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Wetland Mitigation Bank at Pond 20 and Port Master Plan Amendment

Final Environmental Impact Report

UPD# EIR-2019-010; SCH# 2019060167

VOLUME III of IV

Prepared For:
San Diego Unified Port District
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Appendix E. Biological Technical Report

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Biological Technical Report

Wetland Mitigation Bank at Pond 20 and Port Master Plan Amendment

San Diego, California

March 2021

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Appendix B. Jurisdictional Delineation Report Wetland Mitigation Bank at Pond 20 and Port Master Plan Amendment – Parcel A – Prepared by HDR Engineering, Inc., August 2020

Appendix C. Delineation of Jurisdictional Wetlands and Non-Wetland Waters Under Clean Water Act Section 404 for the Proposed South San Diego Bay Wetland Mitigation Bank (Pond 20) – Prepared by Great Ecology December 2017

Appendix D. California Coastal Commission Supplemental Wetland Delineation Report for the South San Diego Bay Wetland Mitigation Bank. Prepared by Great Ecology, Revised February 2020

Appendix E. Sensitive Plant and Wildlife Species Tables

Acronyms

ACOE	United States Army Corps of Engineers
APN	Assessor Parcel Number
BCC	USFWS Birds of Special Concern
BMP	Best Management Practices
BTR	Biological Technical Report
CCA	California Coastal Act
CCC	California Coastal Commission
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CRPR	California Rare Plant Rank
CWA	Clean Water Act
EFH	Essential Fish Habitat
ESHA	environmentally sensitive habitat area
FESA	Federal Endangered Species Act
INRMP	Integrated Natural Resources Management Plan
MLLW	Mean Lower Low Water
MM	Mitigation Measures
MSCP	Multiple Species Conservation Program
NAVFAC	Naval Facilities Engineering Command
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
PMP	Port Master Plan
PMPA	Port Master Plan Amendment
RWQCB	Regional Water Quality Control Board
SHA	sensitive habitat area
SSC	Species of Special Concern
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WOS	waters of the state
WOUS	waters of the United States

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ES. Executive Summary

The Wetland Mitigation Bank at Pond 20 and Port Master Plan Amendment (PMPA; project) study area totals approximately 95 acres and encompasses 83 acres within Pond 20, a 50-foot buffer along the northern boundary, and adjoining Parcels A, B, and C, totaling approximately 11 acres. Biological surveys were conducted within the study area to document the flora, fauna, and vegetation communities present and to assess the presence and potential for sensitive species. Pond 20 and the associated parcels encompass a range of plant communities and habitats, including semi-natural herbaceous stands, upland areas colonized by Diegan coastal sage scrub alliances and maritime succulent scrub alliances, saltmarsh, salt pan, and several mixed nonnative assemblages.

The study area supports the state endangered Belding's savannah sparrow (*Passerculus sandwichensis beldingi*), federally threatened/California Department of Fish and Wildlife (CDFW) species of special concern (SSC) western snowy plover (*Charadrius alexandrines nivosus*) and coastal California gnatcatcher (*Polioptila californica californica*) and several SSC and United States (U.S.) Fish and Wildlife Service (USFWS) Birds of Special Concern, including burrowing owl (*Athene cunicularia*). The study area also supports suitable habitat for other special status species, including the federally and state-endangered/CDFW fully protected California least tern (*Sternula antillarum browni*) and~~,~~ light-footed Ridgway's rail (*Rallus obsoletus levipes*), and federally protected nesting migratory birds. The study area traverses wetlands and nonwetland Waters of the U.S. (WOUS) subject to U.S. Army Corps of Engineers (ACOE) jurisdiction, streambed subject to CDFW regulation, and wetlands subject to California Coastal Commission (CCC) jurisdiction.

Impacts to biological resources and jurisdictional areas are identified in Section 6 of this report. Based on project-specific design, in conjunction with avoidance, minimization, and mitigation measures to be implemented, the project results in no significant impact to federal, state, or locally regulated biological resources listed above.

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1 Introduction

1.1 Study Background, Purpose, and Scope

This Biological Technical Report (BTR) has been prepared for the proposed Wetland Mitigation Bank at Pond 20 and Port Master Plan Amendment (PMPA) with the San Diego Unified Port District (District) as the lead agency. The BTR addresses the Federal Endangered Species Act (FESA), California Endangered Species Act, California Environmental Quality Act (CEQA), and other applicable federal, state, and local requirements for analysis of potential impacts on biological resources resulting from the construction of the proposed project.

This BTR integrates information collected from a variety of literature sources and field surveys to describe the biological resources within the vicinity of the survey area. Information was gathered from publicly available literature, data provided by relevant land management agencies, reviews of aerial photography and U.S. Geological Survey (USGS) topographic maps, data from the State of California, and data from the USFWS and CDFW.

1.2 Historical Background

The study area lies within the Otay River Floodplain and along the south side of the Otay River. Historically, based on an 1859 Coastal Survey Office sketch of San Diego Bay, the site supported high salt marsh vegetation (refer to Figure 2-1 in U.S. Department of the Navy 2013). The wetland delineation report for the project (Appendix C) summarized the history of Pond 20, as follows:

> *The salt evaporation and extraction industry has operated in south San Diego Bay since the early 1870s and included the interior of Pond 20. In the 1890s, the Western Salt Company acquired most of the salt producing entities and lands in South San Diego Bay…. In 1916, the Savage Dam failed causing the release of the Lower Otay Lake to the lower watershed including Pond 20. The dam failure washed away several berms within the Saltworks, including those of Pond 20, and deposited substantial volumes of sediment. Pond 20 and the rest of the Saltworks were restored and operational by 1918, with water entering Pond 20 via siphons. However, the additional sediment caused the interior elevation of Pond 20 to increase to a height that, along with its southern location and distance from the other ponds, made it logistically and economically inefficient within the Saltworks operation. Western Salt attempted to reincorporate Pond 20 again into Saltworks operations in the 1960s using a new system of electric pumps to facilitate the movement of water to the other ponds in the network. This effort ultimately failed, and Pond 20 and the surrounding area as a whole have since remained vacant.*

Pond 20 has been separated from tidal influence for more than a century. Currently, the study area is comprised of a salt flat and upland interior surrounded by a berm ranging in height from 12 to 18 feet mean lower low water (MLLW). The study area also contains Nestor Creek and an Otay River tributary located outside of the berms along the eastern and western boundaries, respectively, and three upland parcels, one of which is located west of the Otay River Tributary, one of which is located east of Nestor Creek, and one of which abuts the Pond 20 berm in the southeast corner of the study area.

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2 Project Location and Description

2.1 Project Location

The project study area consists of approximately 95 acres of District-owned and federally managed land located in the City of San Diego, east of the City of Imperial Beach, and south of the confluences of Nestor Creek, Otay River, and San Diego Bay (Figure 2-1). The study area is located within the Imperial Beach USGS 7.5-minute quadrangle and is entirely within the Coastal Zone.

There is no official address for the study area; however, it is located immediately north of Palm Avenue (State Route 75), south of the San Diego Bay National Wildlife Refuge, South San Diego Bay Unit managed by USFWS (Refuge), east of 13th Street, and west of Otay Valley Regional Park. Interstate 5 is located approximately 1 mile east of the project site (Figure 2-2).

The study area is comprised of six parcels of land identified as Assessor Parcel Number (APN) 616 020 (08/12), APN 616 021 08, APN 616 021 09 (portion), and APN 621 020 (04/08).

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Figure 2-1. Regional Location and Project Vicinity

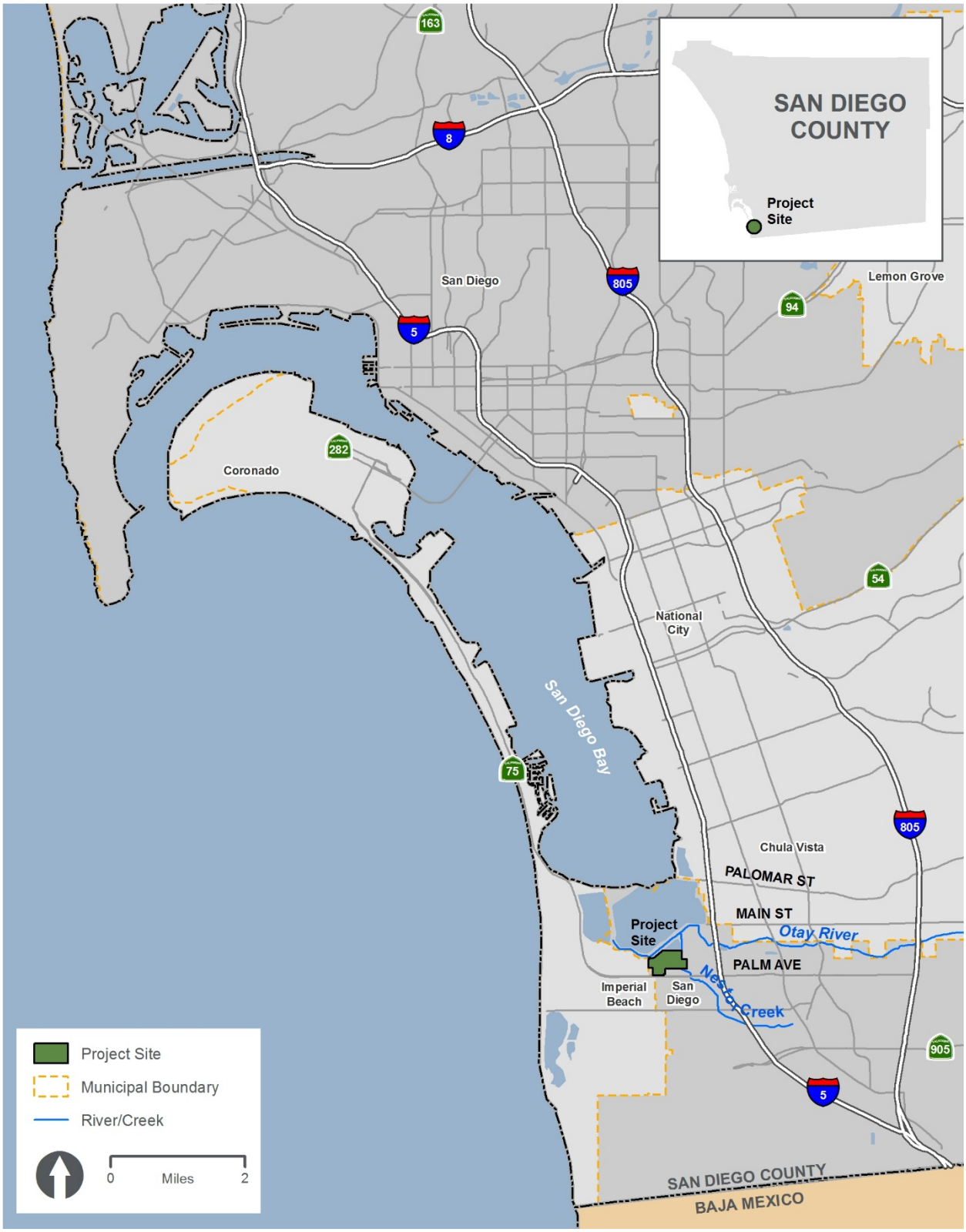

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Figure 2-2. Project Site Characteristics

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2.2 Project Site

The proposed project includes two primary project components: the creation of the Wetland Mitigation Bank at Pond 20 (Bank Site) and a PMPA. The project site is divided into three main areas, as shown on Figure 2-2 and in Table 2-1: the Bank Parcel, Parcels A, B, and C, and the berm breach location. The Bank Parcel is 83.47 acres and contains the southern portion of the former salt evaporation pond known as Pond 20. The Bank Parcel extends beyond the existing salt pond berms to also include Nestor Creek and the Otay River Tributary. The Bank Site would be developed within the existing Pond 20 berms in the Bank Parcel, and the Bank Site would be up to 80 acres. Parcels A, B, and C are immediately adjacent to the Bank Parcel but entirely outside the Pond 20 berms.

Table 2-1. Project Site Parcels

Parcels	Acreage
Bank Parcel*	83.47
Parcel A	2.67
Parcel B	0.99
Parcel C	7.98
Berm Breach	0.33
Total	95.44

Notes:
* The Bank Site is entirely within the Bank Parcel

2.2.1 Bank Site

The Bank Site is entirely within the Bank Parcel. The Bank Site is hydrologically isolated from surface water flows within San Diego Bay, Nestor Creek, Otay River, and the Otay River Tributary because of the earthen berms that surround the Bank Site, which were built to hold and evaporate water, which enables salts to concentrate. Additionally, salt concentrations are too high to support benthic invertebrates or vegetation, which form the basis of many intertidal ecological systems.

Earthen berms are located along the western and eastern borders of the Bank Site, and an embankment is located on the southern edge of the project site along Palm Avenue. A stormwater outfall enters the southwest corner of the Bank Parcel from Palm Avenue. The Otay River Tributary is located on the west side of the Bank Site, and Nestor Creek is on the east side. The Otay River Tributary and Nestor Creek are within the Bank Parcel but would not be included in the mitigation bank. Rather, these areas would function as a buffer to provide protection to the mitigation bank from outside disturbances.

2.2.2 Parcels A, B, and C

Parcel A is located west of the Bank Parcel, Parcel B is on the east side of the southern portion of the Bank Parcel bordered by Palm Avenue, and Parcel C is located east of the Bank Parcel. Parcels A,

B, and C encompass 11.64 acres. These parcels are outside of the earthen berms that surround Pond 20 and do not include the natural surface water features of Nestor Creek and the Otay River Tributary.

Parcel A is 2.67 acres and is located west of the Otay River Tributary and varies in elevation from the low-lying tributary to a low hill in the west/center of the parcel, over 14 feet high. Parcels B and C are generally higher in elevation than Pond 20 (11-14 feet high) and flat and appear to be mowed regularly. The southern portion of Parcel B is a paved and fenced vacant lot. Parcel B is 1 acre and Parcel C is 8 acres. All three parcels are predominately comprised of non-native grasslands. A jurisdictional delineation identified 0.90 acre of jurisdictional wetlands in the Otay River tributary and 0.51 acre in Nestor Creek, which are adjacent to Parcels A and C.

2.2.3 Berm Breach

The berm breach location is located at the northwest corner of the Bank Site where the Otay River Tributary and Otay River converge. The berm breach location is 0.33 acre and is partially within the San Diego Bay National Wildlife Refuge. The berm breach location includes a portion of the Pond 20 perimeter berm and extends into the Otay River Tributary and the Otay River.

2.3 Project Characteristics

The proposed project has two primary components, which include “project-level” and “program-level” environmental evaluation, as detailed below. Figure 2-3 depicts the primary project components, including the Bank Site and Parcels A, B, and C.

2.3.1 Project-Level Components – Wetland Mitigation Bank at Pond 20

Wetland Mitigation Bank at Pond 20 – The District is proposing the creation of a wetland mitigation bank within a portion of District-owned property, which was historically used as salt evaporation pond (Bank Parcel). The project includes associated construction and long-term operation and maintenance activities of the mitigation bank. The Bank Parcel is District-owned property. However, currently this area is not formally incorporated into the Port Master Plan (PMP). The District is proposing a PMPA to incorporate the Bank Parcel into the District’s PMP and assign a land use designation of wetlands. The wetlands designation is for undeveloped lands having high biological productivity and, as recognized by the PMP, may include areas designated for mitigation, or areas identified for potential wetland enhancement, restoration, and/or creation opportunities. The creation of the wetland mitigation bank, as well as the incorporation and land use designation of the wetland mitigation bank into the PMP, is evaluated at a “project level” in this BTR.

2.3.2 Program-Level Components – Parcels A, B, and C Port Master Plan Amendment

PMPA for Parcels A, B, and C – As part of the PMPA, the District is proposing to incorporate Parcels A, B, and C into the District’s PMP and assign land use designations. Parcels A, B, and C are District-owned property. However, currently these areas are not yet incorporated into the PMP. Parcels A, B, and C would be assigned a commercial recreation land use designation. Incorporation of Parcels A, B, and C is evaluated at a “program level” because the specific details of future development, if any, are not currently known.

Figure 2-3. Primary Project Components

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3 Methodology

This BTR summarizes the results of general biological, rare plant, and jurisdictional wetland delineation surveys conducted within the study area by Tierra Data, Inc., Great Ecology, and HDR. Detailed methodology for biological surveys can be found in these reports:

- Biological Resources Survey Report, Pond 20, San Diego, California. August 2018. Prepared by Tierra Data, Inc. (Appendix A).
- Jurisdictional Delineation Report, Wetland Mitigation Bank at Pond 20 and PMPA – Parcel A. August 2020. Prepared by HDR Engineering, Inc. (Appendix B).
- Delineation of Jurisdictional Wetlands and Non-Wetland Waters under Clean Water Act (CWA) Section 404 for the Proposed South San Diego Bay Wetland Mitigation Bank (Pond 20). Prepared by Great Ecology December 2017 (Appendix C).
- CCC Supplemental Wetland Delineation Report for the South San Diego Bay Wetland Mitigation Bank. Prepared by Great Ecology February 2020 (Appendix D).

The following literature and materials were also reviewed in the preparation of this BTR:

- California Natural Diversity Database RareFind version 5.2.14 search for sensitive plant and animal species (CDFW 2020);
- U.S. Geological Survey 7.5-minute Imperial Beach, California (USGS1966), Figure 3-1;
- U.S. Department of Agriculture Natural Resources Conservation Service soil mapping data (U.S. Department of Agriculture Natural Resources Conservation Service 2019), Figure 3-2; and
- USFWS National Wetlands Inventory data to identify areas mapped as wetland features (USFWS 2019), Figure 3-3.

3.1 General Biological Surveys

The study area, for the purposes of vegetation mapping and jurisdictional delineation, includes the project site and a 50-foot buffer along the northern perimeter of the Bank Site. For the purposes of evaluating potential impacts on special status species, the study area includes the project site and a 500-foot buffer around the project site. Vegetation mapping of the study area was conducted by Tierra Data, Inc. in 2017 and 2018. Plant communities were classified consistent with the California Vegetation Classification and Mapping Program (Sawyer et al. 2009; CDFW 2018) to the extent practical. A cross reference to the local agency-recognized vegetation classification system is also provided for consistency with CEQA requirements for assessing mitigation. This system is known as Holland-Oberbauer (Oberbauer et al. 2008).

General biological surveys were conducted over five site visits between September 2017 and May 2018. Rare plant surveys and avian habitat assessments for the Bank Site were conducted in spring 2018. The habitat assessments for federally and state listed species with potential to occur within the study area included rating habitat values based on a general understanding of each species' life history and potential use of the study area for nesting, foraging, and roosting habitat. The vegetation communities mapped within the study area served as a basis for mapping overall habitat values for

each species. Each vegetation community was evaluated on a scale of 1 (Low Quality, few habitat requirements present and heavily disturbed) to 5 (Very High Quality, most habitat requirements present and relatively undisturbed). A detailed discussion of methodology can be found in Section 2.0, Methods of the Biological Resources Report for Pond 20, San Diego California of Appendix A. The initial habitat assessments were supplemented by the combined results of long-term avian monitoring conducted by the District throughout the bay. In addition to special status species identified during general biological surveys (Appendix A), special status plant and wildlife species analyzed for potential to occur at the adjacent Otay River Estuary Restoration Project (Dudek 2018) were also reviewed for potential to occur within the study area.

3.2 United States Army Corps of Engineers Delineation Surveys

WOUS within the study area were delineated according to the methods outlined in the ACOE Wetland Delineation Manual (Environmental Laboratory 1987), the *Interim Regional Supplement to the ACOE Wetland Delineation Manual: Arid West Region* (ACOE 2008a), and *A Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States* (ACOE 2008b). In addition, the *2016 Arid West Regional Wetland Plant List* was referenced when conducting the delineation (Lichvar et al. 2016). Potential Regional Water Quality Control Board (RWQCB) jurisdiction was mapped to the same limits as ACOE jurisdiction. A detailed discussion of methods can be found in Appendix B and Appendix C.

3.3 California Coastal Commission Delineation Survey

CCC-regulated wetlands were generally delineated pursuant to 14 California Code of Regulations Section 13577 which establishes a “one parameter definition” that only requires evidence of a single parameter to establish wetland conditions. However, within the Bank Site where localized ponding occurs at several locations, some of which exhibit hydric soil indicators, CCC has concurred that wetland functions are extremely limited, ~~if not absent,~~ and while there are seasonal water features that exhibit at least one positive wetland field indicator defined by CCC, these areas do not offer the ecosystem services associated with wetlands protected under the Coastal Act ~~and these areas do not qualify as coastal wetlands~~ (~~CCC~~Hucklebridge~~,~~ ~~personal~~ pers. ~~communication~~comm. ~~March 20,~~ 2020). A detailed discussion of methods can be found in Appendix B and Appendix D.

To delineate these areas in the field, CCC provides few guidelines on how to identify the upland boundaries of wetlands. These guidelines include:

a. The boundary between land within predominantly hydrophytic cover and land with predominantly mesophytic or xerophytic cover;

b. The boundary between soil that is predominantly hydric and soil that is predominantly nonhydric; or

c. In the case of wetlands without vegetation or soils, the boundary between land that is flooded or saturated at some time during years of normal precipitation, and land that is not (14 California Code of Regulations Section 13577).

However, these guidelines are not technically field specific. CCC therefore defers to several other sources that delineators can reference when investigating wetland boundaries in the field. These include:

- 1987 Army Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987) and Regional Supplements (ACOE 2008a);
- National Wetland Plant List (Lichvar et al. 2016); and
- Natural Resource Conservation Service Field Indicators of Hydric Soils in the U.S. (USDA NRCS 2016).

The CCC encourages reference of these resources in the context of professional judgment when determining wetland boundaries within the Coastal Zone.

3.4 California Department of Fish and Wildlife Delineation Survey

Potential CDFW-regulated streambed was delineated within Parcel A during the 2019 HDR wetland delineation survey; however, it was not addressed in the Pond 20 Bank Parcel delineations conducted in 2017 and updated in 2019. Based on the presence of bed and bank, Nestor Creek and the Otay River Tributary have been identified as potential CDFW-regulated streambed. The limits of potential CDFW jurisdiction associated with the two creeks within the Bank Parcel was assumed to coincide with CCC wetland limits.

Similar to Parcel A, Parcels B and C and the proposed berm breach location at the northwest corner of the Bank Site were not a part of any of the above jurisdictional delineations, which focused on the Bank Site. Therefore, at these locations, jurisdictional limits were evaluated based on incidental observations and desktop resources, including topographic mapping, national wetland inventory, aerial photography, and vegetation mapping. Within the berm-breach area, potential CDFW jurisdictional limits were based upon the Otay River tributary bank elevation and, per standard CDFW practice, extended to include the adjacent saltwater marsh habitat within the floodplain. ACOE, RWQCB, and CCC jurisdictional limits were based upon the mean higher high tide elevation.

3.5 Agency Consultation

The District and the District's environmental consultant informally contacted ACOE, CCC, and CDFW regarding the proposed project. ACOE and CCC reviewed the wetland delineation reports and provided comments. During a follow up meeting, CCC staff concurred with the conclusions in the delineation report that no CCC jurisdictional wetlands are located within the Bank Site (K. Huckelbridge, personal communication, March 20, 2020). ACOE has also verbally approved the wetland delineation but has not yet issued a Jurisdictional Determination verification letter. CDFW provided a comment letter on the Notice of Preparation. The District and environmental consultant followed up with a meeting to discuss their comments (J. Turner, personal communication, February 7, 2020).

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Figure 3-1. United States Geological Survey Quadrangle: Imperial Beach

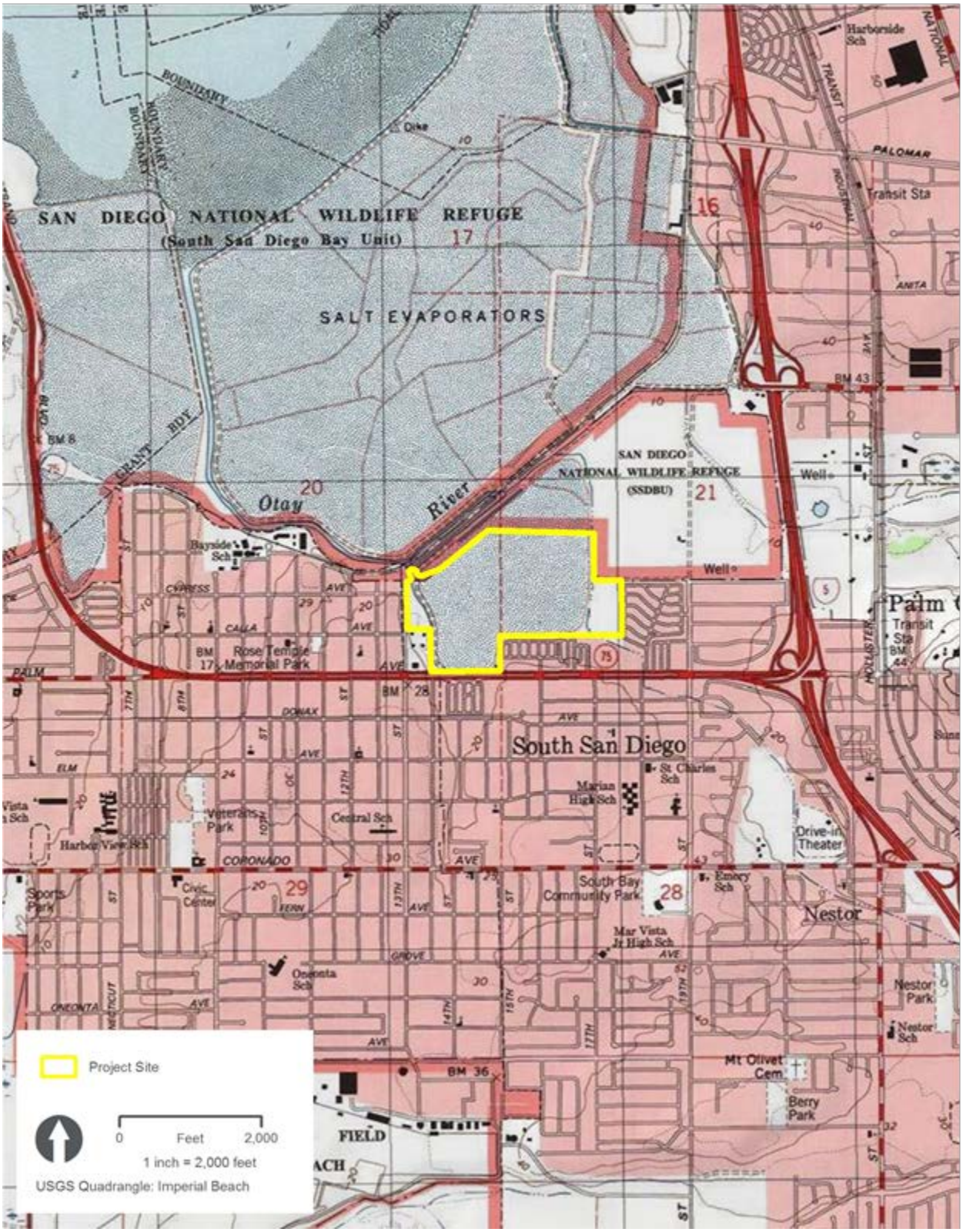

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Figure 3-2. Project Area Soils

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Figure 3-3. Existing National Wetlands Inventory and Federal Emergency Management Agency Mapping

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4 Regulatory Framework

4.1 Federal

4.1.1 National Environmental Policy Act

The National Environmental Policy Act (NEPA) of 1969 (42 U.S. Code Section 4321-4347) is a federal statute requiring the identification and analysis of potential environmental impacts associated with proposed federal actions. The intent of NEPA is to help decision makers make well-informed decisions based on an understanding of the potential environmental consequences and take actions to protect, restore, or enhance the environment. The process for implementing NEPA is outlined in Title 40 of the Code of Federal Regulations (CFR), Parts 1500–1508, Regulations for Implementing the Procedural Provisions of NEPA.

NEPA established the Council on Environmental Quality that was charged with the development of implementing regulations and ensuring Federal agency compliance with NEPA. The Council on Environmental Quality regulations define major Federal actions to include adoption of official policy (i.e., rules and regulations), adoption of formal plans, adoption of programs, and approval of specific projects (40 CFR 1508.18). The Council on Environmental Quality regulations mandate that all Federal agencies use a prescribed structured approach to environmental impact analysis.

4.1.2 Federal Endangered Species Act

FESA defines and lists species as endangered or threatened and provides regulatory protection for the listed species. FESA provides a program for conservation and recovery of threatened and endangered species. It also ensures the conservation of designated critical habitat that the USFWS has determined is required for the survival and recovery of these listed species. Section 9 of FESA prohibits the take of species listed by USFWS as threatened or endangered. Take is defined as: "…to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in such conduct." In recognition that take cannot always be avoided, Section 10(a) of FESA includes provisions for take that is incidental to, but not the purpose of, otherwise lawful activities. Section 10(a)(1)(B) permits (incidental take permits) may be issued if take is incidental and does not jeopardize the survival and recovery of the species.

Section 7(a)(2) of FESA requires that all federal agencies, including the USFWS, evaluate projects with respect to any species proposed for listing or already listed as endangered or threatened and any proposed or designated critical habitat for the species. Federal agencies must undertake programs for the conservation of endangered and threatened species and are prohibited from authorizing, funding, or carrying out any action that will jeopardize a listed species or destroy or modify its critical habitat.

As defined in FESA, individuals, organizations, states, local governments, and other nonfederal entities are affected by the designation of critical habitat only if their actions occur on federal lands; require a federal permit, license, or other authorization; or involve federal funding.

4.1.3 Migratory Bird Treaty Act

The Migratory Bird Treaty Act makes it unlawful to take, possess, buy, sell, purchase, or barter any migratory bird listed in 50 CFR Part 10, including feathers or other parts, nests, eggs, or products, except as allowed by implementing regulations (50 CFR 21). Sections 3505, 3503.5, and 3800 of the CDFW code also prohibit the take, possession, or destruction of birds, their nests, or eggs.

4.1.4 Clean Water Act

United States Army Corps of Engineers

Section 404 of the CWA establishes a program for the ACOE to regulate the discharge of dredge and fill material into WOUS, including wetlands. Activities regulated under this program include fills for development, water resource projects (e.g., dams and levees), infrastructure development (e.g., highways and airports), and conversion of wetlands to uplands for farming and forestry. Either an individual Section 404 permit or authorization to use an existing ACOE nationwide permit must be obtained if any portion of an activity will result in dredge or fill impacts to a river or stream that has been determined to be jurisdictional under Section 404 of the CWA. When applying for a permit, a company or organization must show that they would either avoid wetlands where practicable, minimize wetland impacts, or provide compensation for any unavoidable destruction of wetlands.

As of June 22, 2020, the term “waters of the U.S.” is defined in the USACE regulations at 33 Code of Federal Regulations (CFR) Part 328.3(a) as:

(a) Jurisdictional waters. For purposes of the Clean Water Act, 33 U.S.C. 1251 et seq. and its implementing regulations, subject to the exclusions in paragraph (b) of this section, the term “waters of the United States” means:

(1) The territorial seas, and waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters which are subject to the ebb and flow of the tide;

(2) Tributaries;

(3) Lakes and ponds, and impoundments of jurisdictional waters; and

(4) Adjacent wetlands.

(b) Non-jurisdictional waters. The following are not “waters of the United States”:

(1) Waters or water features that are not identified in paragraph (a)(1), (2), (3), or (4) of this section;

(2) Groundwater, including groundwater drained through subsurface drainage systems;

(3) Ephemeral features, including ephemeral streams, swales, gullies, rills, and pools;

(4) Diffuse stormwater run-off and directional sheet flow over upland;

(5) Ditches that are not waters identified in paragraph (a)(1) or (2) of this section, and those portions of ditches constructed in waters identified in paragraph (a)(4) of this section that do not satisfy the conditions of paragraph (c)(1) of this section;

(6) Prior converted cropland;

(7) Artificially irrigated areas, including fields flooded for agricultural production, that would revert to upland should application of irrigation water to that area cease;

(8) Artificial lakes and ponds, including water storage reservoirs and farm, irrigation, stock watering, and log cleaning ponds, constructed or excavated in upland or in non-jurisdictional waters, so long as those artificial lakes and ponds are not impoundments of jurisdictional waters that meet the conditions of paragraph (c)(6) of this section;

(9) Water-filled depressions constructed or excavated in upland or in non-jurisdictional waters incidental to mining or construction activity, and pits excavated in upland or in non-jurisdictional waters for the purpose of obtaining fill, sand, or gravel;

(10) Stormwater control features constructed or excavated in upland or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater run-off;

(11) Groundwater recharge, water reuse, and wastewater recycling structures, including detention, retention, and infiltration basins and ponds, constructed or excavated in upland or in non-jurisdictional waters; and

(12) Waste treatment systems.

The term *ephemeral* means surface water flowing or pooling only in direct response to precipitation (*e.g.,* rain or snow fall). The term *intermittent* means surface water flowing continuously during certain times of the year and more than in direct response to precipitation (*e.g.,* seasonally when the groundwater table is elevated or when snowpack melts). The term *perennial* means surface water flowing continuously year-round. Per USACE Regulatory Guidance Letter 08-02, applicants can elect to request and obtain an Approved Jurisdictional Determination, he or she can also decline to request an Approved Jurisdictional Determination, and instead obtain a Corps individual or general permit authorization based on either a Preliminary Jurisdictional Determination, or, in appropriate circumstances (such as authorizations by non-reporting nationwide general permits), no Jurisdictional Determination whatsoever. By definition, a Preliminary Jurisdictional Determination can only be used to determine that wetlands or other water bodies that exist on a particular site “may be” jurisdictional waters of the United States. A Preliminary Jurisdictional Determination by definition cannot be used to determine either that there are no wetlands or other water bodies on a site at all (i.e., that there are no aquatic resources on the site and the entire site is comprised of uplands), or that there are no jurisdictional wetlands or other water bodies on a site, or that only a portion of the wetlands or waterbodies on a site are jurisdictional. The use of a Preliminary Jurisdictional Determination may expedite the permitting process when compared to the Approved Jurisdictional Determination process which requires the Jurisdictional Determination to be coordinated with EPA.

The limits of ACOE jurisdiction in nontidal waters extends to the ordinary high-water mark (OHWM), which is defined at 33 CFR Part 328.3(c) as:

> *…that line on the shore established by the fluctuations of water and indicated by physical characteristics such as [a] clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.*

Per the regulatory program CWA guidance to implement the U.S. Supreme Court decision for the Rapanos and Carabell Cases (USACE 2008a), ACOE typically does not assert jurisdiction over nontidal drainage and irrigation ditches that are excavated on dry land, drain adjacent upland areas, and do not convey relatively permanent flow.

Wetlands

The term wetlands (a subset of WOUS) is defined in 33 CFR 328.3(b) as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support...a prevalence of vegetation typically adapted for life in saturated soil conditions.” In 1987, ACOE published a manual to guide its field personnel in determining jurisdictional wetland boundaries followed by the Arid West Supplement in 2008 (Environmental Laboratory 1987, ACOE 2008b). The methodology set forth in the 1987 manual and 2008 supplement generally requires that, in order to be considered a wetland, the vegetation, soils, and hydrology of an area exhibit at least minimal hydric characteristics.

Tidal Waters

For tidal waters, the limit of Section 404 jurisdiction extends to the high tide line, which means the line of intersection of the land with the water’s surface at the maximum height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds, such as those accompanying hurricanes or other intense storms (33 CFR 328.3(d) and 328.4(b)).

Within the study area, the Mean Higher High-Water elevation is based on the San Diego Bay tidal datum[11].

4.1.5 Rivers and Harbors Act

Pursuant to Section 10 of the Rivers and Harbors Act, ACOE regulates work or structures within, over, or under navigable WOUS, including dredging or disposal of dredged materials, excavation, filling, rechannelization, drilling pilings, or any other modifications to a navigable WOUS. Pursuant to the Rivers and Harbors Act, the limits of ACOE jurisdiction in tidal waters extend to the Mean High-Water Line.[1]

4.1.6 Regional Water Quality Control Board

The RWQCB regulates activities pursuant to Section 401(a)(1) of the federal CWA. Section 401 of the CWA specifies that certification from the state is required for any applicant requesting a federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities that may result in any discharge into navigable waters. RWQCB typically requires compensatory mitigation to offset any loss of aquatic function caused by a project. The type and quantity of mitigation is negotiated during the permitting process.

Porter Cologne Act

RWQCB also regulates discharge of waste to waters of the state (WOS) pursuant to California's Porter-Cologne Act, enacted in 1969, which provides the legal basis for water quality regulation within California. Under this Act. The Water Code defines “waters of the state” broadly to include “any surface water or groundwater, including saline waters, within the boundaries of the state."

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[1] San Diego Bay Station Datum Mean Higher-High Water = 5.72; NAVD88 0.43 https://tidesandcurrents.noaa.gov/datums.html?id=9410170. Setting NAVD88 to 0 to get NAVD88 = 5.72-0.43 = 5.29’ NAVD88

RWQCB adopted a statewide definition of rules to protect wetlands and other environmentally sensitive waterways throughout the state on April 2, 2019. These rules define what RWQCB considers a wetland and include a framework for determining if a feature that meets the RWQCB wetland definition is a WOS is subject to regulation. Second, the rules clarify requirements for permit applications to discharge dredged or fill material to any WOS.

The RWQCB defines an area as wetland as follows:

> *An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation.*

4.1.7 Magnuson-Stevens Fishery Conservation Act

The Magnuson-Stevens Fishery Conservation Act designates the National Oceanic and Atmospheric Administration National Marine Fisheries Service (NMFS) to work with regional Fishery Management Councils to develop Fishery Management Plans for each fishery under their jurisdiction. The Fishery Management Plans must identify and describe essential fish habitat (EFH). Federal agencies must consult with National Oceanic and Atmospheric Administration Fisheries on any action that might adversely affect EFH. EFH means those waters and substrate necessary for fish spawning, breeding, feeding, or growth to maturity (Magnuson-Stevens Act, 16 U.S. Code 1801 et seq.). EFH in the study area is addressed in Section 5.5.1.

4.2 State

4.2.1 California Environmental Quality Act

CEQA requires state and local agencies to identify impacts to the environment that might be caused by their actions. Projects undertaken by public or private agencies must comply with this act if there is any approval given by a state agency. CEQA is a self-regulating statute; however, agencies that do not comply may face litigation from the public. CEQA is a statute that requires state agencies to provide information about environmental impacts of their actions and requires that actions be taken to avoid, minimize, or mitigate those impacts. All listed species are protected as well as candidates and those listed by the California Native Plant Society (California Rare Plant Rank Lists 1, 2, and 3 [CNPS 2020]) and CDFW.

4.2.2 California Fish and Game Code

Protection for Listed Species Under the California Endangered Species Act

Sections 2050 through 2098 of the California Fish and Game Code outline the protection provided to California's rare, endangered, and threatened species. Section 2080 of the Fish and Game Code prohibits the taking of plants and animals listed under the California Endangered Species Act. Section 86 of the California Fish and Game Code defines take as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Section 2081 established an incidental take permit program for state listed species. In addition, the Native Plant Protection Act of 1977 (Fish and Game Code Section 1900 et seq.) gives the CDFW authority to designate state endangered, threatened, and rare plants and provides specific protection measures for designated populations.

Fully Protected Species

CDFW has jurisdiction over fully protected species of birds, mammals, amphibians, reptiles, and fish, pursuant to Fish and Game Code Sections 3511, 4700, 5050, and 5515. Take of any fully protected species is prohibited, and CDFW cannot authorize their take in association with a general project except under the provisions of a Natural Communities Conservation Plan, 2081.7, or a Memorandum of Understanding for scientific purposes.

Nesting Birds

CDFW has jurisdiction over actions with potential to result in the disturbance or destruction of active nest sites or the unauthorized take of birds. Fish and Game Code sections that protect birds, eggs, and nests include, Sections 3503 (regarding unlawful take, possession, or needless destruction of the nest or eggs of any bird), 3503.5 (regarding the take, possession, or destruction of any birds-of-prey or their nests or eggs), and 3513 (regarding unlawful take of any migratory nongame bird).~~Sections 3500 to 5500 of the California Fish and Game Code outline protection for fully protected species of mammals, birds, reptiles, amphibians, and fish. Species that are fully protected by these sections may not be taken or possessed at any time. CDFW cannot issue permits or licenses that authorize the take of any fully protected species except under certain circumstances, such as scientific research or live capture and relocation of such species pursuant to a permit for the protection of livestock. Specific sections of the California Fish and Game Code pertinent to the project include:~~

- ~~Section 3503: prohibits the taking, possession, or needless destruction of the nest or eggs of any bird;~~
- ~~Section 3503.5: prohibits the taking, possession, or destruction of any bird in the order Falconiformes or Strigiformes (birds-of-prey) or the taking, possession, or destruction of the nest or eggs of any such bird; and~~
- ~~Section 3513: prohibits the taking or possession of any migratory nongame bird as designated in the Migratory Bird Treaty Act.~~

Lake and Streambed Alteration Program

The State of California regulates water resources under Sections 1600-1616 of the California Fish and Game Code. Section 1602 states:

> *An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.*

CDFW jurisdiction includes ephemeral, intermittent, and perennial watercourses and extends to the top of the bank of a stream or lake if unvegetated or to the limit of the adjacent riparian habitat located contiguous to the watercourse if the stream or lake is vegetated. CDFW typically requires compensatory mitigation if a project results in the net loss of CDFW jurisdiction. The type and quantity of mitigation is negotiated during the permitting process.

Projects that require a Streambed Alteration Agreement may also require a permit from the ACOE under Section 404 of the CWA. In these instances, the conditions of the Section 404 permit and the Streambed Alteration Agreement may overlap.

4.2.3 California Coastal Act

The proposed project is located within the Coastal Zone and constitutes development pursuant to the California Coastal Act (CCA) Section 30106. The CCC regulates development on the California coast. For the purposes of regulation, tidelands are defined as the lands lying between the lines of mean high tide and mean low tide, and wetlands are defined as "lands within the coastal zone that may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, or fens."[2] In addition to the more traditional fresh and saltwater marshes, the California Coastal Zone also contains a number of riparian areas, most often occurring as corridors along streams and rivers.

In addition to regulating aquatic resources, the CCC regulates environmentally sensitive habitat areas (ESHA) that occur within the Coastal Zone. The CCA provides a definition of an ESHA as: "Any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments" (Section 30107.5). CCC wetlands and other habitat (i.e. habitat suitable for use by endangered, threatened or rare species, ACOE and CDFW regulated waterways) that could qualify as ESHA are present within the study area as described in Section 5.5 and 5.6 and impacts to ESHA are described in Section 6. The enforceable policies of the Coastal Zone Management Act related to biological resources as outlined in Chapter 3 of the CCA (Public Resources Code [PRC] Div. 20) include Article 4 – Marine Environment (Sections 30230 through 30236), Article 5 – Land Resources (Section 30240), and Article 6 – Development (Section 30255).

After certification of the PMPA by the CCC, a non-appealable Coastal Development Permit pursuant to Section 30715 of the CCA would be approved by the District. For the project components on federal land, the CCC would require a federal coastal consistency analysis and certification request for review and approval by the Federal Consistency Unit of the CCC to obtain a Federal Coastal Consistency Certification. Additionally, for Parcels A, B, and C pursuant to section 30715(a)(4) of the CCA, Coastal Development Permits for commercial uses not principally devoted to the sale of commercial goods utilized for water-oriented purposes are appealable to the CCC. No specific development or uses have been determined for the subject parcels at this time; therefore, it's possible that future development of Parcels A, B, and C could involve development and/or uses that are appealable to the CCC.

4.3 Local Regulations

4.3.1 Port of San Diego and United States Navy Integrated Natural Resources Management Plan

The Port of San Diego (Port) is a public benefit corporation and special government entity. Created in 1963 by an act of the California legislature, the Port manages San Diego harbor and administers the public lands along San Diego Bay. It is responsible for the protection and enhancement of 2,508 acres of tideland and 2,860 acres of water. It has operated without tax dollars since 1970 and has been responsible for substantial financial contributions to public improvements in its five member cities: Chula Vista, Coronado, Imperial Beach, National City, and San Diego. The Port's mission is to, while protecting the Tidelands Trust resources, balance economic benefits, community services, environmental stewardship, and public safety on behalf of the citizens of California.

[2] California Code of Regulations Section 13577 and California Coastal Act Sections 30121, respectively.

The Integrated Natural Resources Management Plan (INRMP) is a long-term, collaborative strategy for managing the bay's natural resources and is the primary means by which the U.S. Navy and Port jointly plan natural resources work in San Diego Bay (NAVFAC Southwest and Port of San Diego 2013). The INRMP became a joint initiative with the Port in recognition of the need for partnership in stewardship and compliance with environmental laws, while supporting the ability of the U.S. Navy and the Port to accomplish their mission-related work. Required by the Sikes Act Improvement Act of 1997 for the U.S. Department of Defense, the INRMP is the primary means by which natural resources compliance and stewardship priorities are set and funding requirements are determined. A commitment to implement priority projects, as funding permits, comes with the signatures in the front of the INRMP.

In 2002, the first INRMP for San Diego Bay was signed by the Commander, Navy Region Southwest, the Chair of the Board of Port Commissioners, the Regional Administrator of NMFS, the Field Supervisor of USFWS, and the Regional Director of CDFW (then called the California Department of Fish and Game). The 2013 revision continues many of that plan's objectives and strategies, while expanding coverage on water quality, sediment quality, sustainable development, and other topics (U.S. Department of the Navy 2013). Objectives and strategies addressed in the 2013 INRMP that are relevant to the project are included in Table 4-1.

Table 4-1. Integrated Natural Resources Management Plan Objectives Relevant to the Project

Topic Area	Objective
Ecosystem approach	4.1. Protect bay natural resources and their function by planning and acting at ecologically meaningful, hierarchical scales and time frames.
Mitigation and enhancement	4.2. Improve the success of mitigation and enhancement projects based on regulatory (avoidance and minimization measures), functional, and ecosystem criteria.
Unvegetated shallows	4.3.3. Conserve and enhance the attributes of vegetated shallow subtidal sites that sustain a diverse and abundant invertebrate community, fish and wildlife foraging, nursery function for numerous fishes, as well as an ecological role in detritus-based food web support.
Vegetated shallows	4.3.4. Conserve and enhance the attributes of vegetated shallow subtidal sites that sustain a diverse and abundant invertebrate community, fish and wildlife foraging, nursery function for numerous fishes, as well as an ecological role in detritus-based food web support.
Intertidal flats	4.3.5. Achieve a long-term net gain in the area, function, value, and permanence of intertidal flats, and the physical conditions that support this habitat.
Salt marsh	4.3.6. Ensure no net loss of existing structure and function of salt marsh habitat and achieve a long-term net gain in its quantity, quality, and permanence.
Salt ponds	4.3.8. Protect and enhance the important wildlife functions of the salt ponds, with emphasis on special status birds, shorebird foraging and roosting, and sea bird nesting.

Table 4-1. Integrated Natural Resources Management Plan Objectives Relevant to the Project

Topic Area	Objective
Upland transitions	4.3.9. Ensure no net loss of availability, structure, and function of high value adjacent uplands, and achieve a long-term net gain in their quantity, quality, and permanence.
River mouths and floodplains	4.3.10. Allow river mouths and floodplains to fulfill or at least mimic their natural ecological function as an intermittent and episodic source of sedimentation, organic matter, and freshwater input for the bay.
Invasive species	4.4.1. Minimize the harmful ecological, economic, and human health impacts of aquatic invasive species in San Diego Bay.
Invertebrates	4.4.2.2. Identify and conserve the abundance, biomass, and diversity of invertebrate functional groups that reflect health in each habitat and the ecosystem as a whole.
Fishes	4.4.3. Conserve and enhance fish population abundance and diversity, with priority to those using the bay as a nursery or refuge, and to indigenous bay species.
Birds	4.4.4. Maintain, enhance, and restore habitats on San Diego Bay aimed at providing for the health of resident and migratory populations of birds that rely on the bay to complete their life cycle. Foster broader public knowledge and appreciation of the functional, aesthetic, recreational, and economic values of the bird resources of the bay.
California least tern	4.4.6.2. Contribute to the recovery of least tern numbers based on population size, distribution, and secure nesting site numbers by providing clear benefit to the species in a cost-effective manner. Manage predators of the California least tern to maximize colony success as measured by fledgling productivity and pair numbers.
Light-footed clapper rail	4.4.6.3. Protect the listed light-footed clapper rail population inhabiting San Diego Bay and seek to contribute to its recovery.
Western snowy plover	4.4.6.4. Due to a local decline in western snowy plovers, identify and correct the problem related to water quality, invertebrates, and sick or dying snowy plovers. Protect the listed western snowy plover population inhabiting San Diego Bay and seek to contribute to its recovery.
Salt marsh bird's-beak	4.4.6.5. Seek the recovery of the salt marsh bird's-beak population through habitat protection and enhancement.

4.3.2 City of San Diego Multiple Species Conservation Program Subarea Plan

The City of San Diego's Multiple Species Conservation Program (MSCP) Subarea Plan forms the basis for the implementing agreement between the city and the wildlife agencies that ensure implementation of the Subarea Plan and allow the city to issue take permits at the local level (City of San Diego 1997). The City of San Diego Multi-Habitat Planning Area was developed by the city in cooperation with the wildlife agencies, property owners, developers, and environmental groups. The Multi-Habitat Planning Area is approximately 56,831 acres and delineates core biological resource areas and corridors target for conservation. The District has not elected to participate in the MSCP, and, therefore, is not bound by the MSCP. Per the City of San Diego's comment letter on the Notice of Preparation for the project EIR, the District met with the city and confirmed the MSCP does not apply to the project.

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5 Affected Environment

5.1 Environmental Setting

The study area receives an average of 10.3 inches of precipitation annually (U.S. Climate Data 2020). Within the berms that surround Pond 20, the average elevation is approximately 9.8 feet (3 meters) above MLLW. Shallow basins and depressions occur primarily around the southern and western perimeters of the pond, and the elevation rises gently toward the north and west. Parcel A lies west of the Bank Parcel, outside of the bermed area, and ranges in elevation from the low-lying Otay River tributary along its eastern edge, to a low (6-foot to 9-foot high) hill in the west/center. Parcels B and C, also outside the berm, are generally higher elevation than Pond 20 and are flat with no appreciable slope. Parcel B lies to the south of the Bank Parcel and along Palm Avenue. Parcel C lies east of the Bank Parcel, outside of the bermed area, and east of Nestor Creek.

Soils mapped in the study area include Grangeville fine sandy loam, Huerhuero-Urban land complex, and Huerhuero loam (U.S. Department of Agriculture 2011); however, the Great Ecology wetland delineation found soils ranging from sand to clays and evidence of fill placement, including a relatively random distribution of soil types across the study area and down the soil profile. The berms are comprised of highly compacted clay, and the presence of shell hash on the surface indicates that the berm is comprised of marine dredge material. Soils along Nestor Creek and Otay River Tributary are characteristic of coastal wetland with a high organic material content and were found to exhibit several hydric soil indicators.

5.2 Vegetation Communities

Vegetation communities are assemblages of plant species that usually coexist in the same area. Plant communities were classified consistent with the California Vegetation Classification and Mapping Program to the extent practical. This classification system is a quantitative floristic method accepted in California as part of the National Vegetation Classification System. Biological surveys were conducted by assessing boundaries of plant communities and other mapping units, analyzing representative geo-referenced photographs, and estimating vegetation composition and cover as necessary to classify the vegetation by dominant and co-dominant species in the shrub and herbaceous layers. As depicted in Table 5-1 and Figure 5-1, the project site supports 18 distinct vegetation communities.

Table 5-1. Vegetation Communities within the Study Area

Vegetation Community	Bank Parcel	Breach Site	Parcel A	Parcel B	Parcel C	Total Acres	Oberbauer Classification[a]
Herbaceous Alliances	***50.30***	***0.16***	***1.78***	***0.73***	***7.86***	***60.83***	**—**
Bromus spp. Semi-Natural Herbaceous Stand – Annual Brome Grasslands, Disturbed	0.27	—	1.10	0.67	2.20	4.26	Disturbed Habitat (11300)

Table 5-1. Vegetation Communities within the Study Area

Vegetation Community	Bank Parcel	Breach Site	Parcel A	Parcel B	Parcel C	Total Acres	Oberbauer Classification[a]
Carpobrotus chilensis Semi-Natural Herbaceous Stand – Ice Plant Mats	0.09	—	—	0.06	—	0.15	Disturbed Habitat (11300)
Distichlis spicata Herbaceous Alliance – Saltgrass Flats	—	—	—	—	1.07	1.07	Disturbed Habitat (11300)
Glebionis coronaria Semi-Natural Herbaceous Stand	0.02	—	0.16	—	2.29	2.47	Disturbed Habitat (11300)
Hirschfelida incana Semi-Natural Herbaceous Stand – Upland Mustards	4.65	—	—	—	—	4.65	Disturbed Habitat (11300)
Melilotus sp. Semi-Natural Herbaceous Stand – Sweetclover Fields	1.77	—	—	—	—	1.77	Disturbed Habitat (11300)
Mesembryanthemum spp. Semi-Natural Herbaceous Stand – Ice Plant Mats	41.82	—	0.21	—	—	42.03	Disturbed Habitat (11300)
Salicornia subterminalis Herbaceous Alliance – Pickleweed Mats	1.~~68~~58	0.13~~6~~	0.~~31~~34	—	0.1~~0~~8	2.23	Disturbed Wetland (11200)
Salsola tragus Semi-Natural Herbaceous Stand – Russian Thistle Fields	—	—	—	—	2.22	2.22	Disturbed Habitat (11300)
Shrub Dominated Alliances	***18.64***	**—**	***0.54***	**—**	**—**	***19.18***	**—**
Baccharis sarothroides Shrubland – Broom Scrub	0.28	—	—	—	—	0.28	Diegan Coastal Sage Scrub: Baccharis-dominated (32530), Disturbed
Cylindropunita prolifera Shrubland – Coastal Cholla Patches	0.05	—	—	—	—	0.05	Maritime Succulent Scrub (32400), Disturbed

Table 5-1. Vegetation Communities within the Study Area

Vegetation Community	Bank Parcel	Breach Site	Parcel A	Parcel B	Parcel C	Total Acres	Oberbauer Classification[a]
Isocoma menziesii Shrubland – Menzie's Goldenbush Scrub[c]	15.75	—	—	—	—	15.75	Maritime Succulent Scrub (32400), Disturbed and Diegan Coastal Sage Scrub (32500), Disturbed
Opuntia littoralis Shrubland Alliance – Coast Prickly Pear Scrub[c]	0.11	—	—	—	—	0.11	Maritime Succulent Scrub (32400), Disturbed
Salix lasiolepis Shrubland – Arroyo Willow Thickets	0.30	—	—	—	—	0.30	Disturbed Wetland (11200)
Suaeda taxifolia Shrubland – Seablite Scrub	2.15	—	0.54	—	—	2.69	Disturbed Wetland (11200)
Other Land Cover Types	***14.16***	***0.17***	***0.35***	***0.24***	***0.0~~0~~2***	***14.92***	**—**
Berm/Roadway Vegetation	7.14	0.12	0.13	<0.001	—	7.39	Disturbed Habitat (11300)
Urban/Developed[b]	—	—	—	0.24	—	0.24	—
Salt Pan	6.85	0.01	0.22	—	—	7.08	Disturbed Wetland (11200)
Open Water[b]	0.17	0.04	—	—	0.0~~0~~2	0.23~~1~~	—
Total	**83.10**	**0.33**	**2.67**	**0.97**	**7.86**	**94.93**	**—**

Notes:

[a] This column presents the closest corresponding vegetation community recognized in Oberbauer et al. 2008.

[b] These are provisional mapping units not described in the California Vegetation Classification and Mapping Program.

[c] These vegetation communities are ranked by CDFW as S3 - Vulnerable and at moderate risk of extinction or elimination due to a restricted range, relatively few populations or occurrences, recent and widespread declines, or other factors. See Section 5.5.1 for additional details (CDFW 2020).

Figure 5-1. Vegetation Communities

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5.2.1 *Bromus* sp. Semi-Natural Herbaceous Stand – Annual Brome Grasslands, Disturbed (NNG)

Nonnative grasslands occur on Parcels A, B, and C with somewhat differing compositions. On Parcel A, ripgut brome (*Bromus diandrus*), red brome (*B. madritensis*), and foxtail barley (*Hordeum murinum*) are the dominant species, with horehound and crown daisy also prominent. Parcel A is weeded on an irregular basis and is less intensively maintained than the other two parcels. Ground disturbance occurred sometime in the past and the low hill in the west/center appears to be comprised at least partially of fill material. Parcels B and C, on the other hand, appear to be regularly mowed to the point where the dominant species of grass present could not be determined. Other species present include Australian saltbush (*Atriplex semibaccata*), filaree (*Erodium sp.*), Russian thistle (*Salsola tragus*), and crown daisy.

5.2.2 *Carpobrotus chilensis* Semi-Natural Herbaceous Stand – Ice Plant Mats (CAR)

Sea fig (*Carpobrotus chilensis*) occurs in two patches, one on Parcel B and one on the eastern edge of the Bank Parcel on the eastern slope of the berm. Aside from a Canary Island palm (*Phoenix canariensis*) in the middle of the Parcel B patch, no other plant species occur within this community.

5.2.3 *Distichlis spicata* Herbaceous Alliance – Saltgrass Flats (DIS)

The only native grassland alliance within the study area occurs on Parcel C, where saltgrass is the dominant species. Russian thistle, filaree, and Australian saltbush also occur within this community.

5.2.4 *Glebionis coronaria* Semi-Natural Herbaceous Stand (GLE)

This vegetation community occurs on Parcels A and C. The nonnative, invasive weed crown daisy is the dominant species in this community. Russian thistle, wild radish (*Raphanus sativus*), and brome species are also prominent.

5.2.5 *Hirschfeldia incana* Semi-Natural Herbaceous Stand – Upland Mustards (HIR)

This vegetation community occurs in the northern portion of the Bank Parcel and includes vegetation more typical of coastal upland habitats; however, it is lacking diversity and is dominated by nonnative species. There is a slight rise in elevation at this location that causes an abrupt change in the vegetation community. There is a well-defined line of mustard that follows this minor change in elevation and coincides with an apparent change in substrate, and it was the only polygon that has a relatively high density of Santa Barbara milkvetch (*Astragalus trichopodus*).

5.2.6 *Melilotus* sp. Semi-Natural Herbaceous Stand – Sweetclover Fields (MEL)

This vegetation community is located within a narrow band just north of the roadway vegetation polygon of the Bank Parcel. In addition to sweetclover (*Melilotus* sp.), the ice plant present at this location is moderate and dense enough to be considered part of the vegetation classification at the

association level. This area is unique in that it is the only portion of the property dominated by sweetclover, a nitrogen-fixing species that, although nonnative, can improve soil chemistry.

5.2.7 *Mesembryanthemum* Semi-Natural Herbaceous Stand – Ice Plant Mats (MES)

This vegetation community is by far the most prevalent community within the study area (Table 5-1). Plant densities vary greatly across the polygons identified as ice plant mats. Some areas were nearly devoid of vegetation while others were dense monoculture stands of ice plant, in many cases multiple species of ice plant, but primarily slenderleaf ice plant (*Mesembryanthemum nodiflorum)* and crystalline ice plant (*M. crystallinum)*.

5.2.8 *Salicornia subterminalis* Herbaceous Alliance – Pickleweed Mats (SALIC)

Pickleweed mat occurs primarily along Nestor Creek and the Otay River Tributary. This community also extends landward from the tributary into Parcel A. Portions of this estuarine habitat occur within perennial open water/waterways. Other species that occur in these waterways are California cord grass (*Spartina foliosa*), alkali heath and California bulrush (*Schoenoplectus californicus*). This habitat is tidally inundated and is the only coastal marsh habitat within the study area.

5.2.9 *Salsola tragus* Semi-Natural Herbaceous Stand – Russian Thistle Fields (SATR)

Located primarily within Parcel C, this community dominated by Russian thistle with filaree, saltgrass and brome grass. The parcel is regularly mowed for weed control.

5.2.10 *Baccharis sarothroides* Shrubland – Broom Scrub (BAC)

A small area near the eastern edge of the Bank Parcel supports a dense stand of upland vegetation dominated by desertbroom baccharis. This sliver of vegetation appears relatively intact as the shrubs are mature; and there are few nonnatives within the stand itself.

5.2.11 *Cylindropuntia prolifera* Shrubland – Coastal Cholla Patches (CYL)

A patch of coastal cholla (*Opuntia prolifera*) was encountered on slightly elevated ground in the northern portion of the Bank Parcel. While this species was encountered elsewhere in the study area, it was primarily as individuals; this stand was mapped separately given the density and the distinctiveness of the coastal cholla.

5.2.12 *Isocoma menziesii* Shrubland – Menzie's Goldenbush Scrub (ISO)

There are two assemblages recognized in this vegetation community, both occur on the Bank Parcel. The larger of the two, *Isocoma menziesii-Opuntia prolifera* Association, includes dense stands of Menzie's goldenbush (*Isocoma menziesii*) and/or coastal cholla. In the herbaceous layer, ice plant and filaree are the dominant species in the shrub interstices. This community appears to experience occasional flooding, as evidenced by a relatively high percentage of standing dead shrubs. A portion of this vegetation community contains desertbroom baccharis as a co-dominant species.

5.2.13 *Opuntia littoralis* Shrubland Alliance – Coast Prickly Pear Scrub (OPLI)

This vegetation community occurs on the western bank of the eastern berm between the Bank Site and Parcel C. Coast prickly pear (*Opuntia littoralis*) occurs in a large dense patch. No other species occur in this patch.

5.2.14 *Salix lasiolepis* Shrubland – Arroyo Willow Thickets (SALIX)

Located in the far southeastern portion the Otay River Tributary, this vegetation community is a mix of nonnative trees and shrubs supported by urban runoff. A large stand of Canada horseweed (*Conyza canadensis*) occurs within this vegetation community.

5.2.15 *Suaeda taxifolia* Shrubland – Seablite Scrub (SUTA)

Seablite scrub occurs inside the berm of the Bank Parcel and along the banks of the Otay River Tributary in Parcel A. The community is highly disturbed within the study area and varies in plant density.

5.2.16 Berm/Road Vegetation (BRM-1 or BRM-2)

The primary vegetation along old road/railway features and berms is mixed nonnatives. The western berm is nearly barren but contains patches of ice plant. An apparent old road or abandoned railway spur (noted on a 1916 survey map as “Old Otay Wells Spur," Western Salt Company 1916 [Appendix A]) that was partially incorporated into the saltworks facilities crosses the site and is unvegetated in the middle with patches of nonnative and native vegetation encroaching. The eastern berm is mostly dense nonnative vegetation. The southern berm has mixed vegetation, including a patch of nonnative sea lavender (*Limonium* sp.). Riprap forms part of the substrate.

5.2.17 Salt Pan – Unvegetated (SALT)

This cover type is completely unvegetated and occurs within the interior of the berms in the Bank Parcel. Salt crust varies in depth and in some places pooling water was observed.

5.2.18 Open Water (OW)

Two streams flank the exterior of the Bank Site. A tributary of the Otay River runs along the west edge outside the berm and is part of the Bank Parcel but is not part of the Bank Site. Nestor Creek runs along the east edge outside the berm between the Bank Site and Parcel C. Both streams receive freshwater or stormwater inputs and flow into the Otay River to the north of the property. Both streams are subject to tidal flow and support shallow subtidal habitat. Based on the historic aerial photography available on Google Earth, both channels appear to exhibit an unvegetated soft bottom.

5.3 Botanical Resources

During the general biological survey and focused rare plant surveys, all native and naturalized botanical species observed were recorded and are included in Appendix A. Based on the results of this survey, the study area supports 61 vascular plant species. The species detected are representative of the vegetation communities located within the study area. Special status botanical species observed or with the potential to occur within the study area are discussed in Section 5.5.2.

5.4 Zoological Resources

Wildlife detected and/or expected to use the study area are adapted to disturbed landscapes. The wildlife activity was low during field surveys with only a small number of species observed or detected (scat, tracks, etc.). A list of all wildlife species encountered during field surveys can be found in Appendix A.

5.4.1 Invertebrates

Two butterfly species were observed during the surveys, the western pygmy-blue (*Brephidium exilis*) and the painted lady (*Vanessa cardui*).

5.4.2 Reptiles

Several dead Pacific gopher snakes (*Pituophis catenifer catenifer*) were observed, likely forage scraps from raptors based on their proximity to an artificial perch. No live snakes were observed during the survey. Western side-blotched lizards (*Uta stansburiana elegans*) were observed on the eastern portion of the area.

5.4.3 Mammals

Two mammal species were observed in the northern portion of the Bank Parcel during surveys, desert cottontails (*Sylvilagus audubonii*) and San Diego black-tailed jackrabbits (*Lepus californicus bennettii*). Rodent activity was noted in the southeastern portion of the study area.

5.4.4 Birds

Resident songbirds that specialize in salt marsh or low-vegetation cover conditions are abundant (horned lark [*Eremophila alpestris*] and Belding's savannah sparrow [*Passerculus rostratus beldingi*), as well as migrant songbirds that benefit from open conditions (American pipit [*Anthus rubescens pacificus*]). Within the study area, nesting by burrowing owls (*Athene cunicularia*), as well as black-necked stilts (*Himantopus mexicanus mexicanus*), western snowy plovers (*Charadrius nivosus nivosus*), and killdeer (*Charadrius vociferus vociferus*) was identified.

Turkey vultures (*Cathartes aura*) were observed soaring over the northern upland portions of the property. One northern harrier (*Circus cyaneus*) was seen in the area. One burrowing owl was observed on a berm just to the north of the study area. One snowy egret (*Egretta thula thula*) was observed foraging in Nestor Creek between the Bank Site and Parcel C. Also seen were an osprey (*Pandion haliaetus*), a mallard (*Anas platyrhynchos platyrhynchos*), Forster's tern (*Sterna forsteri*) foraging in Otay River to the north of the site, American crows (*Corvus brachyrhynchos hesperis*), and northern mockingbirds (*Mimus polyglottos polyglottos*). Additionally, a constructed raptor perch/nesting platform is located on Parcel A. The 2018 Biological Resources Report did not indicate whether the platform was occupied.

5.5 Rare, Endangered, or Sensitive Species or Habitats

5.5.1 Special Status Habitats/Regulated Resources

In addition to providing an inventory of special status plant and wildlife species, the CDFW's California Natural Diversity Database also provides an inventory of vegetation types that are considered special status by the state and federal resource agencies.

A special status vegetation community is one that has a state rarity rank of S1, S2, or S3, as determined by the NatureServe Heritage Program Status Ranking system (NatureServe 2020) or is identified subject to local, state, or federal regulations (such as oak woodland alliance and communities meeting ACOE's three -parameter wetland criteria). Definitions of the state ranks are as follows:

- S1: Critically imperiled and at a very high risk of extinction or elimination due to extreme rarity, very steep declines, or other factors.
- S2: Imperiled and at high risk of extinction or elimination due to a very restricted range, very few populations or occurrences, steep declines, or other factors.
- S3: Vulnerable and at moderate risk of extinction or elimination due to a restricted range, relatively few populations or occurrences, recent and widespread declines, or other factors.

~~No~~ Two special status vegetation communities (state rarity rank of S1, S2, or S3) occur within the study area, including Menzie's goldenbush scrub (S3) and coastal prickly pear scrub (S3). Menzie's goldenbush scrub is ranked as S3 based on a relatively small range (<80,000 square miles) and a low occurrence within that range (<250 acres) (Ratchford pers. comm. 2021). Neither community would have occurred at this location historically when the site supported salt marsh, and both communities are heavily fragmented and disturbed; however, given the low occurrence of Menzie's goldenbush scrub recorded throughout its narrow range, the 15.75 acres of this alliance within the project site could play a role in sustaining this community over time.~~However~~ Additionally, several habitats within the project site have potential to support special status species or may be regulated as WOUS, WOS, CCC wetland, CDFW streambed or ESHA. These resources are described in Sections 5.5.2, 5.5.3 and 5.6.

~~Additionally,~~ San Diego Bay and all estuarine habitat below the mean high tide is mapped as EFH for Pacific groundfish (includes more than 82 species) and coastal pelagic fisheries (includes 4 finfish [Pacific sardine, northern anchovy, jack mackerel, Pacific mackerel], market squid, and krill). EFH within the study area is limited to Otay River Tributary and Nestor Creek at elevations below 4.99 feet MLLW. Both channels support shallow, soft bottom subtidal habitat at these elevations.

There is a total of approximately 0.2 acre of subtidal habitat within the study area. The study area supports only a very small amount of EFH, is located at the inland extent of EFH, and therefore, is not likely to play a critical role in sustaining near-shore fish populations. Consultation with the NMFS regarding impacts to EFH is required for potential impacts to species that may be present in the study area and downstream.

5.5.2 Special Status Plant Species

Botanical species with a California Rare Plant Rank (CRPR) between 1 and 3 are considered rare and therefore included in this assessment (CNPS 2020).[3] Based on the literature search, there are a total of 46 special status vascular plants species, 1 special status moss, and 1 special status liver wort evaluated for potential to occur within the study area. Details for all special status plant species including habitat, life form, blooming period, and potential to occur within the study area are provided in Appendix E.

The majority of the study area has little potential to support special status plant species due to the history of past land disruption and the high salinity of the soils. Most of the low--lying areas in the southern and western portions of the Bank Parcel are dominated by a near monoculture of ice plant. Parcels B and C are dominated primarily by nonnative grasses and weedy upland species and are subject to regular mowing and possible disking for weed control. Some upland portions of the Bank Parcel have been colonized by native Maritime Succulent Scrub plant species, multiple stands of Santa Barbara milkvetch, and California suncup (*Camissonia bistorta*), otherwise the site is primarily vegetated by nonnative species.

Nine special status plant species, including one federally and state-listed species (salt marsh bird's beak [*Chloropyron maritimum* ssp*. Maritimum*]), have potential to occur within the study area based on the presence of suitable habitat, albeit marginal, based on the sites long history of disturbance and potentially due to the highly saline soils: (1) Estuary seablite (*Suaeda esteroa*) and (2) salt marsh bird's-beak (*Chloropyron maritimum* ssp*. maritimum*) have potential to occur within pickleweed mats and seablite scrub; (3) Coulter's goldfields (*Lasthenia glabrata* ssp*. coulteri*) has potential to occur within pickleweed mat, seablite scrub, salt pan, and open areas of ice plant mat*;* (4) Pacific saltbush (*Atriplex pacifica*) has potential to occur within goldenbush scrub, broom scrub, and salt pan; (5) Nuttall's acmispon (*Acmispon prostratus*), (6) beach goldenaster (*Heterotheca sessiliflora* ssp. *sessiliflora)*, (7) Brand's star phacelia (*Phacelia stellaris*), and (8) aphanisma (*Aphanisma blitoides*) have the potential to occur within goldenbush scrub and broom scrub; and (9) Lewis's evening primrose (*Camissoniopsis lewisii*) has the potential to occur within goldenbush scrub, broom scrub, and annual brome grasslands. These annual and perennial species have the potential to disperse from nearby areas.

The other 37 special status vascular plants species, 1 special status moss, and 1 special status liver wort identified from the literature search were considered not expected to occur due to lack of suitable habitat or substrate or are perennial shrubs not detected during rare plant surveys.

5.5.3 Special Status Wildlife Species

The literature search identified a total of 36 special status wildlife species occurrences within 1 mile of the study area. This includes 1 invertebrate, 1 fish, 18 birds, 6 reptiles, and 10 mammals. The species and their potential to occur within the study area are provided in Appendix E.

The following eight special status animal species were observed during field surveys of the study area:

- Belding's Savannah Sparrow (*Passerculus sandwichensis beldingi*) – State Endangered

[3] CRPR 1B = Plants rare, threatened, or endangered in California and elsewhere; CRPR 2B = Plants rare, threatened or endangered in California but more common elsewhere. 0.1 = Seriously endangered in California. 0.2 = Fairly endangered in California; CRPR 3 = Plants needing more information

- Black Skimmer (*Rynchops niger*) – USFWS Birds of Special Concern (BCC), CDFW Species of Special Concern (SSC)
- Burrowing Owl (Athene cunicularia) – BCC, SSC
- Gull-billed Tern (Gelochelidon nilotica vanrossemi) – BCC, SSC
- Loggerhead Shrike (*Lanius ludovicianus*) – BCC, SSC
- Northern Harrier (*Circus cyaneus hudsonius*) – SSC
- San Diego Black-tailed Jackrabbit (*Lepus californicus bennettii*) - SSC
- Western Snowy Plover (*Charadrius alexandrines nivosus*) – Federally Threatened, SSC
- Coastal California Gnatcatcher (*Polioptila californica californica*) – Federally Threatened, SSC

Federally and State Listed Species

~~Four~~ Five federally and state-listed endangered or threatened wildlife species are known to occur or have potential to occur within and adjacent to the proposed Bank Site, including Belding's savannah sparrow, western snowy plover, California least tern (*Sternula antillarum browni*), light-footed Ridgway's rail (light-footed) (*Rallus obsoletus levipes*), and coastal California gnatcatcher. California least tern nesting colonies and Ridgway's rail (light-footed) are also state listed as fully protected. Habitat assessments were completed for each of these species and summarized below.

Within the study area, Otay River Tributary and Nestor Creek drainage channels provide high-quality foraging and nesting habitat for Belding's savannah sparrow, low-quality nesting and foraging habitat for light-footed Ridgway's rail, except near the breach site where more cordgrass is present, increasing the quality of the habitat, ~~and~~ low-quality foraging habitat for California least tern, and, where subject to tidal influence, moderate quality foraging habitat for western snowy plover. The majority of the study area provides low-quality roosting habitat for Belding's savannah sparrow. Unvegetated portions of the vegetation communities mapped as ice plant mats ~~and the salt flat portions of the~~within the study area provide low-quality nesting habitat for California least tern and low to moderate nesting and foraging habitat for western snowy plover (Burger and Gochfeld 1990). ~~The remaining study area provides foraging and roosting habitat of varying quality for western snowy plover.~~ Menzie's goldenbush scrub and broom scrub within the study area provide moderate foraging habitat and low-quality nesting habitat. The habitat assessment results for each species are summarized below and on Figure 5-2 through ~~Figure 5-6~~ Figure 5-7 and quantified by species in Table 5-2. USFWS designated Critical Habitat for any listed species does not occur within the study area.

Table 5-2. Suitable Habitat for Listed Environmentally Sensitive Area Avian Species within the Study Area

Species	Habitat Function and Suitability	Bank Parcel (acre)	Breach Site (acre)	Parcel A (acre)	Parcel B (acre)	Parcel C (acre)	Total Acres[a]
Belding's Savannah Sparrow	Nesting - High	1.53	0.16	0.34	—	0.18	2.21
	Foraging - High	1.53	0.16	0.34	—	0.18	2.21
	Roosting - Low	68.92	0.00	2.06	0.72	7.76	79.46

Table 5-2. Suitable Habitat for Listed Environmentally Sensitive Area Avian Species within the Study Area

Species	Habitat Function and Suitability	Bank Parcel (acre)	Breach Site (acre)	Parcel A (acre)	Parcel B (acre)	Parcel C (acre)	Total Acres[a]
California Least Tern	Nesting - Low	14.31	0.12	0.00	0.00	0.00	14.43
	Foraging - Low	0.15	0.04	—	—	0.02	0.21
	Roosting - Low	14.31	0.12	0.00	0.00	0.00	14.43
Ridgway's Rail	Nesting - Low	1.57	~~0.16~~0.20	0.34	—	0.20	2.~~27~~31
	Foraging – Low (Except for Breach Site, which is High)	1.57	~~0.16~~0.20	0.34	—	0.20	2.~~27~~31
Coastal California Gnatcatcher	Nesting - Low	6.98	0.00	0.00	0.00	0.00	6.98
	Foraging - Moderate	16.03	0.00	0.00	0.00	0.00	16.03
Western Snowy Plover	Nesting - ~~Low~~Moderate	14.31	0.12	0.00	0.00	0.00	14.43
	Foraging - Moderate~~Low~~	14.46	0.16	0.00	0.00	0.02	14.64
	Roosting - Low	14.31	0.12	0.00	0.00	0.00	14.43

Notes:
[a] There is a high degree of overlap between habitat functions, so areas for different functions should not be summed.

Belding's Savannah Sparrow

Savannah Sparrows nest and forage in salt marshes with dense stands of pickleweed and saltgrass (*Distichlis spicata*). Belding's savannah sparrow are known to ~~utilize the study area~~nest adjacent to the project site in the Otay river, northwest of the study area outside of the Pond 20 berm, and may also occupy the high-quality nesting and foraging habitat ~~for the Belding's savannah sparrow exists~~ within the study area in Nestor Creek and the Otay River Tributary (Figure 5-2) where constituent elements of suitable habitat are present (open water and pickleweed marsh). The remainder of the site represents low-quality roosting potential due to the general lack of suitable habitat and past disturbance patterns. Ice plant mats and other scrubland vegetation communities offer low-quality roosting habitat, while pickleweed mats offer high-quality foraging and nesting habitat for the species. Belding savannah sparrow thrive in open areas with low vegetation and scrubland with adjacent areas of marshland containing plant species such as pickleweed.

California Least Tern

The California least tern typically nest on open beaches free of vegetation and forage primarily for small schooling fish and occasionally for shrimp and other invertebrates (USFWS 2017). No nesting was observed in the study area during the past bay-wide avian surveys. Although California least tern typically nests on open beaches, it has been documented using opening salt evaporation pond berms,

salt pans and open areas in sparsely vegetated areas such as the openings in the ice plant mat community mapped within the study area (Burger and Gochfeld 1990; Powell and Collier ~~1999~~2000). Therefore, bare berm and roadway and scarcely vegetated ice plant mat ~~this~~ habitat has been mapped as potential nesting habitat~~, albeit of low quality~~ (Figure 5-3). Salt pan was not included as suitable nesting habitat due to very long inundation exhibited by these areas and the permanent thick layer of salt crust present in the salt pan on site. The nesting habitat has been described as low quality based on the least tern's high nesting site fidelity, which makes the probability of nesting in the future when a site is currently unoccupied low, as well as the high vegetation cover (>5 percent) and height of the crystalline and slender ice plant (6–8 inches) (Swaisgood et. al 2018).

The Nestor Creek and Otay River Tributary channels on either side of the Pond 20 berms offer low-quality foraging habitat, with only very narrow and shallow open water in which terns can dive for schooling fish to prey on. Terns of various species were observed foraging in the Otay River just to the north of the study area during the 2017-2018 general surveys. No other habitat elements for least terns exist within the study area. Although the 2018 habitat assessment (Appendix A) identified the northern portion of Parcel A (Figure 5-3) as suitable (low quality) foraging habitat for the species, this area occurs along the raised banks of the Otay River Tributary channel and is densely vegetated by pickleweed. Therefore, this area does not support foraging habitat for the species.

Ridgway's Rail (Light-footed)

The Ridgway's rail (light-footed) is known to use coastal salt marshes, lagoons, and other maritime environments, nesting in the lower littoral zone of coastal salt marshes where dense stands of cordgrass are present and foraging in mudflats. The reach of the Otay River north and outside of the study area has historically supported 3 to 5 pairs of breeding Ridgway's rail (light-footed). One pair is frequently detected in the vicinity of the Bayshore Bikeway Bridge approximately 50 feet from the berm breach site (Zembal et al. 2020). Potential habitat for the Ridgway's rail (light-footed) occurs along the Otay River Tributary and Nestor Creek, which are located outside of the Pond 20 berms (Figure 5-4). These waterways support the constituent elements needed for nesting and foraging (open water and cordgrass). Foraging potential within these waterways is likely higher than nesting potential since cordgrass, the species' preferred nesting habitat, only occurs at the northern end of the Otay River Tributary (berm-breach area). The species was not detected within Pond 20 during the 2011-2013 avian surveys, 2017-2018 general surveys, ~~nor~~ or ~~during the~~ 2016-2017 avian surveys~~, although it has been observed in the Otay River north of the site~~ (Appendix A).

Western Snowy Plover

The Pacific coast population of the western snowy plover breeds primarily above the high-tide line on coastal beaches, sand spits, dune-backed beaches, sparsely vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries. Less common nesting habitats include bluff-backed beaches, dredged material disposal sites, salt pond levees, dry salt ponds, and river bars (USFWS 2007). Openings in the ice plant mat in the northwestern portion of the Bank Parcel (within the Bank Site) supports breeding western snowy plover (one nest in 2004, two nests in 2012, one nest in 2014, three nests each in 2016 through 2018, at least two nests in 2019, and four nests in 2020 (Medak, pers. comm. 2020a). However, nesting quality at the ~~project site~~Bank Site is negatively affected by the berms, which restrict access for chicks to open water feeding habitat. ~~Nesting quality is negatively affected by the berms, which restrict access for chicks to open water feeding habitat and the distance to open water.~~ Additionally, the high density of sea fig and ice plant negatively impact invertebrate prey densities. Therefore, habitat associated with Bank Parcel, including the bare berms,

roadways, and openings within the ice plant mat community, is classified as low- to moderate-quality nesting and foraging habitat (Figure 5-5). Although salt pan can provide suitable nesting and foraging habitat for western snowy plover, the salt pan on site exhibits very long duration inundations and a thick permanent crust of salt precluding invertebrate prey and has not been included as suitable habitat**.** Additionally, western snowy plover does not use heavily vegetated areas or areas with a high density of tall shrubs (>1.6 feet) (Powell and Collier 2000; Powell 2001). Therefore, heavily vegetated areas (>40 percent cover) identified in the 2018 habitat assessment (Attachment A of Appendix E to this EIR) as suitable for foraging and roosting totaling approximately 62.7 acres have been reclassified as not suitable in the EIR. Additional foraging habitat is available in the berm breach site at the Otay River Tributary when especially low tides expose mud flats. The berm breach site and Parcel A support potentially suitable breeding habitat. The berm breach site and Parcel C support potentially suitable foraging habitat. ~~Low-quality nesting, roosting and foraging habitat for the western snowy plover is present on the bare berms and roadways and in openings within the ice plant mat community within the Bank Parcel (Figure 5-5). Although salt pan can provide suitable nesting and foraging habitat for western snowy plover, the salt pan on site exhibits a thick permanent crust of salt precluding invertebrate prey and suitable nesting substrates. Additional foraging habitat is available in Nestor Creek and Otay River Tributary when especially low tides expose mud flats. Eight adults were observed roosting within the Bank Parcel during the 2016/2017 avian surveys, but western snowy plover was not observed within the study area during 2006/2007, 2009/2010, 2012, or 2013 avian surveys and is not known to nest within the study area (Personal Communication with Eileen Maher June 17, 2020).~~

Coastal California Gnatcatcher

Coastal California gnatcatcher resides in coastal sage scrub habitat, although it also uses chaparral, grassland, and riparian habitats when they occur adjacent to sage scrub, especially for foraging and dispersal during the nonbreeding season (Campbell et al. 1998 and Grishaven et al. 1998). Coastal California gnatcatcher prefers open scrub habitat dominated or co-dominated by California sagebrush (*Artemisia californica*). California Encelia (*Encelia californica*) is the most common co-dominant species near the coast with San Diego sunflower (*Viguiera laciniate*) becoming a common co-dominant species south of San Diego River (Weaver 1998), Only rarely does a single species compose over 50 percent of occupied habitat (Weaver 1998).

Within the study area, Mezie's goldenbush scrub (consisting of two alliances), coastal prickly pear scrub, coastal cholla patches, and broom scrub include species that commonly occur in coastal sage scrub communities occupied by coastal California gnatcatcher. However, the coastal cholla patches and coastal prickly pear scrub within the project site lack subshrubs all together. The *Isocoma menziesii-Cylindropuntia prolifera* Shrubland exhibits only a single shrub species and is lacking any of the coastal California gnatcatcher's preferred shrub species. *Isocoma menziesii-Baccharis sarothroides* Shrubland exhibits more than 50 percent cover by a single shrub species and also exhibits an almost closed canopy, and the broom scrub is lacking any of the gnatcatcher's preferred shrub species (Appendix A). Therefore, the coastal sage scrub alliances on site can be characterized as unsuitable or low quality for breeding.

There are currently no California Natural Diversity Database records of coastal California gnatcatcher residing at San Diego Bay, and the species is only sporadically detected during ongoing avian surveys (USFWS 1995, Tierra Data Inc. 2011, San Diego Natural History Museum and Avian Research Associates 2014). Two to three individuals were detected in Sweetwater Channel, approximately 4 miles northeast of the project site on three of the monthly survey visits conducted during

2006-2007 San Diego Bay avian surveys (November 2006 and January and February 2007), and a single individual was detected in Sweetwater Channel in June 2016 during the 2016-2017 San Diego Bay avian species surveys. Most recently, one to two individuals were observed on several occasions in between August 26 and September 16, 2020 at the northwest corner of the study area (Tierra Data Inc. 2009, Tierra Data Inc. 2018 and Medak, pers. comm. 2020b), These observations are consistent with the range map provided in the 2004 San Diego County Bird Atlas indicating that wintering individuals have been recorded in the vicinity of the project site (Mock 2004).

Therefore, the site's 16.03 acres of broom shrub and Menzie's goldenbush shrub is suitable for foraging and occasionally supports coastal California gnatcatcher foraging during the nonbreeding season but is not anticipated to support breeding (Figure 5-6). The site is also not anticipated to provide significant dispersal function due to its location at the extreme western end of the Otay River Biological Linkage and its setting amid unsuitable habitat. Specifically, the site abuts urban/developed land uses to the west and south and wetland and open water to the north.

Other Special Status Wildlife Species

Other special status wildlife known to occur within or adjacent to the study area include burrowing owl, northern harrier (nesting), Clark's marsh wren, loggerhead shrike (nesting), and San Diego black-tailed jackrabbit. Other special status species with potential to occur but not observed within or adjacent to the study area include Brant (wintering and staging), bald eagle (wintering), large-billed savannah sparrow (wintering), orange-throated whiptail, and western red bat. Habitat assessment results for burrowing owl are summarized below and on ~~Figure 5-6~~Figure 5-7.

Burrowing Owl

Burrowing owl was observed within Pond 20 north of the Bank Parcel on one occasion during project-specific surveys conducted between 2017-2018. One breeding record (June 2017) and periodic observations of single individuals have been made within Pond 20 during the San Diego Bay avian species surveys, although precise locations within the Pond 20 survey cell are not available. Therefore, it is likely that the study area regularly supports wintering and/or migrating burrowing owl and may have supported a breeding pair in 2017. ~~Moderately low-~~Low- to moderately low-quality nesting habitat for burrowing owls exists on the berms around Pond 20 and in the nonnative grassland areas within the Bank Parcel and on Parcels A, B, and C (Figure 5-1 and Table 5-3). The habitat is considered low to moderately low quality for breeding in part due to high proportion of invasive species on site, such as sea fig and ice plant, which are known to reduce the diversity and density of burrowing owl prey species (Rodriguez et. al. 2020). Additionally, as the shrub communities within the study area mature, they reduce the quantity of open, low-growing habitat that burrowing owls prefer for breeding (Lantz et. al. 2007). ~~where the potential for nesting is degraded by past disturbances and the overabundance of nonnative vegetation. Burrowing owls have been observed in the northern portion of the study area, including a nesting observation during the 2016-2017 avian surveys (Appendix A).~~ Most of the study area (except for salt pan, pickleweed mats, *Carpobrotus chilensis*-dominated ice plant mats, open water, arroyo willow thickets and urban/developed cover), represents low-quality foraging opportunities where insect and small mammal activity occur~~s~~. ~~Burrowing owls thrive in open areas with low vegetation and scrubland with adjacent areas of marshland containing plant species such as pickleweed.~~

Table 5-3. Suitable Habitat for Burrowing Owl within the Study Area

Habitat Function and Suitability	Bank Parcel (acre)	Breach Site (acre)	Parcel A (acre)	Parcel B (acre)	Parcel C (acre)	Total Acres[a]
Nesting/Wintering Low/Moderately Low	13.05	0.12	1.26	0.72	7.96	23.11
Foraging - Low	66.95	0.00	2.01	0.72	7.76	77.44

Notes:

[a] There is a high degree of overlap between habitat functions, so areas for different functions should not be summed.

Figure 5-2. Belding's Savannah Sparrow Habitat Assessment

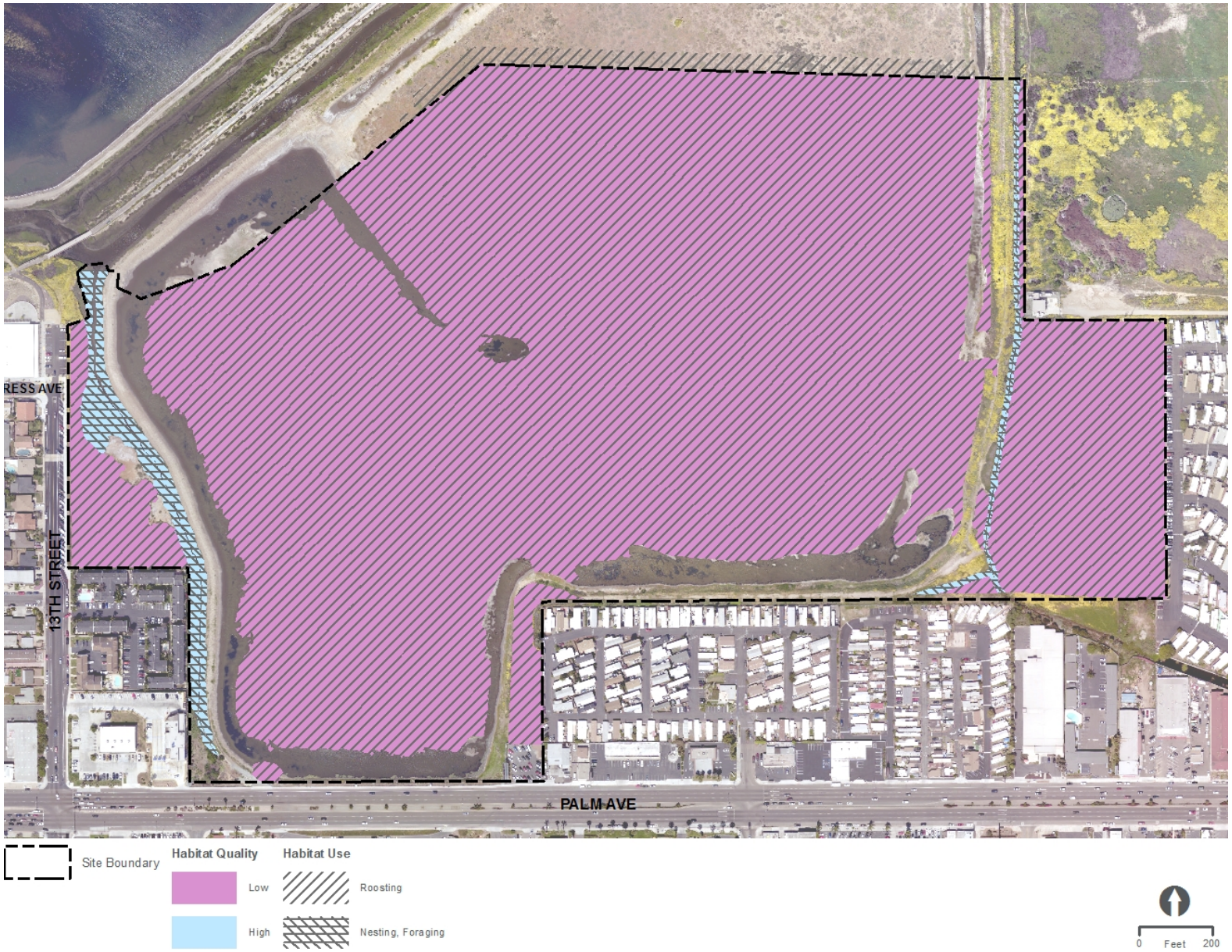

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Figure 5-3. California Least Tern Habitat Assessment

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Figure 5-4. Ridgway's Rail (Light-Footed) Habitat Assessment

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Figure 5-5. Western Snowy Plover Habitat Assessment and Observations

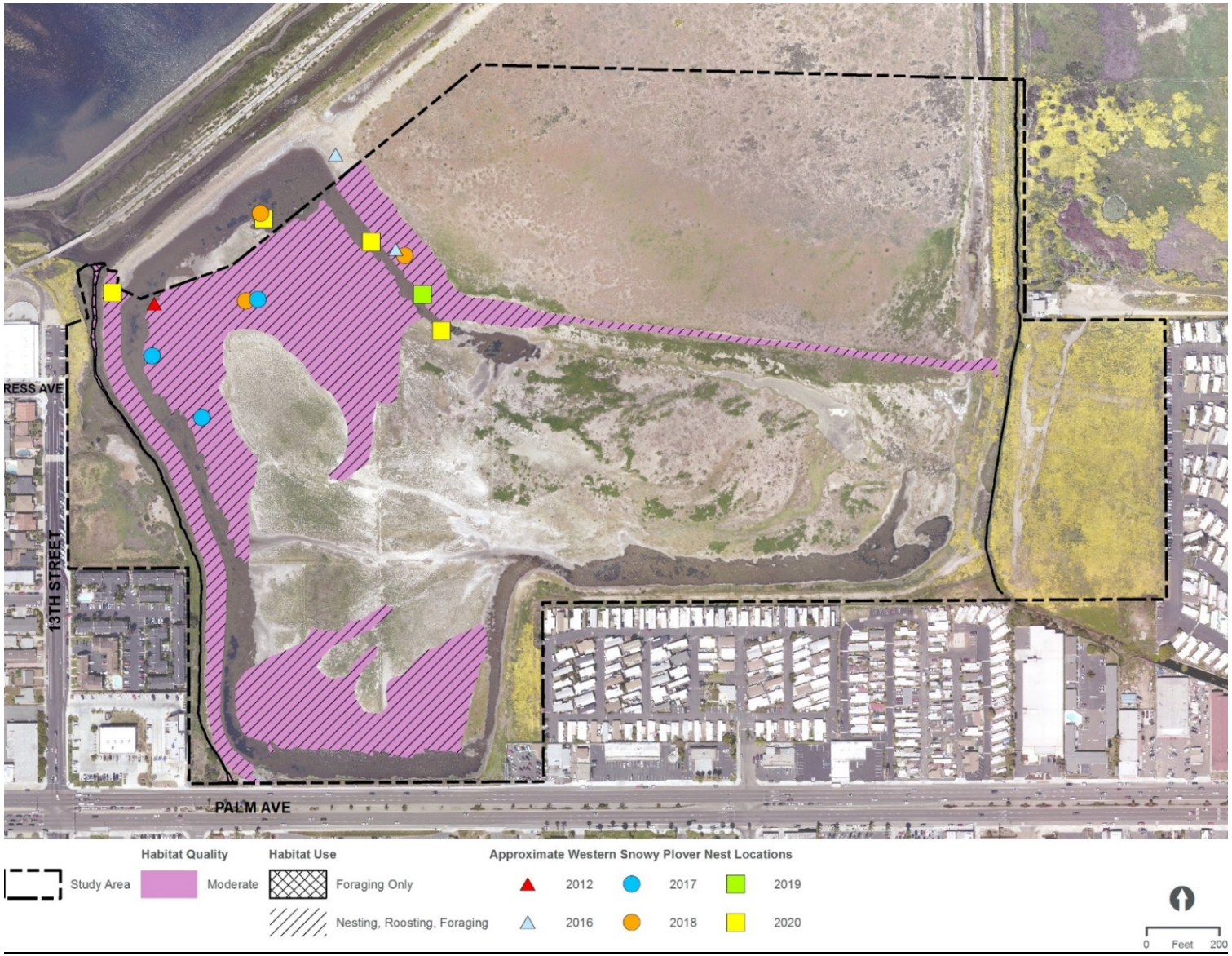

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Figure 5-6. Coastal California Gnatcatcher Habitat Assessment and Observations

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Figure 5-7~~5-6~~. Burrowing Owl Habitat Assessment

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5.6 Jurisdictional Wetland Resources

All jurisdictional resources are associated with either the Otay River Tributary located between the western edge of the Bank Parcel and Parcel A; along Nestor Creek located between the eastern edge of the Bank Parcel and Parcel C; and within Parcel A (Figure 5-8 and Figure 5-9). Both Nestor Creek and the Otay River Tributary receive freshwater and stormwater inputs, primarily at their southern/upstream reaches. Both features are tidally influenced at their northern/downstream reaches due to the connection with the Otay River. The following descriptions of delineated areas are adapted from the Great Ecology delineation reports (Appendices C and D), HDR Wetland Delineation Report (Appendix B) and the Tierra Data, Inc. BTR (Appendix A). A discussion of federal, State, and local jurisdictional resources is provided below.

5.6.1 Pond 20

The interior of Pond 20 within the study area is surrounded by earthen berms and is comprised of disturbed upland salt flats and isolated hypersaline pools perched on fill material. The interior of Pond 20 is isolated from surface tidal flows and only receives surface water inputs via precipitation and stormwater flows from Palm Avenue, located along the southern border. The average elevation of the interior of Pond 20 is 9.05 feet MLLW, and ranges from 4.43 to 12.4 feet MLLW. The berm heights surrounding the Pond are between 13.4 and 14.4 feet MLLW and enclose the entirety of the interior of Pond 20.

Intermittently ponded water features totaling 8.90 acres were identified within Pond 20, but do not meet the ACOE criteria for WOUS, exhibit streambed or provide typical wetland functions. In addition, these features exhibit an impermeable salt layer (aquitard) that that prevents precipitation from infiltrating into the soil. Therefore, these features are not expected to be regulated by ACOE, RWQCB, or CDFW~~, or CCC~~.

5.6.2 Otay River Tributary

The Otay River Tributary is comprised of channelized flows where the berm surrounding Pond 20 forms one of the channel banks. Located outside the western berm of Pond 20, the tributary supports a mix of fresh water from storm drain outlets and tidal waters from the Otay River, near its entrance to San Diego Bay. In addition, the Otay River Tributary receives freshwater flows from a storm drain that outlets onto Parcel A from under 13th street (Figure 5-8 and Figure 5-9). The storm drain channel transitions to a swale prior to reaching the tributary bank. The tributary terminates in the southwest corner of the exterior of Pond 20 and does not flow into or through the interior of Pond 20. The average elevation of the Otay River Tributary Area is 5.4 feet MLLW and ranges from 4.4 to 6.4 feet MLLW at the toe of the berm.

In general, the Otay River Tributary supports an open water channel with pickleweed-dominated salt marsh on the banks and woolly seablight-dominated shrubland on active flood terraces. A small section at the southern end of the Otay River Tributary receives stormwater input and supports *Salix lasiolepis* shrubland.

5.6.3 Nestor Creek

Nestor Creek is comprised of channelized flows where the berm surrounding Pond 20 form one of the channel banks. Nestor Creek, located outside the eastern Pond 20 berm, is an urban freshwater-to-brackish channel that flows north past Pond 20 into the Otay River. Nestor Creek does not flow into or through the interior of Pond 20 (Figure 5-8 and Figure 5-9). The average elevation of the Nestor Creek Area is 6.1 feet MLLW and ranges from 4.4 to 11.4 feet MLLW at the top of the berm.

Figure 5-8~~5-7~~. United States Army Corps of Engineers Jurisdictional Areas

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Figure 5-9~~5-8~~. Potential California Department of Fish and Wildlife and California Coastal Commission Jurisdictional Areas

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5.6.4 Waters of the United States

Wetland and nonwetland WOUS subject to Section 404 of the CWA occur within the study area and are primarily associated with two drainage features: the Otay River Tributary, which is located on Parcel A and along the outer perimeter of the Bank Parcel; and Nestor Creek, which is associated with Parcel C and along the outer perimeter of the Bank Parcel. Maps depicting the location of WOUS are included as Figure 5-8, and Table 5-4 summarizes the total jurisdiction.

Table 5-4. Summary of United States Army Corps of Engineers Waters of the United States Occurring within the Study Area

Location	Wetland WOUS (acres)	Nonwetland WOUS (acres)	Total WOUS (acres)
Breach Site	0.16	0.03	0.19
Bank Site	—	—	—
Bank Parcel (not including Bank Site)	1.19	0.44	1.64
Parcel A	0.35	0.22	0.57
Parcel B	—	—	—
Parcel C	0.08	0.03	0.11
Total	1.79	0.71	2.50

Notes:
WOUS=Waters of the United States

5.6.5 Waters Regulated by Regional Water Quality Control Board

For this project, WOS, as defined by the State Water Resources Control Board's 2019 Wetland and Riparian Area Protection Policy, are equivalent to WOUS. In total, the study area includes 2.50 acres of WOUS/WOS regulated by RWQCB, of which 1.79 acre consists of wetland. Maps depicting the location of WOUS are included as Figure 5-8, and Table 5-5 summarizes the total jurisdiction.

5.6.6 California Coastal Commission Jurisdictional Areas

The coastal zone fully encompasses the study area. The criteria used to define CCC wetlands requires that only one wetland criterion be met (Appendix B). Therefore, all ACOE wetland and nonwetland waters are subject to CCC jurisdiction, as well as any hydrophytic vegetation associated with active floodplain that occurs within the study area (Table 5-5; Figure 5-9). In total, the study area includes 3.05 acres of CCC wetland.

Table 5-5. Summary of California Coastal Commission Wetlands Occurring within the Study Area

Location	Total CCC Wetlands[a] (acres)
Breach Site	0.19
Bank Site	—
Bank Parcel (not including Bank Site)	1.67
Parcel A	1.08
Parcel B	—
Parcel C	0.11
Total	3.05

Notes:
[a] CCC Wetlands require that only one wetland criterion be met
CCC=California Coastal Commission

5.6.7 California Department of Fish and Wildlife Streambed

For this project, potential CDFW-regulated streambed is equivalent to CCC-regulated wetland. In total, the study area includes 3.05 acres of potential CDFW-regulated streambed of which 2.47 acres is vegetated with *Suaeda taxifolia* shrubland, *Salicornia subterminalis* herbaceous alliance, or *Salix lasiolepis* shrubland. Figure 5-9 and Table 5-6 provide a summary of potential CDFW-regulated streambed occurring within the study area.

Table 5-6. Summary Potential California Department of Fish and Wildlife Jurisdictional Areas Occurring within the Study Area

Location	Potential CDFW Riparian (acre)	Potential CDFW Unvegetated Streambed (acre)	Potential Total CDFW Jurisdiction (acre)
Breach Site	0.15	0.04	0.19
Bank Site	—	—	—
Bank Parcel (not including Bank Site)	1.38	0.29	1.67
Parcel A	0.85	0.23	1.08
Parcel B	—	—	—
Parcel C	0.09	0.02	0.11

Table 5-6. Summary Potential California Department of Fish and Wildlife Jurisdictional Areas Occurring within the Study Area

Location	Potential CDFW Riparian (acre)	Potential CDFW Unvegetated Streambed (acre)	Potential Total CDFW Jurisdiction (acre)
Total	2.47	0.58	3.05

Notes:
CDFW=California Department of Fish and Wildlife

5.7 Migratory Birds

The study area provides a wide variety of suitable habitat for nesting migratory birds. Suitable habitat includes large shrubs, ornamental vegetation, native and nonnative herbaceous cover, and sandy flats.

5.8 Wildlife Corridors and Habitat Linkages

San Diego Bay is an important component of the Pacific Flyway used by millions of birds traveling between northern breeding grounds and southern wintering sites. It also supports over-wintering birds that depend on its resources for food, shelter, resting, and staging before migration. The San Diego Bay also serves as the northern range of some tropical species, including several that breed and nest locally.

The study area provides roosting, foraging, and nesting habitat for many of the resident and migratory birds which utilize the San Diego Bay and its surroundings. Several species were observed nesting at the project site during avian surveys, including black-necked stilts, western snowy plovers, burrowing owls, and killdeer. The study area is proximal to San Diego Bay, including the saltworks ponds which are part of the San Diego Bay (located to the north of the study area) and the Pacific Ocean. The pond's proximity to key habitats provides foraging opportunities for species which may nest or roost in the study area. Additional upland habitats exist to the north and east of the project site, and the Otay River basin provides a key linkage to the inland area of southern San Diego. Tijuana Estuary lies just 1.9 mile (3 kilometers) to the south.

Based on results of previous surveys, restored areas and brine flats within the saltworks and other wetlands adjacent to the project site provide important migratory stopover value and spring/summer nesting and roosting habitat for birds. Significant numbers of seabirds and shorebirds establish nests on the saltworks levees north of the project site each spring and summer. These include California least terns and western snowy plovers. Large multispecies breeding colonies include cormorants, terns, and black skimmers (*Rynchops niger*). American avocet (*Recurvirostra americana*) and black-necked stilt nest throughout the interior of the saltworks, and smaller numbers of nesting mallards, gadwall (*Mareca strepera*), and killdeer are scattered throughout. Widespread nesting songbirds include the horned lark (*Eremophila alpestris*) and Belding's savannah sparrow.

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6 Environmental Consequences

The following section describes the proposed project impacts on the existing biological resources. For the purposes of evaluating potential impacts on special status species, the study area includes the project site and a 500-foot buffer around the project site. For the purpose of this report, the proposed project has been divided into the Wetland Mitigation Bank Site (Section 6.1), where impacts have been quantified and a conceptual design has been created, and Parcels A, B, and C (Section 6.2), where no construction has been proposed and impacts are analyzed with a programmatic approach.

6.1 Project Level - Wetland Mitigation Bank Site

As described above, the Wetland Mitigation Bank Site (proposed project) would permanently remove the existing former salt evaporation pond.

The proposed project is designed to be a self-sustaining marsh habitat. The primary hydrologic source for the Bank Site would be unobstructed tidal inflows from San Diego Bay and the Otay River, which passes through Refuge lands before entering the Bank Site. The inlet below the Bayshore Bikeway Bridge is approximately 70 feet wide and allows full passage of tidal flows under all tidal regimes. Additional water input to the Bank Site would come from precipitation and occasional stormwater inputs via internal loading and runoff from Palm Avenue. Tidal hydrology would be reestablished by breaching the Pond 20 northern perimeter berm. The District would excavate the Bank Site and a network of tidal channels to facilitate distribution of tidal flows to achieve inundation frequencies required by the following tidal open water, mudflat, and wetland habitat types:

- Subtidal habitat would be planted with eelgrass, low marsh would be planted with species such as saltwort (*Batis maritima*), and cordgrass (*Spartina foliosa*).
- Mid marsh would be planted with species such as saltgrass (*Distichlis spicata*), alkali heath (*Frankenia salina*), and jaumea (*Jaumea carnosa*). Pickleweed is anticipated to recruit naturally to the site.
- High marsh would be planted with species such as California seablight (*Suaeda californica*), saltgrass, jaumea, Leopold's rush (*Juncus acutus* ssp. *Leopoldii*), saltmarsh fleabane (*Pluchea odorata*), alkali weed (*Cressa truxillensis*) and shoregrass (*Monanthochloe littoralis*). Pickleweed is anticipated to recruit naturally to the site.
- Upland areas would be planted with species such as deerweed (*Acmispon glaber*), coyote brush (*Baccharis pilularis*), bladder pod (*Peritoma arborea*), California buckwheat (*Eriogonum fasciculatum*), California sunflower (*Encelia californica*), coast goldenbush (*Isocoma menziesii*), and black sage (*Salvia mellifora*).

A transitional zone is included low, mid, and high coastal salt marsh elevations, along with areas that would support high tide refugia, and native upland vegetation, which would provide suitable breeding and foraging habitat for many coastal wildlife species, including federally and state listed species.

Specifically, the proposed project would result in the establishment, restoration and enhancement of approximately 59.1 acres of tidal marsh habitat including approximately 20.6 acres of high marsh, 37.1 acres of mid marsh and 1.4 acre of low marsh, 4.0 acres of mudflat, 1.7 acre of subtidal habitat, approximately 3.8 acres of native transition zone habitat, and 7.6 acres of native upland habitat. The remaining Bank Site acreage is comprised of existing perimeter berms that would remain in place as

additional buffer areas. This buffer, comprised of upland and transition habitat and existing landscape, varies in width around the perimeter of the site, and its approximate average width exceeds 100 feet. This provides a substantial buffer between wetland habitat and surrounding land uses.

6.1.1 Mitigation Bank Construction Activities

The project would involve excavation, grading, and soil export activities to establish appropriate topographical conditions and tidal flows to support target marsh-plain elevations followed by soil preparation and revegetation. To reconnect tidal hydrology to the Bank Site, a berm breach of approximately 75 feet, which would partially be within the San Diego Bay National Wildlife Refuge, would occur. After the berm is breached, the network of constructed tidal channels would facilitate distribution of tidal flows to the Bank Site. The approximate location of the berm-breach site is depicted on Figure 6-1.

Construction Access and Staging Areas

Construction staging areas would require preparation, including minor grading, clearing and grubbing, fencing, and application of gravel or similar product to stabilize the areas. Construction staging areas would be established for the staging of project materials and equipment storage. Staging areas would be used for the stockpiling small quantities of excavated materials. Contractors would be required to establish best management practices (BMP) to control stormwater runoff and the potential leaks or spills associated with equipment and vehicles within and adjacent to the construction access and staging areas.

The proposed project includes ~~the following two potential staging locations with associated truck haul routes to provide access to and from the project site. Temporary creek crossing is anticipated to involve a free span across the top of the bank. The~~ staging ~~locations include:~~ at ~~Staging Area #1 –~~ Palm Avenue Staging Area (Parcel B). No creek crossing or vertical clearance is required to access this staging area. This staging area would be accessed by Palm Avenue and utilize Route 1.

- ~~Staging Area #2 – Nestor Creek Staging Area (Parcel C). A temporary crossing of Nestor Creek would be required for Staging Area #2. This would require a temporary bridge over Nestor Creek and vertical clearance to avoid existing overhead electric lines. This staging area would utilize Route 2.~~

Both potential staging areas would require access to haul routes for trucks to haul excess soil generated from the mitigation bank construction. Figure 2-3 depicts the proposed truck routes:

- ~~Route 2 –~~ Palm Avenue via Interstate 5
- ~~Route 3 – Boundary Avenue via Saturn Boulevard and Interstate 5~~

Construction Schedule and Workforce

Construction of the proposed project is anticipated to take approximately 17 months. Construction would occur during daytime hours, Monday through Saturday from 7 a.m. to 4 p.m. Work restrictions may occur because of exceptionally high tides or delays due to rain or following rain events until the ground is dry enough for earth moving equipment to travel safely. A construction crew of approximately 14 people would be on site for the majority of construction, with up to 24 personnel on site for approximately 6 months during mass grading and 4 months during fine grading. The peak number of personnel on site during landscaping activities would be up to 36 people. Clearing and grubbing would

occur in April and May and would utilize 40 hauling trucks per day for 2 months. Mass grading would occur June through November and would utilize 80 hauling trucks per day for 6 months. Fine grading would occur in December and January and would utilize 10 to 15 hauling trucks per day for 2 to 3 weeks.

Operation, Monitoring, and Maintenance

~~A 5-year monitoring schedule would be established, but, if all performance standards are met prior to the 5th year of monitoring, all bank credits would be released.~~

Once all performance standards have been met, the Bank Site is anticipated to be self-sustaining. However, because of the urban surroundings, long-term management may be needed, such as:

- Invasive species monitoring and removal;
- Trash removal;
- Maintenance of site control measures (e.g., fencing); or
- Restoration of any damage from human or maintenance activities or natural phenomenon.

The following discusses the impacts to biological resources as a result of the proposed project. Figure 2-3 and Figure 6-1 depict the primary project components and the preliminary design of the proposed project.

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Figure 6-1. Preliminary Design Plan

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6.1.2 Vegetation Communities

Development of the proposed project would result in permanent impacts to 13 vegetation communities, which primarily occur within the interior of Pond 20 (Table 6-1).

Table 6-1. Summary of Impacts to Vegetation Communities within the Wetland Mitigation Bank Project Site and Breach Site

Vegetation Community	Bank Site	Breach Site	Total Impacted
Herbaceous Alliances	***47.90***	***0.16***	***48.06***
Bromus spp. Semi-Natural Herbaceous Stand – Annual Brome Grasslands, Disturbed	0.03	0.00	0.03
Carpobrotus chilensis Semi-Natural Herbaceous Stand – Ice Plant Mats	0.00	0.00	0.00
Distichlis Spicata Herbaceous Alliance – Saltgrass Flats	0.00	0.00	0.00
Glebionis coronaria Semi-Natural Herbaceous Stand	0.00	0.00	0.00
Hirschfelida incana Semi-Natural Herbaceous Stand – Upland Mustards	4.34	0.00	4.34
Melilotus sp. Semi-Natural Herbaceous Stand – Sweetclover Fields	1.77	0.00	1.77
Mesembryanthemum spp. Semi-Natural Herbaceous Stand – Ice Plant Mats	41.72	0.00	41.72
Salicornia subterminalis Herbaceous Alliance – Pickleweed Mats	0.04	0.16	0.20
Salsola tragus Semi-Natural Herbaceous Stand – Russian Thistle Fields	0.00	0.00	0.00
Shrub Dominated Alliances	***18.06***	***0.00***	***18.06***
Baccharis sarothroides Shrubland – Broom Scrub	0.28	000	0.28
Cylindropunita prolifera Shrubland – Coastal Cholla Patches	0.05	0.00	0.05
Isocoma menziesii Shrubland – Menzie's Goldenbush Scrub	15.59	0.00	15.59
Opuntia littoralis Shrubland Alliance – Coast Prickly Pear Scrub	0.00	0.00	0.00
Salix lasiolepis Shrubland – Arroyo Willow Thickets	0.00	0.00	0.00
Suaeda taxifolia Shrubland – Seablite Scrub	2.14	0.00	2.14

Table 6-1. Summary of Impacts to Vegetation Communities within the Wetland Mitigation Bank Project Site and Breach Site

Vegetation Community	Bank Site	Breach Site	Total Impacted
Other Land Cover Types	***10.28***	***0.17***	***10.45***
Berm/Roadway Vegetation	3.53	0.12	3.65
Salt Pan	6.74	0.01	6.75
Open Water	0.01	0.04	0.05
Total	**76.24**	**0.33**	**76.57**

6.1.3 Rare, Endangered, or Sensitive Species or Habitats

Sensitive Habitat/Regulated Resources

~~No~~ Two sensitive natural communities that are considered special status were found within the project site: (1) Menzie's goldenbush scrub is ranked S3; (2) coastal prickly pear scrub is ranked S3. However, as discussed below, only one vegetation community~~ies~~ with a sensitive (S1-S3) state rarity rank, Menzie's goldenbush scrub, would be directly impacted by project construction. ~~-~~Although the Menzie's goldenbush scrub community exhibits similar characteristics, the low occurrence of that species throughout its narrow range, the 15.75 acres of this alliance within the project site could play a role in sustaining this community over time. ~~occur within the study area. However, S~~several habitats within the project site have potential to support special status species (such as goldenbush scrub, broom scrub, pickleweed mat, seablite scrub, salt pan, mudflat, saltgrass flats, ice plant mats, and non-native grassland) or may be regulated as WOUS, WOS, CDFW streambed, or coastal wetlands. These habitats could be considered ESHAs because they are in the coastal zone. Impacts to these resources are described below and in Section 6.1.4. Subtidal open water habitat impacted at the breach site is regulated as a coastal wetland by CCC and designated EFH by NMFS. Impacts to subtidal open water habitat is discussed below.

Construction

The majority of the proposed Bank Site supports nonnative upland vegetation, with the exception of a small patch of native salt marsh at the breach site and several disturbed shrub alliances, including 15.59 acres of one sensitive alliance (Mezie's goldenbush scrub), within the interior of Pond 20. All vegetation within the Bank Site would be permanently impacted. However, project implementation would result in a net increase in native habitat including subtidal open water habitat. Any net loss of Menzie's goldenbush scrub occurring within the Bank Site would has the potential to be significant given the relatively small range of the alliance and its low occurrence in the range.

Construction of the berm breach has potential to remove 0.04 acre of eelgrass (*Zostera spp.*) habitat (if present within the 0.04 acre of subtidal open water habitat within the breach location) and introduce pollutants from construction equipment into San Diego Bay via the Otay River Tributary. Breach construction also removes 0.16 acre of salt marsh and 0.01 acre of salt pan habitat, thereby reducing the water quality benefits that these communities would normally provide. The salt marsh and/or subtidal open water habitats are regulated by ACOE and CCC pursuant to the CWA and CCA, as well

as providing potentially suitable habitat for pacific groundfish and coastal pelagic species regulated by NMFS and Belding's savannah sparrow (foraging/nesting), Ridgway's rail (foraging/nesting), California least tern (foraging) and western snowy plover (foraging) regulated by CDFW and USFWS. Therefore, the direct impacts on 0.04 acre of subtidal open water habitat, 0.16 acre of salt marsh, and 0.01 acre of salt pan during breach construction would be considered a significant impact. Additionally, construction of the proposed breach would make approximately 0.2 acre of subtidal habitat associated with Otay River Tributary unavailable for foraging and for use as refuge and nursery by coastal pelagic and Pacific groundfish for approximately one month. This very short duration and minor reduction in EFH would not be expected to result in significant impacts to the sustainability of coastal pelagic or pacific groundfish fisheries. The introduction of weedy nonnative species and soil erosion, should it occur, also has potential to introduce pollutants into San Diego Bay, which would significantly degrade the habitat described above.

Compliance with the CWA during construction would also minimize potential direct and indirect temporary impacts on water quality. As a result, temporary impacts to water quality are not anticipated. However, the net loss or degradation of subtidal habitat, including eelgrass (if present), salt pan and saltmarsh habitat, would be significant. Implementation of MM BIO-1, BIO-2, BIO-3, and BIO-9~~10~~ (discussed in Section 7) would reduce potential impacts to less than significant.

Operation

Weed control and soil erosion, should it occur, has potential to introduce pollutants into the San Diego Bay, which would be a significant impact. MM BIO-4 (discussed in Section 7) would reduce this potential impact to less than significant.

Special Status Plant Species

Construction

One federally and state listed plant species has potential to occur within the Bank Site, salt-marsh bird's-beak (federally endangered, state endangered). Although no special status plant species were observed within the study area, nine other special status plant species have potential to occur within the Bank Site and would be permanently impacted if present.

- Estuary seablite and salt marsh bird's-beak have potential to occur within pickleweed mat and sea blite scrub, of which 2.2 acres are proposed for removal.
- Pacific saltbush has potential to occur within goldenbush scrub, broom scrub, and salt pan, of which 22.6 acres are proposed for removal.
- Coulter's goldfields have potential to occur within pickleweed mat, sea blite scrub, salt pan, and open areas in ice plant mat, of which 19.2 acres are proposed for removal.
- Lewis' evening primrose has potential to occur in goldenbush scrub, broom scrub, and annual grassland, of which 16.2 acres are proposed for removal.
- Nuttall's acmispon, beach goldenaster, Brand's star phacelia, and aphanisma have the potential to occur within goldenbush scrub and broom scrub, of which 15.9 acres are proposed for removal.

Should any of these species be present, their permanent impact could be significant. Implementation of MM BIO 1, BIO-5, and BIO-9 (discussed in Section 7) would reduce potential impacts to less than significant.

Operation

Chemical weed control has potential to impact nontarget plant species, and maintenance activities have the potential to introduce invasive species which would be a significant impact. MM BIO-4 (discussed in Section 7) would reduce this potential impact to less than significant.

Special Status Wildlife Species

Several federally and state listed wildlife species are known to occur or have potential to occur within and adjacent to the proposed Bank Site, including coastal California gnatcatcher, western snowy plover, light-footed Ridgway's rail, Belding's savannah sparrow, and California least tern. Table 6-2 summarizes impacts to suitable nesting and foraging habitat for these species.

Table 6-2. Suitable Habitat for Listed Environmentally Sensitive Area Avian Species Impacted within the Mitigation Bank Project Site and Breach Site

Species	Habitat Function and Suitability	Bank ~~Parcel~~Site (acre)	Breach Site (acre)	Total Acres
Belding's Savannah Sparrow	Nesting High	0.04	0.16	0.20
	Foraging High	0.04	0.16	0.20
California Least Tern	Nesting Low	13.38	0.12	13.50
	Foraging - Low	0.01	0.04	0.05
Ridgway's Rail	Nesting Low	0.05	0.~~19~~20	0.~~24~~25
	Foraging ~~-~~ Low (Except for Breach Site, which is High)	0.05	0.~~19~~20	0.~~24~~25
Coastal California Gnatcatcher	Nesting - Low	6.98	0.00	6.98
	Foraging - Moderate	15.59	0.00	15.59
Western Snowy Plover	Nesting Low	13.38	0.12	13.50
	Foraging - Low	13.39	0.16	13.55

Other special status wildlife known to occur or with potential to occur within the study area include burrowing owl, northern harrier (nesting), Brant (*Branta bernicla*) (wintering and staging), Clark's marsh wren (*Cistothorus palustris clarkae*), bald eagle (*Haliaeetus leucocephalus*) (wintering and nesting), large-billed savannah sparrow (*Passerculus sandwichensis rostratus*) (wintering), loggerhead shrike (nesting), orange-throated whiptail (*Aspidoscelis hyperythra*), western red bat (*Lasiurus blossevillii*) and San Diego black-tailed jackrabbit. Table 6-3 summarizes the impacts to suitable nesting and foraging habitat for burrowing owl.

Table 6-3. Suitable Habitat for Burrowing Owl Impacted within the Mitigation Bank Project Site and Breach Site

Habitat Function and Suitability	Bank Parcel (acre)	Breach Site (acre)	Total Acres
Nesting Low/Moderately Low	3.53	0.12	3.65
Foraging – Low	65.90	0.00	65.90

Construction

FEDERALLY AND STATE LISTED WILDLIFE SPECIES

As previously noted, the majority of the proposed Bank Site supports nonnative upland vegetation, and project implementation would result in a net increase in native habitat, including subtidal open water habitat, mudflat habitat, and intertidal marsh.

Belding's Savannah Sparrow

As indicated in Table 6-2, berm breach construction, which is of short duration and would occur after construction of the mitigation site, ~~project construction~~ would impact approximately 0.20 acre of high-quality nesting and foraging habitat for Belding's savannah sparrow, which could be considered significant based on its status as a state listed endangered species. The project would ultimately include approximately 59.1 acres of suitable breeding habitat for Belding's savannah sparrow, resulting in a net increase. Removal of habitat during the breeding season could also result in direct mortality of adults or young. Dust and noise from construction could temporarily reduce the quality of additional suitable nesting habitat in the vicinity. These impacts would also be considered significant prior to mitigation. Implementation of MM BIO-1, BIO-2, BIO-6, and BIO-9 (discussed in Section 7) would reduce potential impacts to less than significant.

California Least Tern

As indicated in Table 6-2, project construction would impact approximately 0.05 acre of low-quality subtidal open water foraging habitat for California least tern. However, the project would ultimately include approximately 1.7 acre of suitable subtidal foraging habitat for California least tern, resulting in a net increase of suitable foraging habitat. The Bank Site and berm breach site currently provide approximately 13.5 acres of potential low-quality nesting habitat (sparsely vegetated ice plant mats and berms) for California least tern; however, as previously noted, breeding and nesting has not been documented in the Bank Site, and California least tern exhibits high breeding site fidelity, so the probability of the site becoming occupied by breeding California least tern in the future when currently unoccupied is low (Atwood and Massey 1988). Project construction would impact 13.5 acres of potentially suitable low-quality nesting habitat through conversion to tidal and upland habitats that are not suitable for nesting. Given that California least tern has not been observed utilizing the project site over multiple years of avian surveys, the loss of potential low-quality California least tern breeding habitat would be less than significant. If the Bank Site became occupied by California least tern prior to construction, then the loss of breeding habitat would be considered significant, and the removal of habitat during the breeding season could result in direct mortality of adults or young. Dust and noise

from construction could temporarily reduce the quality of additional suitable nesting habitat in the vicinity. These impacts would also be considered significant prior to mitigation. Implementation of MM BIO-1, BIO-2, BIO-6, and BIO-9 (discussed in Section 7) would reduce potential impacts to less than significant.

Ridgway's Rail (Light-footed)

As indicated in Table 6-2, project construction would impact approximately 0.24 acre of potential ~~low~~high-quality nesting ~~habitat and somewhat higher-quality~~and foraging habitat (pickleweed mats and open water) for Ridgway's rail within the breach site. However, the project would ultimately create a net increase in the quantity of suitable high-quality habitat breeding habitat for Ridgway's rail. Suitable habitat within the ~~Bank Site and~~ breach site is not known to support Ridgway's rail; however, they have been documented in the immediate vicinity. If the impacted areas became occupied by Ridgway's rail prior to construction, then the loss of breeding habitat would be considered significant, and the removal of habitat ~~during the breeding season~~ could result in direct mortality of adults or young, which is also significant. Dust and noise from construction could temporarily reduce the quality of additional suitable nesting habitat in the vicinity. These impacts would all be considered significant prior to mitigation. Implementation of MM BIO-1, BIO-2, BIO-6, and BIO-9 (discussed in Section 7) would reduce potential impacts to less than significant.

Western Snowy Plover

As indicated in Table 6-2, project construction would impact approximately 13.5 acres of ~~potential low-quality~~occupied moderate-quality nesting habitat (sparsely vegetated ice plant mats and berms) for western snowy plover. ~~However, as previously noted, breeding and nesting has not been documented in the Bank Site, and western snowy plover exhibits high breeding site fidelity, so the probability of the site becoming occupied by breeding western snowy plover in the future when currently not utilized for breeding is low (Powell and Collier 2000). would~~The existing occupied habitat would be ~~Project construction would~~ permanently converted to 13.5 acres of ~~potentially suitable low-quality nesting habitat into~~ tidal ~~and upland~~ habitats that are not suitable for nesting. However, ~~low-quality~~ nesting habitat would remain on the western berm as refuge from high tides, and the creation of shallow slopes (20-30 degrees) with intermittent openings would improve access to foraging habitat for young ~~if western snowy plover began breeding on site following the completion of construction~~. ~~Given that the project site only supports occasional roosting, the loss of 13.5 acres of low-quality western snowy plover habitat would be less than significant. If the Bank Site became occupied by western snowy plover prior to construction, then the loss of breeding habitat would be considered significant, and~~T~~ t~~he removal of habitat during the breeding season could result in direct mortality of adults or young. Dust and noise from construction could temporarily reduce the quality of additional suitable nesting habitat in the vicinity. These impacts would also be considered significant prior to mitigation. Implementation of MM BIO-1, BIO-2, BIO-6, and BIO-9 (discussed in Section 7) would reduce potential impacts to less than significant.

Coastal California Gnatcatcher

As indicated in Table 6-2, project construction would impact approximately 15.87 acres of scrub habitat that provides winter foraging opportunities for coastal California gnatcatcher. Additionally, direct mortality of adults or juveniles could occur If coastal California gnatcatcher passes through the site during construction. Dust and noise from construction could also temporarily reduce the quality of additional suitable nesting habitat in the vicinity. These impacts would also be considered significant

prior to mitigation. Implementation of MM BIO-1, BIO-2, BIO-6, and BIO-9 would reduce impacts on coastal California gnatcatcher to less than significant.

Burrowing Owl

As summarized in Table 6-2, there are 13.05 acres of low- to moderately low-quality breeding, wintering, and migrating stopover habitat for burrowing owl located in the Bank Parcel on the berms and an additional 0.12 acre located in the berm breach site. Of those 13.17 acres, project construction would impact approximately 3.65 acres of low- to moderately low-quality breeding, wintering, and migrating stop over habitat for burrowing owl. The existing habitat would in part be permanently converted to tidal habitats that are not suitable for nesting. However, approximately 9.52 acres of nesting, wintering, and migratory stopover habitat would remain within the Bank Parcel following project construction along with additional habitat provided by the berm to be constructed between the Bank Site and the ORERP to the north. Therefore, construction would not result in a significant loss of suitable habitat. However, the removal of habitat during the nesting season could result in direct mortality of adults or young. Dust and noise from construction could temporarily reduce the quality of additional suitable nesting habitat in the vicinity. These impacts would be considered significant prior to mitigation. Implementation of MM BIO-1, BIO-7, and BIO-9 would reduce potential impacts on burrowing owl to less than significant.

OTHER SPECIAL STATUS WILDLIFE SPECIES

Other special status wildlife known to occur within or adjacent to the study area include ~~burrowing owl (breeding),~~ northern harrier (nesting), Clark's marsh wren, loggerhead shrike (nesting), and San Diego black-tailed jackrabbit. Other special status species with potential to occur but not observed within the study area include Brant (wintering and staging), bald eagle (wintering), large-billed savannah sparrow (wintering), orange-throated whiptail, and western red bat.

Although permanent and temporary impacts to suitable breeding and foraging habitat for sensitive species would occur, project implementation would result in the creation of approximately 64.8 acres of subtidal and intertidal habitat and restoration of 11.6 acres of transitional/upland buffer habitat that would continue to provide improved quality breeding and foraging habitat. With the exception of the strictly terrestrial species (orange-throated whiptail, burrowing owl and San Diego black-tailed jackrabbit, the creation and restoration of native habitat would result in an overall benefit (net increase in higher quality nesting and foraging habitat) to the sensitive species known to occur, or with the potential to occur, in the study area.

Within the City of San Diego MSCP subarea, there are 38,586 acres of suitable habitat for orange-throated whiptail, and 28,669 acres of suitable habitat for black-tailed jackrabbit. Additionally, the project abuts a significant contiguous block of suitable habitat to the east; therefore, the net loss of 64.8 acres of suitable habitat (<0.2 percent) would not have a significant impact on the local subpopulations of these species. However, per the Migratory Bird Treaty Act, should construction activities destroy the active nest of any migratory avian species including those listed in this section, the impact would be considered significant. ~~Project construction would also result in direct impacts on suitable breeding habitat for burrowing owl, which is designated as a state SSC. Based upon guidance provided in the 2012 CDFW Burrowing Owl Mitigation Staff Report, loss of occupied breeding habitat for burrowing owl would be significant.~~ Implementation of MM BIO-1~~, BIO-7,~~ and BIO-9 (discussed in Section 7) would reduce impacts to special status species to less than significant

Operation

Maintenance activities have the potential to introduce invasive species that would degrade habitat quality for wildlife; introduce pollutants to San Diego Bay through the use of herbicides; and disrupt nesting birds if maintenance activities are conducted during the breeding season. These impacts would be significant prior to mitigation. Implementation of MM BIO-4 (discussed in Section 7) would reduce impacts to less than significant.

6.1.4 Jurisdictional Wetland Resources

Waters of the United States

Construction

No WOUS occur within the interior of Pond 20; however, ACOE regulated wetland and nonwetland WOUS (all of which may be also be considered ESHA by the CCC) occur within the proposed berm breach site (Figure 5-8). The berm breach would ~~temporarily~~ impact 0.19 acre of WOUS, including 0.16 acre of wetland WOUS associated with Otay River Tributary. ~~Construction of the staging areas on Parcel A and Parcel C and the temporary span crossings over Otay River Tributary and Nestor Creek could also result in impacts on WOUS, including wetlands.~~ The project is not expected to result in the permanent loss of waters; however, any unanticipated impacts that result in a permanent loss of waters would be significant. Implementation of MM BIO-2 (discussed in Section 7) would reduce this impact to less than significant.

Short-term impacts to the quality of downstream wetland and nonwetland WOUS may occur during construction (i.e., sedimentation, fuel leaks, etc.) of the berm-breach area. The project is not anticipated to result in short-term impacts to downstream WOUS after compliance with the CWA (i.e., compliance with General Construction Storm Water Permit). However, a direct impact on wetland WOUS or degradation of downstream water quality would be significant. Implementation of MM BIO-1 and MM BIO-9 (discussed in Section 7) would reduce this impact to less than significant.

Operation

Chemical weed control has potential to impact nontarget plant species, soil erosion has the potential to impact downstream water quality, and maintenance activities have the potential to introduce terrestrial invasive species which would be a significant impact. MM BIO-4 (discussed in Section 7) would reduce this potential impact to less than significant.

Waters Regulated by the Regional Water Quality Control Board

Construction

Waters regulated by RWQCB (all of which may be also be considered ESHA by the CCC) are defined as equivalent to WOUS. A direct impact on wetland WOUS or degradation of downstream water quality would be significant. Implementation of MM BIO-1 and BIO-9 (discussed in Section 7) would reduce this impact to less than significant. The project is not expected to result in the permanent loss of waters; however, any unanticipated impacts that result in a permanent loss of waters would be significant. Implementation of MM BIO-2 (discussed in Section 7) would reduce this impact to less than significant.

Operation

Chemical weed control has potential to impact nontarget plant species, soil erosion has the potential to impact downstream water quality, and maintenance activities have the potential to introduce terrestrial invasive species, which would be a significant impact. MM BIO-4 (discussed in Section 7) would reduce this potential impact to less than significant.

California Department of Fish and Wildlife Streambed

No CDFW-regulated streambeds occur within the interior of Pond 20. However, potential CDFW-regulated streambed (all of which may be also be considered ESHA by the CCC) occurs within the proposed berm-breach site (Figure 5-8). The berm breach would impact 0.19 acre of potential CDFW-regulated streambed, including 0.15 acre of riparian habitat. ~~Impacts at the Otay River Tributary would be restored upon project completion. Construction of staging areas on Parcel A or Parcel C and the associated temporary span crossings over Otay River Tributary and Nestor Creek could also result in impacts to potential CDFW-regulated streambed, including riparian habitat. The project is not expected to result in the permanent loss of CDFW-regulated streambed; however, any unanticipated impacts that result in a~~ The ~~permanent loss~~alteration of aquatic function of CDFW-regulated streambed at the breach location would be significant. Implementation of MM BIO-2 (discussed in Section 7) would reduce this impact to less than significant.

Short-term impacts to downstream streambed associated with the Otay River may occur during construction (i.e., sedimentation, fuel leaks, etc.) of the berm-breach area. The proposed project would comply with applicable regulations regarding water quality. Therefore, the proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality, and impacts would be less than significant.~~The project is not anticipated to result in short-term impacts to downstream streambed after compliance with the CWA. However, a direct impact on CDFW-regulated streambed or degradation of downstream aquatic resources would be significant. Implementation of MM BIO-1 and BIO-9 (discussed in Section 7) would reduce this potential impact to less than significant.~~

Operation

Chemical weed control has potential to impact nontarget plant species, soil erosion has the potential to impact downstream water quality, and maintenance activities have the potential to introduce terrestrial invasive species which would be a significant impact. MM BIO-4 (discussed in Section 7) would reduce this potential impact to less than significant.

California Coastal Commission Jurisdictional Areas

No CCC-wetlands occur within the interior of Pond 20; however, CCC wetland (all of which may be also be considered ESHA by the CCC) occurs within the proposed berm-breach site (Figure 5-8). The berm breach would temporarily impact 0.19 acre of CCC wetland. ~~Construction of the staging areas on Parcel A or Parcel C and the associated temporary span crossings over Otay River Tributary and Nestor Creek could also result in impacts to CCC wetland.~~ The project is not expected to result in the permanent loss of CCC wetland; however, any unanticipated impacts that result in a permanent loss of CCC wetland would be significant. Implementation of MM BIO-2 (discussed in Section 7) would reduce this impact to less than significant.

Short-term impacts to the quality of downstream CCC wetland may occur during construction (i.e., sedimentation, fuel leaks, etc.) of the berm-breach area. The project is not anticipated to result in short-term impacts to downstream CCC wetland after compliance with the CWA and Coastal Management Act. However, a direct impact on CCC wetland or degradation of downstream water quality would be significant. Implementation of MM BIO-1 and BIO-9 (discussed in Section 7) would reduce this impact to less than significant.

Operation

Chemical weed control has potential to impact nontarget plant species, soil erosion has the potential to impact downstream water quality, and maintenance activities have the potential to introduce terrestrial invasive species, which would be a significant impact. MM BIO-4 (discussed in Section 7) would reduce this potential impact to less than significant.

6.1.5 Wildlife Corridors and Habitat Linkages

The Bank Site provides habitats for roosting, foraging, and nesting for many of the resident and migratory birds which utilize the San Diego Bay and its surroundings. The restored areas and brine flats within the saltworks and other wetlands adjacent to the project site provide migratory stopover value and spring/summer nesting and roosting habitat. As a result of the project, temporary impacts would occur within the proposed project area during the excavation, grading, and soil export activities that would establish appropriate topographical conditions and tidal flows to support target marsh-plain elevations. Ultimately, the proposed project would create a self-sustaining marsh habitat matrix, establishing a network of tidal channels to facilitate distribution of tidal flows to achieve inundation frequencies required by tidal open water, mudflat, and wetland habitats. The proposed project would, therefore, increase the acreage of suitable roosting, foraging, and nesting habitat for resident and migratory birds within the area. The temporary loss of migratory stopover habitat is relatively small compared with the stopover habitat available at San Diego Bay (over 11,000 acres) and along the southern California coastline. Therefore, the temporary loss would be a less than significant impact.

6.1.6 Consistency with Local Habitat Conservation Plans

The City of San Diego's MSCP is not applicable to the proposed project. The proposed project is located within the NAVFAC INRMP. The goal of the INRMP is to ensure the long-term health, restoration, and protection of San Diego Bay's ecosystem in concert with the San Diego Bay's economic, Naval, navigational, recreational, and fisheries needs. The proposed project would increase the acreages of marshland and wetlands and restore upland transition areas within San Diego Bay's ecosystem; therefore, the project would be consistent with the objectives and overall goal of the INRMP identified in Table 4-1.

6.2 Program Level – Parcels A, B, and C Port Master Plan Amendment

As part of the PMPA, the District is proposing to incorporate Parcels A, B, and C into the District's PMP and assign land use designations. Parcels A, B, and C are under CCC jurisdiction and are District-owned property; however, currently these areas are not formally incorporated into the PMP. Parcels A, B, and C would be assigned a commercial recreation designation. At this time, no construction is proposed on Parcels A, B, or C; however, the land use designation of commercial recreation would allow for commercial development of these parcels. Any future project-level commercial development proposals would require discretionary approvals from the District, such as but not limited to a Coastal Development Permit and project approval, and any additional CEQA compliance.

6.2.1 Vegetation Communities

As summarized in Section 5.2 and Table 5-1, Parcels A, B, and C support 12 distinct vegetation communities, the majority of which are nonnative upland land cover types. Native salt marsh occurs within Parcel A and Parcel C, associated with the banks/floodplains of the Otay River Tributary and Nestor Creek, respectively. Future development of the three parcels may result in temporary and permanent impacts to these vegetation communities which are discussed in Sections 6.2.2 and 6.2.3. Impacts to nonsensitive vegetation communities would be less than significant.

6.2.2 Rare, Endangered, or Sensitive Species or Habitats

Special Status Habitat/Regulated Resources

No special status vegetation communities (S1-S3) occur within the three parcels. Therefore, development of these parcels would not result in direct or indirect impacts to special status vegetation communities. However, several habitats within Parcels A and C have potential to support special status species (such as goldenbush scrub, broom scrub, pickleweed mat, seablite scrub, salt pan, mudflat, saltgrass flats, ice plant mats, and non-native grassland) or may be regulated as WOUS, WOS, CCC wetland, or CDFW-streambed. These habitats could be considered ESHAs because they are in the coastal zone. Impacts to these resources are described below and in Section 6.1.4. These resources are described below in Sections 5.5.3 and 5.6.

Special Status Plant Species

As discussed above, no special status plant species were observed during biological surveys. However, estuary seablite, salt marsh bird's-beak, Coulter's goldfields, Pacific saltbush, and Lewis's evening primrose have potential to occur within suitable habitat on Parcel A. Lewis's evening primrose has potential to occur within suitable habitat on Parcel B and estuary seablite, salt marsh bird's-beak, Coulter's goldfields, and Lewis's evening primrose have potential to occur within suitable habitat on Parcel C.

If these species are present when future development occurs, then these plants may be directly or indirectly impacted, which would result in a potentially significant impact. Implementation of MM BIO-1, BIO-5, BIO-9, and BIO-10 (discussed in Section 7) would reduce potential impacts to less than significant.

Chemical weed control has potential to impact nontarget plant species, and maintenance activities have the potential to introduce invasive species, which would be a significant impact. MM BIO-4 and BIO-10 (discussed in Section 7) would reduce this potential impact to less than significant.

Special Status Wildlife Species

Several federally and state listed wildlife species are known to occur or have potential to occur within and adjacent to Parcels A, B, and C, including western snowy plover, light-footed Ridgway's rail, Belding's savannah sparrow, and California least tern. Table 6-4 summarizes impacts to suitable nesting and foraging habitat for these species.

Table 6-4. Suitable Habitat for Listed Environmentally Sensitive Area Avian Species within Parcels A, B and C

Species	Habitat Function and Suitability	Parcel A (acre)	Parcel B (acre)	Parcel C (acre)
Belding's Savannah Sparrow	Nesting - High	0.34	—	0.18
	Foraging - High	0.34	—	0.18
	Roosting - Low	2.06	0.72	7.76
California Least Tern	Nesting - Low	0.00	0.00	0.00
	Foraging - Low	—	—	0.02
	Roosting - Low	0.00	0.00	0.00
Ridgway's Rail	Nesting - Low	0.34	—	0.20
	Foraging - Low	0.34	—	0.20
Western Snowy Plover	Nesting - Low	0.00	0.00	0.00
	Foraging - Low	0.00	0.00	0.02
	Roosting - Low	0.00	0.00	0.00

Federally and State Listed Species

BELDING'S SAVANNAH SPARROW

As indicated in Table 6-4, future development of Parcels A and C may result in direct impacts on suitable habitat for state endangered Belding's savannah sparrow. As depicted on Figure 5-2, the eastern edge of Parcel A supports suitable nesting and foraging habitat for the species while Parcel C supports a sliver of suitable nesting and foraging habitat on its western margin. Loss of occupied breeding habitat for Belding's savannah sparrow would be significant. Additionally, construction and operations noise, lighting, and dust would have potential to indirectly impact Belding's savannah sparrow if they caused adults to abandon active nests or increase nest predations. Similarly, adverse long-term edge effects may be introduced by development such as the introduction of invasive species, lighting, noise, pets, contaminates from storm water runoff, etc. These indirect and long-term impacts would be significant if they would result in increased mortality of adults or young.

Implementation of MM BIO-1, BIO-2, BIO-6, BIO-8, BIO-9, and BIO-10 (discussed in Section 7) would reduce impacts to listed species to less than significant.

RIDGWAY'S RAIL (LIGHT-FOOTED)

As indicated in Table 6-4, future development of Parcels A and C may result in direct impacts on suitable habitat for federally endangered Ridgway's rail (light-footed). As depicted in Figure 5-4, the eastern edge of Parcel A supports low-quality nesting and foraging habitat for the species parcel while Parcel C supports a sliver of low-quality nesting and foraging habitat on its western margin. Although not known to be occupied at this time, should Ridgway's rail begin utilizing the habitat on these parcels, loss or degradation of habitat would be significant. Additionally, construction and operations noise, lighting, and dust would have potential to indirectly impact Ridgway's rail if foraging or breeding occurs within 500 feet of any future projects. Similarly, adverse long-term edge effects may be introduced by development such as the introduction of invasive species, lighting, noise, pets, contaminates from storm water runoff, etc. These long-term impacts would be significant if Ridgway's rail are foraging or breeding within 500 feet of any future projects. Implementation of MM BIO-1, BIO-2, BIO-6, BIO-8, BIO-9, and BIO-10 (discussed in Section 7) would reduce impacts to listed species to less than significant.

WESTERN SNOWY PLOVER AND CALIFORNIA LEAST TERN

As indicated in Table 6-4, Parcels A, B, and C contain no suitable nesting habitat for western snowy plover or California least tern. Therefore, any future development of these parcels would not directly impact nesting habitat. However, construction and operations noise, lighting, and dust would have potential to indirectly impact western snowy plover or California least tern if foraging or breeding occurs within 500 feet of any future projects. Similarly, adverse long-term edge effects may be introduced by development such as the introduction of invasive species, lighting, noise, pets, contaminates from storm water runoff, etc. These long-term impacts would be significant if western snowy plover or California least tern are foraging or breeding within 500 feet of any future projects. Implementation of MM BIO-1, BIO-2, BIO-6, BIO-8, BIO-9, and BIO-10 (discussed in Section 7) would reduce impacts to listed species to less than significant.

Other Special Status Species

Other special status species with potential to utilize habitat on Parcels A, B, and C include burrowing owl, loggerhead shrike, northern harrier, orange-throated whiptail, San Diego black-tailed jackrabbit and western red bat. Other special status wildlife with potential to utilize habitat on Parcels A and C include Clark's marsh wren, Brant (wintering and staging), and large-billed savannah sparrow (wintering). The small quantities of suitable habitat being impacted at each of the three parcels relative to preserved habitat in the region would be a less than significant impact.

BURROWING OWL

Future development of Parcels A, B, and C may result in direct impacts on suitable breeding habitat for burrowing owl, which is designated as a state SSC. Based upon guidance provided in the 2012 CDFW Burrowing Owl Mitigation Staff Report, loss of occupied breeding habitat for burrowing owl, would be significant. Implementation of MM BIO-1, BIO-7, BIO-8, BIO-9, and BIO-10 (discussed in Section 7) would reduce impacts to listed species to less than significant

6.2.3 Jurisdictional Wetland Resources

Waters of the United States

Parcels A supports 0.57 acre of WOUS, of which 0.35 acre consists of wetland. Parcel C supports 0.11 acre of WOUS, of which 0.08 acre consists of wetland. Project development would have potential to impact WOUS, including wetlands. Direct impacts to ACOE WOUS (all of which may be also be considered ESHA by the CCC) during construction and indirect impacts during construction and operations would be considered significant. Implementation of MM BIO-1, BIO-2, BIO-9, and BIO-10 (discussed in Section 7) would reduce impacts to less than significant.

Waters Regulated by the Regional Water Quality Control Board

As discussed above, waters regulated by the RWQCB are equivalent to WOUS. Impacts would also be similar to those discussed above. Direct impacts to RWQCB WOS (all of which may be also be considered ESHA by the CCC) during construction and indirect impacts during construction and operations would be considered significant. Implementation of MM BIO-1, BIO-2, BIO-9, and BIO-10 (discussed in Section 7) would reduce impacts to less than significant.

California Department of Fish and Wildlife Streambed

Parcels A supports 1.08 acre of CDFW-regulated streambed, of which 0.85 acre consists of riparian vegetation. Parcel C supports 0.11 acre of CDFW-regulated streambed, of which 0.09 acre consists of riparian. Project development would have potential to impact CDFW-regulated streambed (all of which may be also be considered ESHA by the CCC). Direct impacts to CDFW-regulated streambed during construction and indirect impacts during construction and operations would be considered significant. Implementation of MM BIO-1, BIO-2, BIO-9, and BIO-10 (discussed in Section 7) would reduce impacts to less than significant.

California Coastal Commission Jurisdictional Areas

Parcel A supports 1.08 acre of CCC wetlands and Parcel C supports 0.11 acre of CCC wetlands. Similar to the discussion above, future development would have a potential to directly impact CCC wetlands during construction. Direct impacts on CCC wetlands during construction and indirect impacts during construction and operations would be considered significant. Implementation of MM BIO-1, BIO-2, BIO-9, and BIO-10 (discussed in Section 7) would reduce impacts to less than significant.

6.2.4 Wildlife Corridors and Habitat Linkages

As discussed above, Parcels A, B, and C support undeveloped land adjacent to the Bank Parcel, which provides live-in habitat for resident and migrating avian species along the coastal corridor. Future development of Parcels A, B, and C may permanently impact available habitat, thereby reducing the overall acreage of roosting, nesting, and foraging areas within the coastal corridor for avian species. However, after compliance with the CWA and the Coastal Zone Management Act, no net loss of coastal wetland would be anticipated. Therefore, the potential loss of migratory stopover habitat would be limited to no more than 10.3 acres of non-native upland. These non-native upland areas support a much lower diversity of species than coastal wetland habitat or native upland habitats that are available along the coast. ~~the loss of migratory stopover habitat is relatively small compared with the stopover habitat available at San Diego Bay (over 11,000 acres) and along the southern~~

~~California coastline~~. Therefore, the permanent loss of up to ~~1.2 acre of wetland habitat and~~ 10.3 acres of nonnative upland habitat would be a less than significant impact.

6.2.5 Consistency with Local Habitat Conservation Plans

The District is not a participating entity in the City of San Diego's MSCP Subarea Plan; however, the project site occurs within the NAVFAC INRMP, which is a comprehensive strategy for managing San Diego Bay's natural resources. Objectives have been identified that protect intertidal habitats, such as mudflats, sandy beaches, and salt marsh. One such objective states:

> *Achieve a long-term net gain in the area, function, value, and permanence of intertidal flats, and the physical conditions that support this habitat.*

Future development of the Parcels A, B, and C could result in temporary and permanent impacts on existing biological resources through construction- and operations-related activities, including clearing and excavation activities. Implementation of MM BIO-1, BIO-6, BIO-7, BIO-8, BIO-9, and BIO-10 (discussed in Section 7) would reduce impacts to less than significant.

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7 Mitigation Measures

Based on the results of this analysis and to address the project's direct and indirect impacts on WOUS and WOS, including sensitive habitats for federal and state listed bird species, the following mitigation is required.

BIO-1 **Implement Biological Resource Protection Measures During Construction.** The District (or project proponent) shall implement the following BMPs during construction to minimize direct and indirect impacts on special status species and their habitats.

a) Prior to the commencement of construction, the District (or project proponent) shall designate a Project Biologist (a person with, at minimum, a bachelor's degree in biology, ecology, or environmental studies with familiarity with federally and/or state listed plant and wildlife species and other, nonlisted special status plant and wildlife species with the potential to be impacted by the project) who shall be responsible for overseeing compliance with the protective measures for biological resources identified herein during vegetation clearing and work activities within and abutting areas of native habitat. The Project Biologist shall be familiar with the local habitats, plants, and wildlife, and shall maintain communications with the contractor to ensure that issues relating to biological resources are appropriately managed. The Project Biologist may designate qualified biologists or biological monitors to help oversee project compliance or conduct the preconstruction surveys for special status species identified in MM BIO-5, BIO-6, and BIO-8. These biologists shall have familiarity with the species for which they would be conducting preconstruction surveys or monitoring construction activities.

b) The Project Biologist or designated qualified biologist shall review final plans, designate areas not proposed for disturbance that need temporary fencing per subsection (h) below (e.g., sensitive habitat area [SHA] fencing), and monitor construction activities within and adjacent to areas with native vegetation communities or special status plant and wildlife species. The qualified biologist shall monitor activities during critical times such as vegetation removal, initial ground-disturbing activities, and the installation of BMPs and fencing to protect native species, and shall ensure that all wildlife and regulatory agency permit requirements, conservation measures, and general avoidance and minimization measures are properly implemented and followed. The qualified biologist shall monitor the SHA fencing and shall provide corrective measures to the contractor to ensure that the fencing is maintained throughout construction. The qualified biologist shall have the authority to stop work and redirect work if a special status wildlife species is encountered within the project area during construction until the Project Biologist or qualified biologist determine(s) that the animal would not be harmed (i.e., no ground disturbing activities are proposed within 100 feet) or it has left the construction area on its own. Also see subsection (e) below.

c) Prior to the start of construction, all project personnel and contractors who would be on site during construction shall complete mandatory training conducted by the Project Biologist or a designated qualified biologist. Any new project personnel or contractors that come on board after the initiation of construction shall also be required to complete the mandatory Worker Environmental Awareness Program

training prepared and conducted by the Project Biologist before they commence with work. The training shall advise workers of potential impacts to sensitive habitat and federally and/or state listed and other special status species and the potential penalties for impacts to such habitat and species. At a minimum, the training shall include the following topics: (1) occurrences of the special status species and sensitive vegetation communities in the project area (including vegetation communities subject to ACOE, CDFW, and RWQCB jurisdiction), (2) protective measures to be implemented in the field, including strictly limiting activities, vehicles, equipment, and construction materials to the fenced areas to avoid sensitive resource areas in the field (i.e., avoided areas delineated on maps or on the project site by fencing); (3) the protocol to resolve conflicts that may arise at any time during the construction process; and (4) reporting requirements and procedures to follow should a federally and/or state listed species be encountered during construction.

d) The training program shall include color photos of federally and/or state listed species, other special status species, and sensitive vegetation communities. Following the education program, the photos shall be posted in the contractor and resident engineer's office where the photos shall remain throughout the duration of project construction. Photos of the habitat in which sensitive species are found shall be posted onsite. The contractor shall be required to provide the District with evidence of the employee training (e.g., a sign-in sheet) on request.

   Project personnel and contractors shall be instructed to immediately notify the Project Biologist or designated biologist of any incidents that could affect sensitive vegetation communities or special status species. Incidents could include fuel leaks or injury to any wildlife. The Project Biologist shall notify the District of any incident within 24 hours of being noticed.

e) Vegetation removal and initial ground disturbance shall occur outside of the bird nesting season (February 1~~5~~ – September 15). Should vegetation removal or initial ground disturbance be required during the bird nesting season, the Project Biologist must conduct a preconstruction nesting survey. Should active nests be present, a construction avoidance buffer of 300 feet is required until the young have fledged or the nest has failed naturally. The biologist may reduce the buffer if, in their professional judgment, topography or other factors mitigate potential impacts from construction vibration, noise, dust, and visual intrusion. For federally and state listed species, see MM BIO-6.

f) The Project Biologist shall have the authority to halt work, and redirect work if necessary, to ensure the proper implementation of species and habitat protection. The Project Biologist shall report any noncompliance issues to the District within 24 hours of its occurrence.

g) The Project Biologist shall monitor the project site immediately prior to and during construction to identify the presence of invasive weeds and shall recommend measures to avoid their inadvertent spread in association with the project. All construction equipment shall be washed and cleaned of debris prior to entering the construction site to minimize the spread of invasive weeds.

h) All habitat regulated by CCC, ACOE, RWQCB, USFWS, NMFS, and/or CDFW, and habitat with potential to support special status species outside of, and abutting, the designated project limits of disturbance shall be designated as SHAs on project maps. Prior to construction, the Contractor shall delineate the project limits, including construction, staging, lay-down, and equipment storage areas, and erect the construction boundary, with fencing or flagging, along the perimeter of the identified construction area to protect adjacent sensitive habitats and sensitive-plant populations. SHAs shall be clearly delineated with fencing or flagging or other BMPs prior to construction to inform construction personnel where the SHAs are located and shall be confirmed by the Project Biologist or designated biologist prior to construction. SHAs fencing may include orange plastic snow fence, orange silt fencing, or stakes and flagging in areas of flowing water. No personnel, equipment, or debris shall be allowed within the SHAs. Fences and flagging shall be installed by Contractor in a manner that does not impact habitats to be avoided and such that it is clearly visible to personnel on foot and operating heavy equipment. 10 days prior to initiating construction, the Contractor shall submit to the District final plans for initial clearing and grubbing project construction. These final plans shall include photographs that show the fenced and flagged SHA limits and all areas to be impacted or avoided. If work occurs beyond the fenced or demarcated limits of impact, all work shall cease until the problem has been remedied. Temporary construction fences and markers shall be maintained in good repair by the Contractor during construction and shall be removed upon completion of project construction.

i) No work activities, materials or equipment storage, or access shall be permitted outside the project limits without permission from the District. All parking and equipment storage by the contractor related to the project shall be confined to the project limits. Contractor shall not conduct work in undisturbed areas and sensitive habitat outside and adjacent to the project limits shall not be used for parking or equipment storage. Project-related vehicle traffic shall be restricted to the project limits and established roads and construction access points.

j) Construction activities shall be limited to daylight hours to the extent feasible. If nighttime activities are unavoidable, then workers shall direct all lights for nighttime lighting into the work area and shall minimize the lighting of natural habitat areas adjacent to the work area. The contractor shall use light glare shields to reduce the extent of illumination into sensitive habitats. If the work area is located near surface waters, the lighting shall be shielded such that it does not shine directly into the water.

k) Clearing shall be confined to the minimal area necessary to facilitate construction activities. Cleared vegetation and spoils shall be disposed of daily at a permanent off-site spoils location or at a temporary onsite location that would not create habitat for special status wildlife species. Spoils and dredged material shall be disposed of at an approved site or facility in accordance with all applicable federal, state, and local regulations.

l) Food-related and other garbage shall be disposed of in wildlife-proof containers and shall be removed from the project area daily during the construction period. Vehicles carrying trash or hauling dirt/sediment shall be required to have loads

covered and secured to prevent dirt, trash, and debris from falling onto roads and adjacent properties.

m) All construction equipment used for the project shall be maintained in accordance with manufacturer's recommendations, and requirements and shall be maintained to comply with noise standards (e.g., exhaust mufflers, acoustically attenuating shields, shrouds, or enclosures).

n) The Contractor shall store all construction-related vehicles and equipment in the designated staging areas.

o) The Contractor shall avoid wildlife entrapment by completely covering or providing escape ramps for all excavated steep-walled holes or trenches more than 1 foot deep at the end of each construction workday. The qualified biologist shall inspect open trenches and holes and shall remove or release any trapped wildlife found in the trenches or holes prior to filling by the construction contractor

~~p)~~ Special status wildlife can be attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar features; construction equipment; or construction debris left overnight in areas that may be occupied by special status species that could occupy such structures shall be inspected by a qualified biologist prior to being used for construction. Such inspections shall occur at the beginning of each day's activities for those materials to be used or moved that day. If necessary, and under the direct supervision of the biologist, the structure may be moved up to one time to isolate it from construction activities, until the special status species has moved from the structure of their own volition or has been captured and relocated.

~~q) Capture and relocation of trapped or injured wildlife listed under FESA or California Endangered Species Act can only be performed by personnel with appropriate state and/or federal permits. Any trapped or injured wildlife and any incidental take shall be reported to the District within 1 working day of the discovery including dates, locations, habitat description, and any corrective measures taken to assist the injured special status species encountered.~~

~~r)~~p) The spread of dust from work sites to sensitive natural communities or sensitive-species habitats on adjacent lands shall be minimized by use of a water truck. Dirt access roads, haul roads, and spoils areas shall be watered to prevent the spread of dust. Follow Storm Water Pollution Prevention Plan to reduce dust emissions.

~~s)~~q) The Contractor shall strictly limit their activities, vehicles, equipment, and construction materials to established roads and the project disturbance limits. Signs shall be posted within the staging area, non-paved access routes, and project site with a maximum 15 mile per hour speed limit.

~~t)~~r) To prevent harassment, injury, or mortality of sensitive wildlife by dogs or cats, no canine or feline pets shall be permitted in the active construction area.

~~u)~~s) Plastic monofilament netting or similar material shall not be used for erosion control because smaller wildlife may become entangled or trapped in it. Acceptable substitutes include coconut coir matting or tackifier hydroseeding compounds. This

limitation shall be communicated to the contractor through specifications or special provisions included in the construction bid solicitation package.

~~v)~~t) Pest and weed management shall be conducted in compliance with the District's Integrated Pest Management Plan.

~~w)~~u) Hazardous materials and equipment stored overnight, including small amounts of fuel to refuel hand-held equipment, shall be stored within secondary containment per the Storm Water Pollution Prevention Plan.

~~x)~~v) The Contractor shall be required to conduct vehicle refueling in upland areas where fuel cannot enter WOUS or WOS and in areas that do not have potential to support sensitive habitat or federally and/or state listed species. Any fuel containers, repair materials including creosote-treated wood, and/or stockpiled material that is left onsite overnight shall be secured in secondary containment within the work area and staging/assembly area and covered with plastic at the end of each workday.

~~y)~~w) In the event that no activity is to occur in the work area for the weekend and/or a period of time greater than 48 hours, the Contractor shall ensure that all portable fuel containers are securely locked and/or removed from the project site.

~~z)~~x) Equipment and containers shall be inspected daily for leaks. Should a leak occur, contaminated soils and surfaces shall be cleaned up and disposed of following the guidelines identified in the SWPPP, Materials Safety Data Sheets, and any specifications required by other permits issued for the project.

~~aa)~~y) The Contractor shall utilize off-site maintenance and repair shops as much as possible for maintenance and repair of equipment.

~~bb)~~z) If maintenance of equipment must occur onsite, fuel/oil pans, absorbent pads, or appropriate containment shall be used to capture spills/leaks within all areas. Where feasible, maintenance of equipment shall occur in upland areas where fuel cannot enter WOUS or WOS and sensitive habitat areas.

BIO-2 Compensatory Mitigation for Special Status Biological Resources~~Impacts to WOUS, CCC Wetland, and CDFW Regulated Streambed~~.

a) Should the project result in a loss of WOUS, CCC wetland, or CDFW regulated streambed, the District shall provide compensatory mitigation for the loss of regulated waters or streambed at a minimum 1:1 ratio. Compensatory mitigation ~~would~~ shall consist of establishment to ensure no loss of aquatic function.

The compensatory mitigation ratios provided herein for direct impacts on regulated aquatic resources represent the minimum required to ensure no net loss of aquatic function following project implementation. Final compensatory mitigation programs will be determined in consultation with USACE, RWQCB, CCC, and/or CDFW during their respective permitting processes.

b) Should the project result in a loss of Menzie's goldenbush scrub, or suitable habitat for Belding's savannah sparrow, Ridgway's rail (light-footed), California gnatcatcher, western snowy plover or California least tern, the District shall provide establishment within the Bank Site at a minimum 1:1 mitigation ratio to ensure no net loss of Menzie's goldenbush scrub or habitat for these species.

c) Should the Bank Site not provide sufficient habitat to provide a minimum 1:1 mitigation ratio for net loss of habitat for any of these species, the balance of the mitigation shall be provided through a combination of establishment, enhancement or preservation and long term management to provide for no net loss of habitat function.

The compensatory mitigation ratios provided herein for loss of the above habitats represent the minimum required to ensure no net loss habitat following project completion. Final compensatory mitigation programs will be determined in consultation with USFWS and CDFW as applicable.

BIO-3 **Berm Breach Site – Pre- and Post--Construction Eelgrass Surveys.** Eelgrass (*Zostera* spp.) surveys, consistent with the requirements outlined in the 2014 California Eelgrass Mitigation Policy, shall be conducted to detect any impacts to eelgrass as a result of breaching the berm to open the Bank Site to tidal influence. Surveys shall be conducted prior to breaching the berm. If the preconstruction survey shows no eelgrass is present, no post-construction survey and no further surveys or mitigation shall be required. If eelgrass is present a post-construction survey shall be conducted within 30 days following completion of breach construction. If impacts to eelgrass from implementation of the proposed project are identified, mitigation for eelgrass impacts shall be at a ratio of no less than 1.2:1, as required by the California Eelgrass Mitigation Policy. Mitigation shall commence within 135 days of any noted impacts on eelgrass, such that mitigation commences within the same eelgrass growing season that impacts occur if feasible.

BIO-4 **Implement Long-Term Operations Maintenance and Management Plan.** A Long-Term Management/Operations and Maintenance Plan shall be prepared and implemented. The plan shall address maintenance activities, associated minimization measures, monitoring requirements and adaptive management strategies to be implemented after the site has met its 5th-year performance criteria and been accepted by the agencies. The Long-Term Operations Maintenance and Management Plan shall include measures to minimize the potential introduction of invasive species during maintenance activities including, but not limited to: washing all equipment prior to entering the site from another location, removing invasive species before seeding to the maximum extent feasible, collecting all plant material removed during maintenance securely, such as in a burlap bag, and removing from the site.. The plan shall prohibit the use of pesticides or herbicides with potential toxicity to aquatic or terrestrial wildlife species. Maintenance and trash/debris removal shall be conducted outside of the bird nesting season (February 1~~5~~ – September 15) to the maximum extent feasible. If maintenance must occur during the nesting season, a qualified biologist shall conduct preconstruction nesting bird surveys and direct maintenance staff to areas not occupied by nesting birds. The plan shall include contingency erosion control BMPs should they be needed following especially large storms. Should supplemental planting be required, all container stock shall be certified pest free and inspected for pests prior to being unloaded on site. At a minimum, the plan shall include biannual inspections for invasive species cover, fence inspection, vandalism, and illegal dumping. The plan shall include long-term performance criteria to include, at a minimum, no perennial invasive species (ranked by California Invasive Plant Council as moderate to high) and less than 5 percent annual invasive species relative cover.

An assessment of habitat function shall be conducted every 10 years. At a minimum, the assessment shall include a wildlife use assessment and an assessment of non-native vegetative cover. The Final Monitoring Report upon which all signatory agencies accept the mitigation site as complete shall serve as the baseline conditions for long-term monitoring. Contingency measures such as supplemental weeding, planting, grading, and erosion control shall be included in the plan. A threshold for implementing contingency measures, such as assessment results with no more than -10 percent deviation from baseline shall be included.

BIO-5 **Preconstruction Rare Plant Surveys.** Protocol rare plant surveys shall be conducted to locate special status plant species onsite prior to the start of construction. Should a significant population (>3 individuals) of the target species (estuary seablite, salt marsh bird's-beak, Pacific saltbush, Coulter's goldfields, Nuttall's acmispon, beach goldenaster, Brand's star phacelia, aphanisma, beach goldenaster, and Lewis' evening primrose) be identified, the District (or project proponent) would collect seed from those individuals present within the impact areas and broadcast 50-percent of the seed in the appropriate restoration areas following soil preparation as supervised by a qualified Lead Biologist (Lead Biologist Minimum Qualifications: Bachelor's degree in Biology [or equivalent such as a degree in Natural Resources] and a minimum of 5 years of restoration experience or equivalent, such as restoration certification and at least 12 semester units of botany course work or 100 hours of independent study with CNPS or other local botanical society, or 5+ years of seed collection and propagation experience with the target genera). Seeding shall be considered successful if the target species is observed at least twice over a 5-year period. Fifty-percent of the collected seed shall be stored by a reputable seed bank. Should the seeded areas not meet the performance criteria defined above, the District shall identify an appropriate off-site location to implement a germination and habitat suitability study. The study would review existing available literature and include methodology to test abiotic factors essential for growth of the target species, including, but not limited to, soil pH, permeability, slope, sun exposure, and rain fall frequency, duration, and distribution patterns. Metrics would include germination rates, survival rates, and productivity based upon seed or fruit set.

Should salt marsh bird's beak, a federally and state-endangered species, be observed during preconstruction surveys and subject to direct impacts, a CDFW Section 2081 Incidental Take Permit is required. Compensatory mitigation for net loss of suitable habitat at a minimum ratio of 1:1 establishment, enhancement or preservation and long-~~-~~term management shall be required.

BIO-6 **Preconstruction Surveys for Federally and State Listed Avian Species.** Initial clearing, ~~and~~ ground disturbance and other construction activities shall occur outside of the nesting bird season (i.e., outside of February 1~~5~~ – September 15) to the maximum extent feasible. ~~All other construction-related activities shall occur outside of the nesting bird season to the maximum feasible extent.~~ Should construction activities need to occur during the nesting bird season, prior to initiation of construction, a District-approved biologist shall:

a) Perform a minimum of three focused surveys, on separate days, to determine the presence of Ridgway's rail (light-footed), western snowy plover, coastal California gnatcatcher, California least tern, or Belding's savannah sparrow nest building

activities, egg incubation activities, or brood rearing activities within 500 feet of project construction proposed during the nesting season that could impact these species. The surveys shall begin a maximum of 7 days prior to project construction and one survey shall be conducted the day immediately prior to the initiation of work. Additional surveys shall be done once a week during project construction in the nesting season. These additional surveys may be suspended once fledglings have left the nest or if noise at the edge of nesting habitat is less than 60 A-weighted decibel equivalent sound level where the berm occurs between construction and nesting activities.

b) If an active Ridgway's rail (light-footed), western snowy plover, coastal California gnatcatcher, California least tern or Belding's savannah sparrow nest is found within a minimum of 5~~1~~00 feet of project construction, the Biological Monitor shall report the nest(s) to the District. ~~A buffer greater than 100 feet may be assessed at the discretion of the monitoring biologist based on species sensitivity, topography, noise/duration of construction activities, etc., to protect active nests.~~ After initial identification of the nest, the biological monitor shall not approach within 25 feet of an active nest; nest monitoring shall occur with binoculars. Signage and SHA fencing shall be installed to deter people from entering any area with an active nest. Work within 500 feet of the active nest shall be halted. With USFWS (Ridgway's rail [light-footed], coastal California gnatcatcher, California least tern, or western snowy plover) or CDFW (Ridgway's rail [light-footed], Belding's savannah sparrow, or California least tern) approval, the buffer may be reduced to less than 500 feet based on species sensitivity, topography, noise/duration of construction activities, etc., to protect active nests. The District shall develop an Avoidance and Minimization Plan, including determining whether the existing berm provides adequate protection for the nest to reduce or eliminate the buffer and measures to minimize construction noise at the nest site if not (such as, installation of noise barriers and/or modification in quantity, location or type of equipment), a monitoring plan, and an adaptive management strategy and/or contingency options.

~~b)~~c) Preconstruction surveys will also be conducted for federally and state-listed species when suitable habitat is proposed for removal outside of the breeding season. Should federally and state-listed avian species be detected, vegetation removal shall be postponed until the species has left the work area, unless the necessary Incidental Take Permits have been issued. In the latter case, clearing would progress in compliance with all required Conservations Measures and Terms and Conditions.

BIO-7 **Preconstruction Surveys for Burrowing Owl.** A preconstruction survey shall be conducted by a qualified biologist in accordance with the survey requirements detailed in the California Department of Fish and Game's March 7, 2012, Staff Report on Burrowing Owl no less than 14 days before initial ground-disturbing activities (California Department of Fish and Game 2012). Any active burrow found during preconstruction survey efforts shall be mapped and provided to the construction foreman. If no active burrows are found, no further mitigation shall be required.

A construction avoidance buffer shall be placed around occupied burrows. Recommended buffer distances are based on time of year and level of disturbance:

- April 1 – August 15: Low disturbance 656 feet, medium and high disturbance 1,640 feet
- August 16 – October 15: Low and medium disturbance 656 feet, high disturbance 1,640 feet
- October 16 – March 31: Low disturbance 164 feet, medium disturbance 328 feet, high disturbance 1,640 feet

If avoidance of impacts on occupied burrows is not practicable, the District shall create a burrow exclusion plan that will be approved by CDFW. The plan shall follow Appendix E of the 2012 Staff Report on Burrowing Mitigation. ~~If owls must be moved away from the disturbance area, passive relocation is preferable to trapping.~~ Relocation shall be implemented only during the nonbreeding season by a qualified biologist. Owls shall be excluded from burrows in the immediate impact zone by installing one-way doors in burrow entrances. One-way doors shall be left in place for 48 hours to ensure owls have left the burrow before excavation.

BIO-8 **Wildlife Surveys for Parcels A, B, and C.** The District (or project proponent) shall conduct nesting season (February 1~~5~~ – September 15) surveys on Parcel A for Belding's savannah sparrow, light-footed Ridgway's rail, western snowy plover, California least tern, and burrowing owl; on Parcel B for Belding's savannah sparrow, and burrowing owl; and on Parcel C for burrowing owl prior to project initiation. If no special status wildlife species are present, no further mitigation shall be required.

Should occupied Belding's savannah sparrow, Ridgway's rail (light-footed), western snowy plover, or California least tern habitat be proposed for permanent impact, ~~the District shall provide salt marsh establishment within the Bank Site at a minimum 1:1 mitigation ratio to ensure no net loss of breeding habitat or approved~~ compensatory mitigation shall be provided as detailed in MM BIO-2. See MM BIO-7 for details regarding burrowing owl monitoring and mitigation.

~~Should occupied Ridgway's rail light-footed habitat be proposed for permanent impact, the District shall provide salt marsh establishment within the Bank Site at a minimum 1:1 mitigation ratio to ensure no net loss of breeding habitat or approved compensatory mitigation.~~

~~Should occupied western snowy plover or California least tern breeding habitat be proposed for permanent impact, the District shall provide habitat establishment within San Diego Bay at a minimum 1:1 mitigation ratio to ensure no net loss of breeding habitat or approved compensatory mitigation.~~

~~Should habitat occupied by a breeding pair of burrowing owl be proposed for permanent impact, the District shall provide mitigation on the mitigation methods section of the Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012). To mitigate for permanent impacts to nesting, occupied and satellite burrows, and/or burrowing owl habitat such that the habitat acreage, number of burrows and burrowing owls impacted are replaced at a minimum 1:1 ratio.~~

BIO-9 **Restoration of Temporary Impacts**. To avoid or minimize the permanent loss or degradation of sensitive or special status habitat resulting from temporary project features, any areas that are ~~bridged, reinforced, or widened to accommodate construction equipment~~ temporarily disturbed ~~would~~ shall be restored to preconstruction conditions and vegetated with appropriate native plant species once construction is complete. This includes potential impacts to seablite scrub, pickleweed mats, salt pan, and open water that are subject to regulation by CCC, ACOE, and RWQCB and may be subject to regulation by CDFW, as well as habitat with potential to support special status biological resources. To avoid or minimize any long-term impacts to habitat or vegetation, staging areas, access routes, and other temporarily disturbed areas shall be decompacted and recontoured to ensure proper site drainage and revegetated with appropriate native species at a 1:1 ratio. Any temporary equipment, structures, or utilities (e.g., water, power) installed at the project site shall be removed at the completion of construction. Any temporary disturbance lasting longer than 12 months shall be mitigated as detailed MM BIO-2.

BIO-10 **Implement Biological Resource Protection Measures During Operations for Parcels A, B, and C.** To avoid or minimize potential operations impacts on biological resources resulting from development of Parcels A, B, and C, the following measures shall be implemented, as applicable based on project-specific design:

a) Landscape plans shall not include the use of plant species considered invasive by California Invasive Plant Council. All plant species specified in the landscape plans shall be certified free of pests, including plant pathogens.

b) Light glare shields shall be included in the project design to reduce the extent of illumination into sensitive habitats. If lighting is located near surface waters, it shall be shielded such that it does not shine directly into the water.

c) Masonry block walls or equivalent shall be erected around the perimeter of the project area to prevent domestic pets or other animals that could harm biological resources in adjacent habitats.

d) The commercial development project proponent shall ensure that operation noise levels are kept below 60 dBA Leq at the margin of the nearest occupied breeding habitat for state or federally listed species.

e) The commercial development project proponent shall design the project such than no stormwater runoff shall enter adjacent native habitat areas. All stormwater runoff shall be channeled into storm drains.

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Appendix A. Biological Resources Survey Report – Prepared by Tierra Data, Inc. August 2018

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Biological Resources Survey Report

Pond 20

San Diego, California

August 2018

San Diego Unified Port District

PORT of SAN DIEGO

DRAFT
Biological Resources Survey Report

Pond 20
San Diego, California

August 2018

Prepared for:

San Diego Unified Port District
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EXECUTIVE SUMMARY

The Pond 20 property is located in San Diego County, California, at the southern terminus of San Diego Bay. Pond 20 is located within a former 1,400-acre saltworks complex and is adjacent to estuarine, coastal salt marsh, and coastal upland transition communities, including wetlands associated with the Otay River and Nestor Creek. The study area totals 97.8 acres and encompasses 83.0 acres within Pond 20, a 50-foot buffer along the northern boundary, and adjoining Parcels A, B, and C (Figure 1-2) totaling 11.6 acres. Biological surveys were conducted within the study area to document the flora, fauna, and vegetation communities present, and to assess the presence and potential for sensitive species. Pond 20 and the associated parcels encompass a range of plant communities and habitats, including semi-natural herbaceous stands, upland areas colonized by Diegan Coastal Sage Scrub and Maritime Succulent Scrub, saltmarsh, salt pannes, and several mixed non-native assemblages.

A majority of the Pond 20 property (approximately 43 acres) is comprised of non-native Ice Plant Mat vegetation types. This vegetation appears to serve as a transition between the salt pannes and coastal upland habitats. Non-native invasive species dominate the study area as a whole; however, the property also contains vegetation patches dominated by native species. Pond 20 vegetation communities have experienced previous disturbance, as evidenced by the site's history, dominance of annual and non-native species present, and evidence of shrub die off. The entire site is considered Disturbed according to the Holland-Oberbauer classification system.

The north-eastern portion of Pond 20 harbors stands of native upland vegetation characteristic of Diegan Coastal Sage Scrub (approximately 16 acres), dominated by Menzie's goldenbush (*Isocoma menziesii*). The scrub canopy is approximately 50% plant cover on average and is interspersed with open flats dominated by a mix of native and non-native forbs and grasses. These areas harbor the only special status plant species encountered during these surveys, California boxthorn (*Lycium californicum*). A total of six California boxthorn shrubs were found dispersed within the coastal sage scrub stands.

Previous studies of Pond 20 have documented special status shorebirds, colonial seabirds, and waterfowl. These are associated with available foraging opportunities in nearby ocean, estuarine and intertidal wetlands, riparian vegetation at the mouth of the Otay River; as well as nesting and roosting opportunities within low-vegetation cover on site. High quality estuarine and wetland habitats in the vicinity of Pond 20 contribute to the overall avian use of the site. Regional avian surveys conducted in 2016-2017 showed that Pond 20 had less avian use than other areas of the saltworks complex; however, activity in Pond 20 was still quite high considering the disturbed and pre-dominantly non-native conditions of the site. This is attributed to restored areas and brine flats elsewhere within the saltworks (part of the San Diego Bay National Wildlife Refuge) and other wetlands adjacent to Pond 20 that provide important migratory stopover value and spring/summer nesting and roosting habitat for birds.

Several special status plant and animal species are either known to occur or have potential to occur at Pond 20. Western snowy plover (federally threatened) and Belding's savannah sparrow (*Passerculus sandwichensis beldingi*; state endangered) have been observed in the study area. Eight additional special status wildlife species and one special status plant species have also been observed. The potential for these and additional sensitive species to occur on site is assessed in this report.

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List of Acronyms and Abbreviations

Cal-IPC	California Invasive Plant Council
CDFW	California Department of Fish and Wildlife
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
ESRI	Environmental Systems Research Institute
GIS	Geographic Information System
GPS	Global Positioning System
Port	Port of San Diego
TDI	Tierra Data Inc.
USFWS	U.S. Fish and Wildlife Service
UTM	Universal Transverse Mercator
VegCAMP	California Vegetation Classification and Mapping Program

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1.0 INTRODUCTION

1.1 Study Area and Objective

Under contract with the San Diego Unified Port District (Port), Tierra Data, Inc. (TDI) conducted a series of biological surveys and review of the Pond 20 property in 2017 and 2018. The purpose of these surveys was to build a biological baseline inventory to support environmental planning associated with establishment of a mitigation bank at the site. The focus of this effort was to identify and map vegetation communities, perform general wildlife and habitat assessments, and conduct a literature review and records search to assess the potential for special interest biological resources to occur in or near the study area.

The Pond 20 property is in San Diego County, California, at the southern terminus of San Diego Bay (Figure 1-1). The entire study area totals 97.8 acres, and encompasses 83.0 acres of Pond 20 itself (plus a 50-foot buffer, encompassing 3.27 acres along the northern perimeter), and three neighboring parcels (labeled as Parcels A, B, and C) totaling 11.6 acres (Figure 1-2).

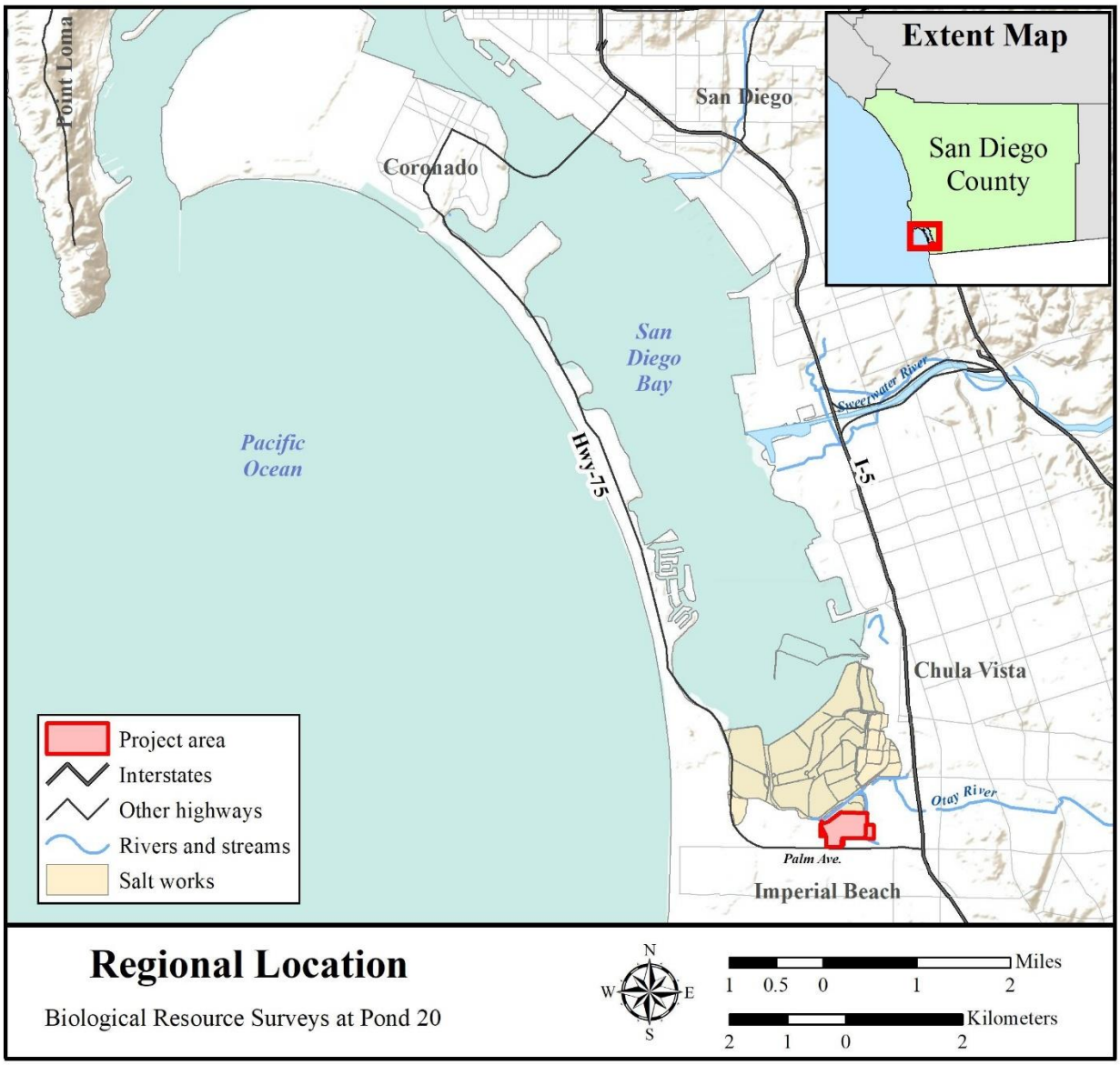

Figure 1-1. Regional Location of the Pond 20 Property.

Figure 1-2. Study Area, including Pond 20 (plus 50-foot buffer long the northern edge) and Parcels A, B and C.

1.2 Historical Background

Pond 20 lies in the Otay River Floodplain and along the south side of the Otay River. Historically, based on an 1859 Coastal Survey Office sketch of San Diego Bay, the site supported high salt marsh vegetation (Refer to Figure 2-1 in U.S. Navy and Port 2013). The recent wetland delineation report (Great Ecology 2017b) summarized the history of Pond 20, as follows.

> "The salt evaporation and extraction industry has operated in south San Diego Bay since the early 1870s and included the interior of Pond 20. In the 1890s, the Western Salt Company acquired most of the salt producing entities and lands in South San Diego Bay…. In 1916, the Savage Dam failed causing the release of the Lower Otay Lake to the lower watershed including Pond 20. The dam failure washed away several berms within the Saltworks, including those of Pond 20, and deposited substantial volumes of sediment. Pond 20 and the rest of the Saltworks were restored and operational by 1918, with water entering Pond 20 via siphons. However, the additional sediment caused the interior elevation of Pond 20 to increase to a height that, along with its southern location and distance from the other ponds, made it logistically and economically inefficient within the Saltworks operation. Western Salt attempted to reincorporate Pond 20 again into Saltworks operations in the 1960s using a new system of electric pumps to facilitate the movement of water to the other ponds in the network. This effort ultimately failed, and Pond 20 and the surrounding area as a whole have since remained vacant."

Pond 20 has been separated from tidal influence for decades. Currently, the site is comprised of a salt flat and upland interior surrounded by a berm ranging in height from 12 to 18 feet Mean Lower Low Water, with Nestor Creek and an Otay River tributary located outside of the berms along the eastern and western boundaries, respectively. In 1916, the Savage Dam at Lower Otay Lake breached and destroyed the berms of this and other salt ponds, dispersing sediment in the study area. Western Salt Company reconstructed the berms soon afterward (Great Ecology 2017b).

1.3 Existing Physical Conditions

The study area receives an average of 9.73 inches (24.7 centimeters) of precipitation annually (Western Regional Climate Center Station No. 041758, 1918-2016). Within the berms that surround Pond 20 the average elevation is approximately 9.8 feet (3 meters) above Mean Lower Low Water (Towill 2017). Shallow basins and depressions occur primarily around the southern and western perimeters of the pond, and the elevation rises gently toward the north and west. Parcel A lies west of Pond 20 outside of the bermed area, and ranges in elevation from the low-lying Otay River tributary along its eastern edge, to a low hill in the west/center approximately 6-9 feet (2-3 meters) high. Parcels B and C are generally higher than Pond 20 and flat with no appreciable slope. Parcel C lies east of Pond 20 outside of the bermed area, and east of Nestor Creek.

Soils mapped in the Pond 20 study area include Grangeville fine sandy loam, Huerhuero-Urban land complex, and Huerhuero loam (U.S. Department of Agriculture 2011). However, the Great Ecology wetland delineation found soils ranging from sand to clays and evidence of fill placement, including a relatively random distribution of soil types across the study area and down the soil profile. The berms are comprised of highly compacted clay, and the presence of shell hash on the surface indicates that the berm is comprised of marine dredge material. Soils along the two drainages outside the Pond 20 berm on the east and west sides of the study area are characteristic of coastal wetland with a high organic material content and were found to exhibit several hydric soil indicators (Great Ecology 2017b, c).

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2.0 METHODS

2.1 Literature Review

A records, literature, and document search for relevant biological resource information was conducted and incorporated in this report. In May 2017, a California Natural Diversity Database (CNDDB) search was conducted for all sensitive species records within 1 mile of the Pond 20 property. A list of rare plant species as classified by the U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Wildlife (CDFW), or California Native Plant Society (CNPS) with the potential to occur at the site was developed. Reports from previous surveys performed nearby were reviewed, including the Biological Technical Report for the Otay River Estuary Restoration Project (Dudek 2016), Comprehensive Conservation Plan for South San Diego Bay Units (USFWS 2006), and documents associated with the Pond 20 wetlands mitigation bank planning (Great Ecology 2017a). In addition, bird observations at Pond 20 collected over 12 months (14 field visits, 12 high tide and two low) from the 2016-2017 San Diego Bay Avian Species Surveys were compiled for inclusion in Appendix A.

2.2 Floral Surveys

Field surveys were conducted by TDI staff members during four site visits (Table 2-1). The entire project study area was surveyed by walking the levee and meandering paths throughout the property.

Table 2-1. Field Survey Dates, Personnel, and Types of Surveys.

Date	Personnel	Survey Type
09/25/2017	Karen Green, Joseph Kean, Harry Smead	Site Assessment, Vegetation Mapping, General Wildlife Survey
4/13/2018	Scott Snover	Rare Plant Survey, General Wildlife Survey
5/4/2018	John Konecny, Harry Smead	Avian Habitat Assessment, General Wildlife Survey
5/14/2018	Scott Snover	Rare Plant Survey, Additional Vegetation Mapping, General Wildlife Survey

2.2.1 Vegetation Mapping

Plant communities were classified consistent with the California Vegetation Classification and Mapping Program (VegCAMP; Sawyer et al. 2009) to the extent practical—in some cases vegetation does not easily fit into published plant communities due to the disturbed nature of the site. This classification system is a quantitative floristic method accepted in California as part of the National Vegetation Classification System. In 2007, the State Legislature required the CDFW to develop and maintain this vegetation mapping standard (Fish and Game Code Section 1940, CDFW 2018a). A crosswalk to the local agency-recognized vegetation classification system is also provided for consistency with California Environmental Quality Act requirements for assessing mitigation. This system is known as Holland-Oberbauer (Oberbauer 2008). The TDI field crew assessed boundaries of plant communities and other mapping units, took representative georeferenced photographs, and estimated vegetation composition and cover as necessary to classify the vegetation by dominant and co-dominant species in the shrub and herbaceous layers.

TDI prepared detailed color maps of the study area on orthophotos to assist in field documentation. Prior to the initial field visit for the vegetation mapping, draft polygons were drawn on aerial photography to delineate land cover and vegetation community types. Each polygon represents a ‘stand’, defined as a discreet area of a particular vegetation type which is distinct from all neighboring areas. Polygons were delineated using a “heads-up” digitizing technique, wherein the lines were drawn directly into an Environmental Systems Research Institute (ESRI) ArcGIS shapefile while viewing the aerial imagery provided by the ESRI program on a computer monitor.

The aerial imagery available on Google Earth (August 2016, http://earth.google.com) was also used to guide the drawing of draft polygon lines. Although the Google Earth imagery was not ortho-rectified and, therefore, could not be used directly in Geographic Information System (GIS) software for mapping, the high resolution and most recent images were helpful for delineating the polygons.

During the field surveys, adjustments to the draft polygon boundaries were recorded on the field maps. For each polygon, the percent cover of dominant and sub-dominant species was recorded, which was then used to determine the vegetation community name, as described below. A species list of observed plants and wildlife was generated. In addition, representative georeferenced photographs were taken of the vegetation.

Naming Conventions of the California Vegetation Classification System

The CDFW VegCAMP protocols were used to classify vegetation communities according to the most dominant plant species present. For example, a polygon that is 75 percent covered by California buckwheat (*Eriogonum fasciculatum*) is classified as the "California Buckwheat Alliance." Herbaceous, shrub, and tree layers are classified separately, such that the classification for any given polygon could potentially have up to three parts (e.g., "Live Oak Woodland/California Buckwheat/Purple Needlegrass"). The naming convention used for these surveys followed the 2nd Edition of the Manual of California Vegetation (Sawyer et al. 2009).

Mapping units were also delineated for polygons that did not fit neatly into any published VegCAMP category (Evens and Kentner 2006). A mapping unit was defined as "an informal visually distinct structural assemblage of plants that does not correlate directly with a floristically defined alliance, association, or phase." The use of mapping units allows for a more descriptive characterization of the actual vegetation present, rather than forcing stands into VegCAMP alliances that do not accurately reflect their composition.

A crosswalk to the Holland-Oberbauer system was included based primarily on the physiognomy of the vegetation. Current site disturbance was not factored into the classification unless it was considered permanent and the mapped area would not be expected to recover to its potential natural habitat condition. The crosswalk was finalized in the office based on professional judgment about the nature of the disturbance on site.

2.2.2 Rare Plant Surveys

Rare plant surveys were conducted by walking meandering transects covering the entire site (see Table 2-1 for survey dates). A species list was compiled from the two surveys. Survey tracks were recorded using Global Positioning Systems (GPS) and coordinates were recorded for any rare plant species found.

2.3 Wildlife Surveys

2.3.1 General Wildlife Surveys

General wildlife surveys were conducted simultaneously with other survey efforts, recording all wildlife species observed either directly or from signs such as footprints, burrows, skeletal remains, and scat.

2.3.2 Habitat Assessment for Special Status Avian Species

Habitat suitability was assessed for five special status avian species known to occur or with potential to occur at the property, as follows:

- **Belding's Savannah Sparrow (*Passerculus sandwichensis beldingi*).** *Federal Status:* None. *California Status:* Endangered. *Habitat Description:* Savannah Sparrows nest and forage in salt marshes with dense stands of pickleweed and saltgrass (*Distichlis spicata*) (Powell 1993; Zembal and Hoffman 2010).

- **Burrowing Owl (*Athene cunicularia*).** *Federal Status:* None. *California Status:* Species of Special Concern. *Habitat Description:* Burrowing owls occupy a wide variety of arid and semi-arid habitats characterized by sparse vegetation and bare ground. Their diet consists of arthropods, lizards, birds, and small mammals (Klute et al. 2003).
- **California Least Tern (*Sternula antillarum browni*).** *Federal Status:* Endangered. *California Status:* Endangered. *Habitat Description:* Least terns nest in areas of open, light-colored sand, dirt or dried mud near lagoons and estuaries with nearby open water for foraging (USFWS 1985a).
- **Light-Footed Ridgway's Rail (*Rallus obsoletus levipes*).** *Federal Status:* Endangered. *California Status:* Endangered. *Habitat Description:* Ridgway's rails nest in coastal salt marshes where dense stands of cordgrass or saltgrass are present. They require shallow water and mudflats for foraging, with adjacent higher vegetation for cover during high water (USFWS 1985b).
- **Western Snowy Plover (*Charadrius nivosus nivosus*).** *Federal Status:* Threatened. *California Status:* Species of Special Concern. *Habitat Description:* Snowy plovers nest on coastal beaches, sand spits, sparsely-vegetated dunes, and salt pannes at lagoons and estuaries. They sometimes also nest on dredged material disposal sites, salt pond levees, dry salt ponds, and river bars (USFWS 2007). They feed on invertebrates in wet sand and plant debris in the intertidal zone, and in dry sand above the high tide line, on salt pannes, spoil sites, and the edges of salt marshes, salt ponds, and lagoons.

Habitat values were assigned based on a general understanding of each species' life history and potential use of the Pond 20 area for nesting, foraging, and roosting habitat. The vegetation communities mapped within the study area served as a basis for mapping overall habitat values for each species. Each vegetation community was evaluated on a scale of 1 (Low Quality, few habitat requirements present and heavily disturbed) to 5 (Very High Quality, most habitat requirements present and relatively undisturbed. Vegetation types with no meaningful value to a species were rated as 'No Habitat'. Factors which were considered in the habitat assessments included:

- Vegetation/cover types meeting species requirements as nesting sites;
- Vegetation/cover types providing habitat for prey species; and
- Level of disturbance, including presence and dominance of non-native species.

2.4 Geographic Data

The Port provided GIS shapefiles of the site boundaries prior to the field survey. A Trimble GeoXH Series unit was used to map the observed plant communities with sub-meter geographic accuracy. All GPS field data were collected in U.S. Survey Feet using the California State Plane, Zone VI, FIPS 0406 projection system in the WGS84, and includes detailed metadata. GIS and GPS products supported georeferencing, electronic mapping, and display of field results. ArcGIS software by ESRI was used to produce maps for all field mapping and reporting.

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3.0 RESULTS

3.1 Vegetation Communities

The site's land use history and ongoing impacts have created conditions wherein ruderal habitats dominate much of Pond 20. Soils in this area are disturbed and saline and are vegetated by native and non-native ruderal weedy species; with non-native species comprising the greatest percentage of cover within the interior bermed portion of the site. Portions of the site associated with drainage channels outside of the bermed area support wetland habitats consisting of mostly native salt marsh elements. Appendix B presents species compositions and cover estimates for each mapped vegetation community. Appendix C presents a photographic summary of the current conditions at Pond 20.

Results of the vegetation communities mapping (per VegCAMP naming conventions) are presented for the four survey areas in Figure 3-1 and Table 3-1.

The study area (97.8 acres) consists primarily of non-native and disturbed plant assemblages with areas of native vegetation varying in abundance (Figure 3-1). There are a total of 15 distinct vegetation alliances/semi-natural stands/mapping units (per VegCAMP naming conventions), many of which include sub-level classifications based on abundance of co-dominant species (Table 3-1). The species assemblages present at Pond 20 do not always match published VegCAMP vegetation descriptions. Three land cover types were encountered that are considered distinct enough to warrant separation. These include Berm/Roadway Vegetation, Salt Pond Bottom, and borrow pit to form the berms.

Table 3-1 also provides a crosswalk of natural community classification names based on the Holland-Oberbauer System (Oberbauer 2008) to facilitate relating the quantitative floristic classifications of VegCAMP to the nomenclature used in prior relevant studies and documents for the site and surrounding areas. The entire study area is considered Disturbed (11300) according to the Holland-Oberbauer classification system. The classification is fitting given that the Pond 20 site has not re-vegetated to its pre-disturbance condition in several decades. This includes areas that have been previously graded or filled to varying degrees, and areas that are no longer recognizable as a native or naturalized vegetation association. Parcels B and C appear to be mowed as part of ongoing lot maintenance.

Pond 20

Total acreage mapped within Pond 20, including the berms, was 86.2 acres, with 14 distinct alliances and six cover types. The dominant alliances in Pond 20 are *Mesembryanthemum* spp. Semi-Natural Herbaceous Stands (total area 39.3 acres) and *Isocoma menziesii* Shrubland Alliance (total area 16.6 acres).

Generally, the Pond 20 property is slightly higher in elevation (approximately 12 feet) in its northeastern portion compared to the southwestern portion (approximately 8 feet). The southwestern portion tends to have more microtopography and small islands of vegetation separated by unvegetated swales, and much of the area is dominated by non-native ice plant (*Mesembryanthemum* spp.) patches. The north-east portion, on the other hand, supports large areas of upland scrub vegetation dominated by native shrubs and cholla.

Parcel A

Total acreage mapped within Parcel A was 2.7 acres, with five distinct alliances and one additional cover type. Parcel A is comprised mostly of non-native grassland (1.1 acres), with small stands (approximately one-half acre or less each) of ice plant and crown daisy (*Glebionis coronaria*). It also contains areas of pickleweed (0.34 acre) and seablite (*Suaeda taxifolia*) (0.54 acre).

Parcel B

Total acreage mapped within Parcel B was 0.8 acre, with only two distinct alliances. Parcel B is dominated by non-native grasslands (0.7 acre) and appears to be mowed regularly. There are several desertbroom baccharis shrubs (*Baccharis sarothroides*) approximately 0.5 meter tall.

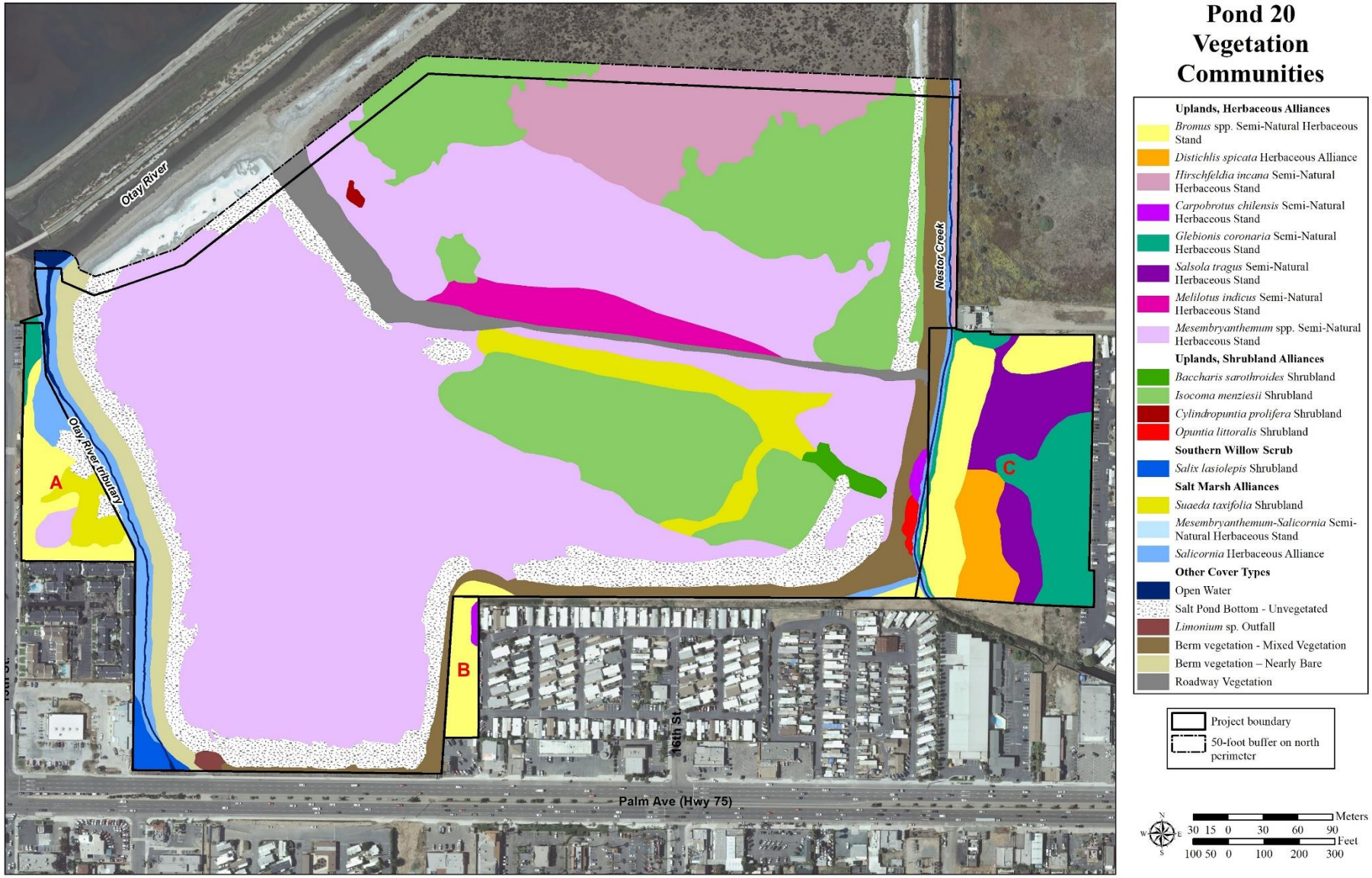

Figure 3-1. Pond 20 Vegetation Communities.

Table 3-1. Plant Communities at Pond 20 and adjacent Parcels A, B, and C based on California Vegetation Classification System, with Crosswalk to Holland-Oberbauer (2008) Communities.

Alliance	Association	Pond 20	Parcel A	Parcel B	Parcel C	Total Acres[1]	Crosswalk[2]
Herbaceous Alliances		**51.83**	**1.90**	**0.78**	**7.94**	**62.45**	
Bromus spp. Semi-Natural Herbaceous Stand—Annual Brome Grasslands, Disturbed	*Bromus* spp. Semi-Natural Herbaceous Stand—Annual Brome Grasslands	0.23	-	0.72	2.18	3.13	Disturbed Habitat (11300)
	Bromus spp.-*Hordeum murinum* Semi-Natural Herbaceous Stand—Annual Brome-Foxtail Barley Grasslands	-	1.13	-	-	1.13	
Carpobrotus chilensis Semi-Natural Herbaceous Stand—Ice Plant Mats	*Carpobrotus chilensis* Semi-Natural Herbaceous Stand	0.09	-	0.06	-	0.15	Disturbed Habitat (11300)
Distichlis spicata Herbaceous Alliance—Salt Grass Flats	*Distichlis spicata* Herbaceous Alliance—Salt Grass Flats	-	-	-	1.07	1.07	Disturbed Habitat (11300)
Glebionis coronaria Semi-Natural Herbaceous Stand	*Glebionis coronaria-Bromus* spp. Semi-Natural Herbaceous Stand	0.05	0.16	-	2.29	2.50	Disturbed Habitat (11300)
Hirschfeldia incana Semi-Natural Herbaceous Stand—Upland Mustards	*Hirschfeldia incana-Mesembryanthemum* spp. Semi-Natural Herbaceous Stand	5.65	-	-	-	5.65	Disturbed Habitat (11300)
Melilotus sp. Semi-Natural Herbaceous Stand—Sweetclover Fields	*Melilotus* sp.-*Mesembryanthemum* spp. Semi-Natural Herbaceous Stands	1.77	-	-	-	1.77	Disturbed Habitat (11300)
Mesembryanthemum spp. Semi-Natural Herbaceous Stand—Ice Plant Mats	*Mesembryanthemum* spp. Semi-Natural Herbaceous Stand	39.30	0.27	-	-	39.57	Disturbed Habitat (11300)
	Mesembryanthemum spp.-*Salicornia subterminalis* Semi-Natural Herbaceous Stands	3.00	-	-	-	3.00	
Salicornia subterminalis Herbaceous Alliance—Pickleweed Mats	*Salicornia subterminalis* Herbaceous Alliance	1.74	0.34	-	0.18	2.26	Disturbed Wetland (11200)
Salsola tragus Semi-Natural Herbaceous Stand—Russian Thistle Fields	*Salsola tragus-Bromus* spp. Semi-Natural Herbaceous Stand	-	-	-	2.22	2.22	Disturbed Habitat (11300)
Shrub Dominated Alliances		**19.51**	**0.54**	**-**	**-**	**20.05**	
Baccharis sarothroides Shrubland—Broom Scrub[3]	*Baccharis sarothroides* Shrubland/ *Mesembryanthemum* spp. Semi-Natural Herbaceous Stands	0.28	-	-	-	0.28	Diegan Coastal Sage Scrub: Baccharis-dominated (32530), Disturbed
Cylindropuntia prolifera Shrubland—Coastal Cholla Patches[3]	*Cylindropuntia prolifera* Shrubland/ *Mesembryanthemum* spp. Semi-Natural Herbaceous Stands	0.05	-	-	-	0.05	Maritime Succulent Scrub (32400), Disturbed

Table 3-1. Plant Communities at Pond 20 and adjacent Parcels A, B, and C based on California Vegetation Classification System, with Crosswalk to Holland-Oberbauer (2008) Communities.

Alliance	Association	Pond 20	Parcel A	Parcel B	Parcel C	Total Acres[1]	Crosswalk[2]
Isocoma menziesii Shrubland—Menzie's Goldenbush Scrub	*Isocoma menziesii-Opuntia prolifera* Shrubland/*Mesembryanthemum* spp. Goldenbush-Cholla Shrubland	9.67	-	-	-	9.67	Maritime Succulent Scrub (32400), Disturbed
	Isocoma menziesii-Baccharis sarothroides Shrubland	6.95	-	-	-	6.95	Diegan Coastal Sage Scrub (32500), Disturbed
Opuntia littoralis Shrubland Alliance—Coast Prickly Pear Scrub	*Opuntia littoralis* Shrubland Alliance—Coast Prickly Pear Scrub	0.11	-	-	-	0.11	Maritime Succulent Scrub (32400), Disturbed
Salix lasiolepis Shrubland—Arroyo Willow Thickets	*Salix lasiolepis* Shrubland/*Conyza canadensis* Semi-Natural Herbaceous Stand	0.30	-	-	-	0.30	Disturbed Wetland (11200)
Suaeda taxifolia Shrubland—Seablite Scrub[3]	*Suaeda taxifolia* Shrubland	2.15	0.54	-	-	2.69	Disturbed Wetland (11200)
Other Land Cover Types		**14.82**	**0.22**	**-**	**0.23**	**15.27**	
Berm/Roadway Vegetation	Roadway vegetation comprised of mixed non-natives and bare ground within Pond 20	2.10	-	-	-	2.10	Disturbed Habitat (11300)
	Berm vegetation—nearly bare	1.74	-	-	-	1.74	
	Berm vegetation—mixed non-natives and bare ground surrounding Pond 20	3.40	-	-	0.21	3.61	
	Berm vegetation—*Limonium* sp. patch near culvert outfall	0.09	-	-	-	0.09	
Salt Pond Bottom – borrow pit	Unvegetated	7.24	0.22	-	-	7.46	Disturbed Wetland (11200)
Open Water	Open Water	0.25	-	-	0.02	0.27	
	Totals	**86.16**	**2.66**	**0.78**	**8.17**	**97.8**	

1. Includes 50-foot buffer area along the northern perimeter.
2. This crosswalk column presents the closest corresponding vegetation community recognized in Oberbauer et al. 2008.
3. These are provisional mapping units not described in VegCAMP.

Parcel C

Total acreage mapped within Parcel C was 8.2 acres, with five distinct alliances and two additional cover types. Parcel C is pre-dominantly non-native grasses and forbs divided between *Glebionis coronaria* Semi-Natural Herbaceous Stands (2.3 acres), *Salsola tragus* Semi-Natural Herbaceous Stand (2.2 acres), and *Bromus* spp. Semi-Natural Herbaceous Stands (2.2 acres). This parcel also appears to be mowed regularly. A small area (1.07 acres) within Parcel C has native saltgrass as the dominant species. The Nestor Creek stream channel along the western edge of Parcel C contains pickleweed and alkali heath (*Frankenia salina*) (0.18 acre).

Vegetation communities are briefly summarized below with more detailed descriptions for herbaceous alliances (Section 3.2.1), shrub-dominated alliances (Section 3.2.2), and other land cover types (Section 3.2.3).

3.1.1 Herbaceous Alliances

There were eight herbaceous alliances mapped within the survey area, covering a total of 58.86 acres. Six of the eight alliances are primarily non-native vegetation.

***Bromus* sp. Semi-Natural Herbaceous Stand—Annual Brome Grasslands, Disturbed**

These non-native grasslands occur on Parcels A (1.13 acres), B (0.72 acre), and C (2.18 acres), though the composition was somewhat different on each. On Parcel A, ripgut brome (*Bromus diandrus*), red brome (*B. madritensis*), and foxtail barley (*Hordeum murinum*) are the dominant species, with horehound and crown daisy also prominent. Parcel A is less intensively maintained than the other two parcels. Ground disturbance occurred sometime in the past and the low “hill” in the west/center appears to be comprised at least partially of fill material. Parcel A is not regularly mowed or otherwise subjected to any obvious weed control efforts. Parcels B and C, on the other hand, appear to be regularly mowed to the point where the dominant species of grass present could not be determined. Other species present include Australian saltbush (*Atriplex semibaccata*), filaree (*Erodium* sp.), Russian thistle (*Salsola tragus*), and crown daisy. See Photo 3-1 for an example of this Alliance on Parcel C.

Photo 3-1. *Bromus* sp. Semi-Natural Herbaceous Stand.

***Carpobrotus chilensis* Semi-Natural Herbaceous Stand—Ice Plant Mats**

Sea fig (*Carpobrotus chilensis*) occurs in two patches, one on Parcel B covering 0.06 acre, and one on the eastern edge of Pond 20 on the eastern slope of the berm, covering 0.09 acre. Aside from a Canary Island palm (*Phoenix canariensis*) in the middle of the Parcel B patch, no other plant species occur in these areas.

Distichlis spicata Herbaceous Alliance—Salt Grass Flats

The only native grassland alliance within the study area occurs on Parcel C where saltgrass is the dominant species, covering approximately 1.07 acres. Russian thistle, filaree, and Australian saltbush also occur there.

Glebionis coronaria Semi-Natural Herbaceous Stand

On Parcels A and C, the non-native, invasive weed crown daisy is the dominant species, covering 0.16 acre in the northern end of Parcel A and 2.32 acres in Parcel C. Russian thistle, wild radish (*Raphanus sativus*), and brome species are also prominent. Crown daisy has an invasiveness rating of Moderate from the California Invasive Plant Council (Cal-IPC) and can come to dominate in coastal areas if not controlled (Cal-IPC 2018).

Hirschfeldia incana Semi-Natural Herbaceous Stand—Upland Mustards

This vegetation community covers 5.65 acres in the northern portion of the Pond 20 site and includes vegetation more typical of coastal upland habitats; however, it is lacking diversity and is dominated by non-native species. There is a slight rise in elevation at this location that causes an abrupt change in the vegetation community. There is a well-defined line of mustard that follows this minor change in elevation and coincides with an apparent change in substrate, and it was the only polygon that has a relatively high density of Santa Barbara milkvetch (*Astragalus trichopodus*). See Photo 3-2 for an example of this Alliance.

Melilotus sp. Semi-Natural Herbaceous Stand—Sweetclover Fields

This vegetation community is located within a narrow band just north of the Roadway Vegetation polygon of the Pond 20 site and totals 1.77 acres. In addition to sweetclover (*Melilotus* sp.), the ice plant present at this location is moderate and dense enough to be considered part of the vegetation classification at the association level. This area is unique in that it is the only portion of the property dominated by sweetclover, a nitrogen-fixing species that, although non-native, can improve soil chemistry. See Photo 3-3 for an example of this Alliance.

Photo 3-2. *Hirschfeldia incana* Semi-Natural Herbaceous Stand.

Photo 3-3. *Melilotus* Semi-Natural Herbaceous Stand.

Mesembryanthemum Semi-Natural Herbaceous Stand—Ice Plant Mats

This vegetation alliance is by far the most prevalent, covering a total of 42.30 acres on the Pond 20 site and 0.27 acres on Parcel A. Of this, 3 acres within the berms of Pond 20 support pickleweed at a density considered significant enough to constitute membership in the vegetation type at the association level. Plant densities vary greatly across the polygons identified as Ice Plant Mats. Some areas were nearly devoid of vegetation while others were dense monoculture stands of ice plant, in many cases multiple species of ice plant, but primarily *Mesembryanthemum nodiflorum* and *M. crystallinum*. See Photo 3-4 for an example of this Alliance.

Photo 3-4. *Mesembryanthemum* Semi-Natural Herbaceous Stand.

Salicornia subterminalis Herbaceous Alliance—Pickleweed Mats

Two waterways occur outside Pond 20, within the survey area. A tributary to the Otay River runs along the western side of Pond 20 (see Photo 5) with Pickleweed Mats that extended westward into Parcel A. The other waterway is Nestor Creek, which runs between the Pond 20 berm and Parcel C. Both waterways connect to the San Diego Bay. These strips of estuarine habitat cover a total of 2.26 acres of the site, including perennial open water. Other species that occur in these waterways are California cord grass (*Spartina foliosa*) and alkali heath; and in Nestor Creek, California bulrush (*Schoenoplectus californicus*) occurs in scattered patches. This habitat is tidally inundated and is the only coastal marsh habitat at the site. See Photo 3-5 for an example of this Alliance.

Photo 3-5. *Salicornia subterminalis* Herbaceous Alliance, Otay River Tributary.

Salsola tragus Semi-Natural Herbaceous Stand—Russian Thistle Fields

Located on Parcel C, this area covers 2.22 acres and is dominated by Russian thistle with filaree, saltgrass and brome grass. It is regularly mowed for weed control.

3.1.2 Shrub Dominated Alliances

Six shrub dominated alliances are identified within the survey area. These vegetation communities cover about 19 acres and, in addition to the native shrub species, contains a high percentage of non-native species.

Baccharis sarothroides Shrubland—Broom Scrub

A small area (0.28 acre) near the eastern edge of Pond 20 contains a dense stand of upland vegetation dominated by desertbroom baccharis. This sliver of vegetation appears relatively intact as the shrubs are mature; and there are few non-natives within the stand itself.

Cylindropuntia prolifera Shrubland—Coastal Cholla Patches

A patch of coastal cholla (*Opuntia prolifera*; 0.05 acre) was encountered on slightly elevated ground in the northern portion of the Pond 20 site. While this species was encountered elsewhere at Pond 20, it was primarily as individuals; this stand was mapped separately given the density and the distinctiveness of the coastal cholla. See Photo 3-6 for an example of this Alliance.

Isocoma menziesii Shrubland—Menzie's Goldenbush Scrub

There are two assemblages recognized in this vegetation community, both on the Pond 20 site; together they comprise 16.62 acres of upland vegetation. The largest of the two, *Isocoma menziesii-Opuntia prolifera* Association, covers 9.67 acres, and includes dense stands of Menzie's goldenbush (*Isocoma menziesii*) and/or coastal cholla. In the herbaceous layer, ice plant and filaree are the dominant species in the shrub interstices. It appears to experience occasional flooding, as evidenced by a relatively high percentage of standing dead shrubs. Approximately 6.95 acres of this vegetation community contains desertbroom baccharis as a co-dominant species. This polygon also contains five of the six individuals of the only rare plant encountered during this survey, California boxthorn (see Section 3.2). See Photo 3-7 for an example of this Alliance.

Photo 3-6. *Cylindropuntia prolifera* Shrubland.

Photo 3-7. *Isocoma menziesii* Shrubland.

Opuntia littoralis Shrubland Alliance—Coast Prickly Pear Scrub

On the western bank of the eastern berm between Pond 20 and Parcel C, coast prickly pear (*Opuntia littoralis*) occurs in a large, dense patch covering 0.11 acre. No other species occur in this patch.

Salix lasiolepis Shrubland—Arroyo Willow Thickets

Located in the far southeastern portion the Otay Tributary, this vegetation community is a mix of non-native trees and shrubs supported by urban runoff. A large stand of Canada horseweed (*Conyza canadensis*) occurs here. Altogether this highly disturbed area totaled 0.30 acre. See Photo 3-8 for an example of this Alliance.

Suaeda taxifolia Shrubland—Seablite Scrub

Approximately 2.15 acres inside the berm of the Pond 20 site and 0.54 acres of Parcel A were mapped as Seablite Scrub. This area consists of two linear depression features that cross each other. The area is highly disturbed in most places and varies in plant density. See Photo 3-9 for an example of this Alliance.

Photo 3-8. *Salix lasiolepis* Shrubland.

Photo 3-9. *Suaeda taxifolia* Shrubland.

3.1.3 Other Land Cover Types

Berm/Road Vegetation

The primary vegetation along old road/railway features and berms is mixed non-natives. The western berm is nearly barren but contains patches of ice plant. An apparent old road or abandoned railway spur (noted on a 1916 survey map as "Old Otay Wells Spur", Western Salt Company 1916) that was partially incorporated into the saltworks facilities crosses the site and is unvegetated in the middle with patches of non-native and native vegetation encroaching (Roadway Vegetation polygon). The eastern berm is mostly dense non-native vegetation. The southern berm has mixed vegetation, including a patch of non-native sea lavender (*Limonium* sp.). Riprap forms part of the substrate. The combined acreage for the Berm/Road classification is 8.35 acres. See Photo 3-10 for an example of this cover type.

Photo 3-10. Berm/Road Vegetation Cover Type.

Salt Pond Bottom Cover Type–Borrow Pits

This cover type totals 7.46 acres of the Pond 20 site and is completely unvegetated. Salt crust varies in depth, and in some places pooling water was observed. See Photo 3-11 for an example of this cover type.

Open Water

Two streams flank the exterior Pond 20 site. A tributary of the Otay River runs along the west edge outside the berm and is part of Parcel A. Nestor Creek runs along the east edge outside the berm and is part of Parcel C. Both streams receive freshwater or stormwater inputs and flow into the Otay River to the north of the property.

Photo 3-11. Salt Pond Bottom – Borrow Pit Cover Type.

3.2 Jurisdictional Wetlands

Jurisdictional wetlands delineation surveys were conducted in January and July of 2017 (Great Ecology 2017b, c). All the jurisdictional wetlands are associated with either the Otay River tributary along the western edge of Pond 20 outside the berm in Parcel A or Nestor Creek along the eastern edge of Pond 20 outside the berm in Parcel A. Both drainages receive freshwater and stormwater inputs, primarily at their southern ends and are tidally influenced at their northern ends due to the connection with the Otay River. Both drainage features outside the Pond 20 berm meet the criteria for Wetland Waters of the U.S. and California Coastal Commission (CCC) jurisdictional wetlands.

Jurisdictional wetland features included open water in both drainages, with pickleweed-dominated salt marsh on the banks. A small section at the southern end of the Otay River tributary receives stormwater input and was classified as freshwater marsh dominated by narrow leaf cattail (*Typha angustifolia*). Just to the north of the freshwater marsh is a section delineated as an unvegetated drainage feature. Sections of Nestor Creek are determined to be brackish marsh, containing California bulrush. Table 3-2 and Figure 3-2 summarize these findings.

Intermittently flooded water features totaling 8.9 acres were identified within Pond 20, but do not meet the criteria for wetland features, nor do they meet criteria for CCC jurisdiction (Great Ecology 2017b, c). Several pools and intermittently flooded depressions within the impounded area of Pond 20 were determined to be hydrologically isolated from adjacent jurisdictional Waters of the U.S. and associated wetlands and were therefore determined to be non-jurisdictional isolated waters (Great Ecology 2017b, c).

Table 3-2. Jurisdictional wetlands outside Pond 20 (Great Ecology 2017b, c).

Wetland Type	Cowardin Wetland Classification	Jurisdiction	Area (acres)
Salt Marsh	E2EM1P	Wetland Water of the U.S., CCC wetland	1.126
Brackish Marsh	E2EM1N	Wetland Water of the U.S., CCC wetland	0.027
Freshwater Marsh	PEM1F	Wetland Water of the U.S., CCC wetland	0.009
Open Water	R1UB3	Non-wetland Water of the U.S., CCC wetland	0.341
Drainage Feature	PUB3J	Non-wetland Water of the U.S.	0.0303

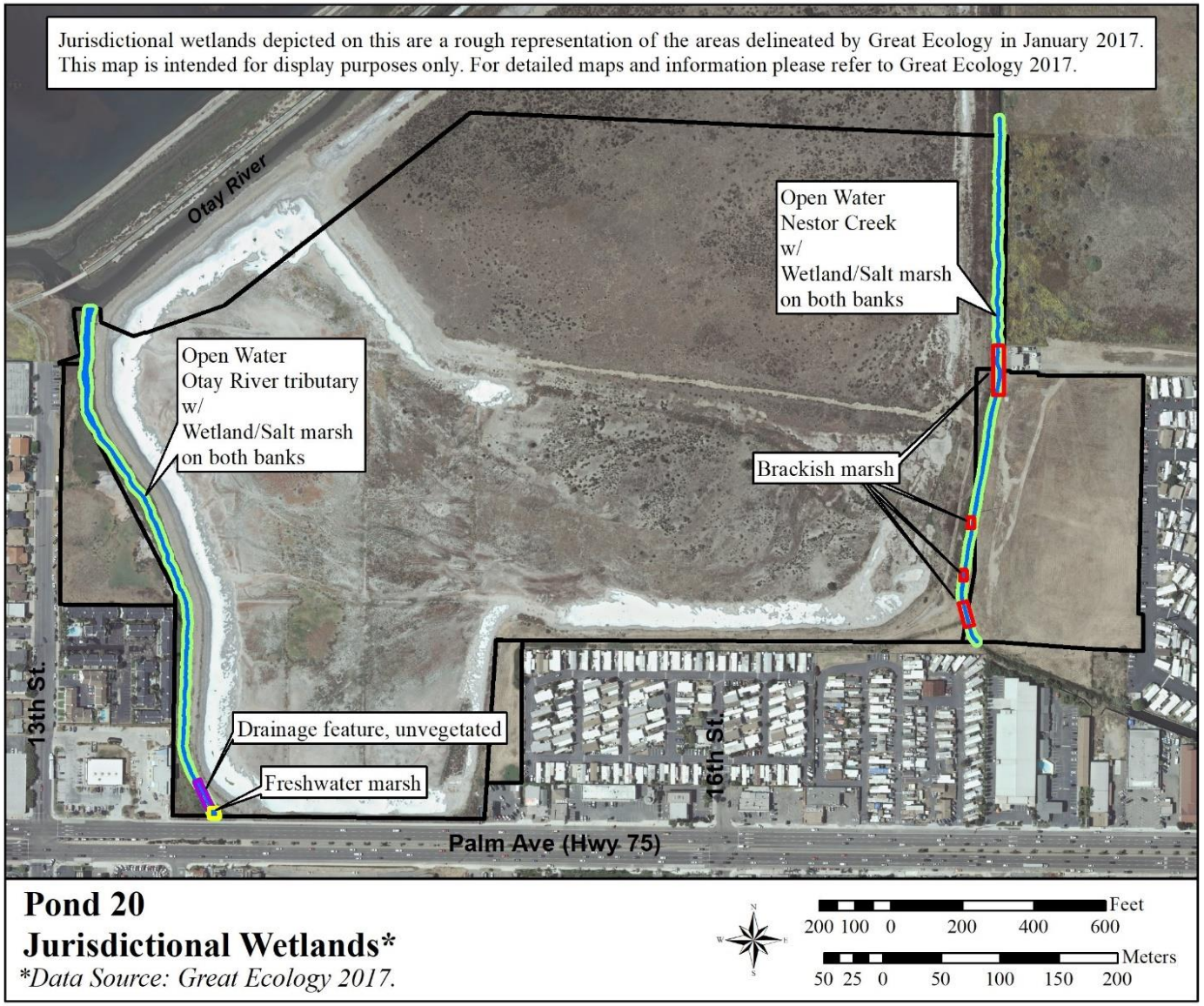

Figure 3-2. Jurisdictional Waters of the U.S. and Wetland Waters of the U.S. at Pond 20. See text for acreages reported by Great Ecology (2017). Acreages are presented in text and are based on mapping recorded in January 2017 (Great Ecology 2017b, c).

3.3 Plants

A total of 61 plant species were observed during these surveys. Appendix A presents a list of all plant species encountered during the field surveys. See Section 3.6.2 for the results of the rare plant surveys.

3.4 Animals

3.4.1 General Wildlife Surveys

Wildlife detected and/or expected to use this area are adapted to disturbed landscapes. The wildlife activity was low during the field surveys with only a small number of species detected. Appendix A presents a list of all wildlife species encountered during the field surveys, including results for documented avian use of Pond 20 during the 12-month 2016-2017 avian surveys (TDI 2018). Wildlife use varies spatially, with most of the observations of San Diego black-tailed jackrabbits (*Lepus californicus bennettii*), desert cottontails (*Sylvilagus audubonii*), and raptors using the northern, higher elevation portion of the property.

Two butterfly species were observed during the 2017-2018 surveys, the western pygmy-blue (*Brephidium exilis*) and the painted lady (*Vanessa cardui*). Both were encountered at several locations throughout survey area.

Resident songbirds that specialize in salt marsh or low-vegetation cover conditions are abundant (horned lark *[Eremophila alpestris]* and Belding's savannah sparrow), as well as migrant songbirds that benefit from open conditions (American pipit [*Anthus rubescens pacificus*]). The berms surrounding Pond 20 provide nesting habitat for burrowing owls. During 2016-2017 avian surveys, nesting was observed in Pond 20 by burrowing owls as well as black-necked stilts (*Himantopus mexicanus mexicanus*), western snowy plovers, and killdeer (*Charadrius vociferus vociferus*).

The following avian species were observed at Pond 20 during the 2017-2018 surveys. Turkey vultures (*Cathartes aura*) were seen soaring over the northern upland portions of the property. One northern harrier (*Circus cyaneus*) was seen scanning the area. One burrowing owl was observed on a berm just to the north of the survey area (see Section 3.6.3 Special Status Wildlife Species). One snowy egret (*Egretta thula thula*) was observed foraging in Nestor Creek between Pond 20 and Parcel C. An osprey (*Pandion haliaetus*) nesting structure and raptor perch are located on Parcel A. Also seen were a mallard (*Anas platyrhynchos platyrhynchos*), Forster's tern (*Sterna forsteri*) foraging in Otay River to the north of the site, American crows (*Corvus brachyrhynchos hesperis*), and northern mockingbirds (*Mimus polyglottos polyglottos*).

Under a separately conducted effort, monthly surveys over the course of 2016-2017 documented 57 avian species at Pond 20 (TDI 2018), totaling over 2,700 individuals (see Appendix A). Most of the observations were in the winter months (December-February), representing 64 percent of all observations. The five most abundant species were horned larks (*Eremophila alpestris*), black-necked stilts, house finches (*Carpodacus mexicanus frontalis*), killdeer, and American pipits (*Anthus rubescens pacificus*).

Several dead Pacific gopher snakes (*Pituophis catenifer catenifer*) were observed during the 2017-2018 surveys; they were likely forage scraps from raptors based on their proximity to an artificial perch. No live snakes were observed during the survey. Western side-blotched lizards (*Uta stansburiana elegans*) were observed on the eastern portion of the property.

Two mammal species were observed in the northern portion of Pond 20 during the 2017-2018 surveys, desert cottontails and San Diego black-tailed jackrabbits (see Section 3.6.3 Special Status Wildlife Species). Rodent activity was noted in the southeastern portion of the property.

3.4.2 Habitat Assessment for Special Status Avian Species

Five species were assessed for habitat values within the study area, all of which are known to occur in the vicinity (Table 3-3). The habitat value of each of the five species was rated separately for foraging, nesting, and roosting. The ratings were based on the presence of physical and biological features essential for each of these activities. The considerations included space for normal behavior; cover or shelter; food, water, air, light, minerals, or other nutritional or physiological requirements; presence of sites for breeding or rearing offspring; and level of disturbance of these habitat elements.

Figure 3-5 through Figure 3-4 depict the estimated habitat quality for the five species evaluated. While seabird nesting has been commonly reported on the salt pond berms in the past (TDI 2018), there was little high quality potential nesting habitat observed on the berms for the five species considered here. Within Pond 20 there is potential for nesting within the Otay River Tributary and Nestor Creek drainages by the Belding's savannah sparrow and low potential for nesting by the light-footed Ridgway's rail, the salt pannes by western snowy plover, and the sparsely vegetated Ice Plant Mat areas for the California least tern. Low to Moderately Low potential nesting habitat is widespread at the site, and burrowing owls have been observed nesting on the Pond 20 berms during the 2016-2017 avian surveys (TDI 2018). Foraging and roosting may take place within some of the habitats, although most of the site is of low quality for those activities.

Habitat value assessments for each species are described in greater detail below.

Table 3-3. Habitat assessment for five special status avian species at Pond 20. Habitat values are assigned for Foraging (F), Nesting (N), and Roosting (R) based on the presence of physical or biological features.

Vegetation Community/ Land Cover Type	Belding's Savannah Sparrow			Burrowing Owl			California Least Tern			Light-Footed Ridgway's Rail			Western Snowy Plover		
	F	N	R	F	N	R	F	N	R	F	N	R	F	N	R
Herbaceous Alliances															
Carpobrotus Semi-Natural Herbaceous Stand	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Distichlis spicata Herbaceous Alliance	—	—	—	L	L	—	—	—	—	—	—	—	—	—	—
Glebionis coronaria Semi-Natural Herbaceous Stand	—	—	L	L	L	—	—	—	—	—	—	—	—	—	—
Hirschfeldia incana Semi-Natural Herbaceous Stand	—	—	L	L	L	—	—	—	—	—	—	—	—	—	—
Bromus sp. Semi-Natural Herbaceous Stand	—	—	L	L	L	—	—	—	—	—	—	—	—	—	—
Melilotus Semi-Natural Herbaceous Stand	—	—	L	L	L	—	—	—	—	—	—	—	—	—	—
Mesembryanthemum Semi-Natural Herbaceous Stand	—	—	L	L	—	—	—	M[1]	—	—	—	—	M	—	M
Salicornia subterminalis Herbaceous Alliance	VH	VH	—	—	—	—	L	—	—	L	L	—	L	—	L
Salsola tragus Semi-Natural Herbaceous Stand	—	—	L	L	L	—	—	—	—	—	—	—	—	—	—
Shrub Dominated Alliances															
Baccharis sarothroides Shrubland	—	—	L	L	—	—	—	—	—	—	—	—	—	—	—
Cylindropuntia prolifera Shrubland	—	—	L	L	—	—	—	—	—	—	—	—	—	—	—
Opuntia littoralis Shrubland	—	—	L	L	—	—	—	—	—	—	—	—	—	—	—
Isocoma menziesii Shrubland	—	—	L	L	—	—	—	—	—	—	—	—	ML	—	ML
Salix lasiolepis Shrubland	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Suaeda taxifolia Shrubland	—	—	L	L	—	—	—	—	—	—	—	—	ML	—	ML
Other Land Cover Types															
Berm/Road Vegetation	—	—	—	—	ML	—	—	—	—	—	—	—	L	—	L
Salt Pond Bottom	—	—	—	—	—	—	—	—	—	—	—	—	—	MH	—

Note: The value of each vegetation or land cover type within the study area was rated on a qualitative scale of Low (L) to Very High (VH). The right-hand column under each species indicates the type of potential usage for each vegetation and land cover type.

Habitat Use Codes: **N** = Nesting, **F** = Foraging, **R** = Roosting/Loafing

Habitat Quality Codes: **L** = Low, **ML** = Moderately Low, **M** = Moderate, **MH** = Moderately High, **VH** = Very High

[1] Only the more sparsely vegetated of these mapped polygons were included in this rating. All others were too dense for least tern nesting.

Belding's Savannah Sparrow

Very high-quality nesting and foraging habitat for the Belding's savannah sparrow exists in Nestor Creek and the Otay River tributary (Figure 3-3) where constituent elements of suitable habitat are present (open water and pickleweed marsh). Savannah sparrows are known to utilize the site (TDI 2017). Most of the remainder of the site represents low quality roosting potential due to the general lack of suitable habitat and past disturbance patterns.

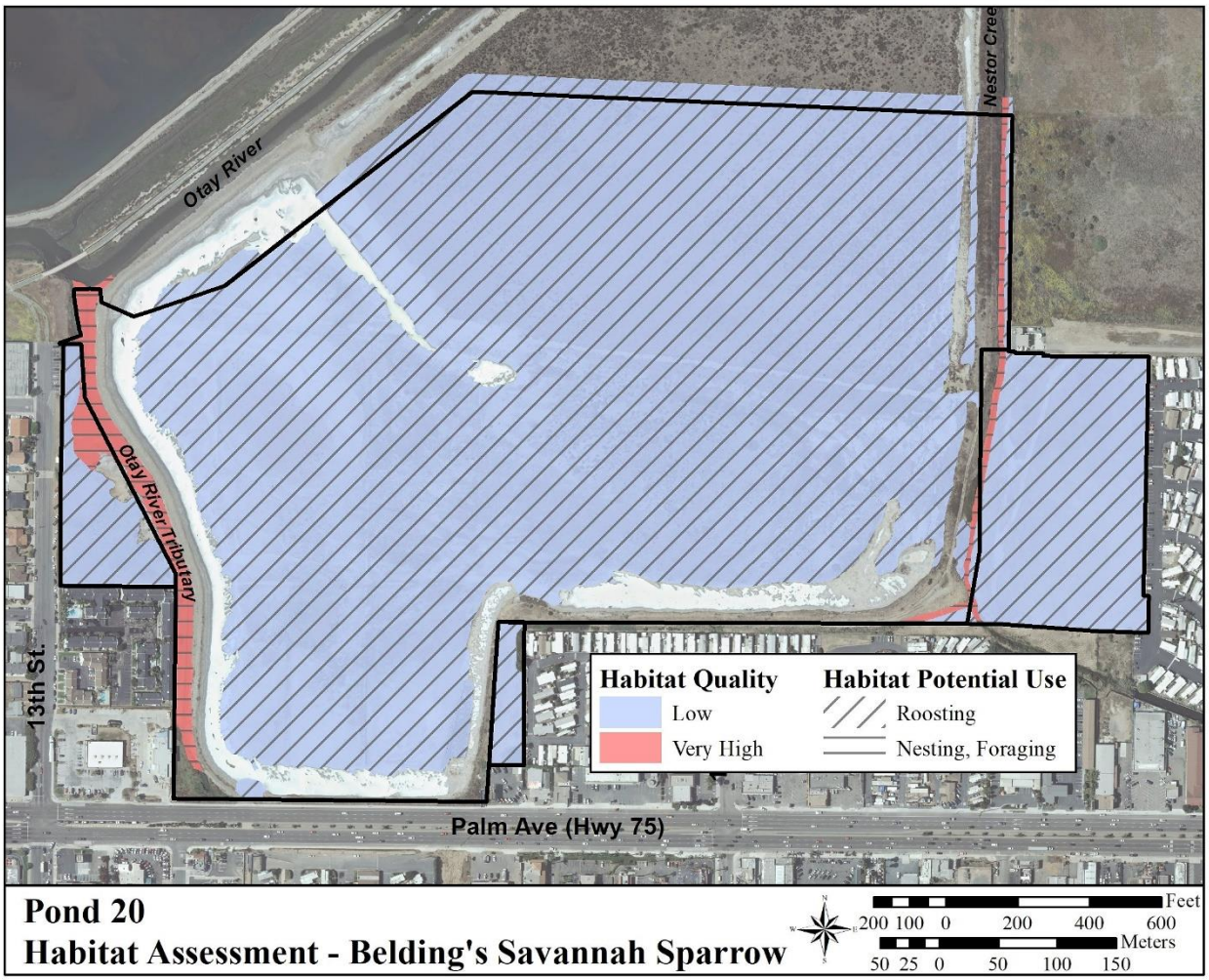

Figure 3-3. Potential habitat assessment for Belding's Savannah Sparrow.

Burrowing Owl

Moderately low-quality nesting habitat for burrowing owls exists on the berms around Pond 20 and in the non-native grassland areas (Figure 3-4), where the potential for nesting is degraded by past disturbances and the over-abundance of non-native vegetation. Burrowing owls have been observed in the northern portion of Pond 20, including a nesting observation during the 2016-2017 avian surveys (TDI 2018). Most of the project area represents low quality foraging opportunities where small mammal activity occurs.

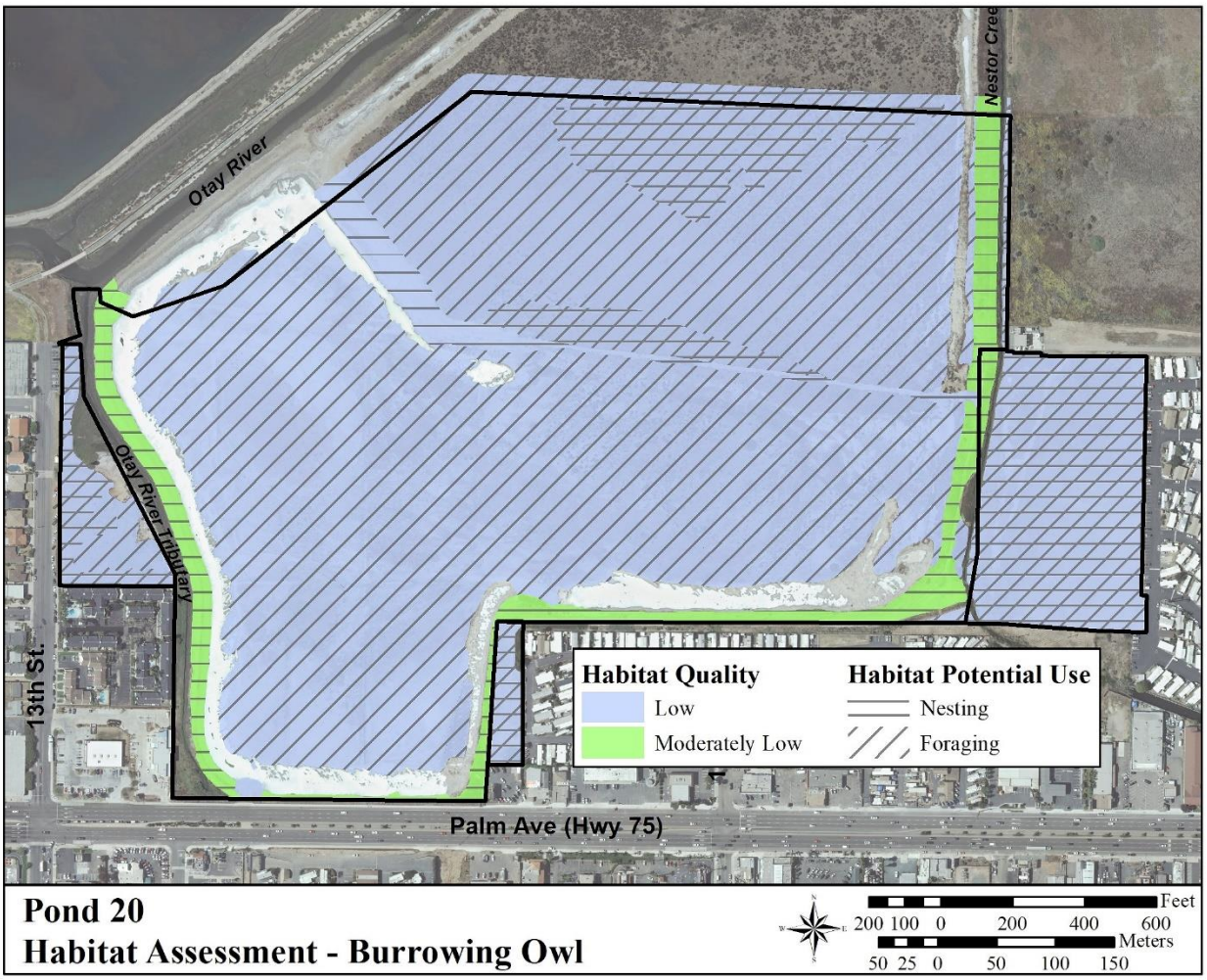

Figure 3-4. Potential habitat assessment for Burrowing Owl.

California Least Tern

Nesting habitat of moderate quality exists for the California least tern in the flat, sparsely vegetated areas within Pond 20 (Figure 3-5), although no nesting was observed in Pond 20 during these surveys or during the 2016-2017 avian surveys. The Nestor Creek and Otay River tributary waterways on either side of Pond 20 represent low quality foraging habitat, with only very narrow and shallow open water in which terns can dive for prey. Terns of various species were observed foraging in the Otay River just to the north of Pond 20 during the 2017-2018 surveys. No other habitat elements for least terns exist within the project area.

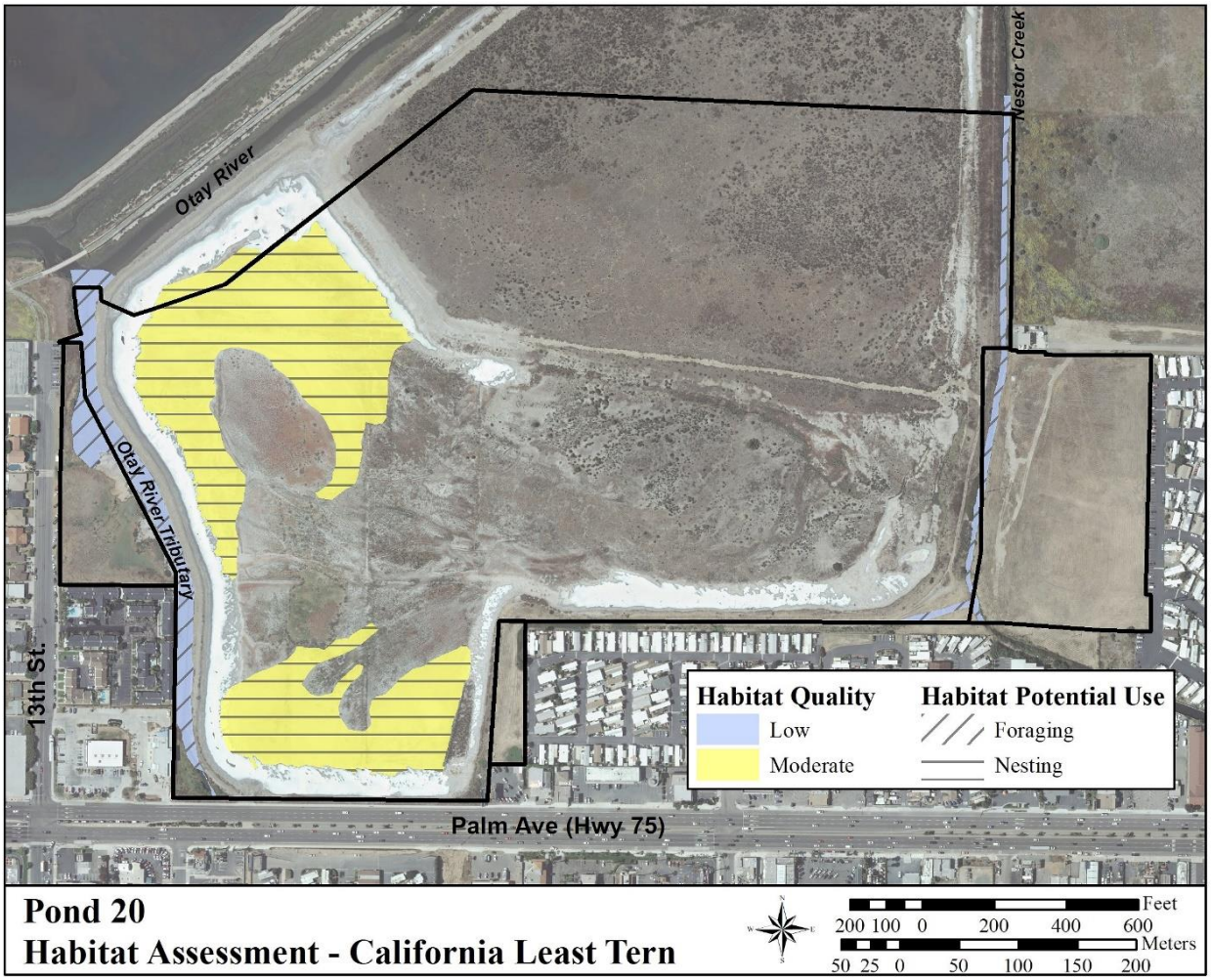

Figure 3-5. Potential habitat assessment for California Least Tern.

Light-Footed Ridgway's Rail

The two waterways on the east and west edges of Pond 20 represent the only potential habitat for light-footed Ridgway's rails (Figure 3-6), where constituent elements needed for nesting and foraging exist in the open water and pickleweed marsh. Foraging potential is probably somewhat higher than nesting potential since cordgrass, the species preferred nesting habitat (USFWS 1985b), only occurs at the northern end of the Otay River tributary. The species was not detected there during the 2017-2018 surveys nor during the 2016-2017 avian surveys (TDI 2018), although it has been observed in the Otay River north of the site (Dudek 2016).

Figure 3-6. Potential habitat assessment for Light-footed Ridgway's Rail.

Western Snowy Plover

Moderately high-quality nesting habitat for the western snowy plover is present in the barren, low-lying salt pond bottoms – borrow pits (Figure 3-7) and the species was observed nesting there during the 2016-2017 avian surveys (TDI 2018). Nesting quality is negatively affected by the berms which restrict access for chicks to open water feeding habitat. Most of the remainder of the site represents low-to-moderate quality foraging and roosting habitat, where some constituent elements persist but are degraded to varying degrees by past disturbance patterns and non-native vegetation.

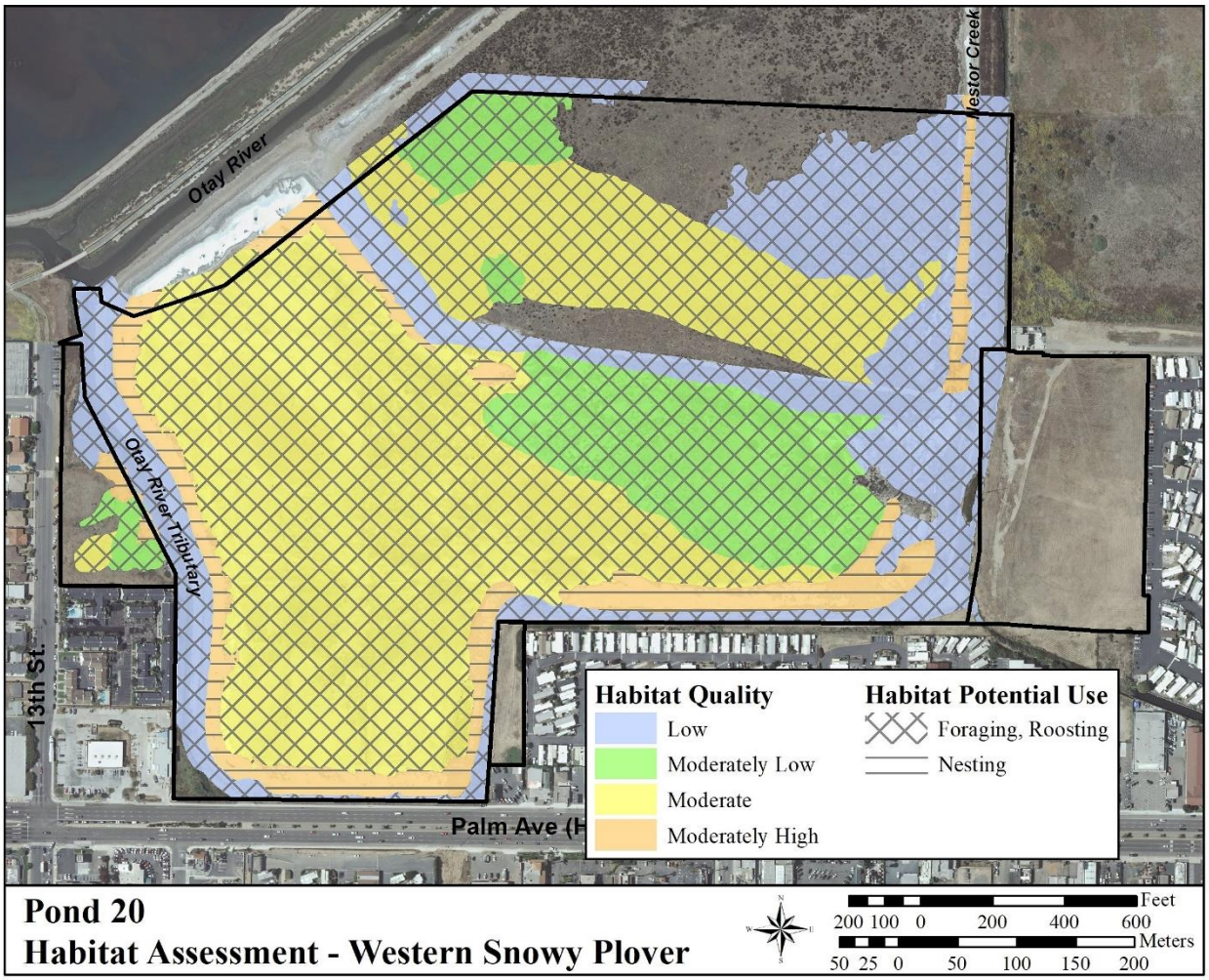

Figure 3-7. Potential habitat assessment for Western Snowy Plover.

3.5 Rare, Endangered or Sensitive Species or Habitats

3.5.1 Sensitive Habitats/Regulated Resources

No sensitive habitats were found at Pond 20. The CNDDB records showed two habitats nearby that are considered sensitive, Southern Coastal Salt Marsh and Southern Willow Scrub, both ranked S2 (Imperiled in the state because of rarity due to factors making it very vulnerable to extirpation from the nation or state/province). Neither of these habitats are present at Pond 20. There is a small area containing arroyo willows outside the southwest corner of Pond 20 in the Otay tributary; however, it is the result of urban runoff and does not constitute a Southern Willow Scrub habitat. Portions of the site would be favorable for high Southern Coastal Salt Marsh and upland transitional habitats, but not fitting for Southern Willow Scrub.

3.5.2 Special Status Plant Species

Much of the survey area has little potential for special status plant species due to the history of past land disruption and that most of the low-lying areas in the southern and western portions of the Pond 20 site are dominated by a near monoculture of ice plant. Parcels B and C are dominated primarily by non-native grasses and weed species and are subject to regular mowing and possibly disking for weed control. Some upland areas of Pond 20 have been colonized by Maritime Succulent Scrub species, while elsewhere within the pond few other native species occur aside from multiple stands of Santa Barbara milkvetch and California suncup (*Camissonia bistorta*).

One special status plant species was encountered during the 2017-2018 survey efforts. Six California boxthorn shrubs were found widely scattered throughout the upland scrub areas of Pond 20 (Figure 3-8). The shrubs vary in size from approximately 0.5 meter high by less than 1 meter in diameter, to over 1 meter high by 2 meters in diameter. California boxthorn, a thorny shrub, is a California Rare Plant Rank (CRPR) 4.2 species (plants of limited distribution, moderately threatened; CNPS 2018). This species tolerates saline and alkaline conditions and sometimes becomes its own vegetation type in coastal bluff and high marsh-upland transition zone settings of coastal San Diego County (Zedler 2001), and maritime succulent scrub in coastal environments of San Diego Bay (TDI 2011). This is a slow growing shrub and does not typically recover from disturbance without intervention, especially long-term or recurring impacts.

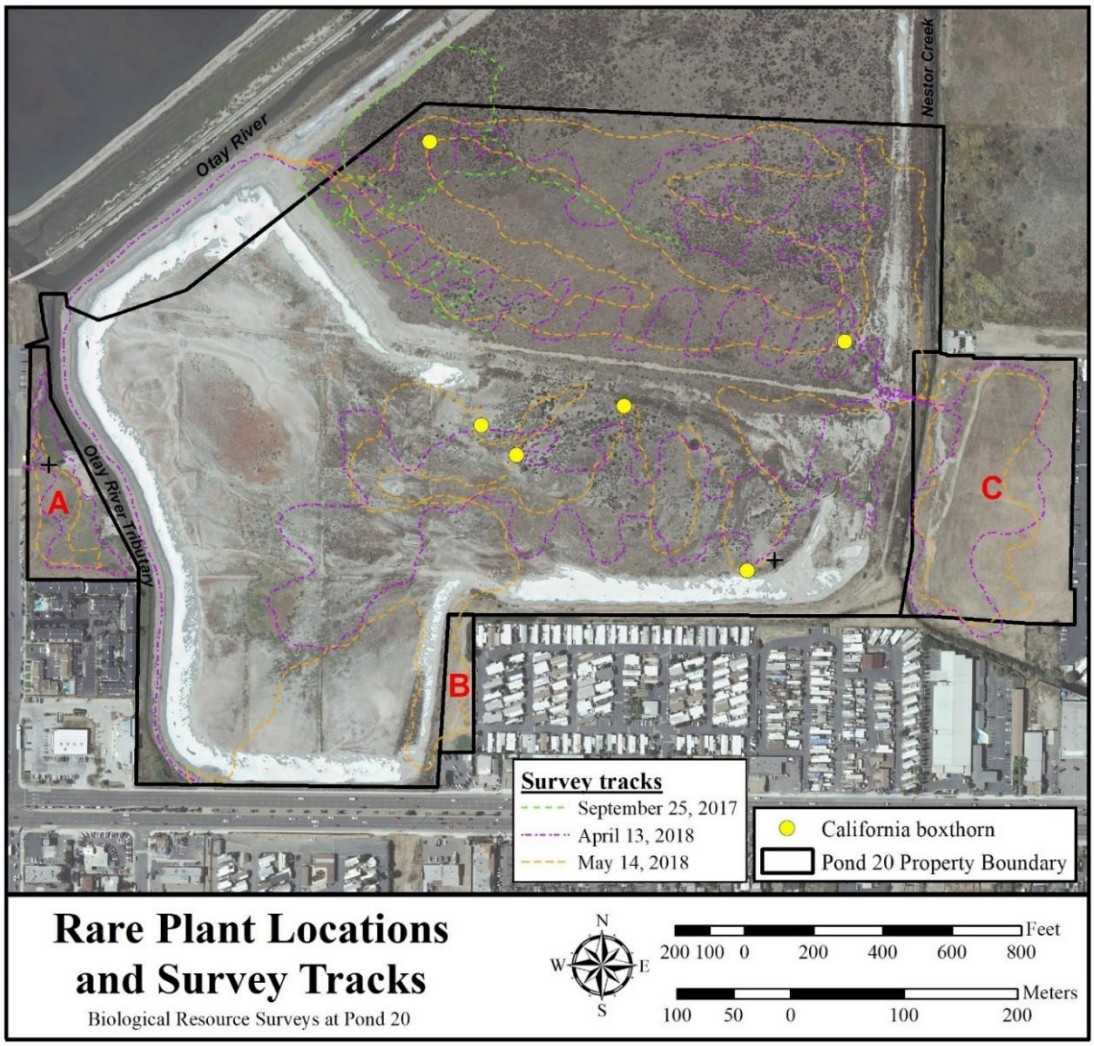

Figure 3-8. Rare plant species locations at Pond 20, 2017-2018.

3.5.3 Special Status Wildlife Species

Only two special status animal species were observed during the 2017-2018 field surveys at Pond 20. One burrowing owl (USFWS Birds of Conservation Concern [BCC], CDFW Species of Special Concern [SSC]) was observed just offsite near the edge of a berm during the September 2017 visit. This individual was seen standing on flat low ground in the northern property area. At least ten San Diego black-tailed jackrabbits (SSC) were encountered during 2017-2018 surveys, mostly in the upland scrub areas in the north-eastern portion of Pond 20.

During the 2016-2017 bay-wide avian surveys (TDI 2017), eight western snowy plovers (Federally-listed as Threatened [FT], SSC) were seen at Pond 20 between May and July. In addition, a total of 57 Belding's savannah sparrows (State-listed as Endangered [SE]), primarily seen in November 2016 (29 observed). Seven additional special-status avian species were also seen in Pond 20 (Table 3-4).

Table 3-4. Special status avian species observed during monthly surveys in 2016-2017 at Pond 20.

Common Name	Species Name	Status	No. Seen	Months Observed
Belding's Savannah Sparrow	*Passerculus sandwichensis beldingi*	SE	57	Aug.–Mar.
Black Skimmer	*Rynchops niger*	BCC, SSC*[B]	1	Jun.
Burrowing Owl	*Athene cunicularia*	BCC, SSC	4	Oct.–Dec., Jun.
Gull-Billed Tern	*Gelochelidon nilotica vanrossemi*	BCC, SSC*[B]	16	Apr.–Jun.
Loggerhead Shrike	*Lanius ludovicianus*	BCC, SSC*[B]	1	Jan.
Long-billed Curlew	*Numenius americanus*	BCC	1	Mar.
Northern Harrier	*Circus cyaneus hudsonius*	SSC*[B]	5	Sep.–Feb.
Western Snowy Plover	*Charadrius alexandrinus nivosus*	FT, SSC*[Y]	8	May-Jul.
Whimbrel	*Numenius phaeopus hudsonicus*	BCC	53	Mar.–Apr.

FT – Federally-listed as Threatened; **SE** – State-listed as Endangered; **SSC** – CDFW Species of Special Concern (*[B]: Breeding season only; *[Y]: Year-round); **BCC** – USFWS Birds of Conservation Concern

Source: TDI 2018

3.6 Sensitive Species Potential to Occur

The following tables present special status species documented within one mile, based on recent CNDDB searches. They do not represent any formal presence/absence survey for Pond 20 but indicate recorded observations in the vicinity. Many of the special status species were considered as unlikely to occur at Pond 20 given that the floodplain and tidal conditions prevalent on adjacent land do not occur at Pond 20.

3.6.1 Plants

There is a total of 14 special status plants species in the CNDDB recorded within 1 mile of Pond 20. Of these, eight are perennials and the remaining six are annual herbs. Details for all special status plant species including habitat, life form, blooming period, and potential to occur at Pond 20 are provided in Table 3-5.

Two species, estuary seablite (*Suaeda esteroa*) and Nuttall's acmispon (*Acmispon prostratus*) were considered to have the potential to occur based on suitable site conditions (scrub areas with sandy substrates) within wetlands at the western edge of the property. See Table 3-5 for additional species-specific details.

A total of four plant species have a low potential to occur, aphanisma (*Aphanisma blitoides*), Orcutt's pincushion (*Chaenactis glabriuscula* var. *orcuttiana*), salt marsh bird's-beak (*Chloropyron maritimum* ssp. *maritimum*), and chaparral ragwort (*Senecio aphanactis*). These are all annual species with potential to disperse from nearby areas. Potentially suitable habitat includes coastal scrub that occurs in the north and eastern part of Pond 20 and salt marsh associated with the Otay River tributary and Nestor Creek drainages. These species are ephemeral, and occurrence generally is tied to the current rain year; they may not germinate every year.

Eight other species identified from the CNDDB search were considered unlikely to occur due to lack of suitable habitat or substrate, and past disturbance and land use history of the site.

Table 3-5. Sensitive Plants with 1 mile of Pond 20.

Scientific Name	Common Name	CRPR Status	Habitat	Life Form	Bloom	Potential at Pond 20
Acmispon prostratus	Nuttall's Acmispon	1B.1	• Coastal Dunes and Scrub – *Sandy Substrates*	AH	Mar.–Jun. (Jul.)	Not Detected. Potential to occur in scrub. No dunes present.
Ambrosia monogyra	Singlewhorl Burrobrush	2B.2	• Chaparral • Sonoran Desert Scrub – *Sandy Substrates*	PS	Aug.–Nov.	Not Detected. Unlikely to occur. Substrates generally not suitable.
Aphanisma blitoides	Aphanisma	1B.2	• Coastal Dunes, Scrub, and Bluff Scrub – *Sandy or Gravelly Substrates*	AH	Feb.–Jun.	Not Detected. Low potential to occur. Nearby records, but suitable substrates are lacking.
Atriplex coulteri	Coulter's Saltbush	1B.2	• Coastal Dunes, Scrub, and Bluff Scrub • Valley and Foothill Grassland – *Alkaline or Clay Substrates*	PH	Mar.–Oct.	Not Detected. Unlikely to occur. Substrates were not suitable and habitat for this perennial species may not have existed on site prior to historical disturbance.
**Atriplex pacifica*	Pacific Saltbrush	1B.2	• Coastal Dunes, Scrub, and Bluff Scrub • Playas	AH	Mar.–Oct.	Not detected. Potential to occur. There is potential for this species to occur since portions of the site do support suitable habitat.
Chaenactis glabriuscula var. *orcuttiana*	Orcutt's Pincushion	1B.1	• Coastal Dunes and Bluff Scrub – *Sandy Substrates*	AH	Jan.–Aug.	Not Detected. Low potential to occur. No habitat present.
Chloropyron maritimum ssp. *maritimum*[1]	Salt Marsh Bird's-Beak	FE, SE, 1B.2	• Marshes (Coastal Salt), higher intertidal	AH	May–Oct. (Nov.)	Not Detected. Low potential to occur. Small patches of coastal salt marsh present.
Cylindropuntia californica var. *californica*	Snake Cholla	1B.1	• Chaparral • Coastal Scrub	PSS	Apr.–May	Not Detected Unlikely to occur. Berms and the northern portion of the property potentially suitable, but disturbance from land use history make this species unlikely.
Dudleya blochmaniae ssp. *blochmaniae*	Blochman's Dudleya	1B.1	• Coastal Scrub and Bluff Scrub • Chaparral • Valley and Foothill Grassland – *Rocky, Clay or Serpentinite Substrates*	PH	Apr.–Jun.	Not Detected. Unlikely to occur. Suitable habitat is limited to areas along berms; soil substrates and historical disturbance make this occurrence low potential.
Heterotheca sessiliflora ssp. *sessiliflora*	Beach Goldenaster	1B.1	• Chaparral (Coastal) • Coastal Dunes and Scrub	PH	Mar.–Dec.	Not Detected. Unlikely to occur. A few upland areas potentially suitable, but habitat is limited.
Isocoma menziesii var. *decumbens*	Decumbent Goldenbush	1B.2	• Chaparral • Coastal Scrub – *Sandy Substrates*	PS	Apr.–Nov.	Not Detected. Unlikely to occur. Suitable habitat is limited; soil substrates and historical disturbance make this occurrence low potential.
***Lycium californicum*	California Boxthorn	4.2	• Coastal Scrub and Bluff Scrub	PS	(Dec.) Mar., Jun.–Aug.	Detected.
Nemacaulis denudata var. *denudata*	Coast Woolly-Heads	1B.2	• Coastal Dunes	AH	Apr.–Sep.	Not Detected. Unlikely to occur. No dunes present.

Table 3-5. Sensitive Plants with 1 mile of Pond 20.

Scientific Name	Common Name	CRPR Status	Habitat	Life Form	Bloom	Potential at Pond 20
Orobanche parishii ssp. *brachyloba*[2]	Short-Lobed Broomrape	4.2	• Coastal Dunes, Scrub, and Bluff Scrub – *Sandy Substrates*	PH	Apr.–Oct.	Not Detected. Unlikely to occur. Host plants may not be present, and disturbance from land use history make this species unlikely.
Senecio aphanactis	Chaparral Ragwort	2B.2	• Chaparral • Cismontane Woodland • Coastal Scrub – *Alkaline Substrates*	AH	Jan.–Apr. (May)	Not Detected. Unlikely to occur. Some areas of suitable habitats and substrates may be present but are degraded due past disturbance and land use and extent of non-native vegetation.
Suaeda esteroa	Estuary Seablite	1B.2	• Marshes and Swamps (Coastal Salt)	PH	(May) Jul.–Oct. (Jan.)	Not Detected. Likely to occur. The narrow wetland strip along the western portion of the property has suitable habitat, as well as an area across the middle of the site where a different Suaeda species dominates.

*This species was not identified in the CNDDB search, yet it is considered here given the suitable conditions occur at Pond 20.

** This species was observed during the recent site assessment.

[1] Hemiparasitic AH = Annual Herb PS = Perennial Shrub

[2] Parasitic PH = Perennial Herb PSS = Perennial Succulent Shrub

1B: Plants Rare, Threatened, or Endangered in California and Elsewhere (Includes Rare Plant Ranks 1B.1, 1B.2, 1B.3)
The plants of Rank 1B are rare throughout their range with the majority of them endemic to California. Most of the plants that are ranked 1B have declined significantly over the last century. California Rare Plant Rank 1B plants constitute the majority of plant taxa tracked by the CNDDB, with more than 1,000 plants assigned to this category of rarity.

2B: Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere (Includes Rare Plant Ranks 2B.1, 2B.2, 2B.3)
The plants of Rank 2B are rare, threatened or endangered in California, but more common elsewhere. Plants common in other states or countries are not eligible for consideration under the provisions of the Federal Endangered Species Act; however, they are eligible for consideration under the California Endangered Species Act. This rank is meant to highlight the importance of protecting the geographic range and genetic diversity of more widespread species by protecting those species whose ranges just extend into California. Note: Plants of both Rank 1B and 2B are rare, threatened or endangered in California; the only difference is the status of the plants outside of the state.

4: Plants of Limited Distribution - A Watch list (Includes Rare Plant Ranks 4.1, 4.2, 4.3)
The plants in this category are of limited distribution or infrequent throughout a broader area in California, and their vulnerability or susceptibility to threat appears low at this time. While we cannot call these plants “rare” from a statewide perspective, they are uncommon enough that their status should be monitored regularly. Should the degree of endangerment or rarity of a Rank 4 plant change, we will transfer it to a more appropriate rank or delete it from consideration.

Threat Ranks:
The CRPR use a decimal-style threat rank. The threat rank is an extension added onto the CRPR and designates the level of threats by a 1 to 3 ranking with 1 being the most threatened and 3 being the least threatened. Most CRPRs read as 1B.1, 1B.2, 1B.3, etc. Note that some Rank 3 plants do not have a threat code extension due to difficulty in ascertaining threats. Rank 1A and 2A plants also do not have threat code extensions since there are no known extant populations in California.

Source: CNDDB 2018.

3.6.2 Wildlife

The CNDDB records search identified a total of 12 wildlife species occurrences within 1 mile of Pond 20. This included three invertebrates, five birds, one reptile, and three mammals (Table 3-6).

The freshwater-living San Diego fairy shrimp (*Branchinecta sandiegonensis*) was considered unlikely at Pond 20 due to saline conditions and lack of vernal pools at the site. The western tidal-flat tiger beetle (*Cicindela gabbii*) and western beach tiger beetle (*Cicindela latesignata latesignata*) were considered to have a low potential to occur given the lack of suitable habitat.

The least Bell's vireo (*Vireo bellii pusillus*) was considered unlikely to occur at Pond 20, except as incidental to its known use of the nearby riparian habitat of the Otay River. Riparian habitat suitable for the least Bell's vireo was not present at Pond 20. The state-listed Belding's savannah sparrow uses habitat present along the eastern edge of Pond 20, as documented during 2016-2017 avian surveys (TDI 2018).

The federally endangered California least tern nests and forages in the vicinity and there is moderate nesting habitat within Pond 20, however there is low potential for its nesting use on site. Predators (e.g., domestic dogs and cats, raccoons, larger birds such as burrowing owls and American kestrels [*Falco sparverius sparverius*]) of least tern chicks and eggs would deter nesting at Pond 20.

The federally threatened western snowy plover was observed at Pond 20 during recent avian surveys performed throughout San Diego Bay (TDI 2018). The federally endangered light-footed Ridgway's rail occurs in the Otay River channel north of the Pond 20 study area (Dudek 2016).

The single reptile species identified in the CNDDB search, coast horned lizard (*Phrynosoma blainvillii*), is unlikely to occur given the lack of suitable habitat and foraging opportunities. The highly saline conditions do not appear to support native harvester ants, the preferred food source of this species.

Two special status mammal species have the potential to occur. Conditions are suitable for foraging by the pallid bat (*Antrozous pallidus*), but not for roosting. The Mexican long-tongued bat (*Choeronycteris mexicana*) has a low potential to occur given the low potential for typical nectar sources or roosting.

3.7 Wildlife Corridors and Habitat Linkages

San Diego Bay is an important component of the Pacific Flyway used by millions of birds traveling between northern breeding grounds and southern wintering sites. It also supports over-wintering birds that depend on its resources for food, shelter, resting, and staging before migration. Finally, the Bay also serves as the northern range of some tropical species, including several that breed and nest locally.

Pond 20 provides habitats for roosting, foraging, and nesting for many of the resident and migratory birds which utilize the Bay and its surroundings. Several species were observed nesting at Pond 20 during the 2016-2017 avian surveys, including black-necked stilts, western snowy plovers, burrowing owls, and killdeer (TDI 2018). The study area is proximal to San Diego Bay, including the saltworks ponds which are part of the San Diego Bay National Wildlife Refuge immediately to the north, and the Pacific Ocean. The pond's proximity to key habitats provides foraging opportunities for species which may nest or roost in the study area. Additional upland habitats exist to the north and east of Pond 20, and the Otay River basin provides a key linkage to the inland area of southern San Diego. Tijuana Estuary lies just 1.9 miles (3 kilometers) to the south.

Based on results of these and previous surveys, restored areas and brine flats within the saltworks and other wetlands adjacent to Pond 20 provide important migratory stopover value and spring/summer nesting and roosting habitat for birds (Patton 1999, 2012; U.S. Navy and Port 2013; San Diego Natural History Museum & Avian Research Associates 2014; TDI 2018). Significant numbers of seabirds and shorebirds establish nests on the saltworks levees north of Pond 20 each spring and summer (Stadtlander 1994; Patton 1999, 2012). These include California least terns (*Sternula antillarum browni*) and western snowy plovers. Large multispecies breeding colonies include cormorants, terns, and black skimmers (*Rynchops niger*). American avocet (*Recurvirostra americana*) and black-necked stilt nest throughout the interior of the saltworks, and smaller numbers of nesting mallards, gadwall (*A. strepera*), and killdeer are scattered throughout. Widespread nesting songbirds include horned lark (*Eremophila alpestris*) and Belding's savannah sparrow (*Passerculus sandwichensis beldingi*).

Table 3-6. Sensitive Animals within 1 mile of Pond 20.

Scientific Name	Common Name	Sensitive Status	Potential at Pond 20
Invertebrates			
Branchinecta sandiegonensis	San Diego Fairy Shrimp	FE	Unlikely to occur. Highly saline soils not suitable to support the pooling duration and freshwater conditions required for this species.
Cicindela gabbii	Western Tidal-Flat Tiger Beetle	CNDDB	Low potential to occur. There are conditions within the Otay River tributary waterway that may be suitable, but the extent of the habitat is very limited.
Cicindela latesignata latesignata	Western Beach Tiger Beetle	CNDDB	Low potential to occur. There are conditions within the Otay River tributary waterway that may be suitable, but the extent of the habitat is very limited.
Birds			
Charadrius alexandrinus nivosus	Western Snowy Plover	FT, SSC	Known to occur, observed during 2017-2018 surveys. Moderately high potential for nesting in salt pannes. Moderate potential for foraging.
Passerculus sandwichensis beldingi	Belding's Savannah Sparrow	SE	Known to occur, observed during 2017-2018 surveys. Limited suitable habitat occurs within the waterways (Otay River tributary and Nestor Creek) on the eastern and western edges of the property for nesting and foraging.
Rallus longirostris levipes	Light-Footed Ridgway's Rail	FE, SE, FP	Potential to occur. Low potential for nesting and foraging in salt marsh habitats on site. Very little cordgrass present except at north terminus, Otay River tributary.
Sternula antillarum browni	California Least Tern	FE, SE, FP	Low potential to occur. The sparsely vegetated areas within the pond could be suitable for nesting. The Otay River tributary and Nestor Creek provide low quality foraging areas due to small size, shallow conditions.
Vireo bellii pusillus	Least Bell's Vireo	FE, SE	Unlikely to occur. Suitable riparian habitat is not present.
Athene cunicularia hypugaea	Western Burrowing Owl	SSC	Known to occur. Suitable nesting habitat is present on the pond berms and in areas of grassland (or other herbaceous annuals) at the site. Most of the site provides suitable habitat for foraging.
Circus cyaneus	Northern Harrier	SSC	Known to occur. Observed during 2017-2018 surveys. Suitable forage and nesting habitat present in the upland portions of the site.
Reptiles			
Phrynosoma blainvillii	Coast Horned Lizard	SSC	Unlikely to occur. Suitable habitat not present; no harvester ants were observed and highly saline areas unsuitable.
Mammals			
Antrozous pallidus	Pallid Bat	SSC	Potential to occur. Roosting (palm trees building/ structures) and foraging (over open water) habitats nearby.
Choeronycteris Mexicana	Mexican Long-Tongued Bat	SSC	Low potential to occur. Roosting habitat (palm trees, building/structures) nearby; however, low potential for the nectar sources (agave plants) for foraging.
Lepus californicus bennettii	San Diego Black-Tailed Jackrabbit	SCC	Known to occur. Observed in the upland scrub areas of the site.

FE – Federally-Listed as Endangered; FP – CDFW Fully Protected; FT – Federally-listed as Threatened; SE – State-listed as Endangered; SSC – CDFW Species of Special Concern; FP – Fully Protected; CNDDB – California Natural Diversity Database Ranked

http://www.dfg.ca.gov/wildlife/nongame/list.html - April 2018

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4.0 MANAGEMENT CONSIDERATIONS

The Board of Port Commissioners determined that development of a wetland mitigation bank is the optimal economic use of the Pond 20 property, and in keeping with the Port's mission to act as steward of State Tidelands within the Public Trust. Therefore, the Port of San Diego seeks to create a wetland mitigation bank within the berm at the Pond 20 former salt pond site, while Parcels A, B, and C are proposed for commercial or conservation land use.

The Port proposes to conduct a significant restoration effort at Pond 20 to develop approximately 67.5 acres of created tidal wetland habitat, 1.16 acres of restored wetland habitat, and 0.37 acres of restored non-wetland waters of the U.S. (Great Ecology 2017a). The mitigation bank will generate subtidal and intertidal wetland credits to compensate for impacts under Section 404 of the Clean Water Act, the California Coastal Act, the Porter-Cologne Water Quality Control Act, and Section 1600 of the California Fish and Game Code; and for impacts to eelgrass habitat under the California Eelgrass Mitigation Policy Orange County and its watersheds.

A preliminary design of the wetland restoration was prepared by Great Ecology (2017a). Figure 4-1 illustrates the preliminary design plan of the future mitigation bank, including a breach to the Otay River in the northwest portion of the study area. Included on Figure 4-1 are locations of sensitive species observed during the 2017-2018 surveys.

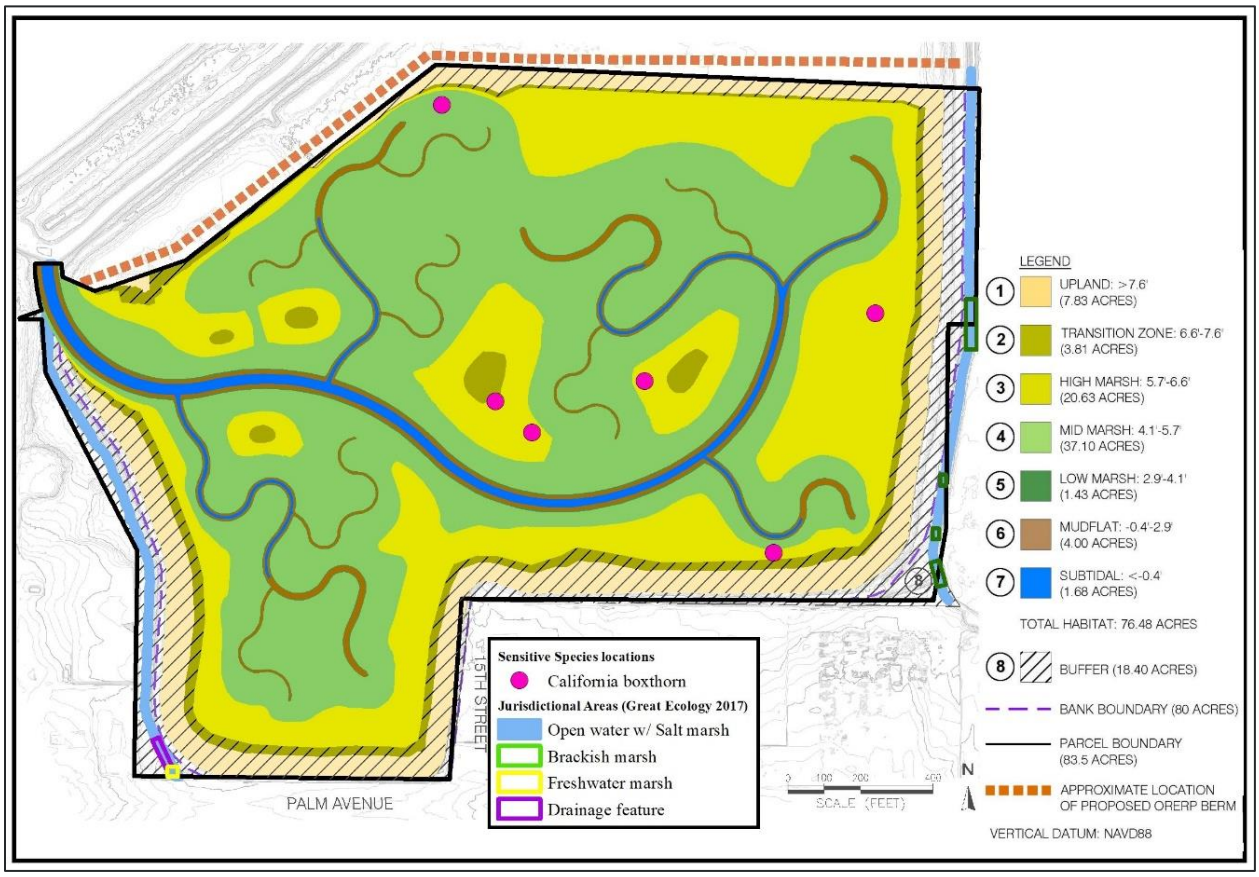

Figure 4-1. Preliminary design plan for a future mitigation bank at Pond 20, and sensitive plant locations mapped during 2017-2018 surveys are added for reference (Base map source: Port of San Diego. Jurisdictional wetlands areas as defined by Great Ecology, 2017a).

4.1 Potential Impact Considerations

Potential impact considerations should take into account the historic intertidal and estuarine conditions, as well as regional resource management goals. Existing site conditions in the context of adjacent habitats helps to provide an accurate appraisal of the site's current productivity, as well as its overall wildlife potential if habitats within Pond 20 were enhanced and restored. Within the vicinity of Pond 20, restored areas and brine flats elsewhere within the saltworks complex provide important value and habitat for birds. Adjacent nearshore ocean, open water, and wetland habitats provide similar benefits.

The proposed project is expected to provide a substantial net benefit by creating estuarine wetlands, which have the highest importance with respect to needed habitat in San Diego Bay and its unique species assemblages (Department of the Navy and Port of San Diego 2013). While conversion of disturbed, relatively low-quality habitat and other impacts would occur in the process of constructing the proposed mitigation bank, these are temporary and offset by the increase in functional habitat values. Because of its former use as an industrial salt evaporation pond the soil conditions are hypersaline in low-lying portions. Natural hydrological processes and site elevation have been altered, and much of the land does not support vegetation or consists of non-native vegetation cover. Existing conditions and habitat are below both historic and current potential of the site given its estuarine context.

Biological resources which could be impacted by the proposed project include:

- jurisdictional aquatic resources associated with Otay River tributary;
- nesting opportunities for birds that select low or patchy vegetation cover with nearby foraging resources (e.g., on the berm/roadway and in low-lowing salt panne areas);
- nesting/foraging/roosting opportunities for coastal-dependent birds including Belding's savannah sparrow, western snowy plover and light-footed Ridgway's rail;
- Maritime Succulent Scrub habitat and species that have colonized the vacated site due to altered conditions (e.g., California boxthorn may be impacted by construction); and
- terrestrial wildlife associated with upland coastal habitat, including habitat suitable for nesting or foraging burrowing owls, foraging northern harriers, and San Diego black-tailed jackrabbits.

Functional values of the site for coastal and wetland dependent species would experience a net benefit from wetland creation and enhancement, and restoration of tidal connection. These benefits include migratory stopover value and spring/summer nesting and roosting habitat for waterbirds and resident songbirds (including Belding's savannah sparrow).

4.2 Mitigation Considerations

- Work in potential nesting habitat should be scheduled outside of the nesting season (February 1 – August 31) where feasible. During the nesting season, conduct a survey to determine the presence or absence of nesting species prior to initiating construction in potential nesting habitat. If nesting birds are detected, appropriate avoidance and minimization measures shall be implemented.
- Pre-construction clearance surveys for light-footed Ridgway's rail and western snowy plover should be conducted prior to initiating construction in potential habitat.
- Conduct a take avoidance (pre-construction) survey of suitable burrowing owl habitat prior to initiating ground disturbance activities. Methodology for the take avoidance survey should follow guidelines contained in Appendix D of the CDFW *Staff Report on Burrowing Owl Mitigation* (CDFW 2012). If burrowing owl is present during project activities, avoidance and minimization, passive relocation and exclusion, reporting, and mitigation will be implemented, as appropriate. Avoid and minimize impacts to existing jurisdictional aquatic resources (wetlands), Otay River tributary.

- Salvage California boxthorn shrubs for relocation and/or collect propagules for use as a component of transition zone or Maritime Succulent Scrub upland areas adjacent parcels. Recommendations on using upland transition as creditable mitigation are described in TDI 2017.
- Salvage existing saltmarsh plants and/or collect propagules prior to impacts, where feasible, for reuse in the restoration area.
- Land use planning of Parcels A, B and C should consider compatibility with the resource goals and objectives of the mitigation bank and other regulations and the policies applicable to the site.
- Consider incorporating Maritime Succulent Scrub species in the design of coastal transition elements to provide buffer to the mitigation bank. Enhancement opportunities could benefit the following sensitive species: California boxthorn, western snowy plover, long-billed curlew, Belding's savannah sparrow, light-footed Ridgway's rail, and black-tailed jackrabbit, as well as several of the plant species in Table 3-5.

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APPENDIX A. SPECIES OBSERVED

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Plant Species Observed at Pond 20.

Scientific Name	Common Name	Sensitive Status
Allenrolphia occidentalis	Iodinebush	–
Amblyopappus pusillus	Pineapple Weed	–
Ambrosia psilostachya	Ragweed	–
Artemisia californica	California Sagebrush	–
Astragalus trichopodus var. *lonchus*	Santa Barbara Milkvetch	–
Atriplex canescens	Four-wing Saltbush	–
Atriplex rosea	Redscale	–
Atriplex semibaccata	Australian Saltbush	–
Baccharis sarothroides	Desertbroom Baccharis	–
Bassia hyssopifolia	Fivehook Bassia	–
Batis maritima	Saltwort	–
Bromus diandrus	Ripgut Brome	–
Bromus madritensis	Foxtail Brome	–
Camissoniopsis bistorta	California Sun Cup	–
Carpobrotus chilensis	Sea Fig	–
Carya illinoinensis	Pecan	–
Centaurea melitensis	Tocalote	–
Chenopodium album	Lamb's Quarters	–
Chenopodium californicum	California Goosefoot	–
Conyza canadensis	Canada Horseweed	–
Cylindropuntia prolifera	Coastal Cholla	–
Datura wrightii	Jimsonweed	–
Distichilis spicata	Saltgrass	–
Dittrichia graveolens	Stinkwort	–
Erodium cicutarium	Coastal Heron's Bill	–
Foeniculum vulgare	Sweet Fennel	–
Frankenia palmeri	Palmer's Frankenia	–
Glebionis coronaria	Crown Daisy	–
Gnaphalium californicum	California Everlasting	–
Heliotropium curassavicum	Chinese Parsley	–
Hirschfeldia incana	Wild Mustard	–
Hordeum murinum	Foxtail Barley	–
Isocoma menziesii	Menzies' Goldenbush	–
Lactuca serriola	Prickly Lettuce	–
Logfia gallica	Narrowleaf Cottonrose	–
Lycium californicum	California Boxthorn	CNPS 4.2
Malephora crocea	Coppery Mesembryanthemum	–
Malva parviflora	Cheeseweed Mallow	–
Marrubium vulgare	White Horehound	–
Melilotus indicus	Annual Yellow Sweetclover	–
Mesembryanthemum crystallinum	Ice Plant	–
Mesembryanthemum nodiflorum	Ice Plant	–
Nicotiana glauca	Tree Tobacco	–
Nitrophila occidentalis	Boraxweed	–
Opuntia littoralis	Coast Prickly Pear	–
Phoenix sp.	Palm tree	–
Phragmites australis	Common Reed	–
Phytolacca americana	Pokeberry	–

Plant Species Observed at Pond 20.

Scientific Name	Common Name	Sensitive Status
Raphanus sativus	Wild Radish	–
Ricinus communis	Castor Bean	–
Rumex crispus	Curly Dock	–
Salicornia subterminalis	Parish's Pickleweed	–
Salix lasiolepis	Arroyo Willow	–
Salsola tragus	Russian Thistle	–
Schinus molle	Peruvian Peppertree	–
Schinus terebinthifolius	Brazilian Pepper Tree	–
Schoenoplectus californicus	California bulrush	–
Sisymbrium sp.	London Rocket	–
Stephanomeria sp.	Wire Lettuce	–
Suaeda taxifolia	Woolly Seablite	–
Tamarix ramississima	Tamarisk	–

4: Plants of Limited Distribution - A Watch list (Includes Rare Plant Ranks 4.1, 4.2, 4.3)
The plants in this category are of limited distribution or infrequent throughout a broader area in California, and their vulnerability or susceptibility to threat appears low at this time. While we cannot call these plants “rare” from a statewide perspective, they are uncommon enough that their status should be monitored regularly. Should the degree of endangerment or rarity of a Rank 4 plant change, we will transfer it to a more appropriate rank or delete it from consideration.

Threat Ranks:
The CRPR use a decimal-style threat rank. The threat rank is an extension added onto the CRPR and designates the level of threats by a 1 to 3 ranking with 1 being the most threatened and 3 being the least threatened. Most CRPRs read as 1B.1, 1B.2, 1B.3, etc. Note that some Rank 3 plants do not have a threat code extension due to difficulty in ascertaining threats. Rank 1A and 2A plants also do not have threat code extensions since there are no known extant populations in California.

Invertebrate Species Observed at Pond 20.

Scientific Name	Common Name	Sensitive Status
Brephidium exilis	Western Pygmy-Blue	–
Vanessa cardui	Painted Lady	–

Reptile Species Observed at Pond 20.

Scientific Name	Common Name	Sensitive Status
Pituophis catenifer catenifer	Pacific Gopher Snake (dead)	–
Sceloporus occidentalis	Western Fence Lizard	–
Uta stansburiana elegans	Western Side-blotched Lizard	–

Mammal Species Observed at Pond 20.

Scientific Name	Common Name	Sensitive Status
Canis familiaris	Domestic Dog	–
Canis latrans clepticus	Coyote	–
Felis silvestris catus	Domestic Cat	–
Lepus californicus bennettii	San Diego Black-tailed Jackrabbit	Rank: G5T3T4 S3S4; Status: SSC
Odocoileus hemionus fuliginata	Mule Deer	–
Spermophilus beecheyi nudipes	California Ground Squirrel	–
Sylvilagus audubonii	Desert Cottontail	–
Thomomys bottae	Botta's Pocket Gopher	–

Bird Species Observed at Pond 20 during the 2017-2018 Surveys and the 2016-2017 San Diego Bay Avian Surveys.

Scientific Name	Common Name	Sensitive Status	Observed During:		
			2017-2018 Surveys	2016-2017 Bay Avian Surveys	
				Peaking Tide	Ebbing Tide
Actitis macularius	Spotted Sandpiper			X	X
Aechmophorus occidentalis occidentalis	Western Grebe				X
Anas americana	American Wigeon			X	X
Anas clypeata	Northern Shoveler			X	
Anas crecca carolinensis	Green-Winged Teal				X
Anas cyanoptera septentrionalium	Cinnamon Teal			X	X
Anas discors	Blue-Winged Teal			X	X
Anas platyrhynchos platyrhynchos	Mallard		X	X	X
Anas strepera strepera	Gadwall			X	X
Anthus rubescens pacificus	American Pipit			X	X
Ardea alba egretta	Great Egret	Rank: G5 S4; Status: CDF, LC			X
Ardea herodias wardi	Great Blue Heron	Rank: G5 S4; Status: CDF, LC			X
Athene cunicularia	Burrowing Owl	Rank: G4 S3; Status: BLM, SSC, LC, BCC	X		X
Aythya americana	Redhead	Rank: G5 S3S4; Status: SSC, LC		X	
Aythya sp.	Scaup Sp.			X	X
Bucephala albeola	Bufflehead				X
Buteo jamaicensis	Red-Tailed Hawk				X
Butorides virescens anthonyi	Green Heron				X
Calidris mauri	Western Sandpiper			X	
Calypte anna	Anna's Hummingbird			X	X
Carpodacus mexicanus frontalis	House Finch			X	X
Cathartes aura meridionalis	Turkey Vulture		X	X	X
Charadrius nivosus	Western Snowy Plover	Rank: G3T3 S2S3; Status: ST, SSC, RWL, BCC			X
Charadrius vociferus vociferus	Killdeer			X	X
Circus cyaneus hudsonius	Northern Harrier	Rank: G5 S3; Status: SSC, LC	X	X	X
Columba livia	Rock Pigeon				X
Corvus brachyrhynchos hesperis	American Crow		X	X	X
Corvus corax clarionensis	Common Raven			X	X
Dendroica petechia	Yellow Warbler			X	X
Egretta thula thula	Snowy Egret	Rank: G5 S4; Status: LC	X	X	X
Eremophila alpestris	Horned Lark	Rank: G5T4Q S4; Status: WL, LC		X	X
Falco sparverius sparverius	American Kestrel			X	X

Bird Species Observed at Pond 20 during the 2017-2018 Surveys and the 2016-2017 San Diego Bay Avian Surveys.

Scientific Name	Common Name	Sensitive Status	Observed During:		
			2017-2018 Surveys	2016-2017 Bay Avian Surveys	
				Peaking Tide	Ebbing Tide
Fulica americana americana	American Coot			X	X
Gelochelidon nilotica vanrossemi	Gull-Billed Tern	Rank: G5 S1; Status: SSC, LC, YWL, BCC			X
Geothlypis trichas	Common Yellowthroat			X	X
Himantopus mexicanus mexicanus	Black-Necked Stilt			X	X
Hirundo rustica erythrogaster	Barn Swallow				X
Hydroprogne caspia	Caspian Tern	Rank: G5 S4; Status: LC, BCC			X
Larus argentatus smithsonianus	Herring Gull				X
Larus delawarensis	Ring-Billed Gull			X	X
Larus occidentalis wymani	Western Gull			X	X
Limosa fedoa fedoa	Marbled Godwit		X		
Megaceryle alcyon	Belted Kingfisher				X
Melospiza melodia	Song Sparrow			X	X
Mimus polyglottos polyglottos	Northern Mockingbird		X	X	X
Multiple Species	Hummingbird Sp.			X	
Numenius americanus	Long-Billed Curlew	Rank: G5 S2; Status: WL, LC, YWL, BCC			X
Numenius phaeopus hudsonicus	Whimbrel	Status: BCC			X
Oxyura jamaicensis rubida	Ruddy Duck			X	X
Pandion haliaetus carolinensis	Osprey	Rank: G5 S4; Status: CDF, WL, LC			X
Passerculus sandwichensis beldingi	Belding's Savannah Sparrow	Rank: G5T3 S3; Status: SE		X	X
Petrochelidon pyrrhonota tachina	Cliff Swallow				X
Phalacrocorax auritus	Double-Crested Cormorant	Rank: G5 S4; Status: WL, LC		X	X
Pluvialis squatarola	Black-Bellied Plover			X	
Podiceps nigricollis californicus	Eared Grebe			X	
Recurvirostra americana	American Avocet			X	X
Riparia riparia	Bank Swallow		X		
Rynchops niger niger	Black Skimmer	Rank: G5 S2; Status: SSC, LC, YWL, BCC			X
Sayornis nigricans semiatra	Black Phoebe			X	X
Sayornis saya saya	Say's Phoebe				X
Stelgidopteryx serripennis	Northern Rough-Winged Swallow				X
Sterna forsteri	Forster's Tern		X		X
Sturnella neglecta	Western Meadowlark			X	X
Sturnus vulgaris vulgaris	European Starling				X

Bird Species Observed at Pond 20 during the 2017-2018 Surveys and the 2016-2017 San Diego Bay Avian Surveys.

Scientific Name	Common Name	Sensitive Status	Observed During:		
			2017-2018 Surveys	2016-2017 Bay Avian Surveys	
				Peaking Tide	Ebbing Tide
Tachycineta bicolor	Tree Swallow				X
Thalasseus elegans	Elegant Tern	Rank: G2 S2; Status: WL, NT			X
Tringa melanoleuca	Greater Yellowlegs			X	X
Tringa semipalmata inornatus	Willet			X	X
Zenaida macroura marginella	Mourning Dove			X	X
Zonotrichia leucophrys	White-Crowned Sparrow			X	X

Rank Codes

Global Ranking:

Critically Imperiled (**G1**); Imperiled (**G2**); Vulnerable (**G3**); Apparently Secure (**G4**); Secure (**G5**).

T = Rank applies to a subspecies or variety under the G rank.

Q = Taxonomic questions.

State Ranking:

Critically Imperiled (**S1**); Imperiled (**S2**); Vulnerable (**S3**); Apparently Secure (**S4**); Secure (**S5**).

Uncertainty about the rank of an element is expressed in two major ways:
By expressing the ranks as a range of values: e.g., S2S3 means the rank is somewhere between S2 and S3.
By adding a "?" to the rank: e.g., S2? This represents more certainty than S2S3, but less certainty than S2.

Status Codes

State Endangered (**SE**); State Threatened (**ST**)

Bureau of Land Management – Sensitive (**BLM**); California Department of Fish & Wildlife: Species of Special Concern (**SSC**), Watch List (**WL**); California Dept. of Forestry & Fire Protection–Sensitive (**CDF**); IUCN: Least Concern (**LC**), Near Threatened (**NT**); North American Bird Conservation Initiative: Red Watch List (**RWL**), Yellow Watch List (**YWL**); U.S. Fish & Wildlife Service Birds of Conservation Concern (**BCC**).

Source: CDFW 2018b.

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APPENDIX B. PLANT COVER ESTIMATES FOR VEGETATION POLYGONS

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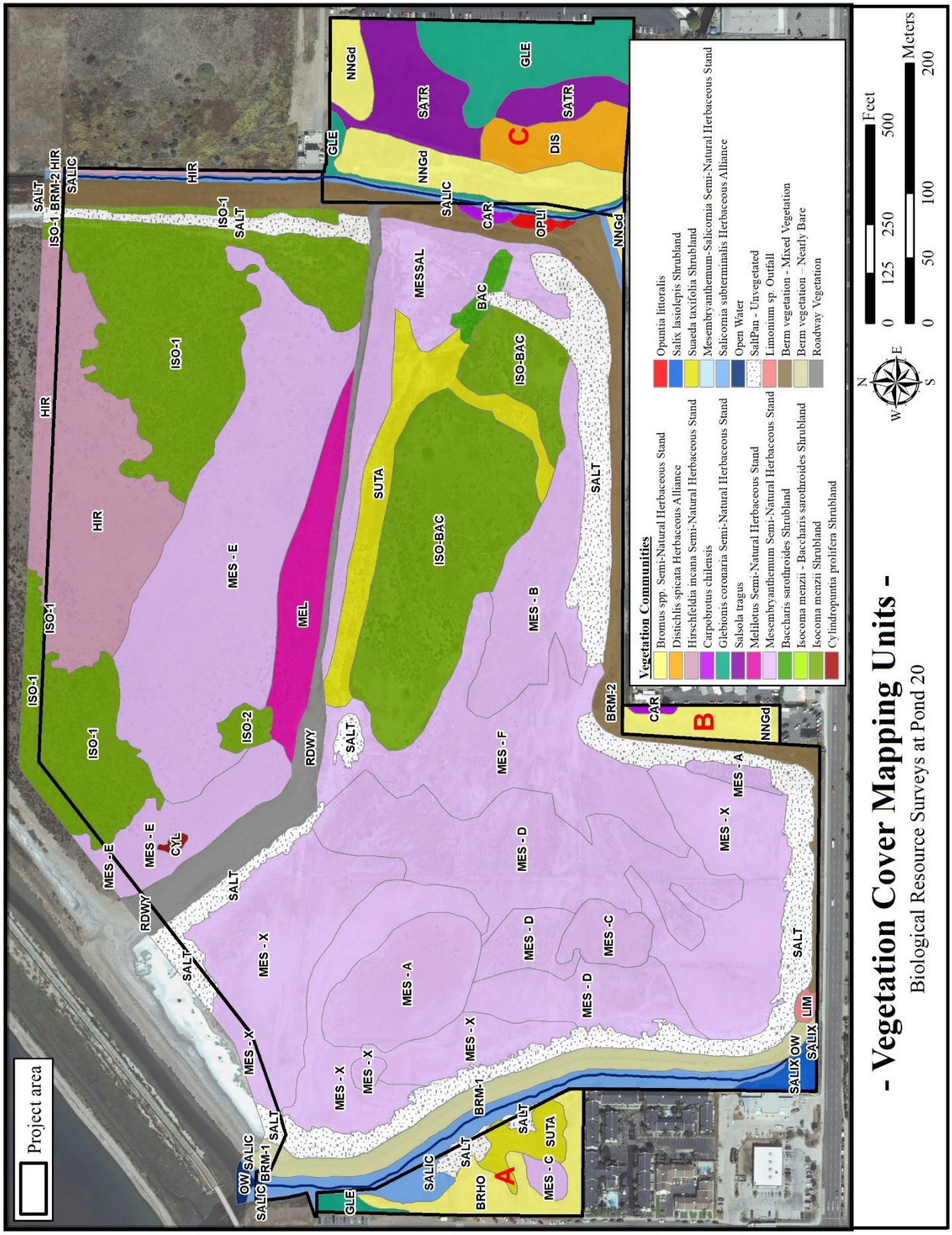

**Refer to Table 3-1 for the results of the vegetation communities mapping for the four survey areas.*

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Polygon ID—BAC

***Baccharis sarothroides* Shrubland Alliance/*Mesembryanthemum* spp. Semi-Natural Herbaceous Stands**

Scientific Name	Common Name	Estimated Cover
Baccharis sarothroides	Desertbroom Baccharis	30%
Mesembryanthemum spp.[1]	Ice Plant	10%
Sceloporus occidentalis	Menzies' Goldenbush	5%

[1] *M. nodiflorum* and *M. crystallinum*.

Polygon ID—BRHO

***Bromus* spp.-*Hordeum murinum* Semi-Natural Herbaceous Stand—Annual Brome Grasslands**

Scientific Name	Common Name	Estimated Cover
Hordeum murinum	Foxtail Barley	45%
Bromus spp.[1]	Brome	25%
Marrubium vulgare	Horehound	5%

[1] *B. diandrus* and *B. madritensis*.

Polygon ID—BRM-1: Berm Vegetation—Nearly Bare

***Mesembryanthemum* spp. Semi-Natural Herbaceous Stands**

Scientific Name	Common Name	Estimated Cover
Mesembryanthemum spp.[1]	Ice Plant	1%

[1] *M. nodiflorum* and *M. crystallinum*.

Polygon ID—BRM-2: Berm Mixed Native and Non-Native Vegetation

Polygon ID—CAR

***Carpobrotus chilensis* Semi-Natural Herbaceous Stand—Ice Plant Mats**

Scientific Name	Common Name	Estimated Cover
Carpobrotus chilensis	Sea Fig	100%

Polygon ID—CYL

***Cylindropuntia prolifera* Shrubland Alliance/*Mesembryanthemum* spp. Semi-Natural Herbaceous Stands**

Scientific Name	Common Name	Estimated Cover
Mesembryanthemum spp.[1]	Ice Plant	30%
Cylindropuntia prolifera	Coastal Cholla	15%
Salicornia subterminalis	Parish's Pickleweed	8%

[1] *M. nodiflorum* and *M. crystallinum*.

Polygon ID—DIS

***Distichlis spicata* Semi-Natural Herbaceous Stands—Salt Grass Flats**

Scientific Name	Common Name	Estimated Cover
Distichlis spicata	Saltgrass	30%
Erodium sp.	Filaree	20%
Salsola tragus	Russian Thistle	15%
Atriplex semibaccata	Australian Saltbush	5%

Polygon is regularly mowed for weed control.

Polygon ID—GLE

***Glebionis coronaria* Herbaceous Alliance—Salt Grass Flats**

Scientific Name	Common Name	Estimated Cover
Glebionis coronaria	Crown Daisy	50%
Salsola tragus	Russian Thistle	25%
Raphanus sativus	Wild Radish	10%

Polygon is regularly mowed for weed control.

Polygon ID—HIR

***Hirschfeldia incana* Semi-Natural Herbaceous Stands**

Scientific Name	Common Name	Estimated Cover
Hirschfeldia incana	Wild Mustard	45%
Mesembryanthemum spp.[1]	Ice Plant	15%
Astragalus trichopodus	Santa Barbara Milkvetch	5%

[1] *M. nodiflorum* and *M. crystallinum*.

Polygon ID—ISO-1

***Isocoma menziesii-Cylindropuntia prolifera* Shrubland/*Mesembryanthemum* sp.**

Scientific Name	Common Name	Estimated Cover
Isocoma menziesii	Menzies' Goldenbush	30%
Cylindropuntia prolifera	Coastal Cholla	25%
Mesembryanthemum spp.[1]	Ice Plant	15%
Gnaphalium californicum	California Everlasting	1%
Astragalus trichopodus	Santa Barbara Milkvetch	1%
Stephanomeria sp.	Wire Lettuce	1%

[1] *M. nodiflorum* and *M. crystallinum*.

Polygon ID—ISO-BAC

***Isocoma menziesii-Baccharis sarothroides* Shrubland**

Scientific Name	Common Name	Estimated Cover
Isocoma menziesii	Menzies' Goldenbush	55%
Baccharis sarothroides	Desertbroom Baccharis	20%
Atriplex rosea	Redscale	20%
Salsola tragus	Russian Thistle	5%
Camissonia sp.	Suncup	5%
Melilotus indica (dry)	Annual Yellow Sweetclover	2%

Polygon ID—LIM: Berm Mixed Vegetation Including Limonium sp.

Polygon ID—MEL

***Melilotus* sp. Semi-Natural Herbaceous Stand/*Mesembryanthemum* spp. Semi-Natural Herbaceous Stands**

Scientific Name	Common Name	Estimated Cover
Melilotus sp. (dry)	Sweetclover	50%
Mesembryanthemum spp.[1]	Ice Plant	30%
Atriplex rosea	Redscale	15%
Salicornia subterminalis	Parish's Pickleweed	1%

[1] *M. nodiflorum* and *M. crystallinum*.

Polygon ID—MES-A

***Mesembryanthemum* spp. Semi-Natural Herbaceous Stands**

Scientific Name	Common Name	Estimated Cover
Mesembryanthemum spp.[1]	Ice Plant	45%
Suaeda taxifolia	Woolly Seablite	8%
Salsola tragus	Russian Thistle	1%
Glebionis coronaria	Crown Daisy	1%

[1] *M. nodiflorum* and *M. crystallinum*.

Polygon ID—MES-B

***Mesembryanthemum* spp. Semi-Natural Herbaceous Stands**

Scientific Name	Common Name	Estimated Cover
Mesembryanthemum spp.[1]	Ice Plant	40%
Atriplex rosea	Redscale	25%
Conyza canadensis	Canada Horseweed	3%
Centaurea melitensis	Tocalote	3%
Salsola tragus	Russian Thistle	2%
Salicornia subterminalis	Parish's Pickleweed	1%

[1] *M. nodiflorum* and *M. crystallinum*.

Polygon ID—MES-C

***Mesembryanthemum* spp. Semi-Natural Herbaceous Stands**

Scientific Name	Common Name	Estimated Cover
Mesembryanthemum spp.[1]	Ice Plant	80%
Sisymbrium sp.	London Rocket	20%
Atriplex rosea	Redscale	2%
Lactuca serriola	Prickly Lettuce	2%

[1] *M. nodiflorum* and *M. crystallinum*.

Polygon ID—MES-D

***Mesembryanthemum* spp. Semi-Natural Herbaceous Stands**

Scientific Name	Common Name	Estimated Cover
Mesembryanthemum spp.[1]	Ice Plant	75%
Suaeda taxifolia	Woolly Seablite	1%
Atriplex rosea	Redscale	1%
Sisymbrium sp.	London Rocket	1%

[1] *M. nodiflorum* and *M. crystallinum*.

Polygon ID—MES-E

***Mesembryanthemum* spp. Semi-Natural Herbaceous Stands**

Scientific Name	Common Name	Estimated Cover
Mesembryanthemum spp.[1]	Ice Plant	60%
Atriplex rosea	Redscale	25%
Baccharis sarothroides	Desertbroom Baccharis	1%

[1] *M. nodiflorum* and *M. crystallinum*.

Polygon ID—MES-F

***Mesembryanthemum* spp. Semi-Natural Herbaceous Stands**

Scientific Name	Common Name	Estimated Cover
Mesembryanthemum spp.[1]	Ice Plant	60%
Melilotus indica (dry)	Annual Yellow Sweetclover	20%
Salicornia subterminalis	Parish's Pickleweed	8%

[1] *M. nodiflorum* and *M. crystallinum*.

Polygon ID— MES-X

***Mesembryanthemum* spp. Semi-Natural Herbaceous Stands**

Scientific Name	Common Name	Estimated Cover
Mesembryanthemum spp.[1]	Ice Plant	5-40%

[1] *M. nodiflorum* and *M. crystallinum*.

Polygon ID—MESSAL

***Mesembryanthemum* spp.-*Salicornia* Semi-Natural Herbaceous Stands**

Scientific Name	Common Name	Estimated Cover
Mesembryanthemum spp.[1]	Ice Plant	50%
Salicornia subterminalis	Parish's Pickleweed	20%

[1] *M. nodiflorum* and *M. crystallinum*.

Polygon ID—NNGd

***Bromus* spp. Semi-Natural Herbaceous Stands—Annual Brome Grasslands, Disturbed**

Scientific Name	Common Name	Estimated Cover
Bromus spp.[1]	Brome	65%
Atriplex semibaccata	Australian Saltbush	10%
Erodium sp.	Filaree	5%
Glebionis coronaria	Crown Daisy	5%

[1] *B. diandrus* and *B. madritensis*.

Polygon is regularly mowed for weed control.

Polygon ID—OPLI

***Opuntia littoralis* Shrubland Alliance—Coast Prickly Pear Scrub**

Scientific Name	Common Name	Estimated Cover
Opuntia littoralis	Coast Prickly Pear	90%

Polygon ID—RDWY

***Mesembryanthemum* spp. Semi-Natural Herbaceous Stands**

Scientific Name	Common Name	Estimated Cover
Mesembryanthemum spp.[1]	Ice Plant	5%
Conyza canadensis	Canada Horseweed	2%

[1] *M. nodiflorum* and *M. crystallinum*.

Polygon ID—SALIC

***Salicornia subterminalis* Semi-Natural Herbaceous Stands**

Scientific Name	Common Name	Estimated Cover
Salicornia subterminalis	Parish's Pickleweed	30%
Mesembryanthemum spp.[1]	Ice Plant	20%
Atriplex rosea	Redscale	10%

[1] *M. nodiflorum* and *M. crystallinum*.

Polygon ID—SALIX

***Salix lasiolepis* Shrubland/*Conyza canadensis* Semi-Natural Herbaceous Stand**

Scientific Name	Common Name	Estimated Cover
Conyza canadensis	Canada Horseweed	40%
Salix lasiolepis	Arroyo Willow	10%
Schinus terebinthifolius	Brazilian Pepper Tree	5%
Ricinus communis	Castor Bean	5%
Nicotiana glauca	Tree Tobacco	2%
Carya illinoinensis	Pecan	2%
Mesembryanthemum spp.[1]	Ice Plant	2%
Stephanomeria sp.	Wire Lettuce	1%
Rumex crispus	Curly Dock	1%
Foeniculum vulgare	Sweet Fennel	1%
Glebionis coronaria	Crown Daisy	1%

[1] *M. nodiflorum* and *M. crystallinum*.

Polygon ID—SALT: Salt Panne Unvegetated

Polygon ID—SATR

***Salsola tragus* Semi-Natural Herbaceous Stand—Russian Thistle Fields**

Scientific Name	Common Name	Estimated Cover
Salsola tragus	Russian Thistle	35%
Erodium sp.	Filaree	10%
Distichlis spicata	Saltgrass	<1%

Polygon ID—SUAEDA

***Suaeda taxifolia* Shrubland**

Scientific Name	Common Name	Estimated Cover
Suaeda taxifolia	Woolly Seablite	50%
Atriplex rosea	Redscale	20%
Mesembryanthemum spp.[1]	Ice Plant	15%
Salicornia subterminalis	Parish's Pickleweed	1%

[1] *M. nodiflorum* and *M. crystallinum*.

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APPENDIX C. GEOREFERENCED PHOTO SUMMARY

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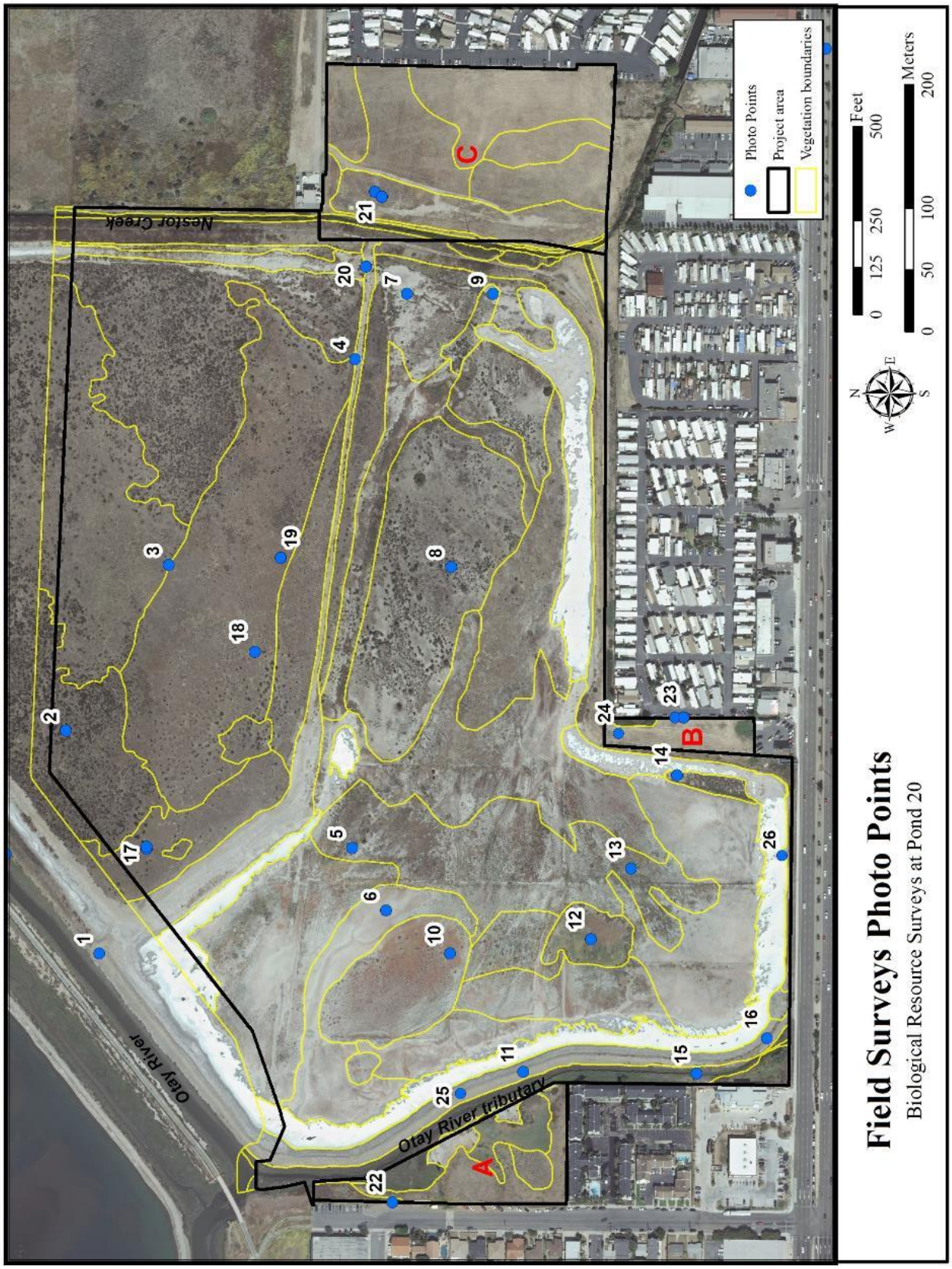
Field Surveys Photo Points
Biological Resource Surveys at Pond 20
Photo Points
Project area
Vegetation boundaries
Feet
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Meters
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Otay River
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Photo Point 1: View of Pond 20 from Northern Berm, Looking South-West.

Photo Point 1: View of Pond 20 from Northern Berm, Looking South-East.

Photo Point 2: *Isocoma menziesii* Shrubland—Menzie's Goldenbush Scrub.

Photo Point 3: *Mesembryanthemum* Semi-Natural Herbaceous Stand—Ice Plant Mats, Looking South.

Photo Point 3: *Hirschfeldia incana* Semi-Natural Herbaceous Stand—Upland Mustards, Looking North.

Photo Point 4: Looking West Along Old Road/Railway.

Photo Point 4: Looking South-West.

Photo Point 5: Looking North.

Photo Point 5: Looking South-West.

Photo Point 6: Looking South-West.

Photo Point 6: Looking North.

Photo Point 7: Looking South.

Photo Point 7: Looking East.

Photo Point 7: Looking West.

Photo Point 8: Looking West.

Photo Point 8: Looking East.

Photo Point 9: Looking West.

Photo Point 9: Looking South.

Photo Point 10: Looking East.

Photo Point 10: Looking South.

Photo Point 11: Looking West Across Otay River Tributary to Parcel A.

Photo Point 11: Looking West Across Otay River Tributary at South End of Parcel A.

Photo Point 12: Looking West.

Photo Point 12: Looking North.

Photo Point 12: Looking South.

Photo Point 13: Looking East.

Photo Point 13: Looking South.

Photo Point 14: Looking North.

Photo Point 14: Looking South.

Photo Point 15: Looking North along the Otay River Tributary.

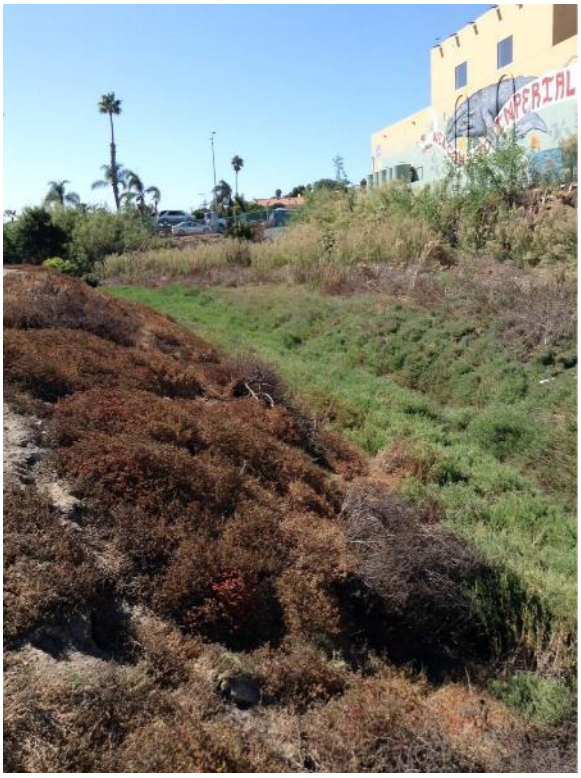

Photo Point 15: Looking South along the Otay River Tributary.

Photo Point 16: South End of the Otay River Tributary.

Photo Point 16: Willow and Pepper Trees at South End of the Otay River Tributary.

Photo Point 16: Willow and Pepper Trees at South End of the Otay River Tributary.

Photo Point 17: Looking South.

Photo Point 18: Looking East.

Photo Point 19: *Astragalus trichopodus* Patch.

Photo Point 20: Parcel C from Top of Pond 20 Berm, Looking East.

Photo Point 20: Parcel C from Top of Pond 20 Berm, across Nestor Creek, Looking South.

Photo Point 21: Parcel C, Looking East.

Photo Point 21: Parcel C, Looking South.

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Photo Point 23: Parcel B, Looking Southwest.

Photo Point 23: Parcel B, Looking West.

Photo Point 23: Parcel B, Looking North.

Photo Point 24: Parcel B Looking South.

Photo Point 25: Parcel A, Looking North from Pond 20 Berm Across Otay River Tributary.

Photo Point 25: Parcel A, Middle Section, with Osprey Nesting Platform (Mid-Photo).

Photo Point 25: Parcel A, South End, Across Otay River Tributary.

Photo Point 25: Otay River Tributary from Pond 20 Berm including Parcel A.

Photo Point 26: Southern Bank of Pond 20, with *Limonium* sp. Patches.

Appendix B. Jurisdictional Delineation Report Wetland Mitigation Bank at Pond 20 and Port Master Plan Amendment – Parcel A – Prepared by HDR Engineering, Inc., August 2020

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Final Jurisdictional Delineation Report

Wetland Mitigation Bank at Pond 20 and Port Master Plan Amendment – Parcel A

San Diego, California

August 2020

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Appendix A. Survey Photographs

Appendix B. Wetland Determination Data Forms

Abbreviations and Acronyms

CCC	California Coastal Commission
CDFW	California Department of Fish and Wildlife
CFR	Code of Federal Regulations
CWA	Clean Water Act
District	San Diego Unified Port District
EPA	Environmental Protection Agency
INRMP	Integrated Natural Resources Management Plan
NRCS	Natural Resources Conservation Service
OHWM	ordinary high water mark
Port	Port of San Diego
RWQCB	Regional Water Quality Control Board
SWRCB	State Water Resources Control Board
U.S.	United States
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
WOS	Waters of the State
WOUS	Waters of the United States

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1 Introduction

This report summarizes preliminary findings of the United States Army Corps of Engineers (USACE) Regional Water Quality Control Board (RWQCB), California Department of Fish and Wildlife (CDFW) and California Coastal Commission (CCC) jurisdiction for the Wetland Mitigation Bank at Pond 20 and Port Master Plan Amendment – Parcel A (proposed project). HDR biologists examined the project site and a surrounding buffer area to determine the limits of: (1) USACE jurisdiction pursuant to Section 404 of the Clean Water Act (CWA); (2) RWQCB jurisdiction pursuant to Section 401 of the CWA and the Porter-Cologne Water Quality Control Act; (3) CDFW jurisdiction pursuant to Section 1600 of the California Fish and Game Code; and (4) CCC jurisdiction pursuant to the California Coastal Zone Management Act.

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2 Project Description

2.1 Project Location

The 2.67 acre Parcel A site (delineation study area) occurs along the western boundary of the project site. The project site is located within the Imperial Beach United States Geological Survey 7.5-minute quadrangle and is entirely within the coastal zone. Parcel A is part of a larger project study area that consists of approximately 95 acres of San Diego Unified Port District (District) owned and federally-managed land located in the City of San Diego, east of the City of Imperial Beach, and south of the confluences of Nestor Creek, Otay River, and San Diego Bay (Figure 1).

There is no official address for the study area; however, it is located immediately north of Palm Avenue (State Route 75), south of the San Diego Bay National Wildlife Refuge South San Diego Bay Unit managed by United States (U.S.) Fish and Wildlife Service, east of 13th Street, and west of Otay Valley Regional Park. Interstate 5 is located approximately 1 mile east of the project site (Figure 1).

2.2 Project Description

The study area is undergoing environmental analysis as part of a larger plan of development (proposed project), see Figure 2. The proposed project has two primary components, which include "project-level" and "program-level" environmental evaluation, as detailed below.

1. **Project-Level Components – Wetland Mitigation Bank at Pond 20**

   The District is proposing the creation of a wetland mitigation bank within a portion of District-owned property, which was historically used as a salt evaporation pond (Bank Parcel). This includes associated construction and long-term operation and maintenance activities of the mitigation bank within a portion of the Bank Parcel (Bank Site). The creation of the wetland mitigation bank, as well as the incorporation and land use designation of the wetland mitigation bank into the Port Master Plan (PMP), is evaluated at a "project level" in the environmental analysis.

2. **Program-Level Components – Parcels A, B and C Port Master Plan Amendment**

   As part of the PMP Amendment, the District is proposing to incorporate Parcels A, B, and C into the District's PMP and assign land use designations. Parcels A, B, and C are under CCC jurisdiction and are District-owned property; however, currently these areas are not formally incorporated into the PMP. Parcels A, B, and C would be assigned a "commercial recreation" and/or "wetlands" designation. Incorporation of Parcels A, B, and C is evaluated at a "program level."

   The program level analysis of Parcels A (delineation study area), B, and C evaluates the worst case development scenario. No construction is proposed on these parcels at this time; however, the analysis considers reasonable development assumptions as follows:

   - Parcel A – maximum commercial development of 25,000 square feet and 2 stories
   - Parcel B – maximum commercial development of 5,000 square feet and 2 stories
   - Parcel C – maximum commercial development of 75,000 square feet and 2 stories

Figure 1. Region and Vicinity

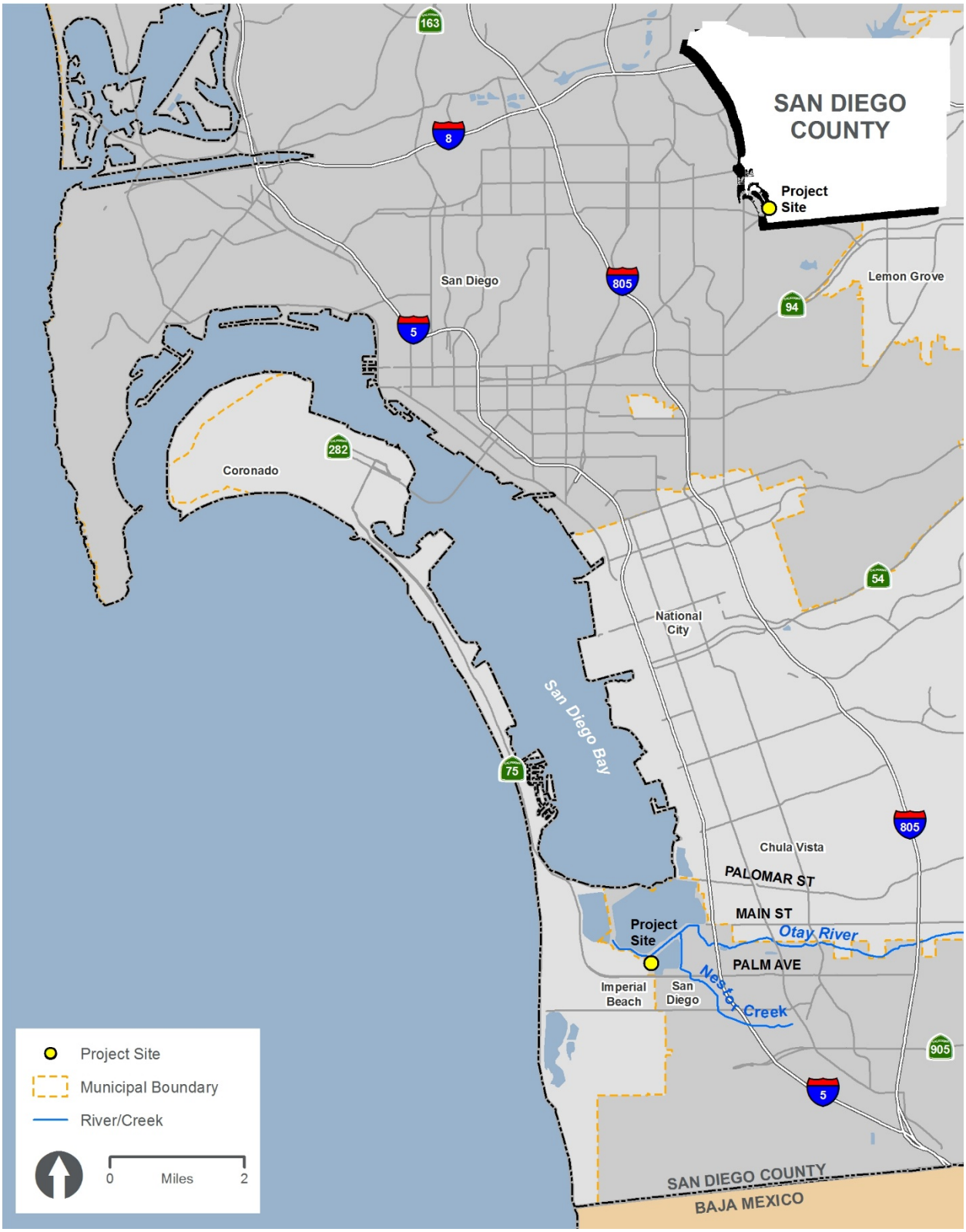

Figure 2. Project Site Characteristics

3 Regulatory Setting

3.1 United States Army Corps of Engineers

Section 404 of the CWA establishes a program for the USACE to regulate the discharge of dredge and fill material into Waters of the U.S. (WOUS), including wetlands. Activities regulated under this program include fills for development, water resource projects (e.g., dams and levees), infrastructure development (e.g., highways and airports), and conversion of wetlands to uplands for farming and forestry. Either an individual Section 404 permit or authorization to use an existing USACE nationwide permit must be obtained if any portion of an activity will result in dredge or fill impacts to a river or stream that has been determined to be jurisdictional under Section 404 of the CWA. When applying for a permit, a company or organization must show that they would either avoid wetlands where practicable, minimize wetland impacts, or provide compensation for any unavoidable destruction of wetlands.

As of June 22, 2020, the term "waters of the U.S." is defined in the USACE regulations at 33 Code of Federal Regulations (CFR) Part 328.3(a) as:

(a) Jurisdictional waters. For purposes of the Clean Water Act, 33 U.S.C. 1251 et seq. and its implementing regulations, subject to the exclusions in paragraph (b) of this section, the term "waters of the United States" means:

> (1) The territorial seas, and waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters which are subject to the ebb and flow of the tide;
>
> (2) Tributaries;
>
> (3) Lakes and ponds, and impoundments of jurisdictional waters; and
>
> (4) Adjacent wetlands.

(b) Non-jurisdictional waters. The following are not "waters of the United States":

> (1) Waters or water features that are not identified in paragraph (a)(1), (2), (3), or (4) of this section;
>
> (2) Groundwater, including groundwater drained through subsurface drainage systems;
>
> (3) Ephemeral features, including ephemeral streams, swales, gullies, rills, and pools;
>
> (4) Diffuse stormwater run-off and directional sheet flow over upland;
>
> (5) Ditches that are not waters identified in paragraph (a)(1) or (2) of this section, and those portions of ditches constructed in waters identified in paragraph (a)(4) of this section that do not satisfy the conditions of paragraph (c)(1) of this section;
>
> (6) Prior converted cropland;
>
> (7) Artificially irrigated areas, including fields flooded for agricultural production, that would revert to upland should application of irrigation water to that area cease;
>
> (8) Artificial lakes and ponds, including water storage reservoirs and farm, irrigation, stock watering, and log cleaning ponds, constructed or excavated in upland or in non-jurisdictional

waters, so long as those artificial lakes and ponds are not impoundments of jurisdictional waters that meet the conditions of paragraph (c)(6) of this section;

(9) Water-filled depressions constructed or excavated in upland or in non-jurisdictional waters incidental to mining or construction activity, and pits excavated in upland or in non-jurisdictional waters for the purpose of obtaining fill, sand, or gravel;

(10) Stormwater control features constructed or excavated in upland or in non-jurisdictional waters to convey, treat, infiltrate, or store stormwater run-off;

(11) Groundwater recharge, water reuse, and wastewater recycling structures, including detention, retention, and infiltration basins and ponds, constructed or excavated in upland or in non-jurisdictional waters; and

(12) Waste treatment systems.

The term *ephemeral* means surface water flowing or pooling only in direct response to precipitation (*e.g.,* rain or snow fall). The term *intermittent* means surface water flowing continuously during certain times of the year and more than in direct response to precipitation (*e.g.,* seasonally when the groundwater table is elevated or when snowpack melts). The term *perennial* means surface water flowing continuously year-round. Per USACE Regulatory Guidance Letter 08-02, applicants can elect to request and obtain an Approved Jurisdictional Determination, he or she can also decline to request an Approved Jurisdictional Determination, and instead obtain a Corps individual or general permit authorization based on either a Preliminary Jurisdictional Determination, or, in appropriate circumstances (such as authorizations by non-reporting nationwide general permits), no Jurisdictional Determination whatsoever. By definition, a Preliminary Jurisdictional Determination can only be used to determine that wetlands or other water bodies that exist on a particular site "may be" jurisdictional waters of the United States. A Preliminary Jurisdictional Determination by definition cannot be used to determine either that there are no wetlands or other water bodies on a site at all (i.e., that there are no aquatic resources on the site and the entire site is comprised of uplands), or that there are no jurisdictional wetlands or other water bodies on a site, or that only a portion of the wetlands or waterbodies on a site are jurisdictional. The use of a Preliminary Jurisdictional Determination may expedite the permitting process when compared to the Approved Jurisdictional Determination process which requires the Jurisdictional Determination to be coordinated with EPA.

The limits of USACE jurisdiction in nontidal waters extends to the ordinary high water mark (OHWM), which is defined at 33 CFR Part 328.3(c) as:

> …that line on the shore established by the fluctuations of water and indicated by physical characteristics such as [a] clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Per the regulatory program CWA guidance to implement the U.S. Supreme Court decision for the Rapanos and Carabell Cases (USACE 2008a), USACE typically does not assert jurisdiction over nontidal drainage and irrigation ditches that are excavated on dry land, drain adjacent upland areas, and do not convey relatively permanent flow.

3.1.1 Wetlands

The term "wetlands" (a subset of WOUS) is defined at 33 CFR 328.3(b) as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support…a prevalence of vegetation typically adapted for life in saturated soil conditions." In 1987, USACE published a manual to guide its field personnel in determining jurisdictional wetland boundaries followed by the Arid West Supplement in 2008 (USACE 2008). The methodology set forth in the 1987 Wetland Delineation Manual and Arid West Supplement generally requires that in order to be considered a wetland, the vegetation, soils, and hydrology of an area exhibit at least minimal hydric characteristics. While the manual provides great detail in methodology and allows for varying special conditions, a wetland should normally meet each of the following three criteria:

1. The plant community must be determined to be hydrophytic based on: (1) the dominance test applied using the 50/20 rule[1]; or (2) where the vegetation fails the dominance test and wetland hydrology and hydric soils are present, vegetation is determined to be hydrophytic using the Prevalence Index test[2] based upon the indicator status (i.e., rated as facultative or wetter in the 2016 National List of Plant Species that Occur in Wetlands [Lichvar et al. 2016]).
2. Soils must exhibit physical and/or chemical characteristics indicative of permanent or periodic saturation (e.g., redoximorphic features with a matrix of low chroma indicating a relatively consistent fluctuation between aerobic and anaerobic conditions).
3. Hydrologic characteristics must indicate that the ground is saturated to within 12 inches of the surface for a sufficient period to cause: (1) the formation of hydric soils; and (2) establishment of a hydrophytic plant community. A positive test for wetland hydrology is based on the presence of one primary or two secondary indicators.

3.1.2 Tidal Waters

For tidal waters, the limit of Section 404 jurisdiction extends to the high tide line, which means the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency, but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds, such as those accompanying hurricanes or other intense storms (33 Code of Federal Regulations 328.3(d) and 328.4(b)).

Within the study area, the Mean Higher-High Water elevation is based on the San Diego Bay tidal datum[2].

3.1.3 Rivers and Harbors Act

Pursuant to Section 10 of the Rivers and Harbors Act, USACE regulates alteration of any navigable WOUS, including the excavation or filling of any such water. Pursuant to the Rivers and Harbors Act,

[1] If a particular species accounts for more than 50 percent of the total coverage of vegetation in the stratum, or for at least 20 percent of the total coverage in the stratum which the species was found, that species is defined as dominant.

[2] A Prevalence Index is calculated using wetland indicator status and relative abundance for each vascular plant species present.

the limits of USACE jurisdiction in tidal waters extends to the mean high water line and the high tide line[3] pursuant to the CWA.

3.2 Regional Water Quality Control Board

In California, the State Water Resources Control Board (SWRCB) and nine RWQCB regulate activities within state and federal waters under Section 401 of the CWA and the Porter-Cologne Water Quality Control Act. The SWRCB is responsible for setting statewide policy, coordinating and supporting RWQCB efforts, and reviewing petitions that contest RWQCB actions. Each RWQCB is semi-autonomous and has the authority to set water quality standards, issue Section 401 certifications and waste discharge requirements, and take enforcement action for projects occurring within its boundary. However, when a project crosses multiple RWQCB jurisdictional boundaries, the SWRCB becomes the regulating agency and issues project permits.

3.2.1 Section 401 of the Clean Water Act

A federal permit or license cannot be issued that may result in a discharge to WOUS unless certification under Section 401 of the CWA is granted or waived by the EPA, state, or tribe where the discharge would originate (EPA 2010). Within the proposed study area, the ability to grant, grant with conditions, deny, or waive certification falls to the San Diego RWQCB.

Pursuant to Section 401 of the CWA, before USACE issues a Section 404 permit, applicants must apply for and receive a Section 401 water quality certification or waiver, as applicable. Under Section 401 of the CWA, all activities regulated at the federal level by USACE are also regulated at the state level. Therefore, state jurisdiction usually includes all waters or tributaries to waters that are determined to be WOUS and, similar to WOUS, are typically delineated at the OHWM.

3.2.2 Porter Cologne Act

RWQCB also regulates discharge of waste to Waters of the State (WOS), pursuant to California's Porter-Cologne Act, enacted in 1969, which provides the legal basis for water quality regulation within California. Under this Act, the Water Code defines WOS broadly to include "any surface water or groundwater, including saline waters, within the boundaries of the state.

3.2.3 State Water Resource Control Board's 2019 Wetland and Riparian Area Protection Policy

The SWRCB adopted a statewide definition of rules to protect wetlands and other environmentally sensitive waterways throughout the state on April 2, 2019. These rules define what SWRCB considers a wetland and include a framework for determining if a feature that meets the SWRCB wetland definition is a "water of the state," subject to regulation. Second, the rules clarify requirements for permit applications to discharge dredged or fill material to any water of the state.

The SWRCB defines an area as wetland as follows:

[3] San Diego Bay Station Datum Mean Higher-High Water = 5.72; NAVD88 0.43 https://tidesandcurrents.noaa.gov/datums.html?id=9410170. Setting NAVD88 to 0 to get NAVD88 = 5.72-0.43 = 5.29' NAVD88

> An area is wetland if, under normal circumstances, (1) the area has continuous or recurrent saturation of the upper substrate caused by groundwater, or shallow surface water, or both; (2) the duration of such saturation is sufficient to cause anaerobic conditions in the upper substrate; and (3) the area's vegetation is dominated by hydrophytes or the area lacks vegetation. (SWRCB 2019).

SWRCB considers the following wetlands (as determined using methodology in the USACE 1987 Wetland Delineation Manual) as WOS:

1. Natural wetlands
2. Wetlands created by modification of a surface water of the state
3. Artificial wetlands that meet any of the following criteria:
    a. Approved by an agency as compensatory mitigation for impacts to other WOS, except where the approving agency explicitly identifies the mitigation as being of limited duration
    b. Specifically identified in a water quality control plan as a wetland or other water of the state
    c. Resulted from historic human activity, is not subject to ongoing operation and maintenance, and has become a relatively permanent part of the natural landscape
    d. Greater than or equal to one acre in size, unless the artificial wetland was constructed, and is currently used and maintained, primarily for one or more of the following purposes (i.e., the following artificial wetlands are not WOS unless they also satisfy the criteria set forth in 2, 3a, or 3b):
        i. Industrial or municipal wastewater treatment or disposal
        ii. Settling of sediment
        iii. Detention, retention, infiltration, or treatment of stormwater runoff and other pollutants or runoff subject to regulation under a municipal, construction, or industrial stormwater permitting program
        iv. Treatment of surface waters
        v. Agricultural crop irrigation or stock watering
        vi. Fire suppression
        vii. Industrial processing or cooling
        viii. Active surface mining – even if the site is managed for interim wetlands functions and values
        ix. Log storage
        x. Treatment, storage, or distribution of recycled water
        xi. Maximizing groundwater recharge (this does not include wetlands that have incidental groundwater recharge benefits)
        xii. Fields flooded for rice growing

All artificial wetlands that are less than an acre in size and do not satisfy the criteria set forth in numbers 2, 3.a, 3.b, or 3.c are not WOS. If an aquatic feature meets the wetland definition, the burden is on the applicant to demonstrate that the wetland is not a water of the state.

3.3 California Department of Fish and Wildlife

The State of California regulates water resources under Section 1600-1616 of the California Fish and Game Code. Section 1602 states:

> "An entity may not substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake."

CDFW jurisdiction includes ephemeral, intermittent, and perennial watercourses and extends to the top of the bank of a stream or lake, if unvegetated, or to the limit of the adjacent riparian habitat located contiguous to the watercourse if the stream or lake is vegetated.

3.4 California Coastal Commission

The project is located entirely within the coastal zone; therefore, is subject to the requirements of the Coastal Zone Management Act. The CCC regulates development on the California coast. For the purposes of regulation, tidelands are defined as the lands lying between the lines of mean high tide and mean low tide, and wetlands are defined as "lands within the coastal zone that may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, or fens." In addition to the more traditional fresh- and saltwater marshes, the California Coastal Zone also contains a number of riparian areas, most often occurring as corridors along streams and rivers.

CCC regulations (14 California Code of Regulations Section 13577) establish a "one parameter definition" that only requires evidence of a single parameter to establish wetland conditions:

> Wetland shall be defined as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deep-water habitats.

In addition to regulating aquatic resources, the CCC regulates environmentally sensitive upland habitat areas that occur within the coastal zone. The California Coastal Act provides a definition of "environmentally sensitive habitat area" as: "Any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments" (Section 30107.5).

The California Coastal Act requires each local government with property in the coastal zone to prepare and adopt a Local Coastal Plan, which has more stringent environmental protections than a general plan. Once certified by the CCC, a Local Coastal Plan is used as the basis for local government approval of proposed developments. The Port's Master Plan is considered their Local Coastal Plan (NAVFAC 2013).

3.5 Local Regulations

3.5.1 Port of San Diego and United States Navy Integrated Natural Resources Management Plan

The Port of San Diego (Port) is a public benefit corporation and special government entity. Created in 1963 by an act of the California legislature, the Port manages San Diego harbor and administers the public lands along San Diego Bay. It is responsible for the protection and enhancement of 2,508 acres of tideland and 2,860 acres of water. It has operated without tax dollars since 1970 and has been responsible for substantial financial contributions to public improvements in its five member cities—Chula Vista, Coronado, Imperial Beach, National City, and San Diego. The Port's mission is to, while protecting the Tidelands Trust resources, balance economic benefits, community services, environmental stewardship, and public safety on behalf of the citizens of California.

The Integrated Natural Resources Management Plan (INRMP) is a long-term, collaborative strategy for managing the bay's natural resources, and the primary means by which the U.S. Navy and Port jointly plan natural resources work in San Diego Bay (NAVFAC Southwest and Port of San Diego 2013). The INRMP became a joint initiative with the Port in recognition of the need for partnership in stewardship and compliance with environmental laws, while supporting the ability of the Navy and the Port to accomplish their mission-related work. Required by the Sikes Act Improvement Act of 1997 for the U.S. Department of Defense, it is the primary means by which natural resources compliance and stewardship priorities are set and funding requirements are determined. A commitment to implement priority projects, as funding permits, comes with the signatures in the front of the INRMP.

In 2002, the first INRMP for San Diego Bay was signed by the Commander, Navy Region Southwest, the Chair of the Board of Port Commissioners, the Regional Administrator of National Marine Fisheries Service, the Field Supervisor of U.S. Fish and Wildlife Service, and the Regional Director of California Department of Fish and Game. The 2013 revision continues many of that plan's objectives and strategies, while expanding coverage on water quality, sediment quality, sustainable development, and other topics.

The INRMP defines wetlands and other aquatic resources as follows:

Wetlands: Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions, such as swamps, marshes, and bogs.

Wetlands (designated): A wetland with one or more of the following attributes: 1) the land periodically supports water plants (hydrophytes), 2) the substrate is dominated by un-drained hydric soil, or 3) the soil is periodically saturated or covered by shallow water.

Riparian Areas: Areas closely related to or bordering rivers, streams, lakes, arroyos, playas, ravine bottoms, etc. Dominated by woody vegetation and non-tidal water regimes.

Mean High Tide Line: A line in 1918 showing the area of the bay to be 21 to 22 mi2 (54 to 57 km2).

Coastal Zone: An area specifically identified by a coastal state in its approved Coastal Zone Management Plan. It is an area of coastal waters and adjacent shorelines strongly influenced by each other, including islands, transitional and intertidal areas, salt marshes, wetlands, and beaches. Excluded from the coastal zone are lands solely subject to or held in trust by the federal government, its officers, or agents.

4 Methodology

4.1 Literature Review

The following literature and materials were reviewed both prior to conducting delineation fieldwork and in the process of determining jurisdictional status of features identified in the field:

- Current and historical aerial photographs of the survey area to determine the potential locations of WOUS and other riparian areas (Google Earth 2019; NETR Online 2019)
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil mapping data (USDA NRCS 2017)
- United States Geological Survey 7.5-minute Imperial Beach, California (United States Geological Survey 1996), Figure 3.
- U.S. Fish and Wildlife Service National Wetlands Inventory data to identify areas mapped as wetland features (U.S. Fish and Wildlife Service 2019), Figure 4.
- Biological Resources Survey Report, Pond 20, San Diego, California. August 2018. Prepared by Tierra data, Inc. (Tierra Data 2018).

4.2 Field Investigation

A field survey of the study area was conducted by HDR biologist Allegra Engleson on May 14, 2019. Surveys consisted of directly inspecting the entire study area and to identify and map field indicators of potentially jurisdictional drainage features and wetland areas. Weather conditions during delineation field work were conducive for surveying with generally clear skies. Photographs of the study area are located in Appendix A. All accessible areas within the study area were investigated on foot.

WOUS were delineated according to the methods outlined in the USACE Wetland Delineation Manual (Environmental Laboratory 1987), the Interim Regional Supplement to the USACE Wetland Delineation Manual: Arid West Region (USACE 2008a), and A Field Guide to the Identification of the Ordinary High Water Mark in the Arid West Region of the Western United States (USACE 2008b). In addition, the *2016 Arid West Regional Wetland Plant List* was referenced when conducting the delineation (Lichvar et al. 2016). Potential RWQCB jurisdiction was mapped to the same limits as USACE jurisdiction. The study area does not support wetlands that meet the RWQCB definition of wetland but not the USACE definition of wetland, as detailed in Sections 3.1 and 3.2. CDFW jurisdiction was mapped to the top of bank and/or the edge of riparian vegetation. CCC wetlands were mapped to the boundaries described in Section 3.4.

Where jurisdictional limits of wetland features exhibited distinct boundaries based on distinct topographic or vegetation changes, limits were digitized based on those visible boundaries on an overlay of 1-foot contours and 1:2,400-scale 2.5-inch ground resolution 2019 aerial maps. All other boundaries, photographs and wetland soil pit location data were collected using an iPad with an external global positioning system receiver. Drainage data points were then connected, and the acreage was calculated by averaging the OHWM widths between data points using ArcGIS software during post-processing. In general, the OHWM was indicated by a break in the bank slope, scouring, or destruction of vegetation. Other data recorded included bank height and morphology, substrate type, and all vegetation within and adjacent to the streambed.

Five soil pits were dug within the study area in an area exhibiting potential wetland conditions, including hydrophytic vegetation and/or hydrology. Soils were analyzed using the *NRCS Field Indicators of Hydric Soils in the U.S.*, Version 8.0, and the *List of California Hydric Soils* (USDA NRCS 2016a and 2016b) and a Munsell Soil Color Chart (Munsell 2013). Results of wetland assessments and test soil pits can be found in Section 6 and Figure 7. Photographs of delineated drainages are located in Appendix A and soil pit data sheets can be found in Appendix B.

Pursuant to the CWA, the landward limits of USACE jurisdiction in portions of the study area subject to tidal flow and where wetland was absent was based upon the Mean Higher – High Water elevation of 5.3 feet (NAVD 88)[4].

Common plant species observed were identified by visual characteristics and morphology in the field, while less common or otherwise unknown plant species were identified later with the aid of plant keys. Taxonomic nomenclature for plants follows the *Jepson eFlora* (Jepson Flora Project 2019).

[4] San Diego Bay Station Datum Mean Higher-High Water = 5.72; NAVD88 0.43 https://tidesandcurrents.noaa.gov/datums.html?id=9410170. Setting NAVD88 to 0 to get NAVD88 = 5.72-0.43 = 5.29' NAVD88

Figure 3. United States Geological Survey Topographic Map

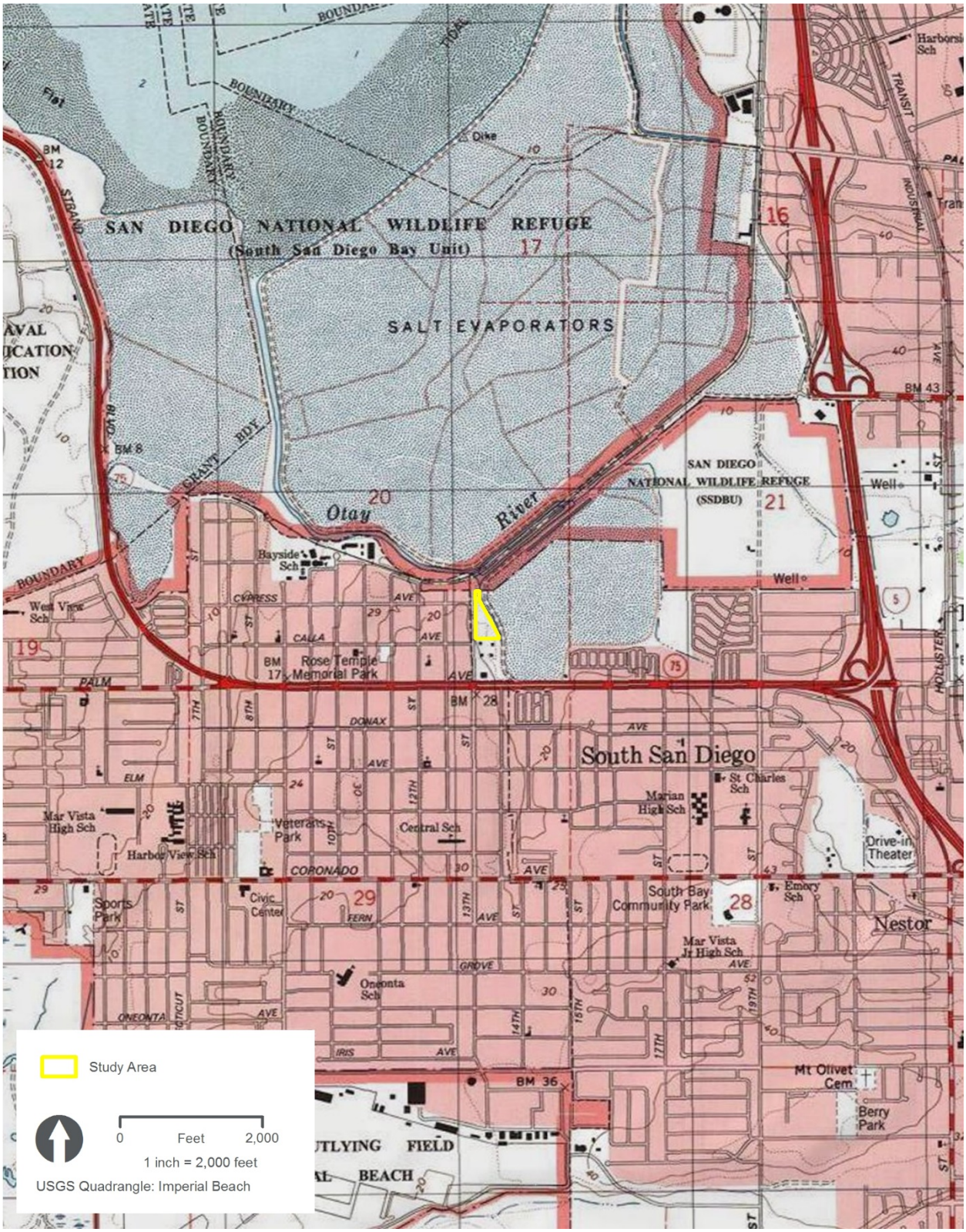

Figure 4. National Wetlands Inventory Map

5 Results

5.1 Environmental Setting

The 2.67 acre study area is bound to the west by 13th street, to the south by residential condominiums, to the east by Otay River tributary and Pond 20, and to the north by the Otay River. Historically, the site was part of a large saltmarsh wetland associated with San Diego Bay (Tierra Data 2018). A recent wetland delineation report (Great Ecology 2017) summarized the history of Pond 20, as follows.

> The salt evaporation and extraction industry has operated in south San Diego Bay since the early 1870s and included the interior of Pond 20. In the 1890s, the Western Salt Company acquired most of the salt producing entities and lands in South San Diego Bay.… In 1916, the Savage Dam failed causing the release of the Lower Otay Lake to the lower watershed including Pond 20. The dam failure washed away several berms within the Saltworks, including those of Pond 20, and deposited substantial volumes of sediment. Pond 20 and the rest of the Saltworks were restored and operational by 1918, with water entering Pond 20 via siphons. However, the additional sediment caused the interior elevation of Pond 20 to increase to a height that, along with its southern location and distance from the other ponds, made it logistically and economically inefficient within the Saltworks operation. Western Salt attempted to reincorporate Pond 20 again into Saltworks operations in the 1960s using a new system of electric pumps to facilitate the movement of water to the other ponds in the network. This effort ultimately failed, and Pond 20 and the surrounding area as a whole have since remained vacant.

5.1.1 Climate

The Imperial Beach area has a Mediterranean climate, characterized by warm, dry summers and cool, moist winters. Average annual precipitation for the city of Imperial Beach is 10.4 inches and most of the annual rainfall occurs November through March (U.S. Climate Data 2019).

5.1.2 General Vegetation

The study area supports five distinct vegetation alliances and one additional cover type (Figure 5). Parcel A is comprised mostly of non-native grassland (1.1 acres), with small stands (approximately one-half acre or less each) of ice plant and crown daisy (*Glebionis coronaria*). It also contains areas of pickleweed (*Arthrocnemum subterminalis*) (0.34 acre) and seablite (*Suaeda taxifolia*) (0.54 acre) (Tierra Data 2018).

5.1.3 Soils

Generally, the site consists of clay loam soils. Onsite soils were identified using the *NRCS Web Soil Survey* (USDA NRCS 2017). The survey area supports one soil series, Huerhuero-Urban land complex, 2 to 9 percent slopes (Figure 6, Soils Map). This series consists of moderately well drained clay loam soils. Runoff is very high. These soils consist of calcareous alluvium derived from sedimentary rock and range from non-saline to very slightly saline. Huerhuero soils occur from 0 to 1,000 feet above mean sea level. This soil is not listed as a hydric soil within San Diego County (USDA 2016a).

Figure 5. Vegetation

Figure 6. Soils

5.1.4 Hydrology

The study area occurs within the Otay Hydrologic Unit (HU 910.00), which is located within the larger San Diego Bay Watershed Management Area. The following description is adapted from a Surface Water Ambient Monitoring Program Report on the Otay Hydrologic Unit (SCCWRP 2007):

> At 154 mi^2, the Otay Hydrologic Unit is one of the smaller watersheds in the San Diego Region. Located entirely within San Diego County, the Otay River drains the north-facing slopes of the San Ysidro Mountains (also known as the Otay Mountains), and the southerly slopes of the Jamul Mountains. White Mountain near Dulzura forms the interior boundary. The outlet of the Otay River is in the southernmost portion of San Diego Bay, which drains into the Pacific Ocean.

The study area abuts a tributary to the Otay River (Tributary A) (Figure 7). The Otay River tributary (Tributary A) appears to move water from Municipal Separate Storm Sewer System drainage and Palm Avenue to the Otay River during high stormwater flows (Great Ecology 2017). Hydrology indicators in the southwest corner of the site indicate that high-water flows pass through the non-wetland area adjacent to the Municipal Separate Storm Sewer System drainage area during storm events (Great Ecology 2017). Additionally, the study area receives input from a culvert outlet under 13th Street (Tributary B).

A previously noted, portions of the study area are subject to tidal influence. All areas below the Mean Higher-High Water elevation of 5.3 feet (NAVD 88) are subject to USACE jurisdiction in addition to any wetlands above that elevation.

In addition, the majority of the study area occurs with Federal Emergency Management Agency designated flood zones X and AE (Figure 8). Zone X is defined as "area of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods," and AE zones are defined as "high risk areas" where "the base floodplain where base flood elevations are provided[5]."

5.2 Waters of the United States

In total, the survey area includes 0.564 acres of WOUS, of which 0.347 acres consist of wetland. Maps depicting the location of WOUS are included as Figure 7, and photographs are included as Appendix A. Table 1 summarizes the total jurisdiction associated with each feature identified onsite.

Table 1. Summary of Waters of the U.S. Occurring within the Parcel A Study Area

Section	Total Non-Wetland WOUS (acres)	Total Wetland WOUS (acres)	Total WOUS (acres)
Tributary A	0.205	0.347	0.552
Tributary B	0.012	0.000	0.012
Total	0.217	0.347	0.564

Notes:
WOUS=Waters of the United States

[5] Definitions of FEMA Flood Zone Designations. https://snmapmod.snco.us/fmm/document/fema-flood-zone-definitions.pdf. Viewed June 2019.

5.2.1 Traditional Navigable Waters

The un-named tributary (Tributary A) flows directly into the Otay River, which outlets into the San Diego Bay, which outlets to the Pacific Ocean, a traditionally navigable water.

Figure 7. United States Army Corps of Engineers Delineation Results

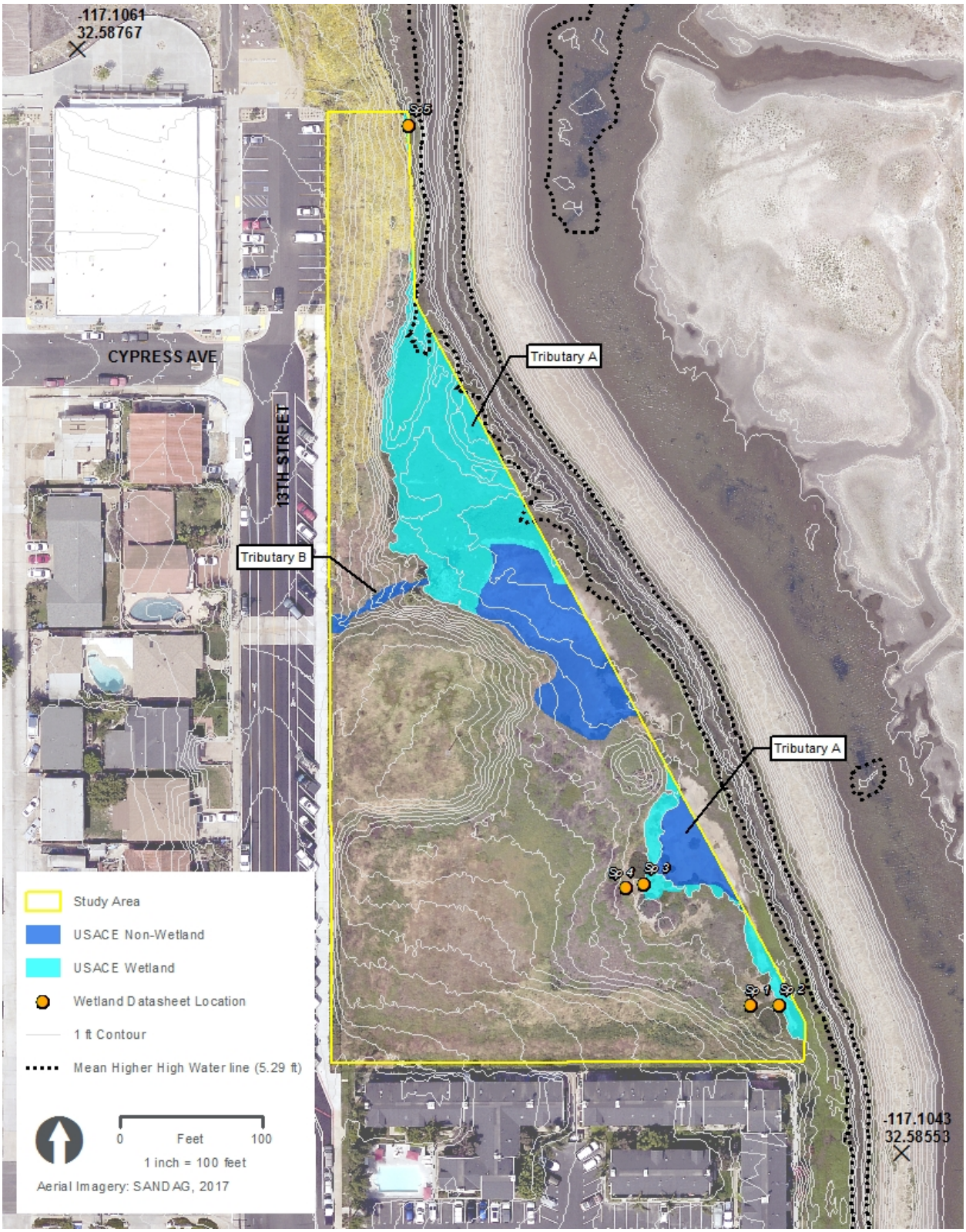

Figure 8. Federal Emergency Management Agency 100 Year Floodplain/National Wetland Inventory Map

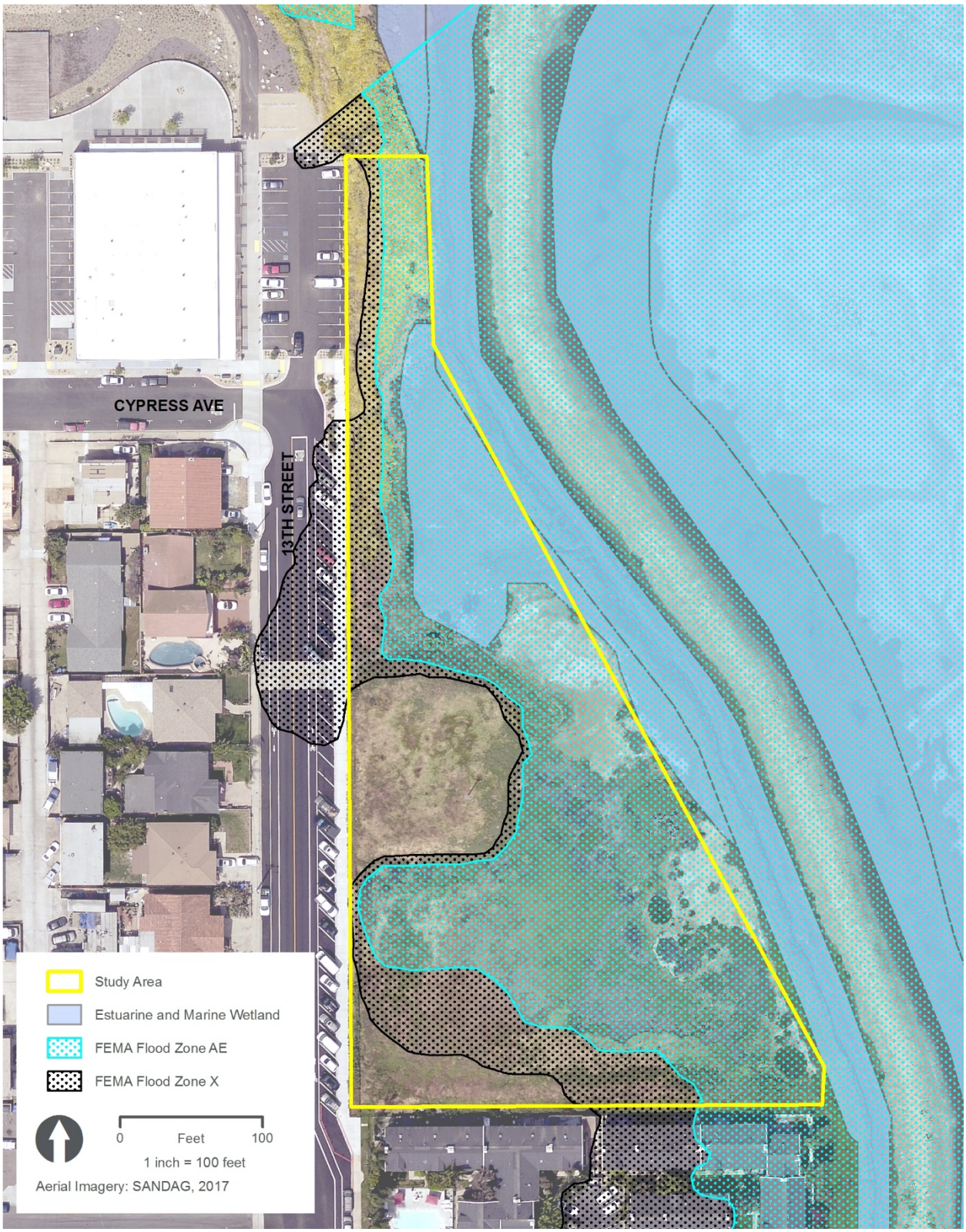

Table 2. Soil Pit Summaries

Soil Pit Name	Pit Location	Dominant Vegetation Indicator Status[1] (OBL/FACW/ FAC/FACU/UPL)	Soil Color and Redox	Hydrologic Indicators	Meets USACE Wetland Criteria			Jurisdictional Wetland (Y/N)
					Hydrophytic Vegetation	Hydric Soil Indicators	Hydrology	
SP- 1	Floodplain terrace	FACW	10YR 4/3, 10YR 3/4 Redox present in matrix and pore linings	B11, C3	☒	☐	☒	No
SP- 2	Floodplain terrace	OBL, FACW	10YR 3/2, Prominent redox present in matrix and pore linings (F6)	F6	☒	☒	☒	Yes
SP- 3	Floodplain terrace	OBL, FACW	7.5YR 3/2 Prominent redox located in matrix and pore linings (F6)	B11, C3	☒	☒	☒	Yes
SP- 4	Hillslope adjacent to floodplain	FACU	10YR 3/3, 7.5YR 3/2 Redox present in matrix and pore linings	B6	☐	☐	☒	No
SP- 5	Floodplain terrace	OBL, FACW	10YR 3/2, 10YR 3/3 Prominent redox located in matrix and pore linings (F6)	C3	☒	☒	☒	Yes

Notes:

[1] Indicator status: Obligate (OBL), Facultative Wetland (FACW), Facultative (FAC) Facultative Upland (FACU) and Upland(UPL) (USACE http://wetland-plants.usace.army.mil/nwpl_static/v33/home/home.html)

5.2.2 Drainage Descriptions

Tributary A

An un-named tributary to the Otay River (Tributary A) occurs adjacent to but outside of the study area and along the eastern boundary of Parcel A. The feature originates offsite at a Municipal Separate Storm Sewer System culvert outlet under Palm Avenue and flows north into the Otay River (Figure 7; Appendix A, Photograph 1). Although the active channel occurs outside of the study area, Parcel A includes the active floodplain for Tributary A. In general, the floodplain supports *Salicornia* Herbaceous Alliance, *Suaeda taxifolia* Shrubland, and Salt Pond Bottom – Unvegetated[6] with non-native weedy habitat occurring in the adjacent uplands (Figure 5; Appendix A). Five soil test pits were dug within the floodplain and in the upland transition zone to identify wetland boundaries (Figure 7; Table 2**,** Soil Pit Summaries; Appendix A; Appendix B). Hydric soils were found generally within 7-8 foot contours. The Tributary A floodplain supports both wetland and non-wetland WOUS.

Tributary B

Tributary B originates at a culvert outlet under 13th Street and continues east, where it drains into the Tributary A floodplain (Figure 7 and Figure 9; Appendix A, Photographs 8-10). The feature is supported entirely by urban runoff/stormwater flows and is not part of an existing natural drainage. The channel exhibits a 3-8 foot wide OHWM and an incised, unvegetated medium-sized cobble channel. The channel becomes a swale after it passes among several Mexican fan palms (*Washingtonia robusta*) and joins the Tributary A floodplain. Tributary B supports only non-wetland WOUS.

5.3 Waters Regulated by Regional Water Quality Control Board

For this project, WOS, as defined by the SWRCB's 2019 Wetland and Riparian Area Protection Policy, are equivalent to WOUS. In total, the survey area includes 0.564 acres of WOUS/WOS regulated by RWQCB, of which 0.347 acres consist of wetland. Maps depicting the location of WOUS are included as Figure 7, and photographs of each are included as Appendix A. Table 1 summarizes the total jurisdiction associated with each feature identified onsite.

5.4 California Department of Fish and Wildlife Streambed

It is standard practice for CDFW to exert jurisdiction over riparian vegetation where it occurs in the 100-year floodplain. Therefore, the *Suaeda taxifolia* Scrub located within the floodplain of Tributary A has been included as CDFW jurisdictional riparian vegetation. Approximately 1.084 acre of CDFW regulated streambed, associated Tributary A and Tributary B, occurs within the study area (Table 3). CDFW jurisdiction extends beyond the OHWM to the top of bank and includes 0.848-acre of riparian habitat and 0.235-acre of unvegetated streambed (Figure 7).

[6] Vegetation mapping taken from *Biological Resources Survey Report – Pond 20, San Diego, California.* August 2018. (Tierra Data, Inc. 2018)

Table 3. Summary of CDFW jurisdiction occurring within Parcel A

Section	CDFW Riparian (acres)	CDFW Unvegetated Streambed (acres)	Total CDFW Jurisdiction (acres)
Tributary A	0.848	0.217	1.066
Tributary B	0.000	0.018	0.018
Total	**0.848**	**0.235**	**1.084**

Notes:
CDFW=California Department of Fish and Wildlife

5.5 California Coastal Commission Wetlands

The coastal zone fully encompasses the study area. Therefore, all USACE wetland and non-wetland waters are subject to CCC jurisdiction (Table 4; Figure 9). As discussed previously, the criteria used to define CCC wetlands requires that only one wetland criterion be met. Consequently, within the study area, a portion of *Suaeda taxifolia* shrubland that does not meet USACE wetland criteria is subject to CCC jurisdiction as wetland (Figure 7). In addition, CCC wetlands extend beyond the OHWM to the top of bank for Tributary B. CCC wetlands in the study area total 1.084 acre.

Table 4. Summary of California Coastal Commission Wetlands occurring within Parcel A

Section	Total CCC Wetlands[1] (acres)
Tributary A	1.066
Tributary B	0.018
Total	1.084

Notes:
[1] CCC wetlands require that only one wetland criterion be met.
CCC=California Coastal Commission

5.6 Wetland Resources as Defined by the Integrated Natural Resources Management Plan

The study area supports aquatic features subject to INRMP wetland policies, see Section 3.5, Local Regulations, for definitions of aquatic features. The INRMP's definition of aquatic features generally follow the one-parameter criteria equivalent to the CCC's one-parameter criteria (Table 3).

Figure 9. California Department of Fish and Wildlife/California Coastal Commission Delineation Results

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6 Conclusions

Approximately 0.564 acre of WOUS, of which 0.347 acre consist of wetland, subject to USACE/RWQCB/CCC jurisdiction; 1.084 acre of unvegetated streambed, subject to CDFW jurisdiction; and 1.084 acre of one-parameter wetland, subject to CCC jurisdiction, occur within the study area (Table 1, Table 3 and Table 4). Approximately 1.084 acre of aquatic features subject to INRMP wetland policies occur within the study area.

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7 List of Preparers

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Appendix A. Survey Photographs

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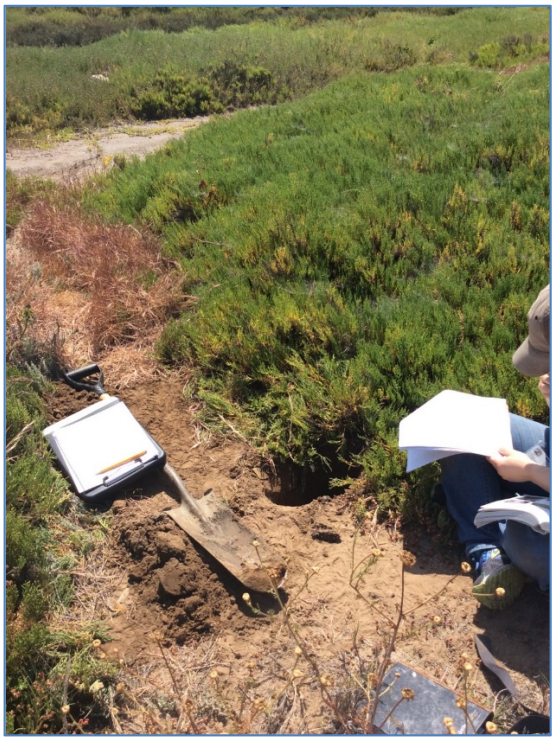
Appendix A - Survey Photographs

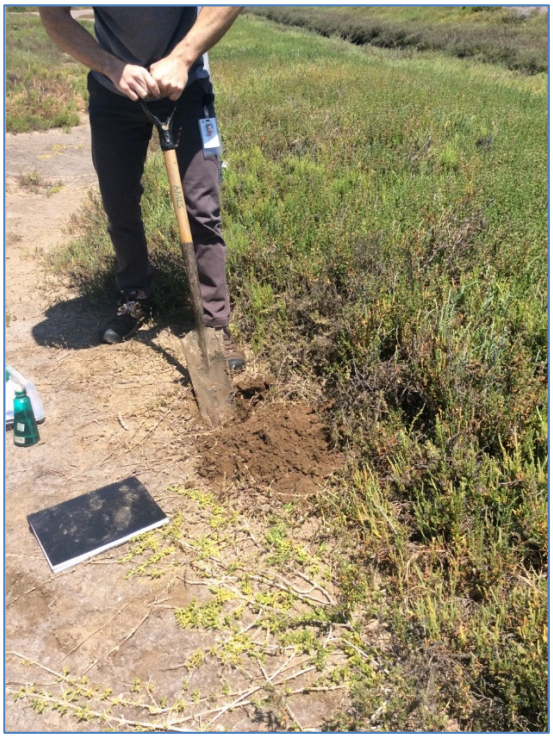
Photograph 1. View looking north from the bike path bridge (located offsite) of the Otay River and Tributary A confluence. Parcel A occurs to the right of the photograph and Pond 20 on the left of the photograph.

Photograph 2. View looking north towards bike path bridge/Otay River. Salt Pond Bottom - Unvegetated in foreground, *Salicornia* Herbaceous Alliance in background.

Photograph 3. View looking south from Soil Pit 5. Tributary A to the left, *Salicornia* Herbaceous Alliance along the streambanks with abrupt transition to upland *Glebionis coronaria* Semi-Natural Herbaceous Stand.



Photograph 4. Soil Pit 1, view looking east toward Tributary A.



Photograph 5. Soil Pit 2, view looking north with Tributary A in the background/right of photo.

Photograph 6. Soil Pit 3. View looking east towards Tributary A.

Photograph 7. Soil Pit 4, view looking east toward Tributary A.

Photograph 8. Tributary B culvert outlet at 13th Street. View facing west looking upstream.

Photograph 9. Tributary B, view looking east downstream. Floodplain for Tributary A / *Salicornia* Herbaceous Alliance in the background.

Photograph 10. Terminus of Tributary B at edge of Tributary A floodplain.

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Appendix B. Wetland Determination Data Forms

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: POND 20 - PARCEL A City/County: Imperial Beach / SD County Sampling Date: 5/14/19

Applicant/Owner: POSD State: CA Sampling Point: SP-1

Investigator(s): AE, Megan Emidy, Brent Easst Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Floodplain terrace Local relief (concave, convex, none): convex Slope (%): 0.5

Subregion (LRR): C Lat: 32.5858175 Long: -117.1046148 Datum: NAD 83

Soil Map Unit Name: Huerhuero - urban land complex 2-9% Slopes NWI classification: NONE

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		

Herb Stratum (Plot size: 5x5)			
1. Arthrocnemum subterminale	50	Y	FACW
2. Cressa truxillensis	5	N	FACW
3. Mesembryanthemum nodiflorum	5	N	FACU
4. Dead grass(?) looks like distichlis ↳ Digitaria?	20		
5.			
6.			
7.			
8.			
	80 = Total Cover		

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust Ø

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: SP-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	10yr 4/3	99	5yr 3/4	1	C	M	Silty Clay loam	
3-12	10yr 3/4	60	10yr 3/2	20	C	M		
			7.5yr 4/6	20	C	M/PL	Silty Clay loam	

3-12

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- X Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): >12"

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): >12"

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: POND 20, PARCel A City/County: IB, SD COUNTY Sampling Date: 5/14/15
Applicant/Owner: POSD State: CA Sampling Point: SP2
Investigator(s): AE, BE Section, Township, Range: _____
Landform (hillslope, terrace, etc.): Floodplane Local relief (concave, convex, none): NONE Slope (%): 0
Subregion (LRR): C Lat: 32.58581799 Long: -117.1045494 Datum: NAD 83
Soil Map Unit Name: Huerhuero-urban land complex 2-9% slopes NWI classification: NONE
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		

Herb Stratum (Plot size: 5x5)			
1. SAR PAC	20	Y	OBL
2. arthrochemum subterminale	15	Y	FACW
3. Distichlis littoralis	15	Y	OBL
4. BAtis maritima	10	N	OBL
5. FRANKENIA	30	Y	FACW
6.			
7.			
8.			
	90 = Total Cover		

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	_____	x 1 = _____
FACW species	_____	x 2 = _____
FAC species	_____	x 3 = _____
FACU species	_____	x 4 = _____
UPL species	_____	x 5 = _____
Column Totals:	_____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- X Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: SP-2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16	10yr 3/2	60	2.5yr 4/6	30	C	M, PL	Clay loam	
			2.5y 3/1	20	C	M		
			5yr 4/6	15	C	M		redox is prominent
			7.5yr 6/2	5	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- X Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >16"

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >16"

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Pond 20, Parcel A City/County: Imperial beach / SD County Sampling Date: 5/14/19

Applicant/Owner: POSD State: CA Sampling Point: SP-3

Investigator(s): AE, BE Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Floodplain terrace Local relief (concave, convex, none): none Slope (%): 0.5

Subregion (LRR): C Lat: 32.58605395 Long: -117.1048525 Datum: NAD 83

Soil Map Unit Name: Huerhuero-urban land complex 2-9% slopes NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		

Herb Stratum (Plot size: 5x5)			
1. Arthrochemum subterminale	30	Y	OBL
2. Mesembryanthemum nodiflorum	80	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
	50 = Total Cover		

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust Ø

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	_____	x 1 = _____
FACW species	_____	x 2 = _____
FAC species	_____	x 3 = _____
FACU species	_____	x 4 = _____
UPL species	_____	x 5 = _____
Column Totals:	_____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: SP 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-16	7.5yr 3/2	55	7.5yr 4/6	25	C	M, PL	Silty clay loam	
			2.5y 3/2	20	C	M		
								Redox is prominent

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- X Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): >16"

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): >16"

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: POND 20, PARCEL A City/County: IB / SD COUNTY Sampling Date: 5/14/19

Applicant/Owner: POSD State: CA Sampling Point: SP-4

Investigator(s): AE, BE Section, Township, Range: _____

Landform (hillslope, terrace, etc.): hillslope adj to floodplain Local relief (concave, convex, none): NONE Slope (%): 0.5%

Subregion (LRR): C Lat: 32.586046 11 Long: -117.1048956 Datum: NAD 83

Soil Map Unit Name: Huerhuero - urban land complex 2-9% slopes NWI classification: NONE

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		

Herb Stratum (Plot size: _____)			
1. Mesembryanthemum nodiflorum	30	Y	FACU
2. Mesembryanthemum crystallinum	25	Y	FACU
3. Beta vulgaris ssp. maritima	5	N	NL
4. Urtica urens	5	N	FACW
5.			
6.			
7.			
8.			
	65 = Total Cover		

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 35 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	_____	x 1 = _____
FACW species	_____	x 2 = _____
FAC species	_____	x 3 = _____
FACU species	_____	x 4 = _____
UPL species	_____	x 5 = _____
Column Totals:	_____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks:

SOIL

Sampling Point: SP-4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-10	10yr 3/3	70	5yr 4/6	25	C	M,PL	Silty clay loam	
			5yr 2.5/1	5	C	M		
10-12	7.5yr 3/2	80	10yr 3/2	20	C	M	Sandy clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- X Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Pond 20, Parcel A City/County: IB/ SD County Sampling Date: 5/14/17

Applicant/Owner: POSD State: CA Sampling Point: SP-5

Investigator(s): AE Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-5

Subregion (LRR): C Lat: 117.105371W Long: 32.587519 Datum: NAD83

Soil Map Unit Name: Huerhuero-urban land complex 2-9% Slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		

Herb Stratum (Plot size: _____)			
1. Frankenia salina	50	Y	FACW
2. Sarcocornia pacifica	40	Y	OBL
3. Suaeda taxifolia	5	N	FACW
4. Cressa truxillensis	5	N	FACW
5.			
6.			
7.			
8.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	_____	x 1 = _____
FACW species	_____	x 2 = _____
FAC species	_____	x 3 = _____
FACU species	_____	x 4 = _____
UPL species	_____	x 5 = _____
Column Totals:	_____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks:

SOIL

Sampling Point: SP-5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10yr 3/2	85	7.5yr 4/6	15	C	M,PL	Silty clay loam	organic debris
4-16	10yr 3/3	70	5yr 4/6	30	C	M,PL		← SANDY clay loam

Redox is prominent

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ___

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appendix C. Delineation of Jurisdictional Wetlands and Non-Wetland Waters Under Clean Water Act Section 404 for the Proposed South San Diego Bay Wetland Mitigation Bank (Pond 20) – Prepared by Great Ecology December 2017

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DELINEATION OF JURISDICTIONAL WETLANDS AND NON-WETLAND WATERS UNDER CLEAN WATER ACT SECTION 404

PROPOSED SOUTH SAN DIEGO BAY WETLAND MITIGATION BANK (POND 20)

December 4, 2017

Submitted to:

United States Army Corps of Engineers
Los Angeles District
5900 La Place Court #100
Carlsbad, CA 92008

Submitted on behalf of:

Port of San Diego
Planning & Green Port
3165 Pacific Highway
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1 INTRODUCTION

The proposed South San Diego Bay Wetland Mitigation Bank (hereafter referred to as the Site) is located just south of San Diego Bay in the City of San Diego in San Diego County, California (FIGURE 1). Approximately 83.5 acres in size, the Site is a contiguous land parcel owned by the Port of San Diego (Port). The Port seeks to create a wetland mitigation bank within the bermed area at the former salt pond referred to as Pond 20, by conducting a significant restoration effort to restore wetlands to the interior of the pond. As part of the mitigation bank development and entitlement process, the Port engaged Great Ecology to identify jurisdictional wetlands and non-wetland Waters of the United States (waters or WUS) and to quantify their extent, as defined in 33 CFR 328.4 and regulated by the United States Army Corps of Engineers (USACE) under the authority of Section 404 of the Clean Water Act (1972) (CWA). Great Ecology conducted a preliminary data evaluation followed by a four-day field wetland delineation beginning January 31, 2017, the results of which are synthesized in this report for coordination with USACE.

1.1 Site Description

Pond 20 is located on the southernmost end of San Diego Bay in Township 18 South, Range 2 West, Sections 20 and 21. It is located on the north side of Palm Avenue, west of Saturn Boulevard, and east of 13th Street. The Site centroid is Latitude 32.5869°N, Longitude 117.1004°W. There is no official address for the Site. The northern boundary and a portion of the western boundary abut the South San Diego Bay Unit of the U.S. Fish and Wildlife Service's (USFWS) San Diego National Wildlife Refuge (Refuge). Within the Refuge and located along the immediate north and east boundaries of Pond 20 lies a vacant parcel with an identical site use history, which will be the site of the Otay River Estuary Restoration Project (ORERP), a mitigation project stemming from impacts to marine life caused by the Poseidon Water Resources Desalination Facility located in Carlsbad, CA. To the north of the ORERP site is the channelized Otay River, which flows from east to northwest where it enters San Diego Bay. The southern boundary of the Site is lined with residential, commercial, and infrastructure development. The Site receives an average of 9.73 inches of precipitation annually, with February being the wettest month on average (WRCC Station No. 041758, 1918-2016).

The Pond 20 Site is comprised of three distinct parcels of land (FIGURE 2):

- The Pond 20: a wholly bermed and enclosed non-operational solar salt evaporator pond that was formerly part of the Western Salt Company's South San Diego Bay Saltworks;
- The Nestor Creek Area (not a component of the mitigation bank): includes portions of Nestor Creek and wetland habitats within and surrounding the channel on the outside of Pond 20's eastern berm; and

- The Otay River Tributary Area (not a component of the mitigation bank): includes a section of the Otay River Tributary and wetland habitats surrounding the channel on the outside of Pond 20's western berm.

The interior of the bermed area at Pond 20 is surrounded by earthen berms and is comprised of disturbed upland salt flats and isolated hypersaline pools perched on fill material. The interior of Pond 20 is isolated from surface tidal flows and only receives surface water inputs via precipitation and stormwater flows from Palm Avenue, located along the southern border (FIGURE 2). The average elevation of the interior of Pond 20 is 9.05 feet Mean Lower Low Water (MLLW), and ranges from 4.43 to 12.43 feet MLLW (Towill 2017). The berm heights surrounding the Pond are between 13.43 and 14.43 feet MLLW and enclose the entirety of the interior of Pond 20(FIGURE 3).

The Nestor Creek and Otay River Tributary are each comprised of channelized flows where the berms surrounding Pond 20 form one of the channel banks. Nestor Creek, located outside the eastern berm, is an urban freshwater-to-brackish stream that flows north past Pond 20 into the Otay River. The Otay River Tributary, located outside the western berm of Pond 20 is tidal water that flows south from the Otay River near its entrance to San Diego Bay. The Otay River Tributary terminates in the southwest corner of the exterior of Pond 20. Neither Nestor Creek nor the Otay River Tributary flow into or through the interior of Pond 20 (FIGURE 2). The average elevation of the Nestor Creek Area is 6.19 feet MLLW, and ranges from 4.43 to 11.43 feet MLLW at the tow of the berm. The average elevation of the Otay River Tributary Area is 5.45 feet MLLW, and ranges from 4.43 to 6.43 feet MLLW at the toe of the berm (FIGURE 3).

1.2 Historic Land Uses

The interior of Pond 20 use history was investigated and evaluated in depth using historical imagery and review of available documents, and is summarized here. Pond 20 is located south of the confluence of Nestor Creek and the Otay River, and is South of San Diego Bay. Pond 20 supported wetland habitats until at least 1870 when it was incorporated into the salt works evaporation system (Grossinger et al. 2011, APPENDIX B Image 1A and 1B; BLM 1987, APPENDIX B Image 2). The salt evaporation and extraction industry has operated in south San Diego Bay since the early 1870s and included the interior of Pond 20 (EDAW 2001). In the 1890s, the Western Salt Company acquired most of the salt producing entities and lands in South San Diego Bay.

The "Saltworks," as the Western Salt Company operation is known, includes a large complex of networked condensation and crystallization salt evaporator ponds in south San Diego Bay. The salt works operations include the intake of bay water entering the salt pond evaporation system, and water traveling through the evaporation ponds by the pull of gravity, siphons, or pumps. The salt concentrates as the water evaporates, and the increasingly saline water is pumped from pond to pond until the salt precipitate is harvested.

Pond 20, was constructed by excavating borrow areas at the base of the interior berms for the reconstruction and repair of the berms. These borrow areas are estimated at 2-4 below the existing grades within Pond 20. Additionally, these borrow areas also provided water storage for transfers of water from one pond to another within the salt pond system (Merkel 2008).

In 1916, the Savage Dam failed causing the release of the Lower Otay Lake into the lower watershed including Pond 20. The dam failure washed away several berms within the Saltworks, including those of Pond 20, and deposited substantial volumes of sediment. Pond 20 and the rest of the Saltworks were restored and operational by 1918, with water entering Pond 20 via siphons. However, the additional sediment caused the interior elevation of Pond 20 to increase to a height that, along with its southern location and distance from the other ponds, made its continued use logistically and economically inefficient within the Saltworks operation. Western Salt attempted to reincorporate Pond 20 again into Saltworks operations in the 1960s using a new system of electrical pumps to facilitate the movement of water to the other ponds in the network. This effort ultimately failed and Pond 20 and the surrounding area as a whole have since remained vacant.

1.3 Regulatory Background

Rivers and Harbors Act of 1899, Section 10

Under Section 10 of the Rivers and Harbors Act of 1899 (RHA), USACE regulates the activities within or affecting navigable waters of the United States. Navigable waters are defined as those waters subject to the ebb and flow of the tides shoreward to the mean high water (MHW) mark, and have or are currently used in part to transport interstate or foreign commerce. Pond 20 does not lie within the historic MHW mark for San Diego Bay, nor is Pond 20 subject to the ebb and flow of the tides due to the surrounding berms. In a letter from USACE to Eileen Maher at the Port of San Diego, dated February 22, 2000, USACE declined to exert jurisdiction over the Site under RHA Section 10 following an analysis of the Pond's location relative to the historic meander line of an 1870 U.S. Land Office Map (BLM 1870; Durham 2000).

Clean Water Act, Section 404

Under Section 404 of the CWA, first enacted in 1972, USACE regulates the discharge of dredged or fill material into jurisdictional waters of the U.S., which include those waters listed in 33 CFR 328.3. For this delineation, all waters of the U.S., including waters listed in 33 CFR 328.3, were delineated to their jurisdictional limits as defined by 33 CFR 328.4 and per the regulations and applicable guidance in effect prior to August 28, 2015.

1.4 Summary of Potential Jurisdictional Areas

APPENDIX A depicts the extent of jurisdictional wetland and non-wetland waters outside the berm at Pond 20 based on a wetland delineation conducted by Great Ecology on January 31 through February 6, 2017. TABLE 1 summarizes the acreage of these CWA Section 404 jurisdictional areas. No wetlands occur within the interior berm at Pond 20.

TABLE 1: SUMMARY OF POTENTIAL SECTION 404 JURISDICTIONAL AREAS OUTSIDE OF POND 20

Site Features Name	Classification	Potential Jurisdictional Determination	Estimated Area (acres)
Otay Tributary (Outside the Pond 20 Berm)			
Wetland 1	Emergent Wetland (PEM1F)	Wetland Water of the U.S.	0.0086
Wetland 2	Salt Marsh Wetland (E2EM1P)	Wetland Water of the U.S.	0.8977
Drainage Feature 1	Unvegetated drainage	Non-Wetland Water of the U.S.	0.0303
Nestor Creek (Outside the Pond 20 Berm)			
Wetland 3	Emergent Brackish Marsh Wetland (E2EM1N)	Wetland Water of the U.S.	0.0025
Wetland 4	Salt Marsh Wetland (E2EM1P)	Wetland Water of the U.S.	0.2285
Wetland 5	Emergent Brackish Marsh Wetland (E2EM1N)	Wetland Water of the U.S.	0.0055
Wetland 6	Emergent Brackish Marsh Wetland (E2EM1N)	Wetland Water of the U.S.	0.0158
Wetland 7	Emergent Brackish Marsh Wetland (E2EM1N)	Wetland Water of the U.S.	0.0027
Open Water 1	Otay River tributary; tidal riverine (R1UB3)	Non-Wetland Water of the U.S.	0.2019
Open Water 2	Nestor Creek; tidal riverine (R1UB3)	Non-Wetland Water of the U.S.	0.1394
Wetland Waters of the U.S. Total Area			1.16
Non-Wetland Waters of the U.S. Total Area			0.37

2 PRELIMINARY DATA GATHERING AND ANALYSIS

Prior to conducting the delineation, Great Ecology reviewed site data, including historical aerial imagery, U.S. Geological Survey (USGS) topographic maps, Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs), USFWS National Wetland Inventory (NWI) maps, and Natural Resources Conservation Service (NRCS) soil survey data, to assist in identifying surface waters and potential wetland areas in and outside of Pond 20. Site-specific data are described below.

2.1 Historical Aerial Imagery

Historical aerial imagery was reviewed to identify suspected wetlands or water bodies that may be present on outside and within the berm at Pond 20. Great Ecology provided analyses of an 1852 T-sheet, an 1870 U.S. Land Office map, and aerial imagery dated from 1953 to 2014. All images are collected in APPENDIX B.

A T-sheet dated 1852 shows that Pond 20 was located within an estuary complex and comprised of vegetated wetlands. The T-sheet shows a multi-branch channel leading from South San Diego Bay into the wetland complex, though these channels did not extend into the Pond 20 boundaries. The 1852 T-sheet shows the entirety of the Saltworks complex as either intertidal flats or vegetated wetlands.

A U.S. Land Office Map, prepared by the Bureau of Land Management (BLM) in 1870, shows the Site was located within a wetland complex located to the south of San Diego Bay (APPENDIX B). According to an analysis of this map by the USACE South Coast Chief in 2000, the Site was not located within the historic meander line of San Diego Bay (Durham 2000).

Historical investigations focusing on the Saltworks estimate that the berms were constructed in the late 1870s (EDAW 2001). The earliest aerial photograph available shows the berms present in 1953.

Aerial photographs from 1953 through 1989 show the majority of the southern interior of Pond 20 as completely inundated, and the northern portion of Pond 20 exposed, except for the borrow areas at the base of the interior berms. The southern portion of Pond 20 within the berm is intermittently exposed throughout this time period.

The water in the southern portion of Pond 20 begins to recede starting in 1989, with the 1994 imagery showing exposed salt crust. Photographs from 1994 to 2014 show that inundation characteristics within Pond 20 are consistent with current conditions. Great Ecology saw no indication of salt evaporator pond operations within Pond 20 since 1953. The aerial imagery suggests that surface water features located in the borrow areas at the base of the southern and

western perimeter berms within Pond 20 are perennial.

2.2 Topographic Maps Summary

Great Ecology reviewed USGS 7.5 Minute topographic maps of Pond 20 to classify topography and identify drainages or WUS.

The Imperial Beach quadrangle, San Diego County, California can be seen in FIGURE 4. The USGS map shows Pond 20 as nearly flat and the presence of berms outlining Pond 20, denoted as a "salt evaporator pond" on the map. Directly north of Pond 20 is the Otay River, situated in a northeast-to-southwest orientation, followed by individual salt evaporator impoundments located within the Refuge. The Otay River flows east to west, to the north of Pond 20, before turning northwest to empty into San Diego Bay. The nearest permanent water source and WUS appears to be the Otay River, which flows between 200 and 1,300 feet north of the northern boundary of Pond 20.

A high-resolution topography map was developed in January 2017 (FIGURE 3), which was referenced extensively for this delineation effort.

2.3 Tidal and Floodplain Summary

Great Ecology reviewed the FEMA National Flood Insurance Program's FIRM for San Diego County, California (Panel 2153, revised April 2016) to identify the location of the Site relative to a 100-year floodplain. The Site is located in the 100-year floodplain for the Otay River and San Diego Bay (APPENDIX C). The Bermed Area is distinctly denoted in the northeast corner of the FIRM by a surrounding unaccredited levee. An unaccredited levee is one for which FEMA has not been provided the design, data, and documentation required by Federal regulations to support a determination that the levee provides "a base chance or greater level of flood hazard reduction" (FEMA 2016). The state of being unaccredited does not mean the levee does not provide flood hazard risk reduction, but rather that documentation may not have been submitted or reviewed by FEMA and updated in the FIRM panel.

Waters from San Diego Bay, the Otay River and its Tributary, and Nestor Creek are unable to enter the interior of Pond 20 via surface water flows, even under extreme high tides. TABLE 2 shows the berm height surrounding Pond 20 as compared with the height of the maximum tide height measured in North San Diego Bay (NOAA Tidal Gauge #9410170) between 1950 and 2017 (NOAA 2017). The data shows a difference of 5.8 to 6.8 feet MLLW or more between the height of the berm and the highest recorded tide.

TABLE 2: COMPARISON OF BERM AND TIDE HEIGHTS, 1950-2017 (DATUM: MLLW)

Berm Height (feet)	Maximum Tide Height (feet)	Difference (feet)
13.43 – 14.43	7.63	5.8 – 6.8

2.4 National Wetland Inventory Summary

Great Ecology reviewed the USFWS National Wetland Inventory (NWI) maps for Pond 20, last updated in 2006, to identify potential wetland areas within the project boundary. NWI is only intended to provide reconnaissance level information of potential wetlands and does not delineate jurisdictional WUS (USFWS 2017). The type and extent of wetlands was field-validated as part of this evaluation and our findings and are presented in the Results section below. The NWI map of Pond 20 is included as FIGURE 5.

NWI shows the exterior of Pond 20 – Nestor Creek and the Otay River tributary as almost entirely intertidal, unconsolidated shore estuarine and marine wetlands and intertidal emergent estuarine and marine wetlands impounded by a berm that obstructs inflow or outflow of water. Directly east along the exterior of Pond 20 is Nestor Creek, classified as an estuarine and marine wetland with intertidal influence, which leads northwest and drains into the Otay River. On the east side of the Pond 20 berm is the Otay River Tributary, classified as estuarine and marine wetland with intertidal influence, which extends north-northwest along the western boundary of Pond 20 and also drains towards the Otay River.

The onsite field investigation revealed that current conditions within Pond 20 do not reflect the NWI categorizations shown on the map. The interior of Pond 20 is currently comprised of largely disturbed upland habitat with large, isolated pools located in the borrow areas at the base of the northern, western, and southern berms, and isolated topographic depressions located on the eastern side of Pond 20. The habitat types located along the Nestor Creek and Otay River Tributary Areas on the east and west edges of Pond 20 outside of the berms are largely consistent with the NWI classifications.

2.5 Soil Survey Summary

Great Ecology reviewed the NRCS Web Soil Survey (2014) to identify soil types, including hydric soils that may be located within Pond 20. The soil survey map is included as FIGURE 6 and soil types identified within the project area are summarized in TABLE 3.

TABLE 3: SOIL TYPES PRESENT ON SITE (NRCS SOIL SURVEY 2014)

Soil Map Unit Name	% of Site	Drainage Type	Depth to Water Table (inches)	Flooding Frequency	Ponding Frequency	Hydric Rating
LG-W- Lagoon Water	55.2	N/A	N/A	N/A	N/A	No
GoA- Grangeville fine sandy loam, 0 to 2 percent slopes	39.8	Somewhat poorly drained	24 to 48	Rare	None	Yes
HuC Huerhuero-Urban land complex, 2 to 9 percent slopes	4.6	Moderately well drained	>80	None	None	No
HrC- Huerhuero loam, 2 to 9 percent slopes	0.3	Moderately well drained	>80	None	None	Yes

The northern portion of the interior of Pond 20 is characterized by Grangeville fine sandy loam. Test pits dug within this soil map unit revealed non-native soils with textures ranging from sand to silt to clay. Great Ecology found hydric soil indicators at one of six test pits dug within this soil map unit (see FIGURES 6 and 7).

The southern portion of the interior of Pond 20 is categorized as Lagoon Water. Aerial imagery and the field investigation show areas of Pond 20 categorized as Lagoon Water do not currently entirely reflect that condition. Pond 20 is isolated from tidal flows.

The northern portion of the interior of Pond 20 has not been completely submerged or worked as a salt evaporation pond since the 1960s, and the southern portion of the interior of Pond 20 has not been submerged since 1989, according to the historical aerial imagery analysis (see ***Section 2.1*** and APPENDIX B). Approximately 7.4 acres of persistent isolated ponds of water are present in Pond 20 within this soil map unit. These isolated pools receive surface water flows exclusively from precipitation and stormwater runoff originating from Palm Avenue along the southern border of Pond 20. Pond 20 was engineered to hold water within a retention basin bounded by berms and an impervious subterranean seal forming the bottom of the pond (EDAW 2011). Pond 20 therefore collects and holds precipitation, and rainwater does not drain from the pond, it only evaporates. Test pits (T1.2, T2.2, and T3.2; see FIGURE 7) dug in recently inundated depressional areas within this soil unit revealed non-native soils comprised of sandy loam and foreign fill materials, including construction lumber debris. Great Ecology encountered moderately alkaline soils defined as a problematic soil condition in the Arid West Regional Supplement to the Wetland Delineation Manual (USACE 2008). Using guidance outlined within the Arid West supplement (Arid West Regional Supplement), Great Ecology determined that these soils are not hydric (see an in-depth discussion of this in ***Section 4.4***).

2.6 Previous Site Delineation Efforts

Jurisdictional wetland delineation field efforts were conducted in 1997 and 2008 (Dudek 1997; Merkel 2008). Both efforts were consistent in their delineation of jurisdictional wetlands and non-wetland waters of the U.S. in the Otay River Tributary and Nestor Creek Areas.

The delineations consistently recorded positive wetland hydrology indicators across Pond 20. Additionally, both delineations consistently found a lack of positive hydrophytic vegetation indicators. Since 1997, Pond 20 has been observed to be comprised of two distinct vegetation communities: the largely unvegetated salt flats and upland herbaceous community populating the lower-lying southern area, and disturbed upland scrub present on the higher-elevation northern portion.

The 1997 delineation did not record positive hydric soil indicators, but the 2008 delineation did within unvegetated topographic depressional features. The 1997 delineation was conducted during an average rainfall year, while the 2008 delineation was conducted in July, two months after May, which was characterized by above normal precipitation (here, “above normal” precipitation is defined as above the 70th percentile for the region, and “below normal” as below the 30th percentile) (TABLE 4). It can be difficult to identify hydric soils in the field, and the interpretation of indicators is highly subjective. The inconsistency in the presence or absence of hydric soil indicators within Pond 20 over time could be due to differences in interpretation of indicators by field delineators across all delineation events, or it may indicate that soil characteristics within Pond 20 are dependent on interannual variability in precipitation and long-term changes in climate.

TABLE 4: PRECIPITATION COMPARISION BETWEEN PREVIOUS DELINEATION YEARS

Month	Average Precipitation (inches)	30th Percentile Precipitation (inches)	70th Percentile Precipitation (inches)	1996 Precipitation (inches)	2008 Precipitation (inches)
January	1.75	0.56	2.02	0.61	0.58[M]
February	2.27	1.13	2.78	1.74	0.57[M]
March	1.3	0.61	1.53	1.12	0
April	0.63	0.22	0.68	0.33	0.02
May	0.2	0	0.12	0	1.53
June	0.05	0	0	0	0
July	0.06	0	0	0	0*,[M]
August	0.01	0	0	0	0[M]
September	0.11	0	0	0*	0
October	0.49	0	0.24	1.33	0
November	0.63	0.29	0.68	1.6	0.21
December	1.4	0.63	1.57	0.88	2.07[M]

Source: NRCS Wetlands (WETS) Climate Tables, Chula Vista, CA Station
Notes
* Month in which delineation effort was conducted

[M] Month missing any data
Orange cell – recorded monthly precipitation was lower than 30th Percentile
Green cell – recorded monthly precipitation was higher than 70th Percentile

3 FIELD METHODS

From January 31, 2017 to February 6, 2017, Marlene Tyner-Valencourt, Brian Felten, and Ashley Tuggle from Great Ecology (team or Great Ecology) conducted an onsite jurisdictional delineation. The field effort was conducted during an above-average rainy season following a four-year drought. Temperatures on the Site during the field delineation effort ranged from 52°F to 65°F, and precipitation during the field effort was limited to less than 0.01 inches of rain on February 6. Approximately 0.58 inches of rain fell in the week before the field effort. Site conditions observed during the field delineation effort are discussed in **SECTION 4**.

The team located, delineated, and mapped wetland features using standard wetland delineation protocols (USACE 1987; WTI 1995; USACE 2008; WTI 2013). The team determined wetland boundaries by the prevalence of hydrophytic vegetation, hydric soils, and indicators of wetland hydrology. Great Ecology documented these conditions using Routine Wetland Determination Data Forms for the Arid West Region (APPENDIX D). The team followed standard guidance for sites greater than five acres by utilizing the transect-based sampling method, employing four transects. As the team walked the transect lines from east to west, the team interspersed paired (one in an upland habitat and one in suspected wetland habitat) or triplet (one in a local depression and two in the surrounding upland) sample plots to characterize areas where the vegetation community and/or elevation dramatically shifted. Transects and sample point locations are shown in FIGURE 7.

Sample plots included soil pit sampling and a vegetation survey. The team examined and described the soil from the pit to a depth of 20 inches, and noted any hydrologic indicators (standing water, etc.). In addition, the team identified herbaceous vegetation within a five-foot radius of the sample plot center, shrubs within a 15-foot radius, and trees within a 30-foot radius. The team used visual evidence of an Ordinary High Water Mark (OHWM) to delineate boundaries of open water surface features per standard USACE Guidance (USACE 2005; Lichvar and McColley 2008). The team measured OHWM width at several points along the Nestor Creek and Otay River tributary, respectively.

For open water features located in the interior of the Pond 20 berms, the team walked the OHWM boundary using a handheld Trimble Geo 7x GPS unit, capable of capturing GPS data at sub-meter accuracy. For Nestor Creek and the Otay River tributary features, the team used the average width of the OHWM measured at seven and nine locations along each channel, respectively, as a standard buffer distance for a centerline plotted in ArcGIS 10.1. The team measured the salt marsh extent on along Nestor Creek as five feet from the OHWM at several points along the Creek and used that as a standard buffer radius to digitize the salt marsh extent. The team walked the boundary of the salt marsh community along the east side of the Otay River tributary where passable. In areas where the

slope degree inhibited walking the line, the team matched the line captured in the field by our GPS unit to one-foot contour lines as measured by the January 2017 topography survey conducted by Towill, Inc. surveyors (2017). Great Ecology mapped freshwater marsh habitat within the Nestor Creek by marking the northern and southern limits using the GPS units.

3.1 Difficult Wetland Situations in the Arid West

The Arid West Regional Supplement (USACE 2008) includes procedures to identify wetlands when problematic or atypical conditions have altered wetland hydrology, soils, or vegetation, collectively referred to by the USACE as "Difficult Wetland Situations." Problematic situations reflect normal seasonal or annual environmental variability, whereas atypical wetland situations refer to recent human activities or natural events. Under both types of situations, indicators of wetland vegetation, soils, or hydrology may be absent.

To determine if any sample points taken met the criteria for problematic or atypical situations, Great Ecology utilized the list of difficult wetland situations included in the Arid West Regional Supplement to identify areas with problematic hydrophytic vegetation, problematic hydric soil, and wetlands that periodically lack indicators of wetland hydrology. This was augmented by referencing guidance on problem areas and atypical situations included in the 1987 Manual and Arid West Regional Supplement (USACE 1987; USACE 2008). The results of our analysis regarding the applicability of difficult wetland situations within Pond 20 are discussed in ***Section 4.4***. The rationale for all wetland determinations based on fewer than three parameters was explained on the data sheets included in APPENDIX D. The 1987 Manual and Arid West Regional Supplement do not include an exhaustive list of the difficult situations that may be encountered during delineations in the Arid West. Great Ecology therefore used its best professional judgment and understanding of regional wetland ecology to interpret all data collected.

4 SUMMARY OF CURRENT SITE CONDITIONS

During the January 31 to February 6, 2017 field survey, Great Ecology made observations of current site conditions, including characteristics of soils, hydrology, and vegetation communities. This information was utilized to support jurisdictional determinations in the field and is summarized below.

4.1 Hydrology

4.1.1 Precipitation

The field delineation effort was conducted during an above-average rainy season following a four-year drought which occurred from 2012 through 2016. Approximately 0.58 inches of rain fell the week before the field effort. In the 2016 to 2017 wet season, precipitation was above normal for two months prior to the field delineation effort. Rainfall recorded in December 2016 and January 2017 was greater than the 70th percentile of the 30-year precipitation regime for each of those months, respectively, and 2016 total annual precipitation was greater than the 70th percentile annual precipitation level as well (TABLE 5). There is no indication that this short-term variability in the regional climate affected the interpretation of hydrology indicators encountered during the delineation.

TABLE 5: WETS TABLE PRECIPITATION (1987-2017) AND 2016-2017 RECORDED MONTHLY PRECIPITATION

Month	Average Precipitation (inches)	30th Percentile Precipitation (inches)	70th Percentile Precipitation (inches)	2016 Precipitation (inches)	2017 Precipitation (inches)
January	1.75	0.56	2.02	2.34	3.75
February	2.27	1.13	2.78	0.43	3.6*
March	1.3	0.61	1.53	0.84	0.05
April	0.63	0.22	0.68	0.88	0
May	0.2	0	0.12	0.69	1.06
June	0.05	0	0	0	0
July	0.06	0	0	0	0
August	0.01	0	0	0	
September	0.11	0	0	0.5	
October	0.49	0	0.24	0.07	
November	0.63	0.29	0.68	0.38	
December	1.4	0.63	1.57	3.98	
Annual	8.91	6.83	10.08	10.11	

Source: NRCS Wetlands (WETS) Climate Tables, Chula Vista, CA Station
Notes
* Month in which delineation effort was conducted
M Month missing any data
Orange cell – recorded monthly precipitation was lower than 30th Percentile
Green cell – recorded monthly precipitation was higher than 70th Percentile

4.1.2 Hydrology of the interior of Pond 20

The interior of Pond 20 contains permanent and ephemeral water features. Permanent ponds and intermittent pools are located predominately along the inside edge or the borrow areas at the base of the berm. Water features within Pond 20 are not connected to any surface water features outside of the berms via surface or groundwater.

The water source for the intermittent pools identified within the berms is solely rainfall. The permanent ponds receive water from rain events and from stormwater runoff entering Pond 20 via sheet water flows and from two stormwater drains from Palm Avenue into the interior of Pond 20 along the southern boundary (FIGURE 2).

Water levels in these isolated water features fluctuate seasonally and are highly dependent on the closed system evaporative processes, which, in addition to Pond 20's history as a salt evaporator pond, have rendered the water hypersaline. Water levels within the borrow areas and their fluctuation rates are controlled by decades of drought and heavy rainfall. Standing water within the borrow areas is generally found below a nearly complete salt crust, though water may sit atop the crust temporarily following precipitation events.

4.1.3 Hydrology of the Otay River Tributary and Nestor Creek Areas

Two drainage features are located outside of Pond 20; Nestor Creek flows north along the eastern boundary and joins with the Otay River northeast of Pond 20, and a tributary of the Otay River runs along the western boundary of Pond 20, flowing to the Otay River (FIGURE 2). Both the Otay River Tributary and Nestor Creek receive tidal influence from San Diego Bay. Nestor Creek is concrete-lined upstream of Pond 20 and is fed by freshwater flows from the adjacent urban neighborhood. During high stormwater flows, the Otay River tributary receives fresh water from a Municipal Separate Storm Sewer (MS4) drainage, which drains Palm Avenue. Hydrology indicators near the MS4 indicate that high water flows pass through the non-wetland area of the Otay River Tributary during storm events. Neither the Otay River Tributary, Nestor Creek, nor the Otay River, enter or flow through the interior of Pond 20 (FIGURE 2).

4.2 Soils

Pond 20 is largely comprised of a salt flat surrounded by a berm ranging in height from 13.48 to 14.48 feet MLLW. Nestor Creek and the Otay River Tributary are located outside the berms along the eastern and western boundaries, respectively. The Pond 20 berm is made of highly compacted clay. Shell hash is present on the surface of the berm, indicating the berm is comprised of marine dredge material. Prior to the 1870s, Pond 20 supported wetland and estuarine habitat. In the 1870s, Pond 20 was constructed as an isolated pond enclosed by high berms, purposely constructed with silts

and clay soils to hold water until it evaporated to facilitate the collection of salt precipitate. The upstream failure of Savage Dam in 1918 damaged the berm and filled the northern portion of Pond 20 with sand, sediment, and soil. Pond 20 is currently at grades of approximately 9.05 feet MLLW on average and is comprised of fill material. Great Ecology found soils ranging from sand to clays and observed construction lumber within the soil column at various locations, and a relatively random distribution of soil types across the site and within the soil profile (FIGURE 6).

A spot soil sample (not formally documented) taken in the unvegetated salt flats adjacent to the open water pools in the southeastern section of Pond 20 using a hand auger revealed a hard-packed dark clay layer overlaid by a coarse mix of sandy soil and salt precipitate (see APPENDIX E, Image 11). This clay layer is present adjacent to the perennial pools that often flood during storms and remains inundated for long periods of time. The clay layer causes the water to either drain very slowly or not at all, leaving only evaporative processes to drive the recession of ponded water. Hydric soil indicators were not observed in this spot sample above the clay layer.

Soils within the Nestor Creek and Otay River Tributary Areas on the east and west sides of Pond 20 were characteristic of coastal wetland habitats with a high organic material content and exhibited several hydric soil indicators. Hydric soils were not observed in the non-wetland area at the southern end of the Otay River Tributary Area near the MS4 outfall (FIGURE 7, soil samples T4.1 and T4.2).

4.3 Vegetation

Great Ecology identified upland vegetation communities within Pond 20, and wetland vegetation communities in the Nestor Creek and Otay River Tributary (FIGURE 8A). Pond 20 exhibited characteristics of a salt flat and supported a largely upland herbaceous vegetation community comprised of slenderleaf iceplant (*Mesembryanthemum nodiflorum),* perennial ragweed (*Ambrosia psilostachya*), and crystalline iceplant (*Mesembryanthemum crystallinum*). The higher elevation upland areas located in the northeast of Pond 20 supported upland shrub-scrub communities of coyotebush (*Baccharis pilularis*), mulefat (*B. salicifolia*), coastal cholla (*Cylindropuntia prolifera*), Menzie's goldenbush (*Isocoma menziesii*), and coastal prickly pear (*Opuntia littoralis*). Three tamarisk (*Tamarix* spp.) individuals were also observed within this community.

Two wetland community types were identified along Nestor Creek (FIGURE 8B), which is outside the berm of Pond 20. A salt marsh community predominately comprised of Pacific swampfire (*Sarcocornia pacifica*, also known colloquially as pickleweed), shore grass (*Distichlis littoralis*), saltwort (*Batis maritima*), and alkalai sea-heath (*Frankenia salina*) were observed on either side of Nestor Creek. Patches of freshwater marshes receiving periodic pulses of saline water (referred to as brackish marsh in this report) and predominately comprised of California club-rush (*Schoenoplectus californicus*) were also located in Nestor Creek within the OHWM boundaries.

Three wetland community types were identified within the Otay River Tributary Area (FIGURE 8A), which is outside the berm of Pond 20. Salt marsh of the same community composition as the Nestor Creek were observed along the Otay River Tributary, with the addition of a patch of coastal salt grass (*Distichlis spicata*) located on the southeast bank. Small stands of saltwater cordgrass (*Spartina alterniflora*) were observed on limited mudflats located on the west side of the Otay River Tributary. In the southwest portion of the Otay River Tributary Area, a small patch of freshwater marsh dominated by narrow-leaf cattail (*Typha angustifolia*) at the mouth of an MS4 drainage was observed. Immediately to the west of this freshwater marsh was a non-wetland floodplain community comprised of arroyo willow (*Salix lasiolepis*), green ash (*Fraxinus pennsylvanica*), and Brazilian pepper tree (*Schinus terebinthifolius*). Lastly, an unvegetated mud-bottom drainage that connects the freshwater MS4 wetland with the southern end of the Otay River Tributary was observed.

The Otay River Tributary and Nestor Creek were both determined to be unvegetated, perennial open water features.

4.4 Regulatory Interpretation of Site Conditions

Based on data gathered, site observations, and relevant regulations and regulatory guidance, Great Ecology determined that normal circumstances are present and vegetation and soil conditions observed within Pond 20 are not naturally problematic. A summary of this analysis is provided below. Conditions observed in the Nestor Creek and Otay River Tributary Areas were easily interpreted and did not warrant such an analysis.

Normal Circumstances vs. Atypical Situations

Atypical situations are derived from unauthorized human activities in wetland areas. Pond 20 was constructed and the wetlands within its interior filled in the 1870s, a century prior to the passage of the CWA. Waters that are legally converted to upland, either with permit authorization or due to the action being taken prior to enactment of the CWA, are no longer WUS and are not subject to CWA jurisdiction (45 FR 85344, Dec. 24, 1980). Additionally, the interior of Pond 20 has not, over time, naturally regained wetland characteristics such that it meets the definition of “wetlands,” precluding any restoration of CWA jurisdiction (RGL 86-09). Atypical situation analysis is not used for activities that were previously authorized under the CWA or predate the passage of CWA (USACE 2008), so therefore normal circumstances are determined to be present and all site observations were interpreted relative to current conditions rather than historical wetland conditions.

Problem Areas

Problem areas are wetland types in which wetland indicators of one or more parameters may be periodically lacking due to normal seasonal or annual variations in environmental conditions that

result from causes other than human activities or catastrophic natural events. The 2017 delineation was conducted following a four year drought and immediately after a significantly wet winter season. Great Ecology therefore conducted analytical as procedures outlined in the Arid West Regional Supplement (USACE 2008) to determine if the lack of positive wetland indicators observed was indicative of naturally problematic site conditions, or if our observations were representative of normal site conditions. Great Ecology's analysis focuses on hydrophytic vegetation and hydric soils given the clear wetland hydrology present within many water features across Pond 20 during the delineation event and in the recent past.

Hydrophytic Vegetation

According to the Arid West Regional Supplement (USACE 2008), problematic hydrophytic vegetation may be present if both hydric soils and wetland hydrology are present but hydrophytic vegetation communities are not. Hydrophytic vegetation communities were not observed across Pond 20, including in topographic depressional areas that exhibited positive hydrology indicators. We observed positive hydric soil indicators in only one of these ten depressions; however, further investigation determined that the soils are not hydric (see next section). The Arid West Regional Supplement's procedure to identify problematic hydrophytic vegetation first requires the presence of positive wetland hydrology and hydric soil indicators within a suspect area. Because only wetland hydrology was present within these features and hydric soils were not present due to normal, non-problematic conditions, Great Ecology did not apply the problematic hydrophytic vegetation identification procedure per procedural guidance (USACE 2008).

However, given the drought conditions that preceded the field effort, we continued our analysis of potential problematic hydrophytic vegetation to determine if a temporal shift in vegetation due to drought occurred within Pond 20. A review of previous delineation efforts revealed that Pond 20 has not supported hydrophytic vegetation communities since at least 1997, or for 20 years prior to the 2017 delineation effort (see ***Section 2.6***). In addition, the 2017 delineation was conducted during an above-average wet portion of the growing season (TABLE 5), which should have been sufficient to support the development of a hydrophytic vegetation community, if present. However, only slenderleaf iceplant (FACU) monocultures, a decidedly upland vegetation community, and disturbed upland scrub were observed, consistent with observations taken during previous delineation efforts spanning two decades. The lack of positive hydrophytic vegetation indicators was therefore interpreted as a feature of normal site conditions, rather than a reflection of drought conditions, and vegetation was therefore not considered to be naturally problematic.

Hydric Soils

Naturally problematic hydric soils may be identified if wetland hydrology and hydrophytic vegetation are present, but positive hydric soil indicators are not observed. Within Pond 20, wetland hydrology was present in ten topographic depressional features, but no hydrophytic vegetation communities were observed. As previously discussed, the absence of hydrophytic vegetation reflects normal, non-problematic conditions. The procedure to identify problematic hydric soils as outlined in the Arid West Regional Supplement first requires wetland hydrology and hydrophytic vegetation to be present within a suspect area before further analysis to determine if the soil is problematically hydric. Because only wetland hydrology was present within these features and hydrophytic vegetation was not present due to normal, non-problematic conditions, Great Ecology did not apply the problematic hydric soils identification procedure per procedural guidance (USACE 2008).

Great Ecology does recognize that in the Arid West, soil alkalinity, which correlates with high soil salinity, may inhibit the formation of redox concentrations and depletions in soils and may constitute a problematic hydric soil situation (USACE 2008). Great Ecology sampled soils in three topographical depressions on the eastern side of the Bermed Area and found positive hydric soil indicators in only one of these features, while positive wetland hydrology indicators were observed in all three. Soil pH was tested to determine if these observations were due to soil alkalinity. Great Ecology found that the soils within the topographical depressions that did not display positive hydric soil indicators were Moderately Alkaline (pH between 8.1 and 8.3; USDA 2002), which may have prevented the formation of hydric soil indicators. However, the Arid West Regional Supplement only defines high alkalinity soils as problematic hydric soils if both wetland hydrology and hydrophytic vegetation are present. Because hydrophytic vegetation communities were not present in these areas and their absence was determined to be non-problematic, these alkaline soils do not qualify as problematic hydric soils.

To understand how observations of hydric soil indicators have varied over time within Pond 20, Great Ecology reviewed the results of the 1997 and 2008 delineations (Dudek 1997; Merkel 2008). The results of the 1997 delineation were consistent with observations made in 2017 – that soils within topographic depressional features located within Pond 20 did not display positive hydric soil indicators. However, the 2008 delineation identified hydric soils within the features that did not display positive hydric soil indicators in 2017. The discrepancy could be due to differences in how hydric soils were identified in the field between 1997, 2008, and 2017; the 1997 delineation referenced the *1987 Corps of Engineers Wetland Delineation Manual* (USACE 1987), the 2008 delineation referenced the *2006 Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2006), and the 2017 delineation referenced the *2008 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (USACE 2008). The discrepancy could be due to subjective interpretation of

observed indicators by field delineators across all years, or it could indicate that the hydric nature of the soils in these features changes over time and is likely influenced by short- and long-term climatic variations. Approved jurisdictional determinations are only valid for five years, largely because USACE recognizes that site conditions change over time. Therefore, Great Ecology interprets the observed soil conditions within Pond 20 as reflective of normal site conditions in the short-term, and considers them to be non-problematic.

5 SUMMARY OF FIELD OBSERVATIONS

Great Ecology sampled 18 point-locations to collect data relating to wetland indicators. Sample locations are shown in FIGURE 7 and a summary of observed positive wetland indicators are included in TABLE 6. Wetland delineation data forms may be found in APPENDIX D and photographs capturing the sample point brackets in APPENDIX E.

TABLE 6: FIELD INDICATOR SUMMARY FOR SAMPLE POINTS, 2017

Sampling Point	Site Area	Positive Field Indicator			Potential Jurisdiction	General Location Type
		Vegetation	Soil	Hydrology		
Interior of Pond 20						
T1.1	Pond 20					Upland
T1.2	Pond 20		X	X		Vegetated depression
T1.3	Pond 20					Upland
T2.1	Pond 20					Upland
T2.2	Pond 20			X		Vegetated depression
T2.3	Pond 20					Upland
Otay River Tributary						
T2.4	Otay River Tributary					Upper berm slope
T2.5	Otay River Tributary	X	X	X	USACE	Salt marsh, lower berm slope
Interior of Pond 20						
T3.1	Pond 20					Upland
T3.2	Pond 20			X		Vegetated depression
T3.3	Pond 20					Upland
Otay River Tributary						
T3.4	Otay River Tributary					Upper berm slope
T3.5	Otay River Tributary	X	X	X	USACE	Salt marsh, lower berm slope
T4.1	Otay River Tributary	X	X	X	USACE	MS4 drainage mouth
T4.2	Otay River Tributary	X		X		Floodplain adjacent to MS4

Sampling	Site Area	Positive Field Indicator			Potential	General Location Type
Nestor Creek						
N1	Nestor Creek	X	X	X	USACE	Brackish marsh, lower berm slope
N2	Nestor Creek					Upper berm slope
N3	Nestor Creek	X	X	X	USACE	In-channel brackish marsh

Using this data, Great Ecology located twenty-two unique water features onsite during the January 31 to February 6 field survey. These features are depicted in FIGURES 8A and 8B and their attributes are summarized in TABLE 7. Each water feature was evaluated using field delineation procedures. Observations and the potential jurisdiction associated with each of these water features is discussed in **SECTIONS 6** and **7**. Below, is a summary of the major features observed by each site referenced.

Otay River Tributary Area (Figure 7) (point locations T2.4, T2.5, T3.4, T3.5, T4.1, and T4.2)

- One unvegetated, perennial tidal open water feature was identified as the Otay River Tributary;
- One three-parameter estuarine wetland was identified surrounding the Otay River Tributary;
- One three-parameter freshwater wetland feature was identified at the southern end of the Otay River Tributary Area abutting an MS4 drainage; and
- One unvegetated drainage was identified at the southern end of the Otay River Tributary Area, located between the southernmost extent of the Otay River Tributary and the northern boundary of the freshwater wetland feature.

Nestor Creek Area (Figure 7) (point locations N1, N2, and N3)

- One unvegetated, perennial brackish open water feature was identified as Nestor Creek;
- One three-parameter estuarine wetland was identified surrounding Nestor Creek; and
- Four brackish marsh wetland features were identified within the Nestor Creek channel.

Interior Pond 20 (Figure 7) (point locations T1.1, T1.2, T1.3, T2.1, T2.2, T2.3, T3.1, T3.2, and T3.3)

- Two perennial, unvegetated open water features; and
- Ten vegetated intermittently-flooded topographic depressions (borrow area).

Great Ecology determined that water features identified within Pond 20 do not meet the three-parameter criteria for wetland features. Perennial pools located within the borrow areas of Pond 20 unvegetated and were thus determined to be non-wetland features. The intermittently flooded depressions did not exhibit positive results for all three wetland indicators and thus were also determined to be non-wetland features (point location T1.2, T2.2, T3.2). The pools and the

depressions were observed to be hydrologically isolated from adjacent jurisdictional WUS and associated wetlands, and were therefore determined to be non-jurisdictional isolated intrastate waters. The rationale for the jurisdictional determination presented here is discussed in **SECTIONS 6** and **7**, and in depth in the attached Regulatory Analysis (APPENDIX F).

TABLE 7: ONSITE WATER FEATURES IDENTIFIED AND ANALYZED FOR POTENTIAL JURISDICTION

Site Feature Name	Type	Estimated Area (acres)	Potential Jurisdictional Determination	Description
Otay River Tributary				
Wetland 1	Freshwater marsh	0.0086	Wetland Water of the U.S.	Emergent vegetation dominated by narrow-leaf cattail (*Typha angustifolia*) surrounding a man-made drainage feature.
Wetland 2	Salt marsh	0.8977	Wetland Water of the U.S.	Coastal salt marsh dominated with pickleweed (*Sarcocornia pacifica*).
Nestor Creek				
Wetland 3	Brackish marsh	0.0025	Wetland Water of the U.S.	Emergent vegetation dominated by California club-rush (*Schoenoplectus californicus*).
Wetland 4	Salt marsh	0.2285	Wetland Water of the U.S.	Coastal salt marsh dominated by alkali sea-heath (*Frankenia salina*).
Wetland 5	Brackish marsh	0.0055	Wetland Water of the U.S.	Emergent vegetation dominated by California club-rush (*S.californicus*).
Wetland 6	Brackish marsh	0.0158	Wetland Water of the U.S.	Emergent vegetation dominated by California club-rush (*S. californicus*).
Wetland 7	Brackish marsh	0.0027	Wetland Water of the U.S.	Emergent vegetation dominated by California club-rush (*S. californicus*).
Otay River Tributary				
Open Water 1	Unvegetated open water	0.2019	Non-Wetland Water of the U.S.	Otay River tributary; surface water present in the drainage.
Nestor Creek				
Open Water 2	Unvegetated open water	0.1394	Non-Wetland Water of the U.S.	Nestor Creek; surface water present in the channelized creek.
Interior Pond 20				
Open Water 3	Unvegetated open water	1.917	Non-Jurisdictional	Isolated semi-permanently flooded salt pond; surface water present in deepest part of the salt depression.
Open Water 4	Unvegetated open water	5.436	Non-Jurisdictional	Isolated semi-permanently flooded salt pond; surface water present in deepest part of the salt depression.
Otay River Tributary				
Drainage Feature 1	Unvegetated drainage	0.0303	Non-Wetland Water of the U.S.	Unvegetated drainage basin with some surface water present.
Borrow Areas (Interior Pond 20)				
Depression 1	Vegetated depression	0.0982	Non-Jurisdictional	Isolated depression within the salt flat supporting slenderleaf iceplant (*Mesembryanthemum nodiflorum*) and other upland herbaceous vegetation.

Site Feature Name	Type	Estimated Area (acres)	Potential Jurisdictional Determination	Description
Depression 2	Vegetated depression	0.1272	Non-Jurisdictional	Isolated depression within the salt flat supporting slenderleaf iceplant (*M. nodiflorum*) and other upland herbaceous vegetation.
Depression 3	Vegetated depression	0.1779	Non-Jurisdictional	Isolated depression within the salt flat supporting slenderleaf iceplant (*M. nodiflorum*) and other upland herbaceous vegetation.
Depression 4	Vegetated depression	0.2384	Non-Jurisdictional	Isolated depression within the salt flat supporting slenderleaf iceplant (*M. nodiflorum*) and other upland herbaceous vegetation.
Depression 5	Vegetated depression	0.3975	Non-Jurisdictional	Isolated depression within the salt flat supporting slenderleaf iceplant (*M. nodiflorum*) and other upland herbaceous vegetation.
Depression 6	Vegetated depression	0.3129	Non-Jurisdictional	Isolated depression within the salt flat supporting slenderleaf iceplant (*M. nodiflorum*) and other upland herbaceous vegetation.
Depression 7	Vegetated depression	0.1406	Non-Jurisdictional	Isolated depression within the salt flat supporting slenderleaf iceplant (*M. nodiflorum*) and other upland herbaceous vegetation.
Depression 8	Vegetated depression	0.0045	Non-Jurisdictional	Isolated depression within the salt flat supporting slenderleaf iceplant (*M. nodiflorum*) and other upland herbaceous vegetation.
Depression 9	Vegetated depression	0.0045	Non-Jurisdictional	Isolated depression within the salt flat supporting slenderleaf iceplant (*M. nodiflorum*) and other upland herbaceous vegetation.
Depression 10	Vegetated depression	0.0462	Non-Jurisdictional	Isolated depression within the salt flat supporting slenderleaf iceplant (*M. nodiflorum*) and other upland herbaceous vegetation.
Total Estimated Area		**10.43**		

6 SECTION 404 WATERS OF THE U.S.

Great Ecology identified seven water features outside the Pond 20 berm along Nestor Creek and the Otay River Tributary that exhibited positive soil, hydrology, and vegetation wetland indicators (FIGURE 8A). These seven areas are all located outside of Pond 20 (Wetlands 1 through 7) and have connectivity to WUS, and are thus jurisdictional wetlands. The freshwater marsh wetland located adjacent to the MS4 outfall in the Otay River Tributary Area was dominated by narrowleaf cattail. The four brackish marsh wetlands located in the Nestor Creek channel were dominated by California club-rush. The two salt marsh wetlands located along the banks of the Otay River tributary and

Nestor Creek were dominated by alkali sea-heath *and* pickleweed. Great Ecology also identified three non-wetland WUS features—two open water features and one unvegetated drainage bounded by clear OHWMs. Each wetland and non-wetland WUS feature is described in depth below and shown in APPENDIX A.

Great Ecology did not identify any jurisdictional wetlands or non-wetland WUS within the interior of Pond 20 (see **SECTION 7** for a detailed discussion of features).

6.1 Wetland Waters of the U.S. in the Otay River Tributary and Nestor Creek

Wetland 1 (Map W3)

Wetland 1 is located at the southern end of the Otay River Tributary Area at the mouth of an MS4 drainage and is dominated by narrowleaf cattail. This wetland is intermittently submerged during storm events with stormwater flows from the MS4 and sheet water flows from Palm Avenue. Although the presence of surface water and a high water table prevented a high-integrity soil sample, Great Ecology observed one centimeter of muck at the top of the soil matrix, and noted a hydrogen sulfide odor upon excavation of the soil sample within Wetland 1. At the time of sampling, the wetland vegetation had been recently cleared for stormwater system maintenance purposes, and the team observed a tree stump located within the wetland that was likely arroyo willow. The soils in Wetland 1 are hydric.

Wetland 2 (Map W1, W2, and W3)

Wetland 2 is located in the Otay River Tributary. The wetland contains dense salt marsh vegetation dominated by pickleweed, saltwort, alkali sea-heath, and shore grass. Patches of cordgrass were also observed. Portions of the wetland are intermittently submerged with tidal flows during high tide, but the steep elevation of the tributary banks prevents submersion of the entire wetland. The soils in Wetland 2 are clay and displayed concentrated redox features within a depleted matrix.

Wetland 4 (Map E1, E2, and E3)

Wetland 4 is located in Nestor Creek on the eastern edge Pond 20. Nestor Creek is freshwater, but is tidally influenced due to its proximity to the Otay River mouth and San Diego Bay. The wetland contains dense hydrophytic vegetation which includes both typical salt marsh and freshwater marsh species, including pickleweed, alkali sea-heath, and California club-rush. The soils in Wetland 4 are sandy loam and exhibited redox concentrations within the soil matrix upon excavation of the soil sample. The wetland is intermittently saturated with both tidal fluctuations and high freshwater flows during storm events.

Wetlands 3, 5, 6, and 7 (Map E2 and E3)

Wetlands 3, 5, 6, and 7 are located in Nestor Creek on the eastern boundary of Pond 20. These wetlands are characterized as being entirely within Nestor Creek OHWM limits with vegetation dominated by California club-rush. Although surface water and high water table prevented a high-integrity soil sample, Great Ecology observed one centimeter of muck on the top of the soil matrix within these wetlands. Given the prevalence of obligate hydrophytic vegetation community, Great Ecology assumed the soils to be hydric. Nestor Creek is freshwater, but is tidally influenced due to its proximity to the Otay River mouth and San Diego Bay. Great Ecology could not confirm the year-round hydrological regime for these wetland features using aerial imagery. Evidence encountered in the field suggests that, under normal climatic conditions, Wetlands 3, 5, 6, and 7 are inundated year-round with fresh water and likely receive pulses of saline water during high tides, resulting in a brackish mix of fresh and marine waters (soil samples N1, N2, and N3).

6.2 Non-Wetland Waters of the U.S.

Open Water 1 (Map W1, W2, and W3)

Open Water 1 is located within the Otay River Tributary. It is located on the western boundary of Pond 20 entirely outside of the berm. The surface water feature appears to be permanently inundated near the northern end of its extent, and becomes semi-permanently inundated at the southern end depending on the fluctuation of tidal prism through the channel. The feature also carries storm water discharges from the MS4 drainage which sheet flows from Palm Avenue during storm flows. The tributary was surrounded by salt marsh (Wetland 2) and showed a clear OHWM. The channel bottom is comprised of unconsolidated mud and is unvegetated. The soils in Open Water 1 are hydric.

Open Water 2 (Map E1, E2, and E3)

Open Water 2 is located in Nestor Creek along the eastern boundary Pond 20, entirely outside of the berm. The surface water appears to be permanent and empties into the Otay River approximately 1,500 feet to the north. Nestor Creek is surrounded by salt marsh (Wetland 4) and contains brackish marsh (Wetlands 3, 5, 6, and 7) within its OHWM. The channel bottom is comprised of unconsolidated mud and is unvegetated except for areas covered by vegetation noted in Wetlands 3, 5, 6, and 7.

Drainage Feature 1 (Map W3)

Drainage Feature 1 is located between the southern terminus of Open Water 2 (the Otay River Tributary) and the northern boundary of Wetland 1. Drainage Feature 1 is a shallow, unvegetated drainage basin that had intermittent surface water present at the time of the field wetland

delineation. During the wetland delineation field effort, Open Water 2 and Wetland 1 were not directly connected via Drainage Feature 1, but the presence of standing water indicates that there was some level of surface water connectivity between the two. The drainage may receive tidal flows from the Otay River tributary to the north, and stormwater discharge from both the MS4 drainage and surface runoff from Palm Avenue. During a December 2016 storm event, Great Ecology observed surface water connectivity between Open Water 1, Drainage Feature 1, and Wetland 1. This area, contained within an OHWM boundary, is comprised of an unconsolidated mud bottom, and is unvegetated. Outside of the OHWM boundary, Drainage Feature 1 is flanked by salt marsh wetlands dominated by coastal salt grass, and three Brazilian pepper tree individuals.

7 POND 20 ISOLATED WATERS

7.1 Regulatory Basis

Pond 20 is not considered WUS, based on the following. Great Ecology considered the definitions for isolated intrastate waters and man-induced wetlands when making the jurisdictional determination for wetland and non-wetland waters based on the field survey conducted. A complete discussion of these issues is offered in the attached Regulatory Analysis for Bermed Area Features memorandum (APPENDIX F), and a brief summary is included here.

Isolated wetland and non-wetland waters may be exempt from USACE jurisdiction under the CWA as interpreted by the U.S. Supreme Court's ruling for *Rapanos v. United States* 547 U.S. 715 (2006). Specifically, the USACE does not have jurisdiction over wetlands and non-wetland waters that do not have a hydrological or otherwise significant nexus (SNX) to, and are not adjacent to a traditional "navigable waters of the U.S." (TNW), and do not exhibit any other interstate commerce connection. Subsequent judicial interpretations of the Supreme Court's *Rapanos* have distinguished between non-wetland waters and wetlands in the context of adjacency and concluded that

non-wetland waters adjacent to WUS can only be WUS where a hydrological connection or otherwise SNX to a TNW exists.

7.2 Isolated Intrastate Waters Identified Onsite

Great Ecology identified twelve isolated intrastate water features located within Pond 20. Two features are perennial open waters, and ten are intermittently flooded waters. Pond 20 is hydrologically isolated from surrounding surface waters. The height and extent of the berm that surrounds Pond 20 prevents the flow of surface water between the Otay River, Otay River Tributary, and Nestor Creek, all located outside of Pond 20, and the surface water features located within Pond 20 (TABLE 2). Water only enters Pond 20 via precipitation and surface storm water flows from Palm Avenue, which lines the southernmost border (FIGURE 2). Great Ecology staff observed two

stormwater conveyances that funnel street-level water from Palm Avenue into Pond 20, and evidence of surface sheet flow from the street into Pond 20 (APPENDIX E). Palm Avenue is at an elevation of 14.43 feet MLLW and the average elevation of Pond 20 is 9.05 feet MLLW. Palm Avenue is therefore approximately 5.38 feet MLLW above the grade of Pond 20 and thus no surface water can flow from Pond 20 onto the street. Additionally, Great Ecology did not observe any fluctuations in the water level of the perennial pools with the tides, indicating that there is likely no subterranean connection between the tidal flows and the perennial pools within Pond 20. Great Ecology therefore determined standing water within the features located in Pond 20 is due only to the collection of rainwater and from sheet flow from Palm Avenue during storm events, not from the flow of surface water or groundwater into Pond 20 from surrounding WUS. These are non-wetland features; there exist no wetlands within Pond 20. Accordingly, although arguably adjacent to the Otay River and Nestor Creek, they are only jurisdictional if they have a hydrologic or otherwise SNX to these waterways,

These perennial open waters and intermittently flooded depressions are discussed in depth below.

Open Waters 3 and 4 (Map 8A)

Open Waters 3 and 4 are semi-permanently flooded borrow areas encrusted with salt located wholly within Pond 20, which is completely enclosed by a berm that obstructs the flow of water. These borrow areas surface water levels are driven entirely by precipitation and evaporation regimes. Seasonally and during drought conditions, the borrow areas may be intermittently exposed with an unconsolidated mud bottom. The borrow areas receive water exclusively from rain events and from stormwater run-off entering Pond 20 via sheet water flows and from two stormwater downspouts from Palm Avenue into the site along its southernmost boundary. Once collected, water remains in the borrow areas due to low-permeability soil.

The berm surrounding Pond 20 inhibits the flow of surface water between Open Waters 3 and 4 and surrounding WUS features. In addition, multiple observations conducted over the multi-day delineation effort demonstrated that the surface water level of the interior of Pond 20 does not fluctuate with the tides, indicating that Pond 20 is isolated from any groundwater connections to the tidal features outside the berms. Because the borrow areas are located completely within the berm they are not hydrologically connected to, nor do they possess a SNX connection with, the Otay River, its tributary, nor Nestor Creek; thus, they are not jurisdictional (see APPENDIX F for a detailed regulatory analysis employed to support this determination).

Depressions 1 to 10 (Map 8A and 8B)

Depressions 1 through 10 are intermittently flooded depressional water features located within Pond 20. These depressions showed an OHWM due to the regular collection of rainwater and stormwater

inputs from Palm Avenue. Great Ecology identified positive wetland hydrology indicators within the depressions. Several depressions were flooded at the time of the delineation. The sample depressions had a water table measured at 11 inches, and saturation present at 10 inches. No positive indicators for hydrophytic vegetation were observed. The isolated depressions were predominately unvegetated with mats of slenderleaf iceplant (Arid West indicator status FACU) established along the edges. Soils within these depressions appear to be a predominantly sandy clay loam and did not exhibit hydric soil features despite the landscape position and hydrology of these features. Soil tests obtained after the wetland delineation indicated a moderately high pH ranging from 8.1 to 8.3, and high soil salinity ranging from 16 to 35 microSiemens (µS) at sample points located within representative depressional features. Alkaline soils with pH greater than 7.9 may inhibit the formation of redox features within the soil matrix. These soils reflect the moderately alkaline soil conditions listed as a problematic soil type in the Arid West Regional Supplement (USACE 2008). Great Ecology used this guidance to make a determination regarding the hydric nature of the soils. Given the soils do not support hydrophytic vegetation and therefore only exhibit one positive wetland indicator for hydrology, Great Ecology determined the soils are not hydric within these features (see ***Section 4.4*** for a discussion of this determination).

Great Ecology determined the intermittently flooded depressions are not wetlands. The presence of an OHWM indicates these features are non-wetland waters. These intermittently flooded depressions are hydrologically isolated from jurisdictional features outside the berm, with no flow of surface water nor groundwater between the depressions and the outer WUS features. Because the features are not wetlands and lack a hydrological connection or SNX to the nearby waterways, they are not jurisdictional. (see APPENDIX F for a detailed regulatory analysis employed to support this determination).

8 USACE JURISDICTIONAL DELINEATION

Great Ecology delineated 1.16 acres of wetland WUS and 0.37 acres of non-wetland waters that are considered jurisdictional under Section 404 of the CWA in Nestor Creek and the Otay River tributary. The extents of these wetland and non-wetland water features are depicted in APPENDIX A. These features are located exclusively within the Nestor Creek and Otay River Tributary areas and all are hydrologically connected to the Otay River Tributary or Nestor Creek and San Diego Bay. All identified wetland and non-wetland water features are therefore either defined as traditional “navigable waters of the U.S.” (TNW) or are tributary to a TNW and therefore meet the definition of jurisdictional wetland waters and non-wetland waters under Section 404 of the CWA. Great Ecology did not delineation any wetland or non-wetland WUS within Pond 20.

Great Ecology identified and classified each jurisdictional wetland and non-wetland water by wetland

type using the National Wetlands Classification Standard utilized by the USFWS (FGDC 2013) and adapted from Cowardin et al. (1979). Great Ecology confirmed the presence of two estuarine intertidal persistent emergent wetlands, irregularly flooded (Wetlands 2 and 4; E2EM1P), four estuarine intertidal persistent emergent wetland, regularly flooded (Wetlands 3, 5, 6, and 7; E2EM1N), one persistent, semi-permanently flooded, freshwater marsh (Wetlands 1; PEM1F), two open water riverine systems with tidal influence and a unconsolidated bottom (Open Water 1 and 2; R1UB3), and one palustrine, intermittently flooded drainage feature with an unconsolidated mud bottom (Drainage Feature 1, PUB3J). It is Great Ecology's opinion that these features should be classified jurisdictional. However, only the USACE can make the final determination of the jurisdictional status of wetlands or water bodies and on the need for permitting and compensatory mitigation.

The conclusions of this delineation are based on conditions observed at the time of the field delineation surveys conducted on January 31 through February 6, 2017.

TABLE 8 below summarizes the potential jurisdictional determination for each site feature.

TABLE 8: POTENTIAL JURISDICTIONAL DETERMINATION FOR ONSITE WATER FEATURES

Site Feature	Great Ecology-Designated Cowardin Wetland Classification	Jurisdictional Determination	Estimated Area (acres)
Otay River Tributary			
Wetland 1	PEM1F	Wetland Water of the U.S.	0.0086
Wetland 2	E2EM1P	Wetland Water of the U.S.	0.8977
Nestor Creek			
Wetland 3	E2EM1N	Wetland Water of the U.S.	0.0025
Wetland 4	E2EM1P	Wetland Water of the U.S.	0.2285
Wetland 5	E2EM1N	Wetland Water of the U.S.	0.0055
Wetland 6	E2EM1N	Wetland Water of the U.S.	0.0158
Wetland 7	E2EM1N	Wetland Water of the U.S.	0.0027
Otay River Tributary			
Drainage Feature 1	PUB3J	Non-Wetland Water of the U.S.	0.0303
Open Water 1	R1UB3	Non-Wetland Water of the U.S.	0.2019
Nestor Creek			
Open Water 2	R1UB3	Non-Wetland Water of the U.S.	0.1369
Interior Pond 20			
Open Water 3		Non-Jurisdictional	1.917
Open Water 4		Non-Jurisdictional	5.436
Borrow Areas (Interior Pond 20)			
Depression 1		Non-Jurisdictional	0.0982
Depression 2		Non-Jurisdictional	0.1272
Depression 3		Non-Jurisdictional	0.1779
Depression 4		Non-Jurisdictional	0.2384
Depression 5		Non-Jurisdictional	0.3975
Depression 6		Non-Jurisdictional	0.3129
Depression 7		Non-Jurisdictional	0.1406
Depression 8		Non-Jurisdictional	0.0045
Depression 9		Non-Jurisdictional	0.0045
Depression 10		Non-Jurisdictional	0.0462
Wetland Waters of the U.S. Total Area			1.16
Non-Wetland Waters of the U.S. Total Area			0.37
Non-Wetland Intrastate Isolated Waters Total Area			8.90

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SITE OVERVIEW
SOUTH SAN DIEGO BAY WETLAND MITIGATION BANK

SAN DIEGO UNIFIED PORT DISTRICT
NOVEMBER 2017

0 0.15 0.3 Miles

N

1:7,500
NAD 83 CA STATE PLANE FIPS IV 0406
CENTROID: 32.5869° N, 117.1004° W

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POND 20 - EXISTING HYDROLOGIC FEATURES

SAN DIEGO UNIFIED PORT DISTRICT
AUGUST, 2017

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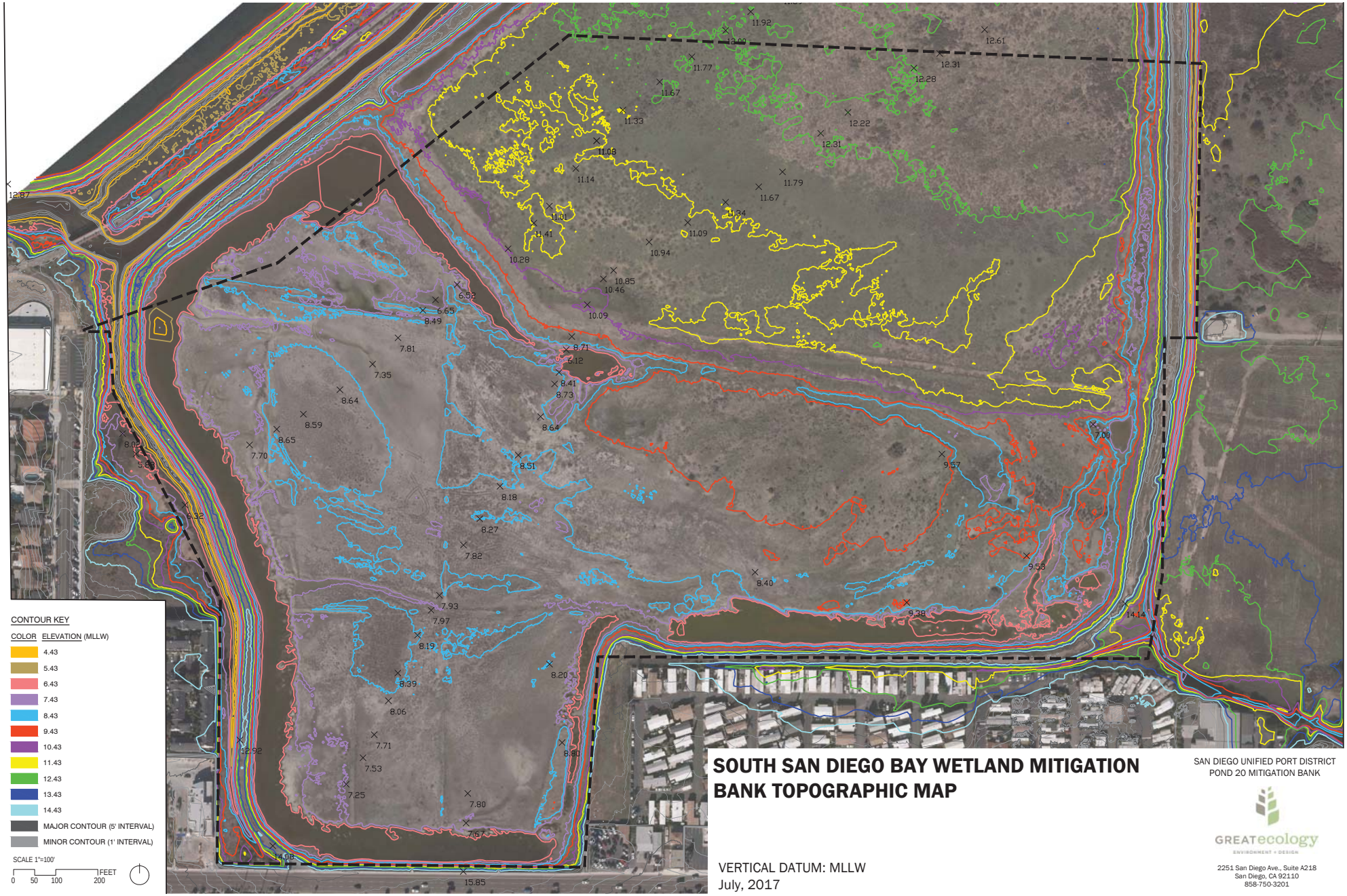
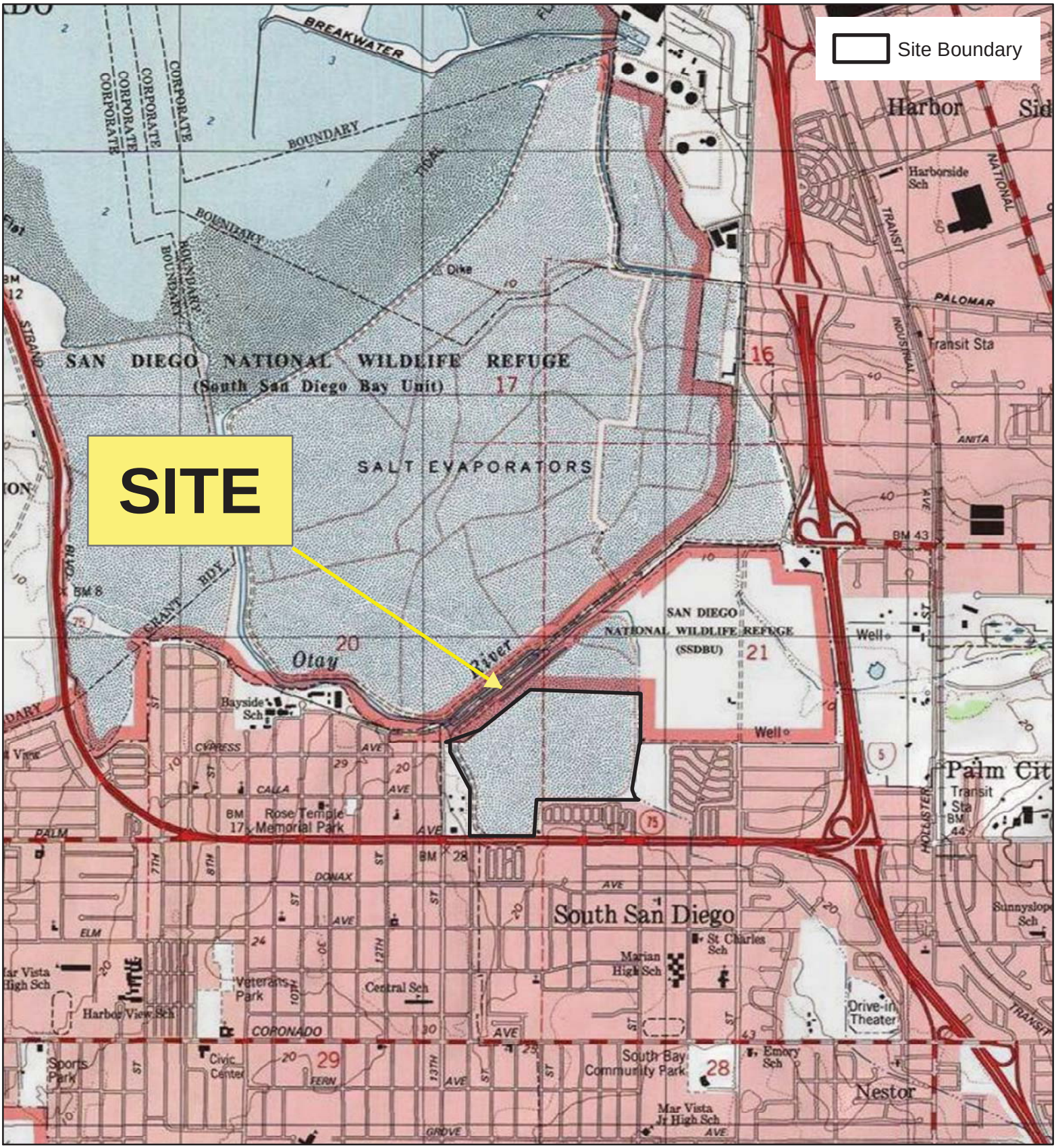


SOUTH SAN DIEGO BAY WETLAND MITIGATION BANK TOPOGRAPHIC MAP

VERTICAL DATUM: MLLW
July, 2017

SAN DIEGO UNIFIED PORT DISTRICT
POND 20 MITIGATION BANK

GREATecology
ENVIRONMENT + DESIGN
2251 San Diego Ave., Suite A218
San Diego, CA 92110
858-750-3201



TOPOGRAPHIC MAP (USGS 2002)
SOUTH SAN DIEGO BAY WETLAND MITIGATION BANK

1:25,000
WGS 1984 WEB MERCATOR

7.5 MINUTE QUADRANGLE: IMPERIAL BEACH
SAN DIEGO UNIFIED PORT DISTRICT
APRIL 2017

0 0.5 1 Miles

N

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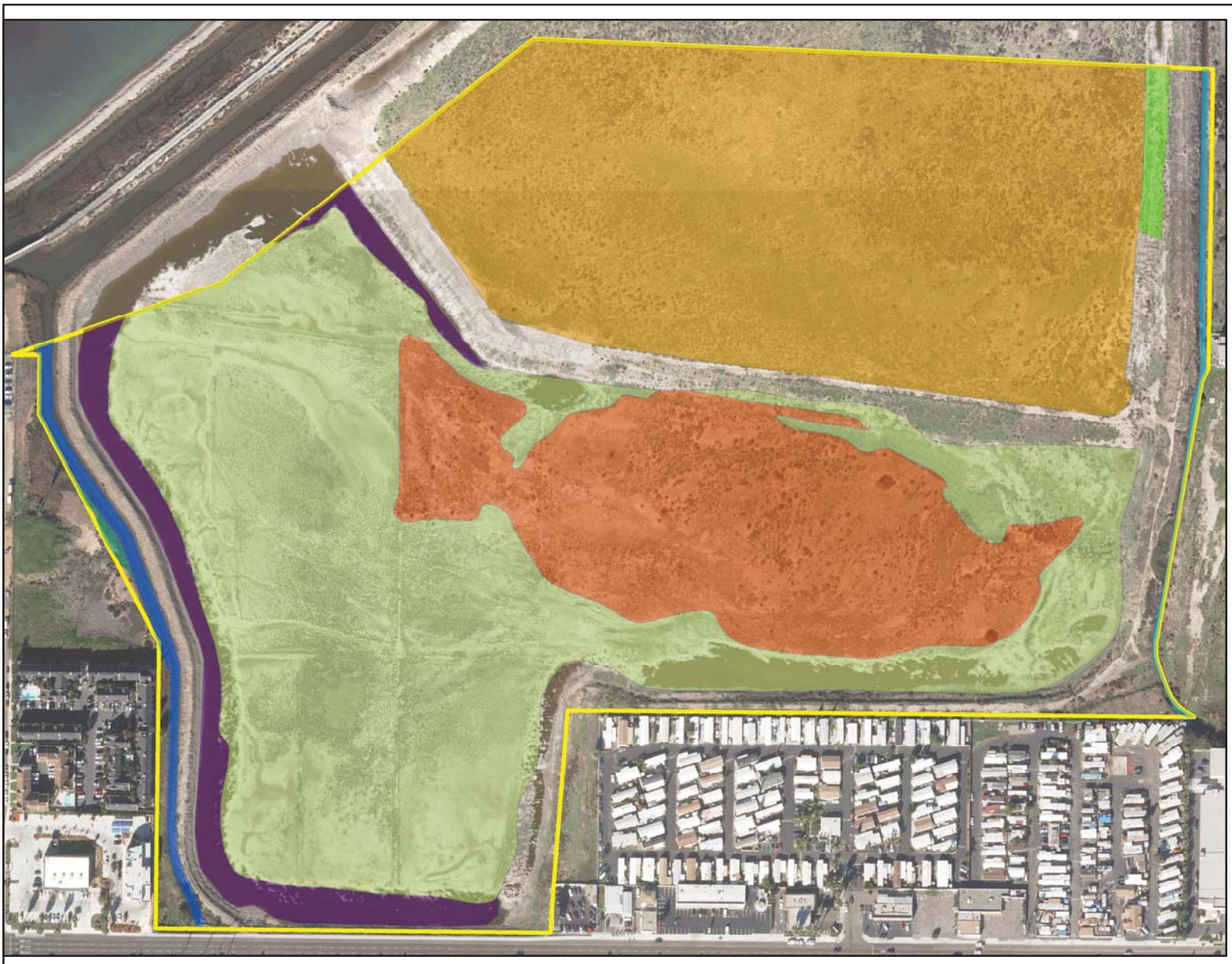


Legend

- E2EM1Nh - Estuarine Intertidal Emergent Persistent Regularly Flooded, Diked/Impounded
- E2EM1Px - Estuarine Intertidal Emergent Persistent Irregularly Flooded, Excavated
- E2SBMx - Estuarine Intertidal Streambed Irregularly Exposed, Excavated
- E2SBNx - Estuarine Intertidal Streambed Regularly Flooded, Excavated
- E2SSP - Estuarine Intertidal Scrub-Shrub Irregularly Flooded
- E2SSPh - Estuarine Intertidal Scrub-Shrub Irregularly Flooded, Diked/Impounded
- E2USNh - Estuarine Intertidal Unconsolidated Shore Regularly Flooded, Diked/Impounded
- E2USPh - Estuarine Intertidal Unconsolidated Shore Irregularly Flooded, Diked/Impounded

NATIONAL WETLANDS INVENTORY (2006)
SOUTH SAN DIEGO BAY WETLAND MITIGATION BANK

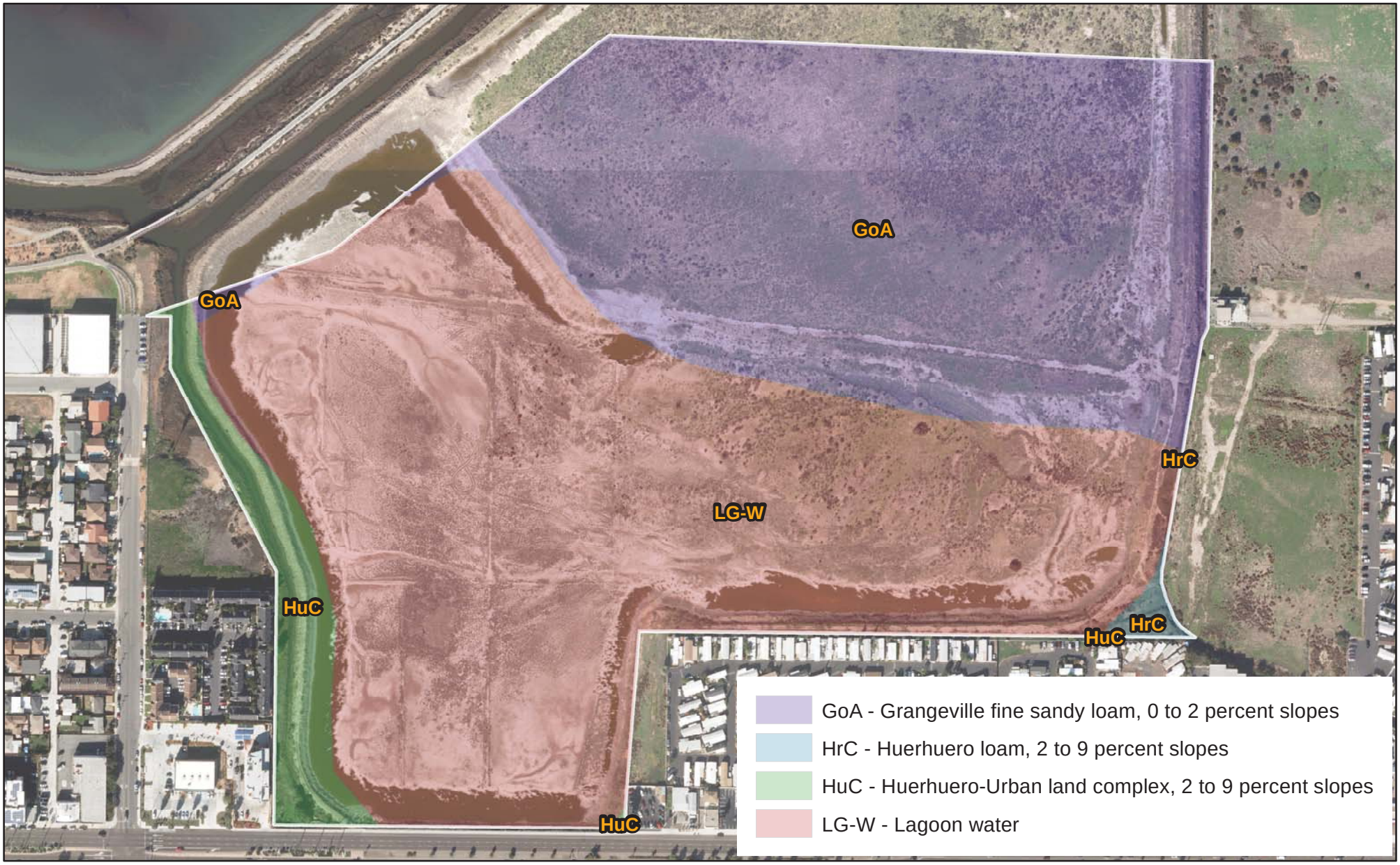
1:4,000
NAD 83 CA STATE PLANE FIPS IV

SAN DIEGO UNIFIED PORT DISTRICT
APRIL 2017

0 0.05 0.1 Miles

N

GREATecology
ENVIRONMENT + DESIGN



SOIL SURVEY (NRCS 1973)
SOUTH SAN DIEGO BAY WETLAND MITIGATION BANK

1:4,000
NAD 1983 CA STATE PLANE FIPS IV

SAN DIEGO UNIFIED PORT DISTRICT
APRIL 2017

0 0.05 0.1 Miles

N

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ENVIRONMENT + DESIGN

SAMPLING TRANSECTS, SAMPLING POINTS, AND PHOTO POINTS
SOUTH SAN DIEGO BAY WETLAND MITIGATION BANK

1:4,000
NAD 1983 CA STATE PLANE VI

SAN DIEGO UNIFIED PORT DISTRICT
SEPTEMBER 2017

0 0.05 0.1 Miles

N

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ENVIRONMENT + DESIGN

IDENTIFIED ONSITE WATER FEATURES - OVERVIEW
SOUTH SAN DIEGO BAY WETLAND MITIGATION BANK

1:4,000
NAD 1983 CA STATE PLANE FIPS VI

SAN DIEGO UNIFIED PORT DISTRICT
APRIL 2017

0 0.05 0.1 Miles

N

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POTENTIAL JURISDICTIONAL WATERS - W1
SOUTH SAN DIEGO BAY **WETLAND** MITIGATION BANK

1:750
NAD 1983 CA STATE PLANE FIPS IV

SAN DIEGO UNIFIED PORT DISTRICT
APRIL 2017

0 50 100 Feet

N

GREATecology
ENVIRONMENT + DESIGN

POTENTIAL JURISDICTIONAL WATERS - W2
SOUTH SAN DIEGO BAY **WETLAND** MITIGATION BANK

1:750
NAD 1983 CA STATE PLANE FIPS IV

SAN DIEGO UNIFIED PORT DISTRICT
APRIL 2017

0 50 100 Feet

GREATecology
ENVIRONMENT + DESIGN

POTENTIAL JURISDICTIONAL WATERS - W3
SOUTH SAN DIEGO BAY WETLAND MITIGATION BANK

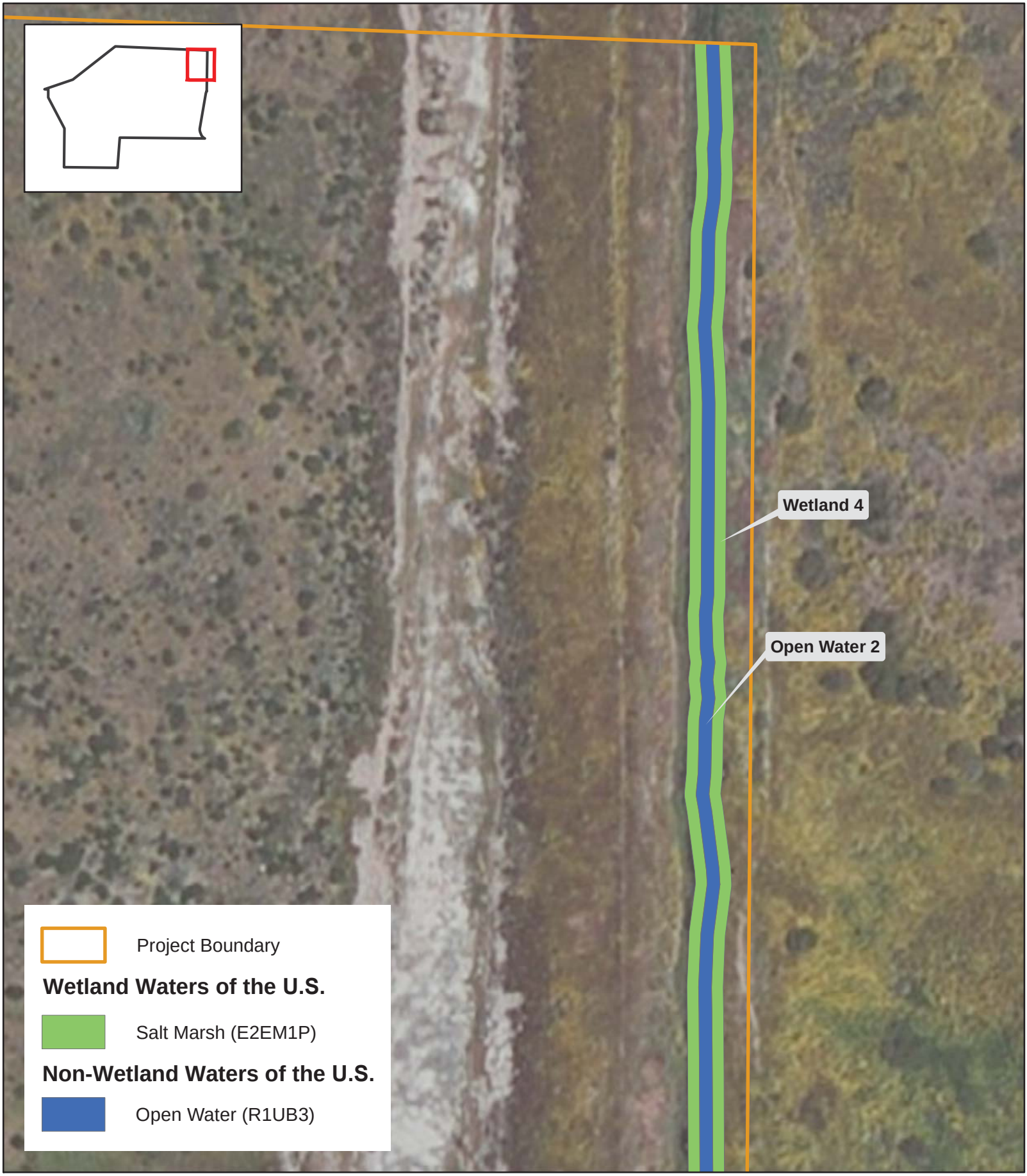
1:750
NAD 1983 CA STATE PLANE FIPS IV

SAN DIEGO UNIFIED PORT DISTRICT
APRIL 2017

0 50 100 Feet

N

GREATecology
ENVIRONMENT + DESIGN



POTENTIAL JURISDICTIONAL WATERS - E1
SOUTH SAN DIEGO BAY **WETLAND** MITIGATION BANK

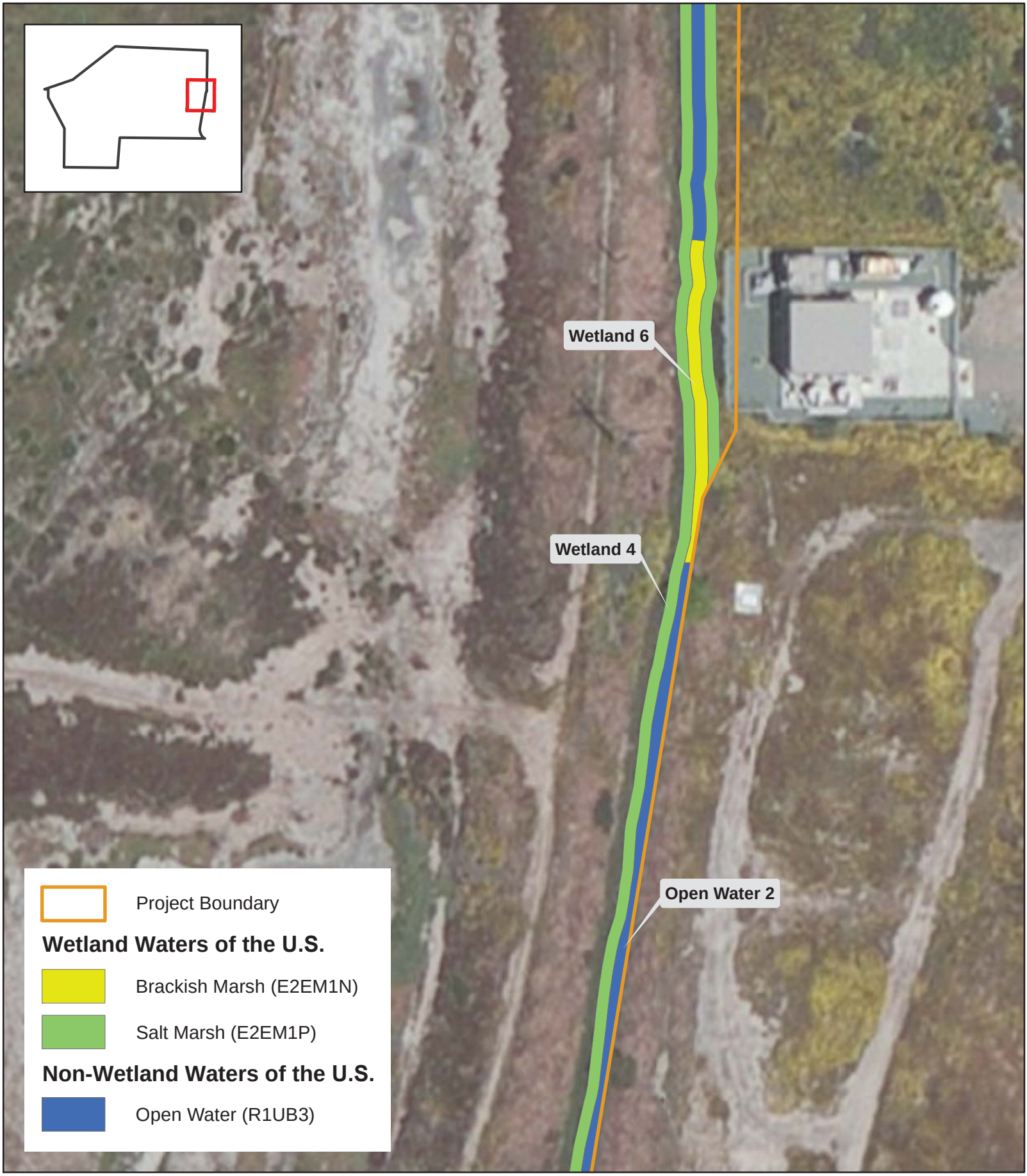
1:750
NAD 1983 CA STATE PLANE FIPS IV

SAN DIEGO UNIFIED PORT DISTRICT
APRIL 2017

0 50 100 Feet

N

GREATecology
ENVIRONMENT + DESIGN



POTENTIAL JURISDICTIONAL WATERS - E2
SOUTH SAN DIEGO BAY **WETLAND** MITIGATION BANK

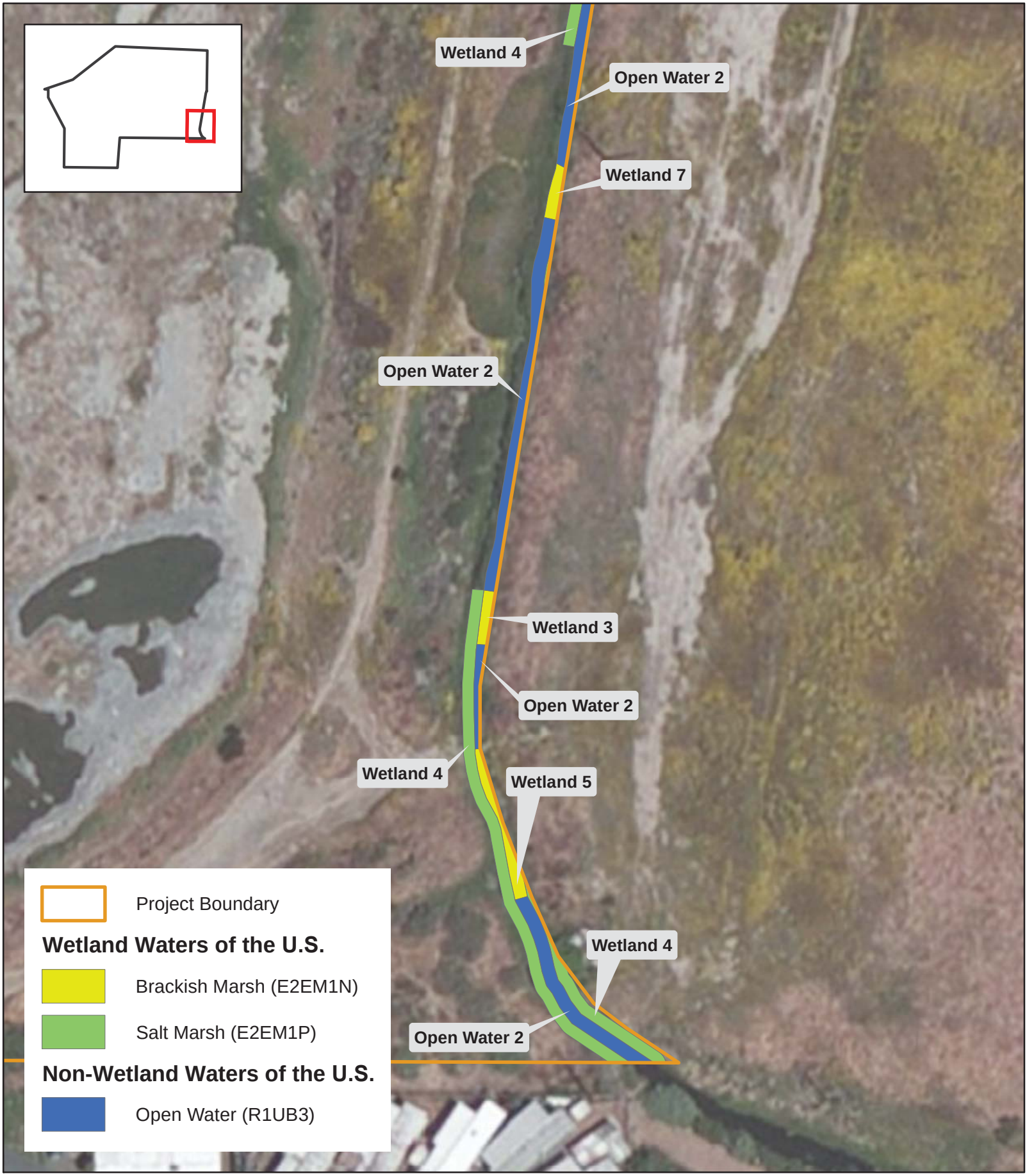
1:750
NAD 1983 CA STATE PLANE FIPS IV

SAN DIEGO UNIFIED PORT DISTRICT
APRIL 2017

0 50 100 Feet

N

GREATecology
ENVIRONMENT + DESIGN



POTENTIAL JURISDICTIONAL WATERS - E3
SOUTH SAN DIEGO BAY **WETLAND** MITIGATION BANK

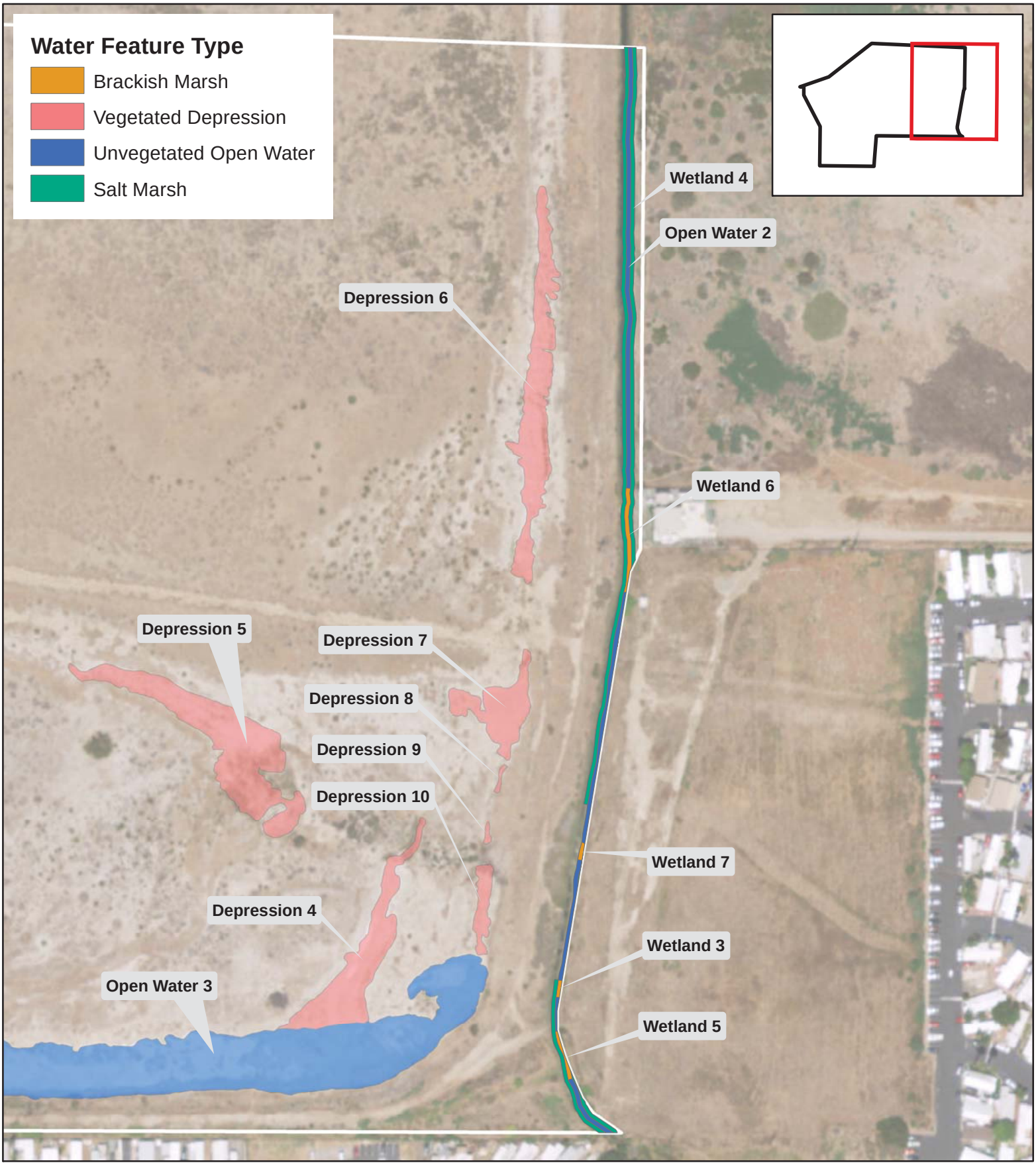
1:750
NAD 1983 CA STATE PLANE FIPS IV

SAN DIEGO UNIFIED PORT DISTRICT
APRIL 2017

0 50 100 Feet

N

GREATecology
ENVIRONMENT + DESIGN



IDENTIFIED ONSITE WATER FEATURES - EAST SOUTH SAN DIEGO BAY WETLAND MITIGATION BANK

1:2,400
NAD 1983 CA STATE PLANE FIPS VI

SAN DIEGO UNIFIED PORT DISTRICT
APRIL 2017

0 0.05 0.1 Miles

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ENVIRONMENT + DESIGN

APPENDIX A:
PRELIMINARY SECTION 404 JURISDICTIONAL MAPS

POTENTIAL JURISDICTIONAL WATERS - OVERVIEW
SOUTH SAN DIEGO BAY WETLAND MITIGATION BANK

1:4,000
NAD 1983 CA STATE PLANE FIPS IV

SAN DIEGO UNIFIED PORT DISTRICT
APRIL 2017

0 0.05 0.1 Miles

N

GREATecology
ENVIRONMENT + DESIGN

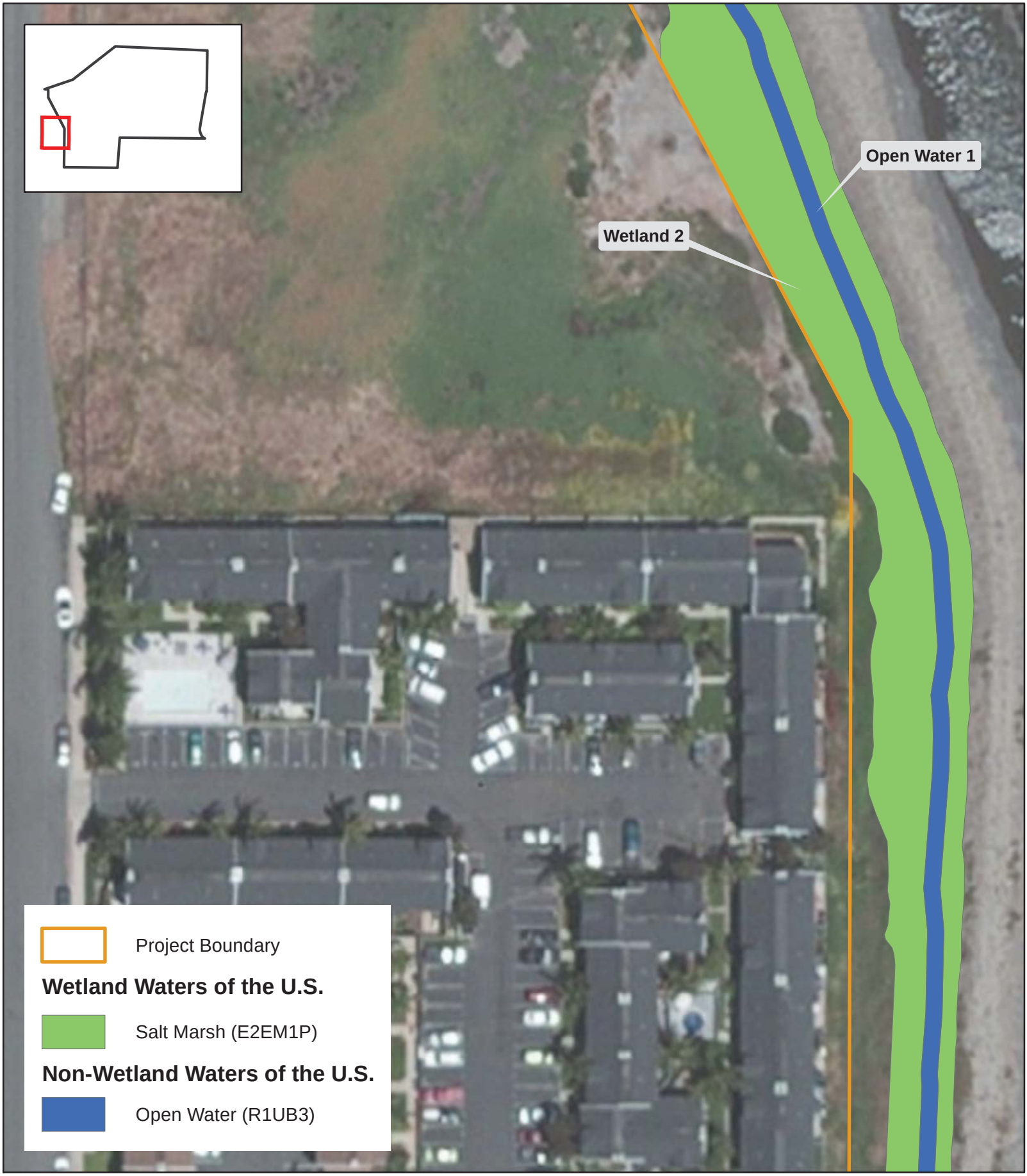
POTENTIAL JURISDICTIONAL WATERS - W1
SOUTH SAN DIEGO BAY WETLAND MITIGATION BANK

1:750
NAD 1983 CA STATE PLANE FIPS IV

SAN DIEGO UNIFIED PORT DISTRICT
APRIL 2017

0 50 100 Feet

GREATecology
ENVIRONMENT + DESIGN



POTENTIAL JURISDICTIONAL WATERS - W2
SOUTH SAN DIEGO BAY WETLAND MITIGATION BANK

1:750
NAD 1983 CA STATE PLANE FIPS IV

SAN DIEGO UNIFIED PORT DISTRICT
APRIL 2017

0 50 100 Feet

GREATecology
ENVIRONMENT + DESIGN

POTENTIAL JURISDICTIONAL WATERS - W3
SOUTH SAN DIEGO BAY WETLAND MITIGATION BANK

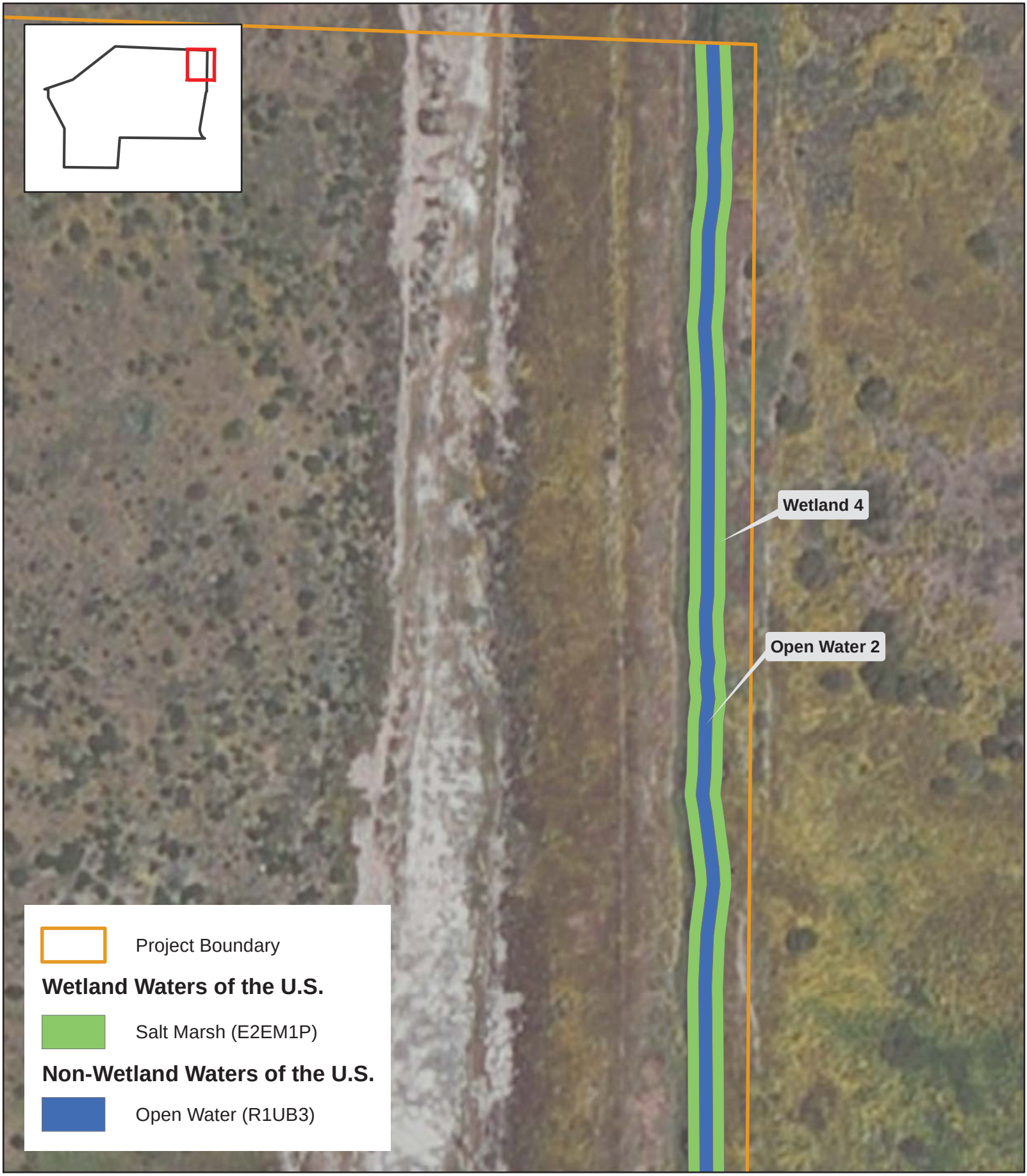
1:750
NAD 1983 CA STATE PLANE FIPS IV

SAN DIEGO UNIFIED PORT DISTRICT
APRIL 2017

0 50 100 Feet

N

GREATecology
ENVIRONMENT + DESIGN



POTENTIAL JURISDICTIONAL WATERS - E1
SOUTH SAN DIEGO BAY WETLAND MITIGATION BANK

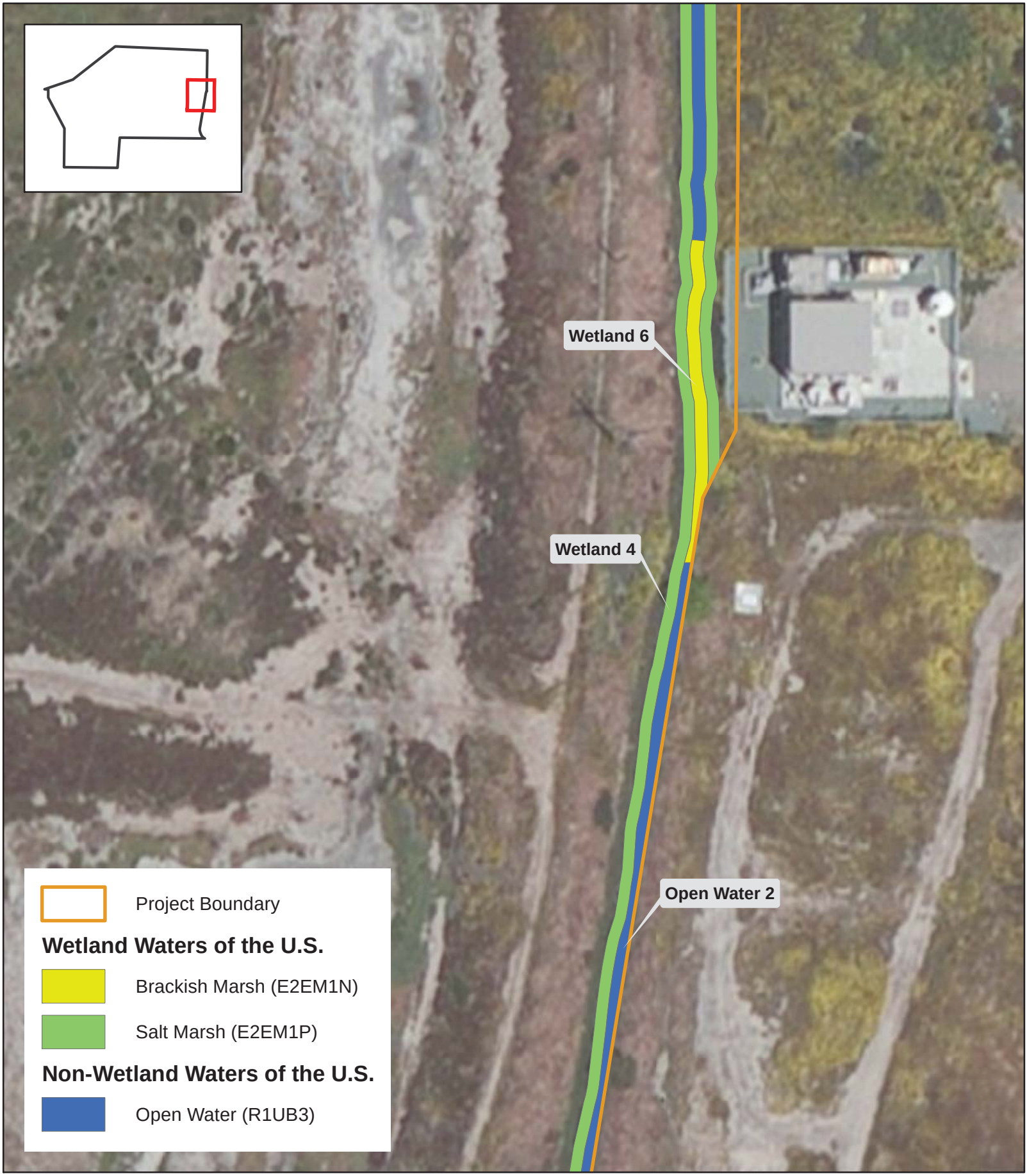
1:750
NAD 1983 CA STATE PLANE FIPS IV

SAN DIEGO UNIFIED PORT DISTRICT
APRIL 2017

0 50 100 Feet

N

GREATecology
ENVIRONMENT + DESIGN



POTENTIAL JURISDICTIONAL WATERS - E2
SOUTH SAN DIEGO BAY WETLAND MITIGATION BANK

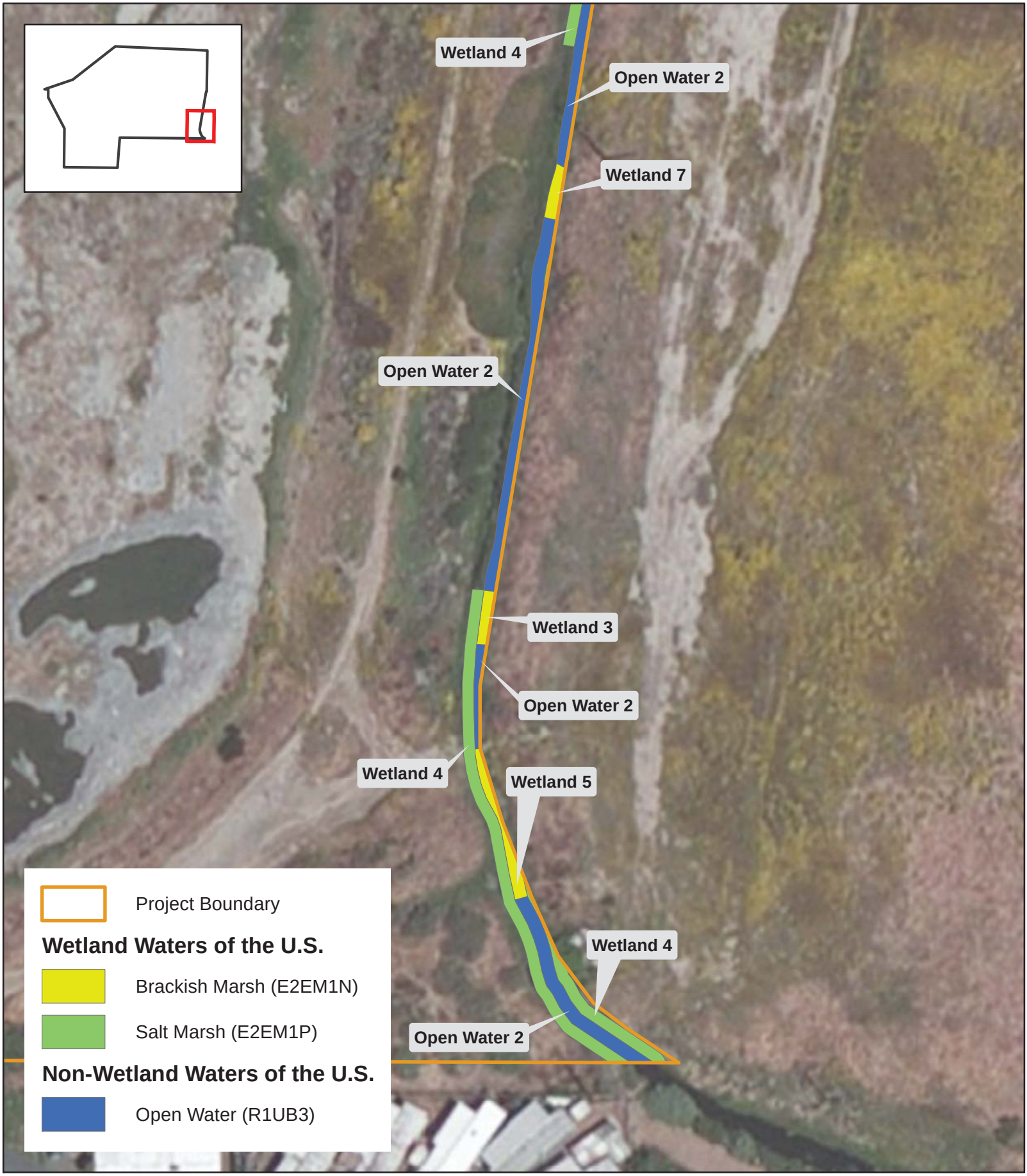
1:750
NAD 1983 CA STATE PLANE FIPS IV

SAN DIEGO UNIFIED PORT DISTRICT
APRIL 2017

0 50 100 Feet

N

GREATecology
ENVIRONMENT + DESIGN



POTENTIAL JURISDICTIONAL WATERS - E3
SOUTH SAN DIEGO BAY WETLAND MITIGATION BANK

1:750
NAD 1983 CA STATE PLANE FIPS IV

SAN DIEGO UNIFIED PORT DISTRICT
APRIL 2017

0 50 100 Feet

N

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ENVIRONMENT + DESIGN

APPENDIX B:
HISTORICAL AERIAL PHOTOGRAPHS

REGISTER Nº.:	T-365
PUBLISHED:	1852
SURVEYOR:	A. M. HARRISON
LOCALE:	TIJUANA ESTUARY, SOUTHERN PART OF SAN DIEGO BAY

N

1:34,000

0 1,000 2,000 4,000 6,000 8,000 Feet

0 500 1,000 2,000 Meters

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FIGURE 1A: 1852 T-SHEET NO. T-365 (SOURCE: GROSSINGER ET AL. 2011)

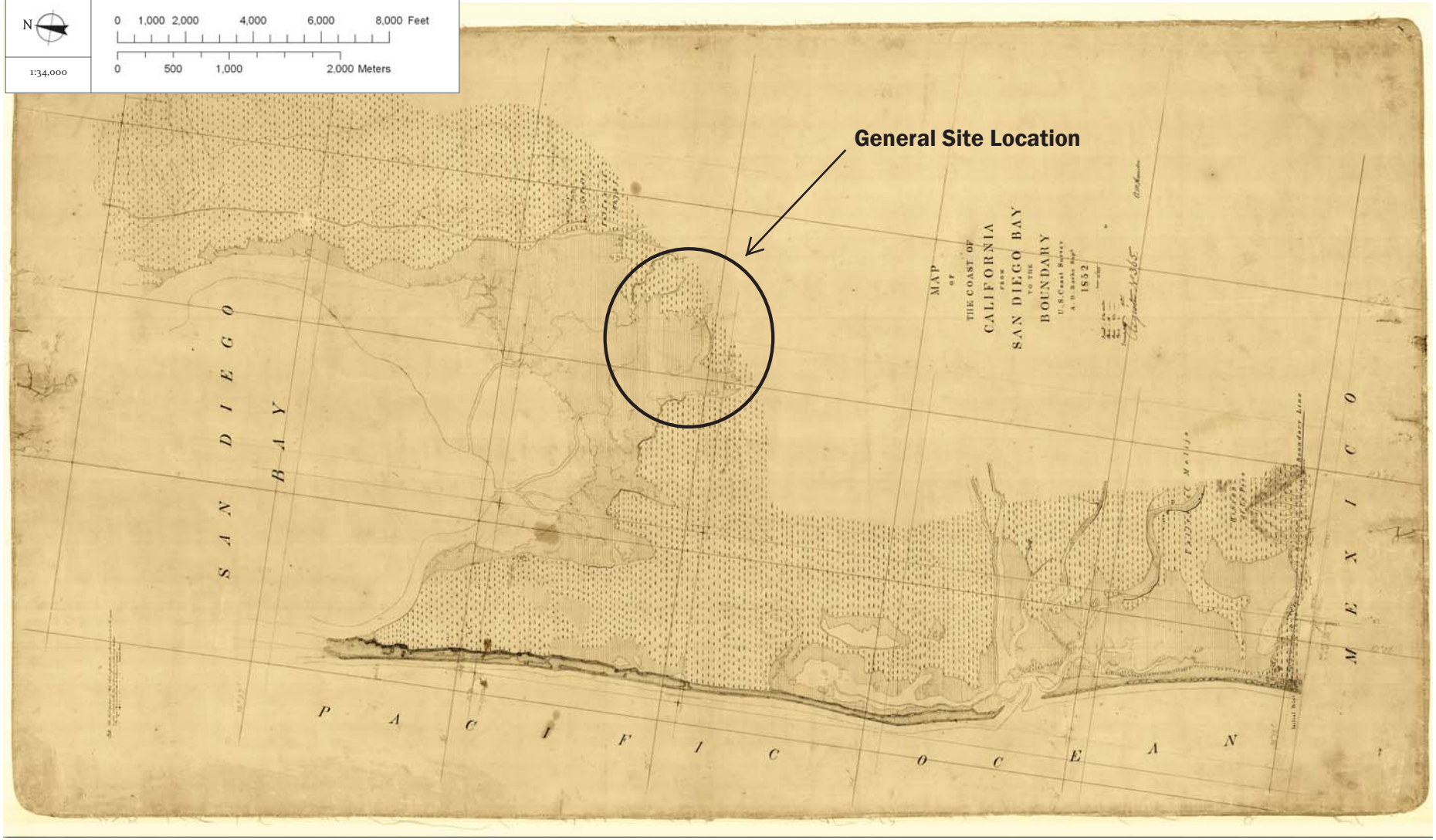

Figure 29. T-365 (full extent).

FIGURE 1B: COASTAL FEATURES DIGITIZED FROM T-SHEET NO. T-365, OVERLAID ON MODERN AERIAL PHOTOGRAPHY (USDA 2005) (SOURCE: GROSSINGER ET AL. 2011

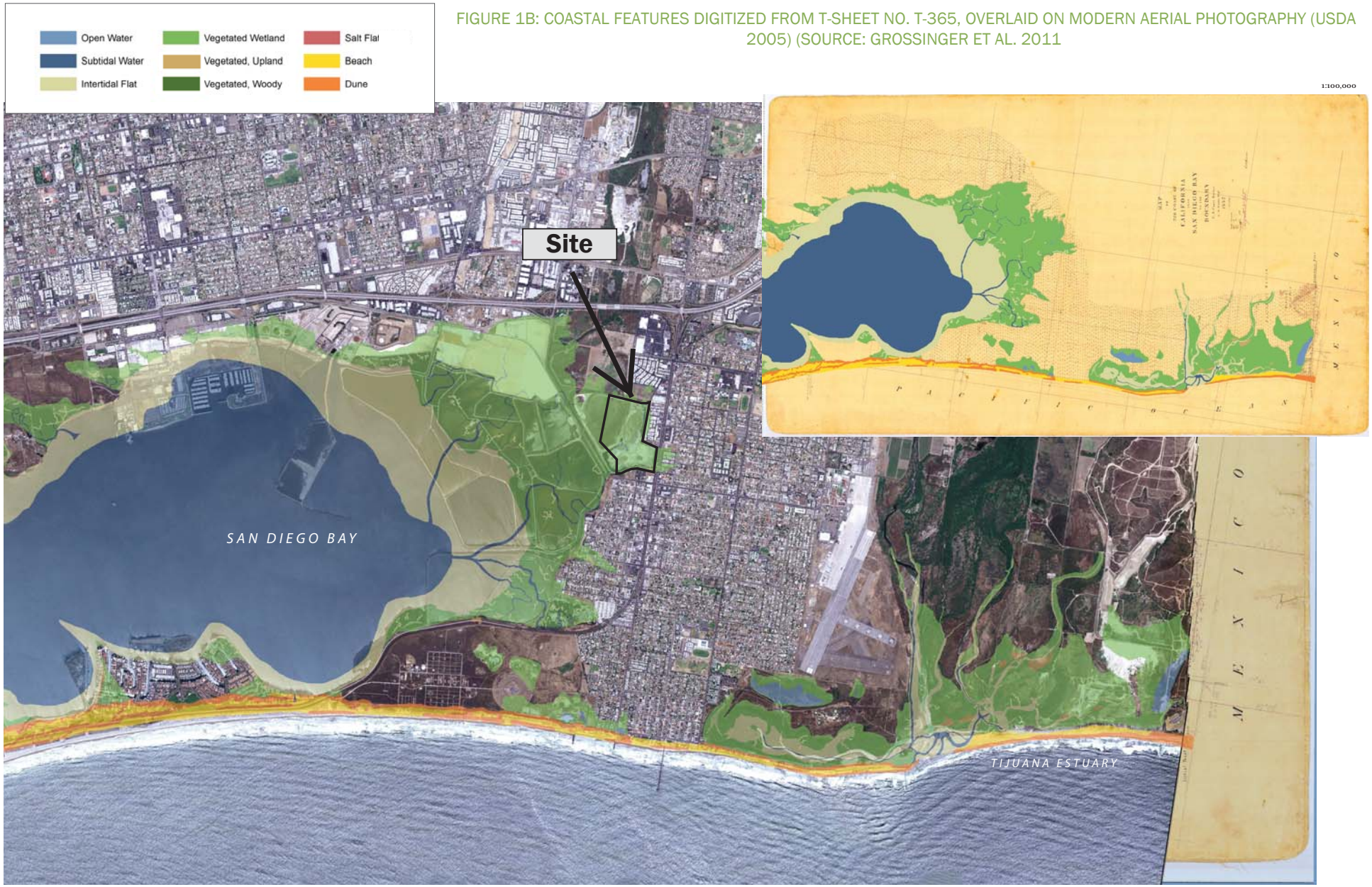

Figure 30. Coastal features digitized from T-365, overlaid on modern aerial photography (USDA 2005), at same scale as facing T-sheet.

GREATecology

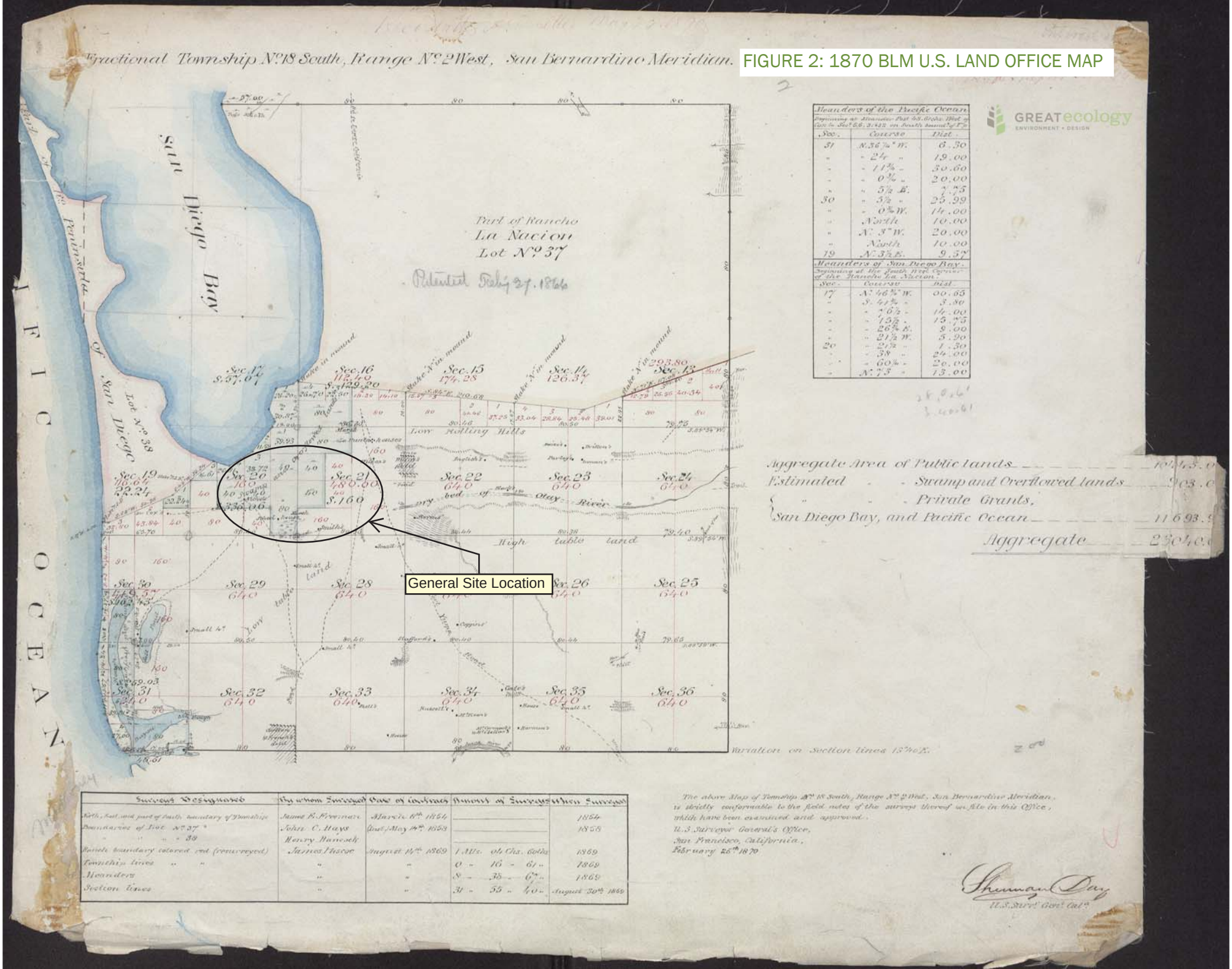
Fractional Township No. 18 South, Range No. 2 West, San Bernardino Meridian.
FIGURE 2: 1870 BLM U.S. LAND OFFICE MAP
GREAT ecology
ENVIRONMENT • DESIGN
San Diego Bay
Part of Rancho La Nacion Lot No. 37
Patented Feby 27. 1866
Lot No. 38
Sec. 17 S. 57.07
Sec. 16 112.40 S. 129.20
Sec. 15 174.28
Sec. 14 126.37
Sec. 13 293.80
Sec. 19 116.64 22.24
Sec. 20 160
Sec. 21 480.00 S. 160
Sec. 22 640
Sec. 23 640
Sec. 24 640
Sec. 30 449.57
Sec. 29 640
Sec. 28 640
Sec. 26 640
Sec. 25 640
Sec. 31 640
Sec. 32 640
Sec. 33 640
Sec. 34 640
Sec. 35 640
Sec. 36 640
Low Rolling Hills
High table land
Low table land
Dry bed of Otay River
General Site Location
Variation on Section lines 13°40' E.
Aggregate Area of Public lands
Estimated " " Swamp and Overflowed lands
" " " Private Grants,
San Diego Bay, and Pacific Ocean
Aggregate
Meanders of the Pacific Ocean
Meanders of San Diego Bay.
Surveys Designated
By whom Surveyed
Date of Contract
Amount of Surveys
When Surveyed
North, East, and part of South boundary of Township
Boundaries of Lot No. 37
" " " " 38
Ranch boundary colored red (resurveyed)
Township lines " "
Meanders
Section lines
James E. Freeman
John C. Hays
Henry Hanesch
James Pascoe
March 6th 1854
(Inst.) May 14th 1858
August 14th 1869
1 Mls. 04 Chs. 60 lks
0 " 16 " 61 "
8 " 38 " 67 "
31 " 55 " 40 "
1854
1858
1869
1869
1869
August 30th 1869
The above Map of Township No. 18 South, Range No. 2 West, San Bernardino Meridian, is strictly conformable to the field notes of the surveys thereof on file in this Office, which have been examined and approved.
U.S. Surveyor General's Office,
San Francisco, California,
February 26th 1870
Sherman Day
U.S. Surv. Gen. Cal.
PACIFIC OCEAN

IMAGE 3: HISTORICAL AERIAL IMAGERY, 1953

IMAGE 4: HISTORICAL AERIAL IMAGERY, 1964

IMAGE 5: HISTORICAL AERIAL IMAGE, 1966

IMAGE 6: HISTORICAL AERIAL IMAGERY, 1989

IMAGE 7: HISTORICAL AERIAL IMAGERY, 1994

IMAGE 8: HISTORICAL AERIAL IMAGERY, 1996

IMAGE 9: HISTORICAL AERIAL IMAGERY, 1998

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1998 Aerial Image

IMAGE 10: HISTORICAL AERIAL IMAGERY, 2000 AERIAL IMAGE

IMAGE 11: HISTORICAL AERIAL IMAGERY, 2001

IMAGE 12: HISTORICAL AERIAL IMAGERY, 2003

IMAGE 13: HISTORICAL AERIAL IMAGERY, 2004

IMAGE 14: HISTORICAL AERIAL IMAGERY, 2005

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IMAGE 15: HISTORICAL AERIAL IMAGERY, 2006

IMAGE 16: HISTORICAL AERIAL IMAGERY, 2007

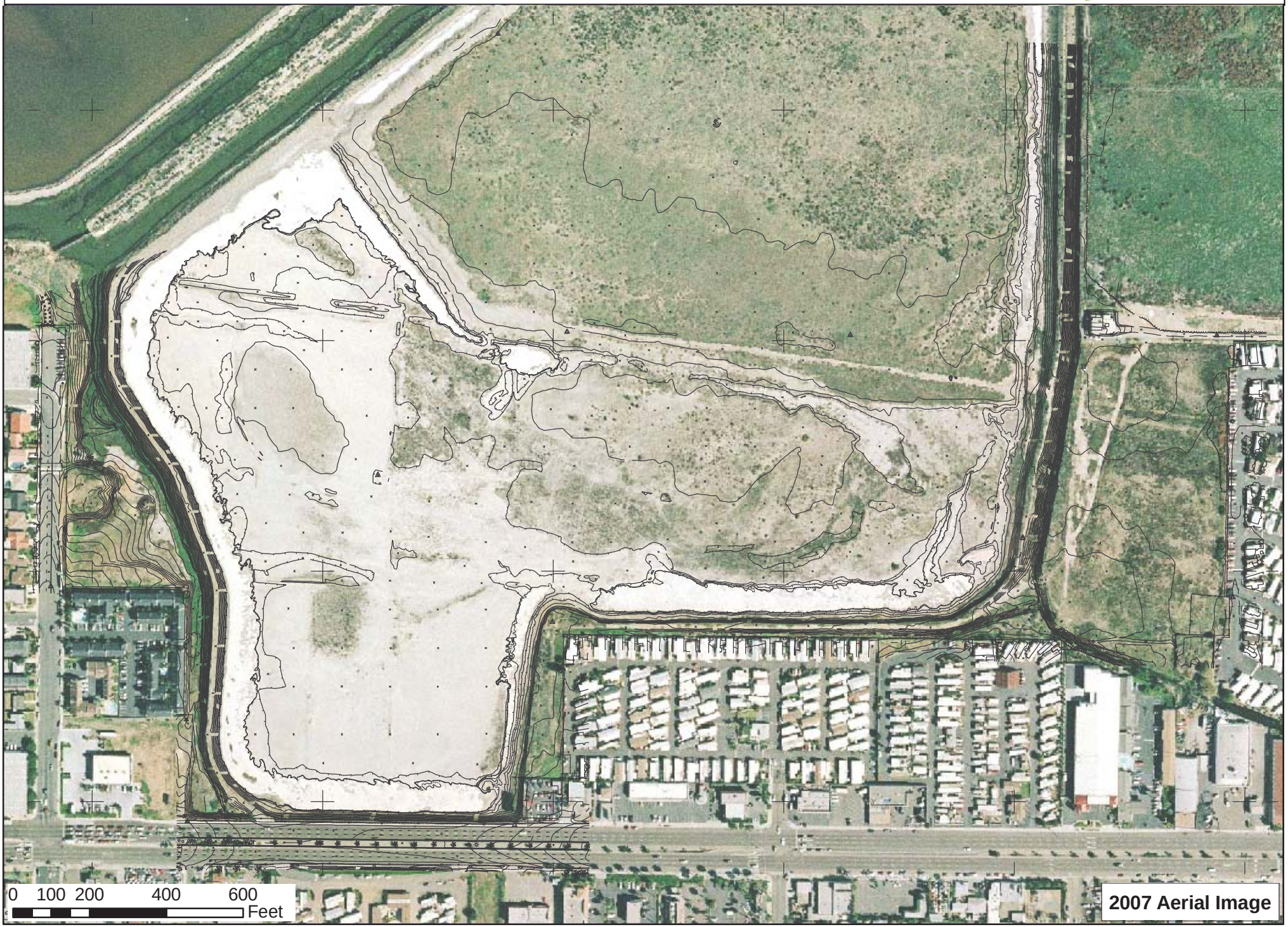


IMAGE 17: HISTORICAL AERIAL IMAGERY, 2008

IMAGE 18: HISTORICAL AERIAL IMAGERY, 2014

APPENDIX C:
FEMA FLOOD INSURANCE RATE MAP (FIRM)

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) Zone 11N. The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov/.

Base map information shown on this FIRM was provided in digital format by the USDA National Agriculture Imagery Program (NAIP). This information was photogrammetrically compiled at a scale of 1:24,000 from aerial photography dated 2008.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

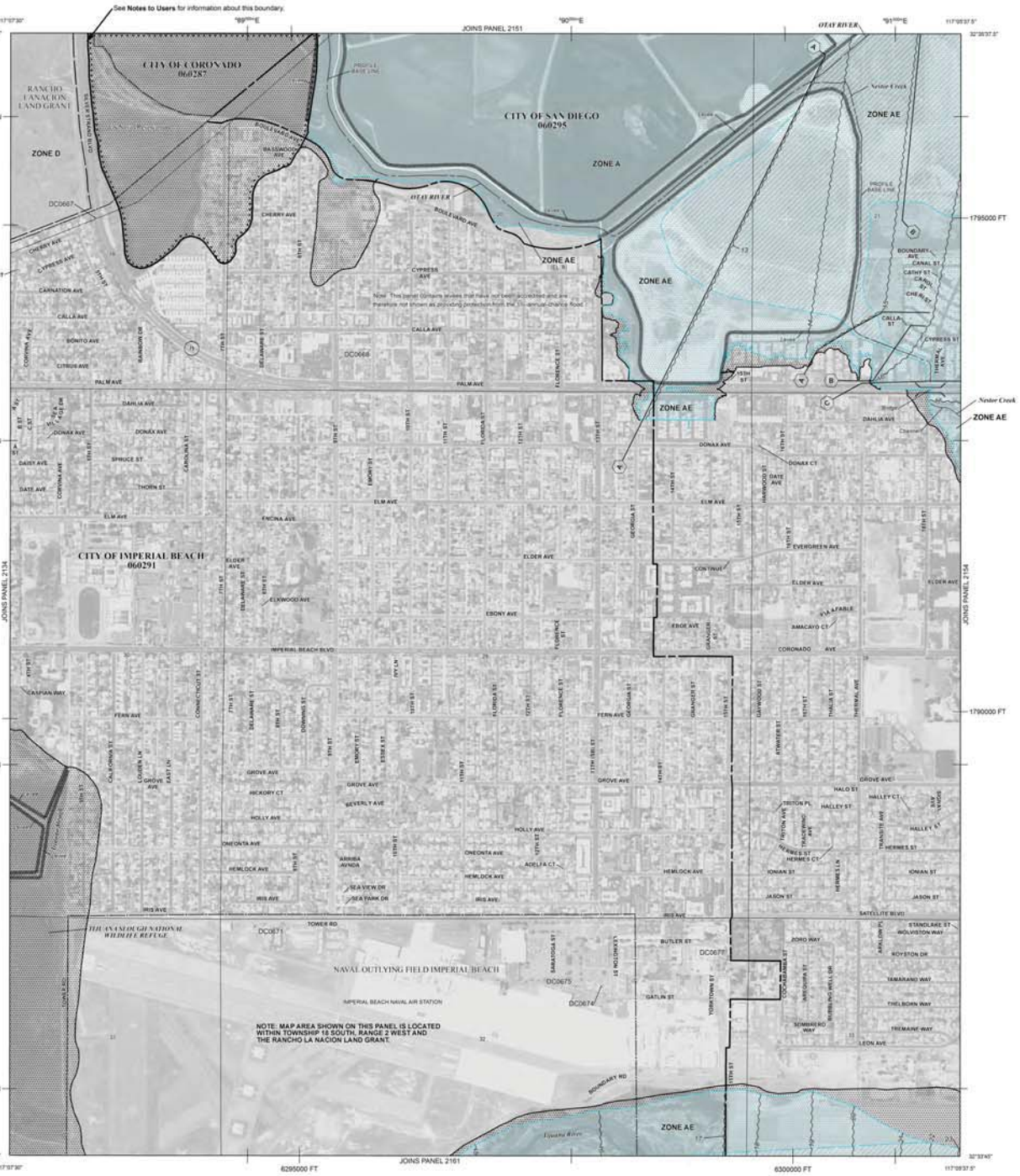
Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.

The **"profile base lines"** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the "profile base line", in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

ATTENTION: The levee, dike, or other structure that impacts flood hazards inside this boundary has not been shown to comply with Section 65.10 of the NFIP Regulations. As such, this FIRM panel will be revised at a later date to update the flood hazard information associated with this structure.

The flood hazard data inside this boundary on the FIRM panel has been republished from the previous effective (historic) FIRM for this area, after being converted from NGVD 29 to NAVD 88.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Areas to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	1% annual chance floodplain boundary
	0.2% annual chance floodplain boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

A — A	Cross section line
23 - - - 23	Transect line
87°07'30", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
4279000 N	1000-meter Universal Transverse Mercator grid ticks, zone 11
6000000 FT	5000-foot grid values: California State Plane coordinate system, Zone VI (FIPSZONE = 406), Lambert projection
DX5510	Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5	River Mile

MAP REPOSITORIES
Refer to Map Repositories List on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
June 16, 1997

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
April 5, 2016 - to change Special Flood Hazard Areas and to update map elevations to North American Vertical Datum of 1988.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 250 500 750 1,000 FEET
150 0 150 300 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 2153G

FIRM

FLOOD INSURANCE RATE MAP

SAN DIEGO COUNTY, CALIFORNIA

AND INCORPORATED AREAS

PANEL 2153 OF 2375

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CORONADO, CITY OF	060287	2153	G
IMPERIAL BEACH, CITY OF	060291	2153	G
SAN DIEGO, CITY OF	060295	2153	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06073C2153G

MAP REVISED
APRIL 5, 2016

Federal Emergency Management Agency

APPENDIX D:
WETLAND DELINEATION DATA FORMS

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 1-31-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T1.1

Investigator(s): M. Tyner-Valencourt, B. Felten, A. Tuggle Section, Township, Range: T18S R2W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): C - Mediterranean California Lat: 32.588875 Long: -117.097318 Datum: NAD 1983

Soil Map Unit Name: GoA - Grangeville fine sandy loam, 0 to 2 percent slopes NWI classification: E2USPh

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks: Site historically supported estuary wetland habitat but was filled and bermed in the 1870s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample site located on moderate slope.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Mesembryanthemum nodiflorum*	50	Yes	FACU
2. *Spergularia rubra*	25	Yes	FAC
3. *Ambrosia psilostachya*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
Total Cover:	80 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 20 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	25	x 3 =	75
FACU species	55	x 4 =	220
UPL species		x 5 =	0
Column Totals:	80 (A)		295 (B)

Prevalence Index = B/A = 3.69

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks: Living vegetation community entirely herbaceous, standing dead Baccharis spp. individuals present.

SOIL

Sampling Point: T1.1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-7	10YR 4/2	85	7.5YR 5/8	15	C	M	Sand	2" of sparse CS between 4-6"
7-16	10YR 2/2	100					Loamy Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ●

Remarks: Observed sparse coated sand grain redox features between 4-6 inches of the soil profile, but not sufficient to support hydric soil determination.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ●	Depth (inches):
Water Table Present?	Yes ○	No ●	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ●	Depth (inches):

Wetland Hydrology Present? Yes ○ No ●

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No inundation visible on aerial imagery.

Remarks: Sample site located at toe of berm where terrain shifts from steep to flat; small amount of surface soil cracks on slope, but no evidence of water ponding so not considered a hydrology indicator. No wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 1-31-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T1.2

Investigator(s): M. Tyner-Valencourt, B. Felten, A. Tuggle Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.588862 Long: -117.097417 Datum: NAD 1983

Soil Map Unit Name: GoA - Grangeville fine sandy loam, 0 to 2 percent slopes NWI classification: E2USPh

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◉	No ◯	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◉	No ◯	

Remarks: Site historically supported estuary wetland habitat but was filled and bermed in the 1870s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point located on a dry area next to standing surface water at a similar elevation within a localized landscape depression.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Mesembryanthemum nodiflorum*	80	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	80 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 20 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species	80	x 4 =	320
UPL species		x 5 =	0
Column Totals:	80 (A)		320 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks: Relatively thick monotypic herbaceous layer of an upland species observed. No hydrophytic vegetation observed.

SOIL

Sampling Point: T1.2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-10	10YR 3/1	65	7.5YR 5/8	35	C	M	Sand	Redox form is coated sand grain
10-20	GLEY1 3/N	85	7.5YR 2.5/3	15	C	PL	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☒ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks: Soils are very saturated; west side of sample soil pit exhibits largely clay soils, east side exhibits mostly sand soils, indicative of fill material.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☒ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ◉	No ○	Depth (inches): 15
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 7

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Evidence of some salt precipitate deposition at sample location in aerial imagery.

Remarks: Sample point located next to a standing water feature during an atypical storm season, evidence of surface water ponding but water has since evaporated and infiltrated from this particular location.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 1-31-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T1.3

Investigator(s): M. Tyner-Valencourt, B. Felten, A. Tuggle Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.588918 Long: -117.097554 Datum: NAD 1983

Soil Map Unit Name: GoA - Grangeville fine sandy loam, 0 to 2 percent slopes NWI classification: E2SSPh

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks: Site historically supported estuary wetland habitat but was filled and bermed in the 1870s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point located on upland area adjacent to depression at toe of berm on east side of Site.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Cylindropuntia prolifera*	40	No	FACU
2.			
3.			
4.			
5.			
Total Cover:	40 %		
Herb Stratum			
1. *Mesembryanthemum crystallinum*	60	Yes	FACU
2. *Erodium botrys*	5	No	FACU
3. *Hirschfeldia incana*	5	No	Not Listed
4.			
5.			
6.			
7.			
8.			
Total Cover:	70 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 20 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species	105	x 4 =	420
UPL species	5	x 5 =	25
Column Totals:	110 (A)		445 (B)

Prevalence Index = B/A = 4.05

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks: Standing dead Baccharis pilularis and Hirschfeldia incana present in shrub layer, also scattered live B. pilularis individuals, though none occurred in our sample plot.

SOIL

Sampling Point: T1.3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-17	10YR 4/3	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No surface water observed in aerial imagery.

Remarks: No hydrology indicators observed.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 1-31-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T2.1

Investigator(s): M. Tyner-Valencourt, B. Felten, A. Tuggle Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): C - Mediterranean California Lat: 32.587237 Long: -117.097331 Datum: NAD 1983

Soil Map Unit Name: GoA - Grangeville fine sandy loam, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◯
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks: Site historically supported estuary wetland habitat but was filled and bermed in the 1870s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point located on upland berm slope right before topographical transition to depression.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Mesembryanthemum nodiflorum*	50	Yes	FACU
2. *Spergularia rubra*	35	Yes	FAC
3. *Ambrosia psilostachya*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
Total Cover:	90 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 10 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	35	x 3 =	105
FACU species	55	x 4 =	220
UPL species		x 5 =	0
Column Totals:	90 (A)		325 (B)

Prevalence Index = B/A = 3.61

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks: Living vegetation made up of sprouting upland vegetation. In this community but outside of sample plot we observed live Cylindropuntia prolifera individuals sparsely distributed near top of berm. Also observed dead standing Baccharis pilularis in the shrub layer, and dead Mesembryanthemum crystallinum in the herb layer.

SOIL

Sampling Point: T2.1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-12	7.5YR 3/3	100					Loamy sand	
12-20	10YR 4/3	90	7.5YR 5/8	10			Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No surface water observed at sample location in aerial imagery.

Remarks: Observed surface features indicating water flows across surface in storm events. No wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 1-31-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T2.2

Investigator(s): M. Tyner-Valencourt, B. Felten, A. Tuggle Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.587239 Long: -117.097476 Datum: NAD 1983

Soil Map Unit Name: GoA - Grangeville fine sandy loam, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◉	No ◯	

Remarks: Site historically supported estuary wetland habitat but was filled and bermed in the 1870s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point is located in a topographical depression at the toe of the berm slope on the east side of the Site.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Spergularia rubra*	25	Yes	FAC
2. *Mesembryanthemum nodiflorum*	20	Yes	FACU
3. *Ambrosia psilostachya*	10	Yes	FACU
4. *Bromus diandrus*	7	No	Not Listed
5. *Sarcocornia pacifica*	5	No	OBL
6. *Medicago polymorpha*	1	No	FACU
7.			
8.			
Total Cover:	68 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 32 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species		x 2 =	0
FAC species	25	x 3 =	75
FACU species	31	x 4 =	124
UPL species	7	x 5 =	35
Column Totals:	68 (A)		239 (B)

Prevalence Index = B/A = 3.51

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks: Patchy distribution of herbaceous species. Observed dead standing unidentified species in herb layer.

SOIL

Sampling Point: T2.2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-11	10YR 3/1	100					Silty clay loam	
11-19	10YR 3/2	90	5YR 3/4	10	C	M	Loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: No hydric soil indicators observed. Soil pH measured at 8.1 (2/6/2017 at 10:45) and soil salinity measured at 16-20 microS (2/9/2017 at 15:00), may have inhibited the development of redox deposits given hydrological conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☒ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ◉	No ○	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 5

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No standing water observed in aerial imagery.

Remarks: Sample point located in topographical depression, surrounding area dry at the time of sampling but soil surface shows evidence of recent inundation. Observed some silt present on dead standing vegetation.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 1-31-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T2.3

Investigator(s): M. Tyner-Valencourt, B. Felten, A. Tuggle Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.587247 Long: -117.09765 Datum: NAD 1983

Soil Map Unit Name: GoA - Grangeville fine sandy loam, 0 to 2 percent slopes NWI classification: E2SSPh

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◯
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks: Site historically supported estuary wetland habitat but was filled and bermed in the 1870s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point located on upland area to the west of the depressional area at the toe of the berm slope.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Mesembryanthemum crystallinum*	30	Yes	FACU
2. *Spergularia rubra*	30	Yes	FAC
3. *Mesembryanthemum nodiflorum*	20	Yes	FACU
4. *Erodium botrys*	5	No	FACU
5. *Medicago polymorpha*	2	No	FACU
6.			
7.			
8.			
Total Cover:	87 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 20 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	30	x 3 =	90
FACU species	57	x 4 =	228
UPL species		x 5 =	0
Column Totals:	87 (A)		318 (B)

Prevalence Index = B/A = 3.66

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks: Sample point located in the transition to the upland community characterizing the bulk of the pond area of the site. Observed disturbed coastal sage scrub communities outside of sample plot that included Baccharis pilularis, B. salicifolia, Cylindropuntia prolifera, and Isocoma menziesii No hydrophytic vegetation present at sample location.

SOIL

Sampling Point: T2.3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-20	10YR 4/1	100					Loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ○	Depth (inches):
Water Table Present?	Yes ○	No ○	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ○	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No surface water observed in aerial imagery.

Remarks: No hydrology indicators observed.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 2-1-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T2.4

Investigator(s): M. Tyner-Valencourt, B. Felten Section, Township, Range: T18S R2W S20

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 35

Subregion (LRR): C - Mediterranean California Lat: 32.587527 Long: -117.105223 Datum: NAD 1983

Soil Map Unit Name: HuC - Huerhuero-Urban land complex, 2 to 9 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks: Site historically supported estuary wetland habitat but was filled and bermed in the 1870s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point located on steep, west-facing slope of berm on west side of Site.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 100% % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	(A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks: No vegetation present.

SOIL

Sampling Point: T2.4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: Observed marine shell deposition on surface of berm indicating placement of fill material. Unable to dig a soil pit at this location given the high degree of soil compaction and steepness of slope.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ○	Depth (inches):
Water Table Present?	Yes ○	No ○	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ○	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No surface water observed in aerial imagery at this location.

Remarks: No hydrology indicators observed. Sampling site located on a steep slope. Surface soil cracks are present alongside evidence of erosion patterns, indicating flow of large volume of surface over this location during storm events.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 2-1-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T2.5

Investigator(s): M. Tyner-Valencourt, B. Felten Section, Township, Range: T18S R2W S20

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.587534 Long: -117.105273 Datum: NAD 1983

Soil Map Unit Name: HuC - Huerhuero-Urban land complex, 2 to 9 percent slopes NWI classification: E2SBMx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ◯	
Hydric Soil Present?	Yes ◉	No ◯	**Is the Sampled Area within a Wetland?** Yes ◉ No ◯
Wetland Hydrology Present?	Yes ◉	No ◯	

Remarks: Site historically supported estuary wetland habitat but was filled and bermed in the 1870s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point is located in floodplain of tidally-influenced Otay River tributary on western side of Site.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Batis maritima*	30	Yes	OBL
2.			
3.			
4.			
5.			
Total Cover:	30 %		
Herb Stratum			
1. *Sarcocornia pacifica*	110	Yes	OBL
2. *Frankenia salina*	30	Yes	OBL
3. *Limonium californicum*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
Total Cover:	145 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 0 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	170	x 1 =	170
FACW species	5	x 2 =	10
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	175 (A)		180 (B)

Prevalence Index = B/A = 1.03

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ◯

Remarks: Very thick herbaceous and shrub salt marsh community

SOIL

Sampling Point: T2.5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-20	10YR 4/1	60	10YR 3/6	40	C	M	Clay	Root material present at 0-2 in.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ◯

Remarks: Strong salt smell when excavating soil pit.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☒ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ◯	No ◉	Depth (inches):
Water Table Present?	Yes ◉	No ◯	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes ◯	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ◉ No ◯

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Tidal gauge data at NOAA Station 9410170 at sample time was approximately 1.86 ft, a local minimum for the day.

Remarks: No evidence of soil saturation but clay texture may inhibit degree of saturation.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 2-1-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T3.1

Investigator(s): M. Tyner-Valencourt, B. Felten Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR): C - Mediterranean California Lat: 32.586249 Long: -117.097531 Datum: NAD 1983

Soil Map Unit Name: LG-W - Lagoon water NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks: Site historically supported estuary wetland habitat but was filled and bermed in the 1870s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point located on west-facing berm slope on east side of Site.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Mesembryanthemum crystallinum*	40	Yes	FACU
2. *Erodium botrys*	10	Yes	FACU
3. *Spergularia rubra*	5	No	FAC
4.			
5.			
6.			
7.			
8.			
Total Cover:	55 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 40 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	5	x 3 =	15
FACU species	50	x 4 =	200
UPL species		x 5 =	0
Column Totals:	55 (A)		215 (B)

Prevalence Index = B/A = 3.91

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks: Sample site representative of patchy distribution of herbaceous upland vegetation on inner berm slope.

SOIL

Sampling Point: T3.1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-9	10YR 3/2	100					Loamy Sand	
9-10	10YR 4/2	95	7.5YR 5/8	5	C	M	Loamy Sand	Coated sand grains redox type
10-20	10YR 2/2	100					Silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No surface water observed in aerial imagery.

Remarks: No hydrology indicators observed.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 2-1-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T3.2

Investigator(s): M. Tyner-Valencourt, B. Felten Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Low-elevation terrace Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.586248 Long: -117.097592 Datum: NAD 1983

Soil Map Unit Name: LG-W - Lagoon water NWI classification: E2USNh

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◉	No ◯	

Remarks: Site historically supported estuary wetland habitat but was filled and bermed in the 1870s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point is located in a topographical depression at the toe of the berm slope that may serve as a floodplain for surface water that pools at an adjacent depression.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Mesembryanthemum nodiflorum*	95	Yes	FACU
2. *Mesembryanthemum crystallinum*	1	No	FACU
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	96 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 4 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species	96	x 4 =	384
UPL species		x 5 =	0
Column Totals:	96 (A)		384 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks: No hydrophytic vegetation community indicators observed.

SOIL

Sampling Point: T3.2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-10	10YR 3/1	100					Sandy loam	
10-14							Sandy clay loam	Lumber detritus obscuring layer
10-20	10YR 2/2	100					Clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: Soil profile is not entirely stratified based on texture, and lumber debris is present as a layer at this sample point. These conditions stem from historic fill placement. Soil pH measured at 8.3 (2/6/2017 at 11:00) and soil salinity measured at 30-35 microS (2/9/2017 at 15:15), may have inhibited the development of redox deposits given hydrological conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ◉	No ○	Depth (inches): 11
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 10

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No surface water observed in aerial imagery.

Remarks: Sample site located near toe of slope, surface soil and vegetation evidence for recent inundation at sample location.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 2-1-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T3.3

Investigator(s): M. Tyner-Valencourt, B. Felten Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.58623 Long: -117.097682 Datum: NAD 1983

Soil Map Unit Name: LG-W - Lagoon water NWI classification: E2USNh

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks: Site historically supported estuary wetland habitat but was filled and bermed in the 1870s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point located in upland area adjacent to topographical depression at toe of berm.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Mesembryanthemum nodiflorum*	30	Yes	FACU
2. *Spergularia rubra*	5	Yes	FAC
3. *Erodium botrys*	2	Yes	FACU
4. *Mesembryanthemum crystallinum*	1	Yes	FACU
5.			
6.			
7.			
8.			
Total Cover:	38 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 60 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	25.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	5	x 3 =	15
FACU species	33	x 4 =	132
UPL species		x 5 =	0
Column Totals:	38 (A)		147 (B)

Prevalence Index = B/A = 3.87

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks: No hydrophytic vegetation community indicators observed.

SOIL

Sampling Point: T3.3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-10	10YR 4/1	100					Sand	
10-20	10YR 3/1	99	7.5YR 3/4	1	C	M	Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No surface water observed in aerial imagery.

Remarks: No hydrology indicators observed.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 2-1-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T3.4

Investigator(s): M. Tyner-Valencourt, B. Felten Section, Township, Range: T18S R2W S20

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 12.5

Subregion (LRR): C - Mediterranean California Lat: 32.585807 Long: -117.10436 Datum: NAD 1983

Soil Map Unit Name: HuC - Huerhuero-Urban land complex, 2 to 9 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks: Site historically supported estuary wetland habitat but was filled and bermed in the 1870s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample site is located on an unvegetated upland constructed slope along berm on west side of Site.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 100% % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	(A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks: Sample location is unvegetated. No hydrophytic vegetation community indicators observed.

SOIL

Sampling Point: T3.4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: Unable to dig a sample pit due to the degree of soil compaction at this location. Observed marine invertebrate shells and debris on soil surface along berm, stemming from berm having been constructed with marine dredge material.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No surface water observed in aerial photos

Remarks: Surface soil cracks observed, but give the sample site elevation and slope we determined that cracks were due to water and wind erosion. No hydrology indicators observed.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 2-1-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T3.5

Investigator(s): M. Tyner-Valencourt, B. Felten Section, Township, Range: T18S R2W S20

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.5858 Long: -117.104395 Datum: NAD 1983

Soil Map Unit Name: HuC - Huerhuero-Urban land complex, 2 to 9 percent slopes NWI classification: E2SBMx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ◯	
Hydric Soil Present?	Yes ◉	No ◯	**Is the Sampled Area within a Wetland?** Yes ◉ No ◯
Wetland Hydrology Present?	Yes ◉	No ◯	

Remarks: Site historically supported estuary wetland habitat but was filled and bermed in the 1870s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample site is located on vegetated slope next to the tidally-influenced Otay River tributary located on the west side of the Site.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Batis maritima*	15		OBL
2.			
3.			
4.			
5.			
Total Cover:	15 %		
Herb Stratum			
1. *Sarcocornia pacifica*	110	Yes	OBL
2. *Distichlis littoralis*	60	Yes	OBL
3. *Frankenia salina*	20	Yes	OBL
4. *Limonium californicum*	5	No	FACW
5.			
6.			
7.			
8.			
Total Cover:	195 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 0 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	205	x 1 =	205	
FACW species	5	x 2 =	10	
FAC species		x 3 =	0	
FACU species		x 4 =	0	
UPL species		x 5 =	0	
Column Totals:	210 (A)		215	(B)

Prevalence Index = B/A = 1.02

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ◯

Remarks: Very thick salt marsh vegetation present.

SOIL

Sampling Point: T3.5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-20	10YR 4/1	65	10R 3/6	35	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ◯

Remarks: Sample pit located next to tidal channel in salt marsh community.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☒ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ◯	No ◉	Depth (inches):
Water Table Present?	Yes ◯	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ◯	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ◉ No ◯

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Tidal height measured at NOAA Station 9410170 at time of sample was recorded and verified at approximately 2.25 ft

Remarks: Sample pit located in immediate flooplain of tidal channel on west side of site. Sample was taken at low-to-mid tide, which may explain lack of water table observed in sample pit. At high tide we would expect a high water table and soil saturation near surface. Additionally, clay soils will inhibit soil saturation.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 2-1-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T4.1

Investigator(s): M. Tyner-Valencourt, B. Felten Section, Township, Range: T18S R2W S20

Landform (hillslope, terrace, etc.): Localized depression Local relief (concave, convex, none): Convex Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.584132 Long: -117.104186 Datum: NAD 1986

Soil Map Unit Name: HuC - Huerhuero-Urban land complex, 2 to 9 percent slopes NWI classification: E2SBMx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ◯	
Hydric Soil Present?	Yes ◉	No ◯	**Is the Sampled Area within a Wetland?** Yes ◉ No ◯
Wetland Hydrology Present?	Yes ◉	No ◯	

Remarks: Site historically supported estuary wetland habitat but was filled and bermed in the 1870s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point is located in a freshwater wetland located at the mouth of the MS4 conveyance at the southwest corner of the Site. Vegetation was recently cleared for stormwater management.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Typha latifolia*	60	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	60 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 40 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60	x 1 =	60
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	60 (A)		60 (B)

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ◯

Remarks: Large arroyo willow (Salix lasiolepis) was removed for stormwater management within the sample location vegetation assessment plot. T. latifolia was cut and is beginning to resprout.

SOIL

Sampling Point: T4.1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-6	10YR 2/1	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☒ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☒ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks: Surface water and high water table prevented the collection of a high-integrity soil sample. Other hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☒ Surface Water (A1)
- ☒ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☒ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ◉	No ○	Depth (inches): 2
Water Table Present?	Yes ◉	No ○	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Vegetation obscuring ground view in aerial imagery, unable to determine if surface water is present.

Remarks: Hydrology indicators present. Area located at mouth of of MS4 conveyance, water source attributed to this and other stormwater inputs from Palm Avenue.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 2-1-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T4.2

Investigator(s): M. Tyner-Valencourt, B. Felten Section, Township, Range: T18S R2W S20

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.584108 Long: -117.104242 Datum: NAD 1983

Soil Map Unit Name: HuC - Huerhuero-Urban land complex, 2 to 9 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ◯	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◉	No ◯	

Remarks: Site historically supported estuary wetland habitat but was filled and bermed in the 1870s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point is located in the floodplain area adjacent to the stormwater-fed wetland and the southwest site boundary. Large felled willow tree has been placed on top of standing vegetation, obscuring vegetation cover assessments.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	5		FACW
2.			
3.			
4.			
Total Cover:	5 %		
Sapling/Shrub Stratum			
1. *Salix lasiolepis*	70	Yes	FACW
2. *Ricinus communis*	10	No	FACU
3. *Fraxinus pennsylvanica*	5	No	FACW
4.			
5.			
Total Cover:	85 %		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 0 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	80	x 2 =	160
FAC species		x 3 =	0
FACU species	10	x 4 =	40
UPL species		x 5 =	0
Column Totals:	90 (A)		200 (B)

Prevalence Index = B/A = 2.22

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ◯

Remarks: Thick layer of duff present, no herbaceous layer observed. Much of the observed litter may have been placed from vegetation removal activities elsewhere on site. One individual plant, a large, mature arroyo willow (Salix lasiolepis), was felled and placed on top of standing live vegetation in the habitat covered at this sample location prior to the delineation effort. This individual likely accounted for 60-70% of tree stratum cover when it stood.

SOIL

Sampling Point: T4.2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-20	10YR 3/2	100					Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☒ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Surface water not observed in aerial imagery at this location.

Remarks: Downed willow was placed on top of existing standing and dead vegetation, confusing the interpretation of vegetation debris distribution. However, the sample location is located near a stormwater input area and in separate site assessments the area has been observed to be inundated during significant storm events.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 2-1-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: N1

Investigator(s): M. Tyner-Valencourt, B. Felten Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.586336 Long: -117.097239 Datum: NAD 1983

Soil Map Unit Name: LG-W - Lagoon water NWI classification: E2SBNx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ◯	
Hydric Soil Present?	Yes ◉	No ◯	**Is the Sampled Area within a Wetland?** Yes ◉ No ◯
Wetland Hydrology Present?	Yes ◉	No ◯	

Remarks: Site historically supported estuary wetland habitat but was filled and bermed in the 1870s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point is located on the Nestor Creek floodplain on the east side of the Site, to the immediate east of the eastern berm.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Frankenia salina*	100	Yes	OBL
2. *Sarcocornia pacifica*	5	No	OBL
3. *Schoenoplectus californicus*	5	No	OBL
4.			
5.			
6.			
7.			
8.			
Total Cover:	110 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 0 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	110	x 1 =	110
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	110 (A)		110 (B)

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ◯

Remarks: Thick community of hydrophytic vegetation and include both typical salt marsh and freshwater marsh species. Nestor Creek is freshwater but is tidally influenced due to its proximity to the Otay River mouth and San Diego Bay. In addition, site history as a salt evaporator pond may have caused high salt concentrations in the soil.

SOIL

Sampling Point: N1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-20	10YR 3/1	70	7.5YR 3/4	30	C	M	Sandy loam	Roots present at 0-3 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☒ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks: Top three inches of soil profile support high rhizome density. Hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ◉	No ○	Depth (inches): 9
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 1

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Sample point is located in Nestor Creek floodplain. Drift deposits notes at higher elevations, suggesting high water flows through the channel and floodplain during storm events.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 2-1-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: N2

Investigator(s): M. Tyner-Valencourt, B. Felten Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR): C - Mediterranean California Lat: 32.586335 Long: -117.097211 Datum: NAD 1983

Soil Map Unit Name: HrC - Huerhuero loam, 2 to 9 percent slopes NWI classification: E2SBNx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◉
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks: Site historically supported estuary wetland habitat but was filled and bermed in the 1870s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point is located on the upland west-facing slope east of Nestor Creek.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Ricinus communis*	10	No	FACU
2.			
3.			
4.			
5.			
Total Cover:	10 %		
Herb Stratum			
1. *Ambrosia psilostachya*	45	Yes	FACU
2. *Festuca spp.**	25	Yes	FACU
3. *Rumex crispus*	10	No	FAC
4. *Limonium californicum*	5	No	FACW
5. *Mesembryanthemum crystallinum*	5	No	FACU
6.			
7.			
8.			
Total Cover:	90 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 10 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	5	x 2 =	10
FAC species	10	x 3 =	30
FACU species	85	x 4 =	340
UPL species		x 5 =	0
Column Totals:	100 (A)		380 (B)

Prevalence Index = B/A = 3.80

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks: Sample point located just above transition between salt marsh and upland community. Rumex crispus was only observed near the boundary between the salt marsh and upland communities, and not further up the slope.
*Two unknown grass species observed in juvenile stage, leaf blades resemble Festuca spp. We combined here and used FACU designation given its occurrence in an upland plant community, its growth pattern on the landscape, and that the majority of Festuca spp. known to occur in the Arid West are designated as such.

SOIL

Sampling Point: N2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-20	10YR 3/2	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators observed.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 2-1-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: N3

Investigator(s): M. Tyner-Valencourt, B. Felten Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Creek Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.586403 Long: -117.097251 Datum: NAD 1983

Soil Map Unit Name: LG-W - Lagoon water NWI classification: E2SBNx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (●) No ( ) (If no, explain in Remarks.)

Are Vegetation [ ] Soil [ ] or Hydrology [ ] significantly disturbed? Are "Normal Circumstances" present? Yes (●) No ( )

Are Vegetation [ ] Soil [ ] or Hydrology [ ] naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes (●)	No ( )	
Hydric Soil Present?	Yes (●)	No ( )	**Is the Sampled Area within a Wetland?** Yes (●) No ( )
Wetland Hydrology Present?	Yes (●)	No ( )	

Remarks: Site historically supported estuary wetland habitat but was filled and bermed in the 1870s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point is located in the freshwater marsh habitat within the Nestor Creek channel.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Schoenoplectus californicus*	85	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	85 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 15 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	85	x 1 =	85
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	85 (A)		85 (B)

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

- [x] Dominance Test is >50%
- [x] Prevalence Index is ≤3.0[1]
- [ ] Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes (●) No ( )

Remarks: Vegetation is contained entirely within Nestor Creek channel OHWM limits. Floodplain is characterized with salt marsh vegetation sampled at Point N1.

SOIL

Sampling Point: N3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-20	10YR 3/2	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- [ ] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [ ] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5) (**LRR C**)
- [x] 1 cm Muck (A9) (**LRR D**)
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Mucky Mineral (S1)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Loamy Mucky Mineral (F1)
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox Depressions (F8)
- [ ] Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- [ ] 1 cm Muck (A9) (**LRR C**)
- [ ] 2 cm Muck (A10) (**LRR B**)
- [ ] Reduced Vertic (F18)
- [ ] Red Parent Material (TF2)
- [ ] Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes (●) No ( )

Remarks: Sample point is located within Nestor Creek and is inundated with ~1 foot of standing water. Unable to collect a soil sample. We observed 1cm of muck on the surface of the sediment within the channel. We assume hydric soils are present given the presence of hydrophytic vegetation within a perennial freshwater stream channel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [x] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1) (**Nonriverine**)
- [ ] Sediment Deposits (B2) (**Nonriverine**)
- [ ] Drift Deposits (B3) (**Nonriverine**)
- [ ] Surface Soil Cracks (B6)
- [x] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Salt Crust (B11)
- [ ] Biotic Crust (B12)
- [ ] Aquatic Invertebrates (B13)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Plowed Soils (C6)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [ ] Water Marks (B1) (**Riverine**)
- [ ] Sediment Deposits (B2) (**Riverine**)
- [ ] Drift Deposits (B3) (**Riverine**)
- [ ] Drainage Patterns (B10)
- [ ] Dry-Season Water Table (C2)
- [ ] Thin Muck Surface (C7)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes (●)	No ( )	Depth (inches): 12
Water Table Present?	Yes ( )	No (●)	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):

Wetland Hydrology Present? Yes (●) No ( )

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Water consistently observed in stream channel at this location across several years of aerial photos queried on Google Earth.

Remarks: Surface water is contained within the Nestor Creek channel.

APPENDIX E:
WETLAND DELINEATION PHOTO LOGS

PHOTO 1: TRANSECT 1, SAMPLE POINTS T1.1 TO T1.3 (FACING SOUTHWEST)

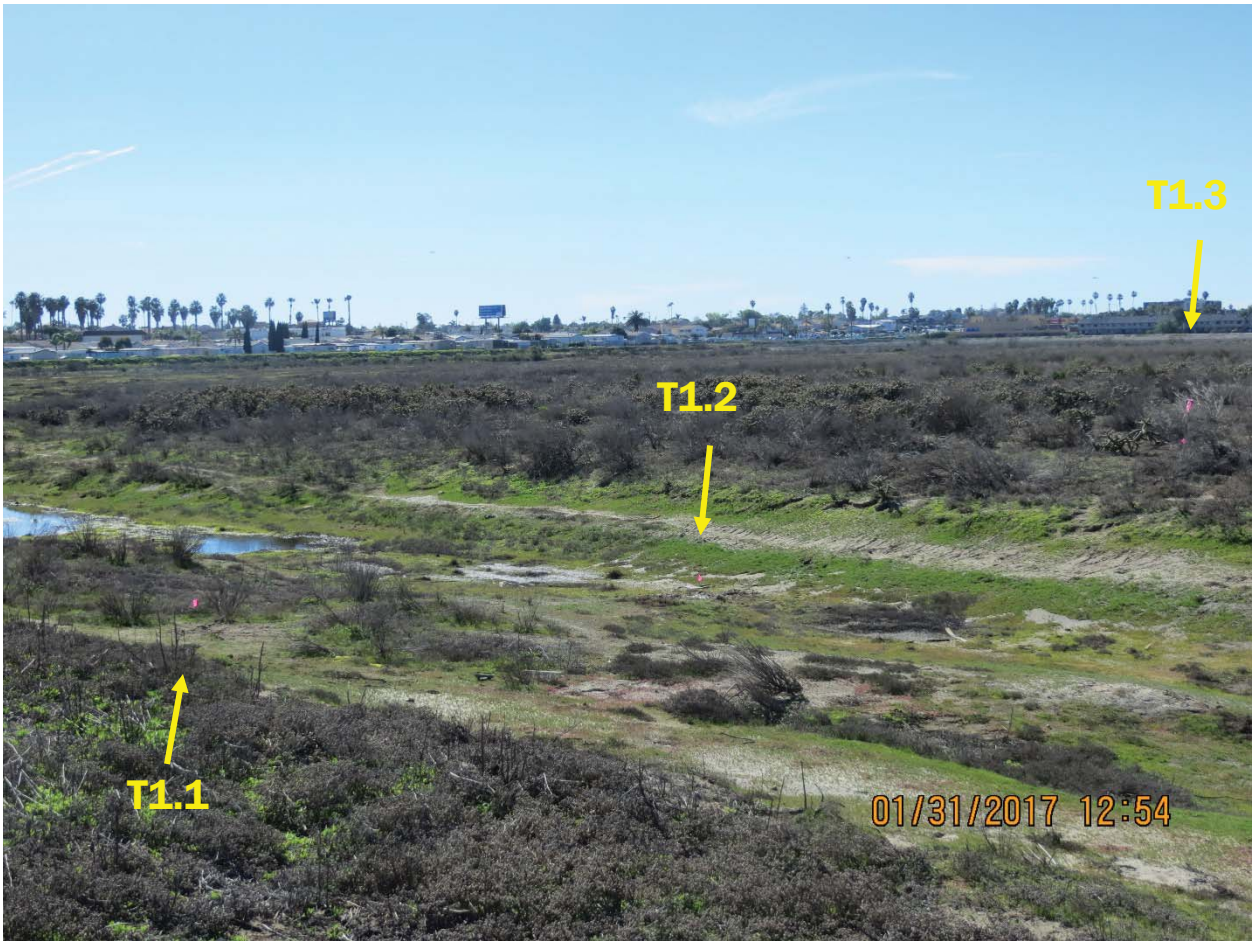


PHOTO 2: TRANSECT 2, SAMPLE POINTS T2.1 TO T2.3 (FACING WEST)

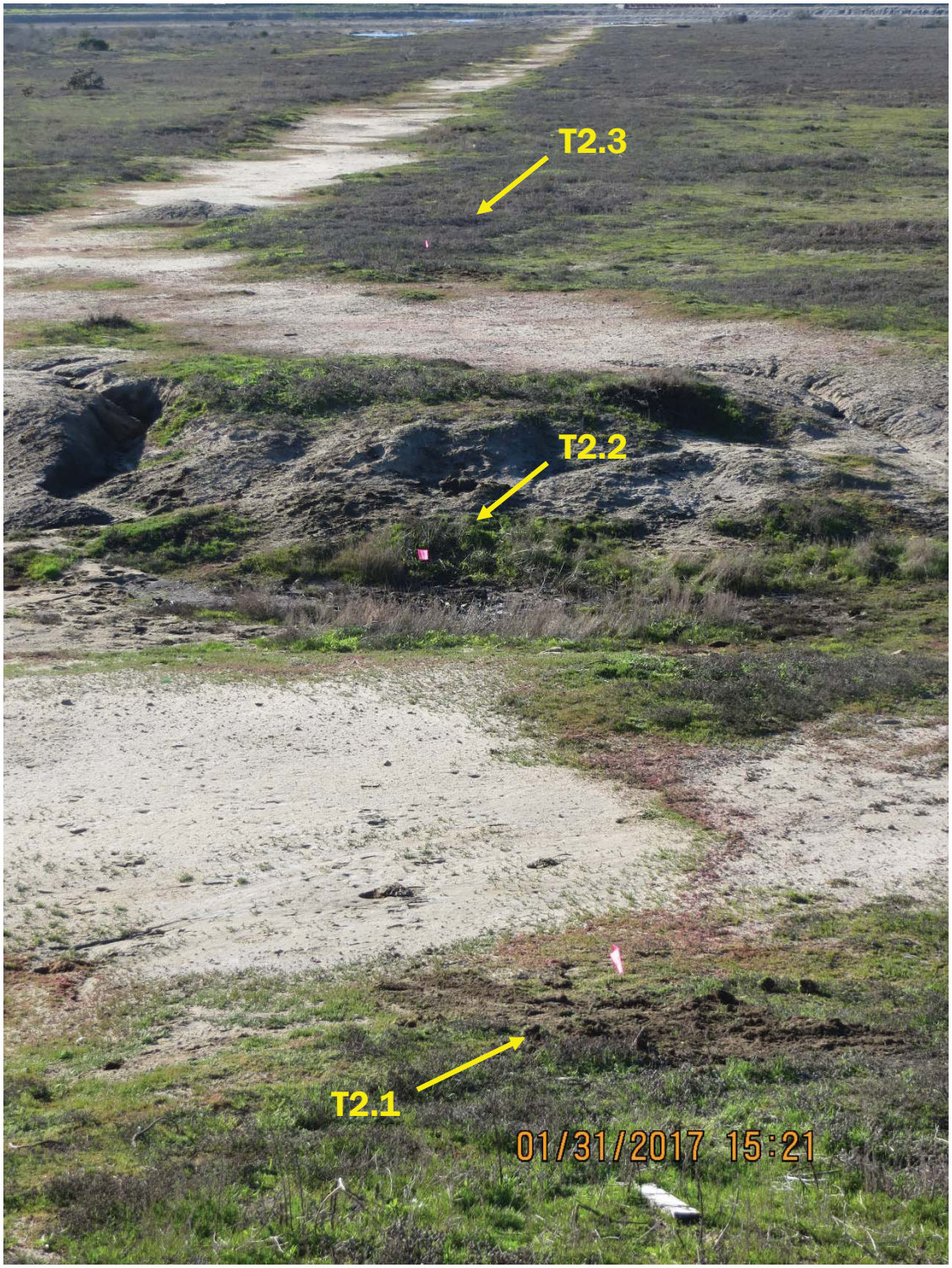


PHOTO 3: TRANSECT 2, SAMPLE POINTS T2.4 TO T2.5 (FACING SOUTHWEST)

PHOTO 4: TRANSECT 3, SAMPLE POINTS T3.1 TO T3.3

Not pictured

PHOTO 5: TRANSECT 3, SAMPLE POINTS T3.4 TO T3.5 (FACING SOUTH)

PHOTO 6: TRANSECT 4, SAMPLE POINTS T4.1 TO T4.2 (FACING SOUTH-SOUTHWEST)

PHOTO 7: NESTOR CREEK, SAMPLE POINTS N1 TO N3 (FACING NORTH)

PHOTO 8: MS4 DRAINAGE AND DISTURBED FRESHWATER MARSH, OTAY RIVER TRIBUTARY AREA

PHOTO 9: STORMWATER CONVEYANCE #1 ENTERING BERMED AREA FROM PALM AVENUE

PHOTO 10: STORMWATER CONVEYANCE #2 ENTERING BERMED AREA FROM PALM AVENUE

PHOTO 11: EROSIONAL GULLY CAUSED BY STORMWATER ENTERING BERMED AREA THROUGH BREAK IN WATTLES

PHOTO 12: DENSELY PACKED CLAY SOIL UNDERLYING UNVEGETATED SALT FLATS ADJACENT TO POOLS IN BERMED AREA

APPENDIX F:
REGULATORY ANALYSIS FOR BERMED AREA FEATURES

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MEMORANDUM

TO: Robert Revo Smith, Jr., P.E., M. ASCE
Senior Project Manager, Regulatory Division
U.S. Army Corps of Engineers

FROM: Mark S. Laska, Ph.D.
Principal and Project Manager
Great Ecology

CC: Eileen Maher
Brent Eastty
Planning & Green Port
Port of San Diego

DATE: December 4, 2017

PROJECT: South San Diego Bay Wetland Mitigation Bank

SUBJECT: Regulatory Analysis for interior Pond 20 Features

BACKGROUND

The Port of San Diego (Port) seeks to develop a wetland mitigation bank on an 83.5 acre parcel in South San Diego Bay known as Pond 20 (Site). In support of that project, a wetland delineation was conducted by Great Ecology on the Site in February 2017, and a delineation report was submitted to the U.S. Army Corps of Engineers (USACE) Los Angeles District Office in April 2017. USACE Senior Project Manager Robert Smith, P.E., M. ASCE submitted comments on the delineation report to the Port on June 22, 2017, and the comments were discussed during a phone meeting that took place on August 3, 2017 between Robert Smith, Eileen Maher and Brent Eastty (Port), and Marlene Tyner-Valencourt (Great Ecology). USACE comments were largely focused on its jurisdiction over ponds located within the interior of Pond 20 (FIGURE 1). Notwithstanding the conclusion in the delineation report that these ponds are isolated intrastate waters, the USACE expressed its initial opinion that portions of the interior of Pond 20 may be jurisdictional under the Rivers and Harbors Act of 1899 (RHA) and under the Clean Water Act (CWA).

In response to USACE's written comments and the topics discussed during the August 3 phone meeting, Great Ecology has developed this memorandum to address whether the non-wetland ponds within the interior of Pond 20 are waters of the U.S. pursuant to the RHA and the CWA. This memorandum does not address the jurisdictional status of any features outside of the Pond 20 berm. This memorandum is intended to support USACE's approved jurisdictional determination for the Port of San Diego's Pond 20 mitigation bank project. The memorandum should be read in conjunction with Great Ecology's 2017 jurisdictional delineation report and all other material facts and evidence required to perform the determination.

This memorandum reviews the relevant laws and agency guidance, applies them to site conditions at Pond 20, and draws objective conclusions regarding agency jurisdiction.

SUMMARY

There are no waters of the U.S., or navigable waters, subject to RHA or CWA jurisdiction within Pond 20.

First, there is no RHA jurisdiction over any part of the interior of Pond 20 because:

- Pond 20 was never below the mean high water (MHW) mark; and
- In 2000, the USACE formally confirmed it does not have RHA jurisdiction over the interior of Pond 20.

Second, there is no CWA jurisdiction over the non-wetland borrow areas within Pond 20 because:

- The borrow areas are not "adjacent" to a navigable water because adjacency jurisdiction only applies to wetlands;
- The borrow areas are not a tributary of nor otherwise hydrologically connected to a navigable water; and
- The borrow areas do not significantly affect the chemical, physical, and biological integrity of a navigable water.

FACTUAL SETTING

Pond 20 is located just south of San Diego Bay in the City of San Diego in San Diego County, California. The Otay River runs along the northern boundary of Pond 20, the Otay River Tributary along the western boundary, and Nestor Creek along the eastern boundary. All three drainages are located outside of the berms and do not flow into or through Pond 20. Palm Avenue runs on the southern border of Pond 20. The average elevation of Pond 20 is 9.05 feet Mean Lower Low Water (MLLW), and ranges from 4.43 to 12.43 feet MLLW. The berm heights are between 13.43 and 14.43 feet MLLW and completely enclose Pond 20. Surface water flows into Pond 20 are limited to precipitation and storm water entering via conveyances and surface sheet flow from Palm Avenue; no surface water flows out of Pond 20 (FIGURE 1). Pond 20 is located within the Federal Emergency Management Agency's (FEMA) 100-year floodplain of the Otay River (FIGURE 2).

Pond 20 is a wholly bermed and enclosed non-operational solar salt evaporator pond that was formerly part of the Western Salt Company's South San Diego Bay Saltworks operations. The berms were originally constructed in the 1870s and were rehabilitated after the 1916 failure of Savage Dam that destroyed much of the Saltworks and deposited tons of fill material within Pond 20. Pond 20 and the rest of the Saltworks were restored and operational by 1918, with water entering Pond 20 via siphons. However, the high elevation of Pond 20, along with its inland location and distance from the other ponds, soon made its continued use logistically and economically inefficient within the Saltworks operation. The Pond 20 was disconnected from Saltworks operations in the 1960s and has since remained vacant.

In the decades since, Pond 20 has remained hydrologically isolated from surrounding surface flows; precipitation events alone have supported the establishment and persistence of perennial pools

(borrow areas) located along the inside edges of the berms. These borrow areas are the subject of the jurisdictional analysis presented below.

RIVERS AND HARBORS ACT OF 1899 JURISDICTION

This section discusses USACE jurisdiction under the RHA. Specifically, this section addresses:

1. Whether USACE has jurisdiction over the entire interior of Pond 20 because it is, or was, below the MHW mark; and
2. Whether USACE has jurisdiction over the interior of Pond 20 based on the concept of "indelible navigability."

Pond 20 is not subject to RHA jurisdiction for two key reasons. First, Pond 20 is not, nor was it ever, below the MHW mark, which demarcates the physical limits of RHA jurisdiction. Second, USACE affirmatively surrendered its RHA jurisdiction over Pond 20 in 2000, meaning the concept of "indelible navigability" does not apply. Once affirmatively surrendered, RHA jurisdiction may not be reasserted over a site.

1. **USACE does not have jurisdiction over Pond 20 under the RHA because it is not, nor was it ever, below the MHW.**

The RHA regulates activities that effect the navigable capacity of "navigable waters of the United States."[1] In tidal contexts, navigable waters of the U.S. include:

> the entire surface and bed of all waterbodies subject to tidal action. Jurisdiction thus extends to the edge ... of all such waterbodies, even though portions of the waterbody may be extremely shallow, or obstructed by shoals, vegetation, or other barriers. Marshlands and similar areas are thus considered 'navigable in law,' but only so far as the area is subject to inundation by the mean high waters. The relevant test is therefore the presence of the mean high tidal waters ....[2]

Here, historic coastal T-sheets, specifically T365, indicate Pond 20 may have historically been a tidal marsh, identified on the T-sheet by tight parallel line symbols.[3] Even if it could be confirmed that the parallel lines on T365 represent tidal marsh, which it cannot, "[o]ne of the basic obstacles in using the T-sheets is the absence of a standardized legend."[4] Thus, "the best way to confirm accurate interpretation" is to compare "multiple, independent historical sources."[5]

The Fractional Township No. 18 South, Range No. 2 West, San Bernardino Meridian 1870 U.S. Land Office Map, which was created by the Bureau of Land Management (BLM), indicates that the Bermed Area, in its unobstructed natural state, was above the MHW. USACE relied on this map in 2000 to make this same determination.[6] Based on known T-sheet map symbol inaccuracies, the more recent BLM map representing pre-pond construction conditions should be relied upon to determine the historic MHW boundary.

Furthermore, in its present bermed condition, Pond 20 is above the MHW's current location. Currently, the berm's height ranges between 13.43 and 14.43 feet above MLLW. Based on historical data

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[1] 33 USC § 403.
[2] 33 CFR § 329.12(b).
[3] *See*, T-sheet T365, available at http://www.caltsheets.org/socal/; *see also* Grossinger, et.al., San Francisco Estuary Institute, *T-Sheet User Guide,* SFEI Report No. 427, September 2005. pages 27-28; 35 (describing T-sheet map symbology and symbology variability).
[4] Grossinger, et.al., San Francisco Estuary Institute, *T-Sheet User Guide,* SFEI Report No. 427, September 2005.
[5] *Id.*
[6] *See*, Mark Durham, U.S. Army Corps of Engineer Chief South Coast Regulatory Branch; Reply Letter to February 4, 2000 Port of San Diego Letter, February 22, 2000 (ATTACHMENT 1).

collected by the North San Diego Bay tidal gauge (#9410170), the ten highest high tides recorded between 1950 and 2017 were 7.63 feet above MLLW, or less.[7] Thus, the MHW does not reach the berm's interior and Pond 20 is not "subject to tidal action," nor is it subject to "inundation by the mean high waters."

Therefore, Pond 20 is not subject to RHA jurisdiction because a) historic map evidence indicates Pond 20 was above the MHW before the berm was constructed, and b) tidal data collected in the bay indicates that the MHW is at least 6.8 feet below the top of the berm in its present state. As discussed below, in 2000, USACE concluded the project area is above the MHW.

2. **USACE does not have RHA jurisdiction over Pond 20 based on indelible navigability because USACE affirmatively surrendered its RHA jurisdiction over the Site in 2000.**

The indelible navigability principle asserts that "sudden or man-made changes to a water body or its navigable capacity do not alter the extent of RHA jurisdiction, and thus the area occupied or formerly occupied by that water body will always be subject to RHA jurisdiction."[8]

Although, based on this rule, man-made changes to navigable waters do not extinguish a waterbody's navigable in law status, the USACE can determine whether a water feature remains or otherwise is navigable

The USACE made just such an explicit determination for Pond 20. Specifically, in 2000, the USACE assessed its RHA jurisdiction over the interior of Pond 20. The agency concluded that "Pond 20 is not subject to our authorization under Section 10 of the RHA" because "the subject property in its unobstructed, natural state was located above MHW and is not defined as navigable waters … ."[9]

USACE's 2000 letter to the Port is unequivocal and includes unmistakable terms regarding its RHA jurisdiction over Pond 20. USACE's letter is an affirmative government statement that RHA jurisdiction does not apply. USACE should not reassert RHA jurisdiction over Pond 20 now, even if it were to purport that Pond 20 was below the historic or present MHW mark locations.

CLEAN WATER ACT JURISDICTION

This section discusses USACE jurisdiction under the CWA. Specifically, this section addresses USACE jurisdiction over the non-wetland ponds based on:

1. Adjacency to the Otay River or Nestor Creek;
2. Tributary status/hydrologic connectivity to the Otay River and Nestor Creek;
3. Location below the MHW elevation; and
4. Lack of significant nexus to Waters of the U.S.

First, USACE does not have jurisdiction over the non-wetland ponds within the berms at Pond 20 by reason of adjacency; adjacency applies only to wetlands.

Second, USACE does not have jurisdiction over non-wetland borrow areas within Pond 20 based on the ponds being a tributary to the Otay River or Nestor Creek, because there is no evidence that the ponds have ever flowed over, or through the berms into the river or creek. Tributary status requires a direct surface water connection between a traditional navigable water and a non-wetland tributary

[7] National Oceanic and Atmospheric Administration [NOAA]. Water Level Reports – Top Ten Max/Min in Period, Station 9410170 San Diego, CA, Period January 1, 1950 to July 31, 2017. Web https://tidesandcurrents.noaa.gov/reports.html?id=9410170

[8] Earl H. Stockdale, U.S. Army Corps of Engineers Chief Counsel; *Legal Principles to Guide the Approved Jurisdictional Determination for the Redwood City Salt Plant*, January 9, 2014 (ATTACHMENT 2).

[9] Mark Durham, U.S. Army Corps of Engineer Chief South Coast Regulatory Branch; Reply Letter to February 4, 2000 Port of San Diego Letter, February 22, 2000 (ATTACHMENT 1).

water. There is no evidence that surface water connection exists between the Otay River or Nestor Creek and the isolated ponds located within Pond 20.

Third, USACE does not have jurisdiction over the non-wetland borrow areas within the berm at Pond 20 based on them being below the MHW elevation, because CWA jurisdiction for tidal waters is based on the location of the high tide line, which is on the outer perimeter of Pond 20. Pond 20 is completely isolated from tidal flows, and was constructed lawfully, meaning the current extent of the high tide line delimits USACE's landward extent of CWA jurisdiction over tidal waters. The isolated ponds located within Pond 20 are beyond the reach of that jurisdiction.

Fourth, USACE does not have jurisdiction over isolated non-wetland waters that do not have a significant nexus to a navigable waterway. The non-wetland borrow areas within Pond 20 have no surface or groundwater connection to surrounding waters; they are not hydrologically connected. Nor is there a chemical or biological significant nexus with navigable waterways; there is no water exchange with the Otay River or Nestor Creek from inside the berm to outside the berm, which thus precludes passage of chemicals and aquatic organisms between Pond 20 and the surrounding surface water features.

The lack of significant nexus ties back into all of the other arguments and will be discussed in conjunction with them below, rather than as a separate argument.

1. **USACE does not have jurisdiction over the non-wetland borrow areas within the Pond 20 berms by reason of adjacency, because jurisdiction based on adjacency applies only to wetlands.**

Waters that are legally converted to upland pursuant to a CWA permit, or before the CWA was enacted, are no longer waters of the U.S. and are not subject to the CWA.[10] Where an existing wetland water of the U.S. is "converted to another use," altering its "wetland characteristics" so that the wetland is no longer a water of the U.S., it is not subject to USACE jurisdiction.[11] If the area's use is abandoned and the area "regains wetland characteristics" that meet USACE's wetland definition, USACE jurisdiction is restored.[12]

Here, it is undisputed that the interior of Pond 20 likely consisted of wetland before the berm and salt ponds were constructed. The berm and salt ponds were constructed by Western Salt in the 1870s, decades before the CWA was enacted.[13] The wetlands on which the salt ponds were constructed would have been waters of the U.S., if such a designation existed at that time, because they were adjacent to San Diego Bay, the Otay River, and Nestor Creek. Construction of the berm and salt ponds hydrologically disconnected Pond 20 from San Diego Bay, the Otay River, and Nestor Creek. More importantly, for this analysis, pre-CWA salt pond construction converted the marsh wetland to non-wetland. Thus, the pre-construction wetlands were legally converted to non-wetland, because the conversion occurred before the CWA was enacted.

Salt production activities within Pond 20 ceased during the 1960s and since then, Pond 20 was left fallow. Several wetland delineations were conducted at Pond 20 after salt production ended, the most

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[10] Environmental Protection Agency, *Guidelines for Specification of Disposal Sites for Dredged or Fill Material*, 45 Fed. Reg. 85344 (Dec. 24, 1980); *see also* Earl H. Stockdale, U.S. Army Corps of Engineers Chief Counsel; *Legal Principles to Guide the Approved Jurisdictional Determination for the Redwood City Salt Plant*, January 9, 2014 (ATTACHMENT 2) ("areas that are lawfully filled, either before the passage of the CWA or pursuant to a CWA permit, are no longer subject to CWA jurisdiction.").
[11] RGL 86-09
[12] *Id.*
[13] EDAW. 2001. Historic resource evaluation report for Western Salt Company Salt Works, San Diego County, Chula Vista, California. Prepared for Tierra Environmental Services and California Department of Transportation (CalTrans), 102 pp.

recent being conducted in 2017. No wetlands were delineated during any of those efforts. Therefore, since the historic wetlands were legally converted to non-wetland, and Pond 20 never regained wetland characteristics after salt production activities ceased, no portion of Pond 20 can be considered a wetland water of the U.S.

The borrow areas within Pond 20 are part of a salt production operation, are not wetlands, and are separated from the Otay River and Nestor Creek--navigable tributaries to San Diego Bay--by an earthen levee. Thus, although arguably adjacent to these water features, the non-wetland borrow areas within the interior of Pond 20 cannot be considered waters of the U.S by reason of adjacency because they are not connected to either waterway and CWA jurisdiction based on mere adjacency alone does not apply to the non-wetland ponds; it only applies to wetlands.

2. **USACE does not have jurisdiction over non-wetland borrow areas within the interior of Pond 20 based on tributary status to the Otay River and Nestor Creek, because there is no evidence the ponds have ever flowed over, or through the berms into the river.**

USACE will assert CWA jurisdiction over "relatively permanent" "non-navigable tributaries to traditional navigable waters."[14] USACE will also assert jurisdiction over water features with a significant nexus to navigable waters. Accordingly, non-wetland water features can be jurisdictional, but only if they exhibit a hydrological or otherwise significant nexus to a navigable waterway. As described below, given the physical barrier that exists between the water features within Pond 20 and Otay Creek and Nestor Creek, no hydrologic connect or otherwise chemical or biological significant nexus exists between Pond 20 and these nearby waterways.

Here, the waterbodies at issue are non-wetland salt ponds separated by an earthen levee from a navigable tributary to tidal bay waters. Even during the highest recorded tide of 7.63 feet MLLW, Otay River water has never overtopped the berm and flowed into Pond 20's borrow areas.

Furthermore, that Pond 20 is within the FEMA 100-year floodplain does not *per se* establish jurisdiction. A hydrologic connection or other significant nexus must exist. There is no evidence that such a relationship exists between the interior of Pond 20 and the surrounding waterways.

Moreover, it is noteworthy that although Pond 20's berm is identified on FEMA's Federal Insurance Rate Map's (FIRM) Panel 2153 (FIGURE 2), the 100-year floodplain extent represented on Panel 2153 is pending revision, because Pond 20's berm effect on the 100-year floodplain has not been taken into account (i.e. the levees are shown as unaccredited). Thus, FEMA itself recognizes that the 100-year floodplain extent is inaccurate, rendering any conclusion based on this map that a hydrological connection between the borrow area and the Otay River exists, entirely speculative.

Thus, the non-wetland ponds within the Bermed Area cannot be considered waters of the U.S., because a) there is no evidence that water has ever flowed, or could flow, from the non-wetland ponds to the Otay River and Nestor Creek; and b) any assertion that non-wetland ponds have a significant impact on the chemical, physical, and biological integrity of a navigable water is speculative.

3. **USACE does not have jurisdiction over the non-wetland borrow areas ponds within Pond 20 because CWA jurisdiction for tidal waters is based on the location of the high tide line and the ponds are not tidal, nor do tidal waters flow over the berm into the borrow areas.**

Under the CWA, "tidal waters" are "waters that rise and fall … due to the gravitational pulls of the moon and sun." [15] The landward limits of jurisdiction in tidal waters extends to the high tide line.[16] The "high

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[14] *See* USEPA/USACE, *Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States and Carabell v. United States*, December 2, 2008; *see also* Corps of Engineers, Department of the Army, *Final Rule for Regulatory Programs of the Corps of Engineers,* 51 Fed. Reg. 41250 (Nov. 13 1986).
[15] Corps of Engineers, Department of the Army, *Final Rule for Regulatory Programs of the Corps of Engineers,* 51 Fed. Reg. 41250 (Nov. 13 1986).
[16] *Id.*

tide line" is the "line of intersection of the land with the water's surface at the maximum height reached by a rising tide," which "encompasses spring high tides … but does not include storm surges … as those accompanying a hurricane or other intense storm." [17]

The non-wetland borrow areas within the Pond 20 berm do not rise and fall due to gravitational forces. Rather the surface water elevation in the ponds fluctuate due to localized storm water inputs and evaporative processes. The ponds are not tidal waters. Furthermore, the tidal San Diego Bay, Otay River, and Nestor Creek waters never overtop the berm. This is evidenced by the berm elevation data and San Diego Bay tidal elevation data provided above.

Additionally, it cannot be argued that, in its natural state, Pond 20 would be subject to tidal influence and would be below the high tide line, because as described above, Pond 20 was lawfully converted from its original wetland state when the berms were constructed. Therefore, the existing location of the high tide line, which is on the outer perimeter of the berm, delimits USACE's landward extent of CWA jurisdiction over tidal waters, and the non-wetland ponds are beyond the reach of that jurisdiction.

Conclusion

There are no waters of the U.S. or navigable waters within Pond 20. The non-wetland borrow areas are isolated intrastate waters and are not subject to RHA or CWA laws and regulations.

Regarding the RHA, USACE does not have jurisdiction over Pond 20 because it is not, nor was it ever, below the MHW mark. Furthermore, the USACE affirmatively confirmed it does not have RHA jurisdiction over the Site in 2000.

Regarding CWA jurisdiction, USACE does not have jurisdiction over the non-wetland borrow areas within the Pond 20 berms by reason of adjacency, because jurisdiction based on adjacency applies only to wetlands. Second, USACE does not have jurisdiction over the non-wetland borrow areas within the Pond 20 berms based on them being tributaries to the Otay River or Nestor Creek, because there is no evidence that the ponds have ever flowed over, or through the berms into the river nor is there otherwise a significant nexus between Pond 20 and the nearby waterways. Third, USACE does not have jurisdiction over the non-wetland borrow areas within the Pond 20 berms based on them being below the MHW elevation, because CWA jurisdiction for tidal waters is based on the location of the high tide line, which is on the outer perimeter of the berms.

List of Figures

Figure 1 Referenced Site Areas and Hydrology Overview

Figure 2 FEMA Flood Insurance Rate Map (FIRM)

Attachments

Attachment 1 Mark Durham, U.S. Army Corps of Engineer Chief South Coast Regulatory Branch; Reply Letter to February 4, 2000 Port of San Diego Letter, February 22, 2000

Attachment 2 Earl H. Stockdale, U.S. Army Corps of Engineers Chief Counsel; *Legal Principles to Guide the Approved Jurisdictional Determination for the Redwood City Salt Plant*, January 9, 2014

[17] *Id.*

FIGURES

FIGURE 1: REFERENCED SITE AREAS AND HYDROLOGY OVERVIEW

POND 20 - EXISTING HYDROLOGIC FEATURES

SAN DIEGO UNIFIED PORT DISTRICT
AUGUST, 2017

GREATecology
ENVIRONMENT + DESIGN

FIGURE 2: FEMA FLOOD INSURANCE RATE MAP (FIRM)

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) Zone 11N. The **horizontal datum** was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov/ or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov/.

Base map information shown on this FIRM was provided in digital format by the USDA National Agriculture Imagery Program (NAIP). This information was photogrammetrically compiled at a scale of 1:24,000 from aerial photography dated 2008.

This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

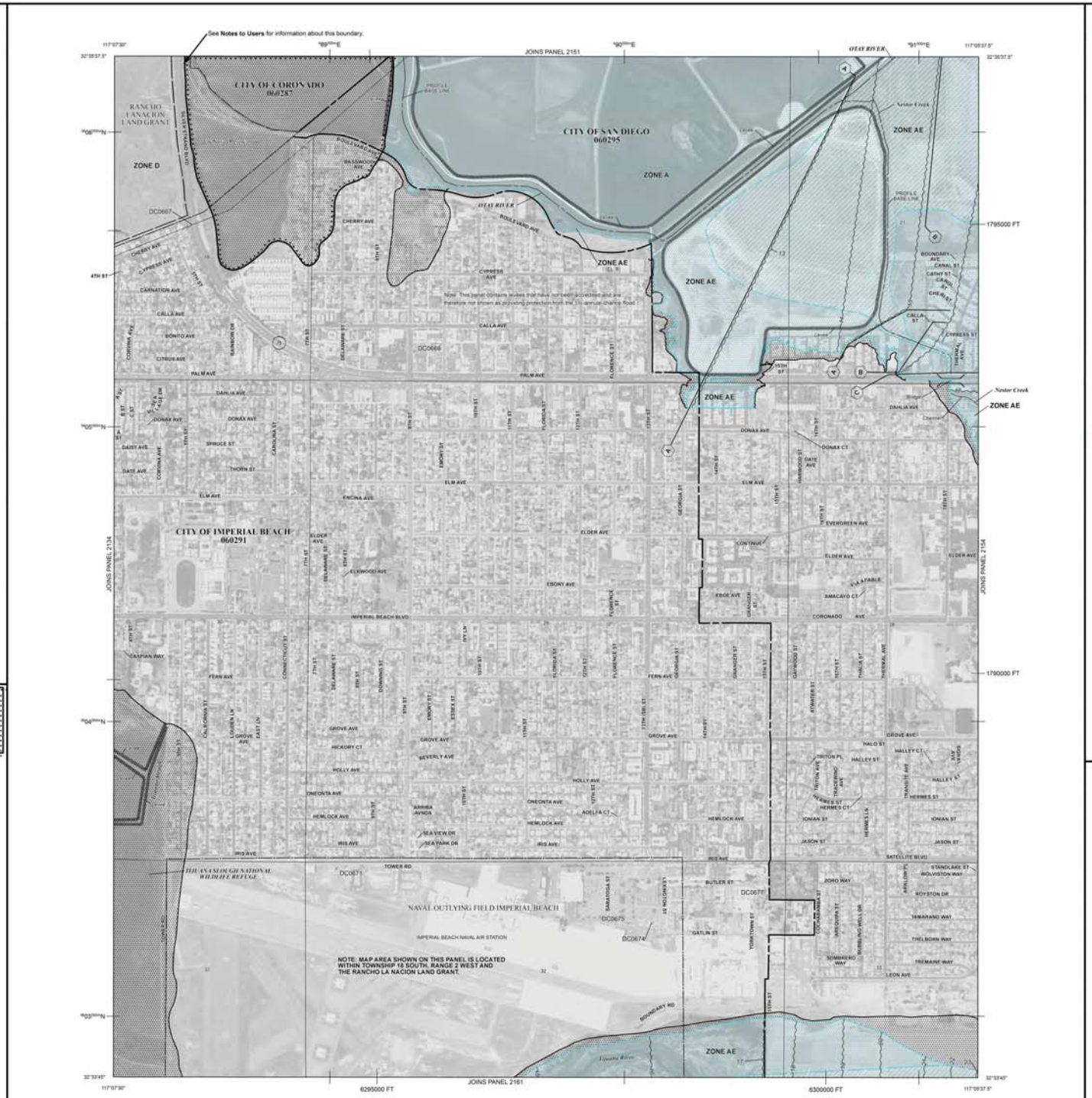
Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.

The **"profile base lines"** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the "profile base line", in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

ATTENTION: The levee, dike, or other structure that impacts flood hazards inside this boundary has not been shown to comply with Section 65.10 of the NFIP Regulations. As such, this FIRM panel will be revised at a later date to update the flood hazard information associated with this structure.

The flood hazard data inside this boundary on the FIRM panel has been republished from the previous effective (historic) FIRM for this area, after being converted from NGVD 29 to NAVD 88.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Areas to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	1% annual chance floodplain boundary
	0.2% annual chance floodplain boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

A — A	Cross section line
23 - - - 23	Transect line
87°07'30", 32°22'30"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
4279000mE	1000-meter Universal Transverse Mercator grid ticks, zone 11
6000000 FT	5000-foot grid values: California State Plane coordinate system, Zone VI (FIPSZONE = 406), Lambert projection
DX5510	Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5	River Mile

MAP REPOSITORIES
Refer to Map Repositories List on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
June 16, 1997

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
April 5, 2016 - to change Special Flood Hazard Areas and to update map elevations to North American Vertical Datum of 1988.

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 2153G

FIRM

FLOOD INSURANCE RATE MAP
SAN DIEGO COUNTY, CALIFORNIA
AND INCORPORATED AREAS

PANEL 2153 OF 2375

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CORONADO, CITY OF	060287	2153	G
IMPERIAL BEACH, CITY OF	060291	2153	G
SAN DIEGO, CITY OF	060295	2153	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
06073C2153G

MAP REVISED
APRIL 5, 2016

Federal Emergency Management Agency

ATTACHMENT 1

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
P.O BOX 532711
LOS ANGELES, CALIFORNIA 90053-2325

February 22, 2000

RECEIVED
FEB 25 2000
ENVIRONMENTAL
SERVICES

REPLY TO
ATTENTION OF:

Office of the Chief
Regulatory Branch

Eileen M. Maher
Snr. Environmental Specialist
Port of San Diego
PO Box 120488
San Diego, California 92112-0488

Dear Ms. Maher:

This is sent in reply to your letter dated February 4, 2000 in which you requested the Corps of Engineers to concur with your determination. That Pond 20, which is located south of San Diego Bay, in San Diego County, California, is not jurisdictional and not subject to authorization under Section 10 of the Rivers and Harbors Act (RHA) of 1899 or Section 404 of the Clean Water Act (CWA).

Based on a review of the information in our files pertaining to the project area, Pond 20 is not subject to our authorization under Section 10 of the RHA. To make this determination, the subject property was compared to the historic meander line, as presented on a reproduction of an 1870 U.S. Land Office map, entitled Fractional Township No. 18 South, Range No. 2 West, San Bernardino Meridian, prepared by Bureau of Land Management (BLM). The meander (or mean high water, MHW) line is plotted by survey datum points from 1869 by the BLM. This exhibit illustrates that the subject property in its unobstructed, natural state was located above MHW and is not defined as navigable waters, per 33 C.F.R. 329.1.

Based on the review, it is not clear if Pond 20 is subject to our authorization under Section 404 of the CWA. Our records indicate that a jurisdictional delineation was conducted for the site in September of 1996, and a report submitted on August 11, 1997. This report indicated that the subject property did not support waters of the United States (U.S.). On June 11, 1997, the Corps and the U.S. Fish & Wildlife Service conducted an onsite field investigation to verify the preliminary findings of the September 1996 jurisdictional delineation. During the investigations, it was recorded that the southwest portion of Parcel 20 was flooded with water. The notes indicate that the perimeter of the property also supported *salicornia*, a wetland (obligate) indicator species. The notes also indicate that migratory waterfowl were observed onsite. These observations were recorded by site photo-documentation. In a more recent discussion with the Service (February 18, 2000), it is believed that flooding occurs seasonally and regularly on the site. Based on these considerations, it appears that the subject property, in part, may be defined as waters of the U.S., per 33 C.F.R. 328.1.

At this time, we do not concur with your findings and recommend that you update and revise the 1996 jurisdictional delineation, as appropriate. We suggest that the revised report graphically present waters of the U.S. and estimate acreage using Federal-approved methods. It is recommended that the map identifies graphically both wetlands and non-wetland waters, and report states the acreage estimates for both, respectfully. After the results are submitted to the Corps, we will field verify your findings. Following, we will state our findings in the record, and we will notify you via written correspondence.

In the event that you or your staff (or other representative) is unable to perform the delineation, or should you choose not to obtain the services of an environmental consulting firm, we can perform the wetland delineation on your behalf. However, due to staffing limitations, we would place you on a waiting list and perform the delineation in about one-year.

If you have any questions, please call Russell L Kaiser at (213) 452-3293.

Sincerely,

Mark Durham

Mark Durham
Chief, South Coast Section
Regulatory Branch

ATTACHMENT 2

Legal Principles to Guide the Approved Jurisdictional Determination for the Redwood City Salt Plant

CECC-ZA 9 January 2014

Introduction and Summary of Conclusions

For more than a century, private industry has been conducting salt making operations in the San Francisco Bay area. Because the salt making facilities are constructed at sites in or near tidal waters, there has been ongoing interest in the Corps' authority to exercise jurisdiction over these sites under Section 10 of the Rivers and Harbors Act of 1899 (RHA) and Section 404 of the Clean Water Act (CWA). Most recently, this interest has focused on the Redwood City salt plant, which is a part of Cargill's larger salt making operations in the Bay area.

DMB Redwood City Saltworks, the entity that represents Cargill and the potential developer of the site, has recently requested an approved jurisdictional determination for the 1,365 acre salt plant facility in Redwood City, CA. Because of this request, the Corps must examine the relevant laws and regulations as interpreted by the courts to identify the legal standards applicable to a jurisdictional determination for the site.

On several occasions the Corps and the courts have addressed the question of jurisdiction over other property in the Bay area owned by Cargill and used for salt making operations. The decisions reached on those occasions have involved different facts and have been made against a backdrop of evolving jurisprudence regarding the extent of the Corps' regulatory jurisdiction under the RHA and CWA. While the Corps' understanding of RHA jurisdiction has not changed substantially in recent years, the Supreme Court has issued several landmark decisions addressing CWA jurisdiction since the last time a court has considered the issue as it relates to a salt making operation on the San Francisco Bay.

Relying on binding precedents of the Supreme Court and the Court of Appeals for the Ninth Circuit, this document sets forth the legal standards that must be applied in determining RHA and CWA jurisdiction over the site of the Redwood City salt plant. It explains that the government's RHA jurisdiction in tidal waters extends shoreward to the mean high water (MHW) mark in its unobstructed, natural state. It concludes that the Cargill Redwood City property should be divided into two parcels for analytical purposes, one developed before 1940 and the other developed after 1940. There is no evidence in the record to suggest that the

Attachment 4

Army ever exerted RHA jurisdiction over the parcel developed before 1940; the parcel was either never subject to RHA jurisdiction or RHA jurisdiction has been surrendered. The other parcel was developed pursuant to a 1940 War Department permit, and the Army retains RHA jurisdiction up to the MHW mark as it existed immediately prior to the construction of levees and a dyke authorized in this permit. The 1940 War Department permit authorizing the levees and dyke should be given deference when determining the historic location of the MHW mark. Finally, this document concludes that the liquids on both parcels, which have been subject to several years of industrial salt making processes, are not "waters of the United States" subject to CWA jurisdiction.

Discussion

Factual Setting[1]

As previously mentioned, a significant portion of the southern San Francisco Bay shoreline has been used for the production of salt through a process called solar evaporation. The Redwood City Saltworks site is comprised of approximately 1,365 acres that currently and/or historically have been used to make salt. The development of the Redwood City site can be described as having occurred on two distinct parcels in two phases, one of which involved a War Department permit issued in 1940 to a former owner, the Stauffer Chemical Company.[2] The two parcels are highlighted in different colors on the attached map.[3]

Parcel 1: The first phase of development occurred prior to 1940 and involved the western portion of the site, roughly between the historic location of First Slough and the current location of Seaport Boulevard. This portion of the site is identified in green on the attached map. It is bounded by a railroad line on the west, Bayshore Highway on the south, an existing levee on the east, and Westpoint Slough on the north. In 1940, it was shown as containing "Salt Evaporating Ponds," "Reclaimed Marsh," and a cement works.[4] This area approximately corresponds to the area that Cargill calls its crystallizer complex.[5]

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[1] The information presented in this section explains the context of the discussion of controlling legal standards and is based on the applicant's submission, information conveyed during site visits, and other sources. A formal determination of the physical characteristics of the site will be undertaken by the San Francisco District of the U.S. Army Corps of Engineers during the processing of the request for an approved jurisdictional determination.

[2] War Department Permit issued to Stauffer Chemical Company, January 16, 1940. The permit includes a diagram of the levee and dyke profiles in relation to the surrounding topography marked "Sheet 1" and a map of the site marked "Sheet 2." These documents together will be collectively referred to as "the permit" or "1940 permit."

[3] The attached map is a copy of the map that accompanied the 1940 permit and was identified as "Sheet 2" of that permit. The color highlighting has been added.

[4] War Department Permit issued to Stauffer Chemical Company, January 16, 1940 (Sheet 2); see also Attachment C to Exhibit 7 of the Redwood City Salt Plant Approved Jurisdictional Determination Submission (May 30, 2012).

[5] See Exhibit 2 of the Redwood City Salt Plant Approved Jurisdictional Determination Submission (May 30, 2012).

Parcel 2: The second phase of development occurred after 1940, immediately east of the first phase of development. The parcel where this development occurred is shown in red on the attached map. The development was undertaken pursuant to a War Department permit authorizing construction of "an earth dyke or levee across and along the bank of First Slough, and along the banks of Westpoint Slough and an unnamed tributary thereof" to enclose an area immediately east of the first development.[6] This area was leveed off from the Bay and developed into a complex of containment cells for salt production. The parcel is bordered on the west by the existing levee that forms the eastern border of the area developed prior to 1940, except that this common border diverges at the "Location of the Proposed Dam" across First Slough. From that point, the western border of the parcel follows the eastern shore of First Slough north, where the proposed levee or dyke is shown as a darker line. The northern border of the parcel follows this dark line along the southern shore of Westpoint Slough, and the eastern border follows the same darker line along the western shore of the unnamed tributary to Westpoint Slough. The southern border is the darker line that generally parallels the "Road on Levee." It approximately corresponds to the area Cargill calls its pickle and bittern complexes.[7]

The Redwood City salt plant entails only the later stages of the salt production process.[8] The initial stages of the process are conducted on other parcels, where the process begins by pumping raw Bay water into a leveed evaporation pond. The water is moved through a series of containment cells as the salinity increases. After approximately four years of subjecting the water to solar evaporation at other locations, the resulting liquid ("pickle") is transferred to the pickle complex at the Redwood City facility. Additional solar evaporation occurs there until the solution is saturated, at which point the pickle is moved into the crystallizer cells where the salt precipitates out of suspension. The resulting liquid, called "bittern," is pumped into the bittern complex cells, where it is stored until moved off site to be sold or recycled back into the salt production process. The salt that remains on the floor of the crystallizer cells is then mechanically scraped from the dry ground and loaded into trucks to be moved offsite.

Rivers and Harbors Act of 1899

Overview

Congress enacted the RHA to protect the navigable capacity of tidal and non-tidal waters. RHA jurisdiction is closely connected to the Federal navigation servitude, which reaches to the limits of navigable waters and permits the sovereign to prevent or remove

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[6] War Department Permit issued to Stauffer Chemical Company, January 16, 1940.
[7] *Id.*
[8] This description is based on the Redwood City Salt Plant Approved Jurisdictional Determination Submission (May 30, 2012).

obstructions to navigation without compensation. This document explains that RHA jurisdiction extends to the MHW mark, which ordinarily is determined by identifying a line on the shore based on the average high tides over a period of years. This line can be ambulatory and special rules may apply to account for forces of nature, which may cause a shoreline to increase or decrease, or manmade improvements that counter these forces. Even where jurisdiction may normally attach, it may be surrendered by the government. Applying these legal precepts is necessary to determine the limits of RHA jurisdiction over Cargill's Redwood City property.

Geographic Scope of RHA Jurisdiction

The RHA regulates obstructions to the navigable capacity of any "navigable water of the United States."[9]

> [It] prohibits the creation of 'any obstruction not affirmatively authorized by Congress[] to the navigable capacity of any of the waters of the United States' [and] . . . make[s] it unlawful to 'build or commence the building of any wharf, pier, dolphin, boom, weir, breakwater, bulkhead, jetty, or other structures in any port, roadstead, haven, harbor, canal, navigable river, or other water of the United States . . . except on plans recommended by the Chief of Engineers and authorized by the Secretary of the Army' or to 'excavate or fill, or in any manner to alter or modify the course, location, condition, or capacity of . . . the channel of any navigable water of the United States, unless the work has been recommended by the Chief of Engineers and authorized by the Secretary of the Army prior to beginning the same.'[10]

Citing Supreme Court precedents, the Ninth Circuit has recognized that:

> The term "navigable waters" has been judicially defined to cover: (1) nontidal waters which were navigable in the past or which could be made navigable in fact by "reasonable improvements," *United States v. Appalachian Electric Power Co.*, 311 U.S. 377 (1940); *Economy Light & Power Co. v. United States*, 256 U.S. 113 (1921); and (2) waters within the ebb and flow of the tide. *The Propeller Genesee Chief v. Fitzhugh*, 53 U.S. 443 (1851); *United States v. Stoeco Homes, Inc.*, 498 F.2d 597 (3d Cir. 1974), cert. denied, 420 U.S. 927.[11]

With respect to tidal waters, the Supreme Court has held that the term "navigable waters" as used in the RHA, extends to all places covered by the ebb and flow of the tide to the MHW

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[9] 33 U.S.C. § 403.

[10] *U.S. v. Milner*, 583 F.3d 1174, 1191 (9th Cir. 2009) (quoting 33 U.S.C. § 403).

[11] *Leslie Salt Co. v. Froehlke*, 578 F.2d 742, 753 (9th Cir. 1978) (hereinafter "*Froehlke*"). This is consistent with the general definition of "navigable waters of the United States" codified in regulation at 33 C.F.R. § 329.4.

mark.[12] This regulatory authority "is not dependent upon the depth and shallowness of the water," and includes "[m]arshlands and similar areas" that are "subject to inundation by the mean high waters."[13] The MHW mark is determined by where on the shore the average of all high tides reaches over a period of 18.6 years.[14]

RHA jurisdiction is coextensive with the reach of the federal navigation servitude.[15] The navigation servitude,

> sometimes referred to as a "dominant servitude," . . . or a "superior navigation easement," . . . is the privilege to appropriate without compensation which attaches to the exercise of the "power of the government to control and regulate navigable waters in the interest of commerce." *United States v. Commodore Park*, 324 U.S. 386, 390, 65 S.Ct. 803, 89 L.Ed. 1017.[16]

The limits of RHA jurisdiction and the navigation servitude are coextensive because their origins are grounded in the same desired purpose of preserving the navigable capacity of waterways.

In summary, the general rule in tidal areas is that RHA jurisdiction extends to the line on the shore reached by the plane of the mean high water averaged over a period of 18.6 years. This general rule applies when there is a relatively static, natural shoreline. But shorelines may not remain static. Oceans may rise, tides may wash away beaches, and humans may build bulkheads on the shore. If the shoreline has changed or has otherwise been altered, additional analysis must be undertaken to determine if the extent of jurisdiction has changed along with the changes to the shoreline, or if the extent of jurisdiction remains fixed at the MHW mark as it existed before the changes. If there have been changes in the shoreline, jurisdiction is either ambulatory, following the changes in the shoreline, or indelible, remaining fixed despite the changes.

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[12] *Borax,* 296 U.S. at 26-27. See 33 C.F.R. § 329.12(a)(2), which was changed in a rulemaking in 1982 in response to the *Froehlke* decision to eliminate the sentence that established the shoreward limit of navigable waters on the Pacific coast as the mean higher high waters. This regulatory change made the shoreward limit of jurisdiction for all coastal waters (Atlantic and Pacific) the same – the mean high water mark. 47 Fed. Reg. 31794, 31797-98 (July 22, 1982).

[13] See *Greenleaf-Johnson Lumber Co. v. Garrison*, 237 U.S. 251, 263 (1915) and 33 C.F.R. § 329.12(b).

[14] *Borax Consolidated v. City of Los Angeles*, 296 U.S. 10, 26-27 (1935); *Frohlke*, 578 F.2d at 746.

[15] *Froehlke*, 578 F.2d. at 748-750, 752 ("The navigational servitude reaches to the shoreward limit of navigable waters.").

[16] *U.S. v. Virginia Electric Co.*, 365 U.S. 624, 327-28 (1961) (quoted in *Froehlke*, 578 F.2d at 752).

Ambulatory Nature of Jurisdiction

The scope and extent of RHA jurisdiction is ambulatory when there are gradual, lasting shifts in the volume of the water body or the character of the banks or shoreline.[17] In such cases, jurisdiction changes to follow the changing path and extent of the water:

> It is the established rule that a riparian proprietor of land bounded by a stream, the banks of which are changed by the gradual and imperceptible process of accretion or erosion, continues to hold the stream as his boundary; if his land is increased, he is not accountable for the gain, and if it is diminished he has no recourse for the loss. But where a stream suddenly and perceptibly abandons its old channel, the title is not affected, and the boundary remains at the former line.[18]

The Supreme Court has described how Federal regulatory authority shifts to follow the course of a water body as it moves over time, just as title follows the course of a water body as it moves over time:

> Nor is the authority of Congress limited to so much of the water of the river as flows over the bed of forty years ago. The alterations produced in the course of years by the action of the water do not restrict the exercise of Federal control in the regulation of commerce. Its bed may vary and its banks may change, but the Federal power remains paramount over the stream, and this control may not be defeated by the action of the state in restricting the public right of navigation within the river's ancient lines. The public right of navigation follows the stream and the authority of Congress goes with it.[19]

Thus, the contours of RHA jurisdiction change when the physical changes to the course or shoreline of a water body are gradual and long-lasting.[20] If the changes to the course or shoreline are sudden and perceptible due to avulsion[21] or man-made improvements, then the principle of indelible navigability applies to fix the previous limits of jurisdiction despite the changes as discussed further below.

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[17] *Jefferis v. East Omaha Land Co.*, 134 U.S. 178, 189 (1890) (cited in *Milner*, 583 F.3d at 1187).

[18] *Philadelphia Co. v. Stimson*, 223 U.S. 605, 624 (1912). See also *Oklahoma v. Texas*, 260 U.S. 606 (1923); *Hughes v. Washington*, 389 U.S. 290 (1967).

[19] *Philadelphia Co. v. Stimson*, 223 U.S. at 634-35.

[20] *State of Cal. ex rel. State Lands Commission v. U.S.*, 805 F.2d 857, 864 (1986) ("When a water line that constitutes a property boundary changes gradually and imperceptibly by the gradual deposit of solid material on its shore (accretion) or by gradual recession (reliction), the property boundary changes with it. . . . In such a situation, title is "ambulatory.").

[21] *Id.* at 864 ("where a water line changes violently and visibly, i.e., by avulsion, the property boundary does not change with the water but remains where it was prior to the change").

The Principle of Indelible Navigability

The principle of indelible navigability holds that sudden or man-made changes to a water body or its navigable capacity do not alter the extent of RHA jurisdiction, and thus the area occupied or formerly occupied by that water body will always be subject to RHA jurisdiction. This principle was discussed and relied upon by the Supreme Court in *Economy Light & Power*,[22] and has been incorporated in the Corps' definition of "navigable waters of the United States:" "A determination of navigability, once made, applies laterally over the entire surface of the water body, and is not extinguished by later actions or events which may impede or destroy navigable capacity."[23] The rule is expanded upon in 33 C.F.R. §§ 329.9 and 329.13: "an area will remain 'navigable in law,' even though no longer covered with water, whenever the change has occurred suddenly, or was caused by artificial forces intended to produce that change."[24] These regulatory definitions implementing the rule of indelible navigability have been unchanged since September 9, 1972.[25]

The Ninth Circuit decision in *Froehlke* embraced the rule of indelible navigability. The court reversed the lower court decision that "the Corps's jurisdiction under the River and Harbors Act includes all areas within the former line of MHHW in its unobstructed, natural state" and instead ruled that jurisdiction is to be fixed at the former line of MHW its unobstructed, natural state.[26] The opinion cited to "the principle in *Willink* . . . that one who develops areas below the MHW line does do at his peril" as dictating this result.[27] Thus, while RHA jurisdiction "extend[s] to all places covered by the ebb and flow of the tide to the mean high water (MHW) mark in its unobstructed, natural state," where the natural state has been obstructed by a sudden change or an artificial change intended to produce that result, the former mean high water line as it existed before the obstruction becomes the fixed limit of RHA jurisdiction.[28]

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[22] *Economy Light & Power Co. v. U.S.*, 256 US 113, 118 (1921) ("The fact . . . that artificial obstructions [to navigation] exist capable of being abated by due exercise of the public authority, does not prevent the [water body] from being regarded as navigable in law, if, supposing them to be abated, it be navigable in fact in its natural state. The authority of Congress to prohibit added obstructions is not taken away by the fact that it has omitted to take action in previous cases.")

[23] 33 C.F.R. § 329.4.

[24] 33 C.F.R. § 329.13.

[25] 37 Fed. Reg. 18289-92 (Sept. 9, 1972).

[26] *Froehlke*, 578 at 753.

[27] *Id.*

[28] *Id.*; 33 C.F.R. § 329.13. The principle of indelible navigability does not apply when natural changes that come about slowly due to accretion or reliction alter the course or limits of a water body. In such cases, "[t]he public right of navigation follows the stream . . . and the authority of Congress goes with it." *Philadelphia v. Stimson*, 223 U.S. 605, 634-635 (1912).

The Ninth Circuit issued a decision after its *Froehlke* decision that also addressed the effect of levees on RHA jurisdiction. The decision in *Milner* considered whether a shore defense structure that was constructed in uplands beyond RHA jurisdiction could become jurisdictional if gradual erosion caused the shoreline to move to intersect the previously constructed shore defense structure, such that the structure was now located in jurisdictional waters. The court found that such shore defense structures were subject to RHA jurisdiction, but did not determine how to fix the limits of RHA jurisdiction. Unlike the shore defense structures under consideration in *Milner*, the levees before us at the Cargill Redwood City site were permitted, water is not passing through or over them, erosion is not a factor, and there is no indication that the levees are in any way obstructing navigation.[29] *Milner* did not change the rule in *Frohlke* and is not applicable to circumstances at the Redwood City site.

Thus, under current Ninth Circuit jurisprudence, RHA jurisdiction in the San Francisco Bay area generally applies "to all places covered by the ebb and flow of the tide to the mean high water (MHW) mark in its unobstructed, natural state."[30] The Federal regulations implementing the RHA are consistent with this rule of law and define the jurisdictional scope of the RHA statute to be fixed if "later actions or events [such as the construction of a levee or other improvement] . . . impede or destroy navigable capacity."[31]

Surrender of Jurisdiction

Several courts have added nuance to the principle of indelible navigability, specifically by introducing the concept of surrender of jurisdiction. The Third Circuit introduced the concept of surrender of jurisdiction in the case of *United States v. Stoeco Homes, Inc.*, which concerned the jurisdictional status of a parcel of land that had previously been a salt marsh subject to the ebb and flow of the tide, some areas of which had been filled to form fast land several decades earlier.[32] At the time the land at issue in *Stoeco* was filled, it was behind established harbor lines and it was Corps policy not to require any RHA permits for filling shoreward of established bulkhead lines.[33] The question before the court in *Stoeco* was whether blanket permission to fill behind established bulkhead lines could lead to the

[29] If there was any obstruction of navigation, the Corps could protect the navigable capacity of the waters by invoking subsection (f) of the 1940 permit.
[30] *Froehlke*, 578 F.2d at 753.
[31] "A determination of navigability, once made, applies laterally over the entire surface of the water body, and is not extinguished by later actions or events which may impede or destroy navigable capacity." 33 C.F.R. § 329.4. The rule is expanded upon in sections 329.9 and 329.13 of the regulations: "an area will remain 'navigable in law,' even though no longer covered with water, whenever the change has occurred suddenly, or was caused by artificial forces intended to produce that change." 33 C.F.R. § 329.13.
[32] *U.S. v. Stoeco Homes, Inc,*. 498 F.2d 597, 600 (3rd Cir. 1974).
[33] *Id.* at 602-603.

permanent loss of RHA jurisdiction if the land was "improved" while the permission was in effect.[34] The Third Circuit looked at the statutory language and found:

> Section 10 by its plain language contemplates congressional consent to some encroachments on the navigational servitude, and delegates to the Army Corps of Engineers and the Secretary of the Army authority to grant such consent on its behalf. If the administrative agency gives an express consent by permit in a specific instance, with no reservation of the right to compel removal, surely that consent must be considered to be a surrender of the federal servitude over the fee in question.[35]

In *Stoeco*, the "improved" land was made fast by filling "substantially above mean high tide,"[36] and the court expressly limited the holding finding surrender "to tidal marshlands which had become fast land" during the time that the filling of those waters was permitted without restriction or reservation.[37] However, the fact that the improvement that resulted in a finding of surrender in this case was making the land fast does not mean that this is the only way a surrender could occur through improvement or modification of jurisdictional waters.

In *Froehlke*, the Ninth Circuit suggested that the concept of surrender could apply in the San Francisco Bay, as well. In evaluating the scope of RHA and CWA jurisdiction over salt plants within the Bay, the Ninth Circuit held that "in tidal areas, 'navigable waters of the United States,' as used in the Rivers and Harbors Act, extend to all places covered by the ebb and flow of the tide to the mean high water (MHW) mark in its unobstructed, natural state."[38] However, the court continued:

> Our holding that the MHW line is to be fixed in accordance with its natural, unobstructed state is dictated by the principle recognized in *Willink*, supra, that one who develops areas below the MHW line does so at his peril. We recognize that under this holding issues of whether the Government's power may be surrendered or its exercise estopped, and if so, under what circumstances and to what extent, may arise. Leslie, for example, may contend that there has been a surrender by the Corps of its

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[34] The three-part inquiry that the Third Circuit made to determine whether RHA jurisdiction was surrendered in *Stoeco* included "whether Congress intended that §10 was intended [sic] to have continuing application to *improved* land formerly within the navigable waters of the United States." *Stoeco*, 498 F.2d at 608 (emphasis added). "Improve" is defined by Webster's as, inter alia, "to augment or enhance in value or good quality; to make more profitable, excellent, or desirable;" and "to enhance in value by bringing under cultivation or reclaiming for agriculture or stock raising." *Webster's New International Dictionary of the English Language*, Second Edition, Unabridged, 1939.

[35] *Stoeco*, 498 F.2d at 610.

[36] *Id.* at 600.

[37] *Id.* at 611.

[38] *Froehlke*, 578 F.2d at 754.

> power under the Rivers and Harbors Act with respect to certain land below the MHW line.[39]

The court also observed that "at this time it is not necessary for us to pass on issues such as were before the court in *Stoeco*."[40] Thus, the Ninth Circuit recognized that it may be possible that the United States could surrender jurisdiction, but the court did not rule on this point.

Surrender Applied to the Redwood City Salt Plant

In the case of the Redwood City salt plant, separate surrender analyses are necessary for the two parcels described above because of their distinctive histories.

The western portion of the site (parcel 1, shown in green on the attached map) was already improved for salt-making purposes at the time the January 16, 1940, War Department permit was issued. The map accompanying the 1940 War Department permit shows this parcel as "Salt Evaporating Ponds" and "Reclaimed Marsh," and identifies the location of the existing levee surrounding those areas.[41] There is no evidence that the Corps ever asserted jurisdiction over this area or the construction of the levees on this parcel.[42] Given the acquiescence of the Corps to the improvement of the western portion of the site prior to 1940, either the property was never subject to RHA jurisdiction or RHA jurisdiction has been surrendered.[43]

The analysis is different for the eastern portion of the site (parcel 2, shown in red on the attached map), which was leveed off from the San Francisco Bay pursuant to the 1940 War Department permit. Here, the question of whether the Corps retains RHA jurisdiction over formerly tidal waters is principally informed by the terms of the permit. The permit authorized the Stauffer Chemical Company, Cargill's predecessor in interest, to:

> construct an earth dyke or levee across and along the bank of First Slough, and along the banks of Westpoint Slough and an unnamed tributary thereof, in Westpoint Slough at about 1.0 mile southeasterly of the mouth of Redwood Creek, San Mateo County,

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[39] *Id.* at 753.

[40] *Id.*

[41] Aerial photographs submitted by the applicant show the levees depicted on the 1940 permit existed in the same configuration in 1930. See Attachment C to Exhibit 7 of the Redwood City Salt Plant Approved Jurisdictional Determination Submission (May 30, 2012).

[42] This is consistent with the Corps practice immediately following the passage of the RHA of only regulating areas and activities that would have a relatively direct impact on the navigable capacity of navigable waters. See *Stoeco*, 498 F.2d at 606.

[43] *Stoeco* holds that the "long-standing administrative practice" not to require explicit or specific permission to fill behind harbor lines prior to 1970 was sufficient consent to surrender the navigation servitude. Similarly, the administrative practice of only regulating activities that would have a relatively direct impact on the navigable capacity of waters at the turn of the last century may also be sufficient to surrender the navigation servitude where navigable waters were filled or otherwise developed with the acquiescence of the Federal government during that period.

> California, in accordance with the plans shown on the drawing attached hereto marked "Proposed Dam and Levee East of Redwood Cr., San Mateo County, California, Application by Stauffer Chemical Co., Dated Dec. 1939."[44]

The permit also contains a number of conditions that are designed to protect the navigable capacity of the named waters. It is accompanied by a map (Sheet 2) and a diagram (Sheet 1), which depicts certain features of the site and elevation data. Reading these documents together, it is clear that the Army was exercising its jurisdiction under the RHA when it sought to regulate the construction of these improvements under the permit.

The permit also contains an express reservation that allows the United States to force the removal of any of the permitted work:

> That if future operations by the United States require an alteration in the position of the structure or work herein authorized, or if, in the opinion of the Secretary of War, it shall cause unreasonable obstruction to the free navigation of said water, the owner will be required, upon due notice from the Secretary of War, to remove or alter the structural work or obstruction caused thereby without expense to the United States, so as to render navigation reasonably free, easy, and unobstructed.[45]

This condition would seem to be exactly the type of "reservation of the right to compel removal" that the Third Circuit indicated could prevent surrender of jurisdiction.[46] While this reservation has limitations regarding when the Corps can order removal of permitted fill, the fact that there is *any* reservation is sufficient to put the landowner on notice that "one who develops areas below MHW does so at his own peril"[47] and thus prevents a surrender of jurisdiction. Because there is no surrender, the areas previously below the MHW mark continue to be regulated under the RHA.

On this basis, surrender has not been triggered and the rule of indelible navigability applies to the eastern portion of the site. Accordingly, any areas that were RHA jurisdictional waters when the levees were permitted in 1940 are still jurisdictional under the RHA.

<u>Determining the Extent of RHA Jurisdiction</u>

With these legal rules in mind, the San Francisco District should expeditiously finalize the jurisdictional determination for the Redwood City salt plant site. Consistent with the

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[44] War Department Permit issued to Stauffer Chemical Company, January 16, 1940.
[45] Condition (f) of the January 16, 1940 War Department permit.
[46] See *Stoeco*, 498 F.2d at 610.
[47] *Froelke*, 578 F.2d at 753

foregoing discussion, the determination should include different findings for the two parcels comprising the site.

For the western portion of the site (parcel 1, highlighted in green on the attached map), RHA jurisdiction does not attach. There is no evidence that the Army ever asserted jurisdiction over this area or the construction that took place on this parcel. Either the property was never subject to RHA jurisdiction or RHA jurisdiction has been surrendered. No further analysis is required for this parcel.

For the eastern portion of the site (parcel 2, highlighted in red on the attached map), which is bordered by the levees that were authorized by the 1940 permit and which includes the area behind the dyke on First Slough, jurisdiction has not been surrendered and is retained by the rule of indelible navigability. For this area, the scope of RHA jurisdiction was fixed at the time the levees were constructed. Accordingly, the District must determine what areas of the parcel, if any, were below the MHW mark at the time the levees were constructed.

In making this determination, the District must take into account the information contained in the 1940 permit and accompanying attachments. These documents reflect the understanding of the parties at the time the permit was issued and should be accepted as the best available evidence of the locations of the features of the site, the elevations of the levees and dyke to be constructed, and the resources warranting protection. The permit identifies three of the more substantial features, First Slough, Westpoint Slough, and an unnamed tributary thereof, in specifying the location of the levees to be constructed.[48] The terms of the permit indicate that these were the waters that the terms and conditions were intended to protect. The diagram accompanying the permit (Sheet 1) shows that the base of the dyke that was constructed across First Slough was below the MHW mark. It also shows that the other levees on the site were to be constructed on marshlands at locations near the above named waters at elevations generally equal to the mean higher high water mark, which is above the MHW mark. The marshlands appear to be identified by horizontal lines shading specific areas of the map. Finally, the map (Sheet 2) also shows the levees crossing three smaller sloughs. These smaller sloughs are not specifically identified in the permit. The permit and its accompanying documents are silent on the elevations of these sloughs and on whether the Army intended to extend RHA protection to them.

In finalizing its jurisdictional determination for this parcel, the District may also consider other existing historical information that supplements the information contained in the permit and its accompanying documents to ensure a full and accurate understanding of the site. However, the District has the burden of substantiating the location of any tidal waters that

[48] War Department Permit issued to Stauffer Chemical Company, January 16, 1940.

were below the MHW mark at the time the levees were constructed to assert RHA jurisdiction over those areas. The information and representations in the permit should receive deference unless there is convincing evidence that the other historical materials provide a more accurate representation of the site at the time the levees were constructed.

Clean Water Act

Overview

The geographic extent of CWA jurisdiction is a distinct question from RHA jurisdiction.[49] The geographic extent of CWA jurisdiction is generally greater than that under the RHA; however, that is not always the case.[50] Because of the different goals of the statutes and as a consequence of the rule of indelible navigability, some areas that are no longer covered by "waters" may be subject to RHA jurisdiction but not CWA jurisdiction. There is no comparable rule of indelible jurisdiction for the CWA.[51] The following discussion analyzes the CWA and implementing regulations in light of relevant legal precedent to determine whether the site of the Redwood City salt plant is subject to CWA jurisdiction. It concludes that the liquid pickle and bittern on the site is not "water" and that therefore these liquids are not subject to CWA jurisdiction. It examines the Ninth Circuit's basis for finding CWA jurisdiction over other Bay-area salt plant sites in *Froehlke*, and explains why that decision is not applicable to the Redwood City site.

Factual Setting

The factual setting set forth at the beginning of this document is relevant to the discussion of CWA jurisdiction over the site. However, there are some details that are particularly relevant to CWA jurisdiction that merit mention here. Specifically, the entire site is controlled by Cargill, and other parties cannot access the site without Cargill's permission. The entire Redwood City site had been converted into its current configuration by 1951, before passage of the CWA in 1972, and has operated as an industrial salt-making facility since that time.[52] That conversion required significant manipulation of the immediate geography. The

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[49] See *Milner*, 583 F.3d at 1194 ("the scope of the Corps' regulatory authority under the CWA and RHA is not the same").

[50] See *U.S. v. Riverside Bayview Homes, Inc.*, 474 US 121, 133 (1985) ("Congress evidently intended to repudiate limits that had been placed on federal regulation by earlier water pollution control statutes and to exercise its powers under the Commerce Clause to regulate at least some waters that would not be deemed "navigable" under the classical understanding of that term.").

[51] Environmental Protection Agency, *Guidelines for Specification of Disposal Sites for Dredged or Fill Material*, 45 Fed. Reg. 85,336, 85,340 (Dec. 24, 1980) ("When a portion of the Waters of the United States has been legally converted to fast land by a discharge of dredged or fill material, it does not remain waters of the United States subject to section 301(a). The discharge may be legal because it was authorized by a permit or because it was made before there was a permit requirement.").

[52] Redwood City Salt Plant Approved Jurisdictional Determination Submission (May 30, 2012) Attachment B. p. 9.

site is partitioned into various cells by a network of levees that also serve as roads and building pads.[53] Most of the cells are used to contain the liquids that are used to produce salt or that are a by-product of the salt making process. The process on this site begins when pickle is pumped from facilities at other locations after several years of processing. That liquid is then moved through a succession of cells at the Redwood City site before the salt is precipitated out of suspension in the crystallizer cells.[54] Once the salt precipitates out of solution, the remaining liquid, bittern, is moved into other cells to be recycled back into the process or sold for other uses.[55] The content of the cells is controlled by the operator of the site and all cells can be entirely drained.[56] For the solar evaporation process to work and increase the concentration of the pickle, the containment cells must be hydrologically separated from the neighboring Bay waters.[57] Any discharge of the pickle or bittern into CWA jurisdictional waters would require a CWA permit.[58]

CWA Statutory Scheme

Congress enacted the CWA to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters."[59] The statute makes "the discharge of any pollutant by any person [into the waters of the United States] . . . unlawful" unless such discharge is permitted under Section 402 or 404 of the Act.[60] The U.S. Environmental Protection Agency (EPA) administers the Section 402 program through the National Pollution Discharge Elimination System (NPDES) to regulate all pollutants except for dredged material and fill material.[61] As part of the NPDES program, EPA establishes effluent limitations guidelines that set pollution control standards for specific pollutants or classes of pollutants. Any discharge of pollutants with effluent limitations requires a permit and must meet those guidelines to comply with the CWA. The U.S. Army Corps of Engineer administers the Section 404 program to regulate the discharge of dredged material and fill material.[62]

The geographic scope of CWA jurisdiction is defined in statute as "navigable waters" and the "contiguous zone or the ocean."[63] "Navigable waters" is further defined by the statute to

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[53] *Id.* at 4.
[54] *Id.* at 3-4.
[55] *Id.*
[56] *Id.*
[57] *Id.* at 8.
[58] *Id.* at 25 n.49. See also 40 C.F.R. § 415.160 et seq.
[59] 33 U.S.C. § 1251.
[60] 33 U.S.C. § 1311. See also 33 U.S.C. § 1362(7) and (12) defining "navigable waters" and "discharge of a pollutant" respectively.
[61] 33 U.S.C. § 1342.
[62] 33 U.S.C. § 1344.
[63] 33 U.S.C. § 1362.

mean "the waters of the United States, including the territorial seas."[64] The structure of the statute makes it clear that the CWA was intended to protect more than just the "traditional navigable waters" that are jurisdictional under the RHA.[65] Congress meant for the definition of the term "navigable waters" to "be given the broadest constitutional interpretation"[66] because "[w]ater moves in hydrologic cycles and it is essential that discharge of pollutants be controlled at the source."[67] However, recent Supreme Court opinions have held that the term "navigable" cannot be read out of the statute when interpreting the jurisdictional scope of the CWA.[68] Thus, Corps permits are required for discharges of dredged material or fill material into "navigable waters" defined as "waters of the United States."

Regulations Implementing the CWA

The agencies charged with implementing the CWA, the EPA and the Corps, define "waters of the United States" by regulation to reach beyond "navigable waters" as that term was traditionally used to protect "all waters that together form the entire aquatic system."[69] While the regulatory definition of jurisdictional "waters of the United States" is broad, it does not cover everything that is wet.[70] Indeed, the Supreme Court has recognized that certain types of waters are not jurisdictional,[71] as has the Ninth Circuit.[72] EPA and Corps regulations set forth seven generally defined types of water bodies that are jurisdictional "waters of the United States:"

> (1) All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
> (2) All interstate waters including interstate wetlands;
> (3) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa

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[64] 33 U.S.C. § 1362(7).
[65] *Rapanos v. U.S.*, 547 U.S. 715, 731 (SCALIA, majority), 767-68 (KENNEDY, concurring) (2009).
[66] 42 Fed.Reg. 37122, 37127 (July 19, 1977) (quoting H.R. Report No. 92-1465 at 144).
[67] S.Rep. No. 92-414, 1972 U.S.C.C.A.N 3668, 3742 (1972).
[68] *Rapanos*, 547 U.S. at 731 (SCALIA, majority), 779 (KENNEDY, concurring).
[69] *U.S. v. Riverside Bayview Homes,* 474 US at 133 (quoting the preamble to the rulemaking establishing the regulations defining the geographic scope of CWA jurisdiction, 42 Fed.Reg. 37128 (1977)); see also 33 C.F.R. Part 328.
[70] For example, "non-tidal drainage and irrigation ditches excavated on dry land." 51 Fed. Reg. 41206, 41217 (Nov. 13, 1986).
[71] See *Rapanos*, 547 U.S. 715; *Solid Waste Agency of Northern Cook County v. USACE*, 531 U.S. 159 (2001) (hereinafter "*SWANCC*").
[72] See *San Francisco Baykeeper v. Cargill Salt Division*, 481 F.3d 700 (9th Cir. 2007) (holding that a pond alleged to be jurisdictional was not a "water of the United States" because "mere adjacency provides a basis for CWA coverage only when the relevant waterbody is a 'wetland,' and no other reason for CWA coverage of Cargill's pond is supported by evidence").

> lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:
> (i) Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
> (ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
> (iii) Which are used or could be used for industrial purpose by industries in interstate commerce;
> (4) All impoundments of waters otherwise defined as waters of the United States under the definition;
> (5) Tributaries of waters identified in paragraphs (a) (1) through (4) of this section;
> (6) The territorial seas;
> (7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a)(1) through (6) of this section.[73]

Any water that does not fall within one of those defined types of water is not jurisdictional under the CWA. Additionally, even if a water falls within one of the seven defined types, jurisdiction will not attach if it is one of two categories of water explicitly excluded from jurisdiction by the regulations:

> (8) Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other Federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.
>
> Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m) which also meet the criteria of this definition) are not waters of the United States.[74]

Corps districts must determine if a water falls within one of the seven categories of jurisdictional water. If a district determines that the water does not fall within one of these seven categories or that it is one of the explicitly excluded types, then the water is not jurisdictional.

In reviewing this list of "waters of the United States," it is evident on first impression that the liquids on the Redwood City site do not fall clearly into any of the seven categories. The site has been highly altered to facilitate the salt manufacturing process. This alteration of the site and a century of industrial salt making have eliminated any trace of the prior marshland

[73] 33 C.F.R. § 328.3(a).
[74] 33 C.F.R. § 328.3(a).

or wetland character of the site. The liquids on the site are intentionally hydrologically separated from the Bay and are not subject to the ebb and flow of the tide. While the liquids on the site originated as water from the Bay, they have been subjected to years of carefully managed processing that has rendered the liquids legally and chemically distinguishable from the water in the Bay. These liquids are wholly within the boundaries of the State of California and are not navigated in interstate commerce, or a part of the territorial seas. Likewise, the liquids are not impoundments of waters otherwise defined as waters of the United States.

These facts suggest that the liquids on the Redwood City site do not fall in any of the seven categories of "waters of the United States" as set forth in the regulations. However, several recent Supreme Court decisions have made the task of determining CWA jurisdiction more complicated than simply applying the regulations. The Court has twice found that the Corps' interpretation and application of the regulatory definition of "waters of the United States" exceeded the scope of jurisdiction provided by the CWA statute. Therefore, the Corps must apply both the regulatory definition of the scope of jurisdiction and the standards for jurisdiction established by the Supreme Court. A water must be determined to be jurisdictional under the regulations *and* the standards established by the Supreme Court for the CWA to apply.

CWA Applies Prospectively

The Supreme Court has "long declined to give retroactive effect to statutes burdening private rights unless Congress had made clear its intent."[75] This presumption holds true for the CWA. The CWA is intended "to regulate discharges of dredged or fill material into the aquatic system as it exists, and not as it may have existed over a record period of time."[76] This was recently confirmed by the Ninth Circuit in *Milner*:

> if land was dry upland at the time the CWA was enacted, it will not be considered part of the waters of the United States unless the waters actually overtake the land, even if it at one point had been submerged before the CWA was enacted or if there have been subsequent lawful improvements to the land in its dry state.[77]

Thus, areas that were lawfully filled, either before the passage of the CWA or pursuant to a CWA permit, are no longer subject to CWA jurisdiction.[78] The fact that the majority of the area

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[75] *Landgraf v. USI Film Products*, 511 U.S. 244, 270 (1994).
[76] 42 Fed. Reg. 37122, 37128 (July 19, 1977).
[77] *Milner*, 583 F.3d at 1195.
[78] Environmental Protection Agency, *Guidelines for Specification of Disposal Sites for Dredged or Fill Material*, 45 Fed. Reg. 85,336, 85,340 (Dec. 24, 1980) ("When a portion of the Waters of the United States has been legally converted to fast land by a discharge of dredged or fill material, it does not remain waters of the United States

within the Redwood City site was improved in a manner that did not necessarily raise the elevation above that of the MHW does not make this principal any less applicable. A CWA jurisdictional determination must be based on the site conditions today and not some prior site condition that no longer exists.[79]

Supreme Court Holdings on CWA Jurisdiction

The Supreme Court has twice found that the Corps' application of the regulations defining the jurisdictional scope of the CWA exceeded the statutory authority.[80] The Court expressed concern over the Corps' broad interpretation and application of the term "waters of the United States" in both cases. Indeed, the Supreme Court observed that in drafting those regulations, the agencies "deliberately sought to extend the definition of 'the waters of the United States' to the outer limits of Congress's commerce power."[81] The Supreme Court held "that 'the waters of the United States' in § 1362(7) cannot bear the expansive meaning that the Corps would give it"[82] and is "not 'based on a permissible construction of the statute.'"[83] In the most recent of those cases, *Rapanos*, the Supreme Court set out two alternative standards for determining CWA jurisdiction. As a result, the Corps must ensure that any assertion of CWA jurisdiction is consistent with the regulations *and* at least one of the two alternative standards established in the *Rapanos* decision.

The two alternative standards for determining what is jurisdictional under the CWA exist because Supreme Court's decision in *Rapanos* was issued without a majority opinion. Three Justices joined in the plurality opinion that Justice Scalia authored, which had arguably the narrower standard for what is jurisdictional under the CWA. Justice Kennedy concurred in the judgment but wrote his own opinion setting forth a different legal standard than that of the plurality. Four justices dissented and would have held that a far more inclusive standard applied. In such cases, controlling legal principles may be derived from those principles espoused by five or more justices.[84] Therefore, there is CWA jurisdiction when the plurality's standard, authored by Justice Scalia, is satisfied, or when the standard in Justice Kennedy's

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subject to section 301(a). The discharge may be legal because it was authorized by a permit or because it was made before there was a permit requirement.").

[79] See *Milner*, 583 F.3d at 1195;

[80] *Rapanos*, 547 U.S. 715; *SWANCC*, 531 U.S. 159.

[81] *Rapanos*, 547 U.S. at 724 (SCALIA, plurality).

[82] *Id.* at 731-32 (SCALIA, plurality), 778-79 (KENNEDY, concurring).

[83] *Id.* at 739 (SCALIA, plurality).

[84] See *Marks v. United States*, 430 U.S. 188, 193-94 (1977); *Waters v. Churchill*, 511 U.S. 661, 685 (1994) (Souter, J., concurring) (analyzing the points of agreement between plurality, concurring, and dissenting opinions to identify the legal "test ... that lower courts should apply," under *Marks*, as the holding of the Court); cf. *League of United Latin American Citizens v. Perry*, 126 S. Ct. 2594, 2607 (2006) (analyzing concurring and dissenting opinions in a prior case to identify a legal conclusion of a majority of the Court); *Alexander v. Sandoval*, 532 U.S. 275, 281-282 (2001) (same).

concurring opinion is satisfied. The plurality concluded that the agencies' regulatory authority should extend only to "relatively permanent, standing or continuously flowing bodies of water . . . connected to traditional interstate navigable waters," and to "wetlands with a continuous surface connection to" such relatively permanent waters.[85] Justice Kennedy held that "to constitute 'navigable waters' under the Act, a water or wetland must possess a 'significant nexus' to waters that are or were navigable in fact or that could reasonably be so made."[86]

Supreme Court on CWA Jurisdiction and What Constitutes "Waters"

Applying the standards for CWA jurisdiction set forth by the Supreme Court to the Redwood City site will be more instructive than applying the regulations to determine if the liquids located there are jurisdictional. This is because the liquids at the site raise a fundamental question: what kinds of liquids constitute "water" as that term would be understood by a majority of the Supreme Court?

In the Supreme Court's most recent decision regarding CWA jurisdiction, *Rapanos*, the plurality opinion emphasized that "the CWA authorizes federal jurisdiction only over 'waters.'"[87] The opinion analyzes the meaning of the statutory definition of "navigable waters," which is "the waters of the United States," to determine if the agencies' interpretation and application of that term is consistent with the authority conferred by the statute. The analysis includes an extensive dissection of the definition of "water" from the second edition of Webster's New International Dictionary because the term "water" is not defined in statute or regulation. The plurality concludes that the term can only mean "relatively permanent, standing or flowing bodies of water."[88] The plurality opinion cites to this definition to require a more limited scope of CWA jurisdiction than the agencies' interpretation, which allowed for CWA jurisdiction over certain intermittent and ephemeral waters. The plurality demanded that the scope of CWA jurisdiction "accord[] with the commonsense understanding of the term [water]."[89] The concurring opinion in *Rapanos* also looks at the same dictionary definition, but does so to show that an understanding of the term "waters" that is broader than the majority's also accords with the dictionary and common sense.[90] Justice Kennedy does not reject the principle that the definition of "water" needs to accord with the commonsense understanding, but rather he believes that a broader interpretation of the term is possible within such a commonsense understanding. The *Rapanos* decision shows that the Supreme Court will closely

[85] *Rapanos*, 547 U.S. at 739, 742 (SCALIA, plurality).
[86] *Id.* at 759 (KENNEDY, concurring). Chief Justice Roberts wrote a separate concurring opinion explaining his agreement with the plurality. See 547 U.S. at 757-759.
[87] *Rapanos*, 547 U.S. at 731.
[88] *Id.* at 732.
[89] *Id.* at 733.
[90] *Id.* at 770.

examine regulatory interpretations of the scope of CWA jurisdiction, and that while interpretations of language may differ, the Supreme Court will likely demand that any interpretation of "waters of the United States" be consistent with commonly accepted understandings of terms such as "water."

Applying this analysis to the Redwood City site, the Corps must determine whether the liquids on the site are "water" as a majority of the Supreme Court understands that term. The *Rapanos* decision is instructive on the type and method of inquiry involved, but the specific analysis in *Rapanos* is not relevant to the issue at hand because the discussion in that case contrasted geographic features that were regularly covered with water with features that were normally dry or only occasionally covered with water. It did not address what kinds of liquids qualify as "water." Therefore, we are left to apply the analytical rubric from *Rapanos* to this slightly different question regarding the meaning of the term "water."

Looking at the definition of "water" in the second edition of Webster's New International Dictionary, the same definition relied on by Justice Scalia in the plurality opinion in *Rapanos*, one finds that the first two definitions of "water" refer to the naturally occurring substance that (1.a.) "descends from the clouds in rain," (1.b.) the "substance having the composition H_2O," or (2) "liquid substance occurring not chemically combined, in any of various quantities, states or aspects" . . . (2.a.) "[a]s derived from natural sources" or (2.b.) "[a]s found in streams and bodies forming geographical features such as oceans, rivers, lakes."[91] Only the third definition includes "liquid containing or resembling or of the fluidity and appearance of water" or a "liquid prepared with water, as by solution."[92] Tellingly, this later meaning of the term is defined by contrasting the liquid with "water," meaning that identifying such liquids as "water" is more attenuated and less "commonsense" than those described in the first two definitions.

Applying the *Rapanos* plurality's method of analysis, the "commonsense understanding" of "water" would include relatively naturally occurring forms of H_2O such as those found in "rivers, lakes, and seas." This doesn't mean that only pure water, or pure sea water, is regulated under the CWA. After all, the Cuyahoga River was not a pure, unadulterated water when it caught fire in 1969. That event is widely regarded as "one of a handful of disasters that led to . . . the passage of the Clean Water Act."[93] So, it can be assumed that natural, but contaminated or adulterated, water bodies like the Cuyahoga in 1969 are among the types of

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[91] *Webster's New International Dictionary* 2882 (2nd ed. 1954) (hereinafter "Webster's Second").
[92] *Id.*
[93] Christopher Maag, *From the Ashes of '69, a River Reborn*, N.Y. Times, June 21, 2009, http://www.nytimes.com/2009/06/21/us/21river.html; see also *Rapanos*, 547 U.S. at 809 (STEVENS, dissent) ("Congress passed the Clean Water act in response to widespread recognition – based on events like the 1969 burning of the Cuyahoga River in Cleveland – that our waters had become appallingly polluted.").

waters that Congress intended to cover under the CWA. However, the liquids on the Redwood City site are a different sort. Those liquids are not within a natural water body; they are contained within an intentionally engineered industrial complex. The composition of the liquids is not a consequence of the discharge of pollutants or the disposal of wastes, but a consequence of a purposeful industrial process to create a product. And, unlike the Cuyahoga River, there are no potential users of the liquids at the Redwood City site other than the site owner that could be impacted by their composition.[94]

The commonsense understanding of the term "water," and one that accords with the definition of "water" in Webster's Second, does not include the pickle or bittern on the Redwood City site, which are products of an industrial process. Other than being in an aqueous form and being originally derived from Bay waters, the liquids on the Redwood City site are more commonly understood to be a chemical used in, or a byproduct of, an industrial process. Additionally, these liquids are regulated as a pollutant under Subpart P (Sodium Chloride Production Subcategory) of the CWA.[95] Thus, these liquids should be treated as an industrial product and not as "water," which is consistent with how EPA has classified this substance in its regulations and which means that they should not be treated as a jurisdictional water under the CWA.

Applicability of the CWA to the Redwood City Site

In sum, the pickle and bittern liquids at the Redwood City site are an industrial product regulated as a pollutant under the CWA; the site is not part of the aquatic system; and any discharge of the liquids to waters of the United States would require a CWA permit. Given these facts and the purposes the CWA is intended to serve, the pickle and bittern liquids at the site are *not* "water" potentially subject to jurisdiction under the CWA.

Leslie Salt Co. v. Froehlke

The *Froehlke* decision was discussed extensively in the section above on RHA jurisdiction, but it bears mentioning again here because that case addressed the jurisdictional status of Bay area salt ponds under the CWA as well as the RHA. In *Froehlke*, the Ninth Circuit

[94] This is similar to waste treatment systems, which are categorically excluded from CWA jurisdiction in the regulatory definition of "waters of the United States" because they are not susceptible to being used by entities operating in interstate commerce other than the entity that controls the waste treatment system. The rationale behind this is that the agencies were concerned with regulating water pollution that has the potential to affect entities operating in interstate commerce, rather than regulating the use of waters in interstate commerce if that use had no potential to affect other users in interstate commerce. See EPA, Decision of the General Counsel, *NPDES Permits*, Opinion No. 73 (Dec 15, 1978); *National Pollutant Discharge Elimination System; Revision of Regulations, Final Rule*, 44 Fed.Reg. 32854, 32858 (June 7, 1979). See also, EPA, *A Collection of Legal Opinions*, Vol. 1 at 295.

[95] 40 C.F.R. § 415.160 et seq.

corrected the district court's holding that CWA jurisdiction was "coterminous" with RHA jurisdiction and that both were determined by identifying the "former line of MHHW of the bay in its unobstructed, natural state."[96] The Ninth Circuit made it clear that instead of being "coterminous" with RHA jurisdiction, CWA jurisdiction was generally broader than RHA jurisdiction.[97] The Ninth Circuit also addressed the question of "whether the Corps' jurisdiction covers waters which are no longer subject to tidal inundation because of man-made obstructions such as Leslie's dikes," which the court viewed as the central issue under review in that case.[98] In addressing this question, the court relied on the finding that the liquid behind the levees was the same as the water in the San Francisco Bay.[99] The court also noted that Leslie used the salt ponds to manufacture a product that is sold in interstate commerce as a basis for regulating them under the CWA.[100] On those grounds, the Ninth Circuit held that "the Corps's jurisdiction under the FWPCA [CWA] extends at least to waters which are no longer subject to tidal inundation because of Leslie's dikes without regard to the location of historic tidal water lines in their unobstructed, natural state."[101]

In sum, the *Froehlke* finding that CWA jurisdiction could extend to waters behind levees was based on two premises: first, that the liquid behind the levees was the "same" as the water in the Bay and equally worthy of protection from pollution; and second, that the end product that was extracted from the impounded water was sold in interstate commerce and therefore within the constitutional limits of the Commerce Clause. However, in the intervening 35 years since the *Froehlke* decision, there have been a number of Supreme Court cases that bear upon the continued validity of these premises and the Ninth Circuit's finding based upon them.

Frohlke: "Water" Behind Levees has a Status Equal to Water in the Bay

The Ninth Circuit's premise for affirming CWA jurisdiction in the *Froehlke* case, which is that the liquid behind the levees confining the Bay area salt plants was the "same" water as in the Bay, has been brought into doubt by intervening Supreme Court decisions, at least with respect to the liquids at the Redwood City site. As discussed above, by the time liquids are transferred to the Redwood City site, they have been processed for at least four years, resulting

[96] *Froehlke*, 578 F.2d at 753.
[97] *Id.* at 754-55.
[98] *Id.* at 754.
[99] *Id.* at 755 ("We see no reason to suggest that the United States may protect these waters from pollution while they are outside of Leslie's tide gates, but may no longer do so once they have passed through these gates into Leslie's ponds.").
[100] *Id.* ("Moreover, there can be no question that activities within Leslie's salt ponds affect interstate commerce, since Leslie is a major supplier of salt for industrial, agricultural, and domestic use in the western United States. Much of the salt which Leslie harvests from the Bay's waters at the rate of about one million tons annually enters interstate and foreign commerce.").
[101] *Id.* at 756.

in a significantly higher salinity than the Bay water; they have been hydrologically severed from the larger aquatic system; and they are regulated as pollutants under the CWA. The liquids at the Redwood City site are therefore chemically distinguishable, ecologically distinguishable, and legally distinguishable from the Bay waters. They are no longer the type of resource the CWA was intended to protect. The liquids at the Redwood City site are more commonly understood to be a chemical used in, or a byproduct of, an industrial process rather than "water."

Given what recent Supreme Court precedents reveal about the scope of CWA jurisdiction, we cannot reasonably expect to regulate as "water" liquids that have been managed as part of a closed-system industrial solar evaporation process for a period of several years or more and that are regulated as a pollutant under the CWA. Therefore, the Corps should not assert CWA jurisdiction over the industrial process (pickle and bittern) liquids at the Redwood City site.

Frohlke: Interstate Commerce Connection

Because the industrial process liquids at the Redwood City site are not "water" for the purposes of CWA jurisdiction, the question of whether there is an interstate commerce connection with the liquids on the site is no longer relevant. Even with an appropriate interstate commerce connection to the liquids at the site, those liquids must be "water" for CWA jurisdiction to attach. Moreover, the Supreme Court's recent decisions requiring that "the word 'navigable' in the Act must be given some effect" or "significance" when interpreting the jurisdictional scope of the CWA suggest that the type of interstate commerce connection identified by the Ninth Circuit in *Frohlke* is not the type of interstate commerce connection required to establish CWA jurisdiction.[102]

The specific interstate commerce connection the Ninth Circuit cited in *Froelke* was that "Leslie is a major supplier of salt for industrial, agricultural, and domestic use in the western United States."[103] This interstate commerce connection does not give any significance to the word 'navigable' in the Act.[104] After the Supreme Court's decisions in *SWANCC* and *Rapanos*,

[102] *Rapanos*, 547 U.S. at 731 (SCALIA, majority), 779 (KENNEDY, concurring).
[103] *Froehlke*, 578 F.2d at 755.
[104] Additionally, this type of interstate commerce connection was not what was contemplated by the agencies when the CWA regulations were developed. The valid test is not whether a liquid is susceptible to use in interstate commerce by the entity that controls the liquid, but rather whether a liquid is susceptible to use in a manner that would affect interstate commerce by entities other than the entity that controls the liquid. See EPA, *A Collection of Legal Opinions*, Vol. 1 at 295; EPA, Decision of the General Counsel, *NPDES Permits*, Opinion No. 73 (Dec. 15, 1978); 44 Fed.Reg. at 32858.

the Corps should not assert CWA jurisdiction under 33 C.F.R. § 328.3(a)(3) on the basis of a connection to interstate commerce unless there is a significant nexus to navigable waters.[105]

Bases for CWA Geographic Jurisdiction

There does not appear to be any reasonable legal basis for asserting CWA jurisdiction over the Redwood City site. The liquids on the site are more commonly understood to be chemicals used in, or a byproduct of, an industrial process rather than "water." Additionally, the *Froehlke* decision's findings on CWA jurisdiction have been brought into doubt by more recent Supreme Court decisions and should not be relied on when determining CWA jurisdiction at the Redwood City site. For these reasons, the Corps should not exercise CWA jurisdiction over the highly concentrated saline liquids ("pickle") or waste product from this process ("bittern"), and no further CWA analysis is required.

As mentioned above, CWA jurisdiction is normally broader than RHA jurisdiction, but that is not always the case.[106] In some instances CWA jurisdiction is narrower, such as where the principle of indelible navigability is invoked to assert RHA jurisdiction over areas that are no longer inundated with water. Such is the case here. *Milner* holds that this difference "is explained by the RHA's concern with preventing obstructions, on the one hand, and the CWA's focus on discharges into water, on the other."[107]

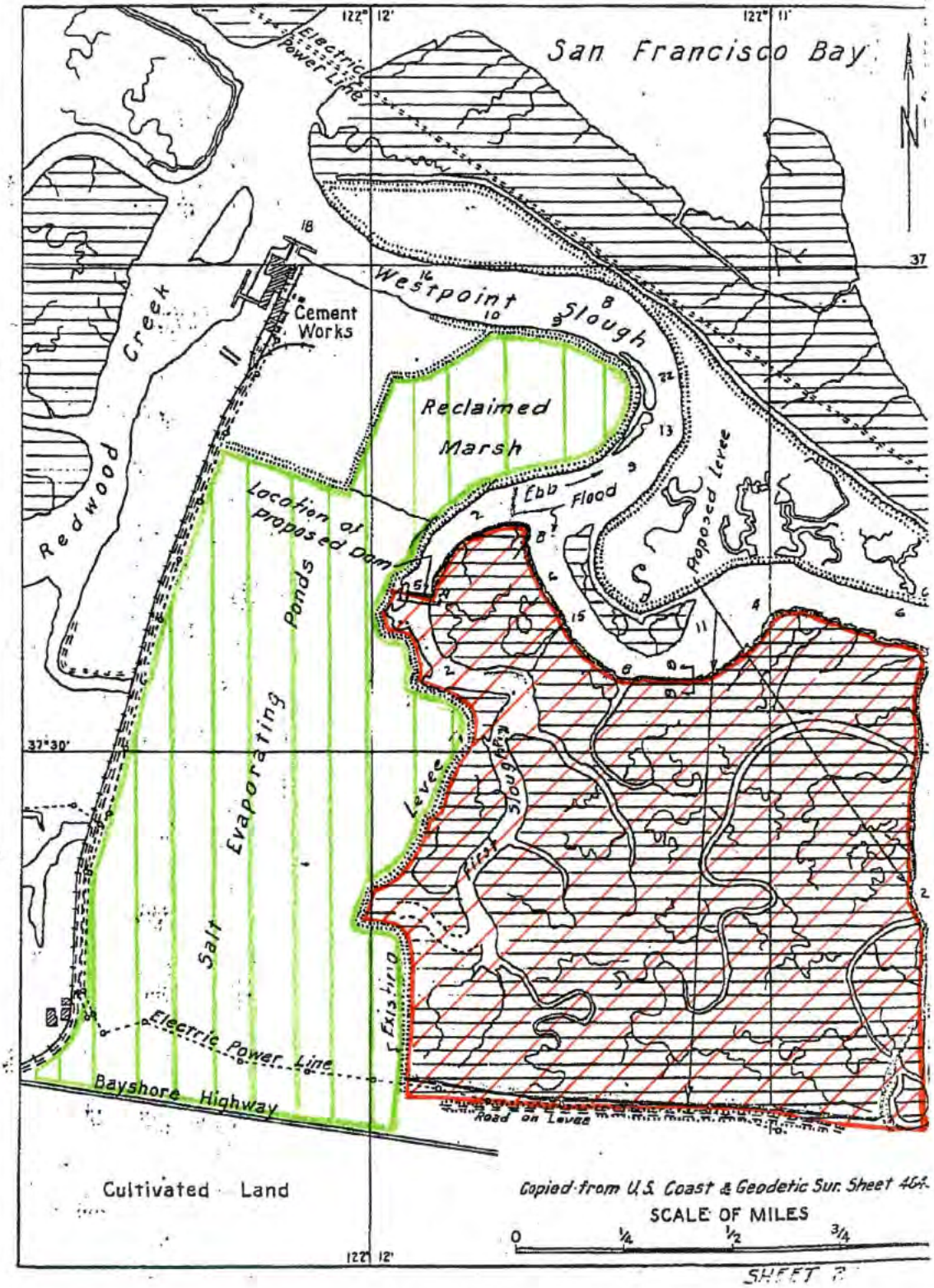
Continued Coordination

The close coordination between the San Francisco District, South Pacific Division, and Headquarters staff on the correct legal principles to apply when making RHA and CWA jurisdictional determinations at the Redwood City site is appreciated. This office looks forward to continuing that coordination on the approved jurisdictional determination for the site.

Earl H. Stockdale
Chief Counsel

[105] The meaning of "navigable waters" as that term is used in the CWA has been ruled on by numerous courts, and more is required for a water to be a "navigable water" than just the capacity to float a boat. Waters need to be "susceptible of being used, in their ordinary condition, as highways for commerce" to be navigable-in-fact and thus a "navigable water" on the basis of their capacity to be navigated. *The Daniel Ball*, 77 U.S. 557, 563 (1870). Such susceptibility does not exist at the Redwood City site in its ordinary condition.
[106] *Milner*, 583 F.3d at 1196.
[107] *Id.*

ATTACHMENT 1



"SHEET 2" from January 19, 1940 War Department Permit

Supplement to "Legal Principles to Guide the Approved Jurisdictional Determination for the Redwood City Salt Plant" 9 January 2014

CECC-ZA

25 March 2014

Introduction

This document supplements the 9 January 2014 memorandum titled "Legal Principles to Guide the Approved Jurisdictional Determination for the Redwood City Salt Plant" to address questions raised regarding positions taken in that document and to discuss new information and views that were subsequently provided by the Corps' San Francisco District. Specifically, this document addresses the determination of Rivers and Harbors Act of 1899 (RHA) jurisdiction over the western portion of the Redwood City salt plant site (parcel 1, shown in green on the map attached to the 9 January 2014 document). The previous writing concluded that RHA jurisdiction should not be exercised over the western portion of the site because that area was either never subject to RHA jurisdiction or because any RHA jurisdiction that arguably might have existed over that area had been surrendered.

The discussions between the Corps district, division, and headquarters personnel and a review of the additional information and recommendations provided by the San Francisco District prompted this further elaboration on the issue of surrender and RHA jurisdiction over the western parcel of the site. For the purposes of making an approved jurisdictional determination for the Redwood City site, it is unnecessary to establish a definitive, general rule on how and when surrender of RHA jurisdiction can occur in every situation and circumstance. Likewise, while there is evidence that major portions of the western parcel were never jurisdictional under RHA, it is unnecessary to trace in detail the jurisdictional status of the different areas of the site over time to determine how to proceed under the RHA. The history of permit actions for the site distinguishes the western parcel from those cases in which courts found that jurisdiction has not been surrendered and from the circumstances that were briefed in the *Cargill v. West* case in which the issue of surrender was raised but not litigated to finality with respect to another parcel of Bay-area property in the 1990s.[1]

The history specific to the western portion of the Redwood City salt plant site creates an unfavorable factual record that could form the basis for compelling arguments in any litigation brought by the landowner that either RHA jurisdiction never existed over the western portion of the site, or that any RHA jurisdiction that may have existed prior to the development of the site has been surrendered. The challenges created by the unfavorable factual record are

[1] *Cargill v. West, et al.*, No. C-92-20756-RMW (N.D. Cal. Dec. 23, 1994) (Order Denying Defendants' Motion to Dismiss and Remanding the Case to the Corps).

Attachment 5

compounded by the lack of clarity on the legal standard regarding when there is a surrender of RHA jurisdiction. Because of these challenges, which would likely lead to an unfavorable legal precedent from the federal courts, the Corps shall decline to assert any RHA jurisdiction it arguably may have had or has over the western portion of the site.

Legal Standard for Surrender

There is scant case law on surrender of RHA jurisdiction that is pertinent to the circumstances at this site. As previously discussed, the leading case is *United States v. Stoeco Homes, Inc.* However, subsequent decisions have made clear that surrender will not be implied or be based on acquiescence, but must be in "unmistakable terms."[2] However, in the cases where surrender was found, the "unmistakable terms" that accomplished surrender were something less than an explicit statement by the government that regulatory jurisdiction or the navigation servitude was being surrendered or forfeited. There is no bright line rule that can be applied mechanically to determine if there is a surrender. Instead, the factual circumstances of any situation where surrender is a possibility should be evaluated in light of those few cases that have addressed claims that RHA jurisdiction or the navigation servitude was surrendered.[3]

Many cases that address surrender involve condemnation actions or takings claims, but there are several cases with analysis that may be relevant to claims that RHA jurisdiction has been surrendered.[4] Cases where courts have found that jurisdiction was not surrendered generally involved prior acquiescence to obstructions to navigation,[5] fill deposited by the United States in furtherance of navigation,[6] prior activities on tidal wetlands that did not destroy their wetland characteristics,[7] or disposition of fee interest in the land below the MHW mark.[8] The commonality between these cases is that the government action (or inaction) at issue in each case was taken without any statement regarding the jurisdictional status of the waters or former waters at issue, and there was no reasonable basis for expecting the property to be unhindered by the navigation servitude or RHA jurisdiction. In contrast, several cases found that RHA jurisdiction or the navigation servitude were surrendered based on some affirmative government statement regarding the status of RHA jurisdiction or the navigation servitude over the waters at issue, whether it was the formal establishment of harbor lines

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[2] *US v. Cherokee Nation of Oklahoma*, 480 U.S. 700 (1987); *Lambert v. JA Jones*, 835 F2d 1105 (5th Cir 1988).

[3] While there may be grounds for distinguishing regulatory jurisdiction under the RHA and the navigation servitude, as suggested by *Boone v. United States*, 944 F.2d 1489 (9th Cir. 1991), there does not appear to be legal consensus that RHA jurisdiction can only be extinguished through equitable estoppel and not through the surrender analysis employed by the court in *Stoeco*. *See Cargill v. West, et al.*, No. C-92-20756-RMW (N.D. Cal. Jul 12,1994)(Order on Dispositive Motions) (order applying surrender analysis to RHA jurisdiction after the U.S. argued that only equitable estoppel was applicable).

[4] The following is not intended to be an exhaustive examination of all cases addressing surrender.

[5] *U.S. v. Sasser*, 771 F.Supp 720 (D. S.C. 1991).

[6] *US v. 49.79 Acres of Land, More or Less*, 582 F.Supp 368 (D.Del. 1983).

[7] *U.S. v Ciampitti*, 583 F.Supp 483 (D. N.J. 1984).

[8] *US v. Cherokee Nation of Oklahoma*, 480 U.S. 700 (1987).

behind which fill was given blanket authorization,[9] or entering into a stipulation agreement whereby certain promises were made by the United States to a landowner to protect the landowner's interests and improvements to property over which the navigation servitude was previously asserted.[10] In both of these cases, the court also found that the landowners had a reasonable basis for believing the land was unhindered by the navigation servitude or RHA jurisdiction.

History of the Western Portion of the Redwood City Site

The western portion of the Redwood City site (parcel 1, shown in green on the map attached to the 9 January 2014 document) has a long history of development and involvement by the Corps. Specifically, the three permits discussed below provide evidence of the Corps' understanding of the condition of the western parcel. These permit actions are sufficient for the landowner to make strong arguments that most if not all of that parcel was never subject to RHA jurisdiction, or that any RHA jurisdiction that may have existed over the western parcel has been surrendered.

There is no indication that there were any permits or other authorizations required for the construction of the levees around the western portion of the Redwood City site. This is consistent with the practice at the time of only requiring permits for those activities that would have affected the navigable capacity of navigable-in-fact waters.[11] In 1940, the War Department issued a permit for the construction of levees bordering the eastern portion of the site (parcel 2, shown in red on the map attached to the 9 January 2014 document), immediately adjacent to the western parcel.[12] The 1940 permit identifies the northern portion of the western parcel as "reclaimed marsh" and the rest of the western parcel as "salt evaporating ponds," showing that the western parcel had been developed by that time and that the Corps did not require permits for that work. Admittedly, the 1940 permit request did not propose any work for the western parcel, so representation of the western parcel in that permit is less pertinent to whether there was surrender over the western parcel than the eastern parcel. However, the permit does show that the Corps was aware that the western parcel had been improved for salt-making operations and was no longer in its natural condition. Again, no permits were required for the prior work on the western parcel.

A subsequent Department of War permit issued to Leslie Salt in 1947 more squarely addressed the circumstances of the western parcel.[13] That permit authorized the dredging of material from four separate areas (two areas within Redwood Creek, one area with Westpoint Slough, and one area within a diked area to the west of the western parcel) and the "deposit

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[9] *Stoeco*, 498 F.2d 597 (3rd Cir. 1974).
[10] *U.S. v. 119.67 Acres of Land*, 663 F.2d 1328 (5th Cir. 1981).
[11] See *U.S. v. Alaska*, 503 U.S. 569, 580-81 (1992).
[12] War Department Permit issued to Stauffer Chemical Company, January 16, 1940.
[13] War Department Permit issued to Leslie Salt Company, April 26, 1947.

[of] the material removed on property belonging to the applicant *above the high water line.*"[14] On the map accompanying the permit, the entire area in the western parcel previously identified in the 1940 permit as "salt evaporating ponds" is marked as "area to be filled." The logical interpretation of the language of the permit, read in conjunction with the accompanying map, is that the majority of the western parcel (that portion shown as "salt evaporating ponds" on the 1940 permit) was above the mean high water line in 1947, that is, it had been converted into fast land and was therefore not subject to RHA jurisdiction.[15] Additionally, the public notice soliciting comment on the application for the 1947 permit explicitly stated that the permit "expresses the assent of the Federal Government in so far as concerns the public rights of navigation," making it clear what resource impacts were of interest.[16] This permit did not address the northern-most portion of the western parcel shown as "reclaimed marsh" in the 1940 permit.

In addition, part of this northern-most portion of the western parcel (the "reclaimed marsh") was addressed in a much more recent permit action from 2002.[17] This permit was for the development of Westpoint Marina in part of the area formerly occupied by Cargill's "Pond 10" and that generally corresponds to the area shown as "reclaimed marsh" on the 1940 permit. This area had been used to store bittern. The project that was subject to the 2002 permit action involved construction of an upland area to support roadways and other facilities, as well as the excavation of the marina basin. The only activity that was subject to jurisdiction under the RHA was "work to breach the existing levee after marina construction has been completed." Thus, the Corps did not assert RHA jurisdiction over the interior portion of the site to be developed as Westpoint Marina.[18] It is true that the lack of jurisdiction over the interior portion of this area has little direct relevance to the jurisdictional status of the rest of the site, but it does constitute evidence of the Corps' consistent pattern of practice of not asserting RHA jurisdiction over the western parcel.

Analysis of Law and Fact

The law regarding surrender is not well defined; there exists significant ambiguity as to what qualifies as the "unmistakable terms" required for there to be a surrender. The cases in which courts found that there was surrender involved some affirmative statement by the government about the jurisdictional status of the property (even if only as a class), as opposed to actions or inaction that did not purport to address jurisdiction. In the case of the western portion of the Redwood City site, there are multiple affirmative statements from the Corps that

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[14] *Id.* (emphasis added).

[15] *U.S. v. Willow River Power Co.*, 324 U.S. 499, 509 (1945)("High-water mark bounds the bed of the river. Lands above it are fast lands. . .").

[16] War Department, Corps of Engineers San Francisco District, Public Notice No. 47-43, March 28, 1947 (emphasis in original).

[17] USACE San Francisco District, *Public Notice; Project: WestPoint Marina*, Permit No. 22454S (May 17, 2002).

[18] In the permit for the Westpoint Marina, the Corps asserted RHA jurisdiction over work within the interior of the marina basin once the exterior levee was breached and the basin was inundated with water directly from the Bay.

could reasonably be interpreted to qualify as the type of unmistakable terms that the court relied on in *Stoeco* to find a surrender of any regulatory jurisdiction that may have existed. This is in contrast to the eastern portion of the site, where the initial activity modifying the natural topography was subject to a permit that contained an explicit reservation of jurisdiction.

Should the Corps assert RHA jurisdiction over any portion of the western parcel, there is a substantial likelihood that the property owner would challenge that assertion of jurisdiction in the federal courts. Given the uncertain law and the unfavorable facts regarding surrender in this circumstance, there is a high likelihood that a court could make bad law on surrender were the Corps to assert RHA jurisdiction over the western portion of the Redwood City site.

Alternative Interpretation of RHA Jurisdiction under *Froehlke* and *Milner*

In discussions with the San Francisco District about the 9 January 2014 memorandum, an alternative interpretation of the legal standard for RHA jurisdiction that should be derived from *Froehlke* and *Milner* was proffered.[19] It was suggested that the rule established in *Froehlke* and followed in *Milner* that RHA jurisdiction "extend[s] to all places covered by the ebb and flow of the tide to the mean high water (MHW) mark in its unobstructed, natural state" should be interpreted to mean that any area that *is currently* below the theoretical plane of the MHW mark projected across the landscape or that *would currently be* below this theoretical plane but for an artificial improvement (such as a levee as in *Froehlke* or a shore defense structure as in *Milner*, but possibly including other artificial improvements) is subject to RHA jurisdiction. Thus, in the case of a low-lying area separated from tidal waters by a levee, the levee and any area behind it that is below the elevation of the current MHW mark would be currently subject to RHA jurisdiction even if those areas had never been covered by water in the past.

Neither *Froehlke* nor *Milner* require this interpretation. The *Froehlke* decision merely determined whether the relevant benchmark for jurisdiction on the Pacific was the MHW mark or the mean higher high water (MHHW) mark, and did not apply the standard established to the circumstances in the case, so it is impossible to know how that court intended the standard to be implemented.[20] The *Milner* decision only held that the shore defense structures that were previously above the MHW mark at the time that they were constructed, but have come to be, at least in part, below the MHW mark now (because of erosion, sea level rise, or other changes), are now subject to RHA jurisdiction.[21] The court in *Milner* did not make any explicit holding regarding RHA jurisdiction over lands lying on the upland side of those shore defense structures. Thus, neither case held that land that is currently below the projected plane of the MHW line in its unobstructed natural state, but that currently is not covered with water due to

[19] *Leslie Salt Co. v. Froehlke*, 578 F.2d 742, 753 (9th Cir. 1978) (hereinafter "*Froehlke*"); *U.S. v. Milner*, 583 F.3d 1174, 1191 (9th Cir. 2009).
[20] *Froehlke*, 578 F.2d at 753.
[21] *Milner*, 583 F.3d at 1193.

an artificial obstruction, is now subject to RHA jurisdiction. The standard established for RHA jurisdiction in the 9 January 2014 memo is consistent with the holdings of *Froehlke* and *Milner*, more closely follow the Corps regulations implementing the RHA, and has more defensible implications for what areas may currently be jurisdictional under the RHA.

However, even if one were to accept the San Francisco District's alternative interpretation of the rule dictated by *Froehlke* and *Milner*, a court reviewing the matter would likely find that there is no RHA jurisdiction over the western parcel based on the San Francisco District's long-standing and well-publicized policy for determining RHA jurisdiction behind dikes or levees. The policy provides:

> Section 10 [RHA] jurisdiction will be exercised over areas behind dikes if <u>all</u> of the following criteria are met:
>
> 1. The area is <u>presently</u> at or below mean high water (MHW),
> 2. The area was historically at or below MHW in its "unobstructed, natural state" (i.e., the area was at or below MHW before the dikes were built), and
> 3. There is no evidence (elevation data) that the area was ever above MHW. [22]

Applying the evidence previously discussed to the rules established in the San Francisco District policy would result in a strong case that no RHA jurisdiction now can be or should be exercised. Specifically, the western portion of the site appears to fail the second and possibly the third elements of the District policy. As previously discussed, the 1947 permit indicates that the area identified as "salt evaporating ponds" on the 1940 permit was above MHW at the time of the 1947 permit evaluation, meaning that the third element is not satisfied. The evidence is less direct for the area identified as "reclaimed marsh" in the 1940 permit, but the 1940 permit along with the 2002 Westpoint Marina permit and maps that predate the development of the site all suggest that the "reclaimed marsh" area was above MHW either before the levees were constructed or were made so subsequently, and therefore fails either the second or third elements of the policy, or both. If the Corps were now to try to assert RHA jurisdiction over the western portion of the site, a reviewing federal court likely would rule that the Corps is now estopped from asserting RHA jurisdiction, because the owners of that portion have relied on the District policy that precludes the assertion of jurisdiction since at least 1983, the year in which the policy was promulgated.

Conclusion

The landowners of the Redwood City salt plant site have several strong legal arguments supporting their position that RHA jurisdiction should not be exercised over the western

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[22] Calvin Fong, Chief, Regulatory Functions Branch, *Reg. Functions Bull. Memorandum, Regulatory Function's Policy on Section 10 Jurisdiction Behind Dikes (Levees)* (May 25, 1983) (emphasis in original; internal citations omitted).

portion of the stie. There is substantial evidence that would receive deference from the Federal courts that any RHA jurisdiction that may have existed over the western portion of the site was surrendered, or alternatively that jurisdiction should not be exercised based on long-standing District policy. Therefore, as a matter of judgment and risk calculation, based on the specific facts and history discussed above, which are unique to the site, the Corps shall decline to assert any RHA jurisdiction that it may be able to claim over the western portion of the Redwood City site.

Earl H. Stockdale
Chief Counsel

481 F.3d 700 (2007)

SAN FRANCISCO BAYKEEPER; Citizens Committee to Complete the Refuge; Michael R. Lozeau, Plaintiffs-Appellees,

v.

CARGILL SALT DIVISION; Cargill Inc., Defendants-Appellants.

San Francisco Baykeeper; Citizens Committee to Complete the Refuge, Plaintiffs-Appellants, and Michael R. Lozeau, Plaintiff,

v.

Cargill Salt Division; Cargill Inc., Defendants-Appellees.

Nos. 04-17554, 05-15051.

United States Court of Appeals, Ninth Circuit.

Argued and Submitted September 27, 2006.
Filed March 8, 2007.

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702 *702 Before CANBY, HAWKINS, and GOULD, Circuit Judges.

CANBY, Circuit Judge.

San Francisco Baykeeper and Citizens Committee to Complete the Refuge (collectively "Baykeeper") filed this citizen suit under the Clean Water Act, 33 U.S.C. § 1251 et seq., ("CWA" or "the Act") against Cargill Salt Division and Cargill, Incorporated (collectively "Cargill"). Baykeeper alleged that Cargill discharged pollutants into "waters of the United States" without a permit. The body of water into which Cargill allegedly discharged waste is a non-navigable, intrastate pond ("the Pond"), not determined to be a "wetland," that collects polluted runoff within Cargill's waste containment facility located near the southeastern edge of San Francisco Bay. The district court granted summary judgment in favor of Baykeeper after determining that the Pond qualifies as a "water[] of the United States" because it is adjacent to a protected water of the United States (Mowry Slough). Cargill then brought this appeal. Because we conclude that mere adjacency provides a basis for CWA coverage only when the relevant waterbody is a "wetland," and no other reason for CWA coverage of Cargill's Pond is supported by evidence or is properly before us, we reverse the district court's summary judgment.

Background

Cargill and its predecessors have conducted salt-making operations at the edge of San Francisco Bay, in Alameda County, California, since the 1860's. In 1979, the United States acquired some 15,000 acres of Cargill's lands for inclusion in the Don Edwards San Francisco Bay Wildlife Refuge ("the Refuge"). Cargill retained an easement over 12,000 acres that permits it to continue its salt-making operation.

Cargill produces salt by evaporating water from the Bay in a series of ponds. The harvesting and refinement of the salt results in the production of waste residue that is heavily saline and contains other pollutants. Cargill maintains within the Refuge a 17-acre waste containment facility that it uses for disposal of salt-processing residue. The northern portion of the disposal site (the "upper elevation") contains a pile of uncovered waste several acres in size ("the Pile"). During storms, rainwater carries residue from the

upper elevation (including the Pile) to the southern portion of the site (the "lower elevation") where it drains into the non-navigable Pond. An earthen levee separates the southern edge of the Pond from Mowry Slough, a navigable tributary of San Francisco Bay. The parties agree that Mowry Slough is a "water[] of the United States."

The horizontal distance between the edge of the Slough and the edge of the Pond varies considerably depending on the tide. At low tide, the Pond and the Slough are separated by as much as 125 feet, including the surrounding wetlands. At high tide, however, Slough water inundates the wetlands up to the levee and has, on some occasions, overtopped the levee and flowed into the Pond. While there is no evidence in the record that liquid has ever flowed from the Pond to the Slough, the district court made no specific rulings on that issue. Cargill from time to time pumps waste water away from the Pond to prevent the level of the Pond from approaching the top of the levee.

In 1996, Baykeeper filed a citizen suit pursuant to 33 U.S.C. § 1365 against Cargill, stating various claims under the CWA arising
703 from Cargill's alleged unpermitted discharge of pollution into "waters of the *703 United States" (the Pond). From the beginning, the parties have disputed whether the Pond is within the coverage of the CWA.

In its first motion for summary judgment, Baykeeper alleged that the Pond is a "water[] of the United States" under the "Migratory Bird Rule" of the Environmental Protection Agency ("the EPA"), 53 Fed.Reg. 20,764, 20,765 (June 6, 1988), because it is used intermittently as habitat by migratory birds. The district court agreed and granted summary judgment in favor of Baykeeper on two claims.[1] While appeals were pending here, however, the Supreme Court issued its decision in *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers* ("*SWANCC*"), 531 U.S. 159, 121 S.Ct. 675, 148 L.Ed.2d 576 (2001), holding that the identical Migratory Bird Rule of the Army Corps of Engineers ("the Corps"), when applied to isolated intrastate waters, exceeded the Corps' authority under the CWA. *Id.* at 174, 121 S.Ct. 675. In light of *SWANCC,* we vacated the district court's summary judgment and remanded for consideration of whether alternative grounds exist for CWA jurisdiction. *San Francisco Baykeeper v. Cargill Salt Div.,* 263 F.3d 963 (9th Cir.2001).

On remand, Baykeeper again moved for summary judgment, this time advancing the theory that the Pond is a "water[] of the United States" because it is adjacent to Mowry Slough. Cargill opposed the motion, arguing that, under controlling regulations, adjacency provides a basis for CWA coverage only in the case of wetlands. Baykeeper has apparently never argued or presented evidence that the Pond qualifies as a "wetland" under the applicable regulatory definition. *See* 40 C.F.R. § 122.2 (2006).

The district court granted summary judgment a second time in favor of Baykeeper after determining that "bodies of water that are adjacent to navigable waters are `waters of the United States' and are therefore protected under the Clean Water Act." Noting that adjacent wetlands qualify for CWA protection under the applicable regulations and Supreme Court precedent, the court reasoned that "the same characteristics that justif[y] protection of adjacent wetlands ... apply as well to adjacent ponds." In support of its determination that the Pond is a water of the United States, the district court found as undisputed facts that: (1) "the Pond was adjacent to Mowry Slough at the time that the suit was filed"; (2) "the soils between the Pond and Mowry Slough are saturated"; and (3) "the berm between the Pond and Mowry Slough leaked and allowed Slough water to enter the Pond at high tide."[2]

704 *704 The parties subsequently entered into a settlement agreement setting forth potential remedies contingent on further proceedings, and preserving the right to appeal certain issues (including the district court's finding of CWA jurisdiction based on adjacency). As part of the agreement, Baykeeper waived the right "now or in the future" to assert "any theories of CWA jurisdiction over the Site (including the Pond), other than the Adjacent Waters Theory upon which the District Court based its Jurisdictional Ruling." The district court issued a final judgment incorporating the terms of the settlement agreement, and this appeal followed.

Jurisdiction and Standard of Review

We have jurisdiction under 28 U.S.C. § 1291. We review de novo the district court's grant of summary judgment that the Pond is a "water[] of the United States." *Baccarat Fremont Developers, LLC v. United States Army Corps of Eng'rs,* 425 F.3d 1150, 1153 (9th Cir. 2005).

Discussion

We conclude that the district court improperly expanded the regulatory definition of "waters of the United States" when it held that bodies of water that are adjacent to navigable waters are subject to the CWA by reason of that adjacency. Our conclusion is based on the CWA, the regulations promulgated by the agencies responsible for administering it, and the decisions of the Supreme Court addressing the reach of the Act and its regulations.

Congress passed the CWA in 1972 "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 86 Stat. 816, *codified at* 33 U.S.C. § 1251(a). One of its principal provisions prohibits the unpermitted discharge of pollutants into "navigable waters." 33 U.S.C. § 1311(a). The term "navigable waters" is defined elsewhere in the Act to mean "waters of the United States." *Id.* § 1362(7).

By not defining further the meaning of "waters of the United States," Congress implicitly delegated policy-making authority to the EPA and the Corps, the agencies charged with the CWA's administration. *See Chevron, USA Inc. v. Natural Res. Def. Council,* 467 U.S. 837, 844, 104 S.Ct. 2778, 81 L.Ed.2d 694 (1984) (holding that congressional delegation to an agency may be implicit).[3] Although the Corps initially construed the Act to cover only waters navigable-in-fact, the Corps and the EPA have since issued nearly identical regulations expanding the definition of "waters of the United States" to include some intrastate waterbodies that are not navigable in the traditional sense.[4]

As relevant here, current regulations protect not only navigable-in-fact waters but also tributaries of such waters, 40 C.F.R. § 122.2 ("Waters" (e)),[5] non-navigable waterbodies whose use or misuse could affect interstate commerce, *id.* § 122.2 ("Waters"
705 (c)), and, most important for our purposes, "`wetlands' adjacent to waters *705 (other than waters that are themselves wetlands)" otherwise covered by the Act, *id.* § 122.2 ("Waters" (g)). "Wetlands" are defined to mean

> areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Id.

Under the controlling regulations, therefore, the only areas that are defined as waters of the United States by reason of adjacency to other such waters are "wetlands." There is little doubt that the regulatory definition is intended to be exhaustive; the context makes that clear, as does the fact that the definition states what "Waters of the United States ... means," not what those waters "include." *See id.; Shell Oil Co. v. EPA,* 950 F.2d 741, 753 (1992) (giving restrictive effect to a definition that states what a term "means" as opposed to what it "includes"). Disregarding the unambiguous regulations limiting to wetlands the areas subject to the CWA because of adjacency, the district court determined that the Pond is covered by the Act because "the same characteristics that justif[y] protection of adjacent wetlands... apply as well to adjacent ponds." This analysis was improper.

When legislation implicitly grants to an agency the authority to elucidate the meaning of a statutory provision, "a court may not substitute its own construction of a statutory provision for a reasonable interpretation made by the administrator of an agency." *Chevron,* 467 U.S. at 844, 104 S.Ct. 2778; *see also United States v. Mead Corp.,* 533 U.S. 218, 229, 121 S.Ct. 2164, 150 L.Ed.2d 292 (2001); *Wash., Dep't of Ecology v. U.S. EPA,* 752 F.2d 1465, 1469 (9th Cir.1985) (an agency's reasonable interpretation of a statute is entitled to deference "even if the agency could also have reached another reasonable interpretation, or even if [the court] would have reached a different result had[it] construed the statute initially"). This principle applies with particular force where, as here, "statutory construction involves reconciling conflicting policies, and a full understanding of the force of the statutory policy in the given situation (depends) upon more than ordinary knowledge respecting the matters subjected to agency regulations." *Wash., Dep't of Ecology,* 752 F.2d at 1469 (internal quotation marks and citations omitted; parenthesis in original). The district court did not determine, nor was it argued, that the existing regulatory definition of "waters of the United States" is unreasonable because it fails to include *all* waterbodies, or some other subcategory of waterbodies, adjacent to navigable waters. Moreover, for reasons that will become apparent, it was not unreasonable for the EPA to view wetlands as a special category subject to CWA jurisdiction that otherwise would not extend beyond navigable waters. We conclude, therefore, that the district court erred when it found that the Pond is subject to CWA jurisdiction solely because it is "adjacent"[6] to Mowry Slough.

706 It is true that, in certain kinds of cases, there is a tension between the purpose of authorized citizen suits and *Chevron* *706 deference. The purpose of the citizen suit provision of the CWA, 33 U.S.C. § 1365, is to permit citizens to enforce the Clean Water Act when the responsible agencies fail or refuse to do so. For that reason, the CWA provides that a citizen must give sixty days notice to the relevant agency prior to commencing a citizen suit, and cannot bring such an action if the agency is prosecuting an enforcement action. *See id.* § 1365(b)(1). In most cases, citizen suits are brought to enforce limitations included in a permit

issued by the EPA, *see, e.g., Sierra Club, Lone Star Chapter v. Cedar Point Oil Co.,* 73 F.3d 546, 566 (5th Cir.1996), and the suit does not call into question any interpretation of the statute by the agency. On occasion, however, a citizen sues because of a discharge that the EPA has elected not to regulate. If the decision of the EPA is given conclusive deference, the citizen suit would be defeated. Suit is therefore allowed despite the EPA's inaction, and a court may decide whether the offending substance is a pollutant even when the EPA has not decided that question. *See id.* at 566-67. Thus, we have held that a court may, in entertaining a citizen suit, decide whether a discharge of particular matter into navigable waters violates the CWA even though the regulating agency determined that the discharge was not subject to the requirement of a permit. *Ass'n to Protect Hammersley, Eld, and Totten Inlets v. Taylor Resources, Inc.,* 299 F.3d 1007, 1012-13 (9th Cir.2002).

These cases do not, however, justify courts in denying deference to the EPA or the Corps when, by formal regulation, those agencies construe the meaning of a statutory term that establishes the reach of the CWA that they administer. *Cf. Mead Corp.,* 533 U.S. at 230, 121 S.Ct. 2164 (stating that the "overwhelming number of our cases applying *Chevron* deference have reviewed the fruits of notice-and-comment rulemaking or formal adjudication"). Indeed, in deciding the merits of the citizens' claim in *Taylor Resources,* we were heavily guided by the EPA's definition of "point sources" in order not to "undermine the agency's interpretation of the Clean Water Act." *Taylor Resources,* 299 F.3d at 1019. To decide the present case brought by Baykeeper, the district court and we are required to determine whether Cargill has discharged pollutants into a water of the United States without a permit. For reasons already stated, it is most appropriate to defer to the administering agencies in construing the statutory term "waters of the United States," which establishes the reach of the CWA. Deference is especially suitable because this borderline determination of non-navigable areas to be made subject to the CWA is one that involves "conflicting policies" and expert factual considerations for which the agencies are especially well suited. *See Wash., Dep't of Ecology,* 752 F.2d at 1469. Because we do not want to undermine or throw into chaos the EPA's and the Corps' construction of the statute that establishes the reach of the CWA, *Chevron* deference is required, even in this citizen suit.

Baykeeper appears to concede that the regulatory definition of "waters of the United States" does not support the district court's expansive construction. Nevertheless, it argues that summary judgment was appropriately granted because "the Supreme Court has repeatedly held that the CWA protects all waterbodies with a `significant nexus' to navigable waters." This is simply not the case. In *United States v. Riverside Bayview Homes, Inc.,* 474 U.S. 121, 106 S.Ct. 455, 88 L.Ed.2d 419 (1985), the Court held that the Corps did not exceed its statutory authority when it defined "waters of the United States" to include adjacent *wetlands. Id.* at 134-35, 106 S.Ct. 455. The *707 Supreme Court's opinion leaves little doubt about two of its foundations: (1) that it is up to the Corps to determine where "waters of the United States" end, and (2) that the Corps' regulation was reasonable in treating adjacent wetlands as a unique category subject to the CWA despite their non-navigability:

> The Corps has concluded that wetlands may affect the water quality of adjacent lakes, rivers, and streams even when the waters of those bodies do not actually inundate the wetlands. For example, wetlands that are not flooded by adjacent waters may still tend to drain into those waters. In such circumstances, the Corps has concluded that wetlands may serve to filter and purify water draining into adjacent bodies of water and to slow the flow of surface runoff into lakes, rivers, and streams and thus prevent flooding and erosion.... In addition, adjacent wetlands may "serve significant natural biological functions, including food chain production, general habitat, and nesting, spawning, rearing and resting sites for aquatic ... species." In short, the Corps has concluded that wetlands adjacent to lakes, rivers, streams, and other bodies of water may function as integral parts of the aquatic environment even when the moisture creating the wetlands does not find its source in the adjacent bodies of water. Again, we cannot say that the Corps' judgment on these matters is unreasonable....

Id. (internal citations omitted). It is simply not permissible to conclude from this passage that a *court* is authorized to conclude, when the administering agencies have reasonably ruled to the contrary, that other non-navigable bodies of water, which are not wetlands, are waters of the United States because they are adjacent to such waters.

Sixteen years after *Bayview,* the Supreme Court in *SWANCC* struck down the Migratory Bird Rule, noting that isolated intrastate ponds, unlike wetlands, lack a significant nexus to navigable waters. 531 U.S. at 167-68, 121 S.Ct. 675. *SWANCC* did not hold, however, that the Corps would be *required* to regulate all non-navigable bodies of water with some nexus to navigable waters, and it certainly did not hold that a court would be free to impose such a regulatory requirement if the administering agencies did not.

Baykeeper's reliance on *Rapanos v. United States,* ___ U.S. ___, 126 S.Ct. 2208, 165 L.Ed.2d 159 (2006), is similarly misplaced. *Rapanos,* like *Riverside Bayview,* concerned the scope of the Corps' authority to regulate adjacent *wetlands.* Justice Kennedy's controlling concurrence explained that only wetlands with a significant nexus to a navigable-in-fact waterway are covered by the

Act. *Id.* at 2248 (Kennedy, J., concurring) ("Consistent with *SWANCC* and *Riverside Bayview* and with the need to give the term `navigable' some meaning, the Corps' jurisdiction over wetlands depends upon the existence of a significant nexus between the wetlands in question and navigable waters in the traditional sense."). No Justice, even in dictum, addressed the question whether all waterbodies with a significant nexus to navigable waters are covered by the Act.

We conclude, therefore, that nothing in *Bayview, SWANCC* or *Rapanos* requires or supports the view that Cargill's Pond is a water of the United States because it is adjacent to Mowry Slough. Baykeeper contends, however, that the Pond is more than merely adjacent; it has a nexus to Mowry Slough. It is not sufficient, however, for Baykeeper simply to make its individual case; it must establish that it was unreasonable for the EPA to confine to wetlands the CWA's reach to *708 non-navigable waterbodies adjacent to protected waters. Even on its own terms, however, Baykeeper's argument fails. The evidence in support of Baykeeper's nexus falls far short of the nexus that Justice Kennedy required in *Rapanos* even for wetlands that the Corps sought to hold subject to the CWA:

> [W]etlands possess the requisite nexus, and thus come within the statutory phrase "navigable waters," if the wetlands, either alone or in combination with similarly situated lands in the region, *significantly affect the chemical, physical, and biological integrity of other covered waters more readily understood as "navigable."* When, in contrast, wetlands' effects on water quality are *speculative or insubstantial,* they fall outside the zone fairly encompassed by the statutory term "navigable waters."

Rapanos, 126 S.Ct. at 2248 (Kennedy, J., concurring) (emphasis added). By any permissible view of the evidence, the effect of Cargill's Pond on Mowry Slough is speculative or insubstantial; the Pond does not significantly affect the integrity of the Slough. First, there is no evidence that any water has ever flowed from the Pond to the Slough. One expert, asked whether "given the right hydrology conditions," water could flow from the Pond to the Slough, answered that "it is possible." There is no evidence, however, that those "right hydrology conditions" have ever existed or were likely to exist. This testimony fits the definition of "speculative." There was also much emphasis on the fact that, in some high tide situations, water from the Slough has flowed over the levee, or seeped through the levee, into the Pond. But flow in that direction does not affect the navigable body of water in the Slough. Thus the evidence does not meet Justice Kennedy's standard, and we emphasize that this standard was for wetlands, for which the Corps had made special allowance beyond the margins of the usual navigable waters at which the CWA is aimed. We therefore reject the "adjacency-plus-nexus" argument that Baykeeper puts forward.[7]

Relying on *Headwaters, Inc. v. Talent Irrigation District,* 243 F.3d 526 (9th Cir.2001), Baykeeper next argues that the Pond is a "water[] of the United States" because even intermittent hydrologic connections are sufficient to trigger CWA jurisdiction. In *Headwaters,* we held that an irrigation canal that drained intermittently into a protected waterbody was subject to the CWA because it qualified as a "tributary" under 40 C.F.R. § 230.3(s)(5). *Headwaters,* 243 F.3d at 533. While *Headwaters* is relevant to the permissible scope of the Corps' tributary jurisdiction, it has no bearing on the issue presented here: whether the Pond is protected under the CWA because it is adjacent to navigable waters. In any event, the instant record does not support a finding that the Pond is a tributary of the Slough; there is no evidence that water from the Pond has ever flowed into the Slough or the Slough's wetland.

Our decisions in *Baccarat Fremont Developers, LLC v. United States,* 425 F.3d 1150 (9th Cir.2005), and *Northern California River Watch v. City of Healdsburg,* 457 F.3d 1023 (9th Cir.2006), also do not *709 support Baykeeper's position that CWA jurisdiction extends to all adjacent waterbodies. In *Baccarat,* we held simply that *SWANCC* did not modify the Supreme Court's holding in *Riverside Bayview* that the Corps can appropriately exercise jurisdiction over adjacent *wetlands.* *Baccarat,* 425 F.3d at 1156-57. We expressed no opinion regarding the Corps' jurisdiction over adjacent waterbodies not qualifying as wetlands.

City of Healdsburg also concerned the Corps' jurisdiction over adjacent wetlands. There, we applied Justice Kennedy's "significant nexus" standard, *see* *Rapanos,* 126 S.Ct. at 2248, and concluded that the wetland at issue was a "water[] of the United States" because (among other reasons) its waters seep directly into a protected river. *City of Healdsburg,* 457 F.3d at 1030-31. All told, we know of no case holding that all waterbodies adjacent to navigable waters are covered by the Act.

As its fallback, Baykeeper argues that, under EPA regulations, the Pond qualifies for CWA protection as a waterbody whose use or misuse could affect interstate commerce, 40 C.F.R. § 122.2 (Waters (a), (c)), and as a "tributary" of a protected waterbody.[8] *Id.* (Waters (e)). We note that neither of these theories was urged as an independent ground of jurisdiction in support of the most recent summary judgment, and that, following that judgment, Baykeeper executed a settlement agreement waiving the right to assert all jurisdictional theories "other than the Adjacent Waters Theory upon which the District Court based its Jurisdictional Ruling." Baykeeper apparently concedes that the waiver provision is valid and enforceable.[9] It argues, however, that its

alternative theories are not waived because the "Adjacent Waters Theory," broadly construed, includes consideration of facts other than mere physical proximity.

Construing the waiver provision liberally in Baykeeper's favor, we conclude that Baykeeper reserved (at most) the right to assert theories of CWA coverage that are supported by facts on which the district court based its ruling. Although the district court noted that the soils between the Pond and the Slough are saturated, and that liquid from the Slough has entered the Pond at high tide, 710 it did not point to any evidence, and we have found none, that liquid or matter from the Pond has *710 flowed or will flow to the Slough or its wetlands (a factual predicate for tributary jurisdiction). Nor did the district court base its ruling on the fact that Cargill's discharge of pollutants into the Pond "could affect interstate or foreign commerce." In short, the "Adjacent Waters Theory upon which the District Court based its Jurisdictional Ruling" does not rely on evidence of tributary status or effect on interstate commerce. Accordingly, we conclude that these alternative theories are independent of the "Adjacent Waters Theory" and are waived.

Conclusion

For the foregoing reasons, the district court's summary judgment ruling is REVERSED. In light of that ruling, Baykeeper's cross-appeal is DISMISSED as moot.

[1] The district court granted summary judgment that Cargill violated 33 U.S.C. §§ 1311 and 1342(p)(2)(B) by discharging stormwater associated with industrial activity into "waters of the United States," and that Cargill violated 33 U.S.C. § 1311 by discharging non-stormwater pollutants into "waters of the United States." Following the summary judgment ruling, Baykeeper dismissed its remaining claims with prejudice.

[2] In a separate summary judgment ruling, the district court held that it lacked jurisdiction to order removal of that portion of the Pile created before 1991 because: (1) Baykeeper's 1996 "notice" letter failed to provide the requisite specificity concerning pre-1991 discharges; and (2) the five-year limitations period in 28 U.S.C. § 2462 barred relief for any time prior to five years preceding the filing of the complaint. Baykeeper filed a cross-appeal arguing that the district court erred in declining to order removal of pre-1991 discharges. Because we conclude that the district court erred in determining that the Pond is a "water[] of the United States," we do not reach the issues raised in Baykeeper's cross-appeal.

[3] The CWA explicitly authorizes the Administrator of the EPA "to pre-scribe such regulations as are necessary to carry out his functions under this chapter." 33 U.S.C. § 1361(a).

[4] For present purposes, the two agencies' regulatory definitions of "waters of the United States" are substantively identical.

[5] Section 122.2 of the regulations sets forth alphabetically the words or terms being defined, and in some cases then provides letter-designated subdivisions under a definition. For convenience, this opinion cites the subdivisions under the definition of "Waters of the United States" as "Waters (a)" etc.

[6] For present purposes, we accept Baykeeper's definition of "adjacent" as extending beyond physical proximity to include the additional factors relied upon by the district court in determining that the Pond is adjacent to the Slough (i.e., that the soils between the Pond and the Slough are saturated, and that liquid has intermittently flowed from the Slough to the Pond).

[7] It is important to keep in mind the key claim before us in this case: that Cargill discharged pollutants into *its Pond* without a permit. There is no question that, if Cargill engaged in some action that caused the discharge, or permitted the leakage, of pollutants from the Pond into Mowry Slough without a permit, it would be in violation of the CWA because of that discharge *into the Slough,* which all parties agree is a water of the United States. No such violation has been shown or is now claimed.

[8] These grounds for CWA coverage are also recognized in substantively identical regulations issued by the Army Corps of Engineers. *See* 40 C.F.R. §§ 230.3(s)(1), (3), (5).

[9] Some confusion has been caused by the fact that we and the parties have from time to time referred to the issue in this case as whether the Pond is within the "jurisdiction" of the CWA. A better statement of the issue would be whether the Pond is within the coverage of the CWA. In any event, the "jurisdiction" of the CWA has nothing to do with the jurisdiction of this court. Baykeeper's complaint alleged that Cargill had violated the CWA by discharging pollutants into the waters of the United States. That colorable allegation clearly gave the district court jurisdiction over the case, *see* 33 U.S.C. § 1365(a), 28 U.S.C. § 1331, and we have jurisdiction over this appeal pursuant to 28 U.S.C. § 1291. Baykeeper's failure to establish that Cargill's Pond was a water of the United States is a failure to make out a case, not a failure to establish the jurisdiction of the court. *See Arbaugh v. Y & H Corp.*, 546 U.S. 500, 126 S.Ct. 1235, 1242-45, 163 L.Ed.2d 1097 (2006) (discussing loose use of term "jurisdiction" and holding that failure to establish that defendant is covered by the governing statute is failure to make out a claim, not a failure to establish jurisdiction). Thus, Baykeeper's stipulation is not subject to question as an attempt to limit the scope of our subject-matter jurisdiction. *See id.* at 1244 ("[S]ubject-matter jurisdiction, because it involves the court's power to hear a case, can never be forfeited or waived.") (internal quotation marks omitted).

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Appendix D. California Coastal Commission Supplemental Wetland Delineation Report for the South San Diego Bay Wetland Mitigation Bank. Prepared by Great Ecology, Revised February 2020

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South San Diego Bay Wetland Mitigation Bank

CALIFORNIA COASTAL COMMISSION
SUPPLEMENTAL WETLAND DELINEATION REPORT

Prepared for:

Eileen Maher
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Port of San Diego
3165 Pacific Highway
San Diego, CA 92101

Date:

December 4, 2017 – *Original Report*

February 14, 2020 – *Revised Report*

Prepared by

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CALIFORNIA COASTAL COMMISSION

SUPPLEMENTAL WETLAND DELINEATION REPORT

BACKGROUND

The Port of San Diego is developing the majority of its Pond 20 property (the Site) into a wetland mitigation bank. The 83.5 acre Site is located in south San Diego Bay in the City of San Diego, San Diego County, California and is wholly within the Coastal Zone (FIGURE 1). As part of the bank planning and entitlement process, a formal wetland delineation to determine the boundaries of United States Army Corps of Engineers (USACE) jurisdiction was completed within the bermed area and immediately adjacent to the bermed area at the former salt pond referred to as Pond 20 between January 31 and February 6, 2017 by Great Ecology. With submission of the delineation report to the Interagency Review Team (IRT) in April 2017, representatives from the California Coastal Commission (CCC) requested that areas falling under CCC jurisdiction also be delineated on the Site. A CCC delineation was therefore conducted on the Site on July 6, 2017 by Great Ecology staff. The results of the CCC delineation were documented in a supplemental report submitted to the CCC on December 4, 2017. The CCC provided review and comment on November 15, 2018; revisions to field data forms (APPENDIX A) and aquatic resources mapping (FIGURE 4, TABLE 1) are incorporated into this updated report.

SITE DESCRIPTION

Pond 20 is bordered by the Otay River Estuary Restoration Project (ORERP) site, the Otay River, and the South San Diego Bay Unit of the U.S. Fish & Wildlife Service (USFWS) National Wildlife Refuge (NWR) to the north; residential and commercial development to the west; Palm Avenue and residential development to the south; and the City of San Diego's Otay River Pump Station and open space managed by the Port of San Diego and the Otay Valley Regional Park to the east (FIGURE 2).

The majority of Pond 20 is a bermed former salt evaporator pond, but the project boundaries also include surface water features that run alongside the pond area outside the berms. Nestor Creek flows north to the Otay River outside the berm along the eastern boundary of Pond 20, and a tributary of the Otay River flows south from the Otay River outside the berm along Pond 20's western boundary, terminating in the southwest corner. These two water features are tidal; they do not flow through the proposed Pond 20 mitigation bank enclosed by berms, nor do they ever overtop the berms.

For ease of reference the Site is divided into three distinct areas:

- **Pond 20:** A wholly bermed and enclosed non-operational solar salt evaporator pond that was formerly part of the Western Salt Company's South San Diego Bay Saltworks. Pond 20 comprises the majority of the Site and is hydrologically isolated from all surrounding surface water features. Surface water only enters Pond 20 via precipitation and occasional storm water runoff from Palm Avenue via one point conveyance and surface sheet flow. This area is shown within the white boundary in FIGURE 1 and is also referred to as the Bank Site;
- **The Nestor Creek Area (not a component of the mitigation bank):** Located outside the eastern berm, includes portions of Nestor Creek, a channelized mud-bottom urban freshwater-to-brackish stream that flows north past Pond 20 into the Otay River, and wetlands within and surrounding the channel; and
- **The Otay River Tributary Area (not a component of the mitigation bank):** Located outside the western berm, includes a section of the Otay River Tributary, a tidal mud-bottom surface water feature that flows south from the Otay River near its entrance to San Diego Bay and terminates at the southern end of the Area, and wetlands surrounding the channel.

Both the Otay River Tributary and Nestor Creek are subject to the tides; Pond 20 is not subject to tidal flows.

Pond 20 was constructed in the 1870s, specifically to retain water as part of the south San Diego Bay Saltworks operations. In 1916, the Savage Dam failed and released Lower Otay Lake to the lower watershed. The dam failure washed away several berms within the Saltworks, including those of Pond 20, and deposited substantial volumes of sediment within Pond 20. Pond 20 and the rest of the Saltworks were restored and operational by 1918, with water moved through Pond 20 using a system of pumps and siphons. However, the high elevation of Pond 20, along with its inland location and distance from the other ponds, soon made its continued use logistically and economically inefficient within the Saltworks operation. Western Salt attempted to reincorporate Pond 20 into Saltworks operations in the 1960s using a new system of electrical pumps to facilitate the movement of water from Pond 20 to the other ponds in the network. This effort ultimately failed and Pond 20 and Site as a whole have since remained vacant.

Please see the USACE delineation report (Great Ecology 2017) for detailed site data, including topography, historical aerial imagery analysis, tidal and floodplain information, National Wetlands Inventory, soil survey, and a summary of previous USACE delineation efforts.

Regulatory Overview

The CCC has the authority to regulate wetlands within the Coastal Zone within the State of California via the Coastal Act, which defines wetlands as:

> *[L]ands within the coastal zone which may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens.* (Coastal Act Section 30121)

To provide further specificity, the CCC uses a one parameter definition of wetlands, which requires the presence of only one wetland attribute to be present for the area to be considered a wetland:

> *Wetland shall be defined as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity or high concentrations of salts or other substances in the substrate. Such wetlands can be recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deep-water habitats.* (14 CCR Section 13577)

This is in contrast to USACE, which requires positive identification of field indicators of all three wetland parameters – hydrophytic vegetation communities, hydric soils, and wetland hydrology.

SITE OVERVIEW
SOUTH SAN DIEGO BAY MITIGATION BANK

SAN DIEGO UNIFIED PORT DISTRICT
NOVEMBER 2017

0 0.15 0.3 Miles

N

FIGURE 1
1:7,500
CENTROID: 32.5869° N, 117.1004° W
NAD 83 CA STATE PLANE FIPS IV 0406

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CURRENT LANDSCAPE CONTEXT
SOUTH SAN DIEGO BAY MITIGATION BANK

SAN DIEGO UNIFIED PORT DISTRICT
NOVEMBER 2017

0 0.75 1.5 Miles

N

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FIGURE 2
1:45,000
WGS 1984 WEB MERCATOR

To delineate these areas in the field, CCC provides few guidelines on how to identify the upland boundaries of wetlands. These guidelines include:

a. *The boundary between land within predominantly hydrophytic cover and land with predominantly mesophytic or xerophytic cover;*

b. *The boundary between soil that is predominantly hydric and soil that is predominantly nonhydric; or*

c. *In the case of wetlands without vegetation or soils, the boundary between land that is flooded or saturated at some time during years of normal precipitation, and land that is not.* (14 CCR Section 13577)

However, these guidelines are not technically field specific. CCC therefore defers to several other sources that delineators can reference when investigating wetland boundaries in the field. These include:

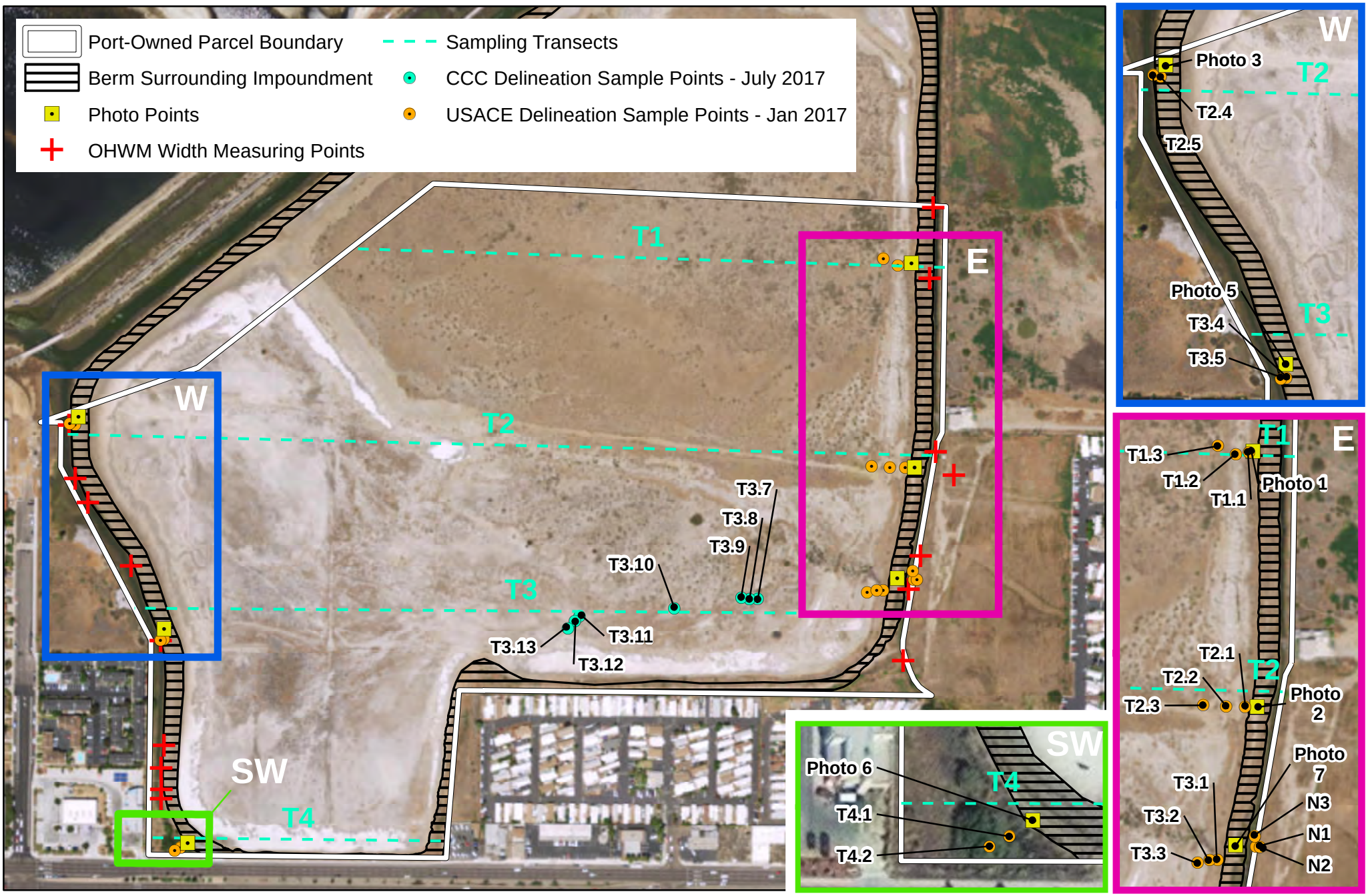
- 1987 Army Corps of Engineers Wetland Delineation Manual and Regional Supplements;
- The National Wetland Plant List (NWPL), which replaces the U.S. Fish & Wildlife Service's 1988 National List of Plant Species that Occur in Wetlands (USACE 2012); and
- Natural Resource Conservation Service Field Indicators of Hydric Soils in the United States.

The CCC encourages reference of these resources in the context of professional judgement when determining wetland boundaries within the Coastal Zone.

Field Methods

Great Ecology staff conducted a field investigation to identify the boundaries of potential CCC wetland areas on July 6, 2017. Great Ecology followed the same sampling protocol and wetland indicator identification process found in the USACE Wetland Delineation Manual (1987) and the Arid West Supplement (2008) and detailed the Pond 20 USACE delineation report (Great Ecology 2017). Great Ecology sampled 25 points in total across the Site – 18 during the January and February 2017 USACE delineation, and seven additional points for the CCC delineation along Transect 3 from east to west. Great Ecology targeted our sampling for the CCC event to more closely investigate subtle changes in topography and vegetation communities within Pond 20 (FIGURE 3).

To provide a comprehensive supplement, Great Ecology included areas identified during the February 2017 delineation field event that exhibited at least one positive wetland parameter. Datasheets for the USACE and CCC delineation efforts are included in APPENDIX A and a photo log of both events in APPENDIX B.



SAMPLING TRANSECTS, SAMPLING POINTS, AND PHOTO POINTS
SOUTH SAN DIEGO BAY WETLAND MITIGATION BANK

SAN DIEGO UNIFIED PORT DISTRICT
NOVEMBER 2017

0 0.075 0.15 Miles

N

FIGURE 3
1:4,500
NAD 1983 CA STATE PLANE VI

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SUMMARY OF OBSERVED SITE CONDITIONS

Pond 20

Pond 20 contains isolated semi-permanent and ephemeral water features. Semi-permanent ponds, unvegetated salt flats, and intermittent depressional pools are located predominately along the inside edge of the berms.

Semi-Permanent Ponds

The inside edges of the eastern and southern berms support approximately 7.35 acres of semi-permanent ponds. The ponds are completely isolated from surface and groundwater features located outside the berms. The water sources for the ponds are exclusively direct rainfall and occasionally stormwater entering Pond 20 via sheet water flows and from one stormwater downspout that extends from Palm Avenue into Pond 20 along the southern boundary. Due to Pond 20's constructed purpose as a water retention facility for the Saltworks, the soils underlying Pond 20 are impermeable to prevent the loss of surface water via leaching. The water levels within the perennial ponds therefore do not fluctuate with the tides observed in the adjacent Otay River Tributary. The pond water levels instead fluctuate seasonally, completely dependent on closed system evaporative processes which render the retained water hypersaline. Water levels within the pools and their fluctuation rates are controlled by decades of drought and heavy rainfall. During the 2011 to 2017 drought, water levels were at a minimum in the ponds. Extreme (i.e. >70th percentile) rainfall fell in December 2016 and January 2017, recharging the water levels in the ponds. Standing water within the isolated pools is generally found below a nearly complete salt crust, though water may sit atop the crust following sufficient cumulative precipitation.

For safety reasons, Great Ecology did not sample soils within the permanent ponds but assumed them to be hydric based on observations made during previous delineation efforts, and the long-term hydrology patterns for those features observed in historical aerial imagery. The ponds are unvegetated and therefore do not support hydrophytic wetland plant communities.

Because there is no surface or groundwater nexus between the ponds and surface water features located outside the berms, the ponds do not provide basic aquatic functions and services, such as transport of detritus and/or nutrients, moderation of groundwater flow or discharge, energy dissipation or export of organic carbon, or particulate retention. No fish have been observed in the ponds, and no substantial wildlife use of the ponds has been observed beyond a small number of birds resting on them. The ponds provide very low capacity for all aquatic functions and are of very low ecological value.

Unvegetated Salt Flats

The unvegetated salt flats are located in low-lying areas adjacent to the semi-permanent ponds and comprise approximately 5.57 acres. Hydrologically isolated from groundwater and surface water features located outside the berms, the water source of the unvegetated salt flats is exclusively direct rainfall, and these areas are only intermittently inundated following cumulative rainfall events. Positive hydric soil indicators were only observed in one of two locations within this feature type. Soil is sand or sandy loam. Great Ecology infers that water drains laterally down-gradient from the salt flats into the semi-permanent ponds due to its higher elevational position relative to the ponds. The salt flats are unvegetated, so no hydrophytic wetland plant communities were observed on this feature type.

Because of hydrologic isolation, the salt flats do not provide basic aquatic functions and services such as such as transport of detritus and/or nutrients, moderation of groundwater flow or discharge, energy dissipation or export of organic carbon, or particulate retention. Additionally, the salt flats do not provide short- or long-term water storage services. The salt flats do not support substantial wildlife use beyond a small number of birds resting on them. No bird species have been observed nesting on the salt flats.

Ephemeral Vegetated and Unvegetated Depressions

On the eastern and central/southern portions of Pond 20 are 14 well-drained topographic depressions comprising approximately 2.11 acres.

Pond 20 was filled with sediment from an upstream dam failure in 1916. Evidence of this fill material is still present today. While the majority of Pond 20 fill is sand, Great Ecology noted random distributions of loams, and clays within the soil profile at most sample points within the intermittent depressional pools on the east side of Pond 20. At several sample points, old pieces of wood lumber at various stages of decay formed horizontal layers down the soil column. Hydric soil indicators were only observed in four of 16 sample points taken within Pond 20.

During both 2017 delineation efforts, the majority of Pond 20 was populated by a monoculture of upland iceplant species – slenderleaf iceplant (*Mesembryanthemum nodiflorum*) in January and February 2017, and crystalline iceplant (*Mesembryanthemum crystallinum*) in July 2017. The higher-elevation north and northeastern portions of Pond 20 support an upland scrub-shrub community of coyotebush (*Baccharis pilularis*), mulefat (*B. salicifolia*), coastal cholla (*Cylindropuntia prolifera*), Menzie's goldenbush (*Isocoma menziesii*), and coastal prickly pear (*Opuntia littoralis*). Three tamarisk (*Tamarix* spp.) individuals were also observed within this community. No hydrophytic vegetation communities were observed within Pond 20. These two predominant vegetation communities have remained consistent in their composition and distribution since 1997 (Dudek 1997, Merkel 2008). Observed wildlife use has been restricted to rabbits, woodrats, and hunting raptor species characteristic of upland coastal sage scrub communities.

Because of their hydrologic isolation, the vegetated and unvegetated topographical depressions do not provide basic aquatic functions and services such as such as transport of detritus and/or nutrients, moderation of groundwater flow or discharge, energy dissipation or export of organic carbon, or particulate retention. The depressions do not support substantial wildlife use beyond those of upland scrub species. No bird species have been observed nesting on the salt flats.

Nestor Creek Area

Directly east of the berm is Nestor Creek, classified as an estuarine and marine wetland with intertidal influence, which leads northwest toward the Otay River. The Nestor Creek Area contains permanent open water features and wetlands, including 0.14 acres of unvegetated open water and 0.25 acres of salt and brackish marsh.

Nestor Creek is concrete-lined upstream of the Site and is fed by freshwater flows from the adjacent urban floodplain. During high stormwater flows, the Otay River tributary appears to move water from a Municipal Separate Storm Sewer (MS4) drainage and Palm Avenue north to the Otay River. Hydric vegetation and soils, as well as hydrology indicators were present at two of three sample points taken on Nestor Creek. The only sample point where no wetland indicators were present was on the upper berm slope.

Two wetland community types were identified within the Nestor Creek Area along Nestor Creek. A salt marsh community predominately comprised of pickleweed (*Sarcocornia pacifica*), shore grass (*Distichlis littoralis*), saltwort (*Batis maritima*), and alkali sea-heath (*Frankenia salina*) were observed on either side of Nestor Creek. Patches of freshwater marshes receiving periodic pulses of saline water (referred to as brackish marsh in this report) and predominately comprised of California club-rush (*Schoenoplectus californicus*) were located in Nestor Creek within the ordinary high water mark (OHWM) boundaries.

These communities provide forage and breeding habitat for birds, as well as some refugia for fish in the form of permanent standing water that is periodically flushed due to tidal connection and influence from San Diego Bay. Further, the marshes present along Nestor Creek have been observed to catch

particulates (large and small) flowing down from the adjacent urban areas. The vegetation provides some nutrient removal capacity, as well as acting as a buffer to slow storm flows entering into San Diego Bay.

Otay River Tributary Area

The Otay River Tributary Area contains permanent open water features and wetlands, including 0.20 acres of unvegetated open water, 0.03 acres of unvegetated drainage basin, 0.05 acres of forested floodplain, and 0.90 acres of salt and freshwater marsh.

Some combination of hydric vegetation and soils, as well as hydrology indicators were present at three of four sample points taken in the Otay River Tributary Area. Two sample points had all positive wetland field indicators. The forested floodplain adjacent to the MS4 near this location did not have hydric soil indicators, pointing to infrequent and temporary inundation that has allowed hydrophytic vegetation to take root and hydrology indicators to develop. As with Nestor Creek, the only sample point where no wetland indicators were present was on the upper berm slope.

Three wetland community types were identified within the Otay River Tributary Area along the Otay River Tributary. Salt marsh of the same community composition as the Nestor Creek Area were observed on either side of the Otay River Tributary, with the addition of a patch of coastal salt grass (*Distichlis spicata*) located on the southeast bank of the Otay River Tributary. Small stands of saltwater cordgrass (S*partina alterniflora*) were observed on limited mudflats located on the west side of the Otay River Tributary. In the southwest portion of the Otay River Tributary Area, a small patch of freshwater marsh dominated by narrow-leaf cattail (*Typha angustifolia*) at the mouth of an MS4 drainage was observed. Immediately to the west of this freshwater marsh was a non-wetland floodplain community comprised of arroyo willow (*Salix lasiolepis*), green ash (*Fraxinus pennsylvanica*), and the non-native Brazilian pepper tree (S*chinus terebinthifolius*). Lastly, an unvegetated mud-bottom drainage that connects the freshwater MS4 wetland with the southern end of the Otay River Tributary was observed.

These communities provide forage and breeding habitat for birds. With the direct connection to the MS4 drainage associated with Palm Avenue, this section of wetlands provides some nutrient removal and particulate retention for stormwater during the wet season, reducing the pollutant load that enters into the Otay River and San Diego Bay. The drainage provides buffer protection of San Diego Bay during storms.

RESULTS

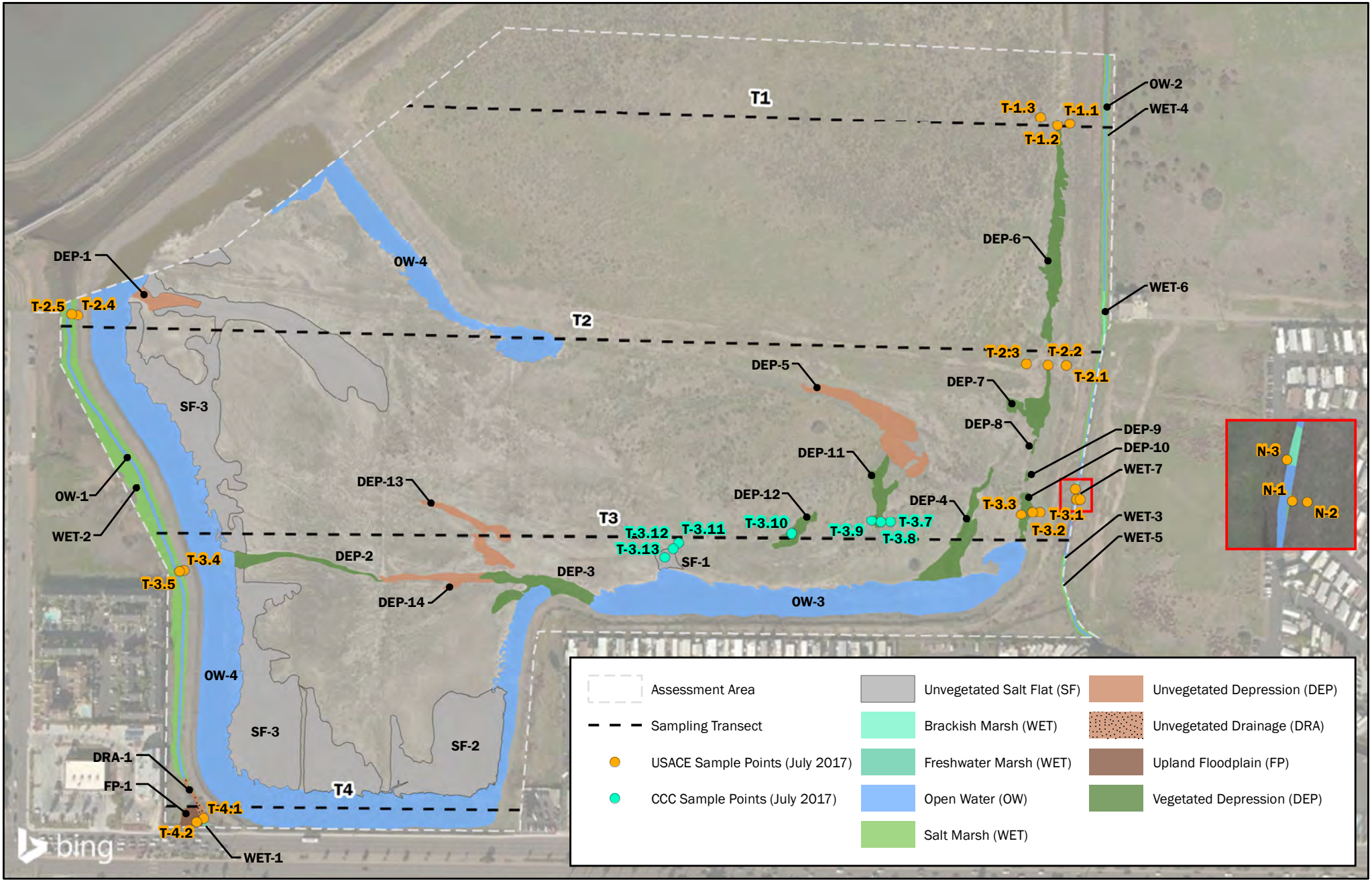
Great Ecology located thirty unique water features onsite across both 2017 delineation field efforts. These features are depicted in FIGURE 4 through FIGURE 11 and their attributes are summarized in TABLE 1. Each feature was evaluated for potential CCC wetland status.

TABLE 1: ONSITE WATER FEATURES EVALUATED FOR CCC JURISDICTION

Site Area	Site Feature Name	Type	Estimated Area (acres)	Potential Jurisdictional Determination	Description
Otay River Tributary Area	Wetland 1	Freshwater marsh	0.0086	Wetland Water of the State	Emergent vegetation dominated by narrow-leaf cattail surrounding a man-made drainage feature.
	Wetland 2	Salt marsh	0.8978	Wetland Water of the State	Coastal salt marsh dominated with pickleweed.
	Open Water 1	Unvegetated open water	0.2019	Non-Wetland Water of the State	Otay River tributary; surface water present in the drainage.
	Drainage Feature 1	Unvegetated drainage	0.0303	Wetland Water of the State	Unvegetated drainage basin with some surface water present.
	Floodplain 1	Vegetated freshwater floodplain	0.0492	Wetland Water of the State	Upland floodplain located adjacent to the Wetland 1, dominated by arroyo willow and green ash.
Nestor Creek Area	Open Water 2	Unvegetated open water	0.1369	Non-Wetland Water of the State	Nestor Creek; surface water present in the channelized creek.
	Wetland 3	Brackish marsh	0.0025	Wetland Water of the State	Emergent vegetation dominated by California club-rush.
	Wetland 4	Salt marsh	0.2282	Wetland Water of the State	Coastal salt marsh dominated by alkali sea-heath.
	Wetland 5	Brackish marsh	0.0055	Wetland Water of the State	Emergent vegetation dominated by California club-rush.
	Wetland 6	Brackish marsh	0.0156	Wetland Water of the State	Emergent vegetation dominated by California club-rush.
	Wetland 7	Brackish marsh	0.0030	Wetland Water of the State	Emergent vegetation dominated by California club-rush.
Pond 20	Open Water 3	Unvegetated open water	1.917	Non-Jurisdictional	Isolated semi-permanently flooded salt pond; surface water present in deepest part of the salt depression.
	Open Water 4	Unvegetated open water	5.436	Non-Jurisdictional	Isolated semi-permanently flooded salt pond; surface water present in deepest part of the salt depression.
	Depression 1	Unvegetated depression	0.0982	Non-Jurisdictional	Isolated unvegetated depression.
	Depression 2	Vegetated depression	0.1272	Non-Jurisdictional	Isolated depression supporting slenderleaf iceplant, crystalline iceplant, and other upland herbaceous vegetation.

Site Area	Site Feature Name	Type	Estimated Area (acres)	Potential Jurisdictional Determination	Description
	Depression 3	Vegetated depression	0.2288	Non-Jurisdictional	Isolated depression within the salt flat supporting slenderleaf iceplant, and other upland herbaceous vegetation.
	Depression 4	Vegetated depression	0.2384	Non-Jurisdictional	Isolated depression supporting slenderleaf iceplant, crystalline iceplant, and other upland herbaceous vegetation.
	Depression 5	Unvegetated depression	0.3975	Non-Jurisdictional	Isolated unvegetated depression.
	Depression 6	Vegetated depression	0.3173	Non-Jurisdictional	Isolated depression supporting slenderleaf iceplant, crystalline iceplant, and other upland herbaceous vegetation.
	Depression 7	Vegetated depression	0.1476	Non-Jurisdictional	Isolated depression supporting slenderleaf iceplant, crystalline iceplant, and other upland herbaceous vegetation.
	Depression 8	Vegetated depression	0.0045	Non-Jurisdictional	Isolated depression supporting slenderleaf iceplant, crystalline iceplant, and other upland herbaceous vegetation.
	Depression 9	Vegetated depression	0.0045	Non-Jurisdictional	Isolated depression supporting slenderleaf iceplant, crystalline iceplant, and other upland herbaceous vegetation.
	Depression 10	Vegetated depression	0.0588	Non-Jurisdictional	Isolated depression supporting slenderleaf iceplant, crystalline iceplant, and other upland herbaceous vegetation.
	Depression 11	Vegetated depression	0.1210	Non-Jurisdictional	Isolated depression supporting slenderleaf iceplant, crystalline iceplant, and other upland herbaceous vegetation.
	Depression 12	Vegetated depression	0.0779	Non-Jurisdictional	Isolated depression supporting slenderleaf iceplant, crystalline iceplant, and other upland herbaceous vegetation.
	Depression 13	Unvegetated depression	0.1809	Non-Jurisdictional	Isolated unvegetated depression.
	Depression 14	Unvegetated depression	0.1103	Non-Jurisdictional	Isolated unvegetated depression.
	Salt Flat 1	Unvegetated salt flat	0.05411	Non-Jurisdictional	Intermittently flooded, unvegetated salt flat, thick salt precipitate present on top of soil surface.

Site Area	Site Feature Name	Type	Estimated Area (acres)	Potential Jurisdictional Determination	Description
	Salt Flat 2	Unvegetated salt flat	1.7679	Non-Jurisdictional	Intermittently flooded, unvegetated salt flat, thick salt precipitate present on top of soil surface.
	Salt Flat 3	Unvegetated salt flat	3.7513	Non-Jurisdictional	Intermittently flooded, unvegetated salt flat, thick salt precipitate present on top of soil surface.
Total Estimated Area			**16.62**		



SOUTH SAN DIEGO BAY MITIGATION BANK
FIGURE 4: AQUATIC RESOURCES - UPDATED

SAN DIEGO COUNTY
JANUARY 2020

N

0 150 300 FEET

SOURCE: BING
NAD 1983/2011 STATE PLANE CALIFORNIA VI

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POTENTIAL JURISDICTIONAL WATERS - **SITE**
SOUTH SAN DIEGO BAY MITIGATION BANK

SAN DIEGO UNIFIED PORT DISTRICT
JULY 2017

0 0.05 0.1 Miles

N

FIGURE 5
1:4,000
NAD 1983 CA STATE PLANE FIPS IV

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POTENTIAL JURISDICTIONAL WATERS - W1
SOUTH SAN DIEGO BAY MITIGATION BANK

FIGURE 6
1:750
NAD 1983 CA STATE PLANE FIPS IV

SAN DIEGO UNIFIED PORT DISTRICT
JULY 2017

0 50 100 Feet

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POTENTIAL JURISDICTIONAL WATERS - W2
SOUTH SAN DIEGO BAY MITIGATION BANK

FIGURE 7
1:750
NAD 1983 CA STATE PLANE FIPS IV

SAN DIEGO UNIFIED PORT DISTRICT
JULY 2017

0 50 100 Feet

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POTENTIAL JURISDICTIONAL WATERS - W3
SOUTH SAN DIEGO BAY MITIGATION BANK

FIGURE 8
1:750
NAD 1983 CA STATE PLANE FIPS IV

SAN DIEGO UNIFIED PORT DISTRICT
JULY 2017

0 50 100 Feet

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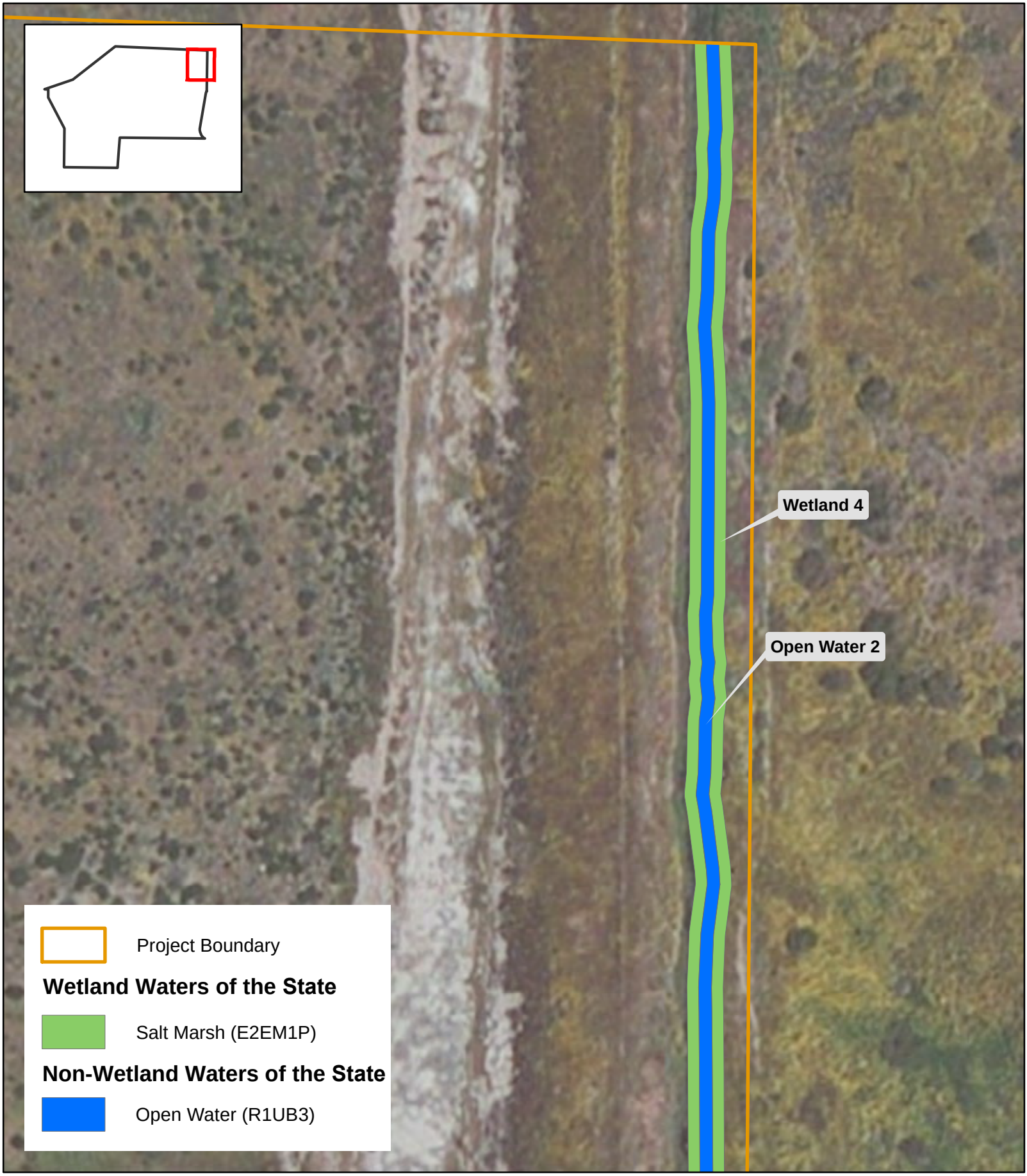

POTENTIAL JURISDICTIONAL WATERS - E1
SOUTH SAN DIEGO BAY MITIGATION BANK

FIGURE 9
1:750
NAD 1983 CA STATE PLANE FIPS IV

SAN DIEGO UNIFIED PORT DISTRICT
JULY 2017

0 50 100 Feet

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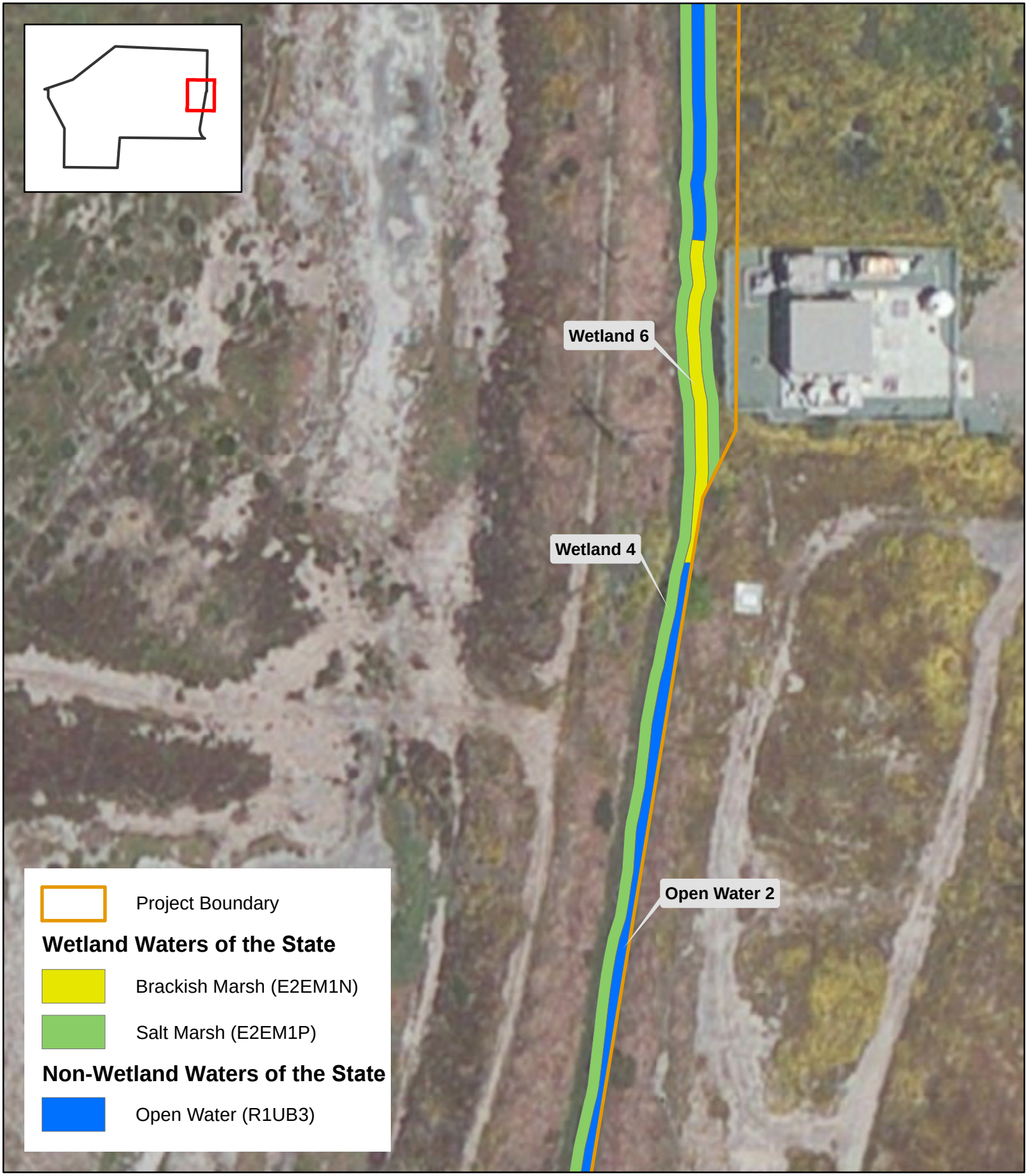

POTENTIAL JURISDICTIONAL WATERS - E2
SOUTH SAN DIEGO BAY MITIGATION BANK

FIGURE 10
1:750
NAD 1983 CA STATE PLANE FIPS IV

SAN DIEGO UNIFIED PORT DISTRICT
JULY 2017

0 50 100 Feet

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POTENTIAL JURISDICTIONAL WATERS - E3
SOUTH SAN DIEGO BAY MITIGATION BANK

FIGURE 11
1:750
NAD 1983 CA STATE PLANE FIPS IV

SAN DIEGO UNIFIED PORT DISTRICT
JULY 2017

0 50 100 Feet

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CCC Jurisdictional Areas

Areas delineated as CCC jurisdictional during the winter 2017 field delineation event and the July 6, 2017 field delineation event are summarized in TABLE 2 and mapped in FIGURE 5 through FIGURE 11. In total, Great Ecology identified eight water features comprising 1.58 acres of areas under CCC jurisdiction, which are located exclusively within the Otay River Tributary and Nestor Creek Areas.

TABLE 2: SUMMARY OF CCC JURISDICTIONAL AREAS WITHIN THE SITE

Site Area	Site Features Name	Classification	Potential Jurisdictional Determination	Estimated Area (acres)
Otay River Tributary Area	Open Water 1	Otay River Tributary; tidal riverine (R1UB3)	Non-Wetland Water of the State	0.2019
	Wetland 1	Emergent Wetland (PEM1F)	Wetland Water of the State	0.0086
	Wetland 2	Salt Marsh Wetland (E2EM1P)	Wetland Water of the State	0.8978
	Drainage Feature 1	Unvegetated drainage	Wetland Water of the State	0.0303
	Floodplain 1	Forested Floodplain (PFO1A)	Wetland Water of the State	0.0492
Nestor Creek Area	Open Water 2	Nestor Creek; tidal riverine (R1UB3)	Non-Wetland Water of the State	0.1369
	Wetland 3	Emergent Brackish Marsh Wetland (E2EM1N)	Wetland Water of the State	0.0025
	Wetland 4	Salt Marsh Wetland (E2EM1P)	Wetland Water of the State	0.2282
	Wetland 5	Emergent Brackish Marsh Wetland (E2EM1N)	Wetland Water of the State	0.0055
	Wetland 6	Emergent Brackish Marsh Wetland (E2EM1N)	Wetland Water of the State	0.0156
	Wetland 7	Emergent Brackish Marsh Wetland (E2EM1N)	Wetland Water of the State	0.0030
CCC Wetlands Total Area				1.58

Otay River Tributary Area Jurisdictional Features

Open Water 1 (Figure 6 through Figure 8)

Open Water 1 is located within the Otay River Tributary Area and is known as the Otay River Tributary. It is located on the western boundary of the Site entirely outside Pond 20. The surface water feature appears to be permanently inundated near the northern end of its extent, and becomes semi-permanently inundated at the southern end depending on the fluctuation of tidal prism through the channel. The feature also carries storm water discharges entering the Site from the MS4 drainage and sheet flows from Palm Avenue during high storm flows. The tributary was surrounded by salt marsh (Wetland 2) and showed a clear OHWM. The channel bottom is comprised of unvegetated, unconsolidated mud.

Wetland 1 (Figure 8)

Wetland 1 is located at the southern end of the Otay River Tributary Area at the mouth of an MS4 drainage and is dominated by narrowleaf cattail. This wetland is intermittently submerged during storm events with stormwater flows from the MS4 and sheet water flows onto the Site, outside the berm, from Palm Avenue. Although the presence of surface water and a high water table prevented a high-integrity soil sample, Great Ecology ecologists observed one centimeter of muck at the top of the soil matrix, and noted a hydrogen sulfide odor upon excavation of the soil sample within Wetland 1. At the time of sampling, the wetland vegetation had been recently cleared for stormwater system maintenance purposes, and the team observed a tree stump located within the wetland that was likely arroyo willow, debris from which was observed deposited on the upland area directly adjacent to Wetland 1.

Wetland 2 (Figure 6 through Figure 8)

Wetland 2 is located in the Otay River Tributary Area and completely surrounds the Otay River tributary. The wetland contains dense salt marsh vegetation dominated by pickleweed, saltwort, alkali sea-heath, and shore grass. Patches of cordgrass were also observed along the banks of the Otay River Tributary. Portions of the wetland are intermittently submerged with tidal flows during high tide, but the steep elevation of tributary banks prevents submersion of the entire wetland. The soils in Wetland 2 are clay and displayed concentrated redox features within a depleted matrix.

Drainage Feature 1 (Figure 8)

Drainage Feature 1 is a shallow, unvegetated drainage basin that had intermittent surface water present at the time of the field wetland delineation. Drainage Feature 1 is located between the southern terminus of Open Water 2 (the Otay River Tributary) and the northern boundary of Wetland 1. During the wetland delineation field effort, Open Water 2 and Wetland 1 were not directly connected via Drainage Feature 1, but the presence of standing water indicates some level of surface water connectivity between the two existed in the recent past. The drainage may receive tidal flows from the Otay River tributary to the north, and stormwater discharge from both the MS4 drainage and sheet surface runoff from Palm Avenue. During a December 2016 storm event, Great Ecology staff observed surface water connectivity between Open Water 1, Drainage Feature 1, and Wetland 1. This area, contained within an OHWM boundary, is comprised of an unconsolidated mud bottom, and is unvegetated. Outside of the OHWM boundary, Drainage Feature 1 is flanked by salt marsh wetlands dominated by coastal salt grass, and three Brazilian pepper tree individuals.

Floodplain 1 (Figure 8)

Floodplain 1 is located within the Otay River Tributary Area and directly adjacent to the MS4 drainage associated with Palm Avenue that feeds into the Otay River Tributary. While hydric soil indicators were not present, wetland hydrology and vegetation were present. This wetland feature appears to be infrequently inundated, only flooding during excess stormflows from the MS4. It is not tidally influenced. Vegetation was typically shrubby and dominated by species characteristic of disturbed freshwater floodplains, including arroyo willow, green ash, and castorbean (*Ricinus communis*). There was a thick layer of duff present and no herbaceous layer. Much of the litter appeared to be vegetation cut and placed from elsewhere. In addition, there was a mature arroyo willow that had been cut and laid down in this area.

Nestor Creek Area Jurisdictional Features

Open Water 2 (Figure 9 through Figure 11)

Open Water 2 is located in the Nestor Creek Area and known as Nestor Creek. It is located along the eastern boundary of Pond 20, entirely outside of the berm. The surface water appears to be permanent and empties into the Otay River approximately 1,500 feet to the north. Nestor Creek is surrounded by salt marsh (Wetland 4) and contains brackish marsh (Wetlands 3, 5, 6, and 7) within its OHWM. The channel bottom is comprised of unconsolidated mud and is unvegetated except for Wetlands 3, 5, 6, and 7.

Wetland 4 (Figure 9 through Figure 11)

Wetland 4 is located on the eastern edge of Pond 20, entirely outside of the berm, and completely surrounds Nestor Creek. Nestor Creek is freshwater, but is tidally influenced due to its proximity to the Otay River mouth and San Diego Bay. The wetland contains dense hydrophytic vegetation including both typical salt marsh and freshwater marsh species, i.e. pickleweed, alkali sea-heath, and California club-rush. Wetland 4 soils are sandy loam and exhibited redox concentrations within the soil matrix. The wetland is intermittently saturated with both tidal fluctuations and high freshwater flows during storm events.

Wetlands 3, 5, 6, and 7 (Figure 10 and Figure 11)

Wetlands 3, 5, 6, and 7 are located in the Nestor Creek Area on the eastern boundary of Pond 20, entirely outside of the berm. These wetlands are characterized as being entirely within Nestor Creek OHWM limits with vegetation dominated by California club-rush. Although surface water and high water table prevented a high-integrity soil sample, Great Ecology observed one centimeter of muck on the top of the soil matrix within these wetlands and, given the prevalence of obligate hydrophytic vegetation community, Great Ecology staff assumed the soils to be hydric. Nestor Creek is freshwater, but is tidally influenced due to its proximity to the Otay River mouth and San Diego Bay. Great Ecology could not confirm the year-round hydrological regime for these wetland features using aerial imagery given the limited areal extent. Evidence encountered in the field suggests that, under normal climatic conditions, Wetlands 3, 5, 6, and 7 are inundated year-round with fresh water and likely receive pulses of saline water during high tides, resulting in a brackish mix of fresh and marine waters.

Pond 20 Water Features Not Considered CCC Jurisdictional

Great Ecology identified additional water features within Pond 20 that exhibited at least one positive wetland field indicator defined by CCC, totaling approximately 15 acres. These include the Open Water, Salt Flat, and Depression features listed in TABLE 1. While these locations exhibit one positive wetland field indicator, there is no substantial wildlife use. These hydrologically isolated locations do not provide chemical cycling and transformation in plants, nor do they transport detritus and/or nutrients. These areas do not provide substantial subsurface storage capacity. In short, these areas do not offer the ecosystem services associated with wetlands protected under the Coastal Act, similar to waters identified and determined non-jurisdictional for the South Bay Power Plant project (CCC 2014).

Perennial Ponds (Figure 4, Open Water 3 and Open Water 4)

The salt ponds have standing water for the majority of the year and an OHWM is present, indicating positive wetland hydrology. These ponds are fed exclusively by precipitation and have no connection to groundwater or tidal influence. Birds have been anecdotally observed resting and loafing in the ponds while onsite, but ponds are hypersaline to the point that no fish are present to forage on, nor is there aquatic vegetation for forage. The ponds evaporate during the summer and the salt precipitates into a smooth crust that is unusable for foraging, nesting, or breeding by most species. These areas are completely unvegetated when dry and the hypersaline conditions make wetland plant establishment in the current conditions impossible.

Unvegetated Salt Flats (Figure 4, Salt Flat 1 through Salt Flat 3)

The salt flats are large stretches of unvegetated landscape directly adjacent to the perennial ponds. The soils are wet or saturated during the wet season and are covered in a salt precipitate during the dry season, indicating positive wetland hydrology and hydric soils. As with other parts of Pond 20, there is no hydrological connection to any source of water apart from the nearby ponds, which are fed exclusively by precipitation. The soils in this area, particularly, have been found to be underlain by an impermeable clay layer. There is nothing living in or on these soils due to the hypersaline nature of the area, making them unsuitable forage habitat.

Unvegetated Depressions (Figure 4A, Depression 1, Depression 5, Depression 13, and Depression 14)

The unvegetated depressions are well-drained topographical depressions located within the Pond 20 landscape matrix. The depressions exhibit positive wetland hydrology indicators, but hydric soils and hydrophytic vegetation communities are not present. Some depressions have a surface water connection to the perennial ponds, while others are isolated on the landscape. Some interior unvegetated depressions are deeper than those near the ponds, which indicates there is no groundwater influence at play in water depth. The ponds are unvegetated and fill with water during the wet season. The standing water evaporates over a period of days to weeks, depending on the size of the depression, leaving behind a salt crust precipitate. There are no fish in these depressions or vegetation for foraging, likely due to hypersaline conditions and lack of surface water connectivity over decades.

Vegetated Depressions (Figure 4, Depression 2 through Depression 4, and Depression 6 through Depression 12)

The vegetated depressions are well-drained topographical depressions located within the Pond 20 landscape matrix. The vegetated depressions exhibit positive wetland hydrology, but do not support hydric soils or hydrophytic vegetation communities. There is standing water in the depressions during the wet season and the soils may remain saturated throughout the year depending on the depth of the depression and its proximity to the nearby ponds. The depressions are vegetated with a mix of upland and facultative wetland plants.

One sample point (T3.9) scored positive for hydrophytic vegetation, but this is the result of limitations in the characterization procedures proscribed for this wetland indicator. The majority of the vegetation community in this area was dominated by goldenbush, classified as Facultative by the Corps' Arid West Plant List (2016), with most other plants in the community being upland or facultative upland species (e.g., coyotebush, beach evening primrose [*Camissoniopsis cheiranthifolia*], crystalline iceplant). In San Diego, goldenbush is frequently a component of native vegetation communities that establish on sandy uplands, such as coastal sage scrub, and not necessarily coastal wetland plant communities. The area characterized by T3.9 is a sandy upland with robust shrub cover, and young goldenbush growth is restricted to the edge of the adjacent vegetated topographic depression.

Overall, these vegetated communities do not provide substantial wetland function in these depressions. They have some potential for retention of particulates from decaying vegetation; however the depression areas are relatively small and the area of effect would be limited to the boundaries of the depression. While the vegetation has some potential for nutrient cycling and transformation of elements and compounds within individual depressions, the depressions are small and isolated, fed only by precipitation. No fish have been observed in the depressions, nor have there been any observations of substantial wildlife use during field surveys. In spite of the irregular presence of individual hydrophytic plants within various depressions, they do not offer any significant ecological value in terms of overall wetland function at Pond 20.

REFERENCES

California Coastal Commission (CCC). 2014. W15a: Staff Report: Regular Calendar, Application No. E-12-015. 37 pp.

Great Ecology. 2017. Delineation of Jurisdictional Wetlands and Non-Wetland Waters Under Clean Water Action Section 404, Proposed South San Diego Bay Wetland Mitigation Bank (Pond 20). Report prepared for the Port of San Diego, Planning & Green Port, 180 pp.

United States Army Corps of Engineers (USACE). 2012. Updated 2012 National Wetland Plant List. Accessed: 13 October 2017. http://www.usace.army.mil/Media/News-Releases/News-Release-Article-View/Article/475438/updated-2012-national-wetland-plant-list-is-available/.

APPENDIX A: DATA FORMS

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 2-1-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: N1-updated

Investigator(s): M. Tyner-Valencourt, B. Felten Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.586336 Long: -117.097239 Datum: NAD 1983

Soil Map Unit Name: LG-W - Lagoon water NWI classification: E2SBNx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ●	No ○	
Hydric Soil Present?	Yes ●	No ○	**Is the Sampled Area within a Wetland?** Yes ● No ○
Wetland Hydrology Present?	Yes ●	No ○	

Remarks: Site historically supported tidal estuary habitat but was filled and bermed in mid-1850s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point is located on the Nestor Creek floodplain on the east side of the Site, to the immediate east of the eastern berm.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Frankenia salina*	100	Yes	FACW
2. *Sarcocornia pacifica*	5	No	OBL
3. *Schoenoplectus californicus*	5	No	OBL
4.			
5.			
6.			
7.			
8.			
Total Cover:	110 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 0 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	10	x 1 =	10	
FACW species	100	x 2 =	200	
FAC species		x 3 =	0	
FACU species		x 4 =	0	
UPL species		x 5 =	0	
Column Totals:	110 (A)		210	(B)

Prevalence Index = B/A = 1.91

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ● No ○

Remarks: Thick community of hydrophytic vegetation and include both typical salt marsh and freshwater marsh species. Nestor Creek is freshwater but is tidally influenced due to its proximity to the Otay River mouth and San Diego Bay. In addition, site history as a salt evaporator pond may have caused high salt concentrations in the soil.

SOIL

Sampling Point: N1-updat

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-20	10YR 3/1	70	7.5YR 3/4	30	C	M	Sandy loam	Roots present at 0-3 inches

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☒ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks: Top three inches of soil profile support high rhizome density. Hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☒ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ◉	No ○	Depth (inches): 9
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 1

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Sample point is located in Nestor Creek floodplain. Drift deposits notes at higher elevations, suggesting high water flows through the channel and floodplain during storm events.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 2-1-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: N2

Investigator(s): M. Tyner-Valencourt, B. Felten Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR): C - Mediterranean California Lat: 32.586335 Long: -117.097211 Datum: NAD 1983

Soil Map Unit Name: HrC - Huerhuero loam, 2 to 9 percent slopes NWI classification: E2SBNx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ●	
Hydric Soil Present?	Yes ○	No ●	**Is the Sampled Area within a Wetland?** Yes ○ No ●
Wetland Hydrology Present?	Yes ○	No ●	

Remarks: Site historically supported tidal estuary habitat but was filled and bermed in mid-1850s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point is located on the upland west-facing slope east of Nestor Creek.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Ricinus communis*	10	No	FACU
2.			
3.			
4.			
5.			
Total Cover:	10 %		
Herb Stratum			
1. *Ambrosia psilostachya*	45	Yes	FACU
2. *Festuca spp.**	25	Yes	FACU
3. *Rumex crispus*	10	No	FAC
4. *Species N-A*	5	No	
5. *Mesembryanthemum crystallinum*	5	No	FACU
6.			
7.			
8.			
Total Cover:	90 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 10 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	10	x 3 =	30
FACU species	85	x 4 =	340
UPL species		x 5 =	0
Column Totals:	95 (A)		370 (B)

Prevalence Index = B/A = 3.89

Hydrophytic Vegetation Indicators:

- ● Dominance Test is >50%
- ● Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ○ No ●

Remarks: Sample point located just above transition between salt marsh and upland community. Rumex crispus only observed near this boundary, not further up the slope.
*Two unknown grass species observed in juvenile stage, leaf blades resemble Festuca spp. We combined here and used FACU designation given its occurrence in an upland plant community, its growth pattern on the landscape, and that the majority of Festuca spp. known to occur in the Arid West are designated as such.

SOIL

Sampling Point: N2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-20	10YR 3/2	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No hydrology indicators observed.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 2-1-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: N3

Investigator(s): M. Tyner-Valencourt, B. Felten Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Creek Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.586403 Long: -117.097251 Datum: NAD 1983

Soil Map Unit Name: LG-W - Lagoon water NWI classification: E2SBNx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ●	No ○	
Hydric Soil Present?	Yes ●	No ○	**Is the Sampled Area within a Wetland?** Yes ● No ○
Wetland Hydrology Present?	Yes ●	No ○	

Remarks: Site historically supported tidal estuary habitat but was filled and bermed in mid-1850s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point is located in the freshwater marsh habitat within the Nestor Creek channel.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Schoenoplectus californicus*	85	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	85 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 15 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	85	x 1 =	85
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	85 (A)		85 (B)

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ● No ○

Remarks: Vegetation is contained entirely within Nestor Creek channel OHWM limits. Floodplain is characterized with salt marsh vegetation sampled at Point N1.

SOIL

Sampling Point: N3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-20	10YR 3/2	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- [ ] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [ ] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5) (**LRR C**)
- [x] 1 cm Muck (A9) (**LRR D**)
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Mucky Mineral (S1)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Loamy Mucky Mineral (F1)
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox Depressions (F8)
- [ ] Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- [ ] 1 cm Muck (A9) (**LRR C**)
- [ ] 2 cm Muck (A10) (**LRR B**)
- [ ] Reduced Vertic (F18)
- [ ] Red Parent Material (TF2)
- [ ] Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes (●) No ( )

Remarks: Sample point is located within Nestor Creek and is inundated with ~1 foot of standing water. Unable to collect a soil sample. We observed 1cm of muck on the surface of the sediment within the channel. We assume hydric soils are present given the presence of hydrophytic vegetation within a perennial freshwater stream channel.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [x] Surface Water (A1)
- [ ] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1) (**Nonriverine**)
- [ ] Sediment Deposits (B2) (**Nonriverine**)
- [ ] Drift Deposits (B3) (**Nonriverine**)
- [ ] Surface Soil Cracks (B6)
- [x] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Salt Crust (B11)
- [ ] Biotic Crust (B12)
- [ ] Aquatic Invertebrates (B13)
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Plowed Soils (C6)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [ ] Water Marks (B1) (**Riverine**)
- [ ] Sediment Deposits (B2) (**Riverine**)
- [ ] Drift Deposits (B3) (**Riverine**)
- [ ] Drainage Patterns (B10)
- [ ] Dry-Season Water Table (C2)
- [ ] Thin Muck Surface (C7)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes (●)	No ( )	Depth (inches): 12
Water Table Present?	Yes ( )	No (●)	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):

Wetland Hydrology Present? Yes (●) No ( )

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Water consistently observed in stream channel at this location across several years of aerial photos queried on Google Earth.

Remarks: Surface water is contained within the Nestor Creek channel.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 1-31-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T1.1-updated

Investigator(s): M. Tyner-Valencourt, B. Felten, A. Tuggle Section, Township, Range: T18S R2W

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): C - Mediterranean California Lat: 32.588875 Long: -117.097318 Datum: NAD 1983

Soil Map Unit Name: GoA - Grangeville fine sandy loam, 0 to 2 percent slopes NWI classification: E2USPh

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ●	
Hydric Soil Present?	Yes ●	No ○	**Is the Sampled Area within a Wetland?** Yes ● No ○
Wetland Hydrology Present?	Yes ○	No ●	

Remarks: Site historically supported tidal estuary habitat but was filled and bermed in mid-1850s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample site located on moderate slope.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Mesembryanthemum nodiflorum*	50	Yes	FACU
2. *Species 1B*	25	Yes	
3. *Ambrosia psilostachya*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
Total Cover:	80 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 20 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species	55	x 4 =	220
UPL species		x 5 =	0
Column Totals:	55 (A)		220 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

- ● Dominance Test is >50%
- ● Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ○ No ●

Remarks: Living vegetation community entirely herbaceous, standing dead Baccharis spp. individuals present.

SOIL

Sampling Point: T1.1-upd

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-7	10YR 4/2	85	7.5YR 5/8	15	C	M	Sand	2" of sparse CS between 4-6"
7-16	10YR 2/2	100					Loamy Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☒ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ◯

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ◯	No ◉	Depth (inches):
Water Table Present?	Yes ◯	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ◯	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ◯ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No inundation visible on aerial imagery.

Remarks: Sample site located at toe of berm where terrain shifts from steep to flat; small amount of surface soil cracks on slope, but no evidence of water ponding so not considered a hydrology indicator. No wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 1-31-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T1.2-updated

Investigator(s): M. Tyner-Valencourt, B. Felten, A. Tuggle Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.588862 Long: -117.097417 Datum: NAD 1983

Soil Map Unit Name: GoA - Grangeville fine sandy loam, 0 to 2 percent slopes NWI classification: E2USPh

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ●	
Hydric Soil Present?	Yes ●	No ○	**Is the Sampled Area within a Wetland?** Yes ● No ○
Wetland Hydrology Present?	Yes ●	No ○	

Remarks: Site historically supported tidal estuary habitat but was filled and bermed in mid-1850s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point located on a dry area next to standing surface water at a similar elevation within a localized landscape depression.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Mesembryanthemum nodiflorum*	80	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	80 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 20 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species	80	x 4 =	320
UPL species		x 5 =	0
Column Totals:	80 (A)		320 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

- ● Dominance Test is >50%
- ● Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ○ No ●

Remarks: Relatively thick monotypic herbaceous layer of an upland species observed. No hydrophytic vegetation observed.

SOIL

Sampling Point: T1.2-upd

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-10	10YR 3/1	65	7.5YR 5/8	35	C	M	Sand	Redox form is coated sand grain
10-20	GLEY1 3/N	85	7.5YR 2.5/3	15	C	PL	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☒ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks: Soils are very saturated; west side of sample soil pit exhibits largely clay soils, east side exhibits mostly sand soils, indicative of fill material.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☒ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ◉	No ○	Depth (inches): 15
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 7

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Evidence of some salt precipitate deposition at sample location in aerial imagery.

Remarks: Sample point located next to a standing water feature during an atypical storm season, evidence of surface water ponding but water has since evaporated and infiltrated from this particular location.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 1-31-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T1.3-updated

Investigator(s): M. Tyner-Valencourt, B. Felten, A. Tuggle Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.588918 Long: -117.097554 Datum: NAD 1983

Soil Map Unit Name: GoA - Grangeville fine sandy loam, 0 to 2 percent slopes NWI classification: E2SSPh

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ●	
Hydric Soil Present?	Yes ○	No ●	**Is the Sampled Area within a Wetland?** Yes ○ No ●
Wetland Hydrology Present?	Yes ○	No ●	

Remarks: Site historically supported tidal estuary habitat but was filled and bermed in mid-1850s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point located on upland area adjacent to depression at toe of berm on east side of Site.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Cylindropuntia prolifera*	40	Yes	Not Listed
2.			
3.			
4.			
5.			
Total Cover:	40 %		
Herb Stratum			
1. *Mesembryanthemum crystallinum*	60	Yes	FACU
2. *Erodium botrys*	5	No	FACU
3. *Hirschfeldia incana*	5	No	Not Listed
4.			
5.			
6.			
7.			
8.			
Total Cover:	70 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 20 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species	65	x 4 =	260
UPL species	45	x 5 =	225
Column Totals:	110 (A)		485 (B)

Prevalence Index = B/A = 4.41

Hydrophytic Vegetation Indicators:

- ● Dominance Test is >50%
- ● Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ○ No ●

Remarks: Standing dead Baccharis pilularis and Hirschfeldia incana present in shrub layer, also scattered live B. pilularis individuals, though none occurred in our sample plot.

SOIL

Sampling Point: T1.3-upd

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-17	10YR 4/3	100					Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No surface water observed in aerial imagery.

Remarks: No hydrology indicators observed.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 1-31-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T2.1

Investigator(s): M. Tyner-Valencourt, B. Felten, A. Tuggle Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): C - Mediterranean California Lat: 32.587237 Long: -117.097331 Datum: NAD 1983

Soil Map Unit Name: GoA - Grangeville fine sandy loam, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ●	
Hydric Soil Present?	Yes ○	No ●	**Is the Sampled Area within a Wetland?** Yes ○ No ○
Wetland Hydrology Present?	Yes ○	No ●	

Remarks: Site historically supported tidal estuary habitat but was filled and bermed in mid-1850s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point located on upland berm slope right before topographical transition to depression.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Mesembryanthemum nodiflorum*	50	Yes	FACU
2. *Species 1B*	35	Yes	
3. *Ambrosia psilostachya*	5	No	FACU
4.			
5.			
6.			
7.			
8.			
Total Cover:	90 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 10 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species	55	x 4 =	220
UPL species		x 5 =	0
Column Totals:	55 (A)		220 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

- ● Dominance Test is >50%
- ● Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ○ No ●

Remarks: Living vegetation made up of sprouting upland vegetation. In this community but outside of sample plot we observed live Cylindropuntia prolifera individuals sparsely distributed near top of berm. Also observed dead standing Baccharis pilularis in the shrub layer, and dead Mesembryanthemum crystallinum in the herb layer.

SOIL

Sampling Point: T2.1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-12	7.5YR 3/3	100					Loamy sand	
12-20	10YR 4/3	90	7.5YR 5/8	10			Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No surface water observed at sample location in aerial imagery.

Remarks: Observed surface features indicating water flows across surface in storm events. No wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 1-31-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T2.2-updated

Investigator(s): M. Tyner-Valencourt, B. Felten, A. Tuggle Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.587239 Long: -117.097476 Datum: NAD 1983

Soil Map Unit Name: GoA - Grangeville fine sandy loam, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ●	
Hydric Soil Present?	Yes ●	No ○	**Is the Sampled Area within a Wetland?** Yes ● No ○
Wetland Hydrology Present?	Yes ●	No ○	

Remarks: Site historically supported tidal estuary habitat but was filled and bermed in mid-1850s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point is located in a topographical depression at the toe of the berm slope on the east side of the Site.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Species 1B*	25	Yes	
2. *Mesembryanthemum nodiflorum*	20	Yes	FACU
3. *Ambrosia psilostachya*	10	Yes	FACU
4. *Bromus diandrus*	7	No	Not Listed
5. *Sarcocornia pacifica*	5	No	OBL
6. *Medicago polymorpha*	1	No	FACU
7.			
8.			
Total Cover:	68 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 32 % % Cover of Biotic Crust %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species	31	x 4 =	124
UPL species	7	x 5 =	35
Column Totals:	43 (A)		164 (B)

Prevalence Index = B/A = 3.81

Hydrophytic Vegetation Indicators:

- ● Dominance Test is >50%
- ● Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ○ No ●

Remarks: Patchy distribution of herbaceous species. Observed dead standing unidentified species in herb layer.

SOIL

Sampling Point: T2.2-upd

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-11	10YR 3/1	100					Silty clay loam	
11-19	10YR 3/2	90	5YR 3/4	10	C	M	Loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks: No hydric soil indicators observed. Soil pH measured at 8.1 (2/6/2017 at 10:45) and soil salinity measured at 16-20 microS (2/9/2017 at 15:00), may have inhibited the development of redox deposits given hydrological conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☒ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ◉	No ○	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 5

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No standing water observed in aerial imagery.

Remarks: Sample point located in topographical depression, surrounding area dry at the time of sampling but soil surface shows evidence of recent inundation. Observed some silt present on dead standing vegetation.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 1-31-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T2.3

Investigator(s): M. Tyner-Valencourt, B. Felten, A. Tuggle Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.587247 Long: -117.09765 Datum: NAD 1983

Soil Map Unit Name: GoA - Grangeville fine sandy loam, 0 to 2 percent slopes NWI classification: E2SSPh

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ●	
Hydric Soil Present?	Yes ○	No ●	**Is the Sampled Area within a Wetland?** Yes ○ No ○
Wetland Hydrology Present?	Yes ○	No ●	

Remarks: Site historically supported tidal estuary habitat but was filled and bermed in mid-1850s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point located on upland area to the west of the depressional area at the toe of the berm slope.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Mesembryanthemum crystallinum*	30	Yes	FACU
2. *Species 1B*	30	Yes	
3. *Mesembryanthemum nodiflorum*	20	Yes	FACU
4. *Erodium botrys*	5	No	FACU
5. *Medicago polymorpha*	2	No	FACU
6.			
7.			
8.			
Total Cover:	87 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 20 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species	57	x 4 =	228
UPL species		x 5 =	0
Column Totals:	57 (A)		228 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

- ● Dominance Test is >50%
- ● Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ○ No ●

Remarks: Sample point located in the transition to the upland community characterizing the bulk of the pond area of the site. Observed disturbed coastal sage scrub communities outside of sample plot that included Baccharis pilularis, B. salicifolia, Cylindropuntia prolifera, and Isocoma menziesii No hydrophytic vegetation present at sample location.

SOIL

Sampling Point: T2.3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-20	10YR 4/1	100					Loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ●

Remarks: No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ○	Depth (inches):
Water Table Present?	Yes ○	No ○	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ○	Depth (inches):

Wetland Hydrology Present? Yes ○ No ●

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No surface water observed in aerial imagery.

Remarks: No hydrology indicators observed.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 2-1-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T2.4

Investigator(s): M. Tyner-Valencourt, B. Felten Section, Township, Range: T18S R2W S20

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 35

Subregion (LRR): C - Mediterranean California Lat: 32.587527 Long: -117.105223 Datum: NAD 1983

Soil Map Unit Name: HuC - Huerhuero-Urban land complex, 2 to 9 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ●	
Hydric Soil Present?	Yes ○	No ●	**Is the Sampled Area within a Wetland?** Yes ○ No ●
Wetland Hydrology Present?	Yes ○	No ●	

Remarks: Site historically supported tidal estuary habitat but was filled and bermed in mid-1850s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point located on steep, west-facing slope of berm on west side of Site.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 100% % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	(A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ● Dominance Test is >50%
- ● Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ○ No ●

Remarks: No vegetation present.

SOIL

Sampling Point: T2.4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: Observed marine shell deposition on surface of berm indicating placement of fill material. Unable to dig a soil pit at this location given the high degree of soil compaction and steepness of slope.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ○	Depth (inches):
Water Table Present?	Yes ○	No ○	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ○	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No surface water observed in aerial imagery at this location.

Remarks: No hydrology indicators observed. Sampling site located on a steep slope. Surface soil cracks are present alongside evidence of erosion patterns, indicating flow of large volume of surface over this location during storm events.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 2-1-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T2.5-updated

Investigator(s): M. Tyner-Valencourt, B. Felten Section, Township, Range: T18S R2W S20

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.587534 Long: -117.105273 Datum: NAD 1983

Soil Map Unit Name: HuC - Huerhuero-Urban land complex, 2 to 9 percent slopes NWI classification: E2SBMx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ●	No ○	
Hydric Soil Present?	Yes ●	No ○	**Is the Sampled Area within a Wetland?** Yes ● No ○
Wetland Hydrology Present?	Yes ●	No ○	

Remarks: Site historically supported tidal estuary habitat but was filled and bermed in mid-1850s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point is located in floodplain of tidally-influenced Otay River tributary on western side of Site.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Batis maritima*	30	Yes	OBL
2.			
3.			
4.			
5.			
Total Cover:	30 %		
Herb Stratum			
1. *Sarcocornia pacifica*	110	Yes	OBL
2. *Frankenia salina*	30	Yes	FACW
3. *Limonium californicum*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
Total Cover:	145 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 0 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	140	x 1 =	140	
FACW species	35	x 2 =	70	
FAC species		x 3 =	0	
FACU species		x 4 =	0	
UPL species		x 5 =	0	
Column Totals:	175 (A)		210	(B)

Prevalence Index = B/A = 1.20

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ● No ○

Remarks: Very thick herbaceous and shrub salt marsh community

SOIL

Sampling Point: T2.5-upd

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-20	10YR 4/1	60	10YR 3/6	40	C	M	Clay	Root material present at 0-2 in.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ◯

Remarks: Strong salt smell when excavating soil pit.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☒ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ◯	No ◉	Depth (inches):
Water Table Present?	Yes ◉	No ◯	Depth (inches): 12
Saturation Present? (includes capillary fringe)	Yes ◯	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ◉ No ◯

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Tidal gauge data at NOAA Station 9410170 at sample time was approximately 1.86 ft, a local minimum for the day.

Remarks: No evidence of soil saturation but clay texture may inhibit degree of saturation.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 2-1-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T3.1

Investigator(s): M. Tyner-Valencourt, B. Felten Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR): C - Mediterranean California Lat: 32.586249 Long: -117.097531 Datum: NAD 1983

Soil Map Unit Name: LG-W - Lagoon water NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ●	
Hydric Soil Present?	Yes ○	No ●	**Is the Sampled Area within a Wetland?** Yes ○ No ●
Wetland Hydrology Present?	Yes ○	No ●	

Remarks: Site historically supported tidal estuary habitat but was filled and bermed in mid-1850s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point located on west-facing berm slope on east side of Site.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Mesembryanthemum crystallinum*	40	Yes	FACU
2. *Erodium botrys*	10	Yes	FACU
3. *Species 3A*	5	No	
4. *Species 1B*	5	No	
5.			
6.			
7.			
8.			
Total Cover:	60 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 40 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species	50	x 4 =	200
UPL species		x 5 =	0
Column Totals:	50 (A)		200 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

- ● Dominance Test is >50%
- ● Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ○ No ●

Remarks: Sample site representative of patchy distribution of herbaceous upland vegetation on inner berm slope.

SOIL

Sampling Point: T3.1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-9	10YR 3/2	100					Loamy Sand	
9-10	10YR 4/2	95	7.5YR 5/8	5	C	M	Loamy Sand	Coated sand grains redox type
10-20	10YR 2/2	100					Silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ●

Remarks: No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ●	Depth (inches):
Water Table Present?	Yes ○	No ●	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ●	Depth (inches):

Wetland Hydrology Present? Yes ○ No ●

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No surface water observed in aerial imagery.

Remarks: No hydrology indicators observed.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 2-1-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T3.2-updated

Investigator(s): M. Tyner-Valencourt, B. Felten Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Low-elevation terrace Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.586248 Long: -117.097592 Datum: NAD 1983

Soil Map Unit Name: LG-W - Lagoon water NWI classification: E2USNh

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ●	
Hydric Soil Present?	Yes ○	No ●	**Is the Sampled Area within a Wetland?** Yes ● No ○
Wetland Hydrology Present?	Yes ●	No ○	

Remarks: Site historically supported tidal estuary habitat but was filled and bermed in mid-1850s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point is located in a topographical depression at the toe of the berm slope that may serve as a floodplain for surface water that pools at an adjacent depression.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Mesembryanthemum nodiflorum*	95	Yes	FACU
2. *Mesembryanthemum crystallinum*	1	No	FACU
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	96 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 4 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species	96	x 4 =	384
UPL species		x 5 =	0
Column Totals:	96 (A)		384 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

- ● Dominance Test is >50%
- ● Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ○ No ●

Remarks: No hydrophytic vegetation community indicators observed.

SOIL

Sampling Point: T3.2-upd

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-10	10YR 3/1	100					Sandy loam	
10-14							Sandy clay loam	Lumber detritus obscuring layer
10-20	10YR 2/2	100					Clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: Soil profile is not entirely stratified based on texture, and lumber debris is present as a layer at this sample point. These conditions stem from historic fill placement. Soil pH measured at 8.3 (2/6/2017 at 11:00) and soil salinity measured at 30-35 microS (2/9/2017 at 15:15), may have inhibited the development of redox deposits given hydrological conditions.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ◉	No ○	Depth (inches): 11
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches): 10

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No surface water observed in aerial imagery.

Remarks: Sample site located near toe of slope, surface soil and vegetation evidence for recent inundation at sample location.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 2-1-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T3.3

Investigator(s): M. Tyner-Valencourt, B. Felten Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.58623 Long: -117.097682 Datum: NAD 1983

Soil Map Unit Name: LG-W - Lagoon water NWI classification: E2USNh

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ●	
Hydric Soil Present?	Yes ○	No ●	**Is the Sampled Area within a Wetland?** Yes ○ No ●
Wetland Hydrology Present?	Yes ○	No ●	

Remarks: Site historically supported tidal estuary habitat but was filled and bermed in mid-1850s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point located in upland area adjacent to topographical depression at toe of berm.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Mesembryanthemum nodiflorum*	30	Yes	FACU
2. *Species 1B*	5	Yes	
3. *Species 3A*	1	Yes	
4. *Species 3B*	1	Yes	
5. *Mesembryanthemum crystallinum*	1	Yes	FACU
6. *Erodium botrys*	2	Yes	
7.			
8.			
Total Cover:	40 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 60 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	6	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species	31	x 4 =	124
UPL species		x 5 =	0
Column Totals:	31 (A)		124 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

- ● Dominance Test is >50%
- ● Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ○ No ●

Remarks: No hydrophytic vegetation community indicators observed.

SOIL

Sampling Point: T3.3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-10	10YR 4/1	100					Sand	
10-20	10YR 3/1	99	7.5YR 3/4	1	C	M	Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No surface water observed in aerial imagery.

Remarks: No hydrology indicators observed.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 2-1-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T3.4

Investigator(s): M. Tyner-Valencourt, B. Felten Section, Township, Range: T18S R2W S20

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 12.5

Subregion (LRR): C - Mediterranean California Lat: 32.585807 Long: -117.10436 Datum: NAD 1983

Soil Map Unit Name: HuC - Huerhuero-Urban land complex, 2 to 9 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ○	No ●	
Hydric Soil Present?	Yes ○	No ●	**Is the Sampled Area within a Wetland?** Yes ○ No ●
Wetland Hydrology Present?	Yes ○	No ●	

Remarks: Site historically supported tidal estuary habitat but was filled and bermed in mid-1850s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample site is located on an unvegetated upland constructed slope along berm on west side of Site.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 100 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	(A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ● Dominance Test is >50%
- ● Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ○ No ●

Remarks: Sample location is unvegetated. No hydrophytic vegetation community indicators observed.

SOIL

Sampling Point: T3.4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: Unable to dig a sample pit due to the degree of soil compaction at this location. Observed marine invertebrate shells and debris on soil surface along berm, stemming from berm having been constructed with marine dredge material.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No surface water observed in aerial photos

Remarks: Surface soil cracks observed, but give the sample site elevation and slope we determined that cracks were due to water and wind erosion. No hydrology indicators observed.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 2-1-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T3.5-updated

Investigator(s): M. Tyner-Valencourt, B. Felten Section, Township, Range: T18S R2W S20

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.5858 Long: -117.104395 Datum: NAD 1983

Soil Map Unit Name: HuC - Huerhuero-Urban land complex, 2 to 9 percent slopes NWI classification: E2SBMx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ●	No ○	
Hydric Soil Present?	Yes ●	No ○	**Is the Sampled Area within a Wetland?** Yes ● No ○
Wetland Hydrology Present?	Yes ●	No ○	

Remarks: Site historically supported tidal estuary habitat but was filled and bermed in mid-1850s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample site is located on vegetated slope next to the tidally-influenced Otay River tributary located on the west side of the Site.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Batis maritima*	15	Yes	OBL
2.			
3.			
4.			
5.			
Total Cover:	15 %		
Herb Stratum			
1. *Sarcocornia pacifica*	110	Yes	OBL
2. *Distichlis littoralis*	60	Yes	OBL
3. *Frankenia salina*	20	Yes	OBL
4. *Limonium californicum*	5	No	FACW
5.			
6.			
7.			
8.			
Total Cover:	195 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 0 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	4	(A)
Total Number of Dominant Species Across All Strata:	4	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:		
OBL species	205	x 1 =	205	
FACW species	5	x 2 =	10	
FAC species		x 3 =	0	
FACU species		x 4 =	0	
UPL species		x 5 =	0	
Column Totals:	210 (A)		215	(B)

Prevalence Index = B/A = 1.02

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ● No ○

Remarks: Very thick salt marsh vegetation present.

SOIL

Sampling Point: T3.5-upd

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-20	10YR 4/1	65	10R 3/6	35	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ◯

Remarks: Sample pit located next to tidal channel in salt marsh community.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☒ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ◯	No ◉	Depth (inches):
Water Table Present?	Yes ◯	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ◯	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ◉ No ◯

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Tidal height measured at NOAA Station 9410170 at time of sample was recorded and verified at approximately 2.25 ft

Remarks: Sample pit located in immediate flooplain of tidal channel on west side of site. Sample was taken at low-to-mid tide, which may explain lack of water table observed in sample pit. At high tide we would expect a high water table and soil saturation near surface. Additionally, clay soils will inhibit soil saturation.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 7-6-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T3.7

Investigator(s): M. Tyner-Valencourt, A. Tuggle Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Flat upland Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.5861721 Long: -117.0987227 Datum: NAD 1983

Soil Map Unit Name: LG-W - Lagoon water NWI classification: E2SSP

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◯
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks: Site historically supported tidal estuary habitat but was filled and bermed in mid-1850s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during the summer following an above-average rainy season after 5+ years of severe drought.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Baccharis pilularis*	10	No	Not Listed
2. *Isocoma menziesii*	10	No	FAC
3. *Atriplex polycarpa*	2	No	FACU
4.			
5.			
Total Cover:	22 %		
Herb Stratum			
1. *Camissonia cheiranthifolia*	35	Yes	Not Listed
2. *Isocoma menziesii*	20	Yes	FAC
3. *Mesembryanthemum crystallinum*	1	No	FACU
4.			
5.			
6.			
7.			
8.			
Total Cover:	56 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum ____ % % Cover of Biotic Crust ____ %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	50.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species	30	x 3 =	90
FACU species	3	x 4 =	12
UPL species	45	x 5 =	225
Column Totals:	78 (A)		327 (B)

Prevalence Index = B/A = 4.19

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks: Vegetation community is not hydrophytic.

SOIL

Sampling Point: T3.7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
	10YR 5/3	100					Sand	Unable to determine if stratified

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: Could not collect and analyze a full soil core due to the dry, sandy nature of the soil, which collapsed on itself upon extraction from soil pit. No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No positive hydrology indicators observed.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 7-6-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T3.8-updated

Investigator(s): M. Tyner-Valencourt, A. Tuggle Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.5861703 Long: -117.0987998 Datum: NAD 1983

Soil Map Unit Name: LG-W - Lagoon water NWI classification: E2SSP

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◉	No ◯	**Is the Sampled Area within a Wetland?** Yes ◉ No ◯
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks: Site historically supported tidal estuary habitat but was filled and bermed in mid-1850s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during the summer following an above-average rainy season after 5+ years of severe drought.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Mesembryanthemum crystallinum*	150	Yes	FACU
2. *Atriplex prostrata*	15	No	FACW
3. *Isocoma menziesii*	15	No	FAC
4. *Bassia hyssopifolia*	1	No	FACU
5.			
6.			
7.			
8.			
Total Cover:	181 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum ____ % % Cover of Biotic Crust ____ %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	15	x 2 =	30
FAC species	15	x 3 =	45
FACU species	151	x 4 =	604
UPL species		x 5 =	0
Column Totals:	181 (A)		679 (B)

Prevalence Index = B/A = 3.75

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks: Isocoma menziesii is distributed primarily along the edges of the feature. Hydrophytic vegetation community not observed.

SOIL

Sampling Point: T3.8-upd

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture[3]	Remarks
0-7	7.5YR 3/4	90	7.5YR 5/8	10	C	M	Loamy Sand	Mottles at bottom of strata
7-13	10YR 6/1	88	7.5YR 5/8	12	C	M	Sand	Large patches of redox features

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☒ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ◯

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ◯	No ◉	Depth (inches):
Water Table Present?	Yes ◯	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ◯	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ◯ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology indicators observed

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 7-6-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T3.9-updated

Investigator(s): M. Tyner-Valencourt, A. Tuggle Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.5861797 Long: -117.098876 Datum: NAD 1983

Soil Map Unit Name: LG-W - Lagoon water NWI classification: E2SSP

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◉	No ◯	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◉ No ◯
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks: Site historically supported tidal estuary habitat but was filled and bermed in mid-1850s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during the summer following an above-average rainy season after 5+ years of severe drought.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1. *Isocoma menziesii*	40	Yes	FAC
2. *Baccharis pilularis*	5	No	Not Listed
3.			
4.			
5.			
Total Cover:	45 %		
Herb Stratum			
1. *Camissonia cheiranthifolia*	60	Yes	Not Listed
2. *Isocoma menziesii*	20	Yes	FAC
3. *Mesembryanthemum crystallinum*	5	No	FACU
4. *Cressa truxillensis*	1	No	FACW
5.			
6.			
7.			
8.			
Total Cover:	86 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum ____ % % Cover of Biotic Crust ____ %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	66.7 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	1	x 2 =	2
FAC species	60	x 3 =	180
FACU species	5	x 4 =	20
UPL species	65	x 5 =	325
Column Totals:	131 (A)		527 (B)

Prevalence Index = B/A = 4.02

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☐ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◉ No ◯

Remarks: Dominance test shows hydrophytic vegetation community present, based entirely on the presence of Isocoma menziesii in a low-diversity community of shrubs and herbaceous vegetation.

SOIL

Sampling Point: T3.9-upd

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
	7.5YR 4/2	100					Sand	Unable to determine if stratified

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: Could not collect and analyze a full soil core due to the dry, sandy nature of the soil, which collapsed on itself upon extraction from soil pit. No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology indicators present

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 7-6-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T3.10-updated

Investigator(s): M. Tyner-Valencourt, A. Tuggle Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Flat upland Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.5860887 Long: -117.0995126 Datum: NAD 1983

Soil Map Unit Name: LG-W - Lagoon water NWI classification: E2SSP

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◉	No ◯	**Is the Sampled Area within a Wetland?** Yes ◉ No ◯
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks: Site historically supported tidal estuary habitat but was filled and bermed in mid-1850s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during the summer following an above-average rainy season after 5+ years of severe drought.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Mesembryanthemum crystallinum*	45	Yes	FACU
2. *Unidentified Forb #1*	5	Yes	FAC
3. *Atriplex prostrata*	2	No	FACW
4. *Camissonia cheiranthifolia*	2	No	Not Listed
5. *Isocoma menziesii*	2	No	FAC
6. *Sarcocornia pacifica*	2	No	OBL
7.			
8.			
Total Cover:	58 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum ____ % % Cover of Biotic Crust ____ %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2	x 1 =	2
FACW species	2	x 2 =	4
FAC species	7	x 3 =	21
FACU species	45	x 4 =	180
UPL species	2	x 5 =	10
Column Totals:	58 (A)		217 (B)

Prevalence Index = B/A = 3.74

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks: One thriving Sarcocornia pacifica shrub surrounded by primarily disturbed upland vegetation.

SOIL

Sampling Point: T3.10-up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-5	10YR 4/2	70	2.5YR 4/8	20	C	M	Loamy sand	Concentrations of clay in matrix
5-6	10YR 2/2	95	10YR 5/6	5	C	M	Silty loam	
6-14	10YR 4/3	50	7.5YR 5/6	50	C	M	Loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☒ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks: Salt precipitate present in 0-2", clayey mix in 2-5"

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology indicators observed

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 7-6-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T3.11

Investigator(s): M. Tyner-Valencourt, A. Tuggle Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Upland Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.5860217 Long: -117.1004141 Datum: NAD 1983

Soil Map Unit Name: LG-W - Lagoon water NWI classification: E2SSP

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◯	No ◉	**Is the Sampled Area within a Wetland?** Yes ◯ No ◯
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks: Site historically supported tidal estuary habitat but was filled and bermed in mid-1850s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during the summer following an above-average rainy season after 5+ years of severe drought.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Mesembryanthemum crystallinum*	40	Yes	FACU
2. *Atriplex prostrata*	15	No	FACW
3. *Bassia hyssopifolia*	2	No	FACU
4. *Camissonia cheiranthifolia*	2	No	Not Listed
5. *Baccharis salicifolia*	1	No	FAC
6. *Erodium ssp.*	1	No	FAC
7.			
8.			
Total Cover:	61 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum ____ % % Cover of Biotic Crust ____ %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	15	x 2 =	30
FAC species	2	x 3 =	6
FACU species	42	x 4 =	168
UPL species	2	x 5 =	10
Column Totals:	61 (A)		214 (B)

Prevalence Index = B/A = 3.51

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks:

SOIL

Sampling Point: T3.11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
	10YR 3/2	100					Sand	Unable to determine if stratified

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: Could not collect and analyze a full soil core due to the dry, sandy nature of the soil, which collapsed on itself upon extraction from soil pit. No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology indicators observed.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 7-6-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T3.12-updated

Investigator(s): M. Tyner-Valencourt, A. Tuggle Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR): C - Mediterranean California Lat: 32.5859813 Long: -117.100457 Datum: NAD 1983

Soil Map Unit Name: LG-W - Lagoon water NWI classification: E2SSP

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◉	No ◯	**Is the Sampled Area within a Wetland?** Yes ◉ No ◯
Wetland Hydrology Present?	Yes ◯	No ◉	

Remarks: Site historically supported tidal estuary habitat but was filled and bermed in mid-1850s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during the summer following an above-average rainy season after 5+ years of severe drought.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Mesembryanthemum crystallinum*	110	Yes	FACU
2. *Bassia hyssopifolia*	10	No	FACU
3. *Atriplex prostrata*	5	No	FACW
4. *Unidentified Forb #1*	2	No	FACU
5. *Camissonia cheiranthifolia*	1	No	Not Listed
6.			
7.			
8.			
Total Cover:	128%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum ____ % % Cover of Biotic Crust ____ %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	5	x 2 =	10
FAC species		x 3 =	0
FACU species	122	x 4 =	488
UPL species	1	x 5 =	5
Column Totals:	128 (A)		503 (B)

Prevalence Index = B/A = 3.93

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks: Hydrophytic vegetation community not observed

SOIL

Sampling Point: T3.12-up

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-1	7.5YR 4/4	100					Loamy sand	
1-3	7.5YR 5/4	65	2.5YR 4/6	30	C	M	Loam	
			10YR 2/1	5	C	M		
3-7	2.5YR 5/1	65	10YR 5/8	20	C	M	Loam	
			2.5YR 2/1					
7-14	10YR 3/2	100					Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☒ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks: Salt precipitate present in 0-1"

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ○ No ◉

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology indicators observed

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 7-6-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T3.13

Investigator(s): M. Tyner-Valencourt, A. Tuggle Section, Township, Range: T18S R2W S21

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.5859229 Long: -117.1005228 Datum: NAD 1983

Soil Map Unit Name: LG-W - Lagoon water NWI classification: E2USNh

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ◉ No ◯ (If no, explain in Remarks.)

Are Vegetation ☐ Soil ☐ or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ◉ No ◯

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ◯	No ◉	
Hydric Soil Present?	Yes ◉	No ◯	**Is the Sampled Area within a Wetland?** Yes ◉ No ◯
Wetland Hydrology Present?	Yes ◉	No ◯	

Remarks: Site historically supported tidal estuary habitat but was filled and bermed in mid-1850s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during the summer following an above-average rainy season after 5+ years of severe drought.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum ____ % % Cover of Biotic Crust ____ %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 % (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	(A)		0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ◉ Dominance Test is >50%
- ◉ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ◯ No ◉

Remarks: No vegetation present

SOIL

Sampling Point: T3.13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-4	10YR 4/3	100					Sandy loam	
4-10	10 YR 2/1	30	2.5YR 5/4	60	C	M	Silty clay loam	Redox features occur in layers
10-13	GLEY 3/N	85	10YR 4/6	15	C	M	Silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☒ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ◯

Remarks: Salt precipitate present in 0-1"

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☒ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☐ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☒ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☒ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ◯	No ◉	Depth (inches):
Water Table Present?	Yes ◯	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ◯	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ◉ No ◯

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerial imagery shows area occasionally inundated and presence of salt crust.

Remarks: OHWM present, salt crust and evidence of water evaporation present.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 2-1-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T4.1

Investigator(s): M. Tyner-Valencourt, B. Felten Section, Township, Range: T18S R2W S20

Landform (hillslope, terrace, etc.): Localized depression Local relief (concave, convex, none): Convex Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.584132 Long: -117.104186 Datum: NAD 1986

Soil Map Unit Name: HuC - Huerhuero-Urban land complex, 2 to 9 percent slopes NWI classification: E2SBMx

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ●	No ○	
Hydric Soil Present?	Yes ●	No ○	**Is the Sampled Area within a Wetland?** Yes ● No ○
Wetland Hydrology Present?	Yes ●	No ○	

Remarks: Site historically supported tidal estuary habitat but was filled and bermed in mid-1850s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point is located in a freshwater wetland located at the mouth of the MS4 conveyance at the southwest corner of the Site. Vegetation was recently cleared for stormwater management.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
Total Cover:	%		
Sapling/Shrub Stratum			
1.			
2.			
3.			
4.			
5.			
Total Cover:	%		
Herb Stratum			
1. *Typha latifolia*	60	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	60 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 40 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
Total Number of Dominant Species Across All Strata:	1	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	60	x 1 =	60
FACW species		x 2 =	0
FAC species		x 3 =	0
FACU species		x 4 =	0
UPL species		x 5 =	0
Column Totals:	60 (A)		60 (B)

Prevalence Index = B/A = 1.00

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ● No ○

Remarks: Large arroyo willow (Salix lasiolepis) was removed for stormwater management within the sample location vegetation assessment plot. T. latifolia was cut and is beginning to resprout.

SOIL

Sampling Point: T4.1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-6	10YR 2/1	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- [ ] Histosol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [x] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5) (**LRR C**)
- [x] 1 cm Muck (A9) (**LRR D**)
- [ ] Depleted Below Dark Surface (A11)
- [ ] Thick Dark Surface (A12)
- [ ] Sandy Mucky Mineral (S1)
- [ ] Sandy Gleyed Matrix (S4)
- [ ] Sandy Redox (S5)
- [ ] Stripped Matrix (S6)
- [ ] Loamy Mucky Mineral (F1)
- [ ] Loamy Gleyed Matrix (F2)
- [ ] Depleted Matrix (F3)
- [ ] Redox Dark Surface (F6)
- [ ] Depleted Dark Surface (F7)
- [ ] Redox Depressions (F8)
- [ ] Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- [ ] 1 cm Muck (A9) (**LRR C**)
- [ ] 2 cm Muck (A10) (**LRR B**)
- [ ] Reduced Vertic (F18)
- [ ] Red Parent Material (TF2)
- [ ] Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes (●) No ( )

Remarks: Surface water and high water table prevented the collection of a high-integrity soil sample. Other hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- [x] Surface Water (A1)
- [x] High Water Table (A2)
- [ ] Saturation (A3)
- [ ] Water Marks (B1) (**Nonriverine**)
- [ ] Sediment Deposits (B2) (**Nonriverine**)
- [ ] Drift Deposits (B3) (**Nonriverine**)
- [ ] Surface Soil Cracks (B6)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Salt Crust (B11)
- [ ] Biotic Crust (B12)
- [ ] Aquatic Invertebrates (B13)
- [x] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Plowed Soils (C6)
- [ ] Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- [ ] Water Marks (B1) (**Riverine**)
- [ ] Sediment Deposits (B2) (**Riverine**)
- [ ] Drift Deposits (B3) (**Riverine**)
- [ ] Drainage Patterns (B10)
- [ ] Dry-Season Water Table (C2)
- [ ] Thin Muck Surface (C7)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Shallow Aquitard (D3)
- [ ] FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes (●)	No ( )	Depth (inches): 2
Water Table Present?	Yes (●)	No ( )	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes ( )	No (●)	Depth (inches):

Wetland Hydrology Present? Yes (●) No ( )

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Vegetation obscuring ground view in aerial imagery, unable to determine if surface water is present.

Remarks: Hydrology indicators present. Area located at mouth of of MS4 conveyance, water source attributed to this and other stormwater inputs from Palm Avenue.

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Wetlands Restoration of Salt Pond 20 City/County: San Diego, San Diego County Sampling Date: 2-1-2017

Applicant/Owner: San Diego Unified Port District State: CA Sampling Point: T4.2-updated

Investigator(s): M. Tyner-Valencourt, B. Felten Section, Township, Range: T18S R2W S20

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR): C - Mediterranean California Lat: 32.584108 Long: -117.104242 Datum: NAD 1983

Soil Map Unit Name: HuC - Huerhuero-Urban land complex, 2 to 9 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ○ No ● (If no, explain in Remarks.)

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ○ No ●

Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ●	No ○	
Hydric Soil Present?	Yes ○	No ●	**Is the Sampled Area within a Wetland?** Yes ● No ○
Wetland Hydrology Present?	Yes ●	No ○	

Remarks: Site historically supported tidal estuary habitat but was filled and bermed in mid-1850s for use as a salt evaporator pond, and has not been restored since. Delineation conducted on site during an above-average rainy season following 5+ years of severe drought. Sample point is located in the floodplain area adjacent to the stormwater-fed wetland and the southwest site boundary. Large felled willow tree has been placed on top of standing vegetation, obscuring vegetation cover assessments.

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Fraxinus pennsylvanica*	5	Yes	FACW
2.			
3.			
4.			
Total Cover:	5 %		
Sapling/Shrub Stratum			
1. *Salix lasiolepis*	70	Yes	FACW
2. *Ricinus communis*	10	No	FACU
3. *Fraxinus pennsylvanica*	5	No	FACW
4.			
5.			
Total Cover:	85 %		
Herb Stratum			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	%		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 0 % % Cover of Biotic Crust 0 %

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
Total Number of Dominant Species Across All Strata:	2	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	100.0 %	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	0
FACW species	80	x 2 =	160
FAC species		x 3 =	0
FACU species	10	x 4 =	40
UPL species		x 5 =	0
Column Totals:	90 (A)		200 (B)

Prevalence Index = B/A = 2.22

Hydrophytic Vegetation Indicators:

- ☒ Dominance Test is >50%
- ☒ Prevalence Index is ≤3.0[1]
- ☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ● No ○

Remarks: Thick layer of duff present, no herbaceous layer observed. Much of the observed litter may have been placed from vegetation removal activities elsewhere on site. One individual plant, a large, mature arroyo willow (Salix lasiolepis), was felled and placed on top of standing live vegetation in the habitat covered at this sample location prior to the delineation effort. This individual likely accounted for 60-70% of tree stratum cover when it stood.

SOIL

Sampling Point: T4.2-upd

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture[3]	Remarks
0-20	10YR 3/2	100					Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.
[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (**LRR C**)
- ☐ 1 cm Muck (A9) (**LRR D**)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[4]:

- ☐ 1 cm Muck (A9) (**LRR C**)
- ☐ 2 cm Muck (A10) (**LRR B**)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks: No hydric soil indicators observed.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1) (**Nonriverine**)
- ☐ Sediment Deposits (B2) (**Nonriverine**)
- ☒ Drift Deposits (B3) (**Nonriverine**)
- ☐ Surface Soil Cracks (B6)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Salt Crust (B11)
- ☐ Biotic Crust (B12)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Plowed Soils (C6)
- ☐ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ☐ Water Marks (B1) (**Riverine**)
- ☐ Sediment Deposits (B2) (**Riverine**)
- ☐ Drift Deposits (B3) (**Riverine**)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):
Water Table Present?	Yes ○	No ◉	Depth (inches):
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):

Wetland Hydrology Present? Yes ◉ No ○

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Surface water not observed in aerial imagery at this location.

Remarks: Downed willow was placed on top of existing standing and dead vegetation, confusing the interpretation of vegetation debris distribution. However, the sample location is located near a stormwater input area and in separate site assessments the area has been observed to be inundated during significant storm events.

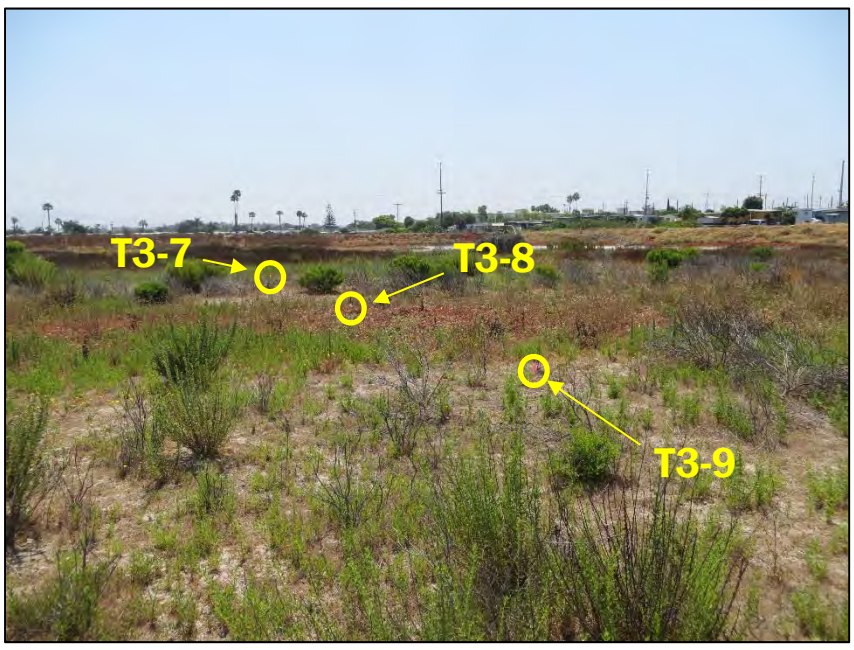
APPENDIX B: PHOTOLOG

CALIFORNIA COASTAL COMMISSION DELINEATION PHOTOGRAPHS

TRANSECT 3

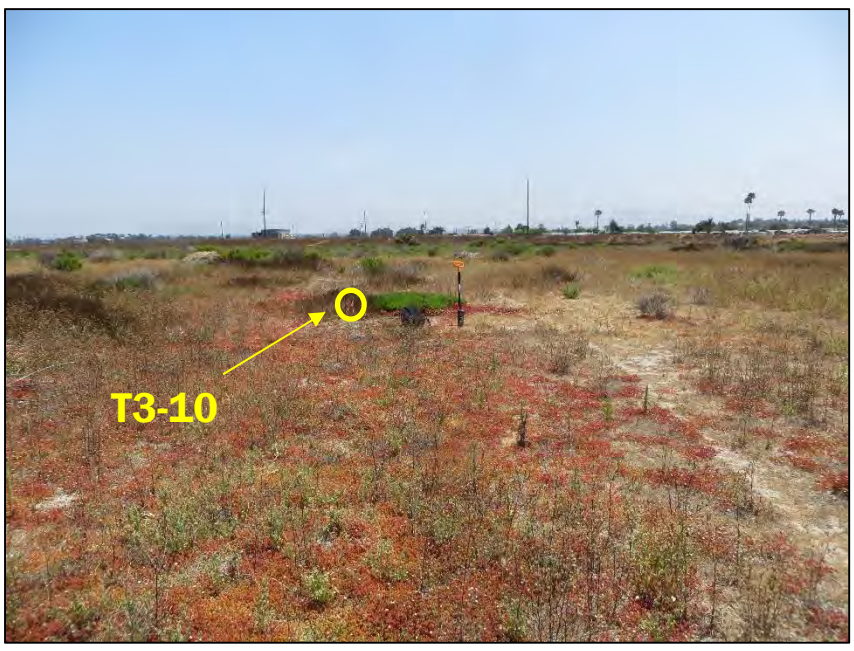
July 6, 2017

T3-7 to T3-9a

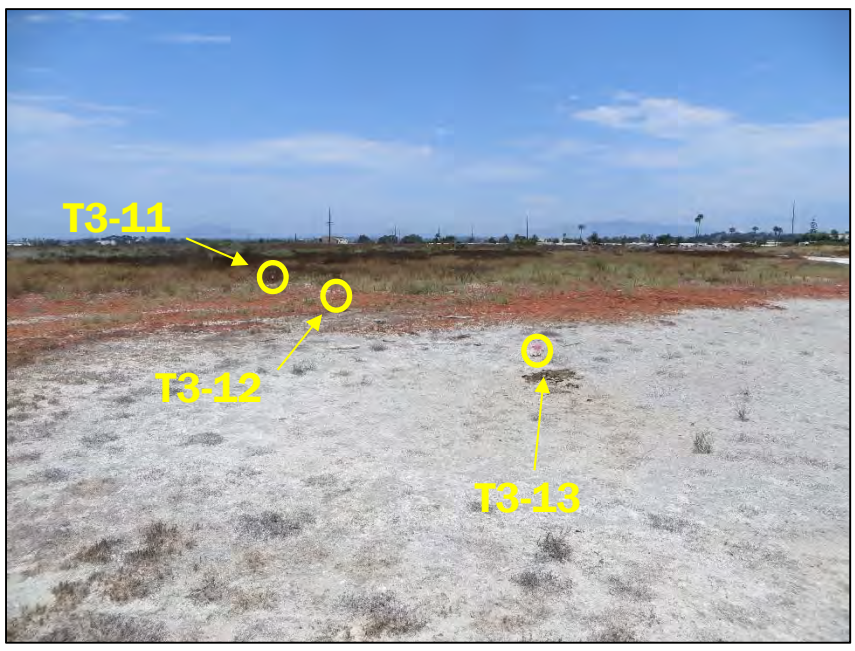


T3-7 to T3-9b

T3-10



T3-11 to T3-13



Hard Clay Pan underlying Salt Flats **Consolidated clay layer**

Inflow from Palm Avenue

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Appendix E. Sensitive Plant and Wildlife Species Tables

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Special Status Plant Species Evaluated for Potential to Occur within the Study Area

Special Status Plant Species Evaluated for Potential to Occur within the Study Area

Species	Sensitivity Status	Description	Potential to Occur
San Diego thorn-mint *Acanthomintha ilicifolia*	USFWS: FT CDFW: SE CRPR: 1B.1	Annual herb. Chaparral, coastal scrub valley and foothill grassland, vernal pools; clay soils; 30–3,150 ft. Blooming period: April–June	Absent. Suitable combination of soils and vegetation communities is absent.
Nuttall's Acmispon *Acmispon prostrates*	USFWS: None CDFW: None CRPR: 1B.1	Annual herb. Coastal dunes and sandy coastal scrub; 0–32 ft. Blooming period: March–July (synonym of Lotus nuttallianus)	Potential to occur in Isocoma mensiesii shrubland and Baccharis sarothroides shrubland Although species was not observed during rare plants surveys, those surveys were conducted during a multi-year drought and may not have germinated if present.
Singlewhorl Burrobrush *Ambrosia monogrya*	USFWS: None CDFW: None CRPR: 2B.2	Perennial shrub. Sandy soils in chaparral, coastal sage scrub, Sonoran desert scrub, and washes; 328–1,640 ft. Blooming period: August–November	Absent. Although potentially suitable habitat is present in Isocoma mensiesii shrubland and Baccharis sarothroides shrubland, this shrub was not observed during rare plants surveys,
San Diego ambrosia *Ambrosia pumila*	USFWS: FE CDFW: None CRPR: 1B.1	Perennial rhizomatous herb, Chaparral, coastal scrub, valley and foothill grassland, vernal pools; often disturbed, sometimes alkaline; 60–1,360 ft; Blooming period: May–October	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
Aphanisma *Aphanisma blitoides*	USFWS: None CDFW: None CRPR: 1B.2	Annual herb. Sandy soils in coastal bluff scrub, coastal dunes, and coastal scrub; 3–1,000 ft. Blooming period: March–June	Potential to occur in Isocoma mensiesii shrubland and Baccharis sarothroides shrubland. Although species was not observed during rare plants surveys, those surveys were conducted during a multi-year drought and may not have germinated if present.

Special Status Plant Species Evaluated for Potential to Occur within the Study Area

Species	Sensitivity Status	Description	Potential to Occur
Del Mar manzanita *Arctostaphylos glandulosa ssp. crassifolia*	USFWS: FE CDFW: None CRPR: 1B.1	Evergreen shrub; Maritime chaparral; sandy; <1,200 ft.; Blooming period: December – June	Absent. There is suitable habitat and the study area is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
Coastal dunes milk-vetch *Astragalus tener* var. *titi*	USFWS: FE CDFW: SE CRPR: 1B.1	Annual herb; Coastal bluff scrub, coastal dunes, coastal prairie; mesic, often vernally mesic; <170 ft Blooming period: March–May	Absent. Suitable habitat is absent.
Coulter's Saltbush *Atriplex coulteri*	USFWS: None CDFW: None CRPR: 1B.2	Perennial herb. Alkaline or clay soils in coastal bluff scrub, coastal dunes, coastal scrub, and grassland; 9–1,509 ft. Blooming period: March–October	Absent Substrates were not suitable and habitat for this perennial species may not have existed on site prior to historical disturbance.
Pacific Saltbush *Atriplex pacifica*	USFWS: None CDFW: None CRPR: 1B.2	Annual herb. Coastal bluff scrub, coastal dunes, coastal scrub, playas; 0–459 ft. Blooming period: March–October	Potential to occur in Isocoma mensiesii shrubland, Baccharis sarothroides shrubland and salt pan. Although species was not observed during rare plants surveys, those surveys were conducted during a multi-year drought and may not have germinated if present.
Parish's brittlescale *Atriplex parishii*	USFWS: None CDFW: None CRPR: 1B.1	Annual herb; Chenopod scrub, playas, vernal pools, alkaline; 80–6,300 ft ; Blooming period June–October	Absent. Suitable substrate is not present and study area is below known elevation range for the species.
Davidson's saltscale *Atriplex serenana* var. *davidsonii*	USFWS: None CDFW: None CRPR: 1B.2	Annual herb; Coastal bluff scrub, coastal scrub; alkaline; 30–650ftBlooming period: April–October	Absent. Suitable substrate is absent and study area is below the known elevation range of the species.

Special Status Plant Species Evaluated for Potential to Occur within the Study Area

Species	Sensitivity Status	Description	Potential to Occur
Golden-spined cereus *Bergerocactus emoryi*	USFWS: None CDFW: None CRPR: 2B.2	Shrub; Closed-cone conifer forest, chaparral, coastal scrub, sandy; 10–1,300 ft Blooming period May–June	Absent. There is suitable habitat and the survey area is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
Lewis's evening primrose *Camissoniopsis lewisii*	USFWS: None CDFW: None CRPR: 3	Annual herb: Coastal bluff scrub, cismontane woodland coastal dunes, coastal scrub, valley and foothill grassland; sandy or clay; <1,000 ft; Blooming period March –May (June)	Potential to occur in Isocoma mensiesii shrubland, Baccharis sarothroides shrubland and Bromus sp. semi-natural herbaceous stands. Although species was not observed during rare plants surveys, those surveys were conducted during a multi-year drought and may not have germinated if present.
Wart-stemmed ceanothus *Ceanothus verrucosus*	USFWS: None CDFW: None CRPR: 2B.2	Evergreen shrub; Chaparral; <1,250 ft Blooming period: December-May	Absent. Suitable habitat is absent.
Southern tarplant *Centromadia (=Hemizonia) parryi* ssp. *australis*	USFWS: None CDFW: None CRPR: 1B.1	Annual herb; Marshes and swamps (margins), valley and foothill grassland (vernally mesic), vernal pools, clay pan; <400; Blooming period: May–November	Absent. Suitable substrate absent. Clay pan absent.
Smooth tarplant *Centromadia (=Hemizonia) pungens* spp. *laevis*	USFWS: None CDFW: None CRPR: 1B.1	Annual herb. Chenopod scrub, meadows and seeps, playas, riparian woodland, valley and foothill grassland, alkaline; <1,580 ft: Blooming period April–September	Absent. Suitable substrate absent
Orcutt's Pincushion *Chaenactic glabriuscula* var. *orcuttiana*	USFWS: None CDFW: None CRPR: 1B.1	Annual herb. Sandy soils in coastal bluff scrub and coastal dunes; 0–328 ft. Blooming period: January–August	Absent. Suitable habitat absent.
Orcutt's spineflower *Chorizanthe orcuttiana*	USFWS: FE CDFW: SE CRPR: 1B.1	Annual herb; Maritime chaparral, closed-cone conifer forest, coastal scrub; <400 ft; Blooming period: March–May	Absent. The project site is located outside of the species known range.

Special Status Plant Species Evaluated for Potential to Occur within the Study Area

Species	Sensitivity Status	Description	Potential to Occur
Salt Marsh Bird's-Beak *Chloropyron maritimum* ssp. *maritimum*	USFWS: FE CDFW: SE CRPR: 1B.2	Hemiparasitic annual herb. Coastal dunes and coastal salt marshes and swamps; 0–98 ft. Blooming period: May–October (synonym of Cordylanthus maritimus ssp. maritimus)	Potential to occur in Salicornia subterminalis herbaceous alliance and Suaeda taxifolia shrubland. Although species was not observed during rare plants surveys, those surveys were conducted during a multi-year drought and may not have germinated if present.
San Diego sand aster *Corethrogyne filaginifolia* var. *incana*	USFWS: None CDFW: None CRPR: 1B.1	Perennial herb; Chaparral, coastal bluff scrub, coastal scrub; 10-380 ft; Blooming period June–September	Absent. There is suitable habitat and the project site is located within the elevation range for this species; however, this species would have been observed during the focused plant survey.
Del Mar Mesa sand aster *Corethrogyne filaginifolia* var. *linifolia*	USFWS: None CDFW: None CRPR: 1B.1	Perennial herb; Coastal bluff scrub, maritime chaparral (openings), coastal scrub; sandy; 10–380 ft Blooming period May-September	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
Snake Cholla *Cylindropuntia californica* var. *californica*	USFWS: None CDFW: None CRPR: 1B.1	Stem succulent. chaparral and coastal scrub, typically on xeric hillsides; 98–492 ft. Blooming period: April–May	Absent Suitable habitat (xeric hillside) absent.
Orcutt's bird's-beak *Dicranostegia orcuttiana*	USFWS: None CDFW: None CRPR: 2B.1	Annual herb; Coastal scrub; 30–1,150 ft ; Blooming period (Mar) April–July (Sept)/	Absent. The study area is below the known elevation range for the species.
Blochman's Dudleya *Dudleya blockmaniae* ssp. *blochmaniae*	USFWS: None CDFW: None CRPR: 1B.1	Perennial herb. Rocky, often clay or serpentine soils in coastal bluff scrub, chaparral, coastal scrub, and grassland; 16–1,476 ft. Blooming period: April–June	Absent. Suitable combination of vegetation communities and soil substrates is lacking.

Special Status Plant Species Evaluated for Potential to Occur within the Study Area

Species	Sensitivity Status	Description	Potential to Occur
Variegated dudleya *Dudleya variegate*	USFWS: None CDFW: None CRPR: 1B.2	Perennial herb; Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland, vernal pools; clay; <1,900; Blooming period April–June	Absent. Suitable substrate absent.
Sticky dudleya *Dudleya viscida*	USFWS: None CDFW: None CRPR: 1B.2	Perennial herb; Coastal bluff scrub, chaparral, coastal scrub; gabbroic soils/ rocky; 30–1,800 ft; May-June	Absent. Suitable substrate absent.
Hoover's button-celery *Eryngium aristulatum* var. *hooveri*	USFWS: None CDFW: None CRPR: 1B.1	Perennial herb; Vernal pools; 10-150 ft Blooming period: July	Absent. Although the project site is located within the elevation range for this species, there are no vernal pools on site.
San Diego button-celery *Eryngium aristulatum* var. *parishii*	USFWS: FE CDFW: SE CRPR: 1B.1	Perennial herb: San Diego mesas in mesic coastal scrub, valley and foothill grassland, vernal pools, 60–2,000 ft.; Blooming period: April–June	Absent. Study area is below the known elevation range for the species
Pendleton button-celery *Eryngium pendletonense*	USFWS: None CDFW: None CRPR: 1B.1	Perennial herb. Coastal bluff scrub, valley and foothill grassland, vernal pools; clay, vernally mesic; 50-360 ft.; Blooming period: April–June	Absent. Suitable substrates are absent.
Sand-loving wallflower *Erysimum ammophilium*	USFWS: None CDFW: None CRPR: 1B.2	Perennial herb; Maritime chaparral, coastal dunes, coastal scrub; sandy, openings; <200 Blooming period: February–June	Absent. The study area is outside of the known range of the species.
Cliff spurge *Euphorbia misera*	USFWS: None CDFW: None CRPR: 2B.2	Shrub; Coastal bluff scrub, coastal scrub, Mojavean desert scrub; rocky; 30–1,650 ft.; Blooming period: December–August	Absent. Suitable substrates are absent.
San Diego barrel cactus *Ferocactus viridescens*	USFWS: None CDFW: None CRPR: 2B.1	Perennial stem succulent; Chaparral, coastal scrub, valley and foothill grassland, vernal pools; <1,500 ft; May June	Absent. There is potentially suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.

Special Status Plant Species Evaluated for Potential to Occur within the Study Area

Species	Sensitivity Status	Description	Potential to Occur
Campbell's liverwort *Geothallus tuberosus*	USFWS: None CDFW: None CRPR: 1B.1	Ephemeral liverwort; Coastal scrub (mesic), vernal pools; 30–2,000 ft.	Absent. There is potentially suitable habitat within the study area however, this species was not observed during focused plant surveys.
Beach Goldenaster *Heterotheca sessiliflora* ssp. *sessiliflora*	USFWS: None CDFW: None CRPR: 1B.1	Perennial herb. beaches, Coastal chaparral, dunes, and coastal scrub; 0–4,018 ft. Blooming period: March–December	Potential to occur in Isocoma menzessii and Baccharis sarathroides shrublands. .Although species was not observed during rare plants surveys, those surveys were conducted during a multi-year drought and may not have germinated if present.
Decumbent Goldenbush *Isocoma menziesii* var. *decumbens*	USFWS: None CDFW: None CRPR: 1B.2	Shrub. Chaparral and in sandy coastal scrub, often in sandy disturbed areas; 33–443 ft. Blooming period: April–November	Not expected to occur. Although potentially suitable habitat is present in Isocoma mensiesii shrubland and Baccharis sarothroides shrubland within the proposed mitigation site this shrub was not observed during rare plants surveys,
San Diego marsh-elder *Iva hayesiana*	USFWS: None CDFW: None CRPR: 2B.2	Perennial herb; Marshes and swamps, playas; 30–1,650 ft.; Blooming period April–November/	Absent. The study area is below the known elevation range for the species.

Special Status Plant Species Evaluated for Potential to Occur within the Study Area

Species	Sensitivity Status	Description	Potential to Occur
Coulter's goldfields *Lasthenia glabrata* ssp. *coulteri*	USFWS: None CDFW: None CRPR: 1B.1	Annual herb; Saltwater marsh and swamps, playas, vernal pools; <4,000 ft.; Blooming period February–June	Potential to occur in Salicornia subterminalis herbaceous alliance, Suaeda taxifolia shrubland, openings in Mesembryanthemum-semi-natural herbaceous stands and salt pond bottom. Although species was not observed during rare plants surveys, those surveys were conducted during a multi-year drought and may not have germinated if present.
Sea dahlia *Leptosyne maritima*	USFWS: None CDFW: None CRPR: 2B.2	Perennial herb; Coastal bluff scrub, coastal scrub; 16-492 ft.; Blooming period March–May	Absent. There is suitable habitat and the project site is located within the elevation range for this species. However, this species would have been observed during the focused plant survey.
Little mousetail *Myosurus minimus* ssp. *apus*	USFWS: None CDFW: None CRPR: 3.1	Annual herb; Vernal pools, valley and foothill grassland, alkaline; 60-2,100 ft.; Blooming period March-June	Absent. Suitable substrates absent.
Mud nama *Nama stenocarpum*	USFWS: None CDFW: None CRPR: 2B.2	Annual/ Perennial Herb; Marshes and swamps (lake margins, riverbanks); 15-1,650 ft., January–July	Absent. Suitable freshwater habitat is absent.
Coast Woolly-heads *Nemacaulis denudata* var. *denudata*	USFWS: None CDFW: None CRPR: 1B.2	Annual herb. Coastal dunes; 0–328 ft. Blooming period: April–September	Absent. No dunes present.
California Orcutt grass *Orcuttia californica*	USFWS: FE CDFW: SE CRPR: 1B.1	Annual herb; Vernal pools; 50-2,200 ft.; Blooming period April–August	Absent. Suitable habitat is absent and the study area occurs below the known elevation range of the species.

Special Status Plant Species Evaluated for Potential to Occur within the Study Area

Species	Sensitivity Status	Description	Potential to Occur
South coast branching phacelia *Phacelia remosissima* var. *austrolitoralis*	USFWS: None CDFW: None CRPR: 3.2	Perennial herb; Chaparral, coastal dunes, coastal scrub, coastal salt marshes and swamps; sandy, sometimes rocky; 20-1,000 ft.; March–August	Absent. There is suitable habitat within the study area however, this species would have been observed during the focused plant survey.
Brand's star phacelia *Phacelia stellaris*	USFWS: None CDFW: None CRPR: 1B.1	Annual herb: Coastal dunes, coastal scrub; <1,300 ft; Blooming period March-June	Potential to occur in Isocoma mensiesii shrubland and Baccharis sarothroides shrubland. Although species was not observed during rare plants surveys, those surveys were conducted during a multi-year drought and may not have germinated if present
Nuttall's scrub oak *Quercus dumosa*	USFWS: None CDFW: None CRPR: 1B.1	Evergreen shrub; Chaparral, coastal scrub, closed-cone coniferousforest; sandy, clay loam; 50–1,300 ft., Blooming period February–April/	Absent. The project site is below the known elevation range for the species and it would have been observed during the focused plant survey if present.
Chaparral Ragwort *Senecio aphanactis*	USFWS: None CDFW: None CRPR: 2B.2	Annual herb. dry open rocky areas in chaparral, Cismontane woodland and coastal scrub, and alkaline flats; 49–2,624 ft. Blooming period: January–April	Not expected to occur. No suitable substrate.
Estuary Seablite *Suaeda esteroa*	USFWS: None CDFW: None CRPR: 1B.2	Perennial herb. Coastal salt marshes and swamps; 0–16 ft. Blooming period: May–January	Potential to occur within Salicornia subterminalis herbaceous alliance and Suaeda taxifolia shrubland. Although species was not observed during rare plants surveys, those surveys were conducted during a multi-year drought and may not have germinated if present. This species has been observed on the north facing Pond 20 berm that abuts the Otay River and within the lower reach of

Special Status Plant Species Evaluated for Potential to Occur within the Study Area

Species	Sensitivity Status	Description	Potential to Occur
			Nestor Creek within the adjacent Otay River Restoration Poseidon Project mitigation site.
Coastal triquetrella *Triquetrella californica*	USFWS: None CDFW: None CRPR: 1B.2	Moss; Coastal bluff scrub, coastal scrub; 30–330 ft.	Absent. The study area is below the known elevation range for the species and it would have been observed during the focused plant survey if present.

Sensitivity Status

United States Fish and Wildlife Service (USFWS): FC=Federal Candidate for Listing; FE=Federally Listed Endangered; FT=Federally Listed Threatened

California Department of Fish and Wildlife (CDFW): SE=State Listed Endangered

California Rare Plant Ranking (CPRP):

1B: Plants Rare, Threatened, or Endangered in California and Elsewhere

The plants of Rank 1B are rare throughout their range with the majority of them endemic to California. Most of the plants that are ranked 1B have declined significantly over the last century. California Rare Plant Rank 1B plants constitute the majority of plant taxa tracked by the CNDDB, with more than 1,000 plants assigned to this category of rarity.

2B: Plants Rare, Threatened, or Endangered in California, but More Common Elsewhere

The plants of Rank 2B are rare, threatened or endangered in California, but more common elsewhere. Plants common in other states or countries are not eligible for consideration under the provisions of the Federal Endangered Species Act; however, they are eligible for consideration under the California Endangered Species Act. This rank is meant to highlight the importance of protecting the geographic range and genetic diversity of more widespread species by protecting those species whose ranges just extend into California. Note: Plants of both Rank 1B and 2B are rare, threatened or endangered in California; the only difference is the status of the plants outside of the state.

3: Need more information

Threat Ranks:

The CRPR use a decimal-style threat rank. The threat rank is an extension added onto the CRPR and designates the level of threats by a 1 to 3 ranking with 1 being the most threatened and 3 being the least threatened. Most CRPRs read as 1B.1, 1B.2, 1B.3, etc. Note that some Rank 3 plants do not have a threat code extension due to difficulty in ascertaining threats. Rank 1A and 2A plants also do not have threat code extensions since there are no known extant populations in California.

Special Status Wildlife Species Evaluated for Potential to Occur within the Study Area

Special-Status Wildlife Species Evaluated for Potential to Occur within the Study Area

Species	Sensitivity Status	Description	Potential to Occur
		Invertebrates	
San Diego Fairy Shrimp *Branchinecta sandiegonensis*	USFWS: FE CDFW: None	Small, shallow vernal pools. Occasionally occur in ditches and roadruts with suitable conditions. Have never been found in permanent water bodies.	Not expected to occur. Highly saline soils not suitable to support the pooling duration and freshwater conditions required for this species.
		Fish	
Steelhead-southern California DPS *Oncorhynchus mykiss irideus* pop. 10	USFWS: FE CDFW: None	Includes naturally spawned anadromous steelhead originating below natural and manmade impassable barriers from the Santa Maria River to the U.S.-Mexico Border. Spawning habitat = gravel-bottomed, fast-flowing, well-oxygenated rivers and streams. Non-spawning = estuarine, marine waters (NOAA 2019).	Not expected to occur. Suitable habitat spawning habitat is not present. Suitable habitat for migration occurs in Otay River Tributary and Nester Creek, however both creeks terminate at storm drain outlets just south of the proposed project. Connectivity to freshwater tributaries containing suitable spawning habitat does not occur.
		Birds	
Burrowing Owl *Athene cunicularia*	USFWS: None CDFW: SSC	Nesting habitat includes open areas with mammal burrows, including rolling hills, grasslands, fallow fields, sparsely vegetated desert scrub, vacant lots and human disturbed lands. Soils must be friable for burrows.	~~Known to occur.~~ An individual was observed within Pond 20 north of the Bank Parcel on one occasion during project specific surveys conducted between 2017-2018. One breeding record (June 2017) and periodic observations of single individuals have been made within Pond 20 during the San Diego Bay avian species surveys, although precise locations within the Pond 20 survey cell are not available. Therefore, it is likely that the study area regularly supports wintering and/or migrating burrowing owl and may have supported breeding pair in 2017. Low to moderately low quality ~~Suitable~~ nesting habitat ~~is~~ occurs ~~present~~within the Bank Parcel on the ~~pond~~ berms and in areas of open grassland (or other herbaceous annuals) and on Parcels A, B and C. ~~at the site. Most~~Much of the ~~site~~ study area provides low-quality suitable habitat for foraging.

Special-Status Wildlife Species Evaluated for Potential to Occur within the Study Area

Species	Sensitivity Status	Description	Potential to Occur
Short-eared owl *Asio flammeus*	USFWS: None CDFW: SSC	Open areas with few trees, such as grasslands, prairies, dunes, meadows, irrigated lands, saline and fresh emergent wetlands. Breeds in coastal areas in Del Norte and Humboldt Counties, San Francisco Bay Delta, northeastern Modoc plateau, east side of Sierra Nevada from Lake Tahoe south to Inyo County, and San Joaquin Valley. Uncommon winter migrant in Southern California, and widespread during winter in Central Valley and coastline.	Potential to occur as winter migrant only.
Brant *Branta bernicla* (wintering and staging)	USFWS: None CDFW: SSC	Breeding habitat includes the edges of salt marshes in the low Arctic Region. Migratory habitats include shallow marine lakes. Winter range includes intertidal mudflats.	Potential to forage in Otay River Tributary and Nestor Creek (which are associated with Parcels A and C, the berm breach site and the Bank Parcel outside of the Bank Site) during winter~~.~~
Western Snowy Plover *Charadrius alexandrinus nivosus*	USFWS: FT CDFW: SSC, FP	Coastal populations nest on dune-backed beaches, sand spits, beaches at creeks and river mouths, and salt pans at lagoons and estuaries. Inland populations nest along barren to sparsely vegetated flats and along shores of alkaline and saline lakes, reservoirs, ponds, braided river channels, agricultural wastewater ponds, and salt evaporation ponds. Inland nesting areas occur at the Salton Sea, Mono Lake, and at isolated sites on the shores of alkali lakes in northeastern California, in the Central Valley, and southeastern deserts.	Openings in the iceplant mat in the northwestern portion of the Bank Parcel (within the Bank Site) supports breeding western snowy plover (one nest in 2004, two nests in 2012, one nest in 2014, three nests each in 2016 through 2018, at least two nests in 2019, and four nests in 2020. The berm breach site and Parcel A also support moderate quality foraging and breeding habitat. The tidal portions of Nestor Creek within the Bank Parcel support moderate quality foraging habitat ~~Known to occur. Observed nesting within Pond 20 during 2016-2017 avian surveys.~~
Black tern *Chlidonias niger* (nesting colony)	USFWS: None CDFW: SSC	Freshwater marsh with emergent vegetation; in the Central Valley primarily breed and forage in rice fields and other flooded agricultural fields with weeds and other residual aquatic vegetation.	Potential to forage in Otay River Tributary and Nestor Creek (which are associated with Parcel A and C, the berm breach site and the Bank Parcel outside of the Bank Site).

Special-Status Wildlife Species Evaluated for Potential to Occur within the Study Area

Species	Sensitivity Status	Description	Potential to Occur
Northern Harrier *Circus cyaneus* (nesting)	USFWS: None CDFW: SSC	Nest on the ground in patches of dense, tall vegetation in undisturbed areas. Breed and forage in variety of open habitats such as marshes, wet meadows, weedy borders of lakes, rivers and streams, grasslands, pastures, croplands, sagebrush flats and desert sinks.	Observed foraging within the study area during 2016-2017 avian surveys. Suitable forage and nesting habitat present in the upland portions of the study area including the Bank Parcel, berm breach site, and Parcels A, B, and C.~~Marginal nesting habitat present.~~
Clark's marsh wren *Cistothorus palustris clarkae*	USFWS: None CDFW: SSC	Narrowly distributed along the coast of Southern California. Restricted to freshwater and brackish marshes dominated by bulrushes or cattails.	Low potential to occur (foraging). Observed within Otay River and San Diego Bay coastline west of the site during surveys for the adjacent ORERP. No nesting habitat occurs within the study area; however suitable foraging habitat is present.
Yellow warbler *Dendroica petechial brewsteri* (nesting)	USFWS: None CDFW: SSC	Nests in lowland and foothill riparian woodlands dominated by cottonwoods, alders, and willows; winters in a variety of habitats.	Low potential to occur within the study area. Marginal nesting habitat occurs at the upstream end of the Otay River Tributary (Salix shrubland) and suitable foraging habitat occurs within the study area.
White-tailed kite *Elanus leucurus*	USFWS: None CDFW: FP (nesting)	Occurs in herbaceous and open stages of valley lowland habitats, usually near agricultural land. Forages in undisturbed, open grasslands, savannah-like habitats, agriculture, wetlands, oak woodlands, riparian. Forages in undisturbed, open grasslands, meadows, farmlands and emergent wetlands (CWHR 2005). Typically nest in the upper third of trees that may be 10–160 feet tall. These can be open-country trees growing in isolation, or at the edge of or within a forest (Cornell 2017).	Potential to occur (foraging).
Yellow-breasted chat *Icteria virens* (nesting)	USFWS: None CDFW: SSC	Nest in early-successional riparian habitats with a well-developed shrub layer and an open canopy. Restricted to narrow border of streams, creeks, sloughs and rivers. Often nest in dense thicket plants such as blackberry and willow (Shuford 2008).	Low potential to occur within the study area. Marginal nesting habitat occurs at the upstream end of the Otay River Tributary (Salix shrubland) and suitable foraging habitat occurs within the study area.

Special-Status Wildlife Species Evaluated for Potential to Occur within the Study Area

Species	Sensitivity Status	Description	Potential to Occur
Western gull-billed tern *Gelochelidon nilotica vanrossemi* (nesting colony)	USFWS: BCC CDFW: SSC	Nests on protected spits, berms, and islands composed of sand or other small material. Forages primarily in freshwater ponds and flooded agricultural fields. Forages for small fish, crayfish, lizards, butterflies, beetles, crickets, weevils, and occasionally the young chicks of other shorebirds.	High potential for nesting colony to occur within the Bank Parcel, the berm breach site, and Parcel A. Potential to forage in Otay River Tributary and Nestor Creek, which are associated with Parcel C, the berm breach site, and the Bank Parcel outside of the Bank Site).~~Potential to forage in Otay River Tributary and Nestor Creek.~~
Bald eagle *Haliaeetus leucocephalus* (wintering)	USFWS: FD CDFW: SE	Nests in large, old-growth, or dominant live tree with open branchwork, especially ponderosa pine. Requires large bodies of water or rivers with abundant fish, and adjacent snags. Permanent resident, and uncommon winter migrant, now restricted to breeding mostly in Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity cos. About half of the wintering population is in the Klamath Basin (CWHR 1999).	Low potential to occur (foraging and wintering)
Loggerhead shrike *Lanius ludovicianus*	USFWS: None CDFW: SSC	Inhabits open country with short vegetation, pastures, old orchards, riparian areas, and open woodlands. Highest density occurs in open-canopied valley foothill hardwood, valley foothill hardwood-conifer, valley foothill riparian, pinyon-juniper, juniper, desert riparian, and Joshua tree habitats. Occurs only rarely in heavily urbanized areas, but often found in open cropland. Breed in shrublands or open woodlands with a fair amount of grass cover and areas of bare ground (Shuford 2008)	~~Observed within the study area~~ Known to forage in the study area. One individual observed within the study area during 2016-2017 bay-wide avian surveys.

Special-Status Wildlife Species Evaluated for Potential to Occur within the Study Area

Species	Sensitivity Status	Description	Potential to Occur
Belding's Savannah Sparrow *Passerculus sandwichensis beldingi*	USFWS: None CDFW: SE	Coastal salt marshes. Associated with dense pickleweed, particularly Salicornia virginica, for nesting	Known to roost occasionally within the Bank Site. High potential to breed in pickleweed marsh ~~occur. Observed during 2016-2017 avian surveys. Limited suitable nesting and foraging habitat occurs within the waterways~~ associated with ~~(~~Otay River T~~t~~ributary and Nestor Creek outside of the Bank Site, on Parcel A and C and within the berm breach site~~). Known to nest north and outside of the study area within Otay River.~~
Large-billed savannah sparrow *Passerculus sandwichensis rostratus* (wintering)	USFWS: None CDFW: SSC	A nonbreeding visitor to the southern coast from late August to early March, and at the Salton Sea from late July to mid-February. Typically found among saltmarsh, beaches, kelp wracks, wharves, docks, and city streets. Occasionally found among freshwater marshes. At the Salton Sea they occur just back from the shoreline in low halophytic scrub (Shuford 2008).	Potential to occur during winter due to presence of suitable habitat in Otay river Tributary and Nestor Creek.
California gnatcatcher *Polioptila California californica*	USFWS: FT CDFW: SSC	Year-round resident that occurs in coastal sage scrub. Prefers open sage scrub with California sagebrush as a dominant or co-dominant species. More abundant near sage scrub-grassland interface than where sage scrub grades into chaparral	Known to utilize the Bank Site for foraging during the nonbreeding season. Two individuals were observed within the northeast corner of the Bank Site in Menzie's goldenbush scrub on September 15, 2020. Additional occurrences were recorded just north of the project site on three separate occasions between August 26, 2020 and September 16, 2020. The Bank Site supports moderate quality foraging habitat and low-~~-~~quality nesting habitat.

Special-Status Wildlife Species Evaluated for Potential to Occur within the Study Area

Species	Sensitivity Status	Description	Potential to Occur
Light-footed Ridgway's Rail *Rallus obsoletus levipes*	USFWS: FE CDFW: SE, FP	Coastal salt marshes, lagoons, and their maritime environs from Santa Barbara County south past San Diego into Baja California. Require shallow water and mudflats for foraging, with adjacent higher vegetation for cover during high tide	Low p~~P~~otential to occur. Low potential for nesting and foraging in salt marsh habitats along Nestor Creek and the Otay River Tributary within the Bank Parcel but outside of the Bank Parcel where~~.~~ v~~V~~ery little cordgrass is present. The ~~except at~~ north terminus of the Otay River Tributary at the breach site has a high potential to support Ridgway's (light-footed) rail based on salt marsh characteristics and historic monitoring data. Specifically, ~~Individual observed in~~in the Otay River north of the Bank Parcel ~~and outside of the study area~~ supports breeding Ridgway's rail. Specifically, single pairs of rails detected in 2011, 2012, 2014 and 2015 in the vicinity of the Bayshore Bikeway Bridge bike trail approximately 50 feet from the berm breach site.~~during surveys for the Poseidon ORERP (Poseidon ORERP FEIR).~~
Black Skimmer *Rynchops niger* (nesting colony)	USFWS: BCC CDFW: SSC	Nests on barrier beaches, shell banks, spoil islands, and salt marsh; forages over open water; roosts on sandy beaches and gravel bars.	Known to roost within the study area. Observed during 2016-2017 avian surveys. Marginal nesting and roosting habitat occur in Nestor Creek and Otay River Tributary.
California Least Tern *Sternula antillarum browni*	USFWS: FE, FP CDFW: SE, FP	Nest and roost in colonies on open beaches, forage near shore ocean waters and in shallow estuaries ad lagoons	Low potential for foraging along the Otay River Tributary and Nestor Creek due to small size and shallow conditions. Low potential for nesting in the sparsely vegetated areas on berms and basin bottom within the Bank Parcel. Terns of various species were observed foraging in the Otay River just to the north of the study area during the 2016-2017 bay-wide avian surveys.~~Low potential to occur. The sparsely vegetated areas within Pond 20 may be suitable for nesting. The Otay River Tributary and Nestor Creek provide low quality foraging areas due to small size and shallow conditions.~~

Special-Status Wildlife Species Evaluated for Potential to Occur within the Study Area

Species	Sensitivity Status	Description	Potential to Occur
Least Bell's Vireo *Vireo bellii pusillus*	USFWS: FE CDFW: SE	Obligate riparian breeder. Cottonwood willow, oak woodlands, and mule fat scrub along watercourses	Not expected to occur. Riparian habitat patch is too small to support breeding.
Reptiles			
Southern California legless lizard *Anniella stebbinsi*	USFWS: None CDFW: SSC	Little is known about this species. Information is based on Anniella pulchra before it was split into five species. Current known range is cismontane southern California and the Mojave Desert portion of Kern County. Occurs in sparsely vegetated areas of beach dunes, chaparral, pine-oak woodland, desert scrub, sandy washes, and stream terraces. Originally known to occur throughout Southern California south of the Transverse Ranges into northern Baja California. Mexico	Not expected to occur. Suitable habitat not present, highly saline areas unsuitable.
California Glossy Snake *Arizona elegans occidentalis*	USFWS: None CDFW: SSC	Ranges in the cismontane portion of southern California, the southern portion of the central coast ranges, and in isolated pockets up to the Alameda and San Joaquin County border. Generally found in open desert, grasslands, shrublands, chaparral, and woodlands. Some evidence of open and sandy habitat preference exists, but specific habitat requirements for this species aren't known.	Not expected to occur. Suitable habitat not present, highly saline areas unsuitable.
Orange-throated whiptail *Aspidoscelis hyperythra*	USFWS: None CDFW: SSC	Found from sea level to about 2,000 feet in elevation in semi-arid brushy areas typically with loose soil and rocks, including washes, streamsides, rocky hillsides, coastal sage scrub, chaparral, grassland, juniper and oak woodland (Nafis 2019).	Moderate potential to occur. Presence of sandy soils and Isocoma scrub habitat.

Special-Status Wildlife Species Evaluated for Potential to Occur within the Study Area

Species	Sensitivity Status	Description	Potential to Occur
Green sea turtle *Chelonia mydas*	USFWS: FT CDFW: None	Green turtles are generally found in fairly shallow waters (except when migrating) inside reefs, bays, and inlets. The turtles are attracted to lagoons and shoals with an abundance of marine grass and algae. Open beaches with a sloping platform and minimal disturbance are required for nesting. Green turtles have strong nesting site fidelity and often make long distance migrations between feeding grounds and nesting beaches. Hatchlings have been observed to seek refuge and food in Sargassum rafts.	Not expected to occur. Historically found in the San Diego Bay, outside of the project site. Potentially suitable nesting habitat is not present.
Coast Horned Lizard *Phyrnosoma blainvillii*	USFWS: None CDFW: SSC	Occurs in valley-foothill hardwood, conifer and riparian habitats, as well as in pine-cypress, juniper and annual grassland habitats. Ranges up to 4,000 ft. (1,219 m.) in the Sierra Nevada foothills, and up to 6,000 ft. (1,800 m.) in the mountains of southern California	Not likely to occur. Suitable habitat not present; no harvester ants were observed and highly saline areas unsuitable.
Two-striped gartersnake *Thamnophis hammondii*	USFWS: None CDFW: SSC	Ranges in cismontane Southern California with some occurrences in Monterey and San Luis Obispo Counties and southern San Benito County. Generally found in or near permanent and intermittent freshwater streams, creeks, and pools, as well as stock ponds and other artificial aquatic habitats bordered by dense vegetation. Associated habitat include willow, oak woodlands, chaparral, brushland and coniferous forest from sea level to 8,000 feet elevation (Thomson et al. 2016).	Not expected based on the absence of suitable freshwater habitat
Mammals			
Pallid bat *Antrozous pallidus*	USFWS: None CDFW: SSC	Day roosts are in caves, crevices, mines, and occasionally in hollow trees and buildings	Not expected. Suitable night roosting habitat absent.
Dulzura pocket mouse *Chaetodipus californicus femoralis*	USFWS: None CDFW: SSC	Occurs in brushy areas, chaparral covered slopes in coastal and montane regions, but probably is attracted to grass-chaparral edge. Grazing of grassland by domestic stock eliminates cover necessary for predator avoidance. (CDFW 2019).	Not expected to occur based on absence of suitable habitat.

Special-Status Wildlife Species Evaluated for Potential to Occur within the Study Area

Species	Sensitivity Status	Description	Potential to Occur
Northwestern San Diego pocket mouse *Chaetodipus fallax fallax*	USFWS: None CDFW: SSC	Ranges in San Diego, western and central Riverside, south western San Bernardino, and eastern Orange Counties. Generally found in sandy areas with herbaceous cover and rocks or coarse gravel in a wide mixture of vegetation communities including coastal sage scrub, chaparral, grassland, and sage scrub-grassland ecotones. Specifically, this species prefers rocky and gravelly areas with a yucca overstory and desert scrub communities near or in pine-juniper woodland (CDFW 2018).	Not expected to occur based on absence of suitable habitat.
Mexican Long-tongued Bat *Choeronycteris mexicana*	USFWS: None CDFW: SSC	Occurs in a wide variety of habitats, from arid thorn scrub to tropical deciduous forest and mixed oak-conifer forest. Preferred roosting sites include mines, caves, and rock fissures. Found primarily in moist desert canyons. Require nectar sources (agave plants) for foraging	Not expected to occur based on absence of suitable roosting and foraging habitat.
Western red bat *Lasiurus blossevillii*	USFWS: None CDFW: SSC	Roosts primarily in trees, less often in shrubs. Roost sites often are in edge habitats adjacent to streams, fields, or urban areas. Feeds over a wide variety of habitats including grasslands, shrublands, open woodlands and forests, and croplands.	Potential to use palm trees as roosting habitat and forage over the study area
San Diego Black-tailed Jackrabbit *Lepus californicus bennettii*	USFWS: None CDFW: SSC	Herbaceous and desert-shrub areas and open, early stages of forest and chaparral habitats. Ranges in all of California except the high elevation Sierra Nevada Mountains. Generally occurs in most habitats (CDFW 2018).	Known to occur. Observed in the upland scrub areas of the site.
Pacific pocket mouse *Perognathus longimembris pacificus*	USFWS: FE CDFW: SSC	Grassland, coastal sage scrub with sandy soils; along immediate coast. Nearest documented extant populations at Camp Pendleton over 50 miles to the north	Not expected. Although within the historic range, the study area supported marsh prior to being converted to a salt evaporation pond operated and the majority of the study area was still inundated well into the 80's based on historic aerial photographs

Special-Status Wildlife Species Evaluated for Potential to Occur within the Study Area

Species	Sensitivity Status	Description	Potential to Occur
Harbor Seal *Phoca vitulina*	USFWS: None CDFW: None	Protected by the Marine Mammal Protection Act, Harbor seals live in temperate coastal habitats along the northern coasts of North America, Europe, and Asia. They occur on the U.S East and West coasts. Harbor seals are found all along the West Coast of North America, from California to the Bering Sea. They have long been considered non-migratory and typically stay within 15 to 31 miles of home, but telemetry data have shown they sometimes travel 62 to 249 miles from their tagging location.	Not expected to occur. Known to occur in the San Diego Bay outside of the project site.
San Diego desert woodrat *Neotoma lepida intermedia*	USFWS: None CDFW: SSC	This species prefers Joshua tree, pinyon-juniper, mixed and chamise-redshank chaparral, coastal sage scrub, sagebrush, and most desert habitats, but is also found in a variety of other habitats. Moderate to dense canopies are preferred. Particularly abundant in rock outcrops and rocky cliffs and slopes, especially those with Joshua trees. Elevational range from sea level to 8,500 feet (CWHR 2008).	Not expected to occur based on absence of suitable habitat.
American badger *Taxidea taxus*	USFWS: None CDFW: SSC	Ranges in all of California except the extreme north west corner. Generally found in drier open treeless areas of habitats with friable soils; grasslands; coastal sage scrub. (CDFW 2018).	Potential to occur. Suitable habitat present (sandy soils); however, no signs of digging or badger burrows were observed.
California sea lion *Zalophus californianus*	USFWS: None CDFW: None	Protected by the Marine Mammal Protection Act. Found in shallow waters of the eastern North Pacific Ocean. They prefer sandy beaches or rocky coves for breeding and haul-out sites. Along the West Coast, they also haul out on marina docks as well as jetties and buoys. California sea lions range from southeast Alaska to the Pacific coast of central Mexico. Their primary breeding range is from the Channel Islands in southern California to central Mexico.	Not expected to occur. Known to occur in the San Diego Bay outside of the project site.

Special-Status Wildlife Species Evaluated for Potential to Occur within the Study Area

Species	Sensitivity Status	Description	Potential to Occur

Source: California Department of Fish and Wildlife (CDFW) 2018, 2019; California Wildlife Habitat Relationships (CWHR) 1999, 2008; Medak pers. comm. 2020a; Medak pers. comm. 2020b; Nafis 2019; National Oceanic and Atmospheric Administration (NOAA) 2019; Shuford and Gardali 2008; Thompson, R. et al 2016; Zembal et al 2020
Notes:
Special status ranking:
FD= Federally Delisted (monitored for 5 years)
FP= Fully Protected (CDFW)
FT= Federally Threatened; SE= State Endangered; SSC= CDFW Species of Special Concern; BCC= USFWS Birds of Special Concern

Appendix F. Cultural Resource Report

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Appendix G. Energy Technical Memorandum

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Energy Technical Memorandum

Wetland Mitigation Bank at Pond 20 and Port Master Plan Amendment

San Diego, California

March 2021

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Acronyms

AB	Assembly Bill
CalEEMod	California Emissions Estimator Model
CAP	Climate Action Plan
CEC	California Energy Commission
CEQA	California Environmental Quality Act
District	San Diego Unified Port District
GHG	greenhouse gas
PMP	Port Master Plan
PMPA	Port Mater Plan Amendment
project	Wetland Mitigation Bank at Pond 20 and Port Master Plan Amendment Project
RPS	Renewables Portfolio Standard
SB	Senate Bill
SDG&E	San Diego Gas and Electric

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1 Introduction

This Energy Technical Memorandum was completed for the proposed Wetland Mitigation Bank at Pond 20 and Port Master Plan Amendment (PMPA) Project (project) to identify potential impacts on nearby sensitive land uses. This memorandum provides a description of the project, the regulatory framework related to energy, and the environmental consequences of implementing the project.

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2 Project Location and Description

2.1 Project Location

The project site consists of approximately 95 acres of San Diego Unified Port District (District)-owned and federally managed land located in the City of San Diego, east of the City of Imperial Beach and south of the confluences of Otay River and San Diego Bay (Figure 2-1). The project site is located within the Imperial Beach United States Geological Survey 7.5-minute quadrangle and is entirely within the Coastal Zone.

There is no official address for the project site; however, it is located immediately north of Palm Avenue (State Route 75), south of the San Diego Bay National Wildlife Refuge South San Diego Bay Unit managed by United States Fish and Wildlife Service, east of 13th Street, west of 16th Street, and southwest of Otay Valley Regional Park. Interstate 5 is located approximately 1 mile east of the project site (Figure 2-2).

The project site is composed of six parcels of land identified as assessor parcel numbers:

- 616-020-(08/12)
- 616-021-08
- 616-021-09 (portion)
- 621-020-(04/08)

2.2 Project Description

The proposed project includes two primary project components: the creation of the wetland mitigation bank at Pond 20 (Bank Site) and PMPA. The project site is divided into three main areas, as shown on Figure 2-2: the Bank Parcel, Parcels A, B, and C, and the berm breach location. The Bank Parcel is 83.5 acres and contains the southern portion of the former salt evaporation pond known as Pond 20 and extends beyond the existing salt pond berms to also include Nestor Creek and the Otay River Tributary. The Bank Site would be developed within the existing Pond 20 berms in the Bank Parcel and would be up to 80 acres. Parcels A, B, and C are immediately adjacent to the Bank Parcel but entirely outside the Pond 20 berms. All three parcels are predominately comprised of nonnative grasslands. The proposed project includes a “project-level” and “program-level” environmental evaluation.

2.2.1 Project-Level Components – Wetland Mitigation Bank at Pond 20

The District is proposing the creation of a wetland mitigation bank within a portion of District-owned property, which was historically used as salt evaporation pond (Bank Parcel). The project includes associated construction and long-term operation and maintenance activities of the mitigation bank. The District is proposing a PMPA to incorporate the Bank Parcel into the District’s Port Master Plan (PMP) and assign a land use designation of “wetlands.” The creation of the wetland mitigation bank, as well as the incorporation and land use designation of the wetland mitigation bank into the PMP, is evaluated at a “project level” in this technical memorandum.

Construction Schedule and Workforce

Construction of the proposed project is anticipated to take approximately 17 months. Construction would start following certification of the environmental impact report and issuance of a finding of no significant impact by the United States Fish and Wildlife Service, final design engineering, and receipt of all applicable permits. It is anticipated these would be complete by early 2021, and construction would commence in 2021. The estimated duration of each construction activity is summarized in Table 2-1.

Construction would occur during daytime hours, Monday through Saturday from 7 a.m. to 4 p.m. Work restrictions may occur because of exceptionally high tides or delays due to rain or post rain until the ground is dry enough for earth-moving equipment to travel safely. A construction crew of approximately 14 people would be on site for the majority of construction, with up to 24 personnel on site for approximately 6 months during mass grading and 4 months during fine grading. The peak number of personnel on site during landscaping activities would be 36 people. Construction is anticipated to commence in early 2021, with clearing and grubbing which would occur in April and May and utilize 40 hauling trucks per day for 2 months. Mass grading would occur June through November and utilize 80 hauling trucks per day for 6 months. Fine grading would occur in December and January and utilize 10 to 15 hauling trucks per day for two to three weeks.

Table 2-1. Proposed Construction Schedule

Activity	Estimated Duration (Months)
Clearing and grubbing	2
Mass grading	6
Fine grading	4
Landscaping	4
Breech excavation/opening	1

Construction Equipment

A variety of equipment and vehicles would be used during construction. Table 2-2 lists the construction equipment and vehicles and their estimated schedule during construction. Hauling trucks would be double trailers.

Table 2-2. Construction Equipment and Duration of Use

Type of Equipment	Quantity	Estimated Schedule (Months)
Excavator	2	7
Graders	2	4
Scrapers	1	4

Table 2-2. Construction Equipment and Duration of Use

Type of Equipment	Quantity	Estimated Schedule (Months)
Bull dozers	3	11
Loaders	4	10
Backhoes	2	3
Water trucks	2	15
Hauling trucks	20 to 80	10

Operation

Once construction of the wetland mitigation bank is complete, a 5-year monitoring program would begin. During this 5-year period, one vehicle would visit the project site monthly to monitor performance standards and success criteria. After all performance standards have been met, the long-term maintenance and monitoring phase would begin, which assumes one vehicle would visit the site annually. Long-term management may be needed for maintenance of:

- Invasive species monitoring and removal;
- Trash removal;
- Maintenance of site control measures (e.g., fencing); or
- Restoration of any damage from human or maintenance activities or natural phenomenon.

2.2.2 Program-Level Components – Parcels A, B, and C Port Master Plan Amendment

As part of the PMPA, the District is proposing to incorporate Parcels A, B, and C into the District's PMP and assign land use designations. The Bank Site and Parcels A, B, and C are under California Coastal Commission jurisdiction and District-owned property; however, these areas are not formally incorporated into the PMP. Parcels A, B, and C would be assigned a "commercial recreation" and/or "wetlands" designation. Incorporation of Parcels A, B, and C is evaluated at a "program level," and the incorporation of the Bank Site is evaluated at a "project level" in this technical memorandum.

The program-level analysis of Parcels A, B, and C evaluates the reasonable development scenario. No construction is proposed on these parcels at this time; however, the analysis considers reasonable development assumptions:

- Parcel A – maximum commercial development of 25,000 square feet and two stories
- Parcel B – maximum commercial development of 5,000 square feet and two stories
- Parcel C – maximum commercial development of 75,000 square feet and two stories

This analysis assumes construction of future commercial development would occur after the construction of the wetland mitigation bank. No projects have been identified on Parcels A, B, and C, and any future commercial development proposals would need to go through District review, including California Environmental Quality Act (CEQA) compliance.

To calculate potential energy consumption from future commercial development, the most recent version of California Emissions Estimator Model (CalEEMod) (Version 2016.3.2) default construction equipment and durations for 105,000 square feet of total commercial development across all three parcels were utilized. The CalEEMod emissions calculations are appended to the *Air Quality and Greenhouse Gas Emission Study for Wetland Mitigation Bank at Pond 20 and Port Master Plan Amendment Project* (HDR 2020).

Figure 2-1. Regional Location and Project Vicinity

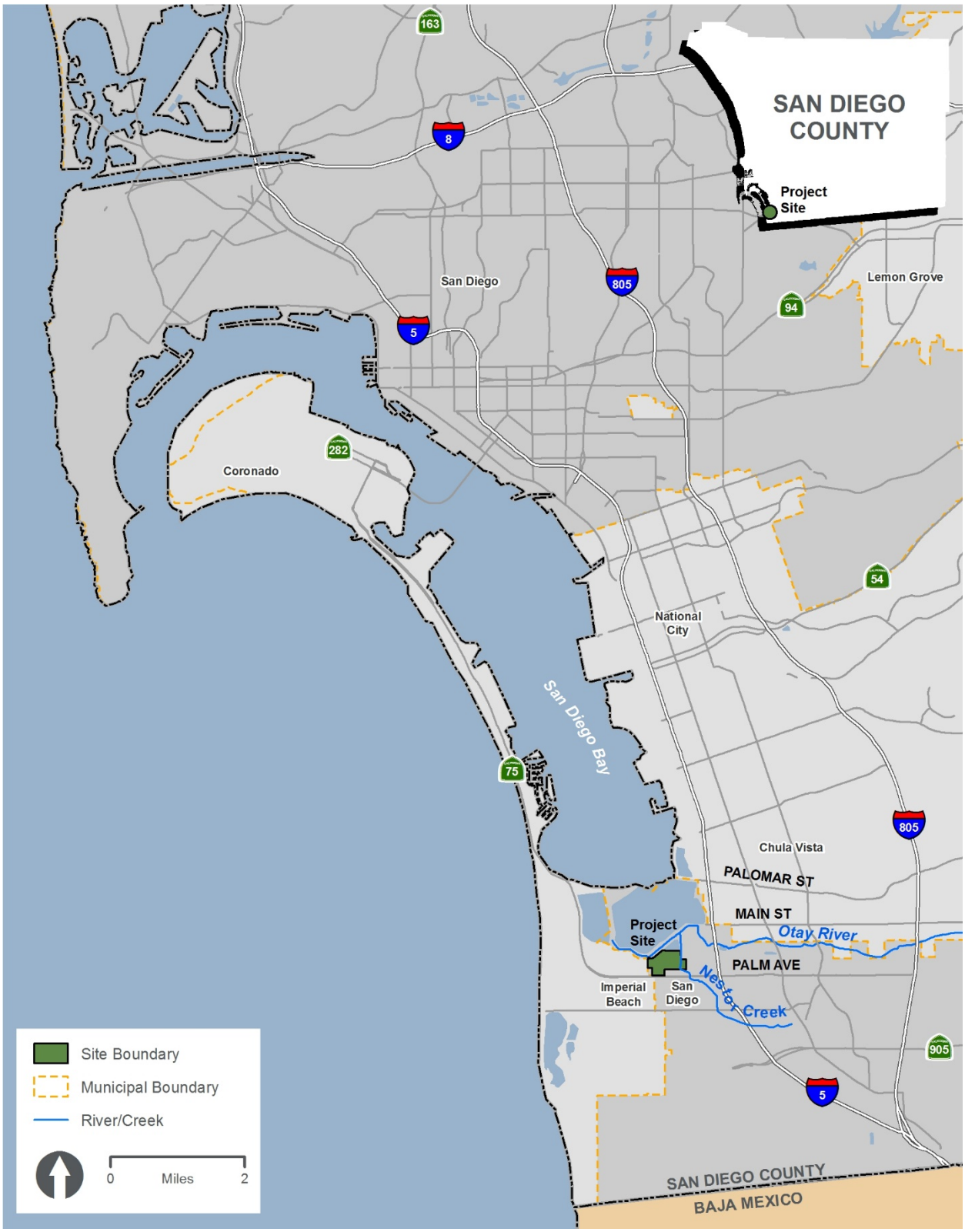

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Figure 2-2. Project Site Characteristics

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3 Regulatory Framework

This section provides an overview of state and local regulations related to energy issues applicable to the proposed project.

3.1 State

3.1.1 Assembly Bill and Senate Bill 32

Assembly Bill (AB) 32, also known as the California Global Warming Solutions Act of 2006, establishes the statewide goal of achieving 1990 greenhouse gas (GHG) emissions levels by 2020. As part of AB 32, the California Public Utilities Commission and the California Energy Commission (CEC) are tasked to provide information, analysis, and recommendations to the California Air Resources Board regarding methods to reduce GHG emissions in the electricity and natural gas utility sectors. Signed on September 8, 2016, Senate Bill (SB) 32 updates AB 32 by requiring a statewide GHG emissions reduction of 40 percent below 1990s levels by 2030. SB 32 outlines ways to achieve this emissions reduction goal, including increasing renewable energy use, improving energy efficiency, and establishing caps on emissions from key industries.

3.1.2 California's Renewables Portfolio Standard

Established in 2002 under SB 1078, California's Renewables Portfolio Standard (RPS) applies to all electricity retailers in the state, including publicly owned utilities, investor-owned utilities, electricity service providers, and community choice aggregators. All of these entities were required to adopt the new RPS goals of 20 percent of retails sales from renewables by the end of 2013, 25 percent by the end of 2016, and the 33 percent requirement being met by the end of 2020. The California Public Utilities Commission and CEC jointly implement the RPS.

3.1.3 Senate Bill 350

Signed on October 7, 2015, SB 350, also known as the Clean Energy and Pollution Reduction Act of 2015, includes objectives to increase the procurement of the state's electricity from renewable sources from 33 percent to 50 percent by December 31, 2030, and double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation by 2030. SB 350 establishes annual targets for statewide energy efficiency savings and demand reduction that will achieve a cumulative doubling of statewide energy efficiency savings in electricity and natural gas final end uses by January 1, 2030.

3.1.4 Senate Bill 100

Signed by former Governor Jerry Brown on September 10, 2018, SB 100 updated the goals of California's RPS (SB 1078) and SB 350. SB 100 requires the retail sellers of electricity to achieve a 50 percent renewable resources target by December 31, 2026, and a 60 percent target by December 31, 2030. In addition, eligible renewable energy resources and zero-carbon sources are required to supply 100 percent of retail sales of electricity to retail customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045.

3.1.5 Senate Bill 1389

SB 1389 requires the CEC to adopt an Integrated Energy Policy Report every 2 years and an update every other year. The Integrated Energy Policy Report addresses electricity, natural gas, and transportation fuels. The latest completed report, the *2018 Integrated Energy Policy Report Update* (CEC 2018b), addresses a variety of topics, including double energy efficiency savings, integrating renewable energy, and forecasting energy demand.

3.1.6 California Building Energy Code

The 2019 California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), also called the CALGreen Code, went into effect on January 1, 2020, and includes mandatory standards for residential and nonresidential buildings. The 2019 standards improve upon the 2016 standards for new construction of, and additions and alterations to, residential and nonresidential buildings. These codes are updated every three years and escalate as time progresses.

3.1.7 CEQA Guidelines Appendix F

Appendix F of the CEQA Guidelines contains energy conservation measures that promote the efficient use of energy for projects. In order to ensure that energy impacts are considered in project decisions, CEQA requires that environmental impact reports include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. The goal outlined in Appendix F of the CEQA Guidelines is to conserve energy through the wise and efficient use of energy. The means of achieving this goal include the following:

- Decreasing the overall per capita energy consumption
- Decreasing reliance on natural gas and oil
- Increasing reliance on renewable energy sources

3.2 Local

3.2.1 Green Port Program and Green Port Policy

The District's Board of Commissioners adopted the Green Port Policy in 2007 under Board of Port Commissioner Policy Number 736. The Green Port Policy established the framework for the Green Port Program by identifying objects for the integration of overarching sustainability principles and initiatives to guide business decisions, development, and operations within the District's jurisdiction. The Green Port Policy includes the following objectives:

- Minimize, to the extent practicable, environmental impacts directly attributable to operations of San Diego Bay and the tidelands
- Strengthen the District's financial position by maximizing the long-term benefits of energy and resource conservation
- Prevent pollution and improve personal, community, and environmental health
- When possible, exceed applicable environmental laws, regulations, and other industry standards

- Ensure a balance of environmental, social, and economic concerns are considered during planning, development, and operational decisions
- Define and establish performance-driven environmental sustainability objectives, targets, and programs
- Monitor key environmental indicators and consistently improve performance
- Foster socially and environmentally responsible behavior through communications with employees, tenants, stakeholders, and the community
- Collaborate with tenants to develop an integrated, measurable, Bay-wide environmental sustainability effort

3.2.2 San Diego Unified Port District Climate Action Plan

The District's *Climate Action Plan* (CAP) includes policies and measures to reduce GHG emissions, including energy conservation and efficiency strategies and alternative energy generation policies. The CAP identifies baseline and future GHG emissions. The baseline year identified is 2006, and future emissions for 2020, 2035, and 2050 were projected by estimating emission impacts for future development projects and increases in cargo and cruise activity. The District identified goals of GHG reduction of 10 percent less than 2006 baselines levels by 2020 and 25 percent less than 2006 baselines levels by 2035. The CAP contains measures and policies to achieve these targets. The CAP also puts the District on the trajectory of meeting its share of the 2050 statewide target.

3.2.3 City of San Diego Municipal Code

The District does not currently process building permits; therefore, the project is required to obtain building permits from the City of San Diego. The following City of San Diego ordinances apply to the project. The City of San Diego's Municipal Code includes the Land Development Code to help ensure that development in the City is protective of public health, safety, and welfare. The intent of the Land Development Code is to provide different review processes appropriate to the different types of development. The City of San Diego's Green Building Regulations include the 2019 California Green Building Standards and are published in Chapter 14 Article 10 of the Land Development Code. The City of San Diego's Municipal Code requires compliance with the mandatory measures under CALGreen for residential and nonresidential projects.

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4 Methodology

This energy analysis evaluates the demand for energy resources and makes a determination regarding the project's consistency with applicable state or local plans for renewable energy and/or energy efficiency.

4.1 Methods

Because the project-level component involves a wetland mitigation bank, there would be no long-term changes in energy consumption for the wetland mitigation bank. Project operation would only involve maintenance with one vehicle accessing the site on a monthly basis and once annually after the 5-year monitoring period is complete. As a wetland mitigation bank, the project's primary energy consumption would occur during the construction phase. The project's potential energy impacts are analyzed based on estimated net energy consumption with regard to electricity, natural gas, and transportation-related energy (e.g., petroleum-based fuels). At the program level, energy consumption during construction of future commercial development is also analyzed based on estimated net energy consumption with regard to transportation-related energy (e.g., petroleum-based fuels). In addition, operational energy consumption is analyzed for commercial development related to building energy use (electricity and natural gas) and fuel consumption.

Construction trip generation used in this analysis was based on the air quality worksheets and the CalEEMod output data (HDR 2020). Developed by the California Air Pollution Control Officers Association, the CalEEMod is a statewide land use emissions computer model that estimates construction and operational emissions from a variety of land use projects. In addition, operational energy consumption is analyzed for commercial development related to building energy use and fuel consumption. The program-level analysis assumes maximization of land development on the parcels and would contain 105,000 square feet of commercial space. No specific project is proposed on Parcels A, B, and C at this time; therefore, a reasonable scenario for construction is assumed. Calculations were made for levels of carbon dioxide produced, fuel use, natural gas consumption, and electricity consumption. Conversion factors used include metric tons to pounds, pounds of carbon dioxide per gallon of diesel, and pounds of carbon dioxide per gallon of gasoline (United States Environmental Protection Agency n.d.).

4.2 Thresholds of Significance

Appendix G of the CEQA Guidelines contains significance criteria for evaluation of energy impacts of a project. Impacts would be considered significant if the project would result in any of the following:

1. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation; or
2. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

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5 Affected Environment

5.1 Energy Infrastructure

The project site, including the Bank Parcel and Parcels A, B, and C, is currently vacant and does not consume any energy, such as electricity, natural gas, or from transportation-based energy sources. Due to the urban location of the project, the project site is within the service area of one energy provider, San Diego Gas and Electric (SDG&E), which provides electricity and natural gas to San Diego County. SDG&E provides energy service to over 3.6 million people (i.e., 1.4 million electric meters and 873,000 natural gas meters) in San Diego County and portions of southern Orange County. SDG&E has a diverse power production portfolio, composed of a variety of renewable and nonrenewable sources. Energy production typically varies by season and by year. Regional electricity loads also tend to be higher in the summer because the higher summer temperatures drive increased demand for air conditioning. In contrast, natural gas loads are higher in the winter because the colder temperatures drive increased demand for natural gas heating. In 2018, more than 43 percent of the electricity SDG&E supplied was from renewable energy sources, compared with less than 1 percent in 2002 (SDG&E 2020).

On March 9, 2020, the California Public Utilities Commission certified San Diego Community Power, a five city community choice aggregation program to begin service effective March 1, 2021 (CPUC 2020). The five member cities include San Diego, Chula Vista, Imperial Beach, La Mesa, and Encinitas and as a second energy provider in the area is expected to serve 920,000 customers. San Diego Community Power would expand clean energy supplies to the member cities, and would have the necessary energy delivery, billing maintenance, and other various activities maintained by SDG&E.

On the project site, overhead SDG&E electric distribution lines run north to south along the western edge of Parcel C. SDG&E has an easement for these electric distribution lines.

5.1.1 State and Regional Energy Resources and Use

California has a diverse portfolio of resources that produced 2,408.2 trillion British thermal units (BTU) of energy in 2018 (U.S. Energy Information Administration 2020a). California was the seventh-largest producer of crude oil among the 50 states in 2018, and, as of January 2019, it ranked third in oil refining capacity. California's total energy consumption is second-highest in the nation, but, in 2018, the state's per capita energy consumption was the fourth-lowest, due in part to its mild climate and its energy efficiency programs. In 2018, California ranked first in the nation as a producer of electricity from solar, geothermal, and biomass resources and fourth in the nation in conventional hydroelectric power generation and in 2018 produced 194,842 gigawatt hours (millions of kilowatt hour) of electricity (U.S. Energy Information Administration 2020b, CEC 2019). In 2018, large- and small-scale solar PV and solar thermal installations provided 19% of California’s net electricity generation (U.S. Energy Information Administration 2020b). San Diego County is served by SDG&E, as discussed above. In 2018, SDG&E customers consumed 21,207 gigawatt hours of electricity and 48 trillion BTU of natural gas, of which commercial uses consume approximately 53 percent of the electricity and 39 percent of the natural gas (CEC 2018a).

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6 Environmental Consequences

The energy impacts of projects are typically divided into two categories: direct energy and indirect energy. Direct energy is the energy consumed in the actual propulsion of a vehicle. It can be measured in terms of the thermal value of the fuel, the cost of the fuel, or the quantity of electricity used in the engine or motor (in this case, the use of petroleum-based fuels). Indirect energy is defined as all of the remaining energy consumed to run the project, including construction energy, maintenance energy, and any substantial impacts on energy consumption related to project-induced land use changes and mode shifts and any substantial changes in energy associated with vehicle operation, manufacturing, or maintenance due to increased automobile use.

This section analyzes the project's project-level and program-level impacts on energy resources.

6.1 Impact Analysis

Threshold (1) Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

6.1.1 Project Level – Wetland Mitigation Bank

Construction

Construction activities for the wetland mitigation bank would consume electricity and fossil fuels and would not require consumption of natural gas. Construction of the proposed project is anticipated to take approximately 17 months. Construction staging areas would require preparation, including minor grading, clearing and grubbing, fencing, and application of gravel or similar products to stabilize the areas and occur over the course of 2 months. Mass grading of the project site would occur over 6 months and would require 80 hauling trucks per day. Fine grading would occur over 4 months and require 10 to 15 hauling trucks per day for 2 to 3 weeks. Landscaping would occur over 4 months, and the berm breach excavation would occur over 1 month. The various construction equipment required and duration of use is detailed in Section 2.2.1.

The use of construction vehicles and equipment would consume fossil fuels, such as diesel, gasoline, and oil. Construction would involve several stages and different types of fuels for different types of equipment, including light- and heavy-duty trucks or machinery. Water consumption during construction activities would indirectly consume electricity. Table 6-1 summarizes the estimated consumption diesel and gasoline during construction of the wetland mitigation bank.

Table 6-1. Project-Level Construction Energy Consumption

Energy Type	Amount Consumed
Diesel fuel used	169,799.1 gallons
Gasoline used	4,142.1 gallons

Notes:
Total construction gasoline CO_2 consumed: 36.9 Metric Tons, total construction diesel consumed: 1,723.7 Metric Tons

Project construction is expected to consume a total of approximately 169,799.1 gallons of diesel fuel from construction equipment, hauling, and water truck trips, and approximately 4,142.1 gallons of gasoline from construction worker vehicle trips. Construction activities and corresponding fuel energy consumption would be temporary and localized, as the use of diesel fuel and heavy-duty equipment would not be a permanent operating condition of the project. The gasoline consumed during construction represents approximately 0.000003 percent of all gasoline sold within San Diego County in 2017 (1,377 millions of gallons) (CEC n.d.). The diesel consumed during project construction would represent approximately 0.001 percent of all diesel sold in San Diego County in 2017 (103 millions of gallons) (CEC n.d.). This represents a very small portion of demand on local and regional fuel supplies and would be accommodated through existing supply sources. This low level of demand for fuel would have no noticeable effect on peak or baseline demands for energy. In addition, there are no unusual project characteristics that would cause the use of construction equipment to be less energy efficient compared with other similar construction sites in other parts of the State. Therefore, construction would not result in wasteful, inefficient, or unnecessary consumption of energy resources, and impacts would be less than significant.

Operation

The proposed mitigation bank would involve very minimal maintenance activities, as one vehicle would conduct monitoring of the project site once a month for a period of 5 years; and once per year after this 5-year period. Therefore, the long-term energy consumption on the project site would not change, and no mitigation measures are required.

6.1.2 Program Level – Parcels A, B, and C Port Master Plan Amendment

At this time, no construction or operation of the commercial development is proposed on Parcels A, B, or C; however, the land use designation of commercial recreation would allow for commercial development of these parcels, subject to project level by the District. This impact analysis evaluates a reasonable development scenario for Parcels A, B, and C, which is a future commercial land use and relies on the reasonable development assumptions identified in Section 2.2.1.

Construction

Similar to the discussion under Project Level – Wetland Mitigation Bank, construction activities for future commercial development would consume electricity and fossil fuels and would not require consumption of natural gas. As discussed in Section 2.2.2, the CalEEMod default construction

equipment and duration for 105,000 square feet of total commercial development across all three parcels was used to calculate estimated energy consumption. Construction is estimated to take approximately 19 months. Construction phases include grading, building construction, architectural coating, and paving.

The use of construction vehicles and equipment would consume fossil fuels, such as diesel, gasoline, and oil. Construction would involve several stages and different types of fuels for different types of equipment, including light- and heavy-duty trucks or machinery. Water consumption during construction activities would indirectly consume electricity. Table 6-2 summarizes the amount of diesel and gasoline estimated to be consumed during construction of future commercial development.

Table 6-2. Program-Level Construction Energy Consumption

Energy Type	Amount Consumed
Diesel fuel used	53,697.0 gallons
Gasoline used	4,276.8 gallons

Notes:
Total construction gasoline CO_2 consumed: 38.1 Metric Tons, total construction diesel consumed: 545.1 Metric Tons
CO_2=carbon dioxide

Future commercial development construction is anticipated to consume a total of approximately 53,697 gallons of diesel fuel from construction equipment, hauling, and water truck trips, and approximately 4,276.8 gallons of gasoline from construction worker vehicle trips. Construction activities and corresponding fuel energy consumption would be temporary and localized, as the use of diesel fuel and heavy-duty equipment would not be a typical condition of the project. The gasoline consumed during construction represents approximately 0.000003 percent of all gasoline sold within San Diego County in 2017 (1,337 millions of gallons) (CEC n.d.). The diesel consumed during project construction would represent approximately 0.0005 percent of all diesel sold in San Diego County in 2017 (103 millions of gallons) (CEC n.d.). This represents a small demand on local and regional fuel supplies and would be accommodated and this demand for fuel would have no noticeable effect on peak or baseline demands for energy. In addition, there are no unusual project characteristics that would cause the use of construction equipment to be less energy efficient compared with other similar construction sites in other parts of the state. Therefore, construction would not result in wasteful, inefficient, or unnecessary consumption of energy resources, and impacts would be less than significant.

Operation

Future commercial development would consume energy related to building use, including electricity and natural gas, indirect energy consumption associated with water use, and fuel consumption by employee and visitor vehicles accessing the project site. Table 6-3 summarizes the estimated annual operational energy consumption for future commercial development on the project site.

Once operational, the proposed project would require more energy than currently required at the project site under current conditions.

Table 6-3. Program-Level Operational Energy Consumption

Energy Type	Amount Consumed
Natural gas	234,150 kilo-British thermal unit
Electricity	1,1318,800 kilowatt-hour
Diesel fuel used	14,619.0 gallons
Gasoline used	243,630.4 gallons

Notes:
Total on-road gasoline CO_2 consumed: 2,170.4 Metric Tons, total on-road diesel consumed: 148.4 Metric Tons
CO_2=carbon dioxide; kBTU=1,000 British thermal units; kWh=kilo-Watt-hour

The estimated natural gas consumed during operation would represent 0.0000006 percent of all natural gas consumed in SDG&E's service area in 2018 and the estimated electricity consumed during operation would represent 0.000006 percent of all electricity consumed in SDG&E's service area in 2018 (CEC 2018b). Similar to construction, the estimated consumption of diesel and gasoline would be well below 1 percent of the fuel sold in San Diego County. Overall, this represents a small demand on local and regional energy consumption and would be accommodated through existing sources and this demand for energy would have no noticeable effect on peak or baseline demands for energy. In addition, there are no unusual project characteristics that would result in a wasteful, inefficient, or unnecessary consumption of energy resources compared with other similar commercial development in other parts of the state. Individual projects, when proposed by a project applicant, would undergo analysis for consistency with applicable energy reduction policies, the then-existing California Building Code Energy Efficiency requirements (Title 24), and would consider other energy efficiency measures, as applicable. Therefore, the project would not result in potentially significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources, during project operation and would not require upgrades to the existing energy infrastructure to accommodate the increased energy demand of the proposed project. Impacts would be less than significant.

While no significant impact has been identified, as described in the *Air Quality and Greenhouse Gas Emission Study for Wetland Mitigation Bank at Pond 20 and Port Master Plan Amendment Project*, mitigation is proposed to reduce GHG emissions from operation of future commercial development. One mitigation measure is proposed that includes measures that would reduce energy consumption including reducing water consumption, recycling of solid waste, incorporation of energy efficiency design features that exceed the most recent Title 24 California Building Energy Efficiency Standards, and carbon sequestration (HDR 2020). Implementation of mitigation measures, would reduce the estimated energy consumption identified in Table 6-3; however, because no specific commercial development is proposed at this time, the measures that could be employed are unknown and therefore cannot be quantified.

Threshold (2) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

6.1.3 Project Level – Wetland Mitigation Bank

As discussed under Threshold (1), the creation of the wetland mitigation bank would result in new sources of energy consumption. The creation of the wetland mitigation bank would not conflict with or obstruct state or local plans for renewable energy. The District's CAP includes policies and measures required by state and federal regulations, as well as transportation-related measures, to reduce energy use and associated emissions. The wetland mitigation bank's short-term construction emissions would not prevent the District from reaching its GHG reduction goal of 10 percent less than the 2006 baseline emission levels by 2020 (a reduction of 62,210 metric tons of carbon dioxide equivalent per year) or its 2035 goals. The project would comply with all applicable transportation-related measures outlined in the District's CAP, including using technologies and strategies to reduce fuel consumption and enforcing state idling laws for construction vehicles. Operation of the wetland mitigation bank would not result in long-term energy consumption on the project site. Therefore, the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

6.1.4 Program Level – Parcels A, B, and C Port Master Plan Amendment

State and local renewable energy and energy efficiency plans that are applicable to the project's future commercial development are discussed in Section 3 and include SB 350, SB 100, California Building Energy Code, the District's CAP, and the Green Port Policy. Some plans and regulations are statewide and do not require local or project action to implement. Each plan and regulation is discussed below. A conflict with an applicable plan would result in a significant impact.

SB 350. The Clean Energy and Pollution Reduction Act of 2015 includes objectives to increase the procurement of the state's electricity from renewable sources from 33 percent to 50 percent by December 31, 2030, and double the energy efficiency savings in electricity and natural gas final end uses of retail customers through energy efficiency and conservation by 2030. This is dependent on the utility provider, and the project does not impede reaching a goal of 50 percent.

SB 100. SB 100 increases the RPS target set in SB 350 to 60 percent by 2030. It also requires all retail sales of electricity to California end-users and electricity procured to serve state agencies to be provided by zero-carbon resources by 2045. The project does not impede implementation of SB 110, and mitigation measures identified in the *Air Quality and GHG Emissions Study* prepared for the project would require buildings to exceed Title 24 building standards.

California Building Energy Code. The 2019 California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), also called the CALGreen Code, includes mandatory standards for nonresidential buildings. The 2019 standards improve upon the 2016 standards for new construction of nonresidential buildings. Mitigation measures identified in the Air Quality and GHG Emissions Study prepared for the project would require buildings to exceed Title 24 building standards.

District CAP. The District's CAP includes policies and measures required by state and federal regulations, as well as transportation-related measures, to reduce energy use and associated emissions. The District CAP sets forth a number of regulations and goals applicable to the project, including building to green building standards, enforcing vehicle idling during construction, and

disclosing energy use. The project would comply with the District's CAP through implementation of mitigation measures identified in the Air Quality and GHG Emissions Study prepared for the project, which would require compliance with sustainability measures identified in the District CAP. Additionally, as discussed in the Transportation Impact Study prepared for the project, all feasible traffic demand management measures would be required as mitigation (Chen Ryan Associates 2020). Mitigation measures include ride-sharing and vanpooling and providing subsidies for transit passes to reduce worker trips and parking demand, which would be consistent with the District's CAP.

Implementation of GHG-reducing measures identified in the Air Quality and GHG Emissions Study prepared for the project and transportation demand management measures identified in the Transportation Impact Study prepared for the project would ensure future commercial development is consistent with the applicable state and local renewable energy and energy efficiency plans. Impacts would be less than significant.

6.1.5 CEQA Guidelines Appendix F

As discussed in Section 3.1.7, the CEQA Guidelines also require a discussion of the potential energy impact possibilities and potential conservation measures applicable to the project. Table 6-4 provides a consistency analysis with questions raised in Appendix F of the CEQA Guidelines. While the wetland mitigation bank would not generate demand for energy consumption, as discussed above, this consistency analysis is applicable for full buildout conditions, including the wetland mitigation bank and future commercial development on Parcels A, B, and C. Overall, the proposed project would assist with energy conservation goals because mitigation measures identified in the Air Quality and GHG Emissions Study prepared for the project would require the proposed project to incorporate energy efficiency and sustainability measures to reduce energy consumption.

Table 6-4. Proposed Project Comparison with CEQA Guidelines Appendix F

Project Impact Considerations from Appendix F	Project Applicability and Analysis
Energy requirements and energy use efficiencies by amount and fuel type for each stage of the project	**Applies.** See Table 6-1 through Table 6-3, which breaks down construction and operational energy use. As indicated, the project would increase the use of electricity and the need for fossil fuels, such as diesel fuel, gasoline, and natural gas.
Effects on local and regional energy supplies and the need for additional capacity	**Applies.** As discussed above, construction of the wetland mitigation bank and future commercial development would not significantly impact local or regional energy supplies. Operation of future commercial development would not require upgrades to the existing energy infrastructure to accommodate the increased energy demand from the proposed project.
Effects of the project on peak and base period demands for electricity and other forms of energy	**Applies.** Energy load would vary over time, but current energy supply and infrastructure would be able to accommodate the additional demand without interruption or issues to existing customers and without the need for new infrastructure. The project does not propose demand that would affect peak and base period demand.
Degree to which the project complies with existing energy standards	**Applies.** The proposed project would be fully compliant with all existing energy standards, including the Energy Building Regulations and Energy Conservation Standards, and California Energy Code (Title 24).

Table 6-4. Proposed Project Comparison with CEQA Guidelines Appendix F

Project Impact Considerations from Appendix F	Project Applicability and Analysis
Effects of the project on energy resources	**Applies.** The proposed project would not result in an adverse impact on energy resources. There are sufficient energy resources to accommodate the additional project energy demand.
Projected transportation energy use requirements and overall use of efficient transportation alternatives	**Applies.** The proposed project would increase the need for fossil fuels compared with baseline conditions because it would introduce new uses to the project site that would increase transportation energy use. The operation of future commercial development would increase the number of vehicle trips, which would result in use of gasoline and diesel fuel. However, mitigation measures identified in the *Air Quality and GHG Emissions Study* prepared for the project would require the proposed project to incorporate sustainability measures to reduce impacts on energy resources, including requiring the installation of charging stations to support electric vehicle usage.

Notes:
CAP=Climate Action Plan; GHG=greenhouse gas

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7 Mitigation Measures

No mitigation measures are required for the short-term construction or long-term operation of the proposed project.

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Appendix H. Soil Assessment Report for the Salt Pond 20

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SOIL ASSESSMENT REPORT
SALT POND 20
SAN DIEGO, CALIFORNIA
KLEINFELDER PROJECT NO. 20164596.018A

JUNE 27, 2019

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ABBREVIATIONS AND ACRONYMS

AETL	American Environmental Testing Laboratories, Inc.
ATL	Advanced Technology Laboratories
BEHP	bis (2-ethylhexyl) phthalate
bgs	below ground surface
COPCs	Chemicals of Potential Concern
DMP	dimethyl phthalate
DTSC	California Department of Toxic Substances Control
EDD	electronic data deliverable
ERL	effects range low
ERM	effects range median
ESA	Environmental Site Assessment
ICP	Inductively Coupled Plasma
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
MS	matrix spike
MSD	matrix spike duplicate
MLLW	Mean Lower Low Water
ND	non-detect
µg/kg	microgram per kilogram
mg/kg	milligram per kilogram
OCP	organochlorine pesticide
PAH	polyaromatic hydrocarbon
PCB	polychlorinated biphenyl
PARCCS	precision, accuracy, representativeness, comparability, completeness, and sensitivity
QA	quality assurance
QC	quality control
RL	reporting limit
RPD	relative percent difference
RSL	Regional Screening Level
SAR	sodium adsorption ratio
SDDEH	County of San Diego Department of Environmental Health
SDG	sample delivery group
SDUPD	San Diego Unified Port District
SL	screening level
SPLP	synthetic precipitation leaching procedure
SSL	soil screening level
STLC	soluble threshold leaching concentration
TPH	total petroleum hydrocarbons
TPH-D	total petroleum hydrocarbons as diesel
TPH-O	total petroleum hydrocarbons as oil
UCL	Upper Confidence Limit
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
REC	Recognized Environmental Condition
SVOC	semi-volatile organic compound
VAP	Voluntary Assistance Program
VOC	volatile organic compound
Work Plan	Soil and Groundwater Assessment Work Plan

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1 INTRODUCTION AND BACKGROUND

On behalf of the San Diego Unified Port District (SDUPD), Kleinfelder has prepared this *Soil Assessment Report* for the Salt Pond 20 site located in San Diego, California ("the Site"; Figures 1-1 and 1-2). This report was prepared pursuant to Kleinfelder's *Soil Sampling and Analysis Work Plan* (Work Plan) dated June 12, 2018 (Kleinfelder, 2018a) and in general conformance with the *Draft Sampling and Analysis Plan/Results Report Guidelines* (United States Army Corps of Engineers [USACE] and United States Environmental Protection Agency [USEPA], 2015). The *Draft Sampling and Analysis Plan/Results Report Guidelines* supplement the *Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. – Testing Manual* (USACE and USEPA, 1998).

The Site comprises approximately 95 acres and encompasses 6 parcels identified as San Diego County Assessor Parcel Numbers 616-020-08, 616-020-09 (portion), 616-020-12, 616-021-08, 616-021-09 (portion), 621-020-04, and 621-020-08 (Figure 1-2). The Site is generally bounded by the Otay River and the San Diego Bay National Wildlife Refuge to the north, the Bayside Palms Mobile Home Village, commercial properties, and Palm Avenue to the south, the South Bay Salt Works and Imperial Sands Mobile Park to the east, and residential properties, car wash, and 13th Street to the west. The center point of the Site is located at approximately 32.587128, -117.101475. Latitude/longitude coordinates are in World Geodetic System 1984.

1.1 WETLAND MITIGATION BANK

The SDUPD plans to create a wetland mitigation bank on the Site by dredging a series of channels that will allow surface water to flow onto the Site from the Otay River. The current Site design[1] consists of four construction elements: marsh plain grading, tidal channel excavation, levee breaching, and ditch fill/transitional slope construction. Figure 1-3 depicts the locations of each construction element and dredging footprints in relation to the existing topography. The cross section lines shown on Figure 1-3 correspond to the cross sections shown on Figure 1-4.

Based on the *Draft Wetland Restoration of Salt Pond 20* preliminary (30%) design plans (Environmental Science Associates, 2017; Appendix A), the total grading footprint is 76.5 acres, including areas of cut (65.9 acres) and fill (10.6 acres). The estimated gross quantities of soil to be excavated includes a combination of mass excavation for the marsh plain grading (405,000

[1] *The current Site design is considered 30% complete and is subject to change based on coordinating the design with the adjacent Otay River Estuary Restoration Project (Environmental Science Associates, 2017).*

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cubic yards), levee breach excavation (6,000 cubic yards), and excavation to form the tidal channels (43,000 cubic yards), for a total of 454,000 cubic yards. The maximum depth of excavation will occur at the levee breach location where a tidal channel will be created and dredged to a maximum depth of -2.87 feet Mean Lower Low Water (MLLW).

Approximately 24,000 cubic yards of soil from the marsh plain grading and tidal channel excavation will be reused on-Site as fill material for the transitional slope along the interior of the existing perimeter berm (Figure 1-3) (Environmental Science Associates, 2017). The remaining 430,000 cubic yards will be transported off-Site for reuse at a commercial development (e.g., Chula Vista Bayfront development), transported to the former South Bay Power Plant site for permanent placement, transported to the former South Bay Power Plant site for temporary storage, transported to an appropriate landfill for disposal, transported to the Pacific Ocean for disposal, or transported to San Diego Bay for reuse.

1.2 SITE HISTORY

A *Phase I Environmental Site Assessment* (ESA) for the Site was performed by Kleinfelder to identify historic use and environmental concerns (Kleinfelder, 2018b). Based on the report's findings, the salt evaporation and extraction industry has operated in southern San Diego Bay, including the Site, since the early 1870s. In the 1890s, Western Salt Company acquired most of the salt producing entities and lands (saltworks) in southern San Diego Bay. When operational, water traveled through the ponds by gravity, siphons, and/or pumps. Within the Site, lower lying channels, parallel to the interior berm edge, served as borrow areas for the reconstruction and repair of the berms as well as for water storage. In 1916, the Savage Dam, located approximately 10 miles east of the Site, failed and released water stored in Lower Otay Lake to the watershed. The dam failure washed away several berms within the saltworks and deposited sediment throughout the Site. The saltworks were restored, however, the Site became economically inefficient to operate and attempts to incorporate it into the saltworks operation were abandoned in the 1960s. It has since remained unused. The Site has not been dredged other than during the original creation of the salt pond. Currently, low lying portions of the Site are covered with a thick white salt crust from ongoing evaporation.

1.3 PREVIOUS SOIL TESTING

On January 30, 2017, Great Ecology conducted a *Soil Quality and Plantability Evaluation* for the purposes of evaluating on-Site soils for plantability and suitability for off-Site reuse (Great Ecology, 2017; Appendix B). During this evaluation, Great Ecology collected soil samples from

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4 hand auger boring locations (P20-1, P20-2, P20-3, and P20-4, depicted on Figure 1-2). Two to 3 samples from each boring were collected from the following depths:

- P20-1 from 0 to 2, 2 to 4, and 4 to 6.5 feet below ground surface (bgs);
- P20-2 from 0 to 1 and 1 to 3 feet bgs;
- P20-3 from 0 to 3, 3 to 5, and 5 to 8 feet bgs; and
- P20-4 from 0 to 4, 4 to 8, and 8 to 9.2 feet bgs.

The samples were analyzed for total metals, total petroleum hydrocarbons (TPH), organochlorine pesticides (OCPs), polychlorinated biphenyls (PCBs), polyaromatic hydrocarbons (PAHs), grain size, percent solids, total organic carbon, and total and dissolved sulfides. Additionally, the deepest samples from each boring were analyzed for constituents associated with plantability, including pH, salinity, calcium, magnesium, sodium, potassium, boron, sulfate, and sodium adsorption ratio (SAR).

TPH, OCPs, and PCBs were not detected above laboratory reporting limits. PAHs were detected in 1 sample (P20-1 from 4 to 6.5 feet bgs): benz(a)anthracene at 19 micrograms per kilogram (µg/kg),[1] benzo(a)pyrene at 16 µg/kg, and chrysene at 22 µg/kg. The concentrations of total metals were compared to effects range low (ERL) and effects range median (ERM) values (Long et al., 1995). Of the metals analyzed, only arsenic exceeded the ERL of 8.2 milligrams per kilogram (mg/kg) in P20-1 from 0 to 2 feet bgs at 8.5 mg/kg and from 2 to 4 feet bgs at 10.7 mg/kg. P20-1 was located in the northwestern portion of the Site along the berm (Figure 1-2). Arsenic was additionally analyzed by the synthetic precipitation leaching procedure (SPLP) in the soil sample that had the highest total arsenic concentration in each boring. The SPLP results were compared to the California Code of Regulations soluble threshold leaching concentration (STLC) for hazardous waste, San Diego County domestic and municipal supply water thresholds, and USEPA Saltwater Criterion Continuous Concentration. None of the SPLP results for arsenic exceeded these thresholds.

Based on the plantability results, Great Ecology indicated a need for soil amendments and leaching prior to planting due to high salinity, boron concentrations, and SAR.

[1] *Result was qualified as "L-flagged" due to the laboratory control sample or duplicate being out of control limits.*

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1.3.1 Potential Sources of Contamination

The findings of the *Phase I ESA* (Kleinfelder, 2018b) identified the following Recognized Environmental Conditions (RECs) where soil impacts may be present (shown on Figure 1-2):

1. One former oil/gas well was drilled by Robert Egger in the central portion of the Site. The well was deemed dry and later abandoned on September 12, 1963.
2. One 48-inch and two 12-inch storm drain outfalls located along the southwestern Site boundary.
3. Previous soil assessment that identified arsenic in excess of the ERL at the western bermed area.
4. The former VMT Auto Sales facility, along Palm Avenue in the southern portion of the Site, was observed to contain a floor drain within a covered limited maintenance area. The floor drain was reported to travel via underground pipe and empty onto the Site.

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2 PURPOSE AND SCOPE

This report summarizes the findings of a soil assessment performed at the Site for the purposes of evaluating the environmental and geotechnical suitability of the Site soil for: on-Site reuse within the proposed mitigation bank; off-Site reuse at an upland site, including but not limited to the Chula Vista Bayfront; transport to the former South Bay Power Plant site for temporary storage prior to offsite reuse at an upland site; transport to the South Bay Power Plant for permanent placement; and/or disposal at an authorized landfill facility. Soil may also be disposed of at a Pacific Ocean dredged material disposal site and/or reused within San Diego Bay (e.g., for eelgrass habitat); however, suitability under these scenarios was not evaluated.

Environmental suitability was assessed by constructing, collecting and analyzing samples from test pits throughout the Site. In addition, targeted sampling and analysis was conducted at the locations where RECs were identified by the *Phase I ESA* (Kleinfelder, 2018b) and environmental concerns identified by the *Soil Quality and Plantability Evaluation Report* (Great Ecology, 2017). Samples were also collected from the test pits for geotechnical analysis to assess the geotechnical suitability of the soil for off-Site reuse.

The scope of this soil assessment included the following (a complete sampling methodology is detailed in Section 4):

- Completed necessary pre-field activities including underground service alert notification.
- Collected soil samples from thirty-two test pits and thirteen hand auger borings.
- Analyzed soil samples for one or more of the following constituents of potential concern (COPCs) including total metals, PAHs, OCPs, PCBs, phenols, phthalates, TPH, volatile organic compounds (VOCs), and semi-volatile organic compounds (SVOCs).
- Analyzed soil samples for geotechnical physical parameters including water content, density, grain size distribution, expansion index, Atterberg limits, organic content, resistivity, pH, chloride content, and sulfate content.

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2.1 DEVIATIONS FROM WORK PLAN

The following deviations from the Work Plan were incurred during this soil assessment:

- Due to odorous soil, the soil samples collected from 1.5 feet to 2 feet bgs at TP-17 and from 1 foot bgs at HA-1 were analyzed for TPH.
- The soil samples collected from the test pits for total metals analysis were analyzed individually and were not composited.
- Four of the 19 composited soil samples collected from the test pits for geotechnical analysis were composited from more than 4 test pits (see Section 4.2 for methodology).
- More than 2 soil samples per test pit were collected from 20 of the 32 test pits due to the observation of more than 2 soil types.
- Due to caving conditions, target depths at the following sampling locations were not reached: TP-5 (reached 7 feet bgs versus [vs] a target of 8 feet bgs), TP-26 (reached 6.5 feet bgs vs a target of 10 feet bgs), HA-1 (reached 4 feet bgs vs a target of 6 feet bgs), HA-3 (reached 5 feet bgs vs a target of 6 feet bgs), and HA-4 (reached 3 feet bgs vs a target of 6 feet bgs).

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3 PHYSICAL SETTING

The following sections summarize available information regarding geographic, geologic, and hydrogeologic conditions of the Site.

3.1 SITE GEOGRAPHY

In general, the Site slopes gradually from a maximum elevation of approximately 11.6 feet MLLW in the north to a minimum elevation of approximately 5.6 feet MLLW in the south. The perimeter of the Site is bounded by an approximately 10- to 15-foot high earthen berm (except where bounded by the San Diego Bay National Wildlife Refuge to the north).

3.2 REGIONAL GEOLOGIC SETTING

San Diego County resides within the southern portion of California's Peninsular Ranges Geomorphic Province (California Geologic Survey, 2002; Norris and Webb, 1990). This province is characterized by an assemblage of north- to northwest-trending, high-relief mountain ranges stretching south from the Santa Monica Mountains in Los Angeles, through San Diego County, and into Baja California.

San Diego County encompasses 3 geomorphic sub-zones of the Peninsular Ranges Geomorphic Province set in a series of north to northwest trending belts, roughly parallel to the coastline. From west to east, these zones are comprised of a relatively narrow, low-relief coastal plain, a central, high-relief mountainous zone, and a low-lying desert zone.

The Site is located within the coastal plain sub-zone which is dominated by a westward thickening wedge of sedimentary units that were deposited on the Cretaceous- to Jurassic-age igneous and metamorphic bedrock material that outcrop in the central portion of San Diego County. These sedimentary units consist of a variety of claystone, siltstone, sandstone, and conglomerate deposited between the late Cretaceous-time discontinuously through the Quaternary, the most recent geologic period.

3.3 SITE GEOLOGY

Lithology encountered during this investigation primarily consisted of a surficial salt crust layer overlying marine deposits. The surficial salt crust layer encountered during this field investigation was generally 0.25- to 0.5-foot thick.

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The marine deposits predominantly consisted of sandy and silty clays, clays, sandy silts, and poorly-graded sands and silty sands (see test pit and hand auger logs provided in Appendix C). The clays and silts were generally encountered below the salt crust at the northwestern and southern portions of the Site while the poorly-graded sands and silty sands were generally encountered below the salt crust at the northern and central portions of the Site.

Generally, the clays and silts consisted of low- to moderately-plastic material with some localized areas of highly-plastic clays. Trace amounts of gravel were generally observed within the silty sands.

3.4 REGIONAL HYDROGEOLOGIC SETTING

The Site is located in the San Diego Hydrologic Basin Planning Area within the Otay Valley Hydrologic Area of the Otay Hydrologic Unit. Groundwater within the Otay Valley Hydrologic Area has existing beneficial uses for municipal and domestic supply, agricultural supply, and industrial service supply (San Diego Regional Water Quality Control Board, 1994). The Site is also located within the boundaries of the Coastal Plain of San Diego Groundwater Basin. The Coastal Plain of San Diego Groundwater Basin is characterized by 3 primary water-bearing formations including Quaternary alluvium (up to 50 feet thick); slightly- to moderately-consolidated sand, silty sand, and clayey sand of the Pliocene to Pleistocene age San Diego Formation (100- to 1,400-feet thick); and weakly-cemented sand of the Miocene- to Pliocene-age Otay Formation (thickness not reported) (California Department of Water Resources, 2004).

3.5 SITE HYDROGEOLOGY

The groundwater flow direction at the Site is anticipated to be generally towards the north-northwest (Kleinfelder, 2018b). During this soil assessment, groundwater was first encountered at depths ranging from approximately 3 to 9 feet below existing Site grades (Table 3-1 and Figure 1-2).

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4 SOIL SAMPLING

Test pit and hand auger soil sampling was performed by Kleinfelder from June 18 through 20, 2018. Kleinfelder contracted with Soclaris Contracting to excavate the test pits.

4.1 PRE-FIELD ACTIVITIES

The test pit and hand auger locations were marked with survey stakes and Underground Service Alert of Southern California was notified at least 48 hours in advance of field work to mark out underground public utilities (Ticket #A181300220-00A). Each sampling location was recorded using a hand-held Trimble Global Positioning System unit (Table 3-1).

4.2 TEST PIT SAMPLING AND ANALYSIS

Under Kleinfelder's supervision, Soclaris excavated 32 test pits (TP-1 through TP-32, Figure 1-2) using a track-mounted backhoe. The planned depth of each test pit was based on the difference between current surface elevation and the proposed elevations for the marsh plain and tidal channel (Environmental Science Associates, 2017) (Table 3-1). Due to the maximum reachable depth of the backhoe (approximately 10 feet), the following test pit locations did not reach the total depths of the planned tidal channel excavations: TP-11, -12, -16, -19, -23, -26, -27, -29, and -30. The total depths of these test pits were approximately 1 to 4 feet above the proposed depths of the tidal channel excavations.

Soil removed from each test pit was placed in separate stockpiles next to the test pit based on depth and changes in lithology observed during test pit excavation. Kleinfelder then collected soil samples directly from the stockpiles. The stockpiles were placed back into the test pits in reverse order to how they were excavated, and the test pits returned to existing grade.

Separate soil samples were collected and analyzed for environmental and geotechnical purposes as described in the following sections. During the first day of sampling (June 18, 2018), Kleinfelder composited the environmental and geotechnical samples as they were collected based on observed lithology from the test pits completed that day (TP-1, -2, -5, -6, -12, -13, -14, and -15). Upon discussion of the compositing methodology with the SDUPD following the first day of sampling, it was decided that it would be more appropriate to choose which samples to composite and at what compositing ratios after all discrete samples have been collected and evaluated. It was additionally decided to not composite samples collected for environmental analysis from the test pits.

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4.2.1 Environmental Sampling and Analysis

As described in the previous section, environmental samples collected on the first day of sampling were composited based on observed lithology. The following composite samples were collected:

- ENVCOMP-1: TP-1 (0.5 to 2 feet bgs), TP-2 (0.5 to 3 feet bgs), and TP-15 (0.5 to 4 feet bgs).
- ENVCOMP-2: TP-2 (3 to 10 feet bgs), TP-5 (2 to 7 feet bgs), and TP-15 (4 to 8 feet bgs).
- ENVCOMP-3: TP-1, -2, -5, and -15 (0 to 0.5 foot bgs) (Replicate collected).
- ENVCOMP-4: TP-14 (8 to 10 feet bgs) and TP-15 (8 to 9 feet bgs) (Replicate collected).

Environmental samples collected on the remaining days were collected as discrete samples from stockpiles.

Soil samples collected for environmental analysis were placed in glass jars, labeled, and stored in coolers with ice. The samples were transported by courier to Advanced Technology Laboratories (ATL) in Signal Hill, California under chain-of-custody documentation. ATL subcontracted select laboratory analyses to Eurofins Calscience and American Environmental Testing Laboratories, Inc. (AETL). Composite and discrete soil samples were analyzed for total metals by USEPA methods 6020/7471A. Soil samples collected from test pits at locations where the soil could potentially be reused on-Site within the mitigation bank were analyzed for additional COPCs requested by the USACE. These test pits included TP-3, TP-4, TP-12 and TP-23. Also, soil samples collected from test pits TP-6, TP-9, TP-13, TP-16, TP-19, TP-21, and TP-25 were analyzed for additional COPCs to characterize potentially exported soil with respect to the Department of Toxic Substances Control (DTSC) Clean Fill Guidance (DTSC, 2001). A summary of the test pit analytical program is provided in Table 4-1. Additionally, the soil sample collected at TP-17 from 1.5 to 2 feet bgs was analyzed for TPH due to odorous soil identified during sampling.

4.2.2 Geotechnical Sampling and Analysis

Soil samples collected for geotechnical analysis were collected in plastic bulk sampling bags and labeled. The samples were transported to Kleinfelder's geotechnical laboratory in San Diego, California and Clarkson Laboratory and Supply, Inc. in Chula Vista, California under chain-of-custody documentation. As previously described, geotechnical samples collected during the first day (June 18, 2018) were composited based on the lithology observed that day (the geotechnical and environmental composite samples were the same on June 18, 2018). During the remaining

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days of sampling, geotechnical samples were collected discretely based on lithology observed and later composited in the laboratory. Samples chosen for compositing were based on the geographic extent of where the samples were collected and were composited using observed thickness-weighted ratios.

All composited geotechnical samples were analyzed in accordance with Table 4-1.

4.3 HAND AUGER SAMPLING AND ANALYSIS

A total of 12 hand auger borings were advanced and sampled to assess the soil at locations identified during the Phase I ESA (Kleinfelder 2018b) as RECs where soil environmental impacts may be present. The following table identifies the RECs and the hand auger locations intended to assess the REC.

Recognized Environmental Condition (REC)	Hand Auger Locations
Former Oil and Gas Well	HA-8, HA-9, HA-10, HA-11
Storm Drain Outfall 12-inch at Southern Site Boundary (the other 12-inch and 48-inch storm drain outfalls to the west were not assessed because the outfalls were outside of the bermed area)	HA-3, HA-4, HA-12
Previous Sample P20-1	HA-1, HA-2
Former VMT Auto Sales	HA-5, HA-6 , HA-7

One additional hand auger boring was advanced (HA-13) and sampled at a location where metal debris was observed. The location of the hand auger borings are shown on Figure 1-2.

In accordance with the Work Plan, the hand auger borings were generally advanced to a maximum depth of 6 feet bgs and sampled at 4 depths: the ground surface and at 2, 4 and 6 feet bgs. Due to the borehole collapsing and the presence of groundwater in HA-1, HA-3 and HA-4, the deeper samples could not be collected. An additional sample was collected at HA-1 from 1-foot bgs due to odorous soil. HA-1 was sampled at the surface and at 1, 2 and 4 feet bgs. HA-3 was sampled at the surface and at 2, 4, and 5 feet bgs. HA-4 was sampled at the surface and at 3 feet bgs.

The soil samples from the surface were collected with a stainless-steel hand trowel and the deeper soil samples were collected using a stainless-steel hand auger.

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Sample location HA-7 at the former VMT Auto Sales facility was intended to be located near the floor drain identified in the Phase I ESA; however, this floor drain was not observed during this assessment and was presumed to be covered up during demolition of the facility. A concrete corer was used to core through the concrete slab at a location thought to be near the floor drain to access the soil below the concrete slab.

Soil collected from each sampling depth was placed on plastic sheeting and recorded on the boring (Appendix C) and photograph logs (Appendix D). Between each boring location, the hand auger was decontaminated using a non-phosphate detergent solution. One equipment blank sample from the hand auger was collected at the end of each sampling day. Following sampling, each hand auger boring was backfilled with the soil cuttings. HA-7 was patched at the surface with concrete.

The soil samples were placed in glass jars, labeled, and stored in coolers with ice. The samples were transported by courier to ATL in Signal Hill, California under chain-of-custody documentation. ATL subcontracted some of the laboratory analyses to Eurofins Calscience and AETL. The analytical suite for the samples varied depending on the COPCs at the location, potential for sampling location to be located in on- Site reuse area (pursuant to the USACE *Draft Sampling and Analysis Plan/Results Report Guidelines*), and to evaluate potential export soil pursuant to the DTSC Clean Fill Guidance. A summary of the hand auger analytical program is provided in Table 4-2.

The soil samples collected from 4 and 6 feet bgs were requested to be held by the laboratory pending results of the shallower samples. Hand auger soil samples that contained OCPs, SVOCs, and TPH were analyzed for leaching potential by SPLP. These included surface samples from HA-2 (fluoranthene and pyrene), HA-4 (total petroleum hydrocarbons as diesel [TPH-D] and total petroleum hydrocarbons as oil [TPH-O]), HA-5 (TPH-D, TPH-O, 4,4-dichlorodiphenyldichloroethylene [DDE], 4,4-dichlorodiphenyltrichloroethane [DDT], alpha-chlordane, gamma-chlordane, and chlordane), and HA-9 (TPH-D and TPH-O).

Due to elevated lead and zinc concentrations in soil samples collected from 2 feet bgs at HA-5 and HA-7, the soil samples collected from 4 feet bgs at these locations were also analyzed for lead and zinc.

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4.4 INVESTIGATIVE-DERIVED WASTE

Waste water used to clean equipment was transferred to a Department of Transportation-rated 55-gallon steel drum and disposed of as non-hazardous waste at the Demenno Kerdoon disposal facility located in Compton, California (Appendix E).

4.5 DEPARTMENT OF ENVIRONMENTAL HEALTH PERMIT

A retroactive boring construction permit from the County of San Diego Department of Environmental Health (SDDEH) was obtained after sampling because groundwater was encountered (Appendix F). A 60-Day report was submitted to the SDDEH on August 20, 2018.

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5 RESULTS AND APPLICABLE SCREENING CRITERIA

The environmental analytical results are presented in Tables 5-1 through 5-6 and the geotechnical analytical results are presented in Tables 5-7 through 5-9. The environmental and geotechnical laboratory reports are included in Appendix G. The environmental results in Tables 5-1 through 5-6 are compared to screening criteria based on the anticipated disposition of the soil (on-Site reuse within the mitigation bank or export off-Site). Tables 5-1 through 5-3 contain the environmental analytical results for locations identified as representing potential areas for on-Site reuse. The results in these tables are compared to the ERL thresholds for adverse biological effects (Long et al. 1995).

Because all soil at the Site may be exported off-Site, all environmental analytical results are provided in Tables 5-4 through 5-6 and screened with respect to criteria applicable to the potential export alternatives. The applicable screening criteria are discussed below.

The applicable screening criteria that were exceeded are shown on Figures 5-1 and 5-2.

5.1 SCREENING LEVELS APPLICABLE TO ON-SITE REUSE

Soil in the vicinity of the following sampling locations has the potential to reused on-Site within the mitigation bank: HA-3, HA-4, HA-5, HA-6, HA-7, HA-12, HA-13, TP-3, TP-4, TP-12, and TP-23. The results of these sample analyses were compared to the ERLs (Long et. al., 1995).

5.2 SCREENING LEVELS APPLICABLE TO OFF-SITE EXPORT

Potential off-Site export alternatives include the following:

- Transport off-Site for reuse at a commercial development (e.g., Chula Vista Bayfront development)
- Transport to the former South Bay Power Plant site for permanent placement
- Transport to the former South Bay Power Plant site for temporary storage
- Transport to an appropriate landfill for disposal
- Transport to the Pacific Ocean for disposal or San Diego Bay for reuse

5.2.1 Transport Off-Site for Reuse at a Commercial Development

Under this option, soil planned for off-Site reuse would be excavated and transported to a commercial development, such as the Chula Vista Bayfront. Screening criteria applicable to this

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reuse option include USEPA Region 9 Regional Screening Levels (RSLs) for composite worker soil and DTSC Modified Screening Levels (SLs) for commercial and industrial soils. These screening criteria were developed as exposure levels for on-Site workers after redevelopment.

Tier 1 Soil Screening Levels (SSLs) contained in Regional Water Quality Control Board – San Diego Region Order No R9-2014-0041, Conditional Waivers of Waste Discharge Requirements for Low Threat Discharges in the San Diego Region (Waiver 10, Section B(4)), may also be applicable for off-Site reuse.

5.2.2 Transport to the Former South Bay Power Plant Site for Permanent Placement

Site-specific screening criteria established for soil transported to the former South Bay Power Plant site for placement will be applicable to this alternative (Haley & Aldrich, 2010).

5.2.3 Transport to the Former South Bay Power Plant Site for Temporary Storage

Site-specific screening criteria for established for soil transported to the former South Bay Power Plant site for placement will be applicable to this alternative (Haley & Aldrich, 2010).

5.2.4 Transport to an Appropriate Landfill for Disposal

Screening criteria applicable to this alternative include federal and California State hazardous waste criteria (CCR 66261.24). Landfill specific criteria may also apply. These criteria are not included in Tables 5-4 through 5-6.

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5.2.5 Transport to the Pacific Ocean for Disposal or San Diego Bay for Reuse

Projects intending to dispose of dredged soil to the Pacific Ocean would apply for an Ocean Dumping Permit with the USACE. This permit requires analytical testing in accordance with the *Evaluation of Dredged Material Proposed for Ocean Disposal* (Ocean Testing Manual) (USEPA, 1991). Projects intending to reuse soil within San Diego Bay (i.e., for eelgrass habitat) would need to be in accordance with the *Water Quality Control Plan for Enclosed Bays and Estuaries* (SWRCB, 2009 [as amended, 2018]). For ocean disposal or bay reuse, additional testing would be warranted and include physical, chemical, toxicity, and bioaccumulation analyses that were not a part of the scope of this assessment.

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6 ENVIRONMENTAL DATA QUALITY EVALUATION

The environmental data quality evaluation presented in this section was based on verification and validation of field and laboratory quality assurance/quality control (QA/QC) samples of environmental analyses collected and analyzed during this assessment.

6.1 DATA VERIFICATION

Data verification of environmental results was performed by Kleinfelder in accordance with the project specific Work Plan. Data verification is the process of evaluating the completeness, correctness, and conformance/compliance of a specific data set against the method, procedural and/or contractual requirements. The documents and/or deliverables used for data verification included:

- Daily field logs,
- Chain-of-custody forms,
- Lab receiving forms,
- Email correspondence,
- Level II laboratory analytical reports, and
- Laboratory electronic data deliverables (EDDs).

Kleinfelder uses the EQuIS program for management of the electronic project data. The EDDs submitted by the laboratory were verified to ensure they were submitted in the proper format and with valid database. Generally, when errors were found, revised EDDs were requested from the contracted laboratory. In some cases, the EDD would be corrected by Kleinfelder to match the data found in the hard copy report.

Using the documents mentioned previously, Kleinfelder verified consistency between the information from the daily field logs and each chain-of-custody to the reporting of the analytical data in the hard copy lab reports (provided in the portable document format) and EDDs. The verification included review of the following data:

- Sample ID, location, type, matrix, date, and time
- Sample delivery group (SDG)
- Analytical method and analysis date
- Analytes reported by method

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- Analyte result, limits, and laboratory qualifier.

If an error was found during the verification process, revisions were requested from the party responsible for the documents or deliverable.

Upon completion of the verification process, the verified data were then validated by Kleinfelder. Table 6-1 includes a summary of the verified project samples by sample location, date, SDG, and sample type.

6.2 DATA VALIDATION

The environmental analytical data generated for this assessment were validated in accordance with the Work Plan and the following guidance documents:

- USEPA Guidance on Environmental Data Verification and Data Validation (USEPA, 2002)
- USEPA Guidance for Labeling Externally Validated Laboratory Data for Superfund Use (USEPA, 2009)
- SEPA National Functional Guidelines for Organic Superfund Methods Data Review (USEPA, 2017a)
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review (USEPA, 2017b)

For this project, 100% of the environmental data were validated at a Stage 2B (Level II) effort. For Stage 2B, the validation of the analytical data includes a review of the following laboratory parameters:

- sample IDs, chain of custody
- holding times
- cooler temperatures
- blanks
- surrogates
- matrix spike/matrix spike duplicate (MS/MSD)
- laboratory control samples/laboratory control sample duplicates (LCS/LCSD)
- post digestion spikes
- internal standards
- reporting limits (RLs)

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- field QC samples.

Data validation qualifiers were assigned using the USEPA guidance, method, and/or laboratory provided QC acceptance limits and procedures. Data validation qualifiers and reason codes were entered into the project EQuIS database and are available to users as final validated data.

6.2.1 Data Validation Flagging Statistics

Analytical results for the sampling events were qualified by Kleinfelder's data validator as follows.

- Validation qualifier "J": The result is an estimated quantity; the associated numerical value is the approximate concentration of the analyte.
- Validation qualifier "J+": The result is an estimated quantity likely biased high; the associated numerical value is the approximate concentration of the analyte.
- Validation qualifier "U": The analyte was analyzed but was not detected above the level of the reported sample quantitation limit.
- Validation qualifier "UJ": The analyte was analyzed but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
- Validation qualifier "R": The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.

A summary of Kleinfelder's data validation qualifiers is presented in Table 6-2. The data in the table are the sums of the final validation qualifier by each individual method and laboratory. The table does not include in the validation statistics results that were only "U" or "J" flagged by the laboratory due to a result value that was above the method detection limit and below the RL as this qualifier is reported by the laboratory and does not represent a Quality Assurance/Quality Control (QA/QC) issue.

Analytical data were qualified for one or more of the following reasons:

- Hold time
- MS/MSD recovery outside of acceptable criteria
- Replicate relative percent difference (RPD) outside of acceptable criteria

A summary of the data validation reasons is presented in Table 6-3. The sums of the validation qualifiers (U, J, J+, UJ, R) are presented by validation reason code, method, and analyte.

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Equipment and source water blanks were collected as indicted in the Work Plan to assess the quality of decontamination procedures. Results of these field quality control samples were non-detect with the following exceptions:

- Sample EB-061818 had detects for barium (4.7 µg/L), chromium (1.4 µg/L), and copper (1.3 µg/L)
- Sample EB-061918 had a detect for chromium (0.9 µg/L)
- Sample EB-062018 had a detect for barium (1 µg/L)

The associated sample results were either non-detect or detects reported at a magnitude of 10 times greater than the blank, therefore, the results were not qualified. The equipment and source blank results indicate field decontamination procedures were carried out effectively.

6.3 SUMMARY OF PARCCS PARAMETERS

The quality of the field sampling efforts and laboratory results were evaluated for compliance with project data quality objectives through a review of overall precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS). Method and analyte results listed below are considered less than satisfactory if analyte results were flagged (highlighted in Table 6-2) by Kleinfelder's data validator at a frequency greater than 40% for a specific PARCCS parameter and/or rejected at a frequency greater than 10%.

6.3.1 Precision

Field and laboratory precision were evaluated using the RPD for the field replicate samples. Results were qualified by Kleinfelder's data validator for field replicate RPDs above 35%. Thirty-two of the 559 results were qualified which is a low percentage of the total (5.7%); therefore, it appears that field and laboratory procedures with respect to field replicates were performed consistently and with acceptable precision.

6.3.2 Accuracy

Accuracy was evaluated using the percent recoveries of the spiked samples, including surrogates, MS/MSD and LCS/LCSD samples. Seventy-five of 9,556 results (0.78%) were qualified due to accuracy criteria; therefore, the laboratory accuracy is satisfactory as shown by repeated recoveries of the spikes within the control limits.

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6.3.3 Representativeness

Sample chain-of-custody and laboratory receiving forms (Appendix G) indicates samples were properly stored and preserved consistent with the specific analytical method requirements. Representativeness was maintained by following chain-of-custody protocol and documentation, sampling, sample labeling, packaging, and transport consistent with procedures outlined in the project-specific Work Plan.

6.3.4 Comparability

Sample results reported in industry standard units to allow for comparable analysis with screening levels and project objectives. Samples were analyzed using methods as outlined in the Work Plan. The use of USEPA approved methods and a data quality assessment process yield data that are comparable.

6.3.5 Completeness

Analytical completeness was assessed by evaluating the validity of data obtained through the data quality assessment process (i.e., amount of valid data obtained as compared to the amount that was expected to be obtained under normal conditions). Estimated data ("J" or "UJ" qualified) are considered valid and usable; however, rejected data ("R" qualified) and missing analyses are considered invalid and unusable. Of the 9,556 analytical results, none were rejected yielding an analytical completeness of 100% which meets the project goal of 100%.

6.3.6 Sensitivity

The laboratory reported target analytes to the base reporting limit consistent with project reporting limits. In some cases, reporting limits were higher when samples were diluted due to elevated concentrations of target analytes and/or the sample matrix. Two thousand and six of the 9,556 results (21%) were reported from diluted samples. The majority of the results reported from dilutions (1,856) were for metals which utilized an Inductively Coupled Plasma (ICP) instrumentation. For ICP analysis, samples must be diluted down to a salinity where ions will not "salt out" and clog the ICP torch. The remaining dilutions were due to the viscosity of the extracts. Sample extracts must have a viscosity low enough to permit injection into the instrumentation. If the viscosity is too high then the samples must be diluted. Due to matrix and method variability, a defined sensitivity goal is not outlined in USEPA guidance or project documents; however, it appears that all samples were analyzed at the lowest dilution possible, which is acceptable with

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regards to sensitivity for the project. Additionally, laboratory reporting limits did not exceed applicable screening criteria.

6.3.7 Summary

The analytical data generated during the sampling event meet the project quality objectives. Sample analytical results are believed to be representative of Site conditions at the time of collection. Results obtained are comparable to historical data and risk-based parameters in that collection and analytical techniques followed approved, documented procedures. Results are reported in industry standard units.

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7 SOIL SUITABILITY EVALUATION

The analytical results of this assessment were used to evaluate the on-Site soil's suitability for on-Site reuse or export off-Site for reuse at a commercial development (e.g., Chula Vista Bayfront development), permanent placement at the former South Bay Power Plant site, temporary storage at the South Bay Power Plant, and/or disposal at an appropriate landfill. Soil may also be disposed of at a Pacific Ocean dredged material disposal site and/or reused within San Diego Bay (i.e., for eelgrass habitat); however, suitability under these scenarios was not evaluated.

7.1 SUITABILITY FOR ON-SITE REUSE

The suitability for on-Site reuse was evaluated by comparing the environmental analytical results for test pit samples TP-3, TP-4, TP-12 and TP-23 and hand auger samples HA-3, HA-4, HA-5, HA-6, HA-7, HA-12, and HA-13 to the ERLs. As discussed above, soil located at these sample locations may remain on-Site within the mitigation bank. ERL exceedances are shown on Figure 5-1 and highlighted in Tables 5-1 through 5-3.

7.1.1 Evaluation of Test Pit Results for On-Site Reuse

Copper was reported at a concentration above the ERL in one sample collected from TP-23 from 5 to 8 feet bgs. The copper result for this sample was 44 mg/kg as compared to the ERL of 34 mg/kg. Copper did not exceed the ERL in the other sampling intervals at TP-23 (from 0.5 to 5 feet bgs and 8 to 10 feet bgs). No other analytes were reported in test pit samples at a concentration exceeding the ERLs.

7.1.2 Evaluation of Hand Auger Results for On-Site Reuse

7.1.2.1 Hand Auger Locations HA-3, HA-4, HA-12 (Eastern 12-Inch Storm Drain Outfall)

Hand-auger borings HA-3, HA-4, and HA-12 were advanced and sampled in the vicinity of the eastern 12-inch storm drain outfall. Arsenic was reported at a concentration above the ERL in one sample collected from HA-3 from the surface. The arsenic result for this sample was 8.6J mg/kg as compared to the ERL of 8.2 mg/kg.

7.1.2.2 Hand Auger Locations HA-5 through HA-7 (Former VMT Auto Sales)

Hand-auger borings HA-5 through HA-7 were advanced and sampled in the vicinity of the former VMT Auto Sales facility. Two OCPs, 4,4-DDE and 4,4-DDT, were reported at concentrations

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exceeding the ERL in the surface sample collected from HA-5. These OCPs were not reported above the laboratory reporting limit in subsequent SPLP analyses. Copper, lead, nickel, and zinc exceeded the ERLs in the HA-5 surface sample, lead exceeded the ERL in the HA-6 surface sample, and silver exceeded the ERL in the HA-7 surface sample. Based on these ERL exceedances, soil in the vicinity of the former VMT Auto Sale facility would not be suitable for on-Site reuse.

7.1.2.3 Hand Auger Location HA-13 (Metal Debris)

No metals exceeded ERLs in the samples collected from HA-13. No other analyses were performed on samples collected from HA-13.

7.1.3 On-Site Reuse Conclusions

The copper result for the sample collected from TP-23 from 5 to 8 feet is only slightly above the ERL and does not appear to be representative of the general soil conditions at the Site. In addition, there does not appear to be a current or historic source for copper contamination in this area. If the soil in the vicinity of TP-23 is to be reused on-Site, we recommend the SDUPD consult with the USACE for further guidance on the copper results for this test pit.

Arsenic exceeded the ERL in the surface sample collected at HA-3 (eastern 12-inch storm drain outfall). However, the reported concentration of arsenic (8.6J mg/kg) did not exceed the DTSC upper-bound background concentration of 12 mg/kg (DTSC, 2008) and is likely representative of background conditions at the site. Furthermore, there are potentially significant practical issues relating to slope stability under the nearby sidewalk and Palm Avenue that should be considered when evaluating options for working in this area. If soil in the vicinity of the storm drain outfall is to be reused on-Site, we recommend the SDUPD consult USACE to determine the suitability for reuse. We additionally recommend discussing the implementation of best management practices with Caltrans to mitigate contaminants in the urban runoff draining to the future mitigation bank area through the 12-inch storm drain outfall.

Soil in the vicinity of the former VMT Auto Sales facility (e.g. sample location HA-5, HA-6 and HA-7) appears to have been impacted by the facility activities. Based on the ERL exceedances, soil in the vicinity of the former VMT Auto Sales facility would not be suitable for on-Site reuse. In addition TPH-D and TPH-O were reported in the surface sample collected from HA-5 (Table 5-5) and TPH-D exceeded the USEPA RSL for composite worker soil. We recommend that a SDDEH Voluntary Assistance Program (VAP) case be opened and additional investigation and

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remediation, if appropriate, be performed at the former VMT Auto Sales to address TPH-impacted soil. Because the TPH-impacted soil identified in sample HA-5-0-0.5 is collocated with most of the other identified exceedances of ERLs in this area, once the TPH-impacted soil issue is resolved, we recommend re-evaluating remaining soil in this area for metals and OCP for on-Site reuse.

7.2 SUITABILITY FOR EXPORT

7.2.1 Evaluation of Test Pit Results for Export

The test pit results were compared to the USEPA RSLs for composite worker soil, DTSC SLs for commercial/industrial soil, South Bay Power Plant site-specific cleanup thresholds, and hazardous waste criteria. Other than arsenic, none of these thresholds were exceeded in any of the test pit results. Arsenic concentrations ranged between 1 mg/kg and 7 mg/kg with a mean concentration of 1.97 mg/kg. Based on the narrow range of concentrations it is likely that the arsenic reported in the test pit samples is representative of background conditions at the site. In addition, none of the arsenic concentrations in the test pit samples exceeded the DTSC upper-bound background concentration of 12 mg/kg (DTSC, 2008).

The test pit results were also compared to the Waiver 10 Tier 1 SSLs. Lead and vanadium exceeded the Tier 1 SSLs as shown on Figure 5-2 and in Table 5-4. Lead exceeded the Tier 1 SSL in samples collected from TP-4 and TP-7 and vanadium exceeded the Tier 1 SSL in samples collected from TP-3, TP-7, TP-8, TP-11, TP-16, TP-19, TP-26, and TP-32. In accordance with Waiver 10 requirements, the 90% Upper Confidence Limits (UCLs) for lead and vanadium were calculated using the results for all test pit and hand auger results (except HA-3 through HA-9, where soil would be disposed of at a landfill). The 90% UCLs for lead and vanadium were calculated to be 6.02 mg/kg and 35.77 mg/kg, respectively (Appendix H). These concentrations are below the Tier 1 SSLs for lead and vanadium of 15 mg/kg and 50 mg/kg, respectively.

Two organic contaminants, dimethyl phthalate (DMP) and bis (2-ethylhexyl) phthalate (BEHP) were detected in samples collected from test pits TP-3, TP-4, TP-6, TP-13, TP-16, TP-19, TP-21, and TP-23. Phthalates are compounds found in a variety of products including plastics, resins, sunscreens, and markers. These products can artificially contaminate samples in the field or in the laboratory. Based on the following lines of evidence, we conclude that the phthalates detected in the test pit samples are due to laboratory contamination.

- DMP and BEHP were the only organic contaminants detected in any of the 30 test pit samples.

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- There are no known historical sources for DMP or BEHP contamination in the test pit areas.
- The lateral and vertical distribution of samples containing DMP or BEHP appears random. The detections do not appear to represent a contiguous volume (or two contiguous volumes) of contaminated soil (e.g., there are non-detect gaps in the vertical profiles), the phthalate concentrations are generally consistent and near the laboratory reporting limits (e.g., there are no gradients from high to low concentrations), and there does not appear to be a relation between detected phthalates and the presence of groundwater. Of the 8 test pits where either DMP or BEHP was identified, 3 had decreasing concentrations with depth, 3 had increasing concentrations with depth, and 2 had a mixed trend, so there is no discernable concentration trend in test pit samples with depth. A detection of either DMP or BEHP in a test pit was negatively correlated with the likelihood of a second detection among the other samples in those pits, as compared to the overall detection frequency among test pit samples.
- None of the 30 samples analyzed for phthalates contained both DMP and BEHP, though all 30 samples were analyzed for both. Samples analyzed for both DMP and BEHP were collected from 11 test pits, but none of the test pits were found to have both DMP and BEHP. This suggests that the Site has been subject to two independent, widespread, non-contiguous, but largely non-collocated releases, one of DMP and one of BEHP, where both are randomly distributed and neither has an apparent source. Alternatively, the mechanisms for the two apparent releases might be mutually exclusive in relation to each other. Both scenarios seem unlikely.
- The DMP and BEHP were both detected in samples collected during all three days of sampling, with consistent sampling protocols.
- The flood caused by the failure of the old Savage Dam in 1916 is understood to have resulted in the deposition of some shallow soils on Site. DMP and BEHP are manmade compounds that were not in widespread use prior to 1916, so it is unlikely that DMP or BEHP was brought to the Site by the flood or that they were buried or mixed into soil by the flood.
- All soil samples were initially transported to ATL by courier. ATL subsequently transported the samples to AETL and Eurofins Calscience by courier for phthalate analysis. Samples from TP-3, TP-4, and TP-23 were analyzed by AETL and samples from TP-6, TP-9, TP-12, TP-13, TP-16, TP-19, TP-21, and TP-25 were analyzed by Eurofins Calscience. Out of these 30 samples, 5 contained BEHP, 7 contained DMP, and 18 were non-detect (ND) for either compound. AETL reported all 5 BEHP detections and 7 NDs, while Eurofins

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Calscience reported all 7 DMP detections and 11 NDs. To calculate the odds of such an outcome, the binomial coefficient was used:

$$\binom{n}{k} = \frac{n!}{k!\,(n-k)!}$$

Where n is the number of elements (total number of samples) and k is the number of distinct elements (number of samples selected). The odds are calculated using the 12 selections by AETL. The total number of permutations n=30 and k=12 yields 86,493,225 possible combinations. The same formula is used to calculate the number of permutations for the subset of all the outcomes. k equals the number of selections for that subset and n equals the total number of samples in the subset. For the calculation of selecting 5 of 5 BEHP samples, n=5 and k=5, yielding 1 (there is only 1 way to select all five). For the calculation of selecting 7 of the 18 NDs, n=18 and k=7, this gives us 31,824 permutations for selecting 7 NDs. We multiply these 2 together (1 x 31,824) to find the product which gives the total number of permutations, equaling 31,824. The total probability will be the 31,824 divided by the total number of possible permutations giving a probability of 0.0003679, or 0.03679%. Assuming that the sample results accurately reflect the environmental condition of the Site, the odds of collecting 30 samples, randomly selecting 18 samples to be sent to a first laboratory and the other 12 to be sent to a second laboratory, and finding that all 7 samples with detectable concentrations of DMP happened to be sent to the first laboratory and all 5 samples with detectable concentrations of BEHP happened to be sent to the second, is an outcome that would occur only once, on average, in 2,718 attempts. A probability this low effectively rules out the possibility that the sample results, taken at face value, accurately reflect the environmental condition of the Site.

- The sample with the highest concentration of phthalates (DMP detected at 0.4 mg/kg in TP-21 from 0 to 5 feet bgs) was re-extracted and analyzed by the laboratory to assess if DMP could have been a result. of laboratory contamination during the initial analysis. DMP was not detected above the laboratory reporting limit in the re-extracted sample, though, the re-extraction occurred outside of the holding time.

Based on these lines of evidence, we conclude that the DMP and BEHP detections do not accurately reflect the environmental condition of the Site, but rather are contaminants artificially introduced during or after the collection of the samples.

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7.2.2 Evaluation of Hand Auger Results for Export

7.2.2.1 Hand Auger Locations HA-1 and HA-2

Previous boring P20-1, located along the berm in the northwestern portion of the Site, contained arsenic at a concentration of 8.5 mg/kg from 0 to 2 feet bgs and at 10.7 mg/kg from 2 to 4 feet bgs. At HA-1 and HA-2, located east of the berm, concentrations of arsenic ranged between 1 and 5.1 mg/kg. These concentrations are below the DTSC upper-bound background concentration of 12 mg/kg (DTSC, 2008).

PAHs were detected in the samples collected from 4 to 6.5 feet bgs at P20-1 and SVOCs were detected in the surface samples at HA-1 and HA-2.

At P20-1, HA-1, and HA-2, the applicable regulatory screening levels for soil export were not exceeded, except for Waiver 10 Tier 1 SSLs due to detectable concentrations of organic contaminants (Figure 5-2 and Table 5-6).

7.2.2.2 Hand Auger Locations HA-3, HA-4 and HA-12 (Eastern 12-Inch Storm Drain Outfall)

Following on the evaluation presented in Section 7.1.2.1, if remedial excavation and export of soil from this area occurs, the excavated material would be subject to the various export screening criteria. No applicable regulatory screening levels were exceeded at HA-3, HA-4, and HA-12 for export, except for Waiver 10 Tier 1 SSLs (Figure 5-2 and Tables 5-4 through 5-6). The Tier 1 SSLs were exceeded for lead, molybdenum, vanadium, TPH-D, TPH-O, BEHP, bisphenol A. TPH-D and TPH-O were non-detect based on SPLP analysis, however BEHP and bisphenol A were not analyzed by SPLP. Analysis of BEHP and bisphenol A by SPLP is recommended.

7.2.2.3 Hand Auger Locations HA-5, HA-6 and HA-7 (Former VMT Auto Sales)

Following on the evaluation presented in Section 7.1.2.2, if remedial excavation and export of soil from this area occurs, the excavated material would be subject to the various export screening criteria. The USEPA RSL for composite worker soil was exceeded in the surface sample at HA-5 for TPH-D. Because the USEPA RSL was exceeded, the soil could not be reused off-Site, therefore, Waiver 10 would not be applicable. As noted in Section 7.1.3, we recommend opening a VAP case for the former VMT Auto Sales facility.

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7.2.2.4 Hand Auger Locations HA-8, HA-9, HA-10 and HA-11 (Former Oil and Gas Well)

No regulatory screening levels were exceeded at HA-8 through HA-11, except for Waiver 10 Tier 1 SSLs, due to detectable concentrations of organic contaminants in the 4 and 6 foot samples at HA-8 (dimethyl phthalate) and surface sample at HA-9 (TPH-D and TPH-O) (Figure 5-2 and Tables 5-5 and 5-6). These results indicate that soil in the vicinity of these borings may have been impacted by the former oil well activities.

7.2.2.5 Hand Auger Locations HA-13 (Metal Debris Area)

No metals exceeded regulatory screening levels in the samples collected from HA-13. No other analyses were performed on samples collected from HA-13.

7.2.3 Export Conclusions

The soil represented by the test pit samples appears to be suitable for unrestricted off-Site reuse. Arsenic reported in the test pit samples appears to be within the range of background concentrations, the 90% UCL concentrations for the reported lead and vanadium results are below the Waiver 10 Tier 1 SSLs, and the phthalate reported in the test pit samples appears to be the result of laboratory contamination. Additionally, there are no known historical sources of contamination to the areas represented by the test pits and the results of this investigation have demonstrated there to be no known contamination in the test pits, therefore Waiver 10 is not applicable to the planned bulk export of soil from the project area.

Due to the reported concentrations of SVOCs in samples collected from HA-1 and HA-2, additional investigation of the soils in this area for SVOCs may be warranted before off-Site reuse.

Soil samples collected from HA-3 and HA-4 contained concentrations of organic contaminants including BEHP and bisphenol A. If the soil in the vicinity of these borings will not remain on-Site, we recommend analysis of these contaminants by SPLP.

The USEPA RSL for composite worker soil was exceeded in the surface sample at HA-5 for TPH-D. Because the USEPA RSL was exceeded, the soil could not be reused off-Site, therefore, Waiver 10 would not be applicable. As noted in Section 7.1.3, we recommend opening a VAP case for the former VMT Auto Sales facility.

The presence of organics in samples collected from HA-8 and HA-9 indicate the soil in the vicinity of these boring may have been impacted by the former oil well activities. As a result, this soil

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would not be suitable for off-Site reuse. We recommend further assessment of this area to evaluate the extent of organic impacts and removal and appropriate disposal of the impacted soil.

Site-specific thresholds for permanent placement at the former South Bay Power Plant site were not exceeded, therefore, soil may be transported from Salt Pond 20 and reused at the former South Bay Power Plant site.

If soil is to be temporarily stored at the former South Bay Power Plant site, then it could become contaminated through direct contact with existing contaminated soil at the former South Bay Power Plant site. Measures should be taken to isolate the soil imported to the former South Bay Power Plant site from existing soil and to document the location, volumes, and movement of the soil after placement. If soils are not isolated and fully documented, then additional characterization of the soil may be needed after placement at the South Bay Power Plant site. In addition if soil placed at the South Bay Power Plant is transported to a secondary off-Site location, the requirements of Waiver 10 would likely apply .

7.3 GEOTECHNICAL EVALUATION

Soil collected from the test pits were composited based on lithology observed at the time of sampling. Based on the physical and chemical properties as well as the relative sample depths of each composited test pit soil sample, 6 unique soil units (A through F) were identified to assist with future soil management. The estimated lateral extent of each soil unit and the apparent in-situ vertical order of the units are shown on Figures 7-1 through 7-6. The lateral extent of each soil unit was estimated by creating polygons around each test pit location using the Thiessen interpolation method. Table 3-1 includes the surface areas of the Thiessen polygons surrounding each test pit location.

Samples collected on June 18, 2018, for environmental analysis (ENVCOMP-1 through ENVCOMP-4) were composited, by visual observation, separately from the samples collected and composited for geotechnical analysis. Kleinfelder compared the soil types composited in ENVCOMP-1 through ENVCOMP-4 with the soil units identified above, to assess whether ENVCOMP-1 through ENVCOMP-4 were composited consistently with the assigned soil units. Based on this comparison, ENVCOMP-1 through ENVCOMP-4 were composited consistently with the assigned soil units (i.e. ENVCOMP-1 and ENVCOMP-2 represent soil unit C, ENVCOMP-3 represents soil unit A, and ENVCOMP-4 represents soil unit F). Barium in ENVCOMP-1 (assigned to soil unit C) was detected at 140 mg/kg which is higher than the highest concentration of barium (130 mg/kg) detected in the individual test pit samples assigned to soil unit C.

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ENVCOMP-1 was composited from three equal volume samples, therefore the highest possible concentration of a single sample in ENVCOMP-1 would be 420 mg/kg, which would not exceed any screening criteria.

The suitability of the site soil for reuse should be evaluated with respect to the specific reuse option and the data collected by this investigation. Some reuse options may not be suitable based on the geotechnical properties identified by this investigation. Additional testing may be needed to assess project-specific requirements.

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8 CONCLUSIONS AND RECOMMENDATIONS

This *Soil Assessment Report* was prepared to document a soil investigation conducted for the purposes of evaluating the on-Site soil's suitability for on-Site reuse or off-Site reuse at a commercial development (e.g., Chula Vista Bayfront development), transported to the former South Bay Power Plant site for permanent placement, transported to the former South Bay Power Plant site for temporary storage, and/or transported to an appropriate landfill for disposal. Soil may also be disposed of at a Pacific Ocean dredged material disposal site and/or reused within San Diego Bay (i.e., for eelgrass habitat); however, suitability under these scenarios was not evaluated. Geotechnical properties of on-Site soil were also analyzed to provide data for future reuse at off-Site locations.

The following is a summary of the conclusions and recommendations resulting from this investigation.

- Site soils in areas of planned or possible on-Site reuse appear to be suitable for this purpose, with the exceptions of targeted locations in the vicinity of the eastern 12-inch storm drain outfall, former VMT Auto Sale facility, and at TP-23. The copper result for the sample collected from TP-23 from 5 to 8 feet is only slightly above the ERL and does not appear to be representative of the general soil conditions at the Site. In addition, there does not appear to be a current or historic source for copper contamination in this area. If the soil in the vicinity of TP-23 is to be reused on-Site, we recommend the SDUPD consult with the USACE for further guidance on the copper results for this test pit.
- Arsenic exceeded the ERL in the surface sample collected at HA-3 (eastern 12-inch storm drain outfall). However, the reported concentration of arsenic (8.6J mg/kg) did not exceed the DTSC upper-bound background concentration of 12 mg/kg (DTSC, 2008) and is likely representative of background conditions at the Site. Furthermore, there are potentially significant practical issues relating to slope stability under the nearby sidewalk and Palm Avenue that should be considered when evaluating options for working in this area. If soil in the vicinity of the storm drain outfall is to be reused on-Site, we recommend the SDUPD consult USACE to determine the suitability for reuse. We additionally recommend discussing the implementation of best management practices with Caltrans to mitigate contaminants in the urban runoff draining to the future mitigation bank area through the eastern 12-inch storm drain outfall. BEHP and bisphenol A were detected in HA-3 and HA-4. We recommend analysis of these contaminants by SPLP if the soil in the vicinity of these borings will not remain on-Site.

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- Soil in the vicinity of the former VMT Auto Sales facility (e.g. sample location HA-5, HA-6 and HA-7) appears to have been impacted by the facility activities. Based on the ERL exceedances, soil in the vicinity of the former VMT Auto Sales facility would not be suitable for on-Site reuse. In addition, TPH-D and TPH-O were reported in the surface sample collected from HA-5 and TPH-D exceeded the USEPA RSL for composite worker soil. We recommend that a VAP case be opened and additional investigation and remediation, if appropriate, be performed at the former VMT Auto Sales to address TPH-impacted soil. Because the TPH-impacted soil identified in sample HA-5-0-0.5 is collocated with most of the other identified exceedances of ERLs in this area, once the TPH-impacted soil issue is resolved, we recommend re-evaluating remaining soil in this area for metals and OCP for on-Site reuse.
- The soil represented by the test pit samples appears to be suitable for unrestricted off-Site reuse. Arsenic reported in the test pit samples appears to be within the range of background concentrations, the 90% UCL concentrations for the reported lead and vanadium results are below the Waiver 10 Tier 1 SSLs, and the phthalate reported in the test pit samples appears to be the result of laboratory contamination. Additionally, there are no known historical sources of contamination to the areas represented by the test pits and the results of this investigation have demonstrated there to be no known contamination in the test pits, therefore Waiver 10 is not applicable to the planned bulk export of soil from the project area.
- Due to the reported concentrations of SVOCs in samples collected from HA-1 and HA-2, additional investigation of the soils in this area for SVOCs may be warranted before off-Site reuse.
- The presence of organics in samples collected from HA-8 and HA-9 indicate the soil in the vicinity of these borings may have been impacted by the former oil well activities. As a result, this soil would not be suitable for off-Site reuse. We recommend further assessment of this area to evaluate the extent of organic contaminant impacts and removal and appropriate disposal of the impacted soil.
- Site-specific thresholds for permanent placement at the former South Bay Power Plant site were not exceeded, therefore, soil may be transported from Salt Pond 20 and reused at the former South Bay Power Plant site.
- If soil is to be temporarily stored at the former South Bay Power Plant site, then it could become contaminated through direct contact with existing contaminated soil at the former South Bay Power Plant site. Measures should be taken to isolate the soil imported to the former South Bay Power Plant site from existing soil and to document the location,

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volumes, and movement of the soil after placement. If soils are not isolated and fully documented, then additional characterization of the soil may be needed after placement at the South Bay Power Plant site. In addition if soil placed at the South Bay Power Plant is transported to a secondary off-Site location, the requirements of Waiver 10 would likely apply.

- If ocean disposal or bay reuse is planned, additional sampling and analysis of on-Site soils would be warranted.
- The geotechnical properties of the soil may require further evaluation to assess suitability for specific reuse options and project-specific requirement.

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9 LIMITATIONS

This report was prepared in a manner consistent with that level of care and skill ordinarily exercised by other members of Kleinfelder's profession practicing in the same locality, under similar conditions and at the date the services are provided. Our conclusions, opinions and recommendations are based on a limited number of observations and data. It is possible that conditions could vary between or beyond the data evaluated. Kleinfelder makes no other representation, guarantee or warranty, express or implied, regarding the services, communication (oral or written), report, opinion, or instrument of service provided.

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The scope of services described here is not intended to be inclusive, to identify all potential concerns, or to eliminate the possibility of other environmental problems. Within current technology, no level of assessment can show conclusively that a property or its structures are completely free of hazardous substances. Therefore, Kleinfelder cannot offer a certification that the property is free of environmental liability. Kleinfelder will assume no responsibility or liability whatsoever for any claim, loss of property value, damage, or injury which results from pre-existing hazardous materials being encountered or present on the project site, or from the discovery of such hazardous materials.

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TABLES

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Table 3-1
Sampling Location Summary
Salt Pond 20, San Diego, California

Sample ID	Proposed Total Depth (feet bgs)	Total Depth (feet bgs)	Coordinates (WGS 1984)	Depth to Groundwater (feet bgs)	Area of Thiessen Polygon (square feet)
HA-1	6	4	32.587295, -117.105094	4	NA
HA-2	6	6.5	32.587355, -117.104871	3.5	NA
HA-3	6	5	32.584170, -117.103193	4	NA
HA-4	6	3	32.584284, -117.103153	1	NA
HA-5	6	6.5	32.584362, -117.101684	NE	NA
HA-6	6	6.5	32.584387, -117.101737	NE	NA
HA-7	6	6.5	32.584343, -117.101427	NE	NA
HA-8	6	6.5	32.587913, -117.098476	NE	NA
HA-9	6	6	32.587922, -117.098137	NE	NA
HA-10	6	6.5	32.587694, -117.098127	NE	NA
HA-11	6	6.5	32.587705, -117.098482	NE	NA
HA-12	6	6.5	32.584589, -117.103348	NE	NA
HA-13	6	6.5	32.585876, -117.099708	NE	NA
TP-1	2	2	32.587604, -117.104253	NE	74,925
TP-2	10	10	32.587062, -117.104548	4	95,021
TP-3	9	9	32.586178, -117.103934	7	111,475
TP-4	8	8	32.585020, -117.103553	6	166,368
TP-5	8	7	32.587994, -117.103352	NE	67,991
TP-6	2	2	32.587393, -117.103483	NE	75,830
TP-7	2	2	32.586543, -117.103080	NE	83,780
TP-8	8	8	32.586081, -117.102572	NE	65,581
TP-9	9	9	32.585495, -117.102888	7	96,032
TP-10	2	2	32.584598, -117.102437	NE	175,577
TP-11	10	10	32.588966, -117.101794	NE	111,439
TP-12	10	10	32.588558, -117.102838	NE	49,051
TP-13	5	5	32.588263, -117.102262	NE	71,210
TP-14	10	10	32.587751, -117.101900	9	72,869
TP-15	9	9	32.587336, -117.102589	8	77,273
TP-16	10	10	32.586746, -117.102074	8	76,712
TP-17	2	2	32.585879, -117.101729	NE	130,195
TP-18	6	6	32.588759, -117.100644	NE	123,375
TP-19	10	10	32.588100, -117.100445	NE	77,954
TP-20	5	5	32.587725, -117.101119	NE	92,683
TP-21	9	9	32.586916, -117.100463	NE	89,067
TP-22	3	3	32.586715, -117.101284	NE	89,091
TP-23	10	10	32.586227, -117.100275	9	177,498
TP-24	6	6	32.589174, -117.099601	NE	90,407
TP-25	6	6	32.588625, -117.098687	NE	119,241
TP-26	10	6.5	32.588283, -117.099297	6.5	78,083
TP-27	10	10	32.587678, -117.099755	NE	76,699
TP-28	4	4	32.587045, -117.099321	NE	107,962
TP-29	10	10	32.588270, -117.097994	8	166,171
TP-30	10	10	32.587654, -117.098742	8	76,526
TP-31	4	4	32.587238, -117.098097	NE	146,148
TP-32	9	9	32.586179, -117.098554	8	224,527

bgs - below ground surface
NA - not applicable
NE - groundwater not encountered
WGS - World Geodetic System
Highlighted total depths did not reach proposed depths

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Table 4-1
Hand Auger Analysis Summary
Salt Pond 20, San Diego, California

Sample ID	Sample Depths (fbgs)	Proposed Approximate Marsh Excavation Depth (fbgs)	Rationale	Environmental Analyses
HA-1	Surface, 1, 2, 4*	None, Proposed Fill Area	Assess soil for the presence of contaminants detected in previous sample P20-1 and to evaluate soil located in potential USACE jurisdictional waters.	Metals (6020/7471A), SVOCs (8270C SIM and 8270 SIM), OCPs (8081), PCBs (8082), Phenols (8270C SIM), Phthalates (8270C SIM) (1 fbgs sample also anlayzed for TPH C6-C40 (8015B[M]))
HA-2	Surface, 2, 4*, 6*	None, Proposed Fill Area	Assess soil for the presence of contaminants detected in previous sample P20-1 and to evaluate soil located in potential USACE jurisdictional waters.	Metals (6020/7471A), SVOCs (8270C SIM and 8270 SIM), OCPs (8081), PCBs (8082), Phenols (8270C SIM), Phthalates (8270C SIM) (Surface sample also analyzed for SVOCs by SPLP using 8270C)
HA-3	Surface, 2, 4*, 5*	None, Proposed Fill Area	Assess soil for the presence of potential contaminants in the vicinity of the storm drain outfall and to evaluate soil located in potential USACE jurisdictional waters.	Metals (6020/7471A), TPH C6-C40 (8015B[M]), OCPs (8081), PCBs (8082), Phenols (8270C SIM), Phthalates (8270C SIM)
HA-4	Surface, 2	None, Proposed Fill Area	Assess soil for the presence of potential contaminants in the vicinity of the storm drain outfall and to evaluate soil located in potential USACE jurisdictional waters.	Metals (6020/7471A), TPH C6-C40 (8015B[M]), OCPs (8081), PCBs (8082), Phenols (8270C SIM), Phthalates (8270C SIM) (Surface sample also analyzed for TPH by SPLP using 8270C)
HA-5	Surface, 2, 4[1], 6*	None, Proposed Fill Area	Assess soil for the presence of potential contaminants in the vicinity of the VMT Auto Sales drain outfall and to evaluate soil located in potential USACE jurisdictional waters.	Metals (6020/7471A), TPH C6-C40 (8015B), VOCs (8260B), OCPs (8081), PCBs (8082), Phenols (8270C SIM), Phthalates (8270C SIM) (Surface sample also analyzed for TPH and OCPs by SPLP)
HA-6	Surface, 2, 4*, 6*	None, Proposed Fill Area	Assess soil for the presence of potential contaminants in the vicinity of the VMT Auto Sales drain outfall.	Metals (6020/7471A), TPH C6-C40 (8015B[M]), VOCs (8260B)
HA-7	Surface, 2, 4[2], 6*	None, Outside of Fill Area	Assess soil for the presence of potential contaminants in the vicinity of the VMT Auto Sales drain inlet.	Metals (6020/7471A), TPH C6-C40 (8015B[M]), VOCs (8260B)
HA-8	Surface, 2, 4, 6	6	Assess soil for the presence of potential contaminants at the abandoned oil/gas well location and to evaluate soil under the DTSC Clean Fill Guidance.	Metals (6020/7471A), TPH C6-C40 (8015B[M]), VOCs (8260B), SVOCs (8270C SIM), PCBs (8082)
HA-9	Surface, 2, 4*, 6*	5	Assess soil for the presence of potential contaminants at the abandoned oil/gas well location.	Metals (6020/7471A), TPH C6-C40 (8015B[M]) (Surface sample also analyzed for TPH by SPLP)
HA-10	Surface, 2, 4*, 6*	5	Assess soil for the presence of potential contaminants at the abandoned oil/gas well location.	Metals (6020/7471A), TPH C6-C40 (8015B[M])
HA-11	Surface, 2, 4*, 6*	5	Assess soil for the presence of potential contaminants at the abandoned oil/gas well location.	Metals (6020/7471A), TPH C6-C40 (8015B[M])
HA-12	Surface, 2, 4*, 6*	2	Assess soil for the presence of potential contaminants in the vicinity of the storm drain outfall. This location was added at the direction of the USEPA[3].	Metals (6020/7471A), TPH C6-C40 (8015B[M])
HA-13	Surface, 2, 4*, 6*	1	Assess soil for the presence of potential contaminants in the vicinity of the metal debris. This location was added at the direction of the USEPA[3].	Metals (6020/7471A)

[1] - only analyzed for lead and zinc
[2] - only analyzed for lead
[3] - Based on comments provided by Allan Ota, USEPA, in an email dated May 25, 2018
*Not analyzed
fbgs - feet below ground surface
DTSC - Department of Toxic Substances Control
OCPs - organochlorine pesticides
PCBs - polychlorinated biphenyls
SPLP - Synthetic Precipitation Leaching Procedure
SVOCs - semi-volatile organic compounds
TPH C6-C40 - total petroleum hydrocarbons carbon chain 6 through 40
VOCs - volatile organic compounds
USACE - United States Army Corps of Engineers

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Table 4-2
Test Pit Analysis Summary
Salt Pond 20, San Diego, California

Sample Location	Analyte Group
Environmental Analyses	
All Test Pits	Title 22 Metals (6020/7471A)
TP-3, -4, -12, -23 (Potential USACE Jurisdiction)	OCPs (8081)
	PCBs (8082)
	Phenols/Phthalates (8270C SIM)
TP-6, -9, -13, -16, -19, -21, -25 (Assessment under DTSC Clean Fill Guidance)	TPH C6-C40 (8015B[M])
	VOCs (8260B)
	SVOCs (8270C SIM)*
	PCBs (8082)
Geotechnical Analyses	
All Test Pits	Water Content (D2216/D4363)
	Density - Modified Proctor, 4" Mold (D1557)
	Sieve Analysis - Coarse and Fine (D422/D6913)
	Expansion Index (D4829)
	Atterberg Limits - Multiple Point (D4318-A)
	Organic Content (D2974-C)
	Resistivity (643)
	pH (D4972/G51)
	Chloride Content (422)
	Sulfate Content (417)

*Some phenols/phthalates are included in the 8270C SIM standard list
OCPs - organochlorine pesticides
PCBs - polychlorinated biphenyls
SVOCs - semi-volatile organic compounds
VOCs - volatile organic compounds
TPH C6-C40 - total petroleum hydrocarbons carbon chain 6 through 40

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Table 5-1
Environmental Analytical Results for On-Site Reuse - Metals
Salt Pond 20, San Diego, California

				Antimony		Arsenic		Barium		Beryllium		Cadmium		Chromium		Cobalt		Copper		Lead		Mercury		Molybdenum		Nickel		Selenium		Silver		Thallium		Vanadium		Zinc	
				mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
				6020		6020		6020		6020		6020		6020		6020		6020		6020		7471A		6020		6020		6020		6020		6020		6020		6020	
	Sample ID	**Sample Date**	**Depth, ft bgs**	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
	Hand Auger Samples																																				
Eastern 12-Inch Storm Drain	HA-3-0-0.5	6/20/2018	0-0.5	< 1	UJ	8.6	J	63		< 2.5	UJ	< 1	U	25		12	J+	17	J	7.8	J	< 0.1	U	< 1	U	13		< 1	UJ	< 1	U	< 1	U	56		64	
	HA-3-2.0	6/20/2018	2	< 1	U	3.1		49		< 2.5	U	< 1	U	23		7.9		15		4.9		< 0.1	U	< 1	U	10		< 1	U	< 1	U	< 1	U	49		43	
	HA-4-0-0.5	6/20/2018	0-0.5	< 1	U	2.9	J	29		< 1	U	< 1	U	6.6		2.8		15		14		< 0.1	U	< 1	U	4.6		< 1	U	< 1	U	< 1	U	20		84	J
	HA-4-0-0.5-REP	6/20/2018	0-0.5	< 1	U	1.5	J	22		< 1	U	< 1	U	5.7		2.2		14		19		< 0.1	U	< 1	U	3.7		< 1	U	< 1	U	< 1	U	17		56	J
	HA-4-2.0	6/20/2018	2	< 1	U	1.3		42		< 1	U	< 1	U	9.4		3.9		11		29		< 0.1	U	4.5		6		< 1	U	< 1	U	< 1	U	29		32	
Former VMT Auto Sales	HA-5-0-0.5	6/19/2018	0-0.5	1.1	J	2.3		150		< 1	U	< 1	U	51		5.2		98		250		< 0.1	U	8.7	J	23		< 1	U	< 1	U	< 1	U	29		350	
	HA-5-2.0	6/19/2018	2	< 1	U	< 1	U	72		< 1	U	< 1	U	12		5.7		23		26		< 0.1	U	< 1	U	10		< 1	U	< 1	U	< 1	U	32		96	
	HA-5-4.0	6/19/2018	4	NA		NA		NA		NA		NA		NA		NA		NA		3.9		NA		NA		NA		NA		NA		NA		NA		22	
	HA-6-0-0.5	6/19/2018	0-0.5	< 1	U	2.1		72		< 1	U	< 1	U	13		4.5	J	17		93	J	< 0.1	U	< 1	U	8.7		< 1	U	< 1	U	< 1	U	41		65	J
	HA-6-0-0.5-REP	6/19/2018	0-0.5	< 1	U	2		86		< 1	U	< 1	U	15		13	J	14		5	J	< 0.1	U	< 1	U	11		< 1	U	< 1	U	< 1	U	51		32	J
	HA-6-2.0	6/19/2018	2	< 1	U	2.5		72		< 1	U	< 1	U	13		6.4		13		7.4		< 0.1	U	< 1	U	8.1		< 1	U	< 1	U	< 1	U	37		35	
	HA-7-0-0.5	6/18/2018	0-0.5	< 1	UJ	2.2		57		< 1	U	< 1	U	11		12		23		7.8		< 0.1	U	< 1	U	5.4		< 1	UJ	3.3	J	< 1	U	41		29	
	HA-7-2.0	6/18/2018	2	< 1	U	2		68		< 1	U	< 1	U	11		5.7		16		24		< 0.1	U	< 1	U	5.3		< 1	U	< 1	U	< 1	U	45		30	
	HA-7-4.0	6/18/2018	4	NA		NA		NA		NA		NA		NA		NA		NA		8.2		NA		NA		NA		NA		NA		NA		NA		NA	
Eastern 12-Inch Storm Drain	HA-12-0-0.5	6/19/2018	0-0.5	< 1	U	5.5		78		< 2.5	U	< 1	U	19		9		19		3.5		< 0.1	U	< 1	U	9.6		< 1	U	< 1	U	< 1	U	53		41	
	HA-12-2.0	6/19/2018	2	< 1	U	1.8		41		< 1	U	< 1	U	6.2		2.9		7		8.8		< 0.1	U	2.5		4.7		< 1	U	< 1	U	< 1	U	31		20	
Metal Debris	HA-13-0-0.5	6/19/2018	0-0.5	< 1	U	1.5		46		< 1	U	< 1	U	6.1		3.2		7		9.1	J	< 0.1	U	1.7		4		< 1	U	< 1	U	< 1	U	27		20	
	HA-13-0-0.5-REP	6/19/2018	0-0.5	< 1	U	1.6		47		< 1	U	< 1	U	6.6		3.7		7.6		3.3	J	< 0.1	U	< 1	U	3.4		< 1	U	< 1	U	< 1	U	28		19	
	HA-13-2.0	6/19/2018	2	< 1	U	1.7		48	J	< 1	U	< 1	U	6.7		3.6	J	6.5	J	3.5		< 0.1	U	< 1	U	3.6		< 1	U	< 1	U	< 1	U	28		18	J
	HA-13-2.0-REP	6/19/2018	2	< 1	U	1.8		76	J	< 1	U	< 1	U	9.1		5.4	J	10	J	3.4		< 0.1	U	< 1	U	5		< 1	U	< 1	U	< 1	U	34		27	J
	Test Pit Samples																																				
	TP-3-0-0.25	6/20/2018	0-0.25	< 1	U	< 1	U	10		< 1	U	< 1	U	< 2	U	1.1		4.1		8		< 0.1	U	< 1	U	3.6		< 1	U	< 1	U	< 1	U	7.8		16	
	TP-3-0.25-2	6/20/2018	0.25-2	< 1	U	1.3		47		< 1	U	< 1	U	6.6		2.6		5.7		2.4		< 0.1	U	< 1	U	2.5		< 1	U	< 1	U	< 1	U	32		16	
	TP-3-2-9	6/20/2018	2-9	< 1	U	5.6		56		< 2.5	U	< 1	U	23		9.2		16		6.8		< 0.1	U	< 1	U	10		< 1	U	< 1	U	< 1	U	66		52	
	TP-4-0-0.25	6/20/2018	0-0.25	< 1	U	< 1	U	18		< 1	U	< 1	U	4.4		2.2		9.6		17		< 0.1	U	< 1	U	6.9		< 1	U	< 1	U	< 1	U	15		27	
	TP-4-0.25-6	6/20/2018	0.25-6	< 1	U	3.5		110		< 1	U	< 1	U	13		9		21		4.7		< 0.1	U	< 1	U	7.7		< 1	U	< 1	U	< 1	U	49		43	
	TP-4-6-8	6/20/2018	6-8	< 1	U	3		38		< 1	U	< 1	U	19		5.4		12		4.1		< 0.1	U	< 1	U	7.7		< 1	U	< 1	U	< 1	U	42		37	
	TP-12-0-5	6/18/2018	0-5	< 1	U	1.7		72		< 1	U	< 1	U	8.6		6.7		11		5.7		< 0.1	U	< 1	U	4.9		< 1	U	< 1	U	< 1	U	39		24	
	TP-12-5-8	6/18/2018	5-8	< 1	U	2.1		49		< 1	U	< 1	U	6.7		3.6		7.1		2.2		< 0.1	U	< 1	U	3		< 1	U	< 1	U	< 1	U	31		18	
	TP-12-8-10	6/18/2018	8-10	< 1	U	3.3		83		< 1	U	< 1	U	8.5		5.3		10		3.2		< 0.1	U	< 1	U	4.4		< 1	U	< 1	U	< 1	U	43		27	
	TP-23-0-0.5	6/20/2018	0-0.5	< 1	UJ	2.9		45		< 1	U	< 1	U	7.7		4.3		8.7		15		< 0.1	U	1.2		7.2		< 1	U	< 1	U	< 1	U	29		35	
	TP-23-0.5-5	6/20/2018	0.5-5	< 1	UJ	1.3		34		< 1	U	< 1	U	5.6		2.4		4.3		3.1		< 0.1	U	< 1	U	2.5		< 1	U	< 1	U	< 1	U	26		13	
	TP-23-5-8	6/20/2018	5-8	< 1	UJ	2.7		91		< 1	U	< 1	U	9.3		5.6		44		4.1		< 0.1	U	< 1	U	4.8		< 1	U	< 1	U	< 1	U	41		48	
	TP-23-8-10	6/20/2018	8-10	< 1	UJ	3.5		72		< 1	U	< 1	U	13		6.7		12		4.5		< 0.1	U	< 1	U	6.6		< 1	U	< 1	U	< 1	U	42		35	
			Screening Limit Criteria																																		
			ERL	NE		8.2		NE		NE		1.2		81		NE		34		46.7		0.15		NE		20.9		NE		1		NE		NE		150	

Notes:
Highlighted result exceeded the ERL
+ - value is likely biased high
J - value is an estimate
ft bgs - feet below ground surface
mg/kg - milligram per kilogram
NA - sample was not analyzed for the corresponding analyte
NE - screening limit not established
U - not detected
Q - qualifier
< - not detected above the laboratory reporting limit listed
ERL - Effects range low, Long et. al., Incidence of Adverse Biological Effects Within Ranges of Chemical Concentrations in Marine and Estuarine Sediments, 1995
REP - replicate sample

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Table 5-2
Environmental Analytical Results for On-Site Reuse - Total Petroleum Hydrocarbons
Salt Pond 20, San Diego, California

			Method	USEPA 8015B(M)		USEPA 8015B(M)		USEPA 8015B(M)		USEPA 8015B(M)		USEPA 8015B(M)	
			Leachate Prep	Not Applicable		Not Applicable		Not Applicable		SPLP		SPLP	
			Analyte	TPH-Gasoline		TPH-Diesel		TPH-Oil		TPH-Diesel		TPH-Oil	
			Carbon Chain Range	C6-C12		C10-C28		C18-C36		C10-C28		C18-C36	
			Unit	mg/kg		mg/kg		mg/kg		mg/L		mg/L	
	Sample ID	**Sample Date**	**Depth, ft bgs**	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
	Hand Auger Samples												
Eastern 12-Inch Storm Drain	HA-3-0-0.5	6/20/2018	0-0.5	ND	U	ND	U	ND	U	NA		NA	
	HA-3-2.0	6/20/2018	2.0	ND	U	ND	U	ND	U	NA		NA	
	HA-4-0-0.5	6/20/2018	0-0.5	ND	U	135		534		ND	UJ	ND	UJ
	HA-4-0-0.5-REP	6/20/2018	0-0.5	ND	U	152		717	J	ND	UJ	ND	UJ
	HA-4-2.0	6/20/2018	2.0	ND	U	ND	U	ND	UJ	NA		NA	
Former VMT Auto Sales	HA-5-0-0.5	6/19/2018	0-0.5	ND	U	1244*		2,207		ND	UJ	ND	UJ
	HA-5-2.0	6/19/2018	2.0	ND	UJ	ND	U	ND	U	NA		NA	
	HA-6-0-0.5	6/19/2018	0-0.5	ND	U	ND	U	ND	U	NA		NA	
	HA-6-0-0.5-REP	6/19/2018	0-0.5	ND	U	ND	U	ND	U	NA		NA	
	HA-6-2.0	6/19/2018	2.0	ND	U	ND	U	ND	U	NA		NA	
	HA-7-0-0.5	6/18/2018	0-0.5	ND	U	ND	U	ND	U	NA		NA	
	HA-7-2.0	6/18/2018	2.0	ND	U	ND	U	ND	U	NA		NA	
Eastern 12-Inch Storm Drain	HA-12-0-0.5	6/19/2018	0-0.5	ND	U	ND	U	ND	U	NA		NA	
	HA-12-2.0	6/19/2018	2.0	ND	U	ND	U	ND	U	NA		NA	
			Screening Limit Criteria										
			ERL	NE		NE		NE		NE		NE	

Notes:

Data for total petroleum hydrocarbons was reported with carbon chain identification. The result is the sum of the individual carbon chains (C6 to C36) in the indicated ranges. The qualifer represents the most extreme qualifier applied to any data point in the range.

J - result is an estimate
mg/L - milligram per liter
mg/kg - milligram per kilogram
NA - not analyzed
ND - not detected above laboratory reporting limits
U - non-detect
UJ - result was non-detect at an estimated reporting limit
REP - replicate sample
SPLP - synthetic precipitation leaching proceedure
TPH - total petroleum hydrocarbons
ERL - Effects range low, Long et. al., Incidence of Adverse Biological Effects Within Ranges of Chemical Concentrations in Marine and Estuarine Sediments, 1995
*Result exceeds the USEPA Regional Screening Level for composite worker soil and would not be suitable for on-Site reuse

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Table 5-3
Environmental Analytical Results for On-Site Reuse - Organics
Salt Pond 20, San Diego, California

			Method	USEPA 8081 Organochlorine Pesticides										USEPA 8270C SIM SVOCs									
			Analyte	4,4-DDE		4,4-DDT		alpha-Chlordane		gamma-Chlordane		Chlordane		Bis(2-ethylhexyl) phthalate		Bisphenol A		Butyl benzyl phthalate		Di-n-butyl phthalate		Di-n-octyl phthalate	
			Unit	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
	Sample ID	Sample Date	Depth, ft bgs	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
	Hand Auger Samples																						
Eastern 12-Inch Storm Drain	HA-3-0-0.5	6/20/2018	0-0.5	ND	U	ND	U	ND	U	ND	U	ND	U	0.014	J	ND	U	ND	U	ND	U	ND	U
	HA-3-2.0	6/20/2018	2.0	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
	HA-4-0-0.5	6/20/2018	0-0.5	ND	U	ND	U	ND	U	ND	U	ND	U	0.236		0.132	J	ND	U	ND	U	ND	U
	HA-4-0-0.5-REP	6/20/2018	0-0.5	ND	U	ND	U	ND	U	ND	U	ND	U	0.382		ND	U	ND	U	ND	U	ND	U
	HA-4-2.0	6/20/2018	2.0	ND	U	ND	U	ND	U	ND	U	ND	U	0.0078	J	0.0146	J	ND	U	ND	U	ND	U
Former VMT Auto Sales	HA-5-0-0.5	6/19/2018	0-0.5	0.0025 (SPLP-ND)	(SPLP-UJ)	0.0047 (SPLP-ND)	(SPLP-UJ)	0.0057 (SPLP-ND)	(SPLP-UJ)	0.032 (SPLP-ND)	(SPLP-UJ)	0.026 (SPLP-ND)	(SPLP-UJ)	2.19		ND	U	0.914		0.534		0.192	J
	HA-5-2.0	6/19/2018	2.0	ND	U	ND	U	ND	U	ND	U	ND	U	0.0124	J	0.0276	J	0.0088	J	0.0054	J	ND	U
	Test Pit Samples																						
	TP-3-0-0.25	6/20/2018	0-0.25	ND	U	ND	U	ND	U	ND	U	ND	U	0.0082	J	ND	U	ND	U	ND	U	ND	U
	TP-3-0.25-2	6/20/2018	0.25-2	ND	U	ND	U	ND	U	ND	U	ND	U	0.0062	J	ND	U	ND	U	ND	U	ND	U
	TP-3-2-9	6/20/2018	2-9	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
	TP-4-0-0.25	6/20/2018	0-0.25	ND	U	ND	U	ND	U	ND	U	ND	U	0.0112	J	ND	U	ND	U	ND	U	ND	U
	TP-4-0.25-6	6/20/2018	0.25-6	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
	TP-4-6-8	6/20/2018	6-8	ND	U	ND	U	ND	U	ND	U	ND	U	0.0068	J	ND	U	ND	U	ND	U	ND	U
	TP-12-0-5	6/18/2018	0-5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
	TP-12-5-8	6/18/2018	5-8	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
	TP-12-8-10	6/18/2018	8-10	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
	TP-23-0-0.5	6/20/2018	0-0.5	ND	U	ND	U	ND	U	ND	U	ND	U	0.0068	J	ND	U	ND	U	ND	U	ND	U
	TP-23-0.5-5	6/20/2018	0.5-5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
	TP-23-5-8	6/20/2018	5-8	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
			Screening Limit Criteria																				
			ERL	0.0022		0.00158		NE		NE		NE		NE		NE		NE		NE		NE	

Notes:
ft bgs - feet below ground surface
J - result is an estimate
mg/kg - milligram per kilogram
ND - result was non-detect
NE - screening limit not established
REP - replicate sample
SPLP - synthetic precipitation leaching proceedure
SVOC - semi-volatile organic compound
Q - final qualifier
U - analyte was not detected
ERL - Effects range low, Long et. al., Incidence of Adverse Biological Effects Within Ranges of Chemical Concentrations in Marine and Estuarine Sediments, 1995

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Table 5-4
Environmental Analytical Results for Export - Metals
Salt Pond 20, San Diego, California

			Analyte	Antimony		Arsenic		Barium		Beryllium		Cadmium		Chromium		Cobalt		Copper		Lead		Mercury		Molybdenum		Nickel		Selenium		Silver		Thallium		Vanadium		Zinc	
			Unit	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
			Method	6020		6020		6020		6020		6020		6020		6020		6020		6020		7471A		6020		6020		6020		6020		6020		6020		6020	
Sample ID	**Sample Date**	**Depth, ft bgs**		Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
Hand Auger Samples																																					
HA-1-0-0.5	6/20/2018	0-0.5		< 1	U	3.8		54		< 2.5	U	< 1	U	18		6.5		15		11	J	< 0.1	U	< 1	U	9.5		< 1	U	< 1	U	< 1	U	44		37	
HA-1-0-0.5-REP	6/20/2018	0-0.5		< 1	U	5.1		45		< 1	U	< 1	U	15		5.5		12		5.7	J	< 0.1	U	< 1	U	7.7		< 1	U	< 1	U	< 1	U	38		32	
HA-1-1.0	6/20/2018	1		< 1	U	3		47		< 1	U	< 1	U	15		6.3		14		14		< 0.1	U	1.4		9.3		< 1	U	< 1	U	< 1	U	40		41	
HA-1-2.0	6/20/2018	2		< 1	U	2.2		37		< 1	U	< 1	U	11		4.3		9.4		6.2		< 0.1	U	< 1	U	6.1		< 1	U	< 1	U	< 1	U	31		26	
HA-2-0-0.5	6/20/2018	0-0.5		< 1	U	< 1	U	24		< 1	U	< 1	U	3.9		2		6		9.4		< 0.1	U	< 1	U	4.6		< 1	U	< 1	U	< 1	U	13		17	
HA-2-0-0.5-REP	6/20/2018	0-0.5		< 1	U	1		28		< 1	U	< 1	U	4.8		2.5		6.8		11		< 0.1	U	< 1	U	5.1		< 1	U	< 1	U	< 1	U	16		21	
HA-2-2.0	6/20/2018	2		< 1	U	3.6		52		< 1	U	< 1	U	26		8.7		15		4.6		< 0.1	U	< 1	U	11		< 1	U	< 1	U	< 1	U	56		47	
HA-3-0-0.5	6/20/2018	0-0.5		< 1	UJ	8.6	J	63		< 2.5	UJ	< 1	U	25		12	J+	17	J	7.8	J	< 0.1	U	< 1	U	13		< 1	UJ	< 1	U	< 1	U	56		64	
HA-3-2.0	6/20/2018	2		< 1	U	3.1		49		< 2.5	U	< 1	U	23		7.9		15		4.9		< 0.1	U	< 1	U	10		< 1	U	< 1	U	< 1	U	49		43	
HA-4-0-0.5	6/20/2018	0-0.5		< 1	U	2.9	J	29		< 1	U	< 1	U	6.6		2.8		15		14		< 0.1	U	< 1	U	4.6		< 1	U	< 1	U	< 1	U	20		84	J
HA-4-0-0.5-REP	6/20/2018	0-0.5		< 1	U	1.5	J	22		< 1	U	< 1	U	5.7		2.2		14		19		< 0.1	U	< 1	U	3.7		< 1	U	< 1	U	< 1	U	17		56	J
HA-4-2.0	6/20/2018	2		< 1	U	1.3		42		< 1	U	< 1	U	9.4		3.9		11		29		< 0.1	U	4.5		6		< 1	U	< 1	U	< 1	U	29		32	
HA-5-0-0.5	6/19/2018	0-0.5		1.1	J	2.3		150		< 1	U	< 1	U	51		5.2		98		250		< 0.1	U	8.7	J	23		< 1	U	< 1	U	< 1	U	29		350	
HA-5-2.0	6/19/2018	2		< 1	U	< 1	U	72		< 1	U	< 1	U	12		5.7		23		26		< 0.1	U	< 1	U	10		< 1	U	< 1	U	< 1	U	32		96	
HA-5-4.0	6/19/2018	4		NA		NA		NA		NA		NA		NA		NA		NA		3.9		NA		NA		NA		NA		NA		NA		NA		22	
HA-6-0-0.5	6/19/2018	0-0.5		< 1	U	2.1		72		< 1	U	< 1	U	13		4.5	J	17		93	J	< 0.1	U	< 1	U	8.7		< 1	U	< 1	U	< 1	U	41		65	J
HA-6-0-0.5-REP	6/19/2018	0-0.5		< 1	U	2		86		< 1	U	< 1	U	15		13	J	14		5	J	< 0.1	U	< 1	U	11		< 1	U	< 1	U	< 1	U	51		32	J
HA-6-2.0	6/19/2018	2		< 1	U	2.5		72		< 1	U	< 1	U	13		6.4		13		7.4		< 0.1	U	< 1	U	8.1		< 1	U	< 1	U	< 1	U	37		35	
HA-7-0-0.5	6/18/2018	0-0.5		< 1	UJ	2.2		57		< 1	U	< 1	U	11		12		23		7.8		< 0.1	U	< 1	U	5.4		< 1	UJ	3.3	J	< 1	U	41		29	
HA-7-2.0	6/18/2018	2		< 1	U	2		68		< 1	U	< 1	U	11		5.7		16		24		< 0.1	U	< 1	U	5.3		< 1	U	< 1	U	< 1	U	45		30	
HA-7-4.0	6/18/2018	4		NA		NA		NA		NA		NA		NA		NA		NA		8.2		NA		NA		NA		NA		NA		NA		NA		NA	
HA-8-0-0.5	6/18/2018	0-0.5		< 1	U	2		32		< 1	U	< 1	U	4.7		2.5		4.3		6		< 0.1	U	< 1	U	2.2		< 1	U	< 1	U	< 1	U	32		15	
HA-8-2.0	6/18/2018	2		< 1	U	1.1		31		< 1	U	< 1	U	3.9		2.1		3.2		1.8		< 0.1	U	< 1	U	1.6		< 1	U	< 1	U	< 1	U	23		9.7	
HA-8-4.0	6/18/2018	4		< 1	U	1.9		64		< 1	U	< 1	U	8.1		4.6		8.5		3		< 0.1	U	< 1	U	4		< 1	U	< 1	U	< 1	U	38		30	
HA-8-6.0	6/18/2018	6		< 1	U	1.9		91		< 1	U	< 1	U	8.7		4.8		8.5		3.4		< 0.1	U	< 1	U	4.5		< 1	U	< 1	U	< 1	U	34		24	
HA-9-0-0.5	6/18/2018	0-0.5		< 1	U	1		37		< 1	U	< 1	U	6.6		2.8		6.8		10		< 0.1	U	< 1	U	3.1		< 1	U	< 1	U	< 1	U	32		23	
HA-9-2.0	6/18/2018	2		< 1	U	1.2		29		< 1	U	< 1	U	4.2		2		3.5		1.8		< 0.1	U	< 1	U	1.7		< 1	U	< 1	U	< 1	U	23		10	
HA-10-0-0.5	6/18/2018	0-0.5		< 1	U	1.3		39		< 1	U	< 1	U	6.3		3		5.9		8.1		< 0.1	U	< 1	U	3		< 1	U	< 1	U	< 1	U	33		20	
HA-10-2.0	6/18/2018	2		< 1	U	1.8		55		< 1	U	< 1	U	7.9		4.2		9.6		3		< 0.1	U	< 1	U	3.4		< 1	U	< 1	U	< 1	U	37		22	
HA-11-0-0.5	6/18/2018	0-0.5		< 1	U	1.1		21		< 1	U	< 1	U	3.9		1.7		3.4		4.4		< 0.1	U	< 1	U	1.7		< 1	U	< 1	U	< 1	U	23		11	
HA-11-2.0	6/18/2018	2		< 1	U	1.4		33		< 1	U	< 1	U	4.6		2.3		4.1		2		< 0.1	U	< 1	U	1.7		< 1	U	< 1	U	< 1	U	26		11	
HA-12-0-0.5	6/19/2018	0-0.5		< 1	U	5.5		78		< 2.5	U	< 1	U	19		9		19		3.5		< 0.1	U	< 1	U	9.6		< 1	U	< 1	U	< 1	U	53		41	
HA-12-2.0	6/19/2018	2		< 1	U	1.8		41		< 1	U	< 1	U	6.2		2.9		7		8.8		< 0.1	U	2.5		4.7		< 1	U	< 1	U	< 1	U	31		20	
HA-13-0-0.5	6/19/2018	0-0.5		< 1	U	1.5		46		< 1	U	< 1	U	6.1		3.2		7		9.1	J	< 0.1	U	1.7		4		< 1	U	< 1	U	< 1	U	27		20	
HA-13-0-0.5-REP	6/19/2018	0-0.5		< 1	U	1.6		47		< 1	U	< 1	U	6.6		3.7		7.6		3.3	J	< 0.1	U	< 1	U	3.4		< 1	U	< 1	U	< 1	U	28		19	
HA-13-2.0	6/19/2018	2		< 1	U	1.7		48	J	< 1	U	< 1	U	6.7		3.6	J	6.5	J	3.5		< 0.1	U	< 1	U	3.6		< 1	U	< 1	U	< 1	U	28		18	J
HA-13-2.0-REP	6/19/2018	2		< 1	U	1.8		76	J	< 1	U	< 1	U	9.1		5.4	J	10	J	3.4		< 0.1	U	< 1	U	5		< 1	U	< 1	U	< 1	U	34		27	J
Test Pit Samples			**Soil Unit**																																		
ENVCOMP-1	6/18/2018	0.5-4	C	< 1	UJ	3.2		140		< 1	U	< 1	U	12		9.7		21		4.2		< 0.1	U	< 1	U	7.1		< 1	U	< 1	U	< 1	U	49		40	
ENVCOMP-2	6/18/2018	2-10	C	< 1	UJ	4.1		63		< 1	U	< 1	U	11		6.6		9.5		4.2		< 0.1	U	< 1	U	5.2		< 1	U	< 1	U	< 1	U	44		28	
ENVCOMP-3	6/18/2018	0-0.5	A	< 1	UJ	< 1	U	12		< 1	U	< 1	U	< 2	U	1.2		4.2		7.7		< 0.1	U	< 1	U	3.3		< 1	U	< 1	U	< 1	U	7.6		16	
ENVCOMP-3-REP	6/18/2018	0-0.5	A	< 1	UJ	< 1	U	13		< 1	U	< 1	U	< 2	U	1.2		4.4		7.4		< 0.1	U	< 1	U	3.7		< 1	U	< 1	U	< 1	U	7.4		17	
ENVCOMP-4	6/18/2018	8-10	F	< 1	UJ	< 1	U	10		< 1	U	< 1	U	< 2	U	< 1	U	1.6		< 1	U	< 0.1	U	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U	11		6.5	
ENVCOMP-4-REP	6/18/2018	8-10	F	< 1	UJ	< 1	U	7.5		< 1	U	< 1	U	2.1		1.1		1.6		1.1		< 0.1	U	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U	10		6.3	
TP-3-0-0.25	6/20/2018	0-0.25	A	< 1	U	< 1	U	10		< 1	U	< 1	U	< 2	U	1.1		4.1		8		< 0.1	U	< 1	U	3.6		< 1	U	< 1	U	< 1	U	7.8		16	
TP-3-0.25-2	6/20/2018	0.25-2	B	< 1	U	1.3		47		< 1	U	< 1	U	6.6		2.6		5.7		2.4		< 0.1	U	< 1	U	2.5		< 1	U	< 1	U	< 1	U	32		16	
TP-3-2-9	6/20/2018	2-9	C	< 1	U	5.6		56		< 2.5	U	< 1	U	23		9.2		16		6.8		< 0.1	U	< 1	U	10		< 1	U	< 1	U	< 1	U	66		52	
TP-4-0-0.25	6/20/2018	0-0.25	A	< 1	U	< 1	U	18		< 1	U	< 1	U	4.4		2.2		9.6		17		< 0.1	U	< 1	U	6.9		< 1	U	< 1	U	< 1	U	15		27	
TP-4-0.25-6	6/20/2018	0.25-6	NA	< 1	U	3.5		110		< 1	U	< 1	U	13		9		21		4.7		< 0.1	U	< 1	U	7.7		< 1	U	< 1	U	< 1	U	49		43	
TP-4-6-8	6/20/2018	6-8	E	< 1	U	3		38		< 1	U	< 1	U	19		5.4		12		4.1		< 0.1	U	< 1	U	7.7		< 1	U	< 1	U	< 1	U	42		37	
TP-5-0.5-2	6/18/2018	0.5-2	B	< 1	U	1.3		28		< 1	U	< 1	U	4.7		2		3.2		2.2		< 0.1	U	< 1	U	1.6		< 1	U	< 1	U	< 1	U	27		11	
TP-6-0-0.5	6/18/2018	0-0.5	A	< 1	U	< 1	U	5.4		< 1	U	< 1	U	< 2	U	< 1	U	2.7		5.1		< 0.1	U	< 1	U	2.1		< 1	U	< 1	U	< 1	U	3.5		7.6	
TP-6-0.5-1.5	6/18/2018	0.5-1.5	C	< 1	U	1.4		51		< 1	U	< 1	U	8.2		3.7		8		2.3		< 0.1	U	< 1	U	3		< 1	U	< 1	U	< 1	U	44		19	
TP-6-1.5-2	6/18/2018	1.5-2	C	< 1	U	1.6		86		< 1	U	< 1	U	8.6		5.3		13		2.8		< 0.1	U	< 1	U	5		< 1	U	< 1	U	< 1	U	40		25	
TP-7-0-0.5	6/20/2018	0-0.5	A	< 1	U	< 1	U	8.8	J	< 1	U	< 1	U	< 2	U	< 1	U	3.4		10	J	< 0.1	U	< 1	U	3.4		< 1	UJ	< 1	UJ	< 1	U	6		10	J
TP-7-0.5-1.5	6/20/2018	0.5-1.5	B	< 1	U	1.5		51		< 1	U	< 1	U	7		3.9		6.6		2.7		< 0.1	U	< 1	U	2.9		< 1	U	< 1	U	< 1	U	36		15	
TP-7-1.5-2	6/20/2018	1.5-2	C	< 1	U	1.4		120		< 2.5	U	< 1	U	15		7.3		16		32		< 0.1	U	< 1	U	7.6		< 1	U	< 1	U	< 1	U	53		32	
TP-8-0-0.25	6/20/2018	0-0.25	A	< 1	U	< 1	U	12		< 1	U	< 1	U	2.1		1.3		4.7		8.6		< 0.1	U	< 1	U	4.4		< 1	U	< 1	U	< 1	U	8		18	
TP-8-0.25-1	6/20/2018	0.25-1	B	< 1	U	2.1		52		< 1	U	< 1	U	9		2.9		6.2		2.7		< 0.1	U	1.8		2.9		< 1	U	< 1	U	< 1	U	49		14	
TP-8-1-5	6/20/2018	1-5	C	< 1	U	3.4		130		< 2.5	U	< 1	U	18		15		15		4.8		< 0.1	U	< 1	U	11		< 1	U	< 1	U	< 1	U	70		32	
TP-8-5-8	6/20/2018	5-8	C	< 1	U	3.9		46		< 1	U	< 1	U	12		8.4		12		3.4		< 0.1	U	< 1	U	6.8		< 1	U	< 1	U	< 1	U	43		24	
TP-9-0-0.25	6/20/2018	0-0.25	A	< 1	U	< 1	U	10		< 1	U	< 1	U	< 2	U	1.1		4.1		9.5		< 0.1	U	< 1	U	4		< 1	U	< 1	U	< 1	U	7.5		14	
TP-9-0.25-2.5	6/20/2018	0.25-2.5	B	< 1	U	2		54		< 1	U	< 1	U	7.6		3.6		6.7		2.8		< 0.1	U	< 1	U	3.1		< 1	U	< 1	U	< 1	U	37		19	
TP-9-2.5-7	6/20/2018	2.5-7	NA	< 1	UJ	3.7		100		< 1	U	< 1	U	9.9		4.8		9.2		3.3		< 0.1	U	< 1	U	4.8		< 1	U	< 1	U	< 1	U	39		29	
TP-9-7-9	6/20/2018	7-9	E	< 1	UJ	3.9		50		< 2.5	U	< 1	U	19		8		14		5		< 0.1	U	< 1	U	8.8		< 1	U	< 1	U	< 1	U	48		42	
TP-10-0-0.25	6/20/2018	0-0.25	A	< 1	U	< 1	U	13		< 1	U	< 1	U	2.4		1.1		5.3		7.9		< 0.1	U	< 1	U	3.8		< 1	U	< 1	U	< 1	U	7.4		18	
TP-10-0.25-2	6/20/2018	0.25-2	C	< 1	U	< 1	U	31		< 1	U	< 1	U	9.3		3		6.8		2.1		< 0.1	U	< 1	U	4.4		< 1	U	< 1	U	< 1	U	25		15	
TP-11-0-4	6/19/2018	0-4	B	< 1	U	2		48		< 1	U	< 1	U	5.7		3.4		5.5		3.2		< 0.1	U	< 1	U	2.4		< 1	U	< 1	U	< 1	U	33		13	
TP-11-4-5	6/19/2018	4-5	C	< 1	U	3		51		< 2.5	U	< 1	U	12		6.7		10		3.5		< 0.1	U	1.4		5.7		< 1	U	< 1	U	< 1	U	37		25	
TP-11-5-10	6/19/2018	5-10	D	< 1	U	3.1		170		< 2.5	U	< 1	U	17		11		20		4.8		< 0.1	U	< 1	U	8.5		< 1	U	< 1	U	< 1	U	72		43	
TP-12-0-5	6/18/2018	0-5	NA	< 1	U	1.7		72		< 1	U	< 1	U	8.6		6.7		11		5.7		< 0.1	U	< 1	U	4.9		< 1	U	< 1	U	< 1	U	39		24	
TP-12-5-8	6/18/2018	5-8	C	< 1	U	2.1		49		< 1	U	< 1	U	6.7		3.6		7.1		2.2		< 0.1	U	< 1	U	3		< 1	U	< 1	U	< 1	U	31		18	
TP-12-8-10	6/18/2018	8-10	NA	< 1	U	3.3		83		< 1	U	< 1	U	8.5		5.3		10		3.2		< 0.1	U	< 1	U	4.4		< 1	U	< 1	U	< 1	U	43		27	
TP-13-0-4	6/18/2018	0-4	B	< 1	U	1.5		42		< 1	U	< 1	U	5.1		2.6		4.2		2.7		< 0.1	U	< 1	U	2		< 1	U	< 1	U	< 1	U	31		14	
TP-13-4-5	6/18/2018	4-5	C	< 1	UJ	2.8	J	73		< 1	UJ	< 1	U	9.2	J+	5.5	J+	13	J+	2.6		< 0.1	U	< 1	U	4.7	J+	< 1	U	< 1	U	< 1	U	41		26	
TP-14-0-8	6/18/2018	0-8	C	< 1	UJ	2.3		98		< 1	U	< 1	U	8.7		5.2		12		3.1		< 0.1	U	< 1	U	4.7		< 1	U	< 1	U	< 1	U	38		30	
TP-16-0-0.5	6/19/2018	0-0.5	A	< 1	U	< 1	U	14		< 1	U	< 1	U	< 2	U	< 1	U	2.1		7.4		< 0.1	U	< 1	U	2.9		< 1	U	< 1	U	< 1	U	5.4		6.1	
TP-16-0.5-3.5	6/19/2018	0.5-3.5	B	< 1	U	1.8		47		< 1	U	< 1	U	5.7		2.7		4.8		2.5		< 0.1	U	< 1	U	2.3		< 1	U	< 1	U	< 1	U	31		16	
TP-16-3.5-5	6/19/2018	3.5-5	C	< 1	U	< 1	U	71		< 2.5	U	< 1	U	12		4.7		11		4.1		< 0.1	U	< 1	U	5.6		< 1	U	< 1	U	< 1	U	52		34	
TP-16-5-10	6/19/2018	5-10	NA	< 1	U	1.3		100		< 1	U	< 1	U	8.1		5.8		12		3.2		< 0.1	U	< 1	U	4.6		< 1	U	< 1	U	< 1	U	40		29	
TP-17-0.083-1.5	6/20/2018	0.083-1.5	C	< 1	U	1.1		55		< 1	U	< 1	U	6.2		3.3		7.6		2.4		< 0.1	U	< 1	U	2.9		< 1	U	< 1	U	< 1	U	28		14	
TP-17-1.5-2	6/20/2018	1.5-2	C	< 1	U	< 1	U	120		< 1	U	< 1	U	7.2		4		8.8		2.4		< 0.1	U	< 1	U	4		< 1	U	< 1	U	< 1	U	36		17	
TP-18-0-4	6/19/2018	0-4	B	< 1	U	1.6		42		< 1	U	< 1	U	5.8		3		4.7		2.5		< 0.1	U	< 1	U	2.5		< 1	U	< 1	U	< 1	U	32		12	
TP-18-4-6	6/19/2018	4-6	C	< 1	U	1.5		55		< 1	U	< 1	U	7.8		4.7		9.3		2.9		< 0.1	U	< 1	U	3.9		< 1	U	< 1	U	< 1	U	36		20	
TP-19-0-4	6/19/2018	0-4	B	< 1	U	1.3		29		< 1	U	< 1	U	4.6		2.1		3.7		3.1		< 0.1	U	< 1	U	1.7		< 1	U	< 1	U	< 1	U	27		12	
TP-19-4-8	6/19/2018	4-8	C	< 1	U	7		67		< 1	U	< 1	U	11		8.3		14		3.8		< 0.1	U	< 1	U	7.1		< 1	U	< 1	U	< 1	U	51		37	
TP-19-8-10	6/19/2018	8-10	D	< 1	U	2.5		45		< 2.5	U	< 1	U	20		8.6		19		4.7		< 0.1	U	< 1	U	9		< 1	U	< 1	U	< 1	U	51		43	
TP-20-0.083-4	6/19/2018	0.083-4	B	< 1	U	1.1		33		< 1	U	< 1	U	4.6		2.2		3.8		2.1		< 0.1	U	< 1	U	1.8		< 1	U	< 1	U	< 1	U	26		11	
TP-20-4-5	6/19/2018	4-5	D	< 1	U	1.5		96		< 2.5	U	< 1	U	11		7.3		19		3.4		< 0.1	U	1.5		6.3		< 1	U	< 1	U	< 1	U	47		29	
TP-21-0-5	6/20/2018	0-5	B	< 1	UJ	1.4		40		< 1	U	< 1	U	5		2.2		3.7		2.2		< 0.1	U	< 1	U	2		< 1	U	< 1	U	< 1	U	28		14	
TP-21-5-9	6/20/2018	5-9	NA	< 1	UJ	2.7		98		< 1	U	< 1	U	10		6.9		12		4.3		< 0.1	U	< 1	U	6.2		< 1	U	< 1	U	< 1	U	41		37	
TP-22-0-2.5	6/19/2018	0-2.5	B	< 1	U	2.6		99		< 2.5	U	< 1	U	11		6.8		12		3.7		< 0.1	U	< 1	U	6.3		< 1	U	< 1	U	< 1	U	43		31	

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Table 5-4
Environmental Analytical Results for Export - Metals
Salt Pond 20, San Diego, California

			Analyte	Antimony		Arsenic		Barium		Beryllium		Cadmium		Chromium		Cobalt		Copper		Lead		Mercury		Molybdenum		Nickel		Selenium		Silver		Thallium		Vanadium		Zinc	
			Unit	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
			Method	6020		6020		6020		6020		6020		6020		6020		6020		6020		7471A		6020		6020		6020		6020		6020		6020		6020	
Sample ID	**Sample Date**	**Depth, ft bgs**		Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
TP-22-2.5-3	6/19/2018	2.5-3	NA	< 1	U	1.3		45		< 1	U	< 1	U	5.1		2.5		4.4		2.2		< 0.1	U	< 1	U	2		< 1	U	< 1	U	< 1	U	27		12	
TP-23-0-0.5	6/20/2018	0-0.5	A	< 1	UJ	2.9		45		< 1	U	< 1	U	7.7		4.3		8.7		15		< 0.1	U	1.2		7.2		< 1	U	< 1	U	< 1	U	29		35	
TP-23-0.5-5	6/20/2018	0.5-5	B	< 1	UJ	1.3		34		< 1	U	< 1	U	5.6		2.4		4.3		3.1		< 0.1	U	< 1	U	2.5		< 1	U	< 1	U	< 1	U	26		13	
TP-23-5-8	6/20/2018	5-8	C	< 1	UJ	2.7		91		< 1	U	< 1	U	9.3		5.6		44		4.1		< 0.1	U	< 1	U	4.8		< 1	U	< 1	U	< 1	U	41		48	
TP-23-8-10	6/20/2018	8-10	C	< 1	UJ	3.5		72		< 1	U	< 1	U	13		6.7		12		4.5		< 0.1	U	< 1	U	6.6		< 1	U	< 1	U	< 1	U	42		35	
TP-24-0-4.5	6/19/2018	0-4.5	B	< 1	UJ	1.2		45		< 1	UJ	< 1	U	5.3		2.7		4.2		2.5		< 0.1	U	< 1	U	2		< 1	UJ	< 1	UJ	< 1	U	28		12	
TP-24-4.5-6	6/19/2018	4.5-6	C	< 1	U	1.6		89		< 1	U	< 1	U	8.9		6.3		12		2.7		< 0.1	U	< 1	U	4.7		< 1	U	< 1	U	< 1	U	42		24	
TP-25-0-4	6/19/2018	0-4	B	< 1	U	1.1		31		< 1	U	< 1	U	4.2		1.9		3.2		2.3		< 0.1	U	< 1	U	1.5		< 1	U	< 1	U	< 1	U	23		12	
TP-25-4-6	6/19/2018	4-6	D	< 1	U	2.4		110		< 2.5	U	< 1	U	12		7.4		12		5.5		< 0.1	U	< 1	U	7.3		< 1	U	< 1	U	< 1	U	39		37	
TP-26-0-4	6/19/2018	0-4	B	< 1	U	1.9		37		< 1	U	< 1	U	5		2.7		4		2.3		< 0.1	U	< 1	U	1.9		< 1	U	< 1	U	< 1	U	29		11	
TP-26-4-6	6/19/2018	4-6	D	< 1	U	1.9		130		< 2.5	U	< 1	U	14		8.5		20		4.3		< 0.1	U	< 1	U	7.8		< 1	U	< 1	U	< 1	U	53		36	
TP-26-6-6.5	6/19/2018	6-6.5	F	< 1	U	< 1	U	35		< 1	U	< 1	U	4.3		2.7		4.8		2		< 0.1	U	< 1	U	2.6		< 1	U	< 1	U	< 1	U	21		12	
TP-27-0-4	6/19/2018	0-4	B	< 1	U	< 1	U	37		< 2.5	U	< 1	U	5.1		2.4		3.9		2.2		< 0.1	U	< 1	U	2		< 1	U	< 1	U	< 1	U	25		11	
TP-27-4-10	6/19/2018	4-10	NA	< 1	U	2.8		130		< 2.5	U	< 1	U	12		7.2		12		4.1		< 0.1	U	< 1	U	6.3		< 1	U	< 1	U	< 1	U	42		31	
TP-28-0-2	6/20/2018	0-2	B	< 1	U	< 1	U	26		< 1	U	< 1	U	3.6		1.2		3.2		3.1		< 0.1	U	< 1	U	1.3		< 1	U	< 1	U	< 1	U	17		7.7	
TP-28-2-4	6/20/2018	2-4	C	< 1	U	1.6		100		< 2.5	U	< 1	U	8.8		5.3		12		3.2		< 0.1	U	< 1	U	4.5		< 1	U	< 1	U	< 1	U	40		25	
TP-29-0-4	6/19/2018	0-4	B	< 1	U	1.7		44		< 1	U	< 1	U	5.9		3		5.1		3.7		< 0.1	U	< 1	U	2.5		< 1	U	< 1	U	< 1	U	31		13	
TP-29-4-8	6/19/2018	4-8	D	< 1	U	2		77		< 2.5	U	< 1	U	10		6.9		11		3.2		< 0.1	U	< 1	U	5.3		< 1	U	< 1	U	< 1	U	39		25	
TP-29-8-10	6/19/2018	8-10	F	< 1	U	1.5		41		< 1	U	< 1	U	5.8		3.3		5.5		2.5		< 0.1	U	< 1	U	2.6		< 1	U	< 1	U	< 1	U	30		15	
TP-30-0-4	6/19/2018	0-4	B	< 1	U	1.3		36		< 1	U	< 1	U	5		2.8		4.1		2.3		< 0.1	U	< 1	U	2.2		< 1	U	< 1	U	< 1	U	28		11	
TP-30-4-8	6/19/2018	4-8	D	< 1	U	< 1	U	110		< 2.5	U	< 1	U	13		8.3		23		4		< 0.1	U	< 1	U	7.7		< 1	U	< 1	U	< 1	U	45		34	
TP-30-8-10	6/19/2018	8-10	F	< 1	U	1.7		64		< 1	U	< 1	U	7.7		4.6		8.6		3		< 0.1	U	< 1	U	3.7		< 1	U	< 1	U	< 1	U	36		19	
TP-31-0-3	6/20/2018	0-3	B	< 1	U	2.1		95		< 1	U	< 1	U	10		6.8		11		4.2		< 0.1	U	< 1	U	5.1		< 1	U	< 1	U	< 1	U	43		25	
TP-31-3-4	6/20/2018	3-4	C	< 1	U	2.4		76		< 2.5	U	< 1	U	8.2		4.5		10		3.1		< 0.1	U	< 1	U	4.2		< 1	U	< 1	U	< 1	U	38		23	
TP-32-0-4	6/20/2018	0-4	B	< 1	U	< 1	U	37		< 1	U	< 1	U	4.5		2.3		3.9		2		< 0.1	U	< 1	U	1.9		< 1	U	< 1	U	< 1	U	24		10	
TP-32-4-7	6/20/2018	4-7	C	< 1	U	2.6		77		< 2.5	U	< 1	U	10		6.3		14		4.1		< 0.1	U	< 1	U	5.2		< 1	U	< 1	U	< 1	U	43		26	
TP-32-7-9	6/20/2018	7-9	NA	< 1	U	1.8		21		< 1	U	< 1	U	9.4		3.2		4.5		1.9		< 0.1	U	< 1	U	2.4		< 1	U	< 1	U	< 1	U	59		12	
		Screening Limit Criteria																																			
		DTSC SL - Commercial/Industrial		NE		0.36		NE		6,900		4,000		NE		1,900		NE		320		4.4		NE		64,000		NE		NE		NE		1,000		NE	
		USEPA RSL - Worker		470		3		220,000		6,900		9,300		NE		350		47,000		800		46		5,800		64,000		5,800		5,800		12		5,800		350,000	
		South Bay Power Plant		367		1.4		154,134		1,615		499		257		269		36,692		320		143		4,586		15,413		NE		NE		60		4,586		275,187	
		Waiver 10 Tier I SSL		5		3.5		509		4		1.7		50		20		60		15		0.26		2		57		0.21		2		1		50		149	
		Kearney (Arsenic = DTSC [2008])		1.95		12		1,400		2.7		1.7		1,579		46.9		96.4		107.9		0.9		9.6		509		0.43		8.3		1.1		288		236	
		TTLC		500		500		10,000		75		100		2,500		8,000		2,500		1,000		20		3,500		2,000		100		500		700		2,400		5,000	
		Soil Unit A	Min	< 1	U	< 1	U	5.4		< 1	U	< 1	U	< 2	U	< 1		2.1		5.1		< 0.1	U	< 1	U	2.1		< 1	U	< 1	U	< 1	U	3.5		6.1	
			Max	< 1	U	2.9		45		< 1	U	< 1	U	7.7		4.3		9.6		17		< 0.1	U	1.2		7.2		< 1	U	< 1	U	< 1	U	29		35	
		Soil Unit B	Min	< 1	U	< 1	U	26		< 1	U	< 1	U	3.6		1.2		3.2		2		< 0.1	U	< 1	U	1.3		< 1	U	< 1	U	< 1	U	17		7.7	
			Max	< 1	U	2.6		99		< 2.5	U	< 1	U	11		6.8		12		4.2		< 0.1	U	1.8		6.3		< 1	U	< 1	U	< 1	U	49		31	
		Soil Unit C	Min	< 1	U	< 1	U	31		< 1	U	< 1	U	6.2		3		6.8		2.1		< 0.1	U	< 1	U	2.9		< 1	U	< 1	U	< 1	U	25		14	
			Max	< 1	U	7		130		< 2.5	U	< 1	U	23		15		44		32		< 0.1	U	1.4		11		< 1	U	< 1	U	< 1	U	70		52	
		Soil Unit D	Min	< 1	U	< 1	U	45		< 2.5	U	< 1	U	10		6.9		11		3.2		< 0.1	U	< 1	U	5.3		< 1	U	< 1	U	< 1	U	39		25	
			Max	< 1	U	3.1		170		< 2.5	U	< 1	U	20		11		23		5.5		< 0.1	U	1.5		9		< 1	U	< 1	U	< 1	U	72		43	
		Soil Unit E	Min	< 1	U	3		38		< 1	U	< 1	U	19		5.4		12		4.1		< 0.1	U	< 1	U	7.7		< 1	U	< 1	U	< 1	U	42		37	
			Max	< 1	U	3.9		50		< 2.5	U	< 1	U	19		8		14		5		< 0.1	U	< 1	U	8.8		< 1	U	< 1	U	< 1	U	48		42	
		Soil Unit F	Min	< 1	U	< 1	U	7.5		<1	U	< 1	U	< 2	U	< 1	U	1.6		< 1	U	< 0.1	U	< 1	U	< 1	U	< 1	U	< 1	U	< 1	U	10		6.3	
			Max	< 1	U	1.7		64		<1	U	< 1	U	7.7		4.6		8.6		3		< 0.1	U	< 1	U	3.7		< 1	U	< 1	U	< 1	U	36		19	

Notes:
Highlighted result exceeded the Waiver 10 Tier I SSL
Arsenic results were not highlighted because all results were below
the DTSC (2008) background concentration of 12 mg/kg
ENVCOMP-1 - Composite of TP-1-0.5-2, TP-2-0.5-3, and TP-15-0.5-4
ENVCOMP-2 - TP-2-3-10, TP-5-2-7, TP-15-4-8
ENVCOMP-3 - TP-1-0-0.5, TP-2-0-0.5, TP-5-0-0.5, TP-15-0-0.5
ENVCOMP-4 - TP-14-8-10, TP-15-8-9
+ - value is likely biased high
J - value is an estimate
ft bgs - feet below ground surface
mg/kg - milligram per kilogram
mg/L - milligram per liter
NA - soil unit not assigned or sample was not analyzed for the corresponding analyte
NE - screening limit not established
U - not detected
UJ - not detected, the reporting limit is estimated
Q - qualifier
REP - replicate sample
< - not detected above the laboratory reporting limit listed

DTSC SL - Modified Screening Level for commercial/industrial soil, based on the Cancer Endpoint (Noncancer Endpoint was listed if Cancer Endpoint was not established), provided in California Department of Toxic Substances Control Office of Human and Ecological Risk's Human Health Risk Assessment Note No. 3, April 2019
USEPA RSL - United States Environmental Protection Agency Regional Screening Level for composite worker soil, based on the Carcinogenic Target Risk (Noncancer Hazard Index was used if Carcinogenic Target Risk was not established), April 2019
South Bay Power Plant - DTSC-approved site-specific screening levels for the South Bay Power Plant site (Haley & Aldrich, 2010)
Kearney - Background Concentrations of Trace and Major Elements in California Soils (Kearney, 1996)
DTSC (2008) - Determination of a Southern California Regional Background Arsenic Concentration in Soil (DTSC, 2008)
Waiver 10 Tier I SSL - Soil screening levels established by the Regional Water Quality Control Board San Diego Region for Discharges/Disposal of Solid Wastes to Land (Conditional Waiver No. 10), June, 2014
TTLC - Total Threshold Limit Concentration

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Table 5-5
Environmental Analytical Results for Export - Total Petroleum Hydrocarbons
Salt Pond 20, San Diego, California

			Method	USEPA 8015B(M)		USEPA 8015B(M)		USEPA 8015B(M)		USEPA 8015B(M)		USEPA 8015B(M)	
			Leachate Prep	Not Applicable		Not Applicable		Not Applicable		SPLP		SPLP	
			Analyte	TPH-Gasoline		TPH-Diesel		TPH-Oil		TPH-Diesel		TPH-Oil	
			Carbon Chain Range	C6-C12		C10-C28		C18-C36		C10-C28		C18-C36	
			Unit	mg/kg		mg/kg		mg/kg		mg/L		mg/L	
	Sample ID	**Sample Date**	**Depth, ft bgs**	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
	Hand Auger Samples												
	HA-1-0-0.5	6/20/2018	0-0.5	ND	U	ND	U	ND	U	NA		NA	
	HA-1-0-0.5-REP	6/20/2018	0-0.5	ND	U	ND	U	ND	U	NA		NA	
	HA-1-1.0	6/20/2018	1.0	ND	U	ND	U	ND	U	NA		NA	
	HA-1-2.0	6/20/2018	2.0	ND	U	ND	U	ND	U	NA		NA	
	HA-1-4.0	6/20/2018	4.0	ND	U	ND	U	ND	U	NA		NA	
Eastern 12-Inch Storm Drain	HA-3-0-0.5	6/20/2018	0-0.5	ND	U	ND	U	ND	U	NA		NA	
	HA-3-2.0	6/20/2018	2.0	ND	U	ND	U	ND	U	NA		NA	
	HA-4-0-0.5	6/20/2018	0-0.5	ND	U	135		534		ND	UJ	ND	UJ
	HA-4-0-0.5-REP	6/20/2018	0-0.5	ND	U	152		717	J	ND	UJ	ND	UJ
	HA-4-2.0	6/20/2018	2.0	ND	U	ND	U	ND	UJ	NA		NA	
Former VMT Auto Sales	HA-5-0-0.5	6/19/2018	0-0.5	ND	U	1244*		2,207		ND	UJ	ND	UJ
	HA-5-2.0	6/19/2018	2.0	ND	UJ	ND	U	ND	U	NA		NA	
	HA-6-0-0.5	6/19/2018	0-0.5	ND	U	ND	U	ND	U	NA		NA	
	HA-6-0-0.5-REP	6/19/2018	0-0.5	ND	U	ND	U	ND	U	NA		NA	
	HA-6-2.0	6/19/2018	2.0	ND	U	ND	U	ND	U	NA		NA	
	HA-7-0-0.5	6/18/2018	0-0.5	ND	U	ND	U	ND	U	NA		NA	
	HA-7-2.0	6/18/2018	2.0	ND	U	ND	U	ND	U	NA		NA	
Former Oil/Gas Well	HA-8-0-0.5	6/18/2018	0-0.5	ND	U	ND	U	ND	U	NA		NA	
	HA-8-2.0	6/18/2018	2.0	ND	U	ND	U	ND	U	NA		NA	
	HA-8-4.0	6/18/2018	4.0	ND	U	ND	U	ND	U	NA		NA	
	HA-8-6.0	6/18/2018	6.0	ND	U	ND	U	ND	U	NA		NA	
	HA-9-0-0.5	6/18/2018	0-0.5	ND	U	12		15		ND	UJ	ND	UJ
	HA-9-2.0	6/18/2018	2.0	ND	U	ND	U	ND	U	NA		NA	
	HA-10-0-0.5	6/18/2018	0-0.5	ND	U	ND	U	ND	U	NA		NA	
	HA-10-2.0	6/18/2018	2.0	ND	U	ND	U	ND	U	NA		NA	
	HA-11-0-0.5	6/18/2018	0-0.5	ND	U	ND	U	ND	U	NA		NA	
	HA-11-2.0	6/18/2018	2.0	ND	U	ND	U	ND	U	NA		NA	
Eastern 12-Inch Storm Drain	HA-12-0-0.5	6/19/2018	0-0.5	ND	U	ND	U	ND	U	NA		NA	
	HA-12-2.0	6/19/2018	2.0	ND	U	ND	U	ND	U	NA		NA	
	Test Pit Samples												
	TP-6-0-0.5	6/18/2018	0-0.5	ND	U	ND	U	ND	U	NA		NA	
	TP-6-0.5-1.5	6/18/2018	0.5-1.5	ND	U	ND	U	ND	U	NA		NA	
	TP-6-1.5-2	6/18/2018	1.5-2	ND	U	ND	U	ND	U	NA		NA	
	TP-9-0-0.25	6/20/2018	0-0.25	ND	U	ND	U	ND	U	NA		NA	
	TP-9-0.25-2.5	6/20/2018	0.25-2.5	ND	U	ND	U	ND	U	NA		NA	
	TP-9-2.5-7	6/20/2018	2.5-7	ND	U	ND	U	ND	U	NA		NA	
	TP-13-0-4	6/18/2018	0-4	ND	U	ND	U	ND	U	NA		NA	
	TP-13-4-5	6/18/2018	4-5	ND	U	ND	U	ND	U	NA		NA	
	TP-16-0-0.5	6/19/2018	0-0.5	ND	U	ND	U	ND	U	NA		NA	
	TP-16-0.5-3.5	6/19/2018	0.5-3.5	ND	U	ND	U	ND	U	NA		NA	
	TP-16-3.5-5	6/19/2018	3.5-5	ND	U	ND	U	ND	U	NA		NA	
	TP-17-1.5-2	6/20/2018	1.5-2	ND	U	ND	U	ND	U	NA		NA	
	TP-19-0-4	6/19/2018	0-4	ND	U	ND	U	ND	U	NA		NA	

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Table 5-5
Environmental Analytical Results for Export - Total Petroleum Hydrocarbons
Salt Pond 20, San Diego, California

		Method	USEPA 8015B(M)		USEPA 8015B(M)		USEPA 8015B(M)		USEPA 8015B(M)		USEPA 8015B(M)	
		Leachate Prep	Not Applicable		Not Applicable		Not Applicable		SPLP		SPLP	
		Analyte	TPH-Gasoline		TPH-Diesel		TPH-Oil		TPH-Diesel		TPH-Oil	
		Carbon Chain Range	C6-C12		C10-C28		C18-C36		C10-C28		C18-C36	
		Unit	mg/kg		mg/kg		mg/kg		mg/L		mg/L	
Sample ID	**Sample Date**	**Depth, ft bgs**	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
TP-19-4-8	6/19/2018	4-8	ND	U	ND	U	ND	U	NA		NA	
TP-19-8-10	6/19/2018	8-10	ND	U	ND	U	ND	U	NA		NA	
TP-21-0-5	6/20/2018	0-5	ND	U	ND	U	ND	U	NA		NA	
TP-21-5-9	6/20/2018	5-9	ND	U	ND	U	ND	U	NA		NA	
TP-25-0-4	6/19/2018	0-4	ND	U	ND	U	ND	U	NA		NA	
TP-25-4-6	6/19/2018	4-6	ND	U	ND	U	ND	U	NA		NA	
		Screening Limit Criteria										
		DTSC SL - Commmercial/Industrial	NE		21,000[1]		21,000[1]					
		USEPA RSL - Worker	420[2]		440[2]		33,000[2]					
		South Bay Power Plant	NE		23,372		28,231[3]					

Notes:
Highlighted result exced USEPA RSL - Worker
Highlighted result exceeded the Waiver 10 Tier I SSL due to detectable organic concentrations
*Exceeds USEPA RSL - Worker and Waiver 10 Tier I SSL due to detectable organic concentration
Data for total petroleum hydrocarbons was reported with carbon chain identification. The result is the sum of the individual carbon chains (C6 to C36) in the indicated ranges. The qualifer represents the most extreme qualifier applied to any data point in the range.
[1] - C17-C32 aromatic
[2] - The lower threshold was chosen between aliphatic and aromatic
[3] - Residual carbon range
J - result is an estimate
mg/kg - milligram per kilogram
mg/L - milligram per liter
NA - not analyzed
ND - not detected above laboratory reporting limits
NE - screening limit not established
U - non-detect
UJ - result was non-detect at an estimated reporting limit
REP - replicate sample
DTSC SL - Modified Screening Level for commercial/industrial soil, based on the Cancer Endpoint (Noncancer Endpoint was listed if Cancer Endpoint was not established), provided in California Department of Toxic Substances Control Office of Human and Ecological Risk's Human Health Risk Assessment Note No. 3, April 2019
USEPA RSL - United States Environmental Protection Agency Regional Screening Level for composite worker soil, based on the Carcinogenic Target Risk (Noncancer Hazard Index was used if Carcinogenic Target Risk was not established), May 2018
South Bay Power Plant - DTSC-approved site-specific screening levels for the South Bay Power Plant site (Haley & Aldrich, 2010)
SPLP - synthetic precipitation leaching proceedure
TPH - total petroleum hydrocarbons

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Table 5-6
Environmental Analytical Results for Export - Organics
Salt Pond 20, San Diego, California

			Method	USEPA 8081 Organochlorine Pesticides										USEPA 8270C SIM SVOCs															
			Analyte	4,4-DDE		4,4-DDT		alpha-Chlordane		gamma-Chlordane		Chlordane		Bis(2-ethylhexyl) phthalate		Bisphenol A		Butyl benzyl phthalate		Dimethyl phthalate		Di-n-butyl phthalate		Di-n-octyl phthalate		Fluoranthene		Pyrene	
			Unit	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
	Sample ID	**Sample Date**	**Depth, ft bgs**	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
	Hand Auger Samples																												
	HA-1-0-0.5	6/20/2018	0-0.5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
	HA-1-0-0.5-REP	6/20/2018	0-0.5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	0.0078	J	ND	U	ND	U	ND	U	ND	U
	HA-1-1.0	6/20/2018	1.0	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
	HA-1-2.0	6/20/2018	2.0	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
	HA-2-0-0.5	6/20/2018	0-0.5	ND	U	ND	U	ND	U	ND	U	ND	U	0.0316		0.0754		ND	U	0.0064	J	ND	U	ND	U	ND	U	0.0057 (SPLP-ND)	(SPLP-UJ)
	HA-2-0-0.5-REP	6/20/2018	0-0.5	ND	U	ND	U	ND	U	ND	U	ND	U	0.0248		0.0886		ND	U	0.0054	J	ND	U	ND	U	0.0075 (SPLP-ND)	(SPLP-UJ)	0.0088 (SPLP-ND)	(SPLP-UJ)
	HA-2-2.0	6/20/2018	2.0	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
Eastern 12-Inch Storm Drain	HA-3-0-0.5	6/20/2018	0-0.5	ND	U	ND	U	ND	U	ND	U	ND	U	0.014	J	ND	U	ND	U	ND	U	ND	U	ND	U	NA		NA	
	HA-3-2.0	6/20/2018	2.0	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NA		NA	
	HA-4-0-0.5	6/20/2018	0-0.5	ND	U	ND	U	ND	U	ND	U	ND	U	0.236		0.132	J	ND	U	ND	U	ND	U	ND	U	NA		NA	
	HA-4-0-0.5-REP	6/20/2018	0-0.5	ND	U	ND	U	ND	U	ND	U	ND	U	0.382		ND	U	ND	U	ND	U	ND	U	ND	U	NA		NA	
	HA-4-2.0	6/20/2018	2.0	ND	U	ND	U	ND	U	ND	U	ND	U	0.0078	J	0.0146	J	ND	U	ND	U	ND	U	ND	U	NA		NA	
Former VMT Auto Sales	HA-5-0-0.5	6/19/2018	0-0.5	0.0025 (SPLP-ND)	(SPLP-UJ)	0.0047 (SPLP-ND)	(SPLP-UJ)	0.0057 (SPLP-ND)	(SPLP-UJ)	0.032 (SPLP-ND)	(SPLP-UJ)	0.026 (SPLP-ND)	(SPLP-UJ)	2.19		ND	U	0.914		ND	U	0.534		0.192	J	NA		NA	
	HA-5-2.0	6/19/2018	2.0	ND	U	ND	U	ND	U	ND	U	ND	U	0.0124	J	0.0276	J	0.0088	J	ND	U	0.0054	J	ND	U	NA		NA	
Former Oil/Gas Well	HA-8-0-0.5	6/18/2018	0-0.5	NA		NA		NA		NA		NA		ND	U	NA		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
	HA-8-2.0	6/18/2018	2.0	NA		NA		NA		NA		NA		ND	U	NA		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
	HA-8-4.0	6/18/2018	4.0	NA		NA		NA		NA		NA		ND	U	NA		ND	U	0.3		ND	U	ND	U	ND	U	ND	U
	HA-8-6.0	6/18/2018	6.0	NA		NA		NA		NA		NA		ND	U	NA		ND	U	0.25		ND	U	ND	U	ND	U	ND	U
	Test Pit Samples																												
	TP-3-0-0.25	6/20/2018	0-0.25	ND	U	ND	U	ND	U	ND	U	ND	U	0.0082	J	ND	U	ND	U	ND	U	ND	U	ND	U	NA		NA	
	TP-3-0.25-2	6/20/2018	0.25-2	ND	U	ND	U	ND	U	ND	U	ND	U	0.0062	J	ND	U	ND	U	ND	U	ND	U	ND	U	NA		NA	
	TP-3-2-9	6/20/2018	2-9	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NA		NA	
	TP-4-0-0.25	6/20/2018	0-0.25	ND	U	ND	U	ND	U	ND	U	ND	U	0.0112	J	ND	U	ND	U	ND	U	ND	U	ND	U	NA		NA	
	TP-4-0.25-6	6/20/2018	0.25-6	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NA		NA	
	TP-4-6-8	6/20/2018	6-8	ND	U	ND	U	ND	U	ND	U	ND	U	0.0068	J	ND	U	ND	U	ND	U	ND	U	ND	U	NA		NA	
	TP-6-0-0.5	6/18/2018	0-0.5	NA		NA		NA		NA		NA		ND	U	NA		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
	TP-6-0.5-1.5	6/18/2018	0.5-1.5	NA		NA		NA		NA		NA		ND	U	NA		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
	TP-6-1.5-2	6/18/2018	1.5-2	NA		NA		NA		NA		NA		ND	U	NA		ND	U	0.32		ND	U	ND	U	ND	U	ND	U
	TP-9-0-0.25	6/20/2018	0-0.25	NA		NA		NA		NA		NA		ND	U	NA		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
	TP-9-0.25-2.5	6/20/2018	0.25-2.5	NA		NA		NA		NA		NA		ND	U	NA		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
	TP-9-2.5-7	6/20/2018	2.5-7	NA		NA		NA		NA		NA		ND	U	NA		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
	TP-12-0-5	6/18/2018	0-5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NA		NA	
	TP-12-5-8	6/18/2018	5-8	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NA		NA	
	TP-12-8-10	6/18/2018	8-10	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NA		NA	
	TP-13-0-4	6/18/2018	0-4	NA		NA		NA		NA		NA		ND	U	NA		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
	TP-13-4-5	6/18/2018	4-5	NA		NA		NA		NA		NA		ND	U	NA		ND	U	0.31		ND	U	ND	U	ND	U	ND	U
	TP-16-0-0.5	6/19/2018	0-0.5	NA		NA		NA		NA		NA		ND	U	NA		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
	TP-16-0.5-3.5	6/19/2018	0.5-3.5	NA		NA		NA		NA		NA		ND	U	NA		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
	TP-16-3.5-5	6/19/2018	3.5-5	NA		NA		NA		NA		NA		ND	U	NA		ND	U	0.26		ND	U	ND	U	ND	U	ND	U
	TP-19-0-4	6/19/2018	0-4	NA		NA		NA		NA		NA		ND	U	NA		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
	TP-19-4-8	6/19/2018	4-8	NA		NA		NA		NA		NA		ND	U	NA		ND	U	0.29		ND	U	ND	U	ND	U	ND	U
	TP-19-8-10	6/19/2018	8-10	NA		NA		NA		NA		NA		ND	U	NA		ND	U	0.26		ND	U	ND	U	ND	U	ND	U
	TP-21-0-5	6/20/2018	0-5	NA		NA		NA		NA		NA		ND	U	NA		ND	U	0.4*		ND	U	ND	U	ND	U	ND	U
	TP-21-5-9	6/20/2018	5-9	NA		NA		NA		NA		NA		ND	U	NA		ND	U	0.25		ND	U	ND	U	ND	U	ND	U
	TP-23-0-0.5	6/20/2018	0-0.5	ND	U	ND	U	ND	U	ND	U	ND	U	0.0068	J	ND	U	ND	U	ND	U	ND	U	ND	U	NA		NA	
	TP-23-0.5-5	6/20/2018	0.5-5	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NA		NA	
	TP-23-5-8	6/20/2018	5-8	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	ND	U	NA		NA	
	TP-25-0-4	6/19/2018	0-4	NA		NA		NA		NA		NA		ND	U	NA		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
	TP-25-4-6	6/19/2018	4-6	NA		NA		NA		NA		NA		ND	U	NA		ND	U	ND	U	ND	U	ND	U	ND	U	ND	U
			Screening Limit Criteria																										
			DTSC SL - Commmercial/Industrial	9.3		7.1		NE		NE		6.1		110		26,000		780		NE		NE		5,300		18,000		13,000	
			USEPA RSL - Worker	9.3		8.5		NE		NE		7.7		160		41,000		1,200		NE		82,000		8,200		30,000		23,000	
			South Bay Power Plant	NE		NE		NE		NE		NE		NE		NE		NE		NE		NE		NE		NE		11,313	
			TTLC	1		1		NE		NE		3		NE		NE		NE		NE		NE		NE		NE		NE	

Notes:
Highlighted result exceeded the Waiver 10 Tier I SSL due to detectable organic concentrations (phthlates in the test pit samples were not highlighted, see Section 7.2.1 of report)
* - Result was ND after re-extraction and analysis
ft bgs - feet below ground surface
J - result is an estimate
mg/kg - milligram per kilogram
NA - not analyzed
ND - result was non-detect
NE - screening limit not established
REP - replicate sample
SPLP - synthetic precipitation leaching proceedure
SVOC - semi-volatile organic compound
TTLC - total threshold limit concentration
Q - final qualifier
U - analyte was not detected
UJ - analyte was not detcted, reporting limit is estimated
DTSC SL - Modified Screening Level for commercial/industrial soil, based on the Cancer Endpoint (Noncancer Endpoint was listed if Cancer Endpoint was not established), provided in California Department of Toxic Substances Control Office of Human and Ecological Risk's Human Health Risk Assessment Note No. 3, April 2019
USEPA RSL - United States Environmental Protection Agency Regional Screening Level for composite worker soil, based on the Carcinogenic Target Risk (Noncancer Hazard Index was used if Carcinogenic Target Risk was not established), April 2019
South Bay Power Plant - DTSC-approved site-specific screening levels for the South Bay Power Plant site (Haley & Aldrich, 2010)

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Table 5-7
Geotechnical Analytical Results
Organic Content, Grain Size, Water Content, Expansion Index, and Atterberg Limits
Salt Pond 20, San Diego, California

Composite Sample ID	Soil Unit Designation	Invididual Samples	Sampling Depth Range (feet bgs)	Laboratory Sample Description	Geotechnical Laboratory Analysis								
					Organic Content (%)	Percent Gravel (%)	Percent Sand (%)	Percent Fines (%)	Water Content (%)	Expansion Index	Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)
C-1	A	TP-1-0-0.5, TP-2-0-0.5, TP-3-0-0.25, TP-4-0-0.25, TP-5-0-0.5, TP-6-0-0.5, TP-7-0-0.5, TP-8-0-0.25, TP-9-0-0.25, TP-10-0-0.25, TP-15-0-0.5, TP-16-0-0.5, TP-17-0-0.08, TP-20-0.08, TP-23-0-0.5	0 to 0.5	Silt with Sand	6.3	0	28.0	72.0	17.3	3	NP	NP	NP
C-2	B	TP-3-0.25-2, TP-5-0.5-2, TP-7-0.5-1.5, TP-8-0.25-1, TP-9-0.25-2.5, TP-13-0-4, TP-16-0.5-3.5, TP-22-0-2.5	0 to 4	Silty Sand	1.2	0	76.2	23.8	12.6	4	NP	NP	NP
C-3	B	TP-11-0-4, TP-19-0-4, TP-20-0.083-4	0 to 4	Silty Sand	1.2	0	78.8	21.2	14.6	9	NP	NP	NP
C-4	B	TP-21-0-5, TP-27-0-4	0 to 5	Poorly-Graded Sand with Silt	1.0	0	90.7	9.3	3.9	2	NP	NP	NP
C-5	B	TP-18-0-4, TP-24-0-4.5, TP-25-0-4	0 to 4.5	Poorly-Graded Sand with Silt	0.5	0	92.6	7.4	4.2	1	NP	NP	NP
C-6	B	TP-26-0-4, TP-29-0-4, TP-30-0-4	0 to 4	Poorly-Graded Sand with Silt	0.5	0	88.1	11.9	3.3	2	NP	NP	NP
C-7	B	TP-23-0.5-5, TP-28-0-2, TP-31-0-3, TP-32-0-4	0 to 5	Poorly-Graded Sand with Silt	0.7	0	92.5	7.5	4.1	1	NP	NP	NP
C-8	C	TP-1-0.5-2, TP-2-0.5-3, TP-6-0.5-1.5, TP-14-0-8, TP-15-0.5-4	0 to 8	Sandy Silty Clay	2.8	0	30.9	69.1	85.1	39	26	20	6
C-9	C	TP-11-5-10, TP-18-4-6, TP-19-4-8, TP-24-4.5-6	4 to 10	Sandy Silty Clay	1.9	0	31	69	32.7	32	28	22	6
C-10	D	TP-25-4-6, TP-26-4-6, TP-29-4-8, TP-30-4-8	4 to 8	Lean Clay	2.9	0	6.3	93.7	40.0	53	33	22	11
C-11	C	TP-23-5-8, TP-28-2-4, TP-31, TP-32	2 to 8	Sandy Lean Clay	1.5	0	36.6	63.4	30.6	11	27	19	8
C-12	C	TP-3-2-9, TP-17-1.5-2	1.5 to 9	Silty Clayey Sand	3.8	0	51.5	48.5	29.9	18	27	20	7
C-13	C	TP-2-3-10, TP-5-2-7, TP-6-1.5-2, TP-12-5-8, TP-13-4-5, TP-15-4-8	1.5 to 10	Sandy Lean Clay	2.9	0	32.4	67.6	30.0	38	30	21	9
C-14	C	TP-8-5-8, TP-16-3.5-5, TP-23-8-10	3.5 to 10	Lean Clay with Sand	2.4	0	24.2	75.8	36.9	61	31	22	9
C-15	D	TP-11-4-5, TP-19-8-10, TP-20-4-5	4 to 10	Silt	4.7	0	6.6	93.4	43.9	77	43	29	14
C-16	E	TP-4-6-8, TP-9-7-9	6 to 9	Fat Clay	5.3	0	2.5	97.5	58.1	97	87	30	57
C-17	F	TP-14-8-10, TP-15-8-9	8 to 10	Poorly-Graded Sand with Silt	0.9	0	91.2	8.8	18.9	1	NP	NP	NP
C-18	C	TP-7-1.5-2, TP-8-1-5, TP-10-0.25-2, TP-17-0.08-1.5	0.08 to 5	Lean Clay with Sand	3.3	0	28.2	71.8	26.6	25	25	16	9
C-19	F	TP-26-6-6.5, TP-29-8-10, TP-30-8-10	6 to 10	Silty Sand	0.8	0	73.8	26.2	23.3	1	NP	NP	NP

Notes:
Organic content analyzed by ASTM Method D2974
Grain size analyzed by ASTM Method D422 and particle size classification based on USCS
Expansion Index analyzed by ASTM Method D4829
Atterberg Limits analyzed by ASTM Method D4318
bgs - below ground surface
NE - non-elastic
NP - non-plastic

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Table 5-8
Geotechnical Analytical Results
Corrosion Potential (Electrical Resistivity, pH, Chloride Content, and Sulfate Content)
Salt Pond 20, San Diego, California

Composite Sample ID	Soil Unit Designation	Invididual Samples	Sampling Depth Range (feet bgs)	Laboratory Sample Description	Corrosion Laboratory Analysis			
					Minimum Resistivity (ohm-cm)	pH	Sulfate Content (ppm)	Chloride Content (ppm)
C-1	A	TP-1-0-0.5, TP-2-0-0.5, TP-3-0-0.25, TP-4-0-0.25, TP-5-0-0.5, TP-6-0-0.5, TP-7-0-0.5, TP-8-0-0.25, TP-9-0-0.25, TP-10-0-0.25, TP-15-0-0.5, TP-16-0-0.5, TP-17-0-0.08, TP-20-0.08, TP-23-0-0.5	0 to 0.5	Silt with Sand	65	8.0	5,850	11,800
C-2	B	TP-3-0.25-2, TP-5-0.5-2, TP-7-0.5-1.5, TP-8-0.25-1, TP-9-0.25-2.5, TP-13-0-4, TP-16-0.5-3.5, TP-22-0-2.5	0 to 4	Silty Sand	120	7.0	2,040	4,540
C-3	B	TP-11-0-4, TP-19-0-4, TP-20-0.083-4	0 to 4	Silty Sand	130	7.9	1,380	2,940
C-4	B	TP-21-0-5, TP-27-0-4	0 to 5	Poorly-Graded Sand with Silt	720	7.6	1,220	380
C-5	B	TP-18-0-4, TP-24-0-4.5, TP-25-0-4	0 to 4.5	Poorly-Graded Sand with Silt	490	8.2	510	850
C-6	B	TP-26-0-4, TP-29-0-4, TP-30-0-4	0 to 4	Poorly-Graded Sand with Silt	560	8.8	140	420
C-7	B	TP-23-0.5-5, TP-28-0-2, TP-31-0-3, TP-32-0-4	0 to 5	Poorly-Graded Sand with Silt	340	7.6	1,380	2,400
C-8	C	TP-1-0.5-2, TP-2-0.5-3, TP-6-0.5-1.5, TP-14-0-8, TP-15-0.5-4	0 to 8	Sandy Silty Clay	43	8.0	5,480	15,000
C-9	C	TP-11-5-10, TP-18-4-6, TP-19-4-8, TP-24-4.5-6	4 to 10	Sandy Silty Clay	46	8.2	1,770	13,800
C-10	D	TP-25-4-6, TP-26-4-6, TP-29-4-8, TP-30-4-8	4 to 8	Lean Clay	48	8.3	1,590	12,800
C-11	C	TP-23-5-8, TP-28-2-4, TP-31, TP-32	2 to 8	Sandy Lean Clay	37	8.4	3,380	17,100
C-12	C	TP-3-2-9, TP-17-1.5-2	1.5 to 9	Silty Clayey Sand	39	8.3	4,800	15,000
C-13	C	TP-2-3-10, TP-5-2-7, TP-6-1.5-2, TP-12-5-8, TP-13-4-5, TP-15-4-8	1.5 to 10	Sandy Lean Clay	26	8.0	4,350	26,000
C-14	C	TP-8-5-8, TP-16-3.5-5, TP-23-8-10	3.5 to 10	Lean Clay with Sand	31	8.2	5,400	24,600
C-15	D	TP-11-4-5, TP-19-8-10, TP-20-4-5	4 to 10	Silt	41	8.1	2,760	16,000
C-16	E	TP-4-6-8, TP-9-7-9	6 to 9	Fat Clay	14	7.7	10,300	96,000
C-17	F	TP-14-8-10, TP-15-8-9	8 to 10	Poorly-Graded Sand with Silt	42	7.9	2,250	13,900
C-18	C	TP-7-1.5-2, TP-8-1-5, TP-10-0.25-2, TP-17-0.08-1.5	0.08 to 5	Lean Clay with Sand	37	8.3	5,700	18,100
C-19	F	TP-26-6-6.5, TP-29-8-10, TP-30-8-10	6 to 10	Silty Sand	50	8.3	1,740	12,800

Notes:
Mimum Resistivity and pH analyzed by California Test Method 643
Water Soluble Sulfate content analyzed by California Test Method 417
Water Soluble Chloride content analyzed by California Test Method 422
Labaoratory corrosion analyses performed by Clarkson Laboratory
ohm-cm - ohm-centimeter
ppm - parts per million
bgs - below ground surface
Import requirements based on Geotechnical Requirements for Import of Fill Soils, Chula Vista Bayfront (Ninyo & Moore, 2017)

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Table 5-9
Geotechnical Analytical Results
Modified Proctor Compaction
Salt Pond 20, San Diego, California

Composite Sample ID	Soil Unit Designation	Invididual Samples	Sampling Depth Range (feet bgs)	Laboratory Sample Description	Modified Proctor Analysis	
					Maximum Dry Unit Weight (pcf)	Optimum Water Content (%)
C-1	A	TP-1-0-0.5, TP-2-0-0.5, TP-3-0-0.25, TP-4-0-0.25, TP-5-0-0.5, TP-6-0-0.5, TP-7-0-0.5, TP-8-0-0.25, TP-9-0-0.25, TP-10-0-0.25, TP-15-0-0.5, TP-16-0-0.5, TP-17-0-0.08, TP-20-0.08, TP-23-0-0.5	0 to 0.5	Silt with Sand	94.3	27.9
C-2	B	TP-3-0.25-2, TP-5-0.5-2, TP-7-0.5-1.5, TP-8-0.25-1, TP-9-0.25-2.5, TP-13-0-4, TP-16-0.5-3.5, TP-22-0-2.5	0 to 4	Silty Sand	11.6	12.6
C-3	B	TP-11-0-4, TP-19-0-4, TP-20-0.083-4	0 to 4	Silty Sand	113.0	12.9
C-4	B	B	0 to 5	Poorly-Graded Sand with Silt	110.4	11.1
C-5	B	TP-18-0-4, TP-24-0-4.5, TP-25-0-4	0 to 4.5	Poorly-Graded Sand with Silt	108.9	11.2
C-6	B	TP-26-0-4, TP-29-0-4, TP-30-0-4	0 to 4	Poorly-Graded Sand with Silt	109.7	6.9
C-7	B	TP-23-0.5-5, TP-28-0-2, TP-31-0-3, TP-32-0-4	0 to 5	Poorly-Graded Sand with Silt	109.8	8.4
C-8	C	TP-1-0.5-2, TP-2-0.5-3, TP-6-0.5-1.5, TP-14-0-8, TP-15-0.5-4	0 to 8	Sandy Silty Clay	116.5	12.2
C-9	C	TP-11-5-10, TP-18-4-6, TP-19-4-8, TP-24-4.5-6	4 to 10	Sandy Silty Clay	120.2	14.4
C-10	D	TP-25-4-6, TP-26-4-6, TP-29-4-8, TP-30-4-8	4 to 8	Lean Clay	117.0	11.5
C-11	C	TP-23-5-8, TP-28-2-4, TP-31, TP-32	2 to 8	Sandy Lean Clay	127.4	9.2
C-12	C	TP-3-2-9, TP-17-1.5-2	1.5 to 9	Silty Clayey Sand	116.1	16.1
C-13	C	TP-2-3-10, TP-5-2-7, TP-6-1.5-2, TP-12-5-8, TP-13-4-5, TP-15-4-8	1.5 to 10	Sandy Lean Clay	117.9	14.3
C-14	C	TP-8-5-8, TP-16-3.5-5, TP-23-8-10	3.5 to 10	Lean Clay with Sand	115.9	14.9
C-15	D	TP-11-4-5, TP-19-8-10, TP-20-4-5	4 to 10	Silt	106.6	17.5
C-16	E	TP-4-6-8, TP-9-7-9	6 to 9	Fat Clay	99.6	19.7
C-17	F	TP-14-8-10, TP-15-8-9	8 to 10	Poorly-Graded Sand with Silt	110.1	12.4
C-18	C	TP-7-1.5-2, TP-8-1-5, TP-10-0.25-2, TP-17-0.08-1.5	0.08 to 5	Lean Clay with Sand	121.0	13.2
C-19	F	TP-26-6-6.5, TP-29-8-10, TP-30-8-10	6 to 10	Silty Sand	128.1	9.0

Notes:
Modified Proctor Compaction analyzed by ASTM Method D1557
pcf - pounds per cubic foot
bgs - below ground surface

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Table 6-1
Data Quality Assessment - Sample Summary
Salt Pond 20, San Diego, California

Sample Location	Sample ID	Sample Type	Sample Date	Depth, feet	ATL SDG	CEL SDG	AETL SDG
HA-1	HA-1-0-0.5	N	6/20/2018	0-0.5	1802237	NA	NA
HA-1	HA-1-0-0.5-Dup	FD	6/20/2018	0-0.5	1802237	NA	NA
HA-1	HA-1-1.0	N	6/20/2018	1-2	1802237	NA	NA
HA-1	HA-1-2.0	N	6/20/2018	2-2	1802237	NA	NA
HA-1	HA-1-4.0	N	6/20/2018	4-4	1802237	NA	NA
HA-2	HA-2-0-0.5	N	6/20/2018	0-0.5	1802258	NA	93067
HA-2	HA-2-0-0.5-Dup	FD	6/20/2018	0-0.5	1802258	NA	93067
HA-2	HA-2-2.0	N	6/20/2018	2-2	1802258	NA	93067
HA-3	HA-3-0-0.5	N	6/20/2018	0-0.5	1802258	NA	93067
HA-3	HA-3-2.0	N	6/20/2018	2-2	1802258	NA	NA
HA-4	HA-4-0-0.5	N	6/20/2018	0-0.5	1802237	NA	NA
HA-4	HA-4-0-0.5-Dup	FD	6/20/2018	0-0.5	1802237	NA	NA
HA-4	HA-4-2.0	N	6/20/2018	2-2	1802237	NA	NA
HA-5	HA-5-0-0.5	N	6/19/2018	0-0.5	1802237	NA	NA
HA-5	HA-5-2.0	N	6/19/2018	2-2	1802237	NA	NA
HA-5	HA-5-4.0	N	6/19/2018	4-4	1802258	NA	NA
HA-6	HA-6-0-0.5	N	6/19/2018	0-0.5	1802258	NA	NA
HA-6	HA-6-0-0.5-Dup	FD	6/19/2018	0-0.5	1802258	NA	NA
HA-6	HA-6-2.0	N	6/19/2018	2-2	1802258	NA	NA
HA-7	HA-7-0-0.5	N	6/18/2018	0-0.5	1802258	NA	NA
HA-7	HA-7-2.0	N	6/18/2018	2-2	1802258	NA	93067
HA-7	HA-7-4.0	N	6/18/2018	4-4	1802258	NA	93067
HA-8	HA-8-0-0.5	N	6/18/2018	0-0.5	1802258	NA	93067
HA-8	HA-8-2.0	N	6/18/2018	2-2	1802258	NA	93067
HA-8	HA-8-4.0	N	6/18/2018	4-4	1802258	NA	93067
HA-8	HA-8-6.0	N	6/18/2018	6-6	1802258	NA	93067
HA-9	HA-9-0-0.5	N	6/18/2018	0-0.5	1802258	NA	93067
HA-9	HA-9-2.0	N	6/18/2018	2-2	1802258	NA	93067
HA-10	HA-10-0-0.5	N	6/18/2018	0-0.5	1802237	NA	NA
HA-10	HA-10-2.0	N	6/18/2018	2-2	1802258	NA	NA
HA-11	HA-11-0-0.5	N	6/18/2018	0-0.5	1802258	NA	NA
HA-11	HA-11-2.0	N	6/18/2018	2-2	1802237	NA	NA
HA-12	HA-12-0-0.5	N	6/19/2018	0-0.5	1802237	NA	NA
HA-12	HA-12-2.0	N	6/19/2018	2-2	1802237	NA	NA
HA-13	HA-13-0-0.5	N	6/19/2018	0-0.5	1802237	18-06-1645	NA
HA-13	HA-13-0-0.5-Dup	FD	6/19/2018	0-0.5	1802237	18-06-1645	NA
HA-13	HA-13-2.0	N	6/19/2018	2-2	1802237	18-06-1645	NA
HA-13	HA-13-2.0-Dup	FD	6/19/2018	2-2	1802237	18-06-1645	NA
TP-3	TP-3-0-0.25	N	6/20/2018	0-0.25	1802237	18-06-1645	NA
TP-3	TP-3-0.25-2	N	6/20/2018	0.25-2	1802237	18-06-1645	NA
TP-3	TP-3-2-9	N	6/20/2018	2-9	1802237	NA	NA
TP-4	TP-4-0-0.25	N	6/20/2018	0-0.25	1802237	NA	NA
TP-4	TP-4-0.25-6	N	6/20/2018	0.25-6	1802300	NA	NA
TP-4	TP-4-6-8	N	6/20/2018	6-8	1802300	NA	NA
TP-5	TP-5-0.5-2	N	6/18/2018	0.5-2	1802300	NA	NA
TP-6	TP-6-0-0.5	N	6/18/2018	0-0.5	1802300	NA	NA
TP-6	TP-6-0.5-1.5	N	6/18/2018	0.5-1.5	1802300	NA	NA

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Table 6-1
Data Quality Assessment - Sample Summary
Salt Pond 20, San Diego, California

Sample Location	Sample ID	Sample Type	Sample Date	Depth, feet	ATL SDG	CEL SDG	AETL SDG
TP-6	TP-6-1.5-2	N	6/18/2018	1.5-2	1802237	NA	93026
TP-7	TP-7-0-0.5	N	6/20/2018	0-0.5	1802237	NA	93026
TP-7	TP-7-0.5-1.5	N	6/20/2018	0.5-1.5	1802237	NA	93026
TP-7	TP-7-1.5-2	N	6/20/2018	1.5-2	1802237	18-06-1645	NA
TP-8	TP-8-0-0.25	N	6/20/2018	0-0.25	1802237	18-06-1645	NA
TP-8	TP-8-0.25-1	N	6/20/2018	0.25-1	1802237	NA	NA
TP-8	TP-8-1-5	N	6/20/2018	1-5	1802258	18-06-1646	NA
TP-8	TP-8-5-8	N	6/20/2018	5-8	1802258	18-06-1646	NA
TP-9	TP-9-0-0.25	N	6/20/2018	0-0.25	1802258	18-06-1646	NA
TP-9	TP-9-0.25-2.5	N	6/20/2018	0.25-2.5	1802258	NA	NA
TP-9	TP-9-2.5-7	N	6/20/2018	2.5-7	1802300	NA	NA
TP-9	TP-9-7-9	N	6/20/2018	7-9	1802300	NA	NA
TP-10	TP-10-0-0.25	N	6/20/2018	0-0.25	1802300	NA	NA
TP-10	TP-10-0.25-2	N	6/20/2018	0.25-2	1802300	NA	NA
TP-11	TP-11-0-4	N	6/19/2018	0-4	1802258	18-06-1646	NA
TP-11	TP-11-4-5	N	6/19/2018	4-5	1802258	18-06-1646	NA
TP-11	TP-11-5-10	N	6/19/2018	5-10	1802258	18-06-1646	NA
TP-12	TP-12-0-5	N	6/18/2018	0-5	1802300	NA	NA
TP-12	TP-12-5-8	N	6/18/2018	5-8	1802300	NA	NA
TP-12	TP-12-8-10	N	6/18/2018	8-10	1802258	18-06-1646	NA
TP-13	TP-13-0-4	N	6/18/2018	0-4	1802258	18-06-1646	NA
TP-13	TP-13-4-5	N	6/18/2018	4-5	1802300	NA	NA
TP-14	TP-14-0-8	N	6/18/2018	0-8	1802300	NA	NA
TP-16	TP-16-0-0.5	N	6/19/2018	0-0.5	1802258	NA	93067
TP-16	TP-16-0.5-3.5	N	6/19/2018	0.5-3.5	1802258	NA	93067
TP-16	TP-16-3.5-5	N	6/19/2018	3.5-5	1802258	NA	93067
TP-16	TP-16-5-10	N	6/19/2018	5-10	1802258	NA	NA
TP-17	TP-17-0.083-1.5	N	6/20/2018	0.083-1.5	1802300	NA	NA
TP-17	TP-17-1.5-2	N	6/20/2018	1.5-2	1802300	NA	NA
TP-18	TP-18-0-4	N	6/19/2018	0-4	1802258	18-06-1646	NA
TP-18	TP-18-4-6	N	6/19/2018	4-6	1802258	18-06-1646	NA
TP-19	TP-19-0-4	N	6/19/2018	0-4	1802300	NA	NA
TP-19	TP-19-4-8	N	6/19/2018	4-8	1802300	NA	NA
TP-19	TP-19-8-10	N	6/19/2018	8-10	1802300	NA	NA
TP-20	TP-20-0.083-4	N	6/19/2018	0.083-4	1802300	NA	NA
TP-20	TP-20-4-5	N	6/19/2018	4-5	1802300	NA	NA
TP-21	TP-21-0-5	N	6/20/2018	0-5	1802300	NA	NA
TP-21	TP-21-5-9	N	6/20/2018	5-9	1802300	NA	NA
TP-22	TP-22-0-2.5	N	6/19/2018	0-2.5	1802300	NA	NA
TP-22	TP-22-2.5-3	N	6/19/2018	2.5-3	1802300	NA	NA
TP-23	TP-23-0-0.5	N	6/20/2018	0-0.5	1802300	NA	NA
TP-23	TP-23-0.5-5	N	6/20/2018	0.5-5	1802258	NA	93067
TP-23	TP-23-5-8	N	6/20/2018	5-8	1802258	NA	93067
TP-23	TP-23-8-10	N	6/20/2018	8-10	1802258	NA	93067
TP-24	TP-24-0-4.5	N	6/19/2018	0-4.5	1802300	NA	NA
TP-24	TP-24-4.5-6	N	6/19/2018	4.5-6	1802300	NA	NA
TP-25	TP-25-0-4	N	6/19/2018	0-4	1802300	NA	NA

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Table 6-1
Data Quality Assessment - Sample Summary
Salt Pond 20, San Diego, California

Sample Location	Sample ID	Sample Type	Sample Date	Depth, feet	ATL SDG	CEL SDG	AETL SDG
TP-25	TP-25-4-6	N	6/19/2018	4-6	1802300	NA	NA
TP-26	TP-26-0-4	N	6/19/2018	0-4	1802300	NA	NA
TP-26	TP-26-4-6	N	6/19/2018	4-6	1802300	NA	NA
TP-26	TP-26-6-6.5	N	6/19/2018	6-6.5	1802300	NA	NA
TP-27	TP-27-0-4	N	6/19/2018	0-4	1802300	NA	NA
TP-27	TP-27-4-10	N	6/19/2018	4-10	1802258	NA	93067
TP-28	TP-28-0-2	N	6/20/2018	0-2	1802258	NA	93067
TP-28	TP-28-2-4	N	6/20/2018	2-4	1802258	NA	93067
TP-29	TP-29-0-4	N	6/19/2018	0-4	1802237	NA	NA
TP-29	TP-29-4-8	N	6/19/2018	4-8	1802237	18-06-1645	NA
TP-29	TP-29-8-10	N	6/19/2018	8-10	1802237	18-06-1645	NA
TP-30	TP-30-0-4	N	6/19/2018	0-4	1802237	18-06-1645	NA
TP-30	TP-30-4-8	N	6/19/2018	4-8	1802300	NA	NA
TP-30	TP-30-8-10	N	6/19/2018	8-10	1802300	NA	NA
TP-31	TP-31-0-3	N	6/20/2018	0-3	1802300	NA	NA
TP-31	TP-31-3-4	N	6/20/2018	3-4	1802300	NA	NA
TP-32	TP-32-0-4	N	6/20/2018	0-4	1802300	NA	NA
TP-32	TP-32-4-7	N	6/20/2018	4-7	1802300	NA	NA
TP-32	TP-32-7-9	N	6/20/2018	7-9	1802300	NA	NA
ENVCOMP-1	ENVCOMP-1	N	6/18/2018	COMP	1802258	18-06-1646	NA
ENVCOMP-2	ENVCOMP-2	N	6/18/2018	COMP	1802258	18-06-1646	NA
ENVCOMP-3	ENVCOMP-3	N	6/18/2018	COMP	1802258	18-06-1646	NA
ENVCOMP-3	ENVCOMP-3-DUP	FD	6/18/2018	COMP	1802258	18-06-1646	NA
ENVCOMP-4	ENVCOMP-4	N	6/18/2018	COMP	1802258	NA	NA
ENVCOMP-4	ENVCOMP-4-DUP	FD	6/18/2018	COMP	1802258	NA	NA
FQC	EB-061818	EB	6/18/2018	--	1802237	NA	93026
FQC	EB-061918	EB	6/19/2018	--	1802258	18-06-1646	93067
FQC	EB-062018	EB	6/20/2018	--	1802292	18-06-1732	93079
FQC	SW-061918	SB	6/19/2018	--	1802258	18-06-1646	93067

Notes:
-- Field QC sample, depth not applicable
ATL - Advanced Technology Laboratory
AETL - American Environmental Testing Laboratories, Inc.
CEL - Eurofins Calscience
COMP - composite sample
EB - equipment blank
FD - field duplicate
FQC - field quality control sample
HA - hand auger
N - normal sample
NA - sample was not analyzed by the lab
SB - source blank
SDG - sample delivery group
TP - test tit

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Table 6-2
Data Quality Assessment - Data Validation Statistics
Salt Pond 20, San Diego, California

			Validation Flagging Statistics									
Method	Lab	Total Results Evaluated	Total Number Flagged	Percent	Number U Flagged	Percent	Number UJ Flagged	Percent	Number J Flagged	Percent	Number R Flagged	Percent
USEPA 6010B	ATL	3	0	0%	0	0%	0	0%	0	0%	0	0%
USEPA 6020	ATL	1920	65	3%	0	0%	28	1%	37	2%	0	0%
USEPA 7470A	ATL	4	0	0%	0	0%	0	0%	0	0%	0	0%
USEPA 7471A	ATL	116	0	0%	0	0%	0	0%	0	0%	0	0%
USEPA 8015B	ATL	1894	91	5%	0	0%	86	5%	5	0%	0	0%
USEPA 8081A	ATL	688	6	1%	0	0%	6	1%	0	0%	0	0%
USEPA 8082	ATL	468	0	0%	0	0%	0	0%	0	0%	0	0%
USEPA 8260B	ATL	2139	25	1%	0	0%	25	1%	0	0%	0	0%
USEPA 8270C	ATL	3	3	100%	0	0%	3	100%	0	0%	0	0%
USEPA 8270C_SIM	CEL	1931	1	0%	0	0%	1	0%	0	0%	0	0%
USEPA 8270C_SIM	AETL	390	0	0%	0	0%	0	0%	0	0%	0	0%
	Totals	**9556**	**191**	**2%**	**0**	**0%**	**149**	**2%**	**42**	**0%**	**0**	**0%**

Notes:
Highlight: total percent of flagged results is greater than 40%
ATL = Advanced Technology Laboratories
AETL - American Environmental Testing Services
CEL - Eurofins Calscience
J - result is an estimate (includes J+ results that are estimated quantities likely biased high)
R - result was rejected, analyte may or may not be present
U - Analyte was not dectected
UJ - Analyte was not detected, reporting limit is estimated

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Table 6-3
Data Quality Assessment - Data Validation Reason Statistics
Salt Pond 20, San Diego, California

			Final Qualifier	J	J+	UJ	R	Total
Validation Reason Code	**Code Definition**	**Method**	**Lab**	**# Results Qualified**	**# Results Qualified**	**# Results Qualified**	**# Results Qualified**	**Results Qualified**
Hold Time Qualified Data								
01	Hold Time Exceeded	USEPA 8015B	ATL	0	0	74	0	74
01	Hold Time Exceeded	USEPA 8081A	ATL	0	0	6	0	6
01	Hold Time Exceeded	USEPA 8270C	AETL	0	0	3	0	3
			Total Qualifed Due to Holding Time	0	0	83	0	83
Accuracy Qualified Data								0
08	MS/MSD %R	USEPA 6020	ATL	10	5	28	0	43
08	MS/MSD %R	USEPA 8015B	ATL	0	0	7	0	7
08	MS/MSD %R	USEPA 8260B	ATL	0	0	25	0	25
08	MS/MSD %R	USEPA 8270C_SIM	CEL	0	0	1	0	1
			Total Qualifed Due to Accuracy Criteria	10	5	60	0	75
Precision Qualified Data								0
14	Field Duplicate RPD	USEPA 6020	ATL	22	0	0	0	22
14	Field Duplicate RPD	USEPA 8015B	ATL	5	0	5	0	10
			Total Qualified Due to Precision Criteria	27	0	5	0	32
			Validation Qualifier Total	37	5	148	0	190
			Total Number of Results	9556				

Notes:
%R - percent recovery
ATL - Advanced Technology Laboratories
AETL - American Environmental Testing Services
CEL - Eurofins Calscience
J - result is an estimate
J+ - result is an estimated quantity likely biased high
R - data are unusable
RPD - relative percent difference
UJ - result is non-detect, reporting limit is estimated

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FIGURES

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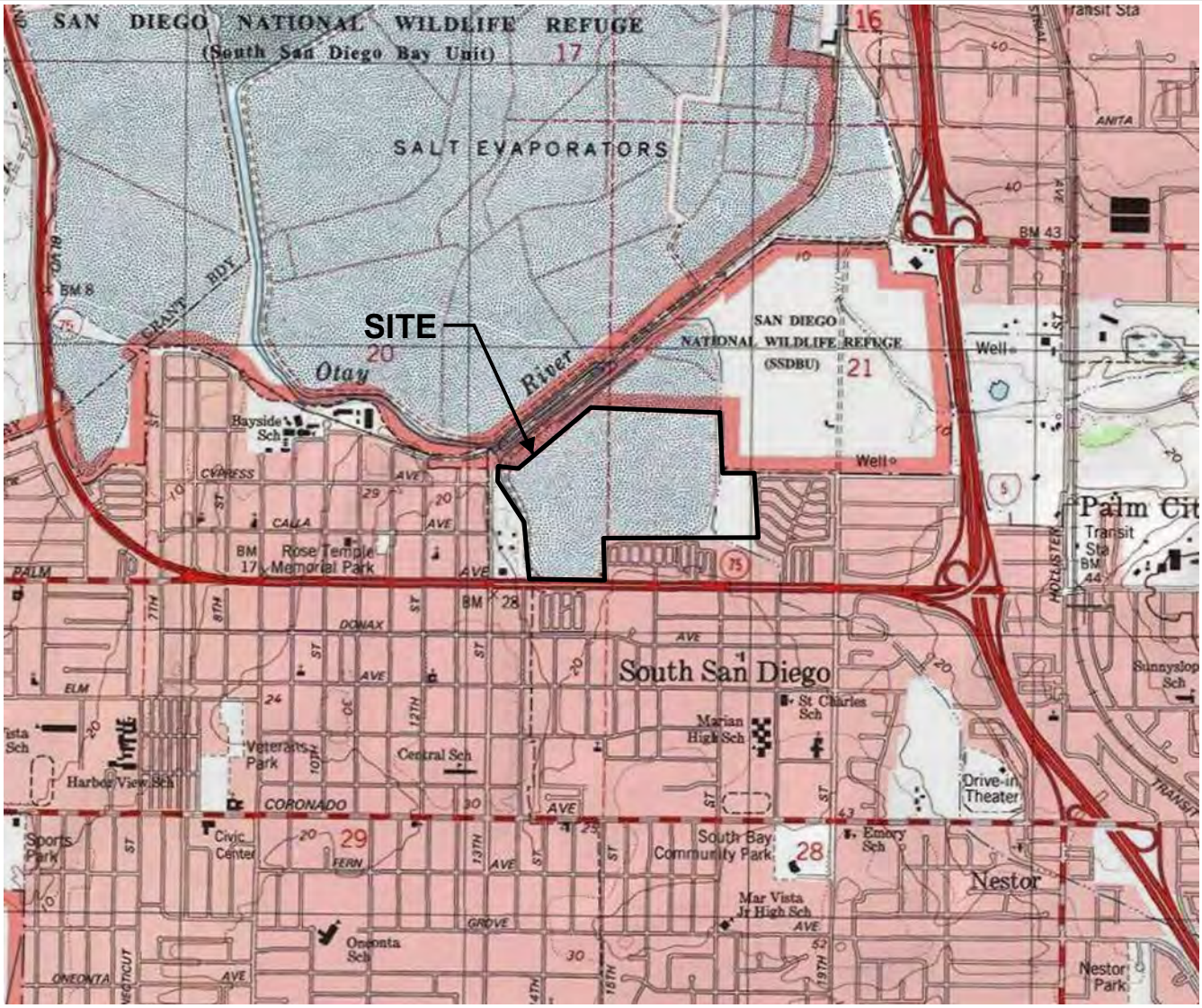

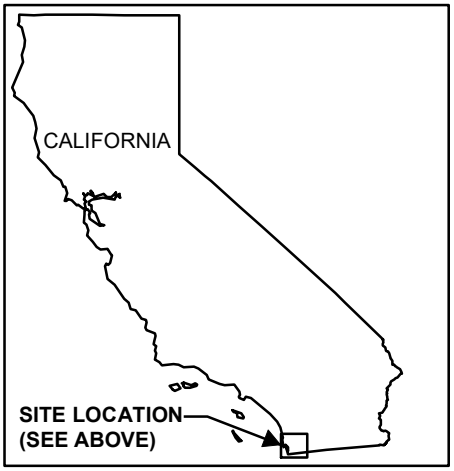

N

0 1,000 2,000 4,000
Feet

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FILE NAME:	20164596_SaltPondVIC.mxd

VICINITY MAP

SOIL ASSESSMENT REPORT
SALT POND 20
SAN DIEGO, CALIFORNIA

FIGURE
1-1

\\sandiego\SANDIEGO-DATA\GRAPHICS_clients\PortOfSanDiego\20164596.018\mxd

0 150 300 600 Feet

N

LEGEND

- TEST PIT LOCATION
- HAND AUGER LOCATION
- ASSESSOR'S PARCEL BOUNDARY
- EXCAVATION CHANNELS
- PREVIOUS SOIL SAMPLE LOCATION (GREAT ECOLOGY, 2017)

NOTES:
GW-# = Depth to groundwater (feet below grade)
Depths are in feet below ground surface.
Source for excavation channels: SDUPD, 2017. Wetland Restoration of Salt Pond 20 Preliminary Design, October 6.

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SITE MAP

SOIL ASSESSMENT REPORT
SALT POND 20
SAN DIEGO, CALIFORNIA

FIGURE
1-2

\\sandiego\SANDIEGO-DATA\GRAPHICS_clients\PortOfSanDiego\20164596.018\mxd

ATTACHED IMAGES: Images: WetlandRestoration_A.jpg Images: WetlandRestoration_B.jpg
ATTACHED XREFS:
CAD FILE: \\sandiego\SANDIEGO-DATA\GRAPHICS_clients\PortOfSanDiego\20164596.018\DWG LAYOUT: Layout1 PLOTTED: 25 Oct 2018, 8:14am, KHagan

250 125 0 250
APPROXIMATE SCALE (feet)

LEGEND

CROSS SECTION

NOTE:
CROSS SECTIONS A THROUGH E SHOWN ON FIGURE 1-4.

GRADING PLAN: ESA, 2017.

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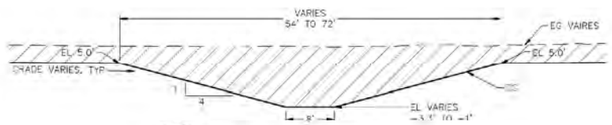
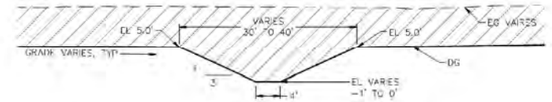
PRELIMINARY SITE GRADING PLAN

SOIL ASSESSMENT REPORT
SALT POND 20
SAN DIEGO, CALIFORNIA

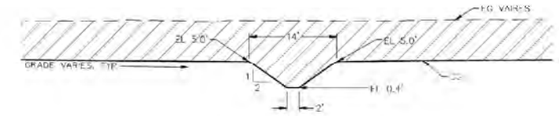
FIGURE
1-3



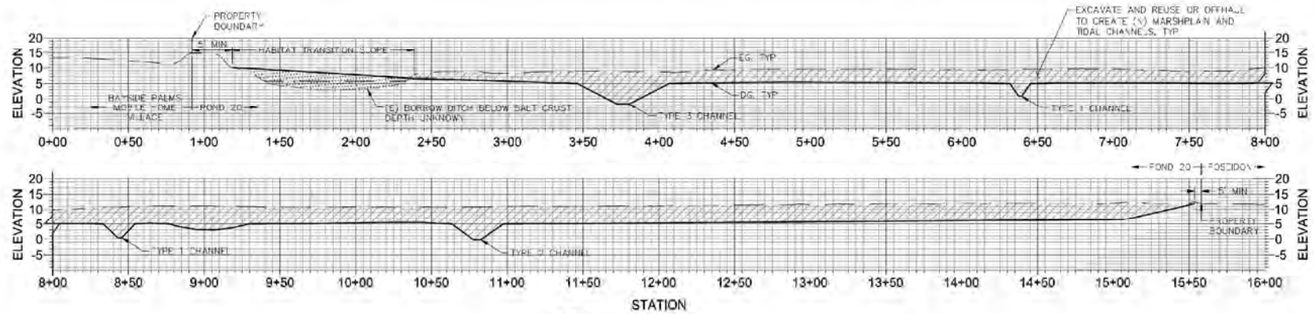
A
8 | 8
TYPE 3 CHANNEL (3RD ORDER)
TYPICAL SECTION



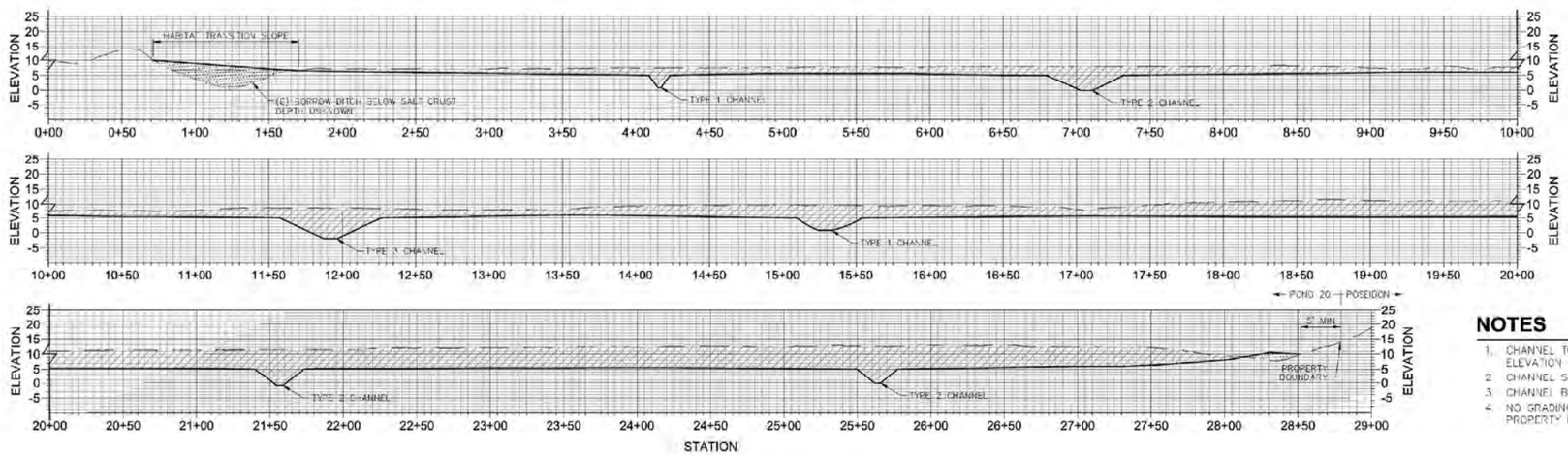
B
7 | 6
TYPE 2 CHANNEL (2ND ORDER)
TYPICAL SECTION



C
7 | 8
TYPE 1 CHANNEL (1ST ORDER)
TYPICAL SECTION



D
7 | 8
SITE GRADING
CROSS SECTION



E
6 | 8
SITE GRADING
CROSS SECTION

NOTES

1. CHANNEL TOP WIDTH VARIES AS THALWEG ELEVATION VARIES.
2. CHANNEL SIDE SLOPES REMAIN CONSTANT.
3. CHANNEL BOTTOM WIDTH REMAINS CONSTANT.
4. NO GRADING WITHIN 5 FOOT BUFFER FROM PROPERTY BOUNDARY.

VERIFY SCALE
0 1"

PRELIMINARY
NOT FOR CONSTRUCTION

SOURCE: ESA, 2017.

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CROSS SECTIONS

SOIL ASSESSMENT REPORT
SALT POND 20
SAN DIEGO, CALIFORNIA

FIGURE
1-4

\\sandiego\SANDIEGO-DATA\GRAPHICS_clients\PortOfSanDiego\20164596.018\mxd

TP-23	
Depth	*5-8*
Copper	44

HA-7	
Depth	*0-0.5*
Silver	3.3 J

HA-5			
Depth			*0-0.5*
Copper	98	Zinc	350
Lead	250	4,4-DDE	0.0025
Nickel	23	4,4-DDT	0.0047

HA-3	
Depth	*0-0.5*
Arsenic	8.6 J

HA-6	
Depth	*0-0.5*
Lead	93 J

0 150 300 600 Feet

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N

LEGEND

- TEST PIT LOCATION
- HAND AUGER LOCATION
- USACE JURISDICTION SAMPLES* (ALSO INCLUDES HA-1 THROUGH HA-5)
- EXCAVATION CHANNELS
- PREVIOUS SOIL SAMPLE LOCATION (GREAT ECOLOGY, 2017)

NOTES:
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Depths are in feet below ground surface
Highlighted – Exceeds ERL
* - Polygons created by Thiessen Method (see Figure 6-1)

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SOIL REUSE SAMPLE LOCATION MAP AND RESULTS EXCEEDING APPLICABLE SCREENING LEVELS

SOIL ASSESSMENT REPORT
SALT POND 20
SAN DIEGO, CALIFORNIA

FIGURE
5-1

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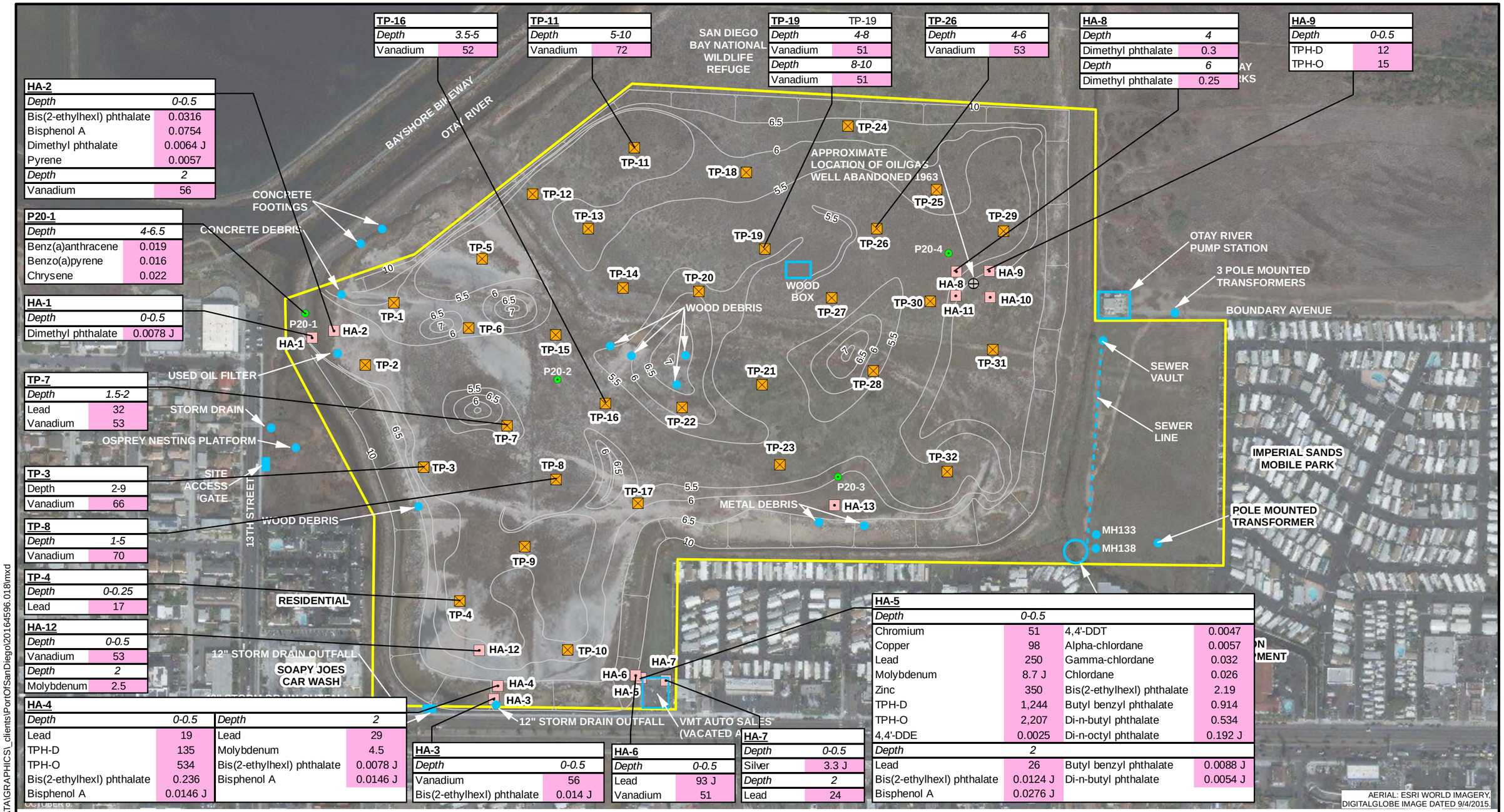

TP-16	
Depth	*3.5-5*
Vanadium	52

TP-11	
Depth	*5-10*
Vanadium	72

TP-19	TP-19
Depth	*4-8*
Vanadium	51
Depth	*8-10*
Vanadium	51

TP-26	
Depth	*4-6*
Vanadium	53

HA-8	
Depth	*4*
Dimethyl phthalate	0.3
Depth	*6*
Dimethyl phthalate	0.25

HA-9	
Depth	*0-0.5*
TPH-D	12
TPH-O	15

HA-2	
Depth	*0-0.5*
Bis(2-ethylhexl) phthalate	0.0316
Bisphenol A	0.0754
Dimethyl phthalate	0.0064 J
Pyrene	0.0057
Depth	*2*
Vanadium	56

P20-1	
Depth	*4-6.5*
Benz(a)anthracene	0.019
Benzo(a)pyrene	0.016
Chrysene	0.022

HA-1	
Depth	*0-0.5*
Dimethyl phthalate	0.0078 J

TP-7	
Depth	*1.5-2*
Lead	32
Vanadium	53

TP-3	
Depth	2-9
Vanadium	66

TP-8	
Depth	*1-5*
Vanadium	70

TP-4	
Depth	*0-0.25*
Lead	17

HA-12	
Depth	*0-0.5*
Vanadium	53
Depth	*2*
Molybdenum	2.5

HA-4			
Depth	*0-0.5*	*Depth*	*2*
Lead	19	Lead	29
TPH-D	135	Molybdenum	4.5
TPH-O	534	Bis(2-ethylhexl) phthalate	0.0078 J
Bis(2-ethylhexl) phthalate	0.236	Bisphenol A	0.0146 J
Bisphenol A	0.0146 J		

HA-3	
Depth	*0-0.5*
Vanadium	56
Bis(2-ethylhexl) phthalate	0.014 J

HA-6	
Depth	*0-0.5*
Lead	93 J
Vanadium	51

HA-7	
Depth	*0-0.5*
Silver	3.3 J
Depth	*2*
Lead	24

HA-5			
Depth	*0-0.5*		
Chromium	51	4,4'-DDT	0.0047
Copper	98	Alpha-chlordane	0.0057
Lead	250	Gamma-chlordane	0.032
Molybdenum	8.7 J	Chlordane	0.026
Zinc	350	Bis(2-ethylhexl) phthalate	2.19
TPH-D	1,244	Butyl benzyl phthalate	0.914
TPH-O	2,207	Di-n-butyl phthalate	0.534
4,4'-DDE	0.0025	Di-n-octyl phthalate	0.192 J
Depth	*2*		
Lead	26	Butyl benzyl phthalate	0.0088 J
Bis(2-ethylhexl) phthalate	0.0124 J	Di-n-butyl phthalate	0.0054 J
Bisphenol A	0.0276 J		

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- TEST PIT LOCATION
- HAND AUGER LOCATION
- PREVIOUS SOIL SAMPLE LOCATION (GREAT ECOLOGY, 2017)
- EXCAVATION CHANNELS

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SOIL EXPORT SAMPLE LOCATION MAP AND RESULTS EXCEEDING APPLICABLE SCREENING LEVELS

SOIL ASSESSMENT REPORT
SALT POND 20
SAN DIEGO, CALIFORNIA

FIGURE
5-2

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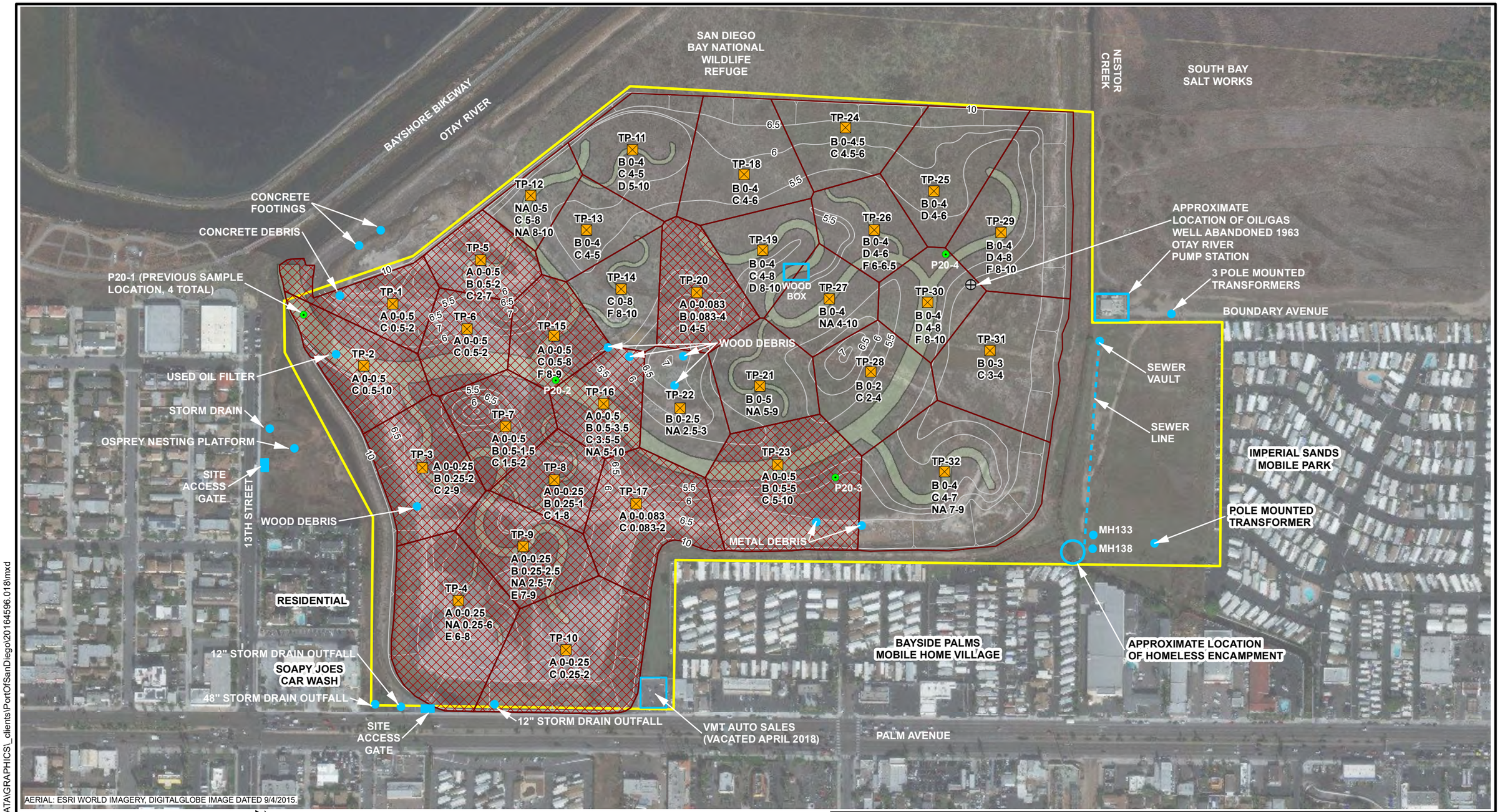

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N

LEGEND

- TEST PIT LOCATION
- TEST PIT AREA - SOIL UNIT A
- EXCAVATION CHANNELS
- PREVIOUS SOIL SAMPLE LOCATION (GREAT ECOLOGY, 2017)

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GEOTECHNICAL SOIL TEST PITS
SOIL UNIT A

SOIL ASSESSMENT REPORT
SALT POND 20
SAN DIEGO, CALIFORNIA

FIGURE
7-1

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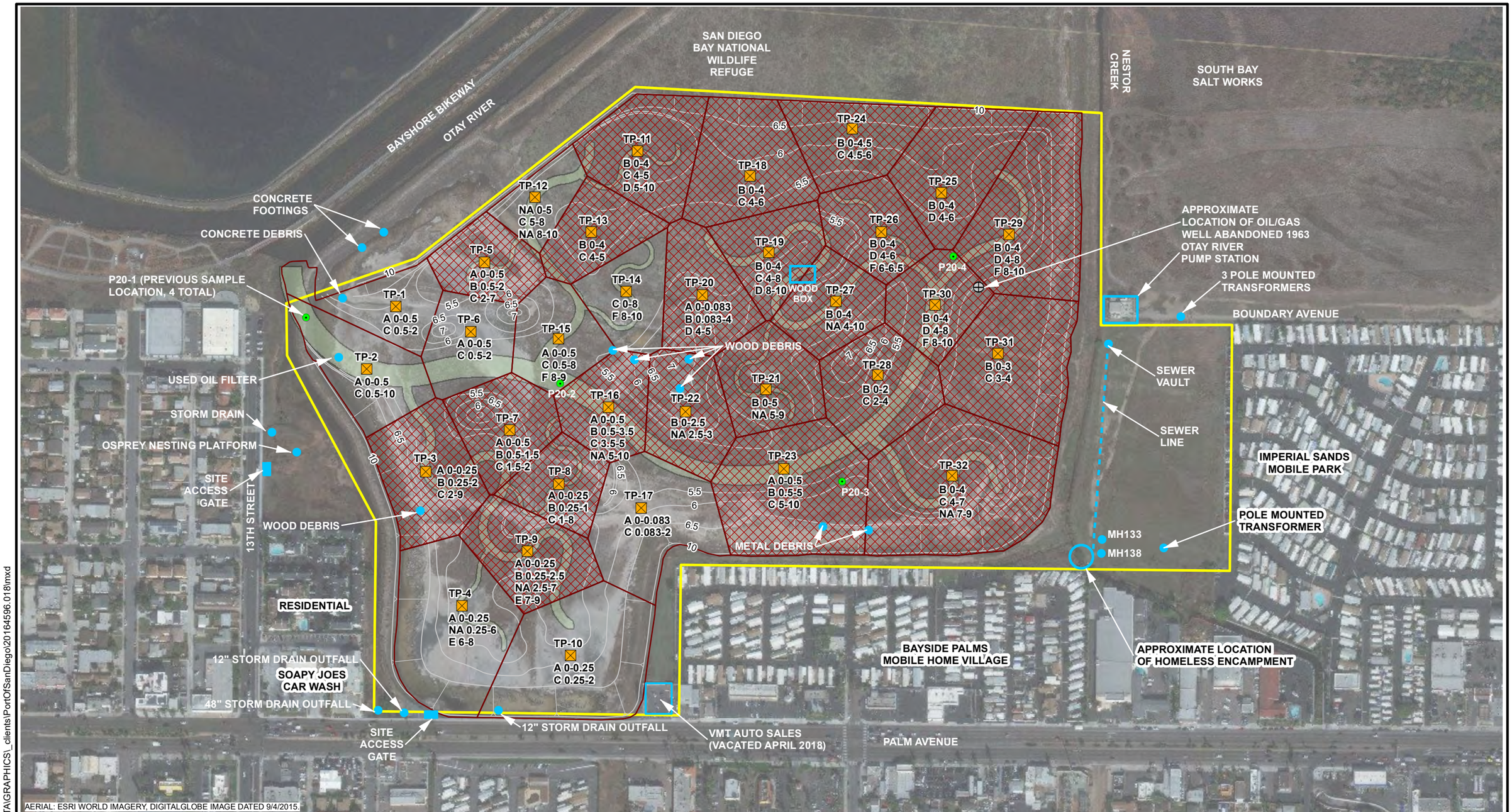

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LEGEND

- TEST PIT LOCATION
- TEST PIT AREA - SOIL UNIT B
- EXCAVATION CHANNELS
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GEOTECHNICAL SOIL TEST PITS
SOIL UNIT B

SOIL ASSESSMENT REPORT
SALT POND 20
SAN DIEGO, CALIFORNIA

FIGURE
7-2

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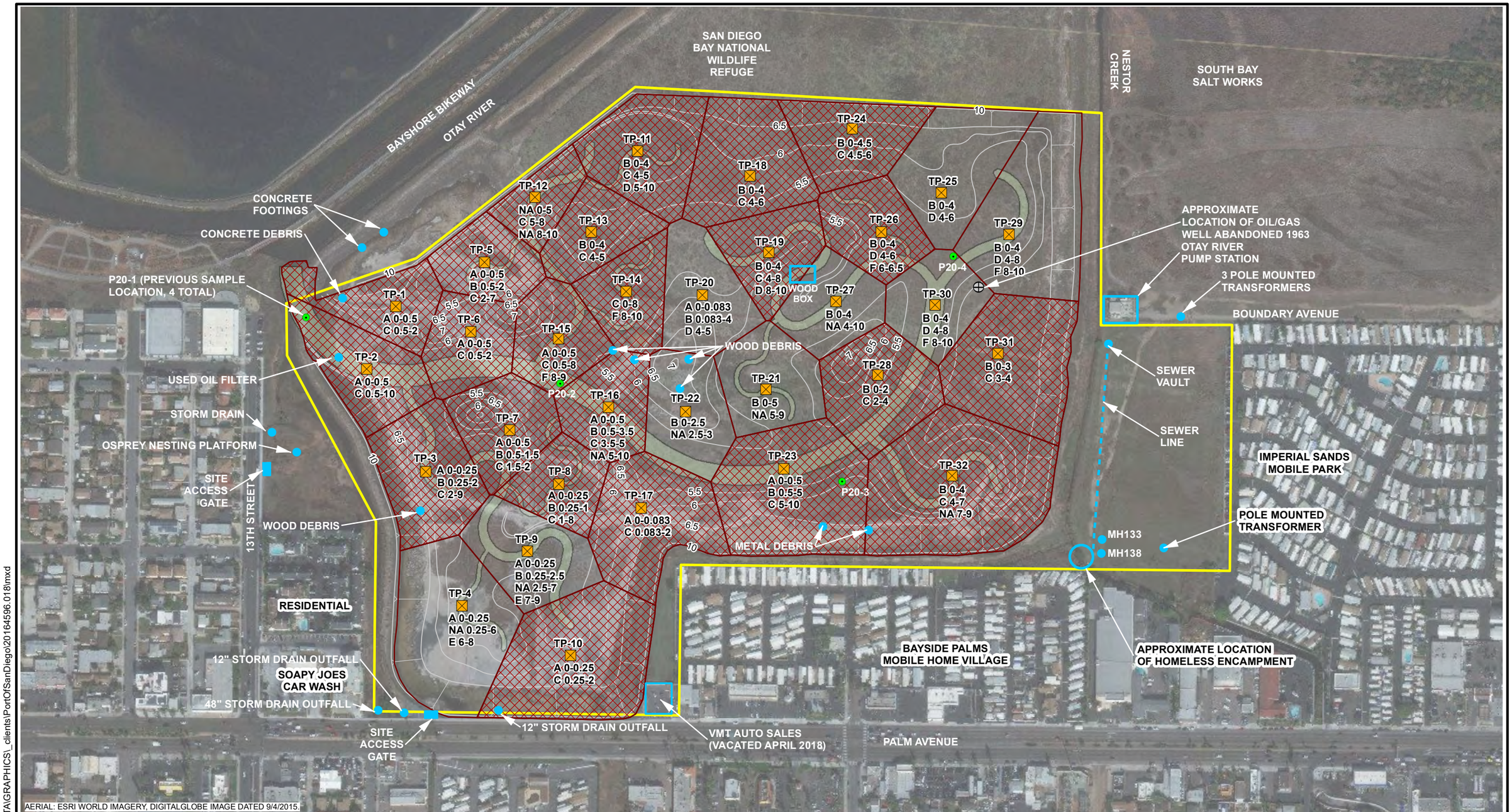

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LEGEND

- TEST PIT LOCATION
- TEST PIT AREA - SOIL UNIT C
- EXCAVATION CHANNELS
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GEOTECHNICAL SOIL TEST PITS
SOIL UNIT C

SOIL ASSESSMENT REPORT
SALT POND 20
SAN DIEGO, CALIFORNIA

FIGURE
7-3

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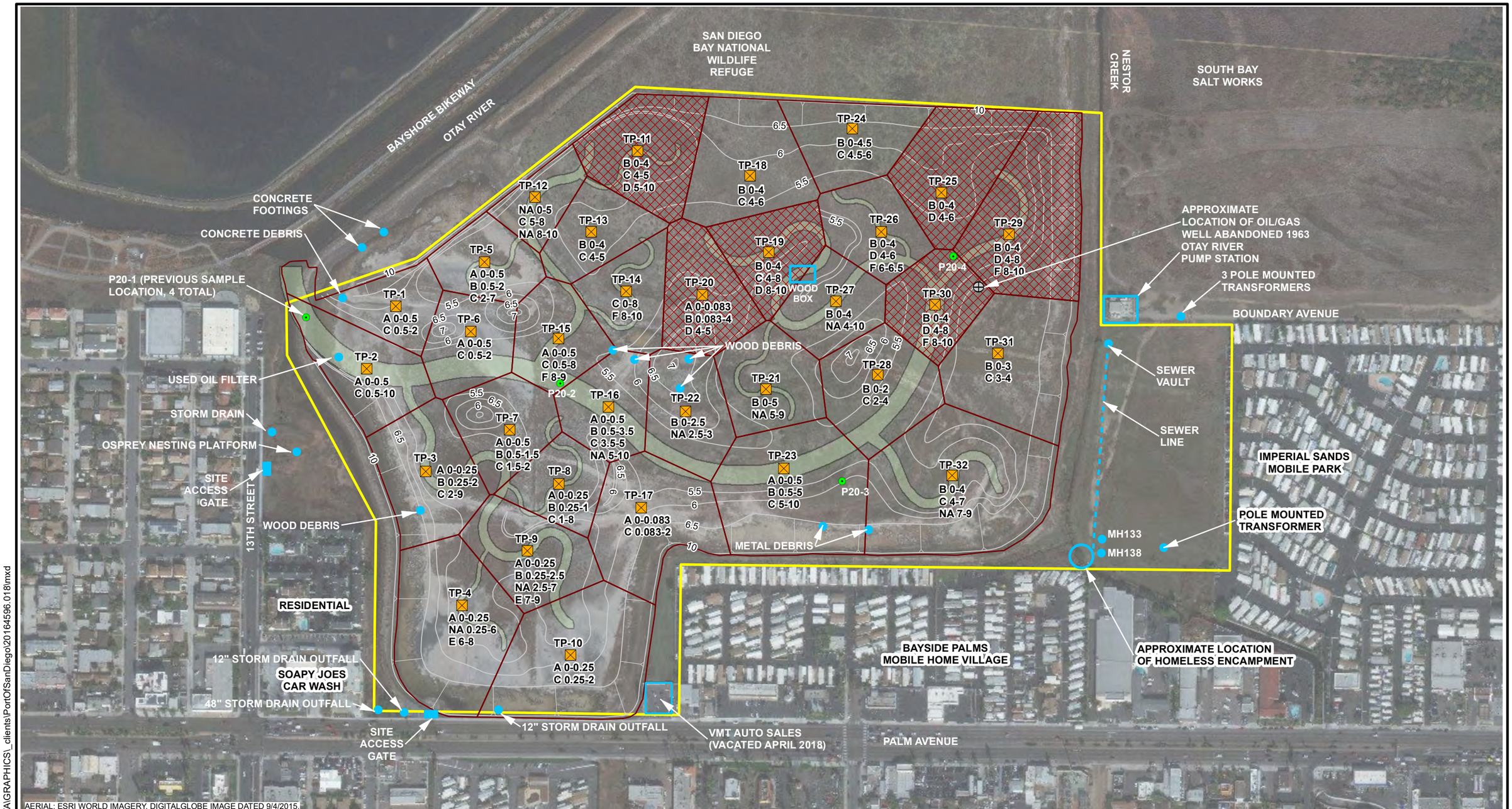

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LEGEND

- TEST PIT LOCATION
- TEST PIT AREA - SOIL UNIT D
- EXCAVATION CHANNELS
- PREVIOUS SOIL SAMPLE LOCATION (GREAT ECOLOGY, 2017)

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GEOTECHNICAL SOIL TEST PITS
SOIL UNIT D

SOIL ASSESSMENT REPORT
SALT POND 20
SAN DIEGO, CALIFORNIA

FIGURE
7-4

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N

LEGEND

- TEST PIT LOCATION
- TEST PIT AREA - SOIL UNIT E
- EXCAVATION CHANNELS
- PREVIOUS SOIL SAMPLE LOCATION (GREAT ECOLOGY, 2017)

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GEOTECHNICAL SOIL TEST PITS
SOIL UNIT E

SOIL ASSESSMENT REPORT
SALT POND 20
SAN DIEGO, CALIFORNIA

FIGURE
7-5

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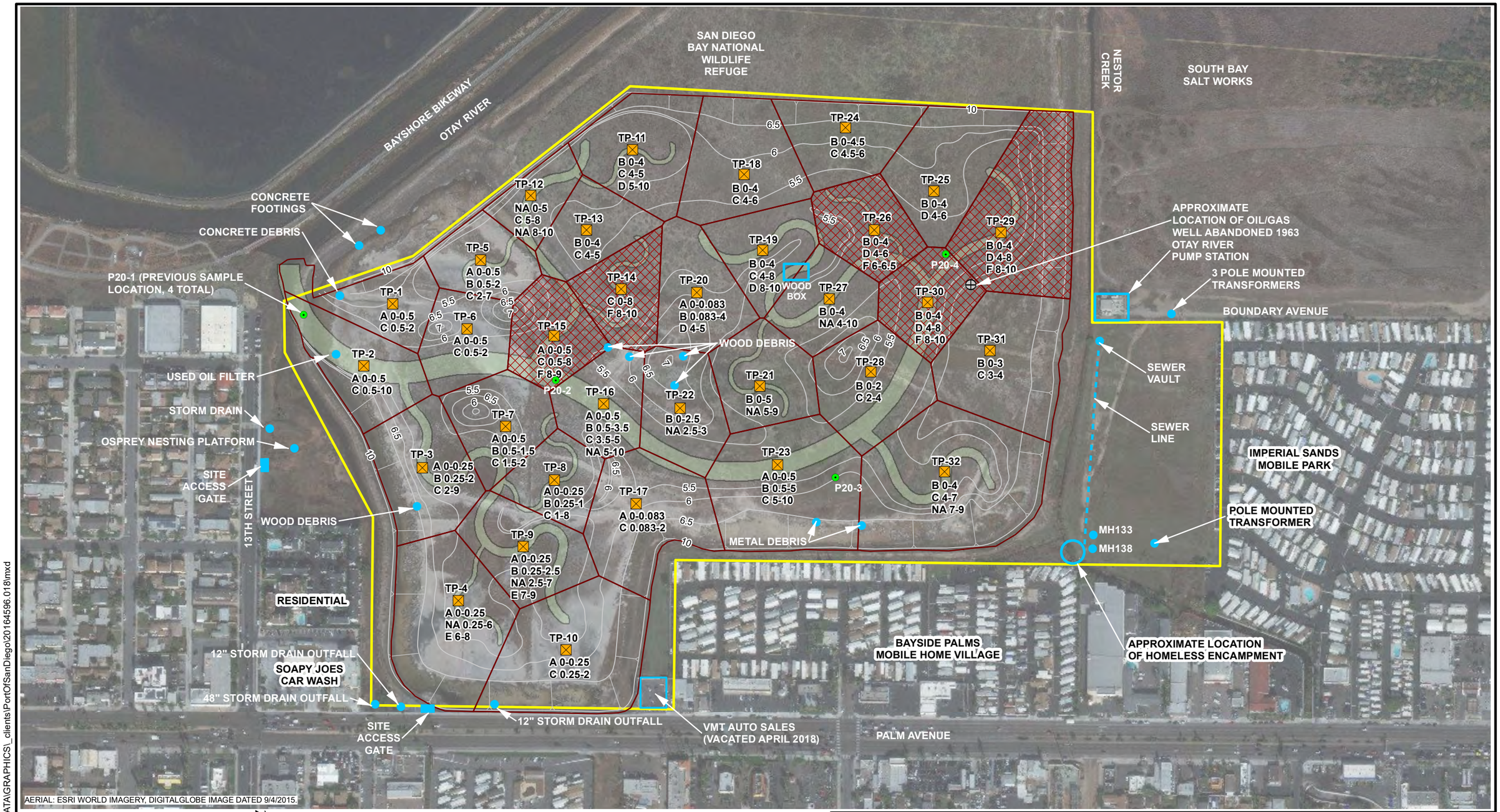

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N

LEGEND

- TEST PIT LOCATION
- TEST PIT AREA - SOIL UNIT F
- EXCAVATION CHANNELS
- PREVIOUS SOIL SAMPLE LOCATION (GREAT ECOLOGY, 2017)

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GEOTECHNICAL SOIL TEST PITS
SOIL UNIT F

SOIL ASSESSMENT REPORT
SALT POND 20
SAN DIEGO, CALIFORNIA

FIGURE
7-6

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APPENDIX A
Draft Wetlands Restoration of Salt Pond 20
Environmental Science Associates, 2017

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Draft

WETLAND RESTORATION OF SALT POND 20

Basis of Design Report

Prepared for
San Diego Unified Port District
Great Ecology

October 24, 2017

ESA

Draft

WETLAND RESTORATION OF SALT POND 20

Basis of Design Report

Prepared for
San Diego Unified Port District
Great Ecology

October 24, 2017

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1 Introduction

This report documents the preliminary design of the Salt Pond 20 Wetland Restoration and transmits the 30%-complete drawings and preliminary construction cost estimate. This Basis of Design (BOD) report describes the design work completed since the conceptual design presented in the memorandum titled Conceptual Planning-Level Engineering/Site Analysis for Pond 20 (Concept Memo) prepared for Great Ecology by ESA on April 25, 2016. This BOD report provides details on the project that can be used to inform the regulatory agency permitting processes, refine a project description for environmental review, and as a basis for initiating the final design.

1.1 Project Background

The San Diego Unified Port District (District) owns a 95-acre parcel in South San Diego Bay called Pond 20. Pond 20 lies in the Otay River Floodplain (Figure 1) and historically supported rich tidal wetland habitat, but was filled and used as a commercial solar salt evaporator pond from the late 1800s until the 1940s. The District acquired the parcel in 1998 and, after many years of study and public outreach, determined the best use of Pond 20 was to restore it and use it as a commercial wetland mitigation bank.

The Pond 20 project would lower the overall elevation of the 85-acre interior sub-parcel of the property and reconnect it to tidal flows from San Diego Bay via cut channels. The design would generate tidal wetlands and upland transitional coastal sage scrub habitat along the perimeter of the property. The majority of Pond 20 would support mid and high marsh habitat, but the project would also establish low marsh and intertidal mudflats across the marshplain, and subtidal habitat within the tidal channels. Sheet 14 of the 30%-complete construction plans shows a distribution of habitat types and corresponding acreage (Appendix A). To the north of the project site is the Otay River Floodplain Site (Figure 2), which is part of the Otay River Estuary Restoration Project (ORERP) proposed by Poseidon Water L.P. (Poseidon) in coordination with the U.S. Fish and Wildlife Service and the San Diego Bay National Wildlife Refuge. The ORERP is being designed to addresses Poseidon's mitigation responsibilities for impacts caused by the construction and operation of the Carlsbad desalination plant. As of September 2017, the Final EIR for the ORERP is pending, and 30%-complete drawings of the Otay River Floodplain Site are expected by the end of the year.

The Pond 20 restoration will need to coordinate restoration design with ORERP for eventual construction. However, at this stage, the projects are being designed separately, and this memo does not reflect incorporation of the ORERP. The final version of this report, which will be submitted along with the 60%-complete drawings, is expected to be updated to include the ORERP design. Additionally, hydrodynamic modeling of flood conditions and scour potential will be completed and incorporated into this memo after the ORERP 30%-complete drawings are received from the Poseidon team. ***Placeholders have been included in this report to identify outstanding analyses.***

1.2 Basis of Design Report Scope

This report describes the design work subsequent to the conceptual design. It documents the constraints and considerations (Section 2) specific to the Pond 20 restoration that formed the basis for the 30%-complete design. The services completed for the BOD include topographic mapping by Towill, preliminary geotechnical investigation (Geocon 2017), assessment of soils conditions (Great Ecology 2017), topographic surveys conducted by ESA, base map creation using a variety of topographic and utilities information, an assessment of flood conditions, including coastal flooding, fluvial flooding, and contribution of wind waves, and detailing of restoration elements to a preliminary (or 30%-complete) level of design. The BOD documents preliminary design analyses (Section 3) and the preliminary design (Section 4).

SOURCE: ESRI

Mitigation Banking at Pond 20. D150733

Figure 1
Project Location

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SOURCE: ESRI

Wetland Restoration of Salt Pond 20 .
D150733 **Figure 2**
Site Map

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2 Design Constraints and Considerations

The proposed restoration design was developed to account for multiple design constraints and considerations. Constraints are defined as factors that must be considered while developing the design, while considerations are factors that contribute to the design, but are not limiting. The design constraints and considerations are described in general at planning-level detail below.

2.1 Design Constraints

2.1.1 Flood Management

The restoration must maintain or improve existing levels of flood protection to the properties along the perimeter of the site. The site is currently separated from the tides by a perimeter levee, but is low lying and is within the FEMA flood zone for Otay River (see Section 3.1 and 3.2). A portion of Palm Avenue and the Bayside Palms Mobile home Village are directly adjacent to the restoration site along the southern boundary. The potential changes in flood risk to these sites resulting from the restoration will be assessed in Section 3.6, Hydrodynamic Modeling.

2.1.2 Wave Action

Opening the site to tidal action can lead to wind wave impacts on the existing levees along the perimeter and development leeward of the levees. An assessment of wave conditions was used to determine appropriate fill slopes that will prevent excessive wave run-up and erosion on the levees, and is discussed in Section 3.2 below.

2.2 Considerations

2.2.1 Mitigation Banking

Restoration sustainability, mitigation banking success, and the balance between the two have been considered in the development of this 30%-complete design. The primary goal of the project is creation of a successful mitigation bank, which will be achieved through the restoration of a functioning tidal marsh that produces sufficient credits to make the bank financially viable. There are unique challenges associated with creating sustainable habitat for the maximum number of mitigation credits at the lowest possible development cost. For example, creating flat slopes around the edges of a wetland restoration site is generally considered a restoration “best practice” because it provides higher elevations zones for the marsh to migrate into over time as sea-levels rise, increasing habitat sustainability. To strike a balance between the financial and restoration goals of the project, the current 30% design utilizes creditable high marsh wetland, rather than uncreditable upland, as the beneficial transition zone, providing higher elevation space for lower marsh levels to migrate into over time, while generating wetland credits today. This approach creates wetlands with a high proportion of high marsh wetland, to enhance site sustainability compared to an approach that creates a higher proportion of mid and low marsh wetlands. Due to the region’s low precipitation rates, establishment of high marsh vegetation may take more time than low and mid marsh vegetation. Although this tradeoff could result in lower initial credit availability, we consider the creation of high marsh to provide valuable habitat that balances sustainability and mitigation banking goals. Note that further assessment of restored wetland response to sea level rise may be needed in subsequent phases of the mitigation banking process.

3 Preliminary Design Analyses

This section describes several of the technical analyses conducted by ESA and others as part of the preliminary design. These analyses include data analysis and geomorphic assessment of tidal channels in the San Diego Bay area, and implications on restoration design. As part of these analyses, ESA collected, reviewed, and analyzed data sets for hydrologic phenomena, such as tides, coastal and fluvial flooding events, and wave generation occurring at the project site. This information was used to assess whether the project would likely increase flood risk to adjacent properties by converting a large, relatively dry former salt pond to a tidal basin with variable bay water levels. An assessment of scour of the Otay River channel downstream of the project site was initiated, but additional modeling and study is anticipated to occur at subsequent stages of the project.

3.1 Water Levels

This section presents a discussion on water levels affecting the project site, including the tidal datums and published elevations of typical observed and predicted tidal hydrology in San Diego Bay, and extreme coastal and fluvial water levels that occur during storms and major flood events.

3.1.1 Tidal Datums and Observed Water Levels

Tide data has been collected by NOAA (ID. 9410170) at the Navy Pier in downtown San Diego and by the TRNERR monitoring program at the mouth of the Otay River (Crooks et al 2015). Table 1 summarizes tidal datums from the two locations relative to the North American Vertical Datum of 1988 (NAVD88) in feet. The NOAA tidal datums are based on a longer period of record, better vertical control, and a more complete dataset. The NOAA gage has been collecting water levels from 1906 to present (the longest period of record in San Diego Bay), is surveyed in NAVD88 datum using NOAA quality control procedures, and provides all relevant tidal datums. The TRNERR gage has been collecting water levels since 2010, is surveyed into NAVD88 periodically, but may shift slightly between surveys, and provides tidal datums for only the upper part of the tide range.[1]

ESA has made a recommendation to the District to collect water level data in the Otay River next to the project site. Data would be gathered by installing a tide gage and surveying it into the project datum. When sufficient data has been collected, it will be compared to the NOAA and TRNERR data and used to determine the appropriate tidal datums to use at the site. It is anticipated that the high tides observed in the restoration site will be similar to those observed in San Diego Bay, but that the low tides may be elevated above low tide observed in the Bay. Since the elevations where different marsh species occur are dependent on tide water levels, and even a few inches can make a difference to the success of specific species, understanding water levels at

[1] The TRNERR tide gage was surveyed into NAVD on 2/25/15; however, the gage is removed from this location every 2-4 weeks for data download. It is likely that the location of the gage shifts slightly when it is re-installed. Additionally, the gage is located within the river bed and dries out at the lowest tides (below -1.6 ft NAVD), so the low tide datums are not calculated.

the site is essential. Collecting data and conducting modeling will help inform the optimal target elevations for grading of restoration features.

TABLE 1
TIDAL DATUMS AND OBSERVED WATER LEVELS IN SAN DIEGO BAY

Tidal Datum		San Diego (NOAA) ft NAVD88	Otay River Entrance (TRNERR), ft NAVD88
Highest observed (12/13/2012)	HOWL	7.7 (8:12 AM)	7.8 (9:24 AM)
Highest Astronomical Tide	HAT	7.3	-
Mean Higher High Water	MHHW	5.3	5.3
Mean High Water	MHW	4.6	4.6
Mean Tide Level	MTL	2.5	-
Mean Sea Level	MSL	2.5	-
Diurnal Tide Level	DTL	2.4	-
National Geodetic Vertical Datum of 1929	NGVD	2.1	-
Mean Low Water	MLW	0.5	-
North American Vertical Datum of 1988	NAVD	0	0
Mean Lower Low Water	MLLW	-0.4	-
Lowest Astronomical Tide	LAT	-2.5	-
Lowest Observed	LOWL	-3.5	-1.6

3.1.2 Extreme Coastal Flooding

Coastal flooding has been assessed by FEMA, as part of the mapping updates to coastal flood hazard areas along the coast of California, and by ESA (2016). Table 2 presents extreme still water levels analyzed by ESA. ESA estimated extreme still water levels from the 51 years of recorded data at the NOAA San Diego tide gage (1965-2015) (ESA 2016), and found the 100-year still water level (SWL) to be approximately 8.1 feet NAVD.

TABLE 2
EXTREME COASTAL STILL WATER LEVELS FOR SAN DIEGO BAY

Storm Event	Still Water Level (feet NAVD)
0.02%, 500-year[1]	8.4
1%, 100-year	8.1
2%, 50-year	8.0
5%, 20-year	7.8
10%, 10-year	7.7
20%, 5-year	7.5
50%, 2-year	7.4

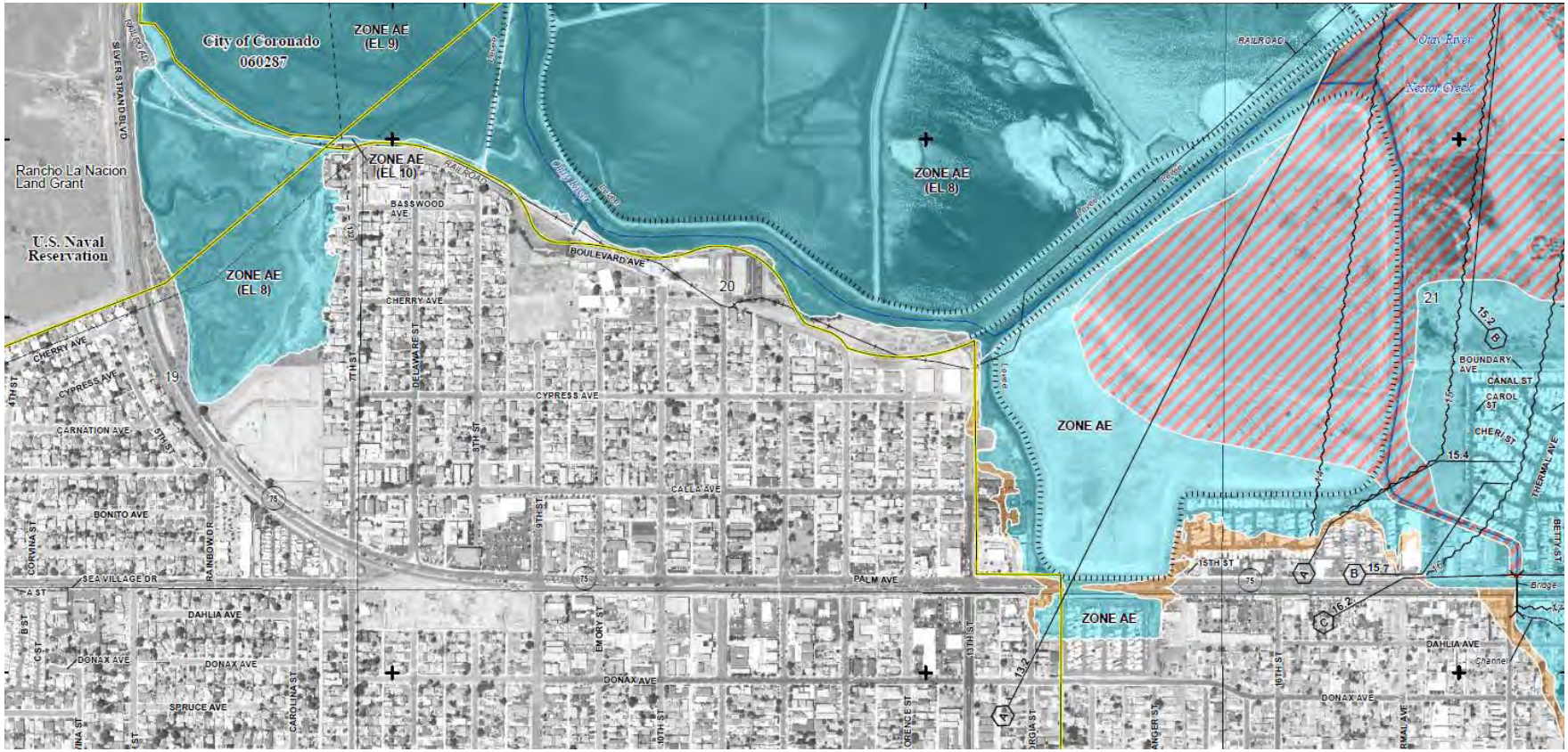
1. The “500-year” is the event that has a 0.02% chance of occurrence each year.

Recent mapping by FEMA for the vicinity of the project area indicates that the SWL elevations presented in Table 2 are in close agreement to the results of their preliminary mapping. Figure 3 presents a map excerpted from the preliminary mapping for south San Diego Bay near Imperial Beach. As shown in the map, the base flood elevation (BFE) in the AE zones[2] are 8 feet NAVD, which is close to the 100-year coastal SWL computed by ESA (2016). Different statistical methods may account for the minor difference in elevations. Also of note in Figure 3 is the AE zone with BFE of 9 feet NAVD in the northwest portion of the map. This area is a former salt pond that was restored to tidal wetlands by the US Fish and Wildlife Service. The dotted line indicates a wave transect where FEMA computed the wave heights and wave runup. The relatively higher BFE in this area indicates that wave generation in the pond contributed wave runup, increasing the BFE. This is discussed more in Section 3.2 below.

3.1.3 Fluvial Flooding

In addition to coastal flooding, Figure 3 presents the 100-year fluvial flood extents of the Otay River, indicated by the red and blue hatching. The estimated 100-year flood water level varies across Pond 20 from 13.2 ft NAVD on the western side of the project area to14 ft NAVD in the east. The fluvial flood dominates the flood mechanism at the site, and impacts properties adjacent to the project site. In its existing state, the Pond 20 basin may provide some storage of floodwater, but according to the Flood Insurance Study (FIS) for San Diego County, Otay River flows on the order of a 10-year event will likely damage the pond levees in the area. The effect of converting the site to tidal conditions on fluvial flood elevations is not known at this time. ESA anticipates conducting hydraulic modeling at subsequent design stages.

[2] FEMA AE zone is a special flood hazard zone with ponded water and without significant wave hazards



SOURCE: FEMA 2017

Wetland Restoration of Salt Pond 20 . D150733

Figure 3

FEMA Preliminary Flood Insurance Rate Map
With Recently Updated Coastal Analysis

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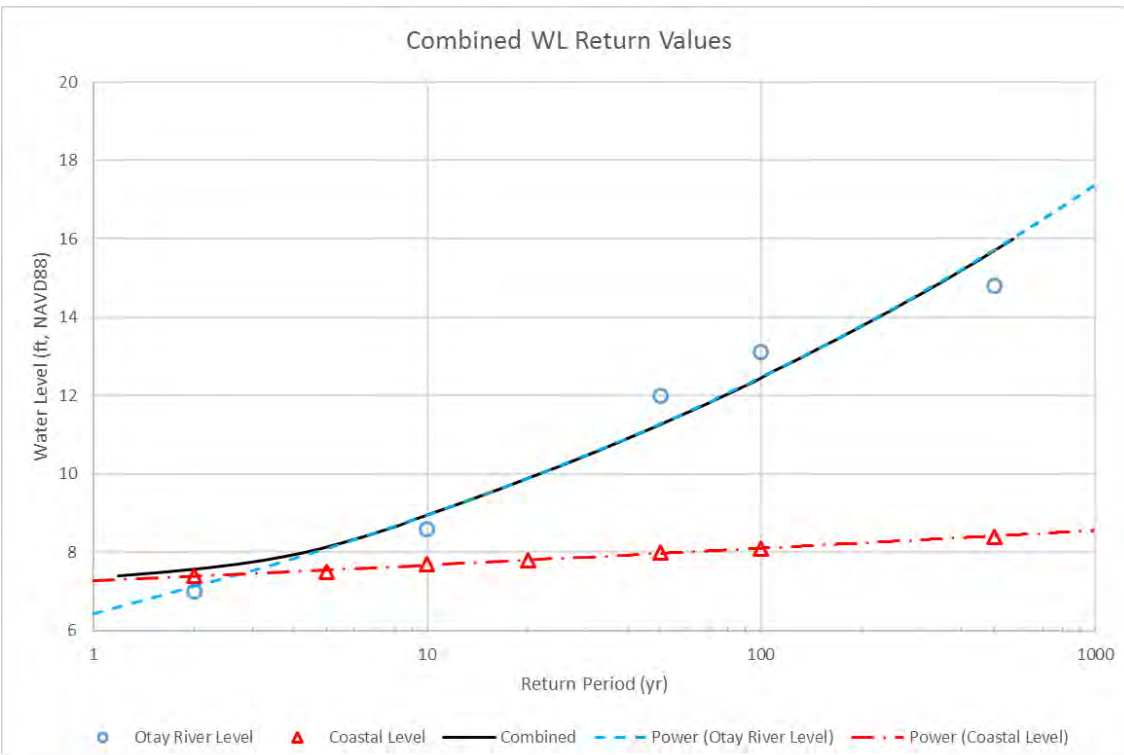
3.1.4 Combined Flooding

To assess whether combined coastal and fluvial water levels results in an increased water level for a given return period, extreme values were determined for each source independently then combined. For a variety of return periods, coastal water levels were calculated as described in the Concept Memo (ESA 2016), and fluvial water levels were leveraged from the FEMA FIS for the Otay River (FEMA 2014). An exponential curve was fit through each of these datasets, and the probability of a given water level was assumed to be the sum of its probabilities from each source (effectively assuming independence of coastal and fluvial water levels). The result is shown in Figure 3, which makes it evident that, while the site may experience occasional coastal flooding, severe floods are almost exclusively fluvial. Although this analysis indicates that the combined effect of coastal and fluvial flooding is small, this simple approach is not sufficient to fully assess the joint probability of a coastal and fluvial floods occurring simultaneously, nor has hydraulic modeling of the interaction of the fluvial flows with coastal water levels been performed. ESA plans on conducting modeling of the Otay River in subsequent stage of design.



Source: FEMA FIS 2014 and ESA 2016

Figure 4
Combined Flooding Return Periods for Fluvial and Coastal Flood Sources

3.2 Wind and Waves

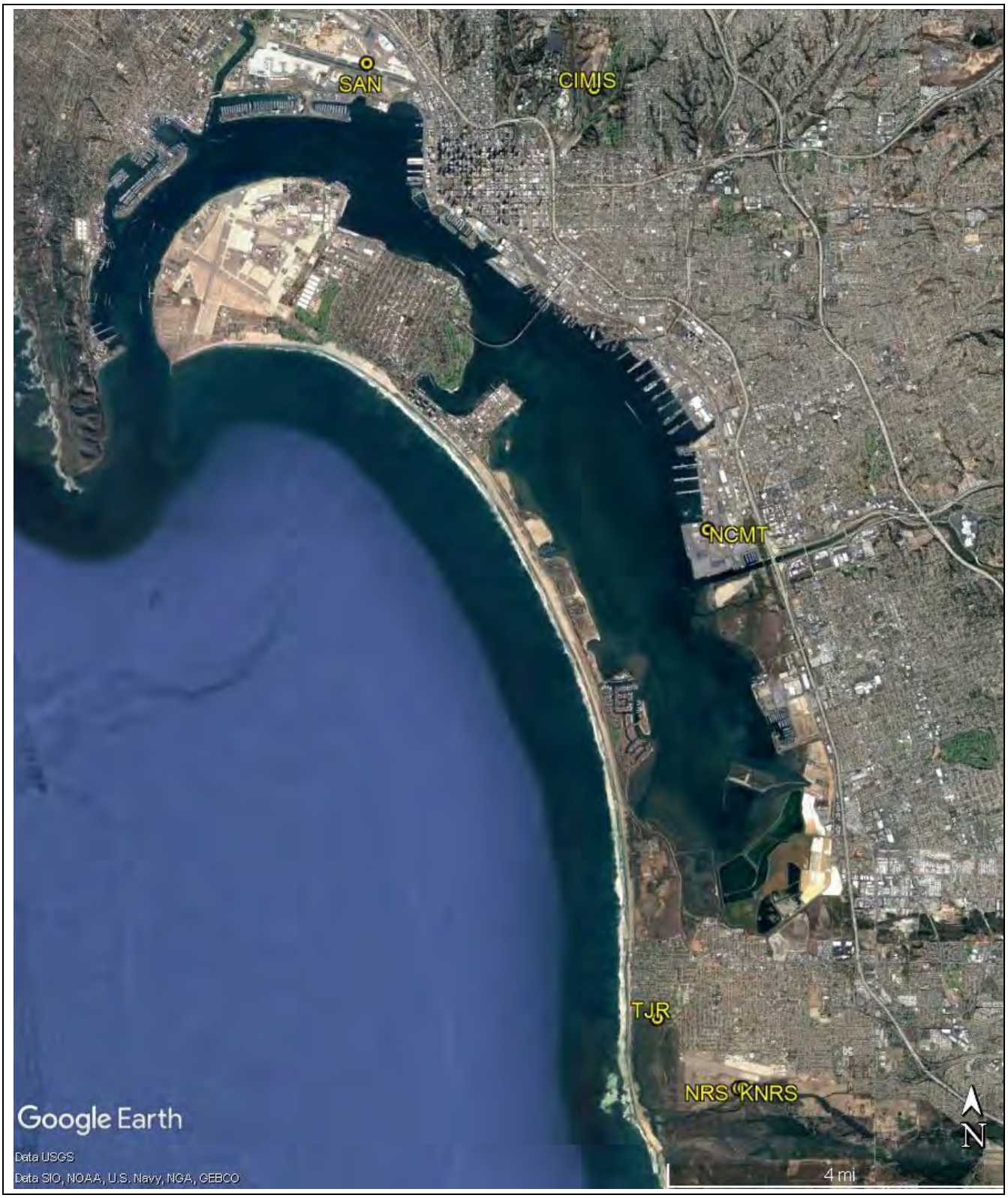
Figure 5 shows the location of six local wind data stations near San Diego Bay considered in this project, whose attributes are summarized in Table 3. The San Diego Airport station (SAN) has over 60 years of data hosted by NOAA, making it the longest of the datasets. While this provides a good sense of the general wind climate in San Diego, the station is more sheltered (by Point

Loma) than the project site. The CIMIS station (#184) is too short and too far north to provide data for the project site directly, but it does offer insight into the strong directionality of wind east of the bay. Farther south, there is a station at the National City Marine Terminal (NCMT), which has a shorter record, but is close enough to the project site to provide a representative directional distribution under normal conditions. The three sites in the Tijuana Estuary are closest to the project site. The first, maintained by TRNERR, has the shortest record, making the other two stations preferable. The stations at the Imperial Beach Naval Outlying Field Station, Ream Field (NRS and KNRS in Figure 4) are both derived from the same NOAA dataset, processed and maintained by different organizations; thus, the longer dataset obtained directly from NWS ASOS (NRS) was used in this study. This dataset is long enough to capture normal wind distribution and extreme conditions near enough to be representative of the project site.

The dominant winds at the project site originate from the west and, to a lesser degree, from the west-southwest. Extreme wind speeds are estimated to be 39 mph at the 10-year level and 47 mph at the 100-year recurrence level.

TABLE 3
WIND STATIONS AROUND SAN DIEGO BAY

Station ID	Station Name	Source	Period of Record	Longitude	Latitude
SAN	Lindbergh Field (SAN DIEGO/LINDBERG)	ASOS (NWS)	1955-2017	-117.18449	32.73392
CIMIS	CIMIS Station 184	CA Irrigation Mgmt. Info. Sys.	2002-2013	-117.13949	32.72948
NCMT	National City Marine Terminal	National City Marine Terminal	2011-2014	-117.11700	32.65616
TRJ	Tijuana River Tidal Linkage	NERR (NOAA)	2001-2017	-117.12700	32.57470
KNRS	Imperial Beach Naval Outlying Field - Ream Field	MesoWest (Univ. of Utah)	1999-2017	-117.11091	32.56302
NRS	Imperial Beach, Ream Field (IMPERIAL BEACH/REAM)	ASOS (NWS)	1970-2017	-117.11000	32.56306



SOURCE: Google Earth, 2017

Wetland Restoration of Salt Pond 20. D150733

Figure 5

San Diego Wind Record Locations

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While the project site is relatively sheltered from San Diego Bay, lying behind the other salt ponds in the south bay, wind over the newly created wetland is expected to generate waves. While these may not be as large as waves in the bay, even small waves can cause significant erosion, especially on levees that have been dry for a long period, such as those separating the project site from adjacent neighborhoods and infrastructure in Imperial Beach.

To evaluate waves in the restored site, a neighboring site was used as a representative case study, based on the wind analysis described above. The recent Preliminary FIRM released by FEMA includes a revised coastal analysis of the San Diego Bay National Wildlife Refuge Complex (south unit), which includes a wave analysis. The resulting BFE published by FEMA is one foot higher than protected areas without waves, indicating that the waves provide a one-foot increase in water levels due to wave runup. Since this project is of a similar scale and in a similar location, it is assumed that wave action will contribute an additional one foot to the FEMA BFE at the project site, but will not lead to further inundation of surrounding areas on the other side of the levees. This may be of interest to regulatory agencies, who could require additional documentation that the project will not result in an increase in flood risk to neighboring properties. Overall, the dominance of the fluvial flood indicates that the changes in the site use will have little impact on the dominant flood elevations.

While flood extents are not expected to change outside of the project site, there is potential for erosion of the inboard side of levees. To address this hazard, the design includes a transitional slope to reduce wave power on the levee (see Section 4.3.4 for additional information).

3.3 Sea Level Rise

Performance of the project for future condition with sea level rise will likely need to be communicated to regulatory agencies for permitting and for understanding the expectations of the project for meeting mitigation targets. The regulatory permitting needs include assessing sea level rise impacts, timing, and potential adaptation approaches as part of a Coastal Development Permit (CDP) issued by the California Coastal Commission (CCC). The assessment should also address issues with evolution of habitats due to sea level rise, and the potential timing of those changes. The following information is presented to provide a summary of pertinent and relevant policy guidance issued by the State of California and the federal government.

The California Coastal Commission Sea Level Rise Policy Guidance (CCC 2015) provides guidance for California projects on how to use predictions of global sea level rise for long-term planning purposes. The guidance document recommends using the estimates provided by the National Research Council's (NRC) report on *Sea-Level Rise for the Coasts of California, Oregon, and Washington* (2012) as a starting place to select values. The NRC (2012) document presents different sea level rise amounts over time for a range in global emissions scenarios. Table 4 presents the sea-level rise amounts for the range of projections at the planning horizons of the NRC study. These sea level rise projections are defined relative to the year 2000. Although minimal sea level rise has been observed between 2000 and 2017, rapid acceleration of sea level rise is expected to follow periods of dynamical suppression of sea level rise along the Pacific coast (Bromirski et al. 2011). Therefore, the sea level rise projections relative to 2000 are used to

account for potential rapid acceleration of sea level rise that could have a significant effect on the project.

TABLE 4
SEA LEVEL RISE PROJECTIONS BASED ON NRC (2012)

Emissions Scenario	2030	2050	2100
Low	2 in	5 in	17 in (1.4 ft)
Mid	6 in	11 in	37 in (3.1 ft)
High	12 in	24 in	66 in (5.5 ft)

These estimates account for regionally published vertical land motion based on Los Angeles

Recently, the Ocean Protection Council (OPC) funded an update on Sea-Level Rise Guidance (Griggs et al. 2017). The recent study provides minor updates to the sea level rise amounts for the prior emissions scenarios, but also considers a more extreme scenario resulting in rapid sea level rise of almost 10 feet by 2100. However, the State of California is currently in a process to determine how and whether to update policy guidance to include the results of the recent study.

Additional sea level rise guidance has been issued by the U.S. Army Corps of Engineers (USACE) for federally funded projects (USACE 2013). The USACE guidance recommends values similar to those presented in Table 4, but the low projection is based on historically observed sea level rise. The USACE guidance is not expected to be required for this project, as this is not a USACE-funded project

ESA recommends considering sea level rise in the design and planning for the project, and anticipates that regulatory agencies will request a technical study assessing the performance and impacts of the project due to sea level rise over the century. The sea level rise amounts should be based on State Policy Guidance (OPC 2013, CCC 2015), which does not include the extreme cases recently assessed by Griggs et al. (2017). Typically, the permitting resource agencies, such as the CCC, request assessing the project over a range of sea level rise amounts at multiple time periods over the planning horizon of the project, and to include the high emissions scenario.

3.4 Tidal Channel Layout and Sizing

The tidal channel planform layout (e.g., channel length per marsh area and sinuosity) and sizing (cross-section dimensions) can be designed based on empirical tidal channel layout/sizing data from reference wetlands. Hydraulic geometry relationships are empirical relationships between tidal prism or marsh area and channel geometry (e.g., channel depth, width, cross-sectional area). PWA (now ESA) developed hydraulic geometry relationships for coastal salt marshes based on survey data collected in relatively undisturbed marshes in San Diego Bay and San Francisco Bay (PWA 1995, Williams et. al. 2002).

Larger (higher order) tidal channels branch (bifurcate) into smaller (lower order) channels. Based on wetland area, the Pond 20 channel system can support a third or fourth order channel network, meaning the channels branch into smaller channels three or four times (ending in the smallest or first order channels). The 30% design assumes excavation of a full third order system, including

first order channels. The larger channel systems are generally laid out to drain to the outside bends of the main third order channel as in natural wetland systems.

Table 5 lists preliminary tidal channel dimensions by channel order. The dimensions are based on hydraulic geometry relationships, but are adjusted for constructability.

TABLE 5
TIDAL CHANNEL DIMENSIONS BY CHANNEL ORDER

Channel order	Top width at marshplain (ft)	Bottom width (ft)	Side slope (H:V)	Invert elevation (ft NAVD)	Depth (ft below marshplain)	Note
3	54 to 72	8	4:1	-3.3 to -1.0	6.0 to 8.3	Subtidal
2	30 to 40	4	3:1	-1.0 to 0	5.0 to 6.0	Subtidal
1	14	2	2:1	0.4	4.6	Intertidal

Note: Channels are ordered from smallest (first order) to largest. Two first order channels join to form a second order channel, two second order channels join to form a third order channel, etc.

3.5 Target Salt Marsh Habitat Elevations

Salt marsh habitat zones can be defined for different areas based on the elevation of the area relative to tidal datums (i.e., as a surrogate for the frequency of tidal inundation). ESA calculated estimated habitat elevation ranges at Pond 20 based on vegetation-inundation relationships measured at other reference sites and a limited number of measurements for the fringing marsh around Pond 20.

At the Ballona Wetlands in Los Angeles, inundation frequencies were determined for each habitat zone (ESA 2015). Table 6 presents the percent inundations and the corresponding elevations based on the NOAA San Diego Bay gage. These elevations may be revised based on the tide data collected (see Section 3.1.1).

TABLE 6
ELEVATION BANDS AND INUNDATION FREQUENCIES OF DIFFERENT HABITAT TYPES

Habitat Type	Elevation Band (feet NAVD)	Annual Inundation Frequency (% time)
Upland	> 7.6	< 3-yr tidal inundation
Transition Zone	6.6 to 7.6	1% to 3-yr inundation
High Marsh	5.7 to 6.6	1% to 5%
Mid Marsh	4.1 to 5.7	5% to 26%
Low Marsh	2.9 to 4.1	26% to 51%
Mudflat	-0.4 to 2.9	51% to MLLW
Subtidal	< -0.4	> MLLW

The habitat elevations in Table 6 were compared to elevations of pickleweed and cordgrass at San Dieguito Lagoon in San Diego County for verification. At San Dieguito, average pickleweed elevations (± one standard deviation) ranged from 4.5 to 5.6 feet NAVD, which falls in the mid marsh category as expected. Average cordgrass elevations at San Dieguito (± one standard deviation) occurred from 3.5 to 3.9 feet NAVD, which falls in the low category, again as expected. A brief survey (n = 5) of the fringing marsh around Pond 20 showed pickleweed occurring down to 4.9 feet NAVD and up to as high as 7.5 feet NAVD in some locations. It is not uncommon for pickleweed to grow up into the transition zone.

These habitat elevations were used to design the grading of the site to achieve the desired balance of habitats.

3.6 Hydrodynamic Modeling

<To be completed for 60%-complete design>

3.7 Scour Analysis

Just downstream of the site, a recently retrofitted pedestrian bridge spans the Otay River. Figure 5 presents a photo of the bridge looking downstream the Otay River from the northwest corner of the project site, near the proposed breach location. Restoration of the Pond 20 site, as well as the ORERP, will increase tidal flows in the area, which may increase scour at the bridge. An initial review of the scour analysis conducted by the Poseidon team has been completed (Section 3.7.1), hydraulic geometry relationships at the bridge have been analyzed (Section 3.7.2), and hydrodynamic scour modeling will be conducted as part of the 60%-complete design (Section 3.7.3). These different lines of evidence will be used to evaluate the impacts of the increased tidal flows on the bridge.

Figure 6
Pedestrian Bridge located downstream of the project site, spanning the Otay River
Small tidal drainage channel connected to the Otay River is shown on the left

3.7.1 Review of the ORERP Bridge Scour Analysis

ESA reviewed the ORERP bridge scour analysis to determine if the analysis was sufficient to rule out any impacts to the bridge caused by increasing the tidal flow at Pond 20. Poseidon used a hydrodynamic model to assess tidal hydraulics and potential scour and deposition for the restored site. They used the TIDE_FEM hydrodynamic model, which showed tidal current velocity maximums of 0.66 feet per second (fps) under the bridge for the final restoration. Evaluation of project site sediment grain size indicated a threshold of motion of 0.72 fps. The analysis concluded that velocities of 0.35 fps to 0.72 fps would result in bedload transport, but not scour. The Poseidon team concluded that the two pinch points under the bridge (where velocities were modeled to reach 0.66 fps) were the only potential scour-prone locations. The Poseidon team suggested some spot channel hardening at the pinch points, but concluded that there were no other scour or erosion concerns at the project site based on their modeling. Their analysis did not take into account breaching of the Pond 20 site.

The ORERP bridge scour analysis did not provide enough information to determine whether restoration at Pond 20 would increase flow velocities above the 0.72 fps threshold. The analysis does show that the bridge can accommodate some increase in tidal flows- further modeling is needed to determine how much (see Section 3.7.3).

3.7.2 Hydraulic Geometry Analysis

The proposed restoration will increase tidal current velocities downstream of the project area. Based on other restoration experience, it is anticipated that increased tidal velocities will result in channel deepening until a new channel geometry occurs, which is in equilibrium with the system's tidal prism. Hydraulic geometry relationships (PWA 1995) were applied to estimate an anticipated amount of channel down-cutting and scour along the main channel and near the railroad bridge following tidal restoration.

Based on the restored tidal prism and hydraulic geometry relationships (PWA 1995), it is estimated that the downstream channel bed will eventually deepen 3.1 feet and widen 60 feet after restoration of Pond 20 (Table 7). This is a very approximate estimate and assumes a natural, cohesive-bay-mud channel bed free of armoring or other obstructions. With the ORERP, the potential for channel erosion is much greater (Table 7). Assuming the ORERP is constructed first, the Pond 20 restoration is expected to deepen the channel by an extra 0.4 feet and widen it by 20 feet.

TABLE 7
TIDAL PRISM AND CHANNEL DIMENSIONS DOWNSTREAM OF THE PROJECT SITE

	Tidal Prism (ac-ft)	Channel Depth (ft below MHHW)	Channel Width @ MHHW (ft)	Channel Area (ft^2)
Existing Conditions[1] (EC)	6	6.1	30	100
EC + Pond 20[2]	60	9.2	90	460
EC + Poseidon Project[3]	240	11.7	160	1090
All (EC + Poseidon + Pond 20)	300	12.1	180	1250

1. PWA 2003
2. Tidal prism from Great Ecology
3. Tidal prism from Jenkins and Wasyl 2010

Recent calculations by ESA of the tidal prism presented in this preliminary design is less than previously estimated by Great Ecology, and as presented in the analysis above. The recent tidal prism is roughly estimated at 30 acre-feet. The analysis here will be updated to reflect these updates during subsequent stages of design.

3.7.3 Scour Modeling

<To be completed for 60%-complete design>

3.8 Soil Analysis

Great Ecology's Soil Quality and Plantability Evaluation Report, completed on May 22, 2017, summarizes the results of soil sampling and analysis for both plant growth suitability and potential for off-site reuse. Sampling included soils from the approximate future marsh planting elevations, and lab tests indicated high salinity, boron content, and low organic carbon. The analysis concluded that soil conditioning, including leaching and incorporation of amendments,

will likely be necessary due to the existing soil characteristics. Additional analysis should be completed during the construction phase, after excavation and grading activities, to determine appropriate soil treatment measures prior to planting.

In addition, testing and analyses of bulk sediment physical characteristics and bulk sediment chemistry indicated a lack of contamination. Soil arsenic was the only analyte to exceed a screening value; additional leachability testing indicated that it is tightly bound and does not present a risk to even the most susceptible aquatic receptors. As a result, the analyses indicate that the materials are substantially ‘inert’ with regard to beneficial reuse at offsite locations.

4 Preliminary Design

This section describes the preliminary design and is intended to document several engineering decisions and assumptions that were made to develop preliminary construction plans to 30%-complete, and a preliminary construction cost estimate. The 30%-complete preliminary construction plans are presented at half-size scale (11” x 17”) in Appendix A. The following sections refer to the design presented in the attached drawings.

4.1 Approach

The preliminary design describes restoration design elements (Section 4.3), construction access (Section 4.4), specifications (Section 4.5), and the preliminary construction cost estimate (Section 4.5). The design will be refined during the 60%-complete design and in the final design prior to construction.

4.2 General Criteria

The following describe general criteria that apply broadly to the preliminary restoration design.

4.2.1 Project Extents

The extents for the mitigation site comprises approximately 76.5 acres of the Pond 20 parcel, and includes 0.3 acres northwest of the parcel boundary. Excavation of the tributary channel to Otay River would require agreement from U.S. Fish and Wildlife Service.

4.2.2 Site Survey and Datums

Towill set horizontal and vertical control around the perimeter of the site, and prepared a basemap based on LIDAR flown in 2017. The project is described using the vertical datum NAVD88 in feet and the horizontal coordinate system California State Plane Zone VI in feet. ESA conducted additional ground survey transects of the project site on April 5, 2016 and February 9, 2017, including attempts to survey the borrow ditch and the existing pond bed.[3] A hard impenetrable surface was observed in the borrow ditch, and is likely the remnant of salt production where various material precipitates and creates hard surfaces, such as gypsum. The field survey collected some elevations of the top of this hard surface, and a couple points extending below this surface. For the purpose of the design sections that follow, ESA estimated elevations at the bottom of the borrow ditch. The survey transects show the variation in elevation across the pond bed, with elevations in the southwestern half of the site between 6 and 10 feet NAVD, and between 10 to 12 feet NAVD in the northeastern half of the pond.

[3] ESA performs land surveys and collects hydrographic data to augment traditional surveying services for the purposes of geomorphic interpretation, monitoring of project performance, and other specific uses consistent with Geologic and Landscape Surveys as defined in the Professional Land Surveyors’ Act (California Business and Professionals Code). ESA does not provide traditional land survey services such as property boundaries and maps for general use by others. ESA recommends that these traditional surveying services be accomplished by a licensed, professional land surveyor either under direct contract with the client or as a sub-consultant to ESA.

4.3 Design Elements

The following sections provide a brief description of various restoration design elements, including the design geometries, and special considerations for construction. Additional assessments that are needed to refine the design and reduce uncertainties are included as well.

4.3.1 Marshplain Grading

The primary activity associated with construction of the project is grading and excavation of the existing pond bed to reach design grades compatible with marsh restoration.

- **Purpose –** Provide lower site grades to match the range of elevations for proposed habitats (Section 3.5) and thereby promote establishment of a range of intertidal marsh vegetation through planting and natural recruitment.

- **Extents –** The marshplain will be graded in the entirety of the project site, with some areas requiring up to approximately 6 feet of excavation to achieve target marshplain elevations.

- **Geometry –** Marshplain design is based on observations at reference sites and through assessing the anticipated tidal hydraulics (Section 3.5). The lowest elevation of the marshplain is 5 feet NAVD at the tops of channels, and the highest elevation is 7 feet NAVD atop marsh mounds and 6.5 feet NAVD along the toe of the transition slope.

- **Materials –** Local soil materials excavated from onsite.

- **Construction Techniques –** Excavate site grades to elevations shown on the preliminary design using large equipment, such as scrapers. Scrapers are used by contractors to move large quantities of earth, and typically result in a graded surface that is within a precise vertical range to the upper end of the allowed vertical tolerance of the design. This practice also can result in a surface that is highly compacted and conditioned to prevent infiltration of water into the ground, which is not an ideal surface for marsh restoration. Therefore, the upper 1 foot of soil should be ripped using standard rippers or discs to help loosen the surface of the marshplain. The ripping activity can result in a slight increase in the finished grade, which should be accounted for in subsequent design documents that accommodate the increase in the finished grade to comply with target marsh elevations. The details on handling material needs to be assessed, to include how material is excavated and whether it is rehandled from excavation to offhaul. This has a significant effect on the cost of the project.

- **Additional Issues to Consider**

    - Prior to planting, additional analysis of finished grade soils should be completed to determine specific treatment measures needed to condition the sediment for successful establishment of marsh and upland vegetation.

- Additional soil sampling and analysis should be completed prior to construction to confirm suitability of off-site reuse of site soils.

4.3.2 Tidal Channels

A tidal channel network will be excavated throughout the site to provide sufficient hydraulic capacity to allow for changes in tidal water levels.

- **Purpose –** Facilitate adequate site drainage and more rapid vegetation establishment by providing natural tidal exchange through equilibrium channel geometry described in Section 3.4. Allow for low marsh vegetation establishment along the channel edge.

- **Extents –** As depicted on the preliminary design, throughout the entire project site.

- **Geometry –** Channel sizing is described in Section 3.4. Design guidelines were used to develop long-term equilibrium channel dimensions of cross sectional area, depth, and width, as based on regressions developed for San Diego Bay and San Francisco Bay. Three channel sizes were selected for construction based on the channel sizing, and are shown by typical sections in the plans. These channels will have constant side slopes, constant top elevation of 5 feet NAVD, and a varying bottom elevation that slopes upward moving into the site from the tidal breach.

- **Materials –** Local soil materials excavated from onsite.

- **Construction Techniques –** Channel construction will require excavation to reach the thalweg elevation, and fill only in areas where the channel crosses or utilizes existing borrow ditches within the site. The excavation of the channels in this design is referred to as “dredging,” which is applied to excavation lower than elevation 5 feet NAVD. It is anticipated that dredging will likely utilize low ground pressure track-mounted excavators that place spoils in trucks to transport material. Elevations within the existing borrow ditches are unknown due to a thick salt crust that has formed at approximately 5 feet NAVD, which has prevented survey of the ditch below. Grading within this part of the site may require additional survey data to refine the design or field fitting during construction.

4.3.3 Levee Breach

Construction of the levee breach will connect the restoration site to the tidal portion of the Otay River through the tributary channel and ultimately to San Diego Bay. The levee breach is an important feature that provides a transition between the existing tidal river and the restoration site, and which will require special construction considerations, including equipment type and timing.

- **Purpose –** Promote exchange of tide, nutrients, and biota to support wetland habitat development.

- **Extents –** As depicted on the preliminary design, within approximately 100 feet of the bottom of the levee on both sides of the levee.

- **Geometry –** The breach will result in a top width of approximately 32 feet at elevation 5 feet NAVD. The side slopes will vary between 4:1 and 3:1 for excavation through the levee and the pond or marsh, respectively. The breach will have an 8-foot bottom width at EL -3.3 ft NAVD. The downstream end of the breach through the tributary channel will need to daylight upward into the existing Otay River thalweg elevation. Additional survey of the outboard marsh, tributary channel, Otay River, and the borrow ditch in the pond would help refine this feature.

- **Materials –** Local soil materials excavated from onsite.

- **Construction Techniques –** Excavation of the levee breach will require using low-ground pressure track-mounted excavators from the levee crest. The areas within approximately 100 feet of the base of the levee would need to be excavated first, and when all excavation on the interior of the site is completed, the final levee breaching would occur to open up the site to the tides. At this point, material excavated would need to be placed in trucks and offhauled. Additional construction issues should be considered for this activity, including the ability of the levee to support the equipment, and whether there are biological or habitat constraints on excavating through the outboard marsh.

- **Additional Issues to Consider**

    - The ability or capacity of the existing levee crest to accommodate heavy construction equipment for final excavation of the levee during breaching of the site needs to be assessed by the geotechnical engineer for the project. The levee would need to potentially support one or more excavators and possibly trucks that would offhaul excavated materials during breaching. The excavators would then need to “walk” off the site along the outboard levees.

    - Habitat and biological constraints of excavating through the outboard marsh and into the Otay River.

4.3.4 Ditch Fill and Transitional Slope

Along the border of the project site, a gently sloping transition zone will be constructed to connect the restoration site to the existing levee and uplands. This element will require filling the existing borrow ditch and creating a stable slope that would be planted with different plant types depending on the elevation, and that would be sufficient in dissipating wind wave energy without being eroded. Additional assessment of the ability of the slope to withstand erosion impacts by waves is needed during subsequent design phases.

- **Purpose –** Provide a gradual transition from the marsh to terrestrial upland vegetation along the existing berm. Attenuate wave action on the existing berm and minimize wave run-up and overtopping during storms. Accommodate marsh migration as sea level rises.

- **Extents –** As depicted on the preliminary design along west, south, and east existing berms.

- **Geometry –** Low elevation is 6.5 ft NAVD where it meets the marshplain described above. High elevation is 10 ft NAVD where it meets the existing berm. The average slope of the transitional berm shown in the plans is approximately 20:1.

- **Materials –** Local materials borrowed from onsite.

- **Construction Techniques –** The borrow ditches will be filled with material excavated from onsite marshplain grading and channel excavation. The ditches are seasonally filled with water, and therefore recommendations on how to appropriately dewater, fill the ditches, and construct a stable slope are needed from the project geotechnical engineer. Also, elevations within the existing borrow ditches are unknown due to a thick crust that has formed at approximately 5 feet NAVD, and which has prevented survey of the ditch below. Grading within this part of the site may require additional survey data to refine the design or field fitting during construction.

- **Additional Issues to Consider**

    - Prior to planting, additional analysis of finished grade soils should be completed to determine specific treatment measures needed to condition the sediment for successful establishment of marsh and upland vegetation.

    - Methods on filling the borrow ditch to create a stable condition for constructing the transition slope, including recommendations from geotechnical engineer on methods, need to dewater or place sediment in water, compaction, settlement, etc.

4.4 Construction Access and Staging

Construction access and staging to the site is shown on the project plans (Appendix A). An area located east of the project site within District property was preliminarily identified as a potential suitable location for construction staging and site access.

The construction staging area will require preparation, including minor grading, clearing and grubbing, and surfacing using gravel or similar. The construction staging area should be large enough to accommodate equipment storage and stockpile for a reasonable amount of project materials imported for the project. The staging area should not be used as a stockpile location for materials excavated from the site. The contractor will need to comply with best management practices to control stormwater runoff, potential contamination during equipment refueling, and other issues.

Access to the site will require additional site investigations, but at this point it is anticipated that the access will require at least two utilities crossings, a temporary bridge, allowance for overhead electric lines, and grading of access from the levee to the pond bed. Utilities crossings would likely consist of a minimum vertical coverage of 4 to 6 feet, with 3 feet of crushed gravel, and

covered with a steel plate. The utility crossings will need to be coordinated with the respective utility district to meet their requirements and obtain approvals.

At the completion of the project, the access and staging areas will need to be restored to existing conditions, or those identified by the District.

4.5 Specifications Outline

Below is a possible applicable example of how specifications will be developed for the project. This example outline specifications were prepared using the 1997 Construction Specifications Institute (CSI) format. Although the final format desired by the District may vary from the format presented, the primary sections are likely to be similar to those included below. ESA will update the specifications outline and format at 60% design based on input by the District.

DIVISION 1 – GENERAL REQUIREMENTS

Section 01020 - Summary
Section 01025 - Measurement and Payment
Section 01050 - Field Engineering
Section 01315 - Project Meetings
Section 01330 - Submittals Procedures
Section 01500 - Temporary Facilities and Controls Section 01770 - Closeout Procedures
Section 01800 - Environmental Protection

TECHNICAL SPECIFICATIONS - DIVISION 2 - SITE WORK

Section 02060 - Order of Work
Section 02100 - Mobilization
Section 02110 - Site Access
Section 02300 - Earthwork
Section 02900 - Planting

4.6 Engineering Cost Estimate

Table 8 presents a summary of the preliminary opinion of probable construction costs. This cost estimate is considered preliminary and representative of the 30%-complete level of design. The construction cost estimated in Table 8 presents a total base project estimate, which excludes costs to offhaul the net surplus excavated material and other related activities, and a total additional cost that includes an approximate allowance for offhaul. As shown in the table, the cost to offhaul and reuse, place, or stockpile the surplus material is on the order of $10M, approximately equal to the cost for all other construction activities. ESA understands that the District and others involved in a separate project at the Chula Vista Bayfront have potential candidate sites for receiving the surplus material. Based on discussions with District staff (L. Scott, pers. comm.), a framework has not been established for the accounting and sharing of project costs for potentially off-hauling surplus material from the Pond 20 Project to the Chula Vista Bayfront Project. ESA has therefore included the additional estimate with material offhaul and reuse for the Pond 20 estimate in Table 8 for the purposes of the 30% design and the District's consideration, planning, and accounting.

Placement of material at the Chula Vista Bayfront, whether from the Pond 20 project or any other potential sources, will require site preparation and clearing and grubbing at the placement site, compaction at 8-inch lifts, erosion control (hydro-seeding with special native seed mix), biological surveys (birds), geotechnical testing for compatibility with suitable material, and environmental testing to test for potential contamination.[4] The unit cost of $14 per cubic yard for offhauling plus the 10% mobilization and 30% contingency is likely sufficient to cover these various requirements associated with the placement site. As discussed above, these placement costs are included as an additional cost for the Pond 20 Project because a framework has not been established for the accounting and sharing of Pond 20 and Chula Vista Bayfront Project costs. For planning purposes, the District does assign a net benefit of $25 to $50 per cubic yard for material that is placed in their Chula Vista Bayfront receiver sites to these requirements, meaning that the 430,000 cubic yards (in-situ volume, after trucking) would offset the Pond 20 costs by $10,750,000 to $21,500,000.

[4] Personal Communication, Linda Scott, Capital Project Manager II, Engineering-Construction, Port of San Diego, October 9, 2017.

TABLE 8
PRELIMINARY CONSTRUCTION COST ESTIMATE

Item	Description	Quantity	Unit	Unit Price	Extended Cost
Base Project Estimate					
1	Mobilization	1	LS	$ 800,000	$ 800,000
2	Clearing and Demo				$ 49,000
	Clear and Grub	*80*	*AC*	*$ 300*	*$ 24,000*
	Miscellaneous Demo (allow)	*5*	*EA*	*$ 5,000*	*$ 25,000*
3	Earthwork				$ 5,579,500
	Mass Excavation	*405,000*	*CY*	*$ 12*	*$ 4,860,000*
	Dredging	*43,000*	*CY*	*$ 9*	*$ 365,500*
	Breach Excavation	*6,000*	*CY*	*$ 15*	*$ 90,000*
	Fill Placement	*24,000*	*CY*	*$ 6*	*$ 144,000*
	Fine Grading	*80*	*AC*	*$ 1,500*	*$ 120,000*
4	Planting	1	LS	$ 1,700,000	$ 1,700,000
	Subtotal				$ 8,128,500
	Contingency (30%)				$ 2,438,550
	Total Base Estimate				$ 10,567,050
	Total Base Estimate (Rounded)				**$ 10,600,000**
Additional Estimate with Material Offhaul and Reuse					
	Mobilization	1	LS	$ 752,500	$ 752,500
	Material Offhaul and Reuse	537,500	CY	$ 14	$ 7,525,000
	Subtotal				$ 8,277,500
	Contingency (30%)				$ 2,483,250
	Total Additional Estimate				$ 10,760,750
	Total Additional Estimate (Rounded)				$ 10,800,000
	Total Base + Additional Estimate (Rounded)				**$ 21,400,000**

This cost estimate is intended to provide an approximation of total project costs appropriate for the preliminary level of design. This cost estimate is considered to be approximately -15% to +30% accurate, and include a 30% contingency to account for project uncertainties (such as final design, permitting restrictions and bidding climate). These estimates are subject to refinement and revisions as the design is developed in future stages of the project. This table does include estimated project costs for permitting, design, monitoring and/or ongoing maintenance. Estimated costs are presented in 2017 dollars, and would need to be adjusted to account for price escalation for implementation in future years. This opinion of probable construction cost is based on ESA's previous experience, bid prices from similar projects, consultation with contractors and suppliers, and R.S. Means. Please note that in providing opinions of probable construction costs, ESA has

no control over the actual costs at the time of construction. The actual cost of construction may be impacted by the availability of construction equipment and crews and fluctuation of supply prices at the time the work is bid. ESA makes no warranty, expressed or implied, as to the accuracy of such opinions as compared to bids or actual costs.

Besides the cost of material offhaul, the primary cost of construction is earthwork, which includes mass excavation, dredging, and onsite reuse. The following are a summary of the assumptions used to determine the unit costs associated with the earthwork sub-items:

- The mass excavation associated with marshplain grading at elevations greater than elevation 5 feet NAVD will likely be accomplished using scrapers.
- Below elevation 5 feet NAVD, excavators will dredge the channels and transport excavated material using low-ground pressure trucks.
- Onsite fill will be placed in areas where there are existing ditches and depressions. For any onsite fill, losses on the order of 20% are assumed for various losses and compaction. Therefore, the volume was increased from the “neat,” or bank volume, by 20% to account for compaction.
- In determining the volume and unit cost for offhauling to stockpile, the following was assumed:
  - Material expands by 25% from bank or in-situ volume to truck volume
  - Unit cost includes hauling, dumping, and spreading into a stockpile, and no additional handling after initial excavation.
  - Unit cost includes erosion control at stockpile location
  - Hauling distance determined assuming stockpile location is 3.5 miles from the project site for the Chula Vista Bayfront Project (CVBP).

The total project cost is heavily influenced by the assumptions in how the pond materials are excavated and transported. Additional information can help reduce the cost of the project significantly. As discussed above, the cost-share between the Salt Pond 20 Wetland Restoration and the Chula Vista Bayfront Project needs to be identified.

The 30% contingency is included to account for many project uncertainties. Reducing the contingency would require additional details on several uncertain issues, including standard contractor practices and availability of water for dust control, environmental issues and potential restrictions to the construction, or issues that may require ongoing biological monitoring of the site, and other engineering details that may be affected by recommendations from the geotechnical engineer on site improvements. ESA understands that no contamination is known at the site, but recommends preparation of a material sampling and testing plan that will need to be implemented to facilitate offhaul of materials from the site.

4.7 Additional Design Issues and Next Steps

As described in various sections above, additional issues need to be addressed during subsequent stages of the design process. The issues identified in this report include the following:

- Additional survey data in Otay River and within the site at borrow ditches.
- Verification of water levels at the project site, and resulting modifications to habitat elevations, and final design grades.
- Refinement to channel design at subsequent design stages to include updates to geometries, refinement of plan view to include variable thalweg elevation and resulting change in top width, and updated information for horizontal control tables.
- Geotechnical recommendations on current design geometries, including slopes of channels, mass grading information, including the expansion factors, methods for filling the borrow ditch and constructing the transitional slope, and suitability of the existing levee for accommodating heavy equipment for construction of the levee breach.
- Sediment sampling and analysis plan to test the offhaul materials for suitability of reuse.
- Confirmation of environmental needs, such as biological constraints to construction, including any monitoring or special considerations of habitat windows for construction activities.
- Refinements to the cost estimate to include better understanding of material offhaul.

5. References

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6. List of Preparers

This report was prepared by the following ESA staff:

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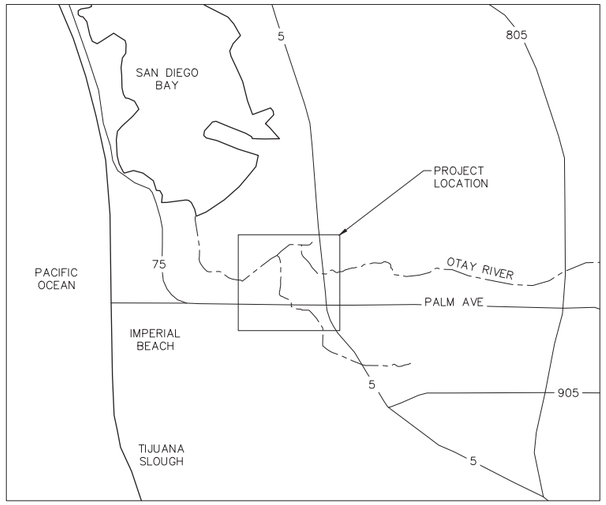
Louis White, PE (Project Engineer – C76509)

Nick Garrity, PE (Project Director)

WETLAND RESTORATION OF SALT POND 20
PRELIMINARY DESIGN (30% COMPLETE)

OCTOBER 6, 2017

SAN DIEGO, CALIFORNIA



VICINITY MAP

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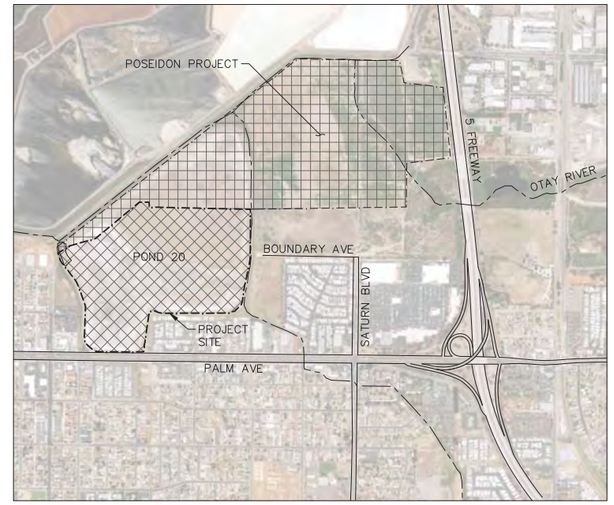

LOCATION MAP

1" = 1000'

INDEX OF SHEETS

GENERAL

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2	G-2	LEGEND, ABBREVIATIONS, & GENERAL NOTES
3	G-3	SITE PLAN, ACCESS, STAGING & SURVEY CONTROL
4	G-4	GRADING CONTROL WEST
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CIVIL

6	C-1	GRADING PLAN WEST
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10	C-5	CIVIL DETAILS (NOT INCLUDED)
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LANDSCAPE

12	L-1	PLANTING PLAN WEST
13	L-2	PLANTING PLAN EAST
14	L-3	PLANT SCHEDULE

DEFINITIONS

PROJECT OWNER: PORT OF SAN DIEGO
3165 PACIFIC HIGHWAY
SAN DIEGO, CA 92101

CONTACT: ARMANDO MORA
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CONTACT: LOUIS WHITE, PE
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PROJECT ECOLOGIST/ LANDSCAPE ARCHITECT: GREAT ECOLOGY
2251 SAN DIEGO AVE, SUITE A218
SAN DIEGO, CA 92110

CONTACT: MARK LASKA
PH: (858) 750-3201

550 Kearny Street
Suite 800
San Francisco, CA 94108
415.262.2300 phone

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RECORD DRAWING
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ENGINEER OF RECORD
DATE:

NOTE:
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SPEC NO. XXXX-XX WBS NO. P0000-0
REFERENCES
PROJECT ENGINEER LOUIS WHITE, PE C76509
CONTRACTOR -
CONSTRUCTION STARTED -
CONSTRUCTION COMPLETED -
COST - INSPECTOR -

REVISIONS | DATE / APPROVED

San Diego Unified Port District
San Diego • California

DESIGNED LAW
DRAWN JRJ
CHECKED LAW

APPROVAL RECOMMENDED
DISTRICT PROJECT MANAGER
APPROVED
DISTRICT MANAGER-DESIGN

WETLAND RESTORATION OF SALT POND 20
PRELIMINARY DESIGN
TITLE SHEET, VICINITY & LOCATION MAPS, DRAWING LIST

DATE 10/6/2017
A/E NO.
SHEET 1 OF 14
DRAWING NO. G-1-XXXX-XX
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LEGEND

- PROPERTY LINE
- (E) CHANNEL CENTERLINE
- GRADING LIMIT
- EXISTING GRADE (PROFILE & SECTION)
- DESIGN GRADE (PROFILE & SECTION)
- GRADE BREAK
- ACCESS ROUTE
- (E) MAJOR CONTOUR LINE (EG)
- (E) MINOR CONTOUR LINE (EG)
- (N) MAJOR CONTOUR LINE (DG)
- (N) MINOR CONTOUR LINE (DG)
- (E) OVERHEAD POWER LINE
- (E) UNDERGROUND SEWER PIPE
- (E) FENCE
- (N) TEMPORARY CONSTRUCTION FENCING

LEGEND (CONT.)

- FILL MATERIAL
- CUT MATERIAL
- POSEIDON PROJECT AREA
- CONSTRUCTION STAGING AREA
- CONSTRUCTION SITE ACCESS

LEGEND (CONT.)

- CUT OR FILL SLOPE
- INDICATES SECTION NUMBER
- VIEW DIRECTION
- SHEET NUMBER ON WHICH SECTION APPEARS
- SHEET NUMBER ON WHICH SECTION IS CUT
- INDICATES DETAIL NUMBER
- SHEET NUMBER ON WHICH DETAIL APPEARS
- SHEET NUMBER ON WHICH DETAIL IS NOTED
- SURVEY BENCHMARK
- GROUND SURVEY (ESA)
- GRADING CONTROL POINT

ABBREVIATIONS

AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
APPROX	APPROXIMATE
DEMO	DEMOLISH/DEMOLISHION
DG	DESIGN GRADE
(E)	EXISTING
EG	EXISTING GRADE
EL	ELEVATION
FT	FEET
GB	GRADE BREAK
IRR	IRRIGATION
LF	LINEAR FEET
MAX	MAXIMUM
MIN	MINIMUM
(N)	NEW
PIP	PROTECT IN PLACE
RC	RELATIVE COMPACTION
TBD	TO BE DETERMINED
TYP	TYPICAL
VIF	VERIFY IN FIELD

NOTES

1. TOPOGRAPHIC MAPPING PREPARED BY TOWILL USING LIMITED FIELD SURVEY AND CONTROL AND LiDAR. SUPPLEMENTAL GROUND SURVEY WAS PERFORMED BY ESA IN 2016 AND 2017. NOT ALL SURVEY POINTS ARE SHOWN, BUT THEY ARE AVAILABLE TO THE CONTRACTOR IF REQUESTED, THE AERIAL PHOTOGRAPHY WAS TAKEN AT THE SAME TIME AS THE LiDAR COLLECTED BY TOWILL.
2. ELEVATIONS ARE REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88). HORIZONTAL CONTROL IS CALIFORNIA STATE PLANE COORDINATE SYSTEM, ZONE 6, IN FEET (NAD 83). ALL ELEVATIONS AND HORIZONTAL COORDINATES ARE IN FEET. TIDAL DATUMS AT PORT OF SAN DIEGO, MEAN HIGHER HIGH WATER (MHHW) IS 5.3 FT NAVD, MEAN TIDE LEVEL (MTL) IS 2.5 FT NAVD, MEAN LOWER LOW WATER (MLLW) IS −0.4 FT NAVD.

ADDITIONAL NOTES WILL BE PROVIDED AS PART OF SUBSEQUENT DESIGN STAGES

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WETLAND RESTORATION OF SALT POND 20
PRELIMINARY DESIGN
LEGEND, ABBREVIATIONS, & GENERAL NOTES

DATE 10/6/2017
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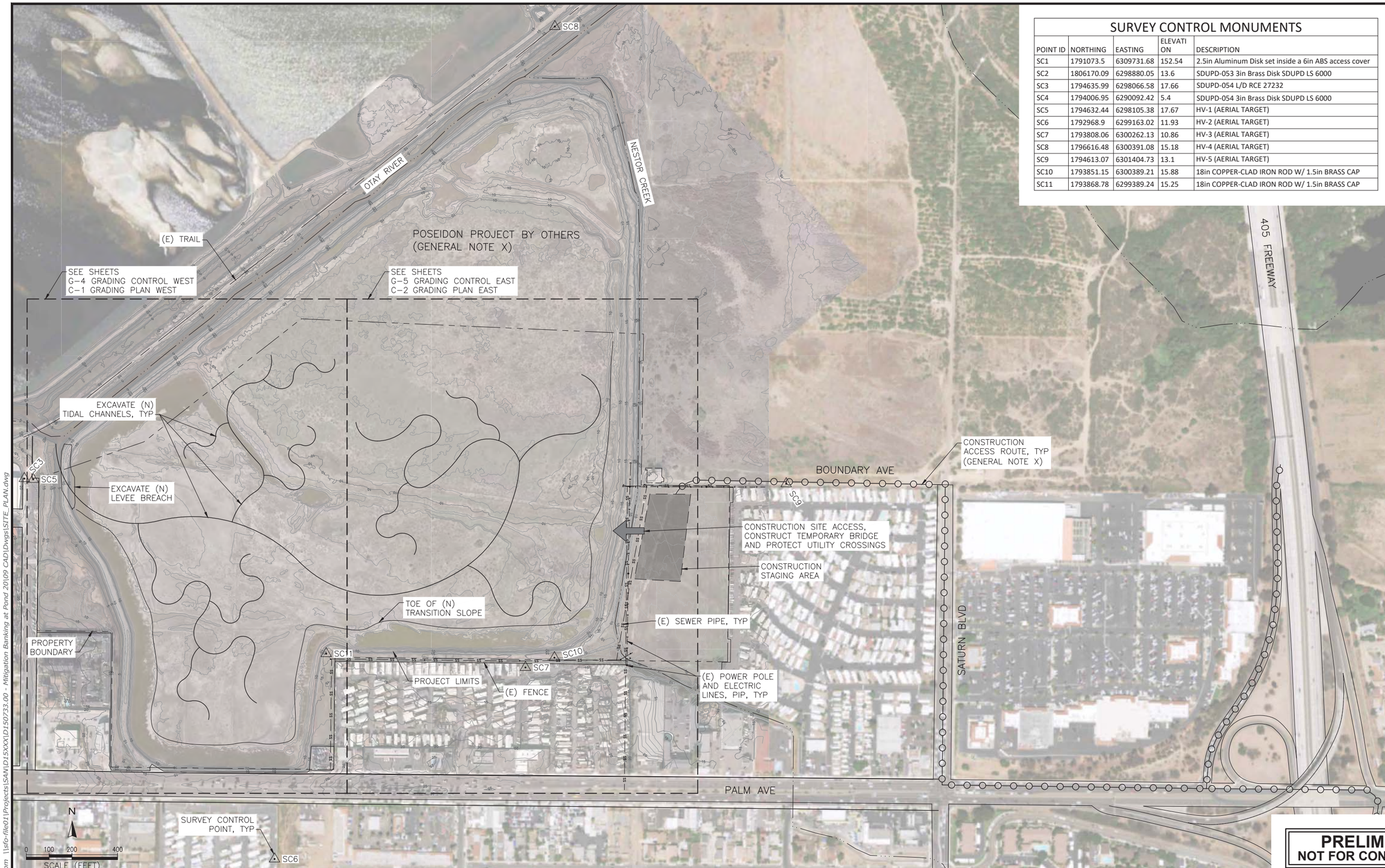
SURVEY CONTROL MONUMENTS

POINT ID	NORTHING	EASTING	ELEVATION	DESCRIPTION
SC1	1791073.5	6309731.68	152.54	2.5in Aluminum Disk set inside a 6in ABS access cover
SC2	1806170.09	6298880.05	13.6	SDUPD-053 3in Brass Disk SDUPD LS 6000
SC3	1794635.99	6298066.58	17.66	SDUPD-054 L/D RCE 27232
SC4	1794006.95	6290092.42	5.4	SDUPD-054 3in Brass Disk SDUPD LS 6000
SC5	1794632.44	6298105.38	17.67	HV-1 (AERIAL TARGET)
SC6	1792968.9	6299163.02	11.93	HV-2 (AERIAL TARGET)
SC7	1793808.06	6300262.13	10.86	HV-3 (AERIAL TARGET)
SC8	1796616.48	6300391.08	15.18	HV-4 (AERIAL TARGET)
SC9	1794613.07	6301404.73	13.1	HV-5 (AERIAL TARGET)
SC10	1793851.15	6300389.21	15.88	18in COPPER-CLAD IRON ROD W/ 1.5in BRASS CAP
SC11	1793868.78	6299389.24	15.25	18in COPPER-CLAD IRON ROD W/ 1.5in BRASS CAP



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APPROVED
DISTRICT MANAGER-DESIGN

WETLAND RESTORATION OF SALT POND 20
PRELIMINARY DESIGN
SITE PLAN, ACCESS, STAGING & SURVEY CONTROL

DATE 10/6/2017
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DRAWING NO. G-3-XXXX-XX
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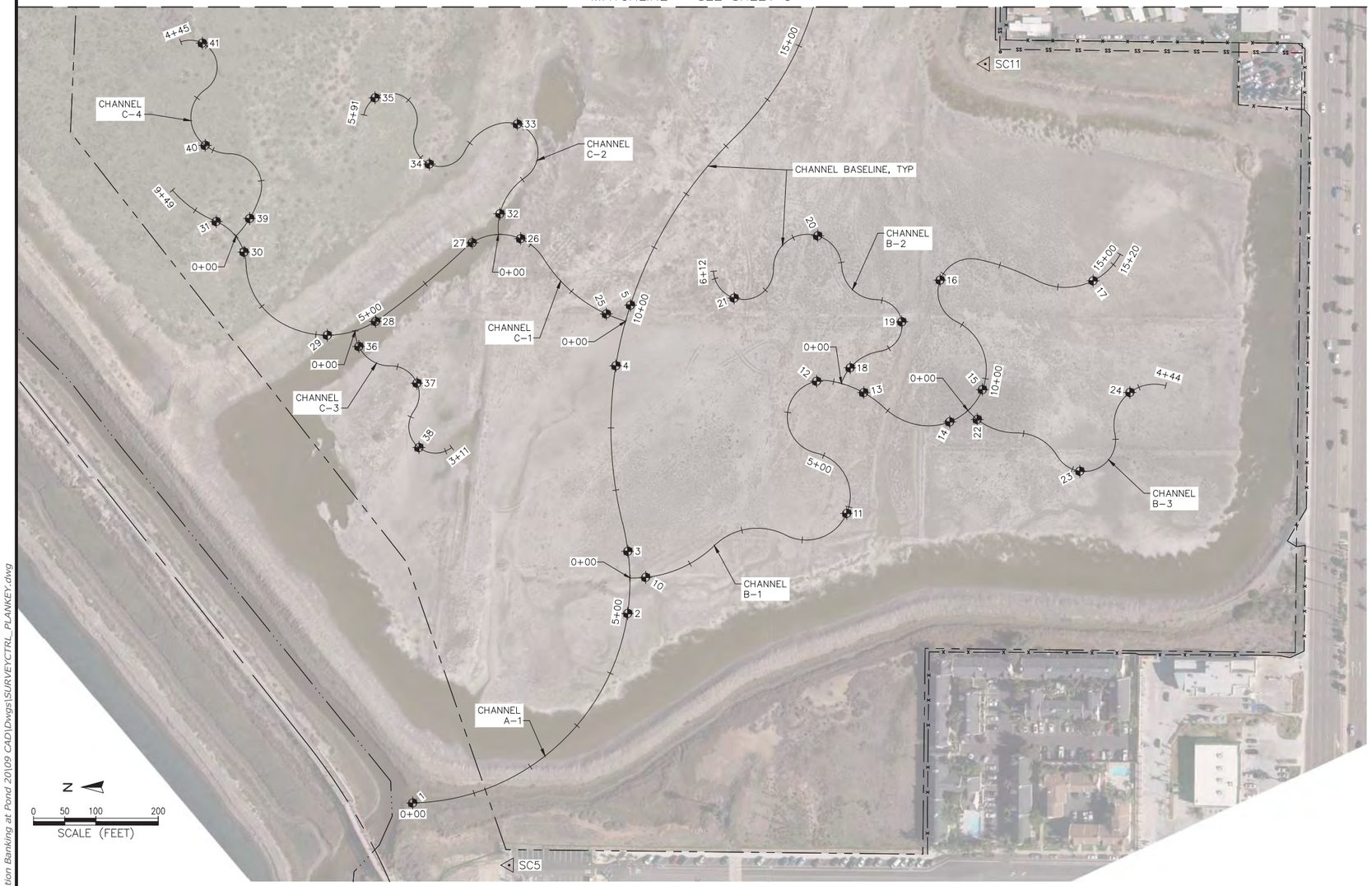
MATCHLINE – SEE SHEET 5



NOTES

1. NOTES

GRADING CONTROL TABLE						
POINT #	NORTHING	EASTING	THALWEG EL	CHAN ID	STATION	CHAN TYPE
1	1794787.1414'	6298204.9054'	-3.3	A-1	0+00	3
2	1794442.3352'	6298508.7191'	-3.3	A-1	5+00	3
3	1794442.0406'	6298608.3977'	-3.3	A-1	6+00	3
4	1794461.1889'	6298905.6730'	-3.3	A-1	9+00	3
5	1794437.8489'	6299002.8065'	-3.3	A-1	10+00	3
6	1794124.0711'	6299612.1864'	-2.5	A-1	17+00	3
7	1794241.1378'	6299988.8703'	-2.0	A-1	21+00	3
8	1794303.2862'	6300067.0142'	-1.5	A-1	22+00	3
9	1794659.3854'	6300233.0396'	-1.0	A-1	26+00	3
10	1794413.4589'	6298566.5063'	-1.0	B-1	0+25	2
11	. . .	. . .	. . .	. . .	. . .	. . .
12	. . .	. . .	. . .	. . .	. . .	. . .
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TO BE COMPLETED AT SUBSEQUENT DESIGN

VERIFY SCALE
0 1"
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

PRELIMINARY
NOT FOR CONSTRUCTION

RECORD DRAWING
REVIEWED BY:
ENGINEER OF RECORD
DATE:

NOTE:
THIS DRAWING MAY BE A REDUCED SCALE PRINT OF THE ORIGINAL DRAWING. UTILIZE GRAPHIC SCALES TO VERIFY IF DRAWING IS A REDUCTION, AND ADJUST SCALES ACCORDINGLY TO THE GRAPHIC SCALES SHOWN.

SPEC NO. XXXX-XX WBS NO. P0000-0
REFERENCES
PROJECT ENGINEER LOUIS WHITE, PE C76509
CONTRACTOR -
CONSTRUCTION STARTED -
CONSTRUCTION COMPLETED -
COST - INSPECTOR -

REVISIONS | DATE / APPROVED

San Diego Unified Port District
San Diego • California

DESIGNED LAW
DRAWN JRJ
CHECKED LAW

APPROVAL RECOMMENDED
DISTRICT PROJECT MANAGER
APPROVED
DISTRICT MANAGER–DESIGN

WETLAND RESTORATION OF SALT POND 20
PRELIMINARY DESIGN
GRADING CONTROL WEST

DATE 10/6/2017
A/E NO.
SHEET 4 OF 14
DRAWING NO. G-4-XXXX-XX
REV. -

Oct 06, 2017 - 12:46pm \\sfo-file01\Projects\SAW\D15XXX\D150733.00 - Mitigation Banking at Pond 20\09 CAD\Dwgs\SURVEYCTRL_PLANKEY.dwg

MATCHLINE – SEE SHEET 4

GRADING CONTROL TABLE						
POINT #	NORTHING	EASTING	THALWEG EL	CHAN ID	STATION	CHAN TYPE
1	1794787.1414'	6298204.9054'	-3.3	A-1	0+00	3
2	1794442.3352'	6298508.7191'	-3.3	A-1	5+00	3
3	1794442.0406'	6298608.3977'	-3.3	A-1	6+00	3
4	1794461.1889'	6298905.6730'	-3.3	A-1	9+00	3
5	1794437.8489'	6299002.8065'	-3.3	A-1	10+00	3
6	1794124.0711'	6299612.1864'	-2.5	A-1	17+00	3
7	1794241.1378'	6299988.8703'	-2.0	A-1	21+00	3
8	1794303.2862'	6300067.0142'	-1.5	A-1	22+00	3
9	1794659.3854'	6300233.0396'	-1.0	A-1	26+00	3
10	1794413.4589'	6298566.5063'	-1.0	B-1	0+25	2
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TO BE COMPLETED AT SUBSEQUENT DESIGN

NOTES

1. NOTES

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RECORD DRAWING
REVIEWED BY:
ENGINEER OF RECORD
DATE:

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SPEC NO. XXXX-XX WBS NO. P0000-0
REFERENCES
PROJECT ENGINEER LOUIS WHITE, PE C76509
CONTRACTOR -
CONSTRUCTION STARTED -
CONSTRUCTION COMPLETED -
COST - INSPECTOR -

REVISIONS
DATE / APPROVED

San Diego Unified Port District
San Diego • California

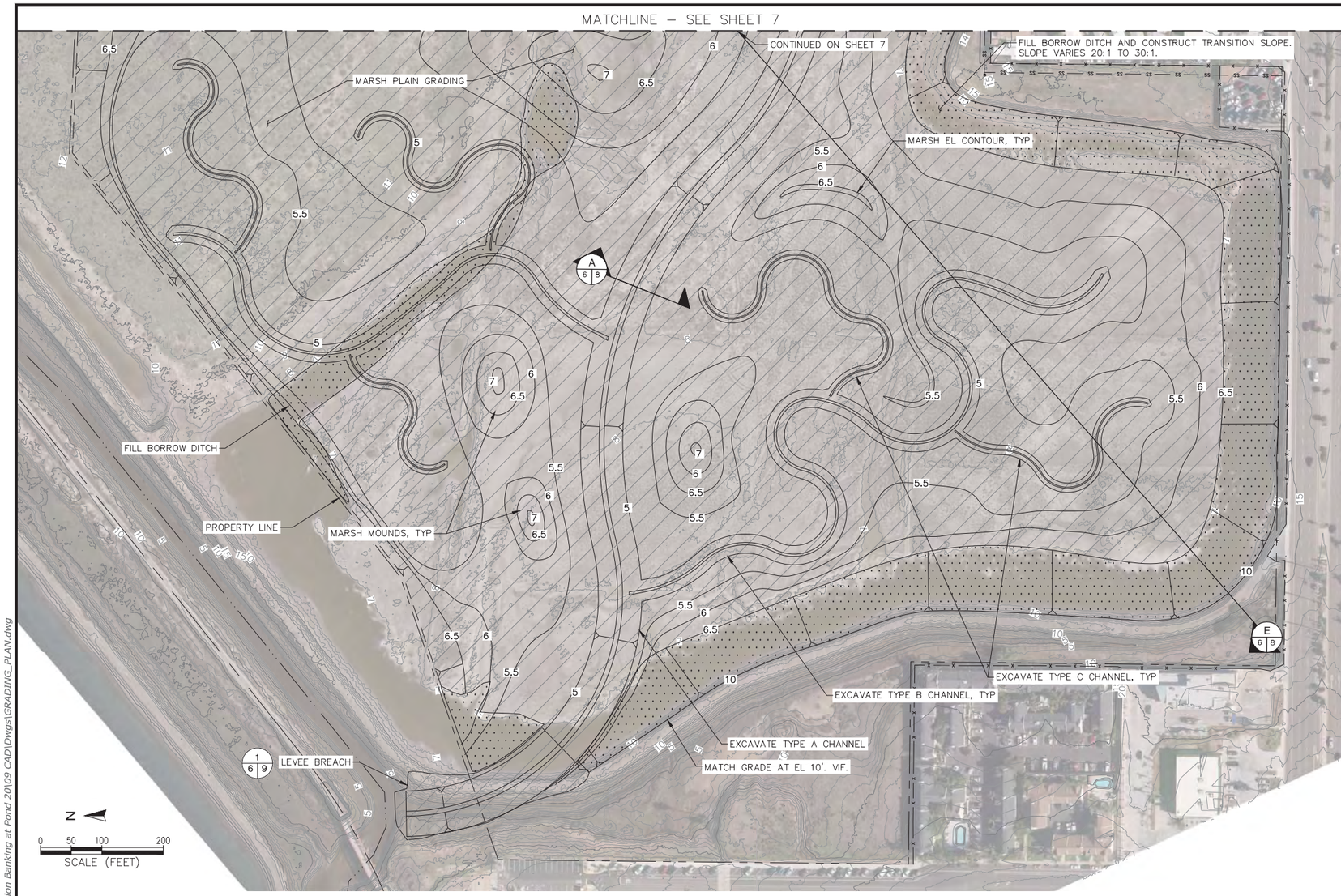
DESIGNED LAW
DRAWN JRJ
CHECKED LAW

APPROVAL RECOMMENDED
DISTRICT PROJECT MANAGER
APPROVED
DISTRICT MANAGER-DESIGN

WETLAND RESTORATION OF SALT POND 20
PRELIMINARY DESIGN
GRADING CONTROL EAST

DATE 10/6/2017
A/E NO.
SHEET 5 OF 14
DRAWING NO. G-5-XXXX-XX
REV. -

Oct 06, 2017 - 12:53pm \\sfo-file01\Projects\SAN\D15XXX\D150733.00 - Mitigation Banking at Pond 20\09 CAD\Dwgs\SURVEYCTRL_PLANKEY.dwg



NOTES

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SPEC NO. XXXX-XX	WBS NO. P0000-0
REFERENCES	
PROJECT ENGINEER	LOUIS WHITE, PE C76509
CONTRACTOR	-
CONSTRUCTION STARTED	-
CONSTRUCTION COMPLETED	-
COST -	INSPECTOR -

REVISIONS | DATE / APPROVED

San Diego Unified Port District
San Diego • California

DESIGNED LAW
DRAWN JRJ
CHECKED LAW

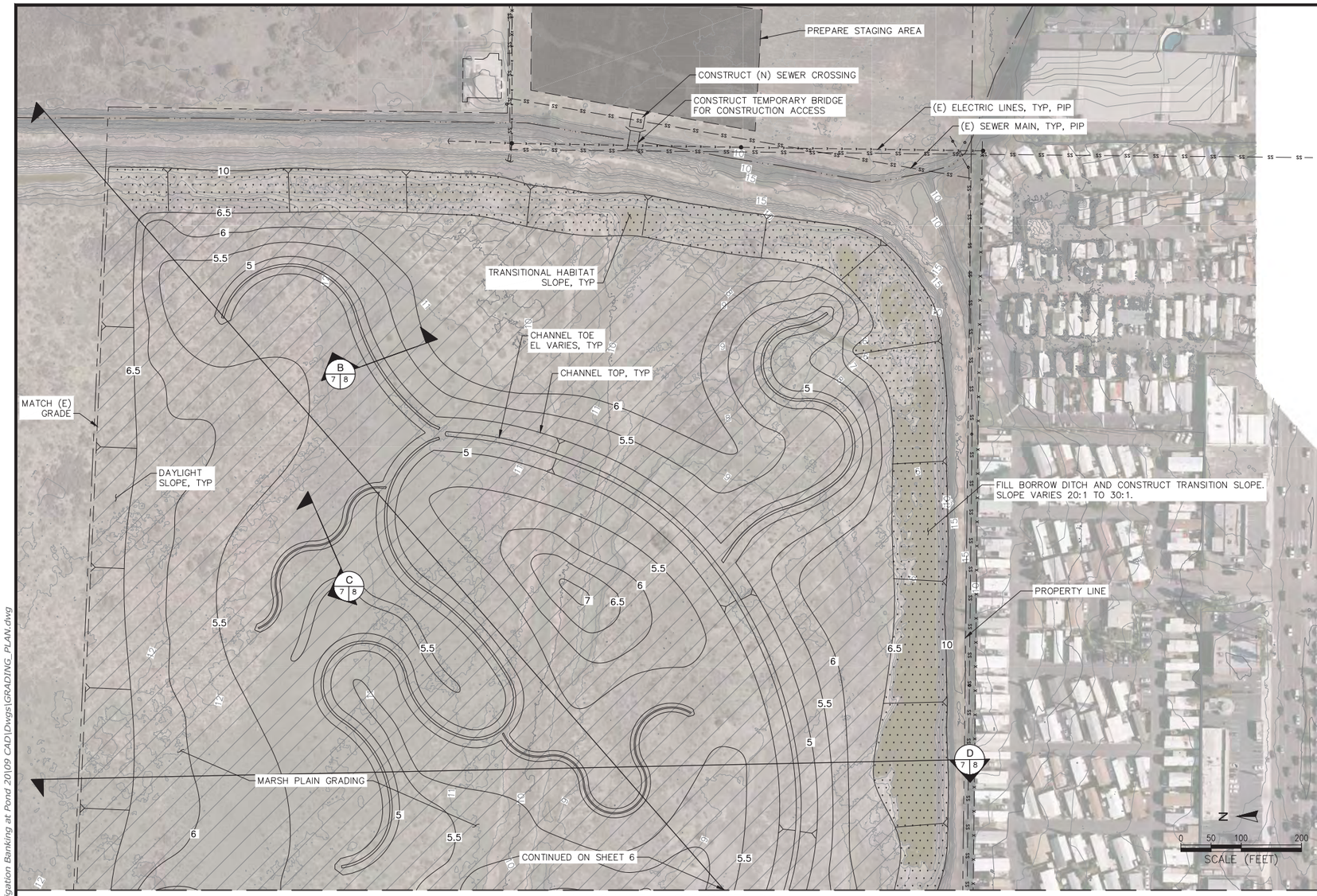
APPROVAL RECOMMENDED
DISTRICT PROJECT MANAGER
APPROVED
DISTRICT MANAGER–DESIGN

WETLAND RESTORATION OF SALT POND 20
PRELIMINARY DESIGN

GRADING PLAN WEST

DATE 10/6/2017
A/E NO.
SHEET 6 OF 14
DRAWING NO. C-1-XXXX-XX
REV. -

Oct 06, 2017 - 1:03pm \\sfo-file01\Projects\SAN\D15XXX\D150733.00 - Mitigation Banking at Pond 20\09 CAD\Dwgs\GRADING_PLAN.dwg



MATCHLINE – SEE SHEET 6

NOTES

1. NOTES

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SPEC NO.	XXXX-XX
WBS NO.	P0000-0
REFERENCES	
PROJECT ENGINEER	LOUIS WHITE, PE C76509
CONTRACTOR	-
CONSTRUCTION STARTED	-
CONSTRUCTION COMPLETED	-
COST -	INSPECTOR -

REVISIONS
DATE / APPROVED

San Diego Unified Port District
San Diego • California

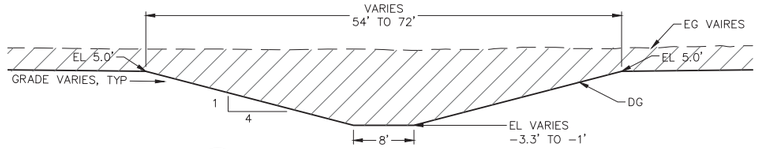
DESIGNED LAW
DRAWN JRJ
CHECKED LAW

APPROVAL RECOMMENDED
DISTRICT PROJECT MANAGER
APPROVED
DISTRICT MANAGER–DESIGN

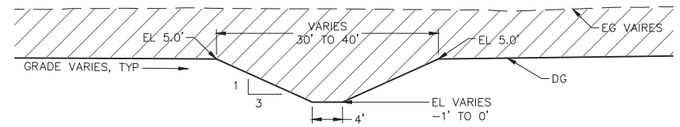
WETLAND RESTORATION OF SALT POND 20
PRELIMINARY DESIGN
GRADING PLAN EAST

DATE 10/6/2017
A/E NO.
SHEET 7 OF 14
DRAWING NO. C-2-XXXX-XX
REV. -

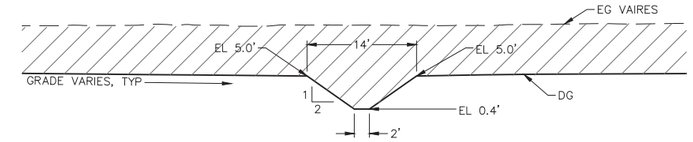
Oct 06, 2017 - 1:04pm \\sfo-file01\Projects\SAN\D15XXX\D150733.00 - Mitigation Banking at Pond 20\09 CAD\Dwgs\GRADING_PLAN.dwg



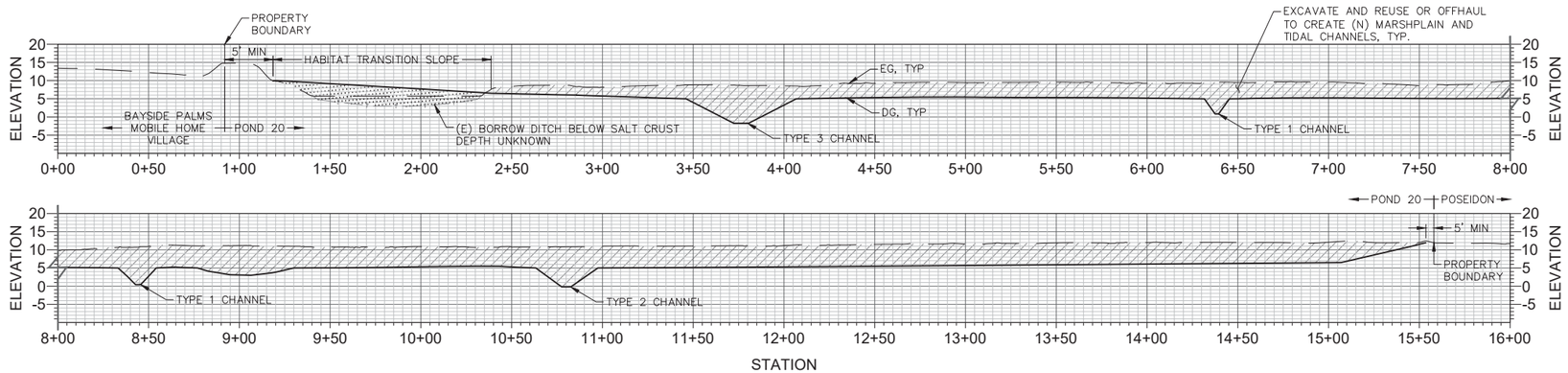
A | 6 | 8 — TYPE 3 CHANNEL (3RD ORDER) TYPICAL SECTION — SCALE: 1"=10'



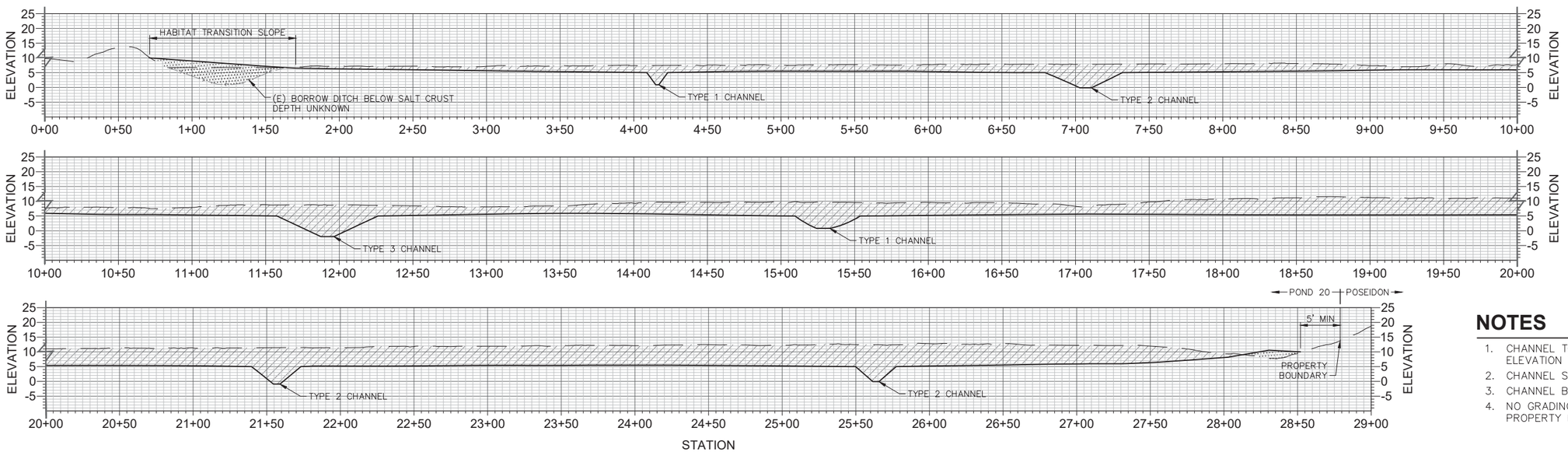
B | 7 | 8 — TYPE 2 CHANNEL (2ND ORDER) TYPICAL SECTION — SCALE: 1"=10'



C | 7 | 8 — TYPE 1 CHANNEL (1ST ORDER) TYPICAL SECTION — SCALE: 1"=10'



D | 7 | 8 — SITE GRADING CROSS SECTION — SCALE: HORZ: 1"=40' VERT: 1"=20'



E | 6 | 8 — SITE GRADING CROSS SECTION — SCALE: HORZ: 1"=40' VERT: 1"=20'

NOTES

1. CHANNEL TOP WIDTH VARIES AS THALWEG ELEVATION VARIES.
2. CHANNEL SIDE SLOPES REMAIN CONSTANT.
3. CHANNEL BOTTOM WIDTH REMAINS CONSTANT.
4. NO GRADING WITHIN 5 FOOT BUFFER FROM PROPERTY BOUNDARY.

VERIFY SCALE 0 1"

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PRELIMINARY
NOT FOR CONSTRUCTION

RECORD DRAWING
REVIEWED BY:
ENGINEER OF RECORD
DATE:

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SPEC NO. XXXX-XX	WBS NO. P0000-0
REFERENCES	
PROJECT ENGINEER	LOUIS WHITE, PE C76509
CONTRACTOR	-
CONSTRUCTION STARTED	-
CONSTRUCTION COMPLETED	-
COST -	INSPECTOR -

REVISIONS | DATE / APPROVED

San Diego Unified Port District
San Diego • California

DESIGNED LAW
DRAWN JRJ
CHECKED LAW

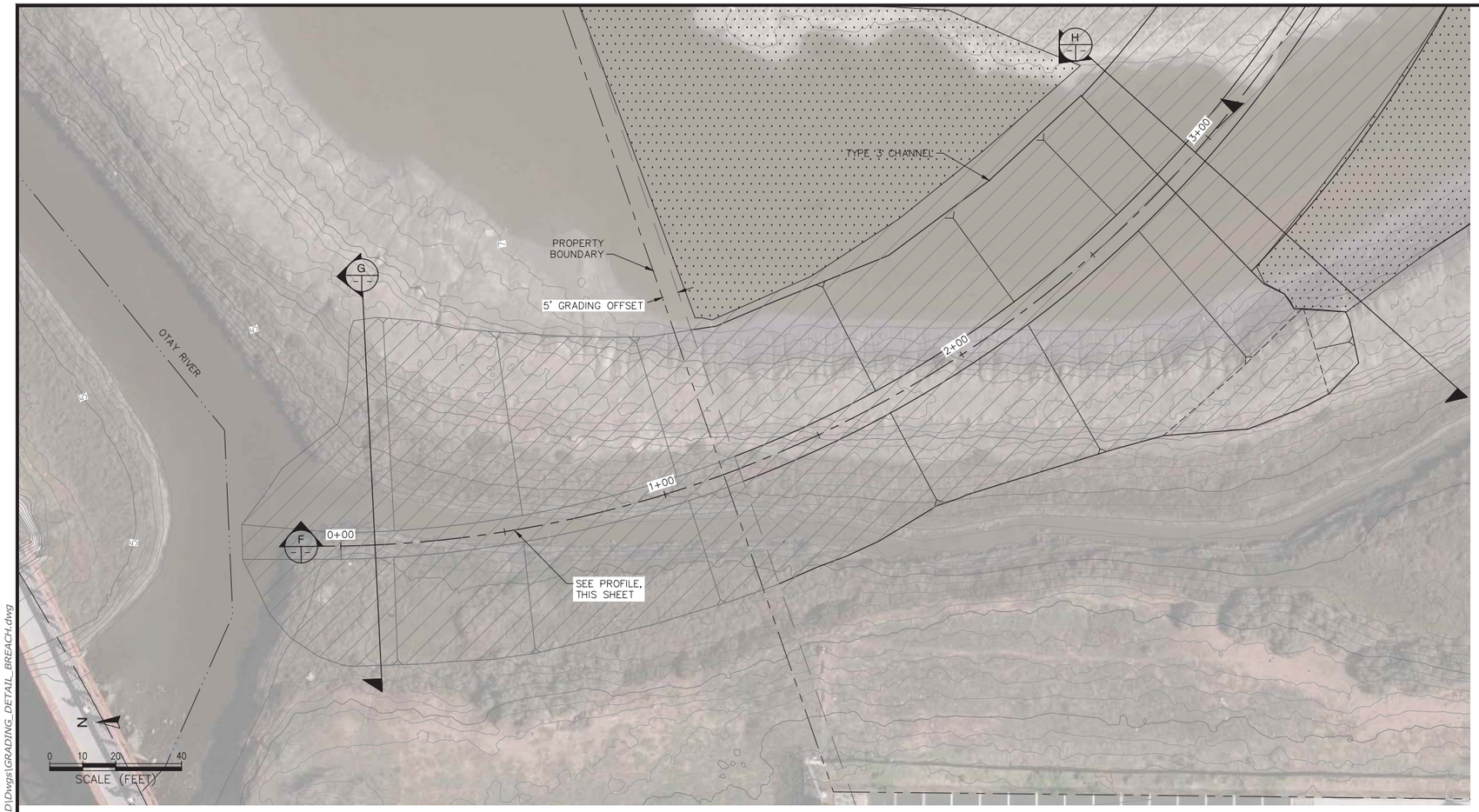
APPROVAL RECOMMENDED — DISTRICT PROJECT MANAGER
APPROVED — DISTRICT MANAGER-DESIGN

WETLAND RESTORATION OF SALT POND 20
PRELIMINARY DESIGN

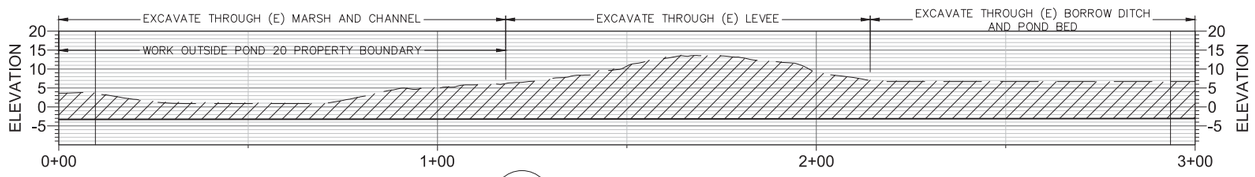
GRADING SECTIONS

DATE 10/6/2017
A/E NO.
SHEET 8 OF 14
DRAWING NO. C-3-XXXX-XX
REV. -

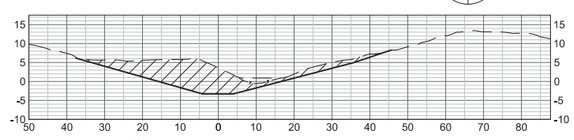
Oct 06, 2017 - 1:13pm \\sfo-file01\Projects\SAN\D15XXX\D150733.00 - Mitigation Banking at Pond 20\09 CAD\Dwgs\GRADING_SECTIONS.dwg



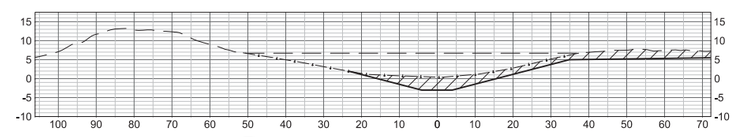
1 / 6 9 LEVEE BREACH DETAIL PLAN SCALE: 1" = 20'



F - - LEVEE BREACH DETAIL PROFILE SCALE: 1" = 20'



G - - LEVEE BREACH DETAIL SECTION SCALE: 1" = 20'



H - - LEVEE BREACH DETAIL SECTION SCALE: 1" = 20'

NOTES

1. NOTES

VERIFY SCALE
0 1"
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

PRELIMINARY
NOT FOR CONSTRUCTION

RECORD DRAWING
REVIEWED BY:
ENGINEER OF RECORD
DATE:

NOTE:
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SPEC NO. XXXX-XX	WBS NO. P0000-0
REFERENCES	
PROJECT ENGINEER	LOUIS WHITE, PE C76509
CONTRACTOR	-
CONSTRUCTION STARTED	-
CONSTRUCTION COMPLETED	-
COST -	INSPECTOR -

REVISIONS | DATE / APPROVED

San Diego Unified Port District
San Diego • California

PORT OF SAN DIEGO UNIFIED PORT DISTRICT

DESIGNED LAW
DRAWN JRJ
CHECKED LAW

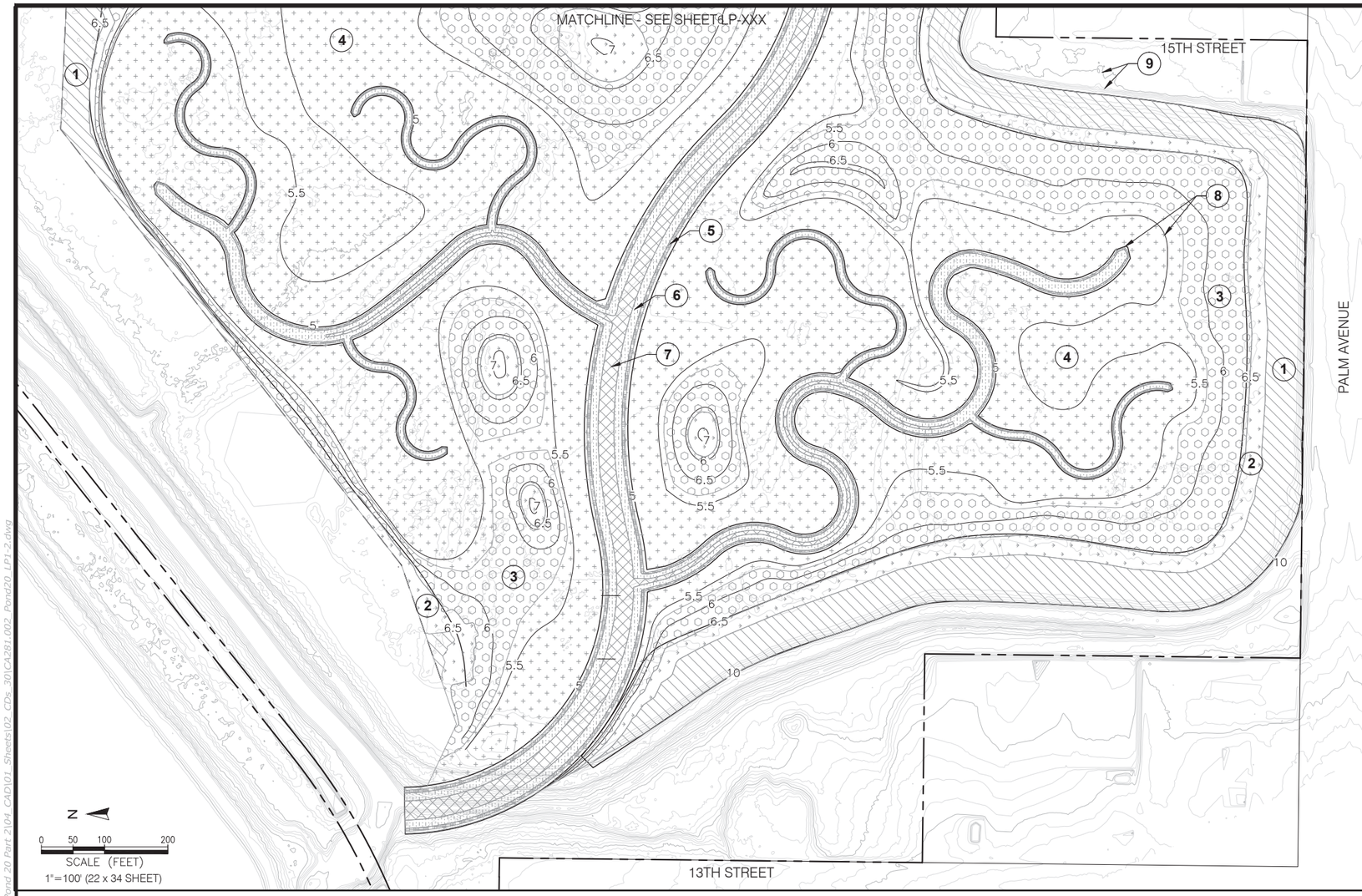
APPROVAL RECOMMENDED
DISTRICT PROJECT MANAGER
APPROVED
DISTRICT MANAGER–DESIGN

WETLAND RESTORATION OF SALT POND 20
PRELIMINARY DESIGN

GRADING DETAIL - LEVEE BREACH PLAN, PROFILE, & SECTIONS

DATE 10/6/2017
A/E NO.
SHEET 9 OF 14
DRAWING NO. C-4-XXX-XX
REV. -

Oct 06, 2017 - 1:53pm \\sfo-file01\Projects\SAN\D15XXX\D150733.00 - Mitigation Banking at Pond 20\09 CAD\Dwgs\GRADING_DETAIL_BREACH.dwg



NOTES

(TO BE INCLUDED IN 60% DESIGN SET)

LEGEND

1. UPLAND
2. TRANSITION ZONE
3. HIGH MARSH
4. MID MARSH
5. LOW MARSH
6. MUDFLAT
7. SUBTIDAL
8. PROPOSED CONTOURS
9. EXISTING CONTOURS

LICENSED LANDSCAPE ARCHITECT
CHRISTOPHER LOFTUS
LA 6259
Signature
Renewal Date
Date
STATE OF CALIFORNIA

GREATecology
ENVIRONMENT + DESIGN

PRELIMINARY
NOT FOR CONSTRUCTION

VERIFY SCALE
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SPEC NO. XXXX-XX WBS NO. P0000-0
REFERENCES
PROJECT ENGINEER -
CONTRACTOR -
CONSTRUCTION STARTED -
CONSTRUCTION COMPLETED -
COST - INSPECTOR -

REVISIONS | DATE / APPROVED

San Diego Unified Port District
San Diego • California

DESIGNED CL
DRAWN MK
CHECKED LG

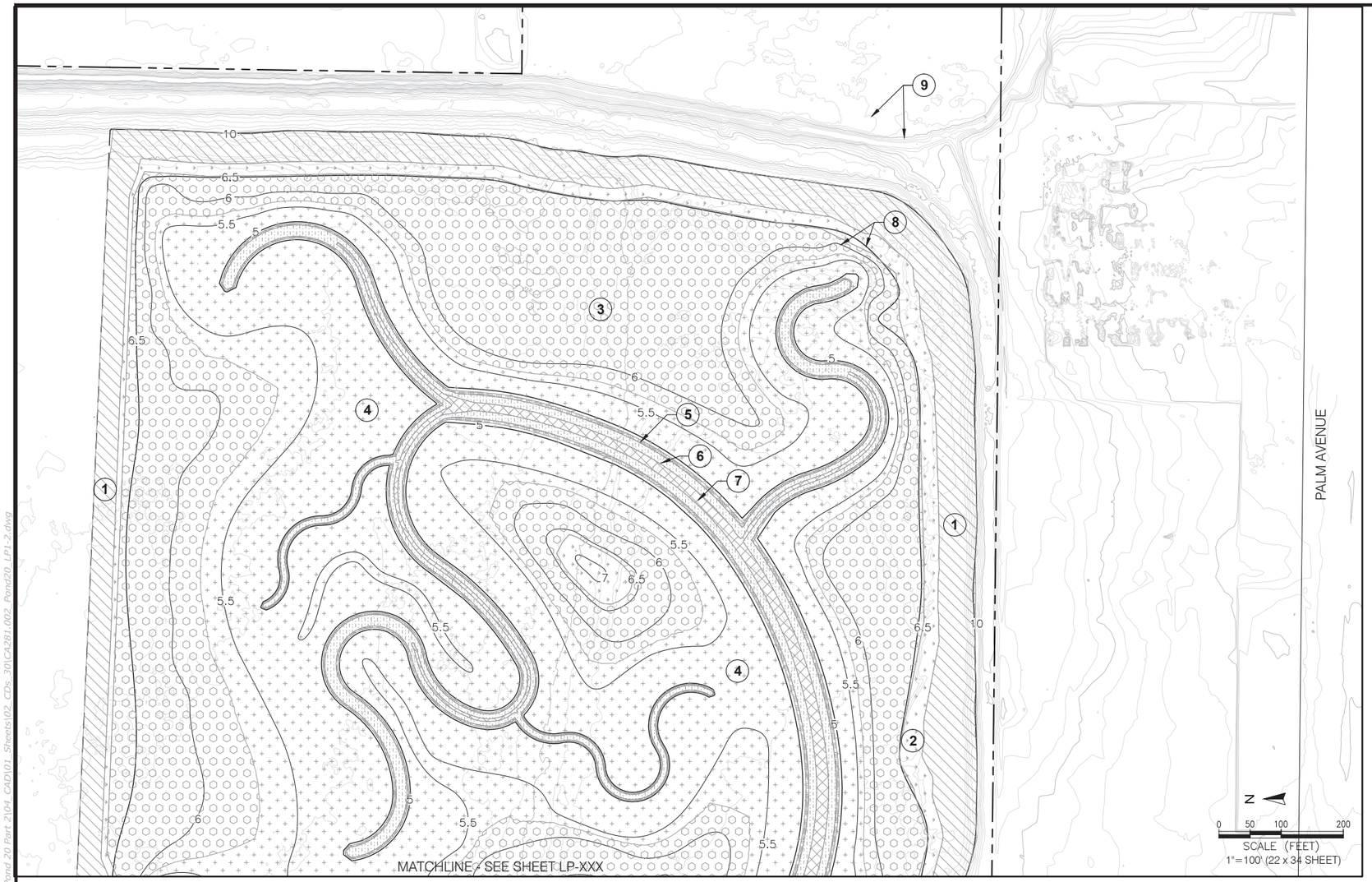
APPROVAL RECOMMENDED
DISTRICT PROJECT MANAGER
APPROVED
DISTRICT MANAGER-DESIGN

WETLAND RESTORATION OF SALT POND 20
PRELIMINARY DESIGN

PLANTING PLAN - WEST

DATE 10/06/2017
A/E NO.
SHEET 12 OF 14
DRAWING NO. LP-XXXX-XX
REV. -

Oct 05, 2017 - 3:01pm Z:\Client Folders\ACTIVE PROJECTS\CA281.002_Port of SD_Pond 20 Part 2\04_CAD\01_Sheets\02_CDs_30\CA281.002_Pond20_LP1-2.dwg



NOTES

(TO BE INCLUDED IN 60% DESIGN SET)

LEGEND

1. UPLAND
2. TRANSITION ZONE
3. HIGH MARSH
4. MID MARSH
5. LOW MARSH
6. MUDFLAT
7. SUBTIDAL
8. PROPOSED CONTOURS
9. EXISTING CONTOURS

LICENSED LANDSCAPE ARCHITECT
CHRISTOPHER LOFTUS
LA 6259
Signature
Renewal Date
Date
STATE OF CALIFORNIA

GREATecology
ENVIRONMENT + DESIGN

PRELIMINARY
NOT FOR CONSTRUCTION

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ENGINEER OF RECORD
DATE:

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SPEC NO. XXXX-XX	WBS NO. P0000-0
REFERENCES	
PROJECT ENGINEER -	
CONTRACTOR -	
CONSTRUCTION STARTED -	
CONSTRUCTION COMPLETED -	
COST -	INSPECTOR -

REVISIONS | DATE / APPROVED

San Diego Unified Port District
San Diego • California

PORT OF SAN DIEGO UNIFIED PORT DISTRICT

DESIGNED CL
DRAWN MK
CHECKED LG

APPROVAL RECOMMENDED
DISTRICT PROJECT MANAGER
APPROVED
DISTRICT MANAGER-DESIGN

WETLAND RESTORATION OF SALT POND 20
PRELIMINARY DESIGN

PLANTING PLAN - EAST

DATE 10/06/2017
A/E NO.
SHEET 13 OF 14
DRAWING NO. LP-xxxx-xx
REV. -

Oct 05, 2017 - 3:04pm Z:\Client Folders\ACTIVE PROJECTS\CA281.002_Port of SD_Pond 20 Part 2\04_CAD\01_Sheets\02_CDs_30\CA281.002_Pond20_LP1-2.dwg

HABITAT ACREAGE SUMMARY

1. UPLAND: >7.6' (7.83 ACRES)
2. TRANSITION ZONE: 6.6'-7.6' (3.81 ACRES)
3. HIGH MARSH: 5.7'-6.6' (20.63 ACRES)
4. MID MARSH: 4.1'-5.7' (37.10 ACRES)
5. LOW MARSH: 2.9'-4.1' (1.43 ACRES)
6. MUDFLAT: -0.4'-2.9' (4.00 ACRES)
7. SUBTIDAL: <-0.4' (1.68 ACRES)

TOTAL: 76.48 ACRES

PRELIMINARY PLANT SPECIES LIST

Scientific Name	Common Name
Subtidal	
Zostera marina	Eelgrass
Low Marsh	
Distichlis spicata	Saltgrass
Spartina foliosa	Cordgrass
Mid Marsh	
Distichlis spicata	Saltgrass
Frankenia salina	Alkali heath
Jaumea carnosa	Jaumea
Leptochloa fusca	Yellow-eyed grass/false fescue
Limonium californicum	Sea lavender
Salicornia bigelovii	Pickleweed
Triglochin concinna	Arrow grass
High Marsh	
Atriplex lentiformis ssp. quinoa	Quinoa/ quinoa-weed
Cressa truxillensis	Alkali weed
Distichlis spicata	Saltgrass
Frankenia salina	Alkali heath
Jaumea carnosa	Jaumea
Juncus acutus ssp. leopoldii	Leopold's rush
Leptochloa fusca	Yellow-eyed grass/false fescue
Limonium californicum	Sea lavender
Pluchea odorata	Sticky/ stinking/ salt marsh fleabane
Salicornia pacifica	Pacifican Pickleweed
Suaeda californica	California seablite
Upland	
Artemisia californica	Sagebrush
Atriplex prostrata	Deltaweed
Ambrosia psilostachya	Western ragweed
Baccharis pilularis	Coyote brush
Distichlis spicata	Saltgrass
Cressa truxillensis	Alkali weed
Elymus condensatus	Giant wild rye
Elymus trachycaulus	Slender wild rye
Encelia californica	California bulrush
Eriogonum fasciculatum	California buckwheat
Eschscholzia californica	California poppy
Frankenia grandifolia	Coastal globe-berried
Grindelia stricta	Pacific rosin-weed/gum
Salicornia bigelovii	White seablite
Salicornia virginica	Black saltwort
Roadside Upland	
Eschscholzia californica	California poppy

NOTE:
1. REFINED PLANT SPECIES LIST WITH CONTAINER SIZES, PLANT SPACING, SEED MIXES, AND APPLICATION RATES WILL BE SPECIFIED IN THE 60% DESIGN SET.

PLANTING NOTES

(TO BE INCLUDED IN 60% DESIGN SET)

PLANTING DETAILS

(TO BE INCLUDED IN 60% DESIGN SET)

LICENSED LANDSCAPE ARCHITECT
CHRISTOPHER LOFTUS
LA 6259
Signature
Renewal Date
Date
STATE OF CALIFORNIA

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PRELIMINARY
NOT FOR CONSTRUCTION

VERIFY SCALE
0 1"
BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY.

RECORD DRAWING
REVIEWED BY:
ENGINEER OF RECORD
DATE:

NOTE:
THIS DRAWING MAY BE A REDUCED SCALE PRINT OF THE ORIGINAL DRAWING. UTILIZE GRAPHIC SCALES TO VERIFY IF DRAWING IS A REDUCTION, AND ADJUST SCALES ACCORDINGLY TO THE GRAPHIC SCALES SHOWN.

SPEC NO. XXXX-XX WBS NO. P0000-0
REFERENCES
PROJECT ENGINEER -
CONTRACTOR -
CONSTRUCTION STARTED -
CONSTRUCTION COMPLETED -
COST - INSPECTOR -

REVISIONS | DATE / APPROVED

San Diego Unified Port District
San Diego • California

DESIGNED CL
DRAWN MK
CHECKED LG

APPROVAL RECOMMENDED
DISTRICT PROJECT MANAGER
APPROVED
DISTRICT MANAGER-DESIGN

WETLAND RESTORATION OF SALT POND 20
PRELIMINARY DESIGN
PLANT SCHEDULE

DATE 10/06/2017
A/E NO.
SHEET 14 OF 14
DRAWING NO. LP-xxxx-xx
REV. -

Oct 06, 2017 10:34am Z:\Client Folders\ACTIVE PROJECTS\CA281.002_Port of SD_Pond 20 Part 2\04_CAD\01_Sheets\02_CDs_30\CA281.002_Pond20_LP3.dwg

APPENDIX B

Soil Quality and Plantability Evaluation – Great Ecology, 2017

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WETLANDS RESTORATION OF SALT POND 20

SOIL QUALITY AND PLANTABILITY EVALUATION REPORT

MAY 22, 2017

Submitted to:

Port of San Diego
3165 Pacific Hwy.
San Diego, CA 92101

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Acronyms and Abbreviations

DDT	dichlorodiphenyltrichloroethane
dS	deciSiemens
ECe	salinity
Enthalpy	Enthalpy Analytical, Inc.
EPA	U.S. Environmental Protection Agency
ERM	effects range median
ft	feet/foot
g	gram(s)
GC/ECD	gas chromatography/electron capture dissociation
GC/FPD	gas chromatography/flame photometric detection
GC/MS SIM	gas chromatography/mass spectroscopy selective ion monitoring
kg	kilogram(s)
L	liters
MDL	method detection limit
meq	milliequivalents
mg	milligram(s)
MLLW	mean lower low water
ND	non-detect
P20	Pond 20
PAH	polycyclic aromatic hydrocarbon
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCB	polychlorinated biphenyl
Port	Port of San Diego
QC	quality control
RB	California Regional Water Quality Control Board
SAP	sampling and analysis plan
SAR	sodium adsorption ratio
TOC	total organic carbon
TPH	total petroleum hydrocarbon
USACE	U.S. Army Corps of Engineers
µg	microgram(s)

1 INTRODUCTION

The Port of San Diego (Port) proposes a wetland restoration project at the Pond 20 site (Site). The Site consists of a former salt evaporation pond on an 83.5-acre parcel of land, located in South San Diego Bay in San Diego, CA. The Port has engaged Great Ecology to design and permit a mitigation bank at the Site, which would conceptually excavate materials to lower the average elevation by several feet. The new topography would be designed to restore tidal habitat, and bank credits would be sold under terms of a mitigation banking agreement. Significant excavation is included in the conceptual design, and we sought to prepare a Sampling and Analysis Plan suitable for regulatory review and implement a modest investigation of soil quality consistent with a feasibility-level analysis. This report includes results of our investigation.

1.1 Site Description

The Site consists primarily of a low diked area, which is hydrologically isolated from the Nestor Creek and Otay River systems. Based on historical survey information, and to be verified by pending topographic survey data, the elevation of the area within the dike ranges from approximately 4.5 to 11.5 feet above mean lower low water (ft MLLW; 1988 North American Vertical Datum [NAVD88]). The proposed average restoration target elevations range from -0.5 to 16.2 ft MLLW (NAVD88), with the majority of restored habitat below 7.0 ft MLLW.

Site materials subject to this investigation are primarily in non-wetland upland areas currently above the High Water Line (+7.79 ft MLLW for San Diego Bay, NOAA Station ID: 9410170) and isolated from tides. We therefore use the conventional term “soils” in this report, although some materials from deeper portions of the conceptual excavation prism might be considered sediments.

Data presented in this report are intended to inform an evaluation of placement options for upland soils, and an evaluation of the viability of underlying soils for planting.

1.2 Geologic and Hydrogeologic Conditions

The Site is located within the western Peninsular Range Geomorphic Province of Southern California, which stretches 900 miles from the Los Angeles Basin and the Transverse Ranges to the southern end of Baja California (Norris and Webb 1990).

The Site lies within the Otay Hydrologic Unit, a watershed covering 154 square miles that is drained by the Otay River and its tributaries. The Otay River flows east to west toward San Diego Bay. The Site is

located adjacent to Nestor Creek, and includes a tidal channel just upstream of the mouth of the Otay River where it meets San Diego Bay (FIGURE 1). The majority of the Site is hydrologically isolated from storm and municipal runoff. Soils subject to this investigation are in the upland portion of the Site, and from the existing surface elevation to the proposed finished grade.

1.3 Field and Database Reconnaissance

Field reconnaissance has indicated no history of spills or releases of hazardous materials, nor any visual indications of soil degradation (e.g., staining from hydrocarbons). The California State Water Resources Control Board Geotracker database has also been reviewed and indicates the Site does not have any history of cleanup investigations.

1.4 Adjacent Parcel information

The Otay River Floodplain has long been under consideration as a mitigation site, and was selected by Poseidon Resources for mitigation of their Carlsbad Desalination facility as required by their Coastal Development Permit E-06-013 (Coastal Commission 2013). The Poseidon mitigation project also includes the Pond 15 site, located north of the San Diego Bay National Wildlife Refuge on the east side of San Diego Bay. The Otay River Floodplain Site lies to the north and east of Pond 20, and, based on visual assessment of the sites and a limited survey of historical aerial photography, some of the Otay River Floodplain mitigation site may share a similar land use history. The specific area likely to share a land use history lies south of the Otay River Channel and west of the Nestor Creek channel.

Poseidon prepared several studies which informed their initial design. One study, a cultural resource survey of the Otay River Floodplain site, revealed significant Native American artifacts in the northeastern corner of the site (i.e., on the far side of the area relative to the Pond 20 site). A detailed soil characterization analysis, found significant soil contamination from DDT, chlordane, and PCBs in the eastern portion of the Otay River Floodplain site, east of Nestor Creek. Some areas of DDT contamination had concentrations high enough to be considered hazardous (Coastal Commission 2013). Contamination is likely related to historical agricultural uses (which did not occur at Pond 20).

Regardless, extensive review of Poseidon's mitigation effort indicated the soil quality of lands directly north of Pond 20 did not affect the proposed mitigation use and furthermore, bulk soil chemistry data indicated placement of materials in an estuarine environment with sensitive biological

POND 20
TOPOGRAPHY AND SAMPLING LOCATIONS

PORT OF SAN DIEGO
FEBURARY 2017

FEET
0 250 500
1 INCH = 500 FEET

FIGURE 1
1:6,400
NAD83, California State Plane, Zone VI, US Foot

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receptors was fully consistent with natural resource conservation at the San Diego Bay National Wildlife Refuge (Coastal Commission 2013). Since Pond 20 shares its land use history with the western portion of the Otay River Floodplain site, and not the agricultural uses which appear to co-occur with contamination on the eastern portion of the Otay River Floodplain site, the Poseidon data indicates land uses at salt ponds did not result in contamination. Furthermore, the data indicate that soil quality associated with historical salt production are consistent with reuse of materials as substrate for sensitive biological resources in San Diego Bay.

1.5 Study Objectives

This sampling and analysis effort includes three distinct objectives to assess conditions at the Site:

1. Characterize the post-excavation (or z-layer) surface for soil structure parameters;
2. Characterize the post-excavation (or z-layer) for plant growth characteristics; and
3. Conduct a screening-level assessment of anticipated excavation (cut).

1.6 Approach and Report Organization

Although the final deposition site for excess materials is currently unknown, we anticipate a combination of regulatory agencies will have a role in the project permitting process. Great Ecology generally followed guidance provided by the Southern California Dredge Material Management Team (DMMT) of regulatory agencies, which include the U.S. Army Corps of Engineers, the Environmental Protection Agency (EPA), the California Coastal Commission, and the California Regional Water Quality Control Board (RB). We followed general guidance for soil and sediment testing provided in the Inland Testing Manual (EPA/USACE 1998), and were consistent regarding parameters listed in the RB Solid Waste Waiver (RB 2014). We also conducted standard horticultural analyses.

To accomplish study objectives, Great Ecology prepared a Sampling and Analysis Plan (SAP) to document approach, field activities, analytical methods, quality assurance parameters (Great Ecology 2017) (APPENDIX A). Great Ecology established four stations within the Site property boundary. Two stations characterized the eastern half of the Site, one station characterized the central western portion of the Site, and one station characterized the berm where it will be breached to create a connection to the Otay River. Great Ecology collected core soil samples to generate the study dataset, which included an assessment of the three-dimensional extent of potential contaminants and soil

structure characteristics. Additional core samples collected from the z-layer were tested for plantability characteristics.

2 METHODS

2.1 Sample Collection and Documentation

Great Ecology designated four sampling stations to investigate soil conditions at 1) the conceptual future berm breach area and 2) the interior of the Site. Interior stations were positioned to capture conditions across the site. Stations were identified in the field using latitude and longitude data generated prior to the field effort and also landscape feature cues from available aerial photography (e.g., vegetation changes, erosional patterns, and hydrological features). On January 30, 2017, Great Ecology collected core sediment samples using a hand auger. FIGURE 1 is a map of the Site sample locations overlaid on topographic data generated in 2017. Field staff successfully collected samples representative of the proposed locations, and verified field positioning with visual landmarks.

Great Ecology recorded field conditions and observations relating to the sampling in a field log. Recorded data included date and time of sample collection; study name, station identifier, volume and identification codes of subsamples collected; latitude and longitude of station locations; meteorological information; core sample characteristics: penetration and sediment characteristics at approximately one foot increments; and presence (or absence) of unusual colors, odors, debris, petroleum hydrocarbon sheens, or other relevant sediment characteristics. We provide the original field logs in APPENDIX B and photographic documentation of the grab samples and cores associated with each station in APPENDIX C.

Logs also included the vertical dimensions of subsampled strata and a sample inventory for each location. Individual composite samples varied with respect to dimensions of vertical profile sampled based on the achieved depth of each core and soil characteristics. For example, in shallow borings (e.g., sample P20-2), the surficial sediment sample comprised of the top one foot of sediment, whereas for deeper borings with consistent soil characteristics, a deeper boundary was established for the bottom of surficial sediment stratum (e.g., the top three feet of sediment at P20-3).

2.2 Sample Handling

Prior to sampling, and in between each station, we thoroughly cleaned all non-disposable sampling equipment with Alconox detergent and rinsed with deionized water (retained and disposed offsite).

Field staff collected core samples using a stainless steel hand auger with a maximum depth of 10 feet. Each one foot section of core was placed on a clean Visqueen sheet for stockpiling and labeled by depth for assessment following the achievement of target depth or deepest possible penetration depth.

Field staff logged, photographed, and subsampled the core using clean stainless steel spoons. Composite samples of the core were prepared in stainless steel mixing bowls to represent the top soil layer, the mid-level zone of accumulation, and the z-layer. The z-layer was subsampled immediately by the staff geologist immediately upon reaching the deepest layers to preserve the best percent moisture test conditions.

Once materials were laid out on the Visqueen, sample characteristics were reviewed and a decision made with regard to subsample strata boundaries. Clean stainless steel spoons and bowls were used to prepare representative composite samples of sufficient volume for analyses. Once field-homogenized, composite materials were transferred to clean containers provided by the NELAP-accredited analytical laboratory, Enthalpy Analytical, Inc. (Enthalpy) of Orange, California. Based on the shallow profile of the borings, all excess materials were backfilled into the borehole to minimize waste.

For sample identification, Great Ecology used a standard sample identification code: three characters to denote the study site (P20) followed by one character to denote the station identifier (i.e., 1 through 4, from FIGURE 1). The last character denoted the depth horizon, with "T" representing the surface soils, "M" representing the mid-level soils, and "Z" representing the bottom soils. For example, the sample identifier of P20-1T corresponds to the soil collection at Station 1 in the surface horizon of the soil profile.

Field staff retained samples overnight in iced coolers before delivering the samples to an Enthalpy courier who transported the samples to the laboratory. Samples were accompanied by a Chain of Custody document that denoted requested analyses.

2.3 Bulk Sediment Analysis

Enthalpy evaluated all samples for metals, total petroleum hydrocarbons (TPH), pesticides, polychlorinated biphenyls (PCBs), and polycyclic aromatic hydrocarbons (PAHs), sulfides, and conventional analyses (TABLE 1). Where appropriate, analytical results were compared to relevant

TABLE 1: SAMPLE ANALYSIS METHODS AND TARGET REPORTING LIMITS

Parameter	Method	Procedure	Sediment Target Reporting Limits[a]
Conventional Analyses			
Grain Size	ASTM D4464M	Sieve/Optical	0.1 g
Percent Solids	SM 2540Bh	Gravimetric	0.1 percent
TOC	USEPA 9060i	Combustion	0.1 percent
Total Sulfides	USEPA 376.2Mh	Titrametric	0.1 mg/kg
Dissolved Sulfides	USEPA 376.2Mh	Titrametric	0.1 mg/kg
Metals			
As, Cd, Cr, Cu, Pb, Ni, Se, Ag	USEPA 6020[h]	ICP-MS	0.1 mg/kg
Mercury (Hg)	USEPA 7471A[h]	GFAAS	0.02 mg/kg
Zinc (Zn)	USEPA 6020[h]	ICP-MS	1.0 mg/kg
Organics			
TPH[b]	USEPA 8015B[h]	GC	0.5 mg/kg
Pesticides[c]	USEPA 8081A[h]	GC/ECD	2-20 μg/kg
PCBs[d]	USEPA 8082[h]	GC/SIM	10 μg/kg
PAHs[e]	USEPA 8270C[h]	GC/MS SIM	20 μg/kg

[a] Target reporting limits provided by Calscience Environmental Laboratories.
[b] Includes diesel range organics, TPH as gasoline, and TPH as motor oil.
[c] Includes 4,4- isomers of DDD, DDE, and DDT; aldrin; α-, β-, δ- and γ-BHC; chlordane; dieldrin; endosulfan I and II; endosulfan sulfate; endrin and endrin aldehyde; heptachlor and heptachlor epoxide; methoxychlor; and toxaphene.
[d] Includes congener analysis only.
[e] Includes Low Molecular Weight PAHs (naphthylene, acenaphthylene, acenaphthene, fluorine, and phenanthrene) and High Molecular Weight PAHs (fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b,k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-c,d)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene).
Mass Units: kg = kilogram, g = gram, mg = milligram, μg = microgram
As = arsenic, Cd = cadmium, Cr = chromium, Cu = copper, Pb = lead, Ni = nickel, Se = selenium, Ag = silver
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphenyl
TPH = total petroleum hydrocarbons
ICP-MS = inductively coupled plasma mass spectroscopy
GFAAS = graphite furnace atomic absorption spectroscopy
GC/ECD = gas chromatography/electron capture dissociation method
GC/MS SIM = gas chromatography/mass spectroscopy selective ion monitoring method

screening criteria, which in this case were Effects Range-Low (ERL) and Effects Range-Median (ERM) values (Buchman 2008). ERL concentrations correspond to the level above which there may be ecological effect in marine environments. Concentrations were well below the Effects Range-Median (ERM) concentrations, above which ecological effects are likely. In addition, Waypoint Analytical (Waypoint) evaluated the z-layer for agricultural suitability (plantability). Plantability was assessed by comparing results to horticultural benchmarks.

2.4 Leachability Analysis

Once bulk soil results were available, arsenic was found to be the only constituent above screening concentrations (per RB 2014). We conducted limited synthetic precipitation leaching procedure (SPLP) testing to assess leachability. SPLP testing used the same metals analysis (EPA 6010B) as was used for bulk soil chemistry, but were prepared to evaluate the mobility of pollutants (EPA 1312/3010A). Arsenic was the only analyte evaluated for leachability.

3 RESULTS

The following section describes bulk sediment analytical chemistry results, as well as leachability test results. APPENDIX D contains original laboratory reports provided by Enthalpy, including quality assurance data and summary tables with all the analytical data. APPENDIX E contains original soil plantability laboratory report provided by Waypoint Analytical.

3.1 Field Data

Great Ecology successfully sampled all four stations. With the exception of the berm location (Station P20-1), field staff were unable to achieve grab target recovery objectives due to the presence of groundwater (TABLES 2 and 3). Berm materials from location P20-1 were predominantly moist gray clay with lenses of fine sand. Berm materials were generally consistent with the visual/textural characteristics of materials at the top of the berm (the upper limit of our boring was approximately five feet below the crest of the berm) and berm materials in general (extending south and northeast of the sampling location, see FIGURE 1).

Core subsections from Station 2, 3, and 4 were generally dominated by sandy loams. Groundwater was shallower in the westernmost location within the berm. Soils in the interior portions of the berm were generally consistent with respect to the relative percentage of sand to clay (see APPENDIX B for field log data).

TABLE 2: SUMMARY CORE LOCATION INFORMATION

Station ID	Date (Time)	Latitude	Longitude	Target Recovery (ft)	Actual Core Depth (ft)
P20 – 1	1/30/17 (14:30)	32°35'14.91"	117°06'18.84"	6 [1]	6.5 [1]
P20 – 2	1/30/17 (12:55)	32°35'12.99"	117°06'09.36"	9.2	3.0
P20 – 3	1/30/17 (11:30)	32°35'10.04"	117°05'59.02"	10.5	8.0
P20 – 4	1/30/17 (09:30)	32°35'17.09"	117°05'55.09"	12.8	9.2

[1] Target recovery was adjusted in the field based on observed site characteristics.
ft = feet

TABLE 3: CORE LOG SUMMARY INFORMATION

Station ID	Target Recovery (ft)	Depth (ft)	Core Material Description
P20 – 1	6 [1]	6.5 [1]	Top 2 ft: moist brown clay with mottling in soil. From 2 to 6.5 ft: moist gray clay with minor lenses of fine sand. No groundwater.
P20 – 2	9.2	3.0	Top 1 ft: moist, dark brown. From 1 to 3 ft: wet, dark brown fine sand. Groundwater at 1.5 ft.
P20 – 3	10.5	8.0	Top 3 ft: Medium tan sand. From 3 to 5 ft: Fine tan sand. From 5 to 8 ft: gray, medium-coarse wet sand with mud. Groundwater at 3 ft.
P20 – 4	12.8	9.2	Top 3 ft: loose, brown, dry sand. From 3 to 5 ft: more compact material, similar to the top 3 ft with minor clay. From 5 to 9.2 ft: sand with lenses of clayey material and coarse sand. Groundwater at 5 ft.

[1] Target recovery was adjusted in the field based on observed site characteristics.
ft = feet

3.2 Bulk Sediment Chemistry Results

TABLES 4 to 12 summarize the bulk sediment analytical results. Contaminants were generally very low qualitatively, consistent with the minimal historical development of the site and hydrological isolation. All estimated concentrations are noted with "J" qualifiers (if applicable).

Total petroleum hydrocarbons were not detected (TABLE 5). Other organic contaminants were nearly absent, except very minor detections of PAHs, well below ground surface at Location P20-1 (TABLES 6 and 7). Pesticides and PCBs were not detected (TABLES 8 to 10).

TABLE 4: POND 20 CONVENTIONAL ANALYSES

Sample ID	TOC (mg/kg)	Total Solids (%)	Dissolved Sulfide (mg/kg)	Total Sulfide (mg/kg)
Method	**EPA 9060A**	**SM 2540 B (M)**	**EPA 376.2M**	**EPA 376.2M**
RL:	560-820	0.10	0.56-0.82	0.56-15
1T	6300	71.4	ND	ND
1M	16000	61.2	ND	9.8
1Z	11000	68.6	ND	230
2T	ND	79.1	ND	ND
2Z	9400	69.8	ND	0.72
3T	ND	88.6	ND	ND
3M	2500	76.4	ND	ND
3Z	ND	84.8	ND	ND
4T	600	89.0	ND	ND
4M	ND	79.7	ND	ND
4Z	ND	80.3	ND	ND

Notes:
All values are dry weight masses
kg = kilograms
µg = micrograms
ND = non-detect
TOC = total organic carbon

TABLE 5: POND 20 ORGANICS – TOTAL PETROLEUM HYDROCARBONS

Sample ID	TPH (C8 to C10) (mg/kg)	TPH (C10 to C28) (mg/kg)	TPH (C28 to C40) (mg/kg)
Method		**EPA 8015M**	
RL:	22.48-32.66	11.24-16.33	11.24-12.45
1T	ND	ND	ND
1M	ND	ND	ND
1Z	ND	ND	ND
2T	ND	ND	ND
2Z	ND	ND	ND
3T	ND	ND	ND
3M	ND	ND	ND
3Z	ND	ND	ND
4T	ND	ND	ND
4M	ND	ND	ND
4Z	ND	ND	ND

Notes:
All values are dry weight masses
kg = kilograms
µg = micrograms
ND = non-detect
TPH = total petroleum hydrocarbons

TABLE 6: POND 20 ORGANICS – LOW-MOLECULAR WEIGHT POLYCYCLIC AROMATIC HYDROCARBONS

Sample ID	Acenaphthene (µg/kg)	Acenaphthylene (µg/kg)	Anthracene (µg/kg)	Fluorene (µg/kg)	Naphthalene (µg/kg)	Phenanthrene (µg/kg)
Method	**EPA 8270CM**					
RL:	11.24-16.33	11.24-16.33	11.24-16.33	11.24-16.33	11.24-16.33	11.24-16.33
1T	ND	ND	ND	ND	ND	ND
1M	ND	ND	ND	ND	ND	ND
1Z	ND	ND	ND	ND	ND	ND
2T	ND	ND	ND	ND	ND	ND
2Z	ND	ND	ND	ND	ND	ND
3T	ND	ND	ND	ND	ND	ND
3M	ND	ND	ND	ND	ND	ND
3Z	ND	ND	ND	ND	ND	ND
4T	ND	ND	ND	ND	ND	ND
4M	ND	ND	ND	ND	ND	ND
4Z	ND	ND	ND	ND	ND	ND

Notes:
All values are dry weight masses
kg = kilograms
µg = micrograms
ND = non-detect

TABLE 7: POND 20 ORGANICS – HIGH-MOLECULAR WEIGHT POLYCYCLIC AROMATIC HYDROCARBONS

Sample ID	Benz(a) anthracene (µg/kg)	Benzo(a) pyrene (µg/kg)	Benzo(b) fluoranthene (µg/kg)	Benzo(g,h,i) perylene (µg/kg)	Benzo(k) fluoranthene (µg/kg)	Chrysene (µg/kg)	Dibenz(a,h) anthracene (µg/kg)	Fluoranthene (µg/kg)	Indeno (1,2,3-cd) pyrene (µg/kg)	Pyrene (µg/kg)
Method	**EPA 8270CM**									
RL:	11.24-16.33	11.24-16.33	11.24-16.33	11.24-16.33	11.24-16.33	11.24-16.33	11.24-16.33	11.24-16.33	11.24-16.33	11.24-16.33
Berm Location – P20-1										
1T	ND L	ND	ND L	ND	ND	ND	ND	ND	ND	ND
1M	ND L	ND	ND L	ND	ND	ND	ND	ND	ND	ND
1Z	19 L	16	ND L	ND	ND	22	ND	ND	ND	ND
Interior Locations – P20-2, P20-3, P20-4										
2T	ND L	ND	ND L	ND	ND	ND	ND	ND	ND	ND
2Z	ND L	ND	ND L	ND	ND	ND	ND	ND	ND	ND
3T	ND L	ND	ND L	ND	ND	ND	ND	ND	ND	ND
3M	ND L	ND	ND L	ND	ND	ND	ND	ND	ND	ND
3Z	ND L	ND	ND L	ND	ND	ND	ND	ND	ND	ND
4T	ND L	ND	ND L	ND	ND	ND	ND	ND	ND	ND
4M	ND L	ND	ND L	ND	ND	ND	ND	ND	ND	ND
4Z	ND L	ND	ND L	ND	ND	ND	ND	ND	ND	ND

Notes:
All values are dry weight masses
kg = kilograms
µg = micrograms
L = The laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) was out of control limits. Associated sample data was reported with qualifier.ND = non-detect

TABLE 8: POND 20 ORGANICS – PESTICIDES (PART I)

Sample ID	Total 4,4'-DDT (µg/kg)	α-BHC (µg/kg)	β-BHC (µg/kg)	δ-BHC (µg/kg)	Lindane (γ-BHC) (µg/kg)	Chlordane (µg/kg)	Dieldrin (µg/kg)	Endosulfan I (µg/kg)	Endosulfan II (µg/kg)	Endosulfan sulfate (µg/kg)
Method	**EPA 8081A NELAC**									
RL:	5.62-8.17	5.62-8.17	5.62-8.17	5.62-8.17	5.62-8.17	56.20-81.66	5.62-8.17	5.62-8.17	5.62-8.17	5.62-8.17
Berm Location – P20-1										
1T	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1M	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1Z	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Interior Locations – P20-2, P20-3, P20-4										
2T	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2Z	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3T	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3M	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
3Z	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4T	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4M	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4Z	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:
All values are dry weight masses
kg = kilograms
µg = micrograms
ND = non-detect

TABLE 9: POND 20 ORGANICS – PESTICIDES (PART II)

Sample ID	Endrin (µg/kg)	Endrin aldehyde (µg/kg)	Endrin Ketone (µg/kg)	Heptachlor (µg/kg)	Heptachlor epoxide (µg/kg)	Methoxychlor (µg/kg)	Toxaphene (µg/kg)	Aldrin (µg/kg)
Method	**EPA 8081A NELAC**							
RL:	5.62-8.17	5.62-8.17	5.62-8.17	5.62-8.17	5.62-8.17	11.24-16.33	112.40-163.32	5.62-8.17
Berm Location – P20-1								
1T	ND	ND	ND	ND	ND	ND	ND	ND
1M	ND	ND	ND	ND	ND	ND	ND	ND
1Z	ND	ND	ND	ND	ND	ND	ND	ND
Interior Locations – P20-2, P20-3, P20-4								
2T	ND	ND	ND	ND	ND	ND	ND	ND
2Z	ND	ND	ND	ND	ND	ND	ND	ND
3T	ND	ND	ND	ND	ND	ND	ND	ND
3M	ND	ND	ND	ND	ND	ND	ND	ND
3Z	ND	ND	ND	ND	ND	ND	ND	ND
4T	ND	ND	ND	ND	ND	ND	ND	ND
4M	ND	ND	ND	ND	ND	ND	ND	ND
4Z	ND	ND	ND	ND	ND	ND	ND	ND

Notes:
All values are dry weight masses
kg = kilograms
µg = micrograms
ND = non-detect

TABLE 10: POND 20 ORGANICS – POLYCHLORINATED BIPHENYLS

Sample ID	PCB-1016 (µg/kg)	PCB-1221 (µg/kg)	PCB-1232 (µg/kg)	PCB-1242 (µg/kg)	PCB-1248 (µg/kg)	PCB-1254 (µg/kg)	PCB-1260 (µg/kg)	PCB-1262 (µg/kg)	PCB-1268 (µg/kg)
Method	**EPA 8082 NELAC**								
RL:	56.20-81.66	56.20-81.66	56.20-81.66	56.20-81.66	56.20-81.66	56.20-81.66	56.20-81.66	56.20-81.66	56.20-81.66
Berm Location – P20-1									
1T	ND	ND	ND	ND	ND	ND	ND	ND	ND
1M	ND	ND	ND	ND	ND	ND	ND	ND	ND
1Z	ND	ND	ND	ND	ND	ND	ND	ND	ND
Interior Locations – P20-2, P20-3, P20-4									
2T	ND	ND	ND	ND	ND	ND	ND	ND	ND
2Z	ND	ND	ND	ND	ND	ND	ND	ND	ND
3T	ND	ND	ND	ND	ND	ND	ND	ND	ND
3M	ND	ND	ND	ND	ND	ND	ND	ND	ND
3Z	ND	ND	ND	ND	ND	ND	ND	ND	ND
4T	ND	ND	ND	ND	ND	ND	ND	ND	ND
4M	ND	ND	ND	ND	ND	ND	ND	ND	ND
4Z	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:
All values are dry weight masses
kg = kilograms
µg = micrograms
ND = non-detect
PCB = polychlorinated biphenyls

TABLE 11: POND 20 METALS ANALYSES

Sample ID	Arsenic (mg/kg)	Arsenic (mg/L)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Method	EPA 3050B/6010B NELAC	SPLP EPA 1212/3010A/6010B NELAC	EPA 3050B/6010B NELAC	EPA 3050B/6010B NELAC	EPA 3050B/6010B NELAC	EPA 3050B/6010B NELAC	EPA 3050B/6010B NELAC	EPA 3050B/6010B NELAC	EPA 3050B/6010B NELAC	EPA 3050B/6010B NELAC	EPA 3050B/6010B NELAC
ERM	**70**	NA	**9.6**	**370**	**270**	**218**	**0.71**	**51.6**	**-**	**3.7**	**410**
ERL	**8.2**	NA	**1.2**	**81**	**34**	**46.7**	**0.15**	**20.9**	**-**	**1.0**	**150**
STLC		5									
MUN		0.050									
CCC		0.036									
RL:	1.12-1.63	0.01	0.56-0.82	1.12-1.63	1.12-1.63	1.12-1.63	0.16-0.23	1.69-2.45	1.12-1.63	0.56-0.82	5.62-8.17
Berm Location – P20-1											
1T	8.5	-	0.72	30.2	16.2	5.68	ND	11.7	ND	ND	66.2
1M	10.7	0. 013	1.07	41.3	21.8	5.49	0.04 J	16	ND	ND	85.7
1Z	7.98	-	0.89	23.9	17.4	5.83	ND	11.3	ND	ND	65.4
Interior Locations – P20-2, P20-3, P20-4											
2T	3.65	-	ND	8.82	6.07	2.01	ND	2.84	ND	0.19 J	22.0
2Z	5.57	ND	0.48 J	15.8	15.8	3.72	ND	7.32	ND	ND	47.8
3T	2.26	-	ND	5.23	2.32	1.93	ND	1.51 J	ND	ND	13.2
3M	4.56	-	0.47 J	10.7	9.31	2.99	ND	5.01	ND	0.36 J	35.8
3Z	4.86	ND	0.26 J	7.4	5.8	2.12	ND	2.91	ND	ND	24.0
4T	2.47	-	0.25 J	6.12	3.83	2.44	ND	2.28	ND	ND	18.6
4M	3.14	-	0.31 J	9.71	7.07	2.53	ND	4.14	ND	ND	34.4
4Z	4.93	0.016	0.27 J	9.81	6.73	2.62	ND	4.03	ND	ND	30.9

Notes:
All values are dry weight masses (except SPLP)
CCC = Saltwater Criterion Continuous Concentration, California Toxics Rule, EPA 2000
ERL/ERM = effects range low/median (Buchman 2008)
J = Reported value is above the Method Detection Limit and below the Reporting Limit. Reported value is estimated.
kg = kilograms
µg = micrograms
MUN = Domestic or Municipal supply waters, San Diego Basin Plan 2016
ND = non-detect
STLC = Soluble Threshold Leaching Concentration (California Title 22)
SPLP = Synthetic Precipitation Leaching Procedure (California Title 22)

TABLE 12: POND 20 AGRICULTURAL SUITABILITY

Sample ID	pH	ECe (dS/m)	Ca (meq/L)		Mg (meq/L)	Na (meq/L)	K (meq/L)	B (ppm)	SO_4 (meq/L)	SAR
1Z	7.9	69.2	25.5		119.0	723.0	14.7	2.42	58.4	85.06
2Z	7.8	60.4	58.4		112.0	559.0	18.4	10.50	103.0	60.56
3Z	8.0	71.9	17.7		117.0	613.0	16.4	8.18	91.1	74.70
4Z	7.2	88.6	35.9		161.0	746.0	12.4	3.63	73.7	75.18

Notes:
Ca = calcium, Mg = magnesium, Na = sodium, K = potassium, B = boron, SO_4 = sulfate
dS = deciSiemens
L = liters
m = meters
meq = milliequivalents
ppm = parts per million
ECe = salinity
SAR = sodium adsorption ratio

Metals concentrations (TABLE 11) were also very low; nearly all locations contained sediments with concentrations below the Effects Range-Low (ERL) concentrations. Only two samples, both at P20-1 (the berm) exceeded ERL levels, which exceeded only the arsenic ERL. The surface and mid-depth samples exhibited only minor exceedances of the ERL, and were well below the ERM. This result, particularly in the absence of other ERL exceedances, indicates a very low likelihood of ecological effects in marine environments.

The presence of arsenic at levels above a screening threshold resulted in additional characterization to assess leachability. For these analyses, the highest bulk sediment concentration samples from each of the four locations were tested to consider a "worst-case" scenario using the SPLP method. Selected soil samples were: P20-1M, P20-2Z, P20-3Z, and P20-4Z; results are included in TABLE 11. All leachability results were well below the STLC limit, in all cases by between 2 and 3 orders of magnitude. When arsenic was detected (2 of the 4 samples; concentrations of 0.013 mg/L in sample P20-1M, and 0.016 in sample P20-4Z), values were below both the Basin Plan levels for waters designated as domestic or municipal supply (MUN = 0.050 mg/L, RB 2016) and the most stringent environmental water quality standard (California Toxics Rule, Saltwater Criterion Continuous Concentration = 0.036 mg/L, EPA 2000).

3.3 Data Quality and Validity

Great Ecology reviewed the quality assurance compliance data provided by Enthalpy to ensure analytical data were valid and representative. There were no quality assurance data provided by Waypoint. In this section, Great Ecology provides summary data for the Enthalpy reports; additional data are included as case narrative statements and quality control data within their respective reports (APPENDIX D).

The maximum achieved reporting limits were higher than the target values for some organic analytes, as well as the metals, but the vast majority fell below the lowest respective guideline values (i.e., ERL concentrations), where applicable.

For mercury, analytical reporting limits fell below the ERM value (0.71 mg/kg), but above the ERL concentration (0.15 mg/kg). However, the method detection limit (MDLs) were reviewed and ranged from 0.02-0.03 mg/kg. Therefore, if it had been present at levels above the ERL, mercury would have been detected and qualified as an estimate. In addition, Great Ecology found the quality control data

for mercury method blank, matrix spike, and laboratory control samples to be in compliance with quality assurance control limits. Mercury data are therefore deemed valid and representative.

For the metals analyses, several method blank detections were present in QC Batch 1174933 (see Page 28 of Enthalpy Lab Request 387148). Method blank detections included antimony, selenium, and zinc; all detections were below respective reporting limits (1 to 5 mg/kg), but above respective method detection limits. Great Ecology reviewed data for the samples that corresponded to QC Batch 1174933; all results were non-detect or less than the ERL (see above tables); therefore, any overestimation of actual antimony, selenium, or zinc was considered moot.

The matrix spike analyses for antimony were out of acceptable control ranges. However, data were considered valid on the basis of laboratory control sample analyses. Therefore, data are deemed valid.

The lab control and matrix spike analyses for benz(a)anthracene and benzo(b)fluoranthene overestimated concentrations to a degree outside control limits. Since these analytes were not detected, a conservative interpretation of the results concludes that these analytes are not present at levels of concern. The naphthalene laboratory control samples were out of control limits, but the matrix spike data (and surrogate analyses) were within control limits and are therefore deemed valid. These data were appropriately qualified.

A single deviation from the SAP (attached as APPENDIX A) was recognized in that only the 4,4- isomers of DDD, DDE, and DDT were analyzed. 2,4 isomers were not analyzed, and were a minor component of DDT-containing products (historically). Since assessment of 4,4 isomers of DDTs is consistent with current guidance regarding how Total DDTs are calculated and compared to benchmark screening criteria (e.g., Buchman 2008), this deviation did not impact the conclusions of this report.

In summary, we consider the reported bulk sediment chemistry data to be valid and representative.

3.4 Data Limitations

The statements above generalize sediment quality on the basis of a small number of sample locations relative to the anticipated volume of excavation. However, generalization is justifiable based on land use history, minimal development, hydrological isolation, and consistency with available bulk sediment chemistry for adjacent lands with similar land uses and hydrology (e.g., USFWS 2016).

4 Discussion

4.1 Field Operations

Great Ecology staff members performed field collection efforts, sample handling, and soil analyses as outlined in the study SAP (see APPENDIX A). Field staff achieved limited progress toward core target depth at three of four stations due to shallow groundwater. Recovery depths were limited as a result of groundwater intrusion and borehole collapse at interior locations. Soil sampling at the berm location (P20-1) was successful.

4.2 General Soil Conditions

The particle size distribution data was observed to be qualitatively different at the interior stations when compared to berm soils. Berm soil was generally finer material, and was observed to have higher TOC and moisture content (TABLE 2). Berm materials appeared visually and texturally distinct from interior soils (see APPENDIX C).

4.3 Bulk Sediment Chemistry

Apart from metals, the majority of priority pollutant contaminants were not detected at the Site. The following categories of contaminants were non-detect at all stations and depth horizons:

- Total petroleum hydrocarbons (TPHs);
- Low-molecular weight polycyclic aromatic hydrocarbons (LPAHs);
- Pesticides; and
- Polychlorinated biphenyls (PCBs).

Location P20-1 had detected levels of high-molecular weight polycyclic aromatic hydrocarbons (HPAHs) in the z-layer; however, combined these HPAHs totaled 57 µg/kg, well below the ERL concentration for HPAHs (1,700 µg/kg) and Total PAHs (4,022 µg/kg) (Buchman 2008).

Arsenic was the only metal with concentrations exceeding benchmark concentrations. At Location P20-1, arsenic concentrations in the top and middle soil horizons exceeded the ERL (8.2 mg/kg). Interior stations did not exceed ERL criteria. SPLP testing demonstrates that the arsenic is insoluble at all locations, and comparisons to water quality criteria indicate no threat to surface or groundwater conditions.

All encountered concentrations are low with regard to ecological risk criteria.

4.4 Horticultural Evaluation of the Z-Layer

Salinity presents the most significant constituent from a horticultural/plantability perspective. Soil salinity was not limited to surficial soils, and extended into the z-layer samples. Salinity far exceeded the tolerance of the majority of salt marsh plants (>30 dS/m) in the z-layer at all stations. Station 2 had the lowest salinity relative to the other stations, and Station 4 had the highest. These represent the shallowest and deepest samples, respectively, taken within the berm at the Site.

The agricultural suitability analyses revealed additional concerns for plantability. The sodium adsorption ratio (SAR) for every station indicates these soils are sodic (>15). Sodic conditions lead to a negative impact on soils structure and water infiltration. Further, the elevated levels of boron present a concern; elevated boron can cause burning of foliage and negatively impact survivorship rates for young plants.

High salinity coupled with high SAR and boron values and low total organic carbon at most stations represent a threat to plant survivorship and indicate a need for soil amendments and leaching prior to planting onsite. Further detail on the agricultural suitability analysis is available in Waypoint's attached report (APPENDIX E).

4.5 Conclusion

A review of the Pond 20 hydrology and site history indicate a lack of contaminant sources in the recent and extended history of the Site, and available bulk sediment chemistry from adjacent parcels corroborates this opinion (Coastal Commission 2013). Direct testing of materials encountered during our investigation indicated that bulk sediment physical characteristics and bulk sediment chemistry were consistent with the hypothesized lack of contamination. Soil arsenic was the only analyte to exceed a screening value; additional leachability testing indicated that it is tightly bound and does not present a risk to even the most susceptible aquatic receptors. As a result, data collected herein indicate that the materials areEF substantially 'inert' with regard to beneficial reuse at offsite locations

5 REFERENCES

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APPENDIX A: SAMPLING AND ANALYSIS PLAN

GREATecology
ENVIRONMENT + DESIGN

POND 20 MITIGATION BANK

SAMPLING AND ANALYSIS PLAN FOR SOIL/SEDIMENT CHARACTERIZATION

Submitted to:

San Diego Unified Port District

3165 Pacific Hwy.

San Diego, CA 92101

Date:

January 24, 2017

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Figure 1 Pond 20 Subparcels (Project Site Map)

Figure 2 Proposed Sampling Locations

1 INTRODUCTION

The San Diego Unified Port District (District) is planning a wetland mitigation bank for the Pond 20 site, located in South San Diego Bay in San Diego, CA. The District engaged Great Ecology to design the mitigation bank. As part of a previously completed feasibility study, Great Ecology created a conceptual design for an 83.5-acre mitigation bank on Sub-parcel B (Site; FIGURE 1). The Site currently consists of largely barren upland open space resulting from its historic use as a salt evaporator pond. The conceptual design includes proposed channels that re-establish tidal connections and excavation of the Site to elevations appropriate to support the establishment of tidal wetlands. Preliminary estimates indicate a significant volume of soil/sediment (between approximately 100,000 and 250,000 cubic yards) will be excavated and either relocated onsite or exported offsite for reuse.

1.1 Document Purpose

This Sampling and Analysis Plan (SAP) was prepared by Great Ecology to outline our sampling and analysis approach. The analysis will characterize the materials, document soil/sediment characteristics, and describe anticipated post-excavation surface conditions (or z-layer conditions) to inform the design process.

This SAP was prepared in accordance with guidance provided by the Southern California Dredge Material Management Team (DMMT) of regulatory agencies, which include the U.S. Army Corps of Engineers, the Environmental Protection Agency (EPA), the California Coastal Commission, and the Regional Water Quality Control Board. Although the final deposition site for excess materials is currently unknown, we anticipate a combination of DMMT agencies will have a role in the project permitting process.

2 SITE CONTEXT

2.1 Geologic, Topographic, and Hydrogeologic Conditions

The Site is located within the western Peninsular Range Geomorphic Province of Southern California, which stretches 900 miles from the Los Angeles Basin and the Transverse Ranges to the southern end of Baja California (Norris and Webb 1990).

The Site consists primarily of a low diked area, which is hydrologically isolated from the Nestor Creek and Otay River systems. Based on historical survey information, and to be verified by pending topographic survey data, the approximate elevation of the area within the dike ranges from approximately 4.5 to 11.5 feet above mean lower low water (MLLW; 1988 North American Vertical

Datum [NAVD88]). The proposed average restoration target elevations range from -0.5 to 16.2 feet MLLW (NAVD88), with the majority of restored habitat below 7.0 feet MLLW.

The Site lies within the Otay Hydrologic Unit, a watershed covering 154 square miles that is drained by the Otay River and its tributaries. The Otay River flows east to west toward San Diego Bay. The Site is located adjacent to Nestor Creek, and includes a tidal channel just upstream of the mouth of the Otay River where it meets San Diego Bay (FIGURE 1). The Site soils/sediments subject to this investigation are in the upland portion of the Site, and from the existing surface elevation to the proposed finished grade.

2.2 Field and Database Reconnaissance

Field reconnaissance has indicated no history of spills or releases of hazardous materials, nor any visual indications of soil degradation (e.g., staining from hydrocarbons).

3 METHODOLOGY

3.1 Objectives and Approach

This sampling and analysis effort includes three distinct objectives:

1. Characterize the post-excavation (or z-layer) surface for soil structure parameters;
2. Characterize the post-excavation (or z-layer) for plant growth characteristics; and
3. Conduct a screening-level assessment of anticipated excavation spoils (cut).

3.2 Soil/Sediment Sampling Protocol

The sampling protocol will employ a hand auger team to sample four locations (FIGURE 2). Clean plastic sheeting (e.g., Visqueen) will be used to establish a zone for equipment mobilization and for sample handling. Hand auger progress will be monitored and logged by staff under the supervision of a California-licensed geologist or engineer.

Materials will be stockpiled on the surface during excavation for subsequent subsampling with the exception of the z-layer, which will be subsampled immediately upon reaching target depth to preserve the best percent moisture test conditions. Archive samples may be collected if warranted by field conditions.

Sampling at each location will result in two samples: a z-layer sample, which will receive comprehensive analysis, and a composite of the overlying soils/sediments, which will be tested for an abbreviated list of analytes limited to conventional, metals, and organic compound analyses.

Borings will not be tested at a scale finer than two feet (materials will be logged at an appropriate scale). If horizons less than two feet in length are observed to exhibit unexpected or unusual characteristics (e.g., hydrocarbon staining), those soils/sediments will be sampled and at minimum archived for potential analysis.

3.3 Soil/Sediment Sample Analysis

Samples collected during the site investigation will be analyzed by a National Environmental Laboratory Accreditation Program (NELAP) certified laboratory using EPA and other standard methods of analysis (e.g., ASTM International). Analyses are focused on four primary indicators:

- Conventional descriptive analyses;
- Soil/sediment characteristics;
- Metals; and
- Organic pollutants.

Respective methods, method publications, and target analytical concentrations are detailed in TABLE 1. The table is subject to modification based on ongoing review; duplication of methods by different laboratories will be avoided if independent testing is necessary.

3.4 Sample Management and Shipment

Chain of custody documentation will serve as a tracking tool to ensure proper analyses are undertaken in accordance with this plan. Chain of custody documentation will accompany iced coolers when transported to the laboratory, and during any subsequent transfer. All samples will be packed and shipped to the laboratory in such a manner as to prevent loss of sample due to breakage, leaks, or cross-contamination. The transfer from the field team to the laboratory will occur at the end of the sampling period, and the Great Ecology field coordinator will be responsible for completing chain of custody documentation for all samples prior to their shipment to the laboratory. The laboratory will be instructed to homogenize samples prior to collection of aliquots for specific analyses.

Upon collection, each sample container will be labeled with water-resistant ink. The sample label information will include the project name, a unique sample identification number (e.g., “P20-1”), sampling date and time, and the sampler's initials. The unique sample identification number will, at minimum, include information corresponding to the boring number and sample horizon or composite nature.

Sample containers for chemical analysis will be labeled, placed in freezer bags, if needed, and immediately placed on bagged ice in a cooler. Additional bagged ice will be placed over the top of the samples for shipment/transport as needed.

Great Ecology will make arrangements to ensure the samples are delivered within an appropriate time frame for fixed laboratory analysis.

TABLE 1 CONVENTIONAL, GEOTECHNICAL, AND ANALYTICAL TESTING ANALYSES

Parameter	Method	Procedure/ Specification	Soil/Sediment Target Reporting Limits[a]
CONVENTIONAL ANALYSES			
Grain Size	ASTM D4464M	Sieve/Optical	0.1 g
Percent Solids	SM 2540B[h]	Gravimetric	0.1 percent
TOC	USEPA 9060[i]	Combustion	0.1 percent
Total Sulfides	USEPA 376.2M[h]	Titrametric	0.1 mg/kg
Dissolved Sulfides	USEPA 376.2M[h]	Titrametric	0.1 mg/kg
GEOTECHNICAL CHARACTERISTICS			
Plasticity Index	ASTM D4318	Atterberg Limit	-
In-Situ Moisture	ASTM D2937)	Gravimetric	-
Shear Strength	ASTM D2166	Unconfined Compressure	-
Grain Size	ASTM D422	Sieve/Hydrometer	0.1 g
METALS			
As, Cd, Cr, Cu, Pb, Ni, Se, Ag	USEPA 6020[i]	ICP-MS	0.1 mg/kg
Zn	USEPA 6020[i]	ICP-MS	1.0 mg/kg
Hg	USEPA 7471A[i]	GFAAS	0.02 mg/kg
ORGANICS			
TRPH	USEPA 418.1M[h]	IR Spectroscopy	1.0 mg/kg
Pesticides[b]	USEPA 8081A[i]	GC/ECD	2-20 μg/kg
PCBs[c]	USEPA 8082[i]	GC/ECD	10 μg/kg
PAHs[d]	USEPA 8270C[i]	GC/MS SIM	20 μg/kg
PLANTABILITY ANALYSES			
Various, by Agricultural Laboratory – salinity, sodium adsorption ratio (SAR), soluble cations, sulfate, boron, pH, and qualitative lime.			

[a] Target reporting limits provided by Calscience Environmental Laboratories
[b] Includes 2,4- and 4,4- isomers of DDD, DDE, and DDT; α–, β–, δ–, and γ-BHC; chlordane; dieldrin; endosulfan I and II; endosulfan sulfate; endrin and endrin aldehyde; heptachlor and heptachlor epoxide; methoxychlor; and toxaphene.
[c] Includes congeners and Aroclors 1016, 1221, 1232, 1242, 1248, 1254, 1260, and 1262.
[d] Includes Low Molecular Weight PAHs (naphthylene, acenaphthylene, acenaphthene, fluorine, and phenanthrene) and High Molecular Weight PAHs (fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b,k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-c,d)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene).
[h] *Standard Methods for the Examination of Water and Wastewater*, 19th Edition (APHA, 1995)
[i] SW-846. Test methods for Evaluating Solid Waste, Physical/Chemical Methods (USEPA 1986-1996)
Mass Units: kg – kilogram, g – gram, mg – milligram, μg – microgram, ng – nanogram L – liter
ASTM – American Society for Testing & Materials
TOC – total organic carbon
PAH – polycyclic aromatic hydrocarbon
PCB – polychlorinated biphenyl
TRPH – total recoverable petroleum hydrocarbons
NA – not applicable
ICPMS – inductively coupled plasma mass spectroscopy
IR – infrared
GFAAS – graphite furnace atomic absorption spectroscopy
GC/ECD – gas chromatography/electron capture dissociation method
GC/MS SIM – gas chromatography/mass spectroscopy selective ion monitoring method
GC/FPD – gas chromatography/flame photometric detection method

4 REPORTING

A final report will document the above investigation and be supported by tables, figures, and appendices, as appropriate. The report will characterize the Site soil/sediment, describe its chemical characteristics, and if feasible given boring depths, identify underlying native soil conditions and estimate the vertical extent and volume of fill material.

5 OTHER INVESTIGATION ACTIVITIES

5.1 Photographs

Photographs will be taken of the sampling locations and surrounding site to document the sampling areas, use of field equipment, and related activities.

5.2 Boring Logs

Boring logs will be generated for each boring completed. Boring logs will document the depth below ground surface from which sample volumes are extracted. The logs will include the date, the total depth, the depth at which groundwater was encountered (if any), and the soil type in accordance with the Unified Soil Classification System. The logs will also include observations regarding soil discoloration and/or odors in ambient air, and corresponding sample identifiers.

5.3 Site Control

To avoid open boreholes at the site, with the attendant safety hazards, the boreholes will be backfilled with excavated materials. Great Ecology appreciates that spoil from the borings could be considered "investigation-derived waste," which typically would be containerized and transported offsite for disposal. However, there is no indication that the material is hazardous waste or could pose any kind of health issue and, as a result, materials will be returned to the boring holes.

5.4 Permitting and Utility Clearance

The County of San Diego, Department of Environmental Health (SDCoDEH) requires permits for soil borings to depths greater than 20 feet below ground surface; our borings will be well above this threshold and permits are therefore not needed. As required by law, Underground Service Alert of Southern California (DigAlert) will be notified of the planned investigation so that the appropriate utility companies have the opportunity to respond and check for conflicts.

5.5 Health and Safety Plan (HASP)

The proposed investigation will be conducted in accordance with a site-specific HASP. The HASP will describe the site-specific chemical and physical hazards that may be encountered, as well as "generic" hazards associated with working in proximity to trenching, drilling, and other equipment. The HASP will specify the minimum health and safety procedures and measures to eliminate or minimize site-specific and generic hazards. In addition to preparing onsite workers and management for the anticipated potential hazards, the HASP will enable workers and management to respond to changing conditions and make professional judgments regarding the interpretation of subsurface assessment data and related control measures. Specifically, the HASP will:

- Inform all field personnel, contractors, subcontractors, and visitors of the potential hazards associated with the work to be performed at the site; and
- Identify the minimum precautionary measures and personal protective equipment.

Field personnel will be required to read, understand, and follow the HASP in the field. Subcontractors must also follow the HASP or follow their own health and safety procedures, provided these are at least as stringent.

Prior to any field work during which exposure to hazardous conditions could occur, contractor and subcontractor personnel will be required to sign a HASP review form as an acknowledgement of their understanding of its contents and as an agreement to follow its procedures and guidance. Visitors to the Site will be familiarized with the HASP and will be required to sign a HASP review form. A copy of the HASP will be available onsite while soil/sediment sampling work is in progress.

5.6 Anticipated Schedule

The project team anticipates completing field work associated with soil and soil/sediment sampling and investigation between January 25 and February 10, 2017. Reporting is anticipated to be completed and delivered within 45 days of completion of field activities.

6 References

California Coastal Commission. 2013. Condition Compliance for CDP No. E-06-013, Special Condition 8 – Poseidon Resources (Channelside), LLC. Agenda item W14a. November 22.

Norris, R.M., and R.W. Webb. 1990. *Geology of California*. 2nd edition, John Wiley. New York.

POND 20 SUBPARCELS

SAN DIEGO UNIFIED PORT DISTRICT

FIGURE 1

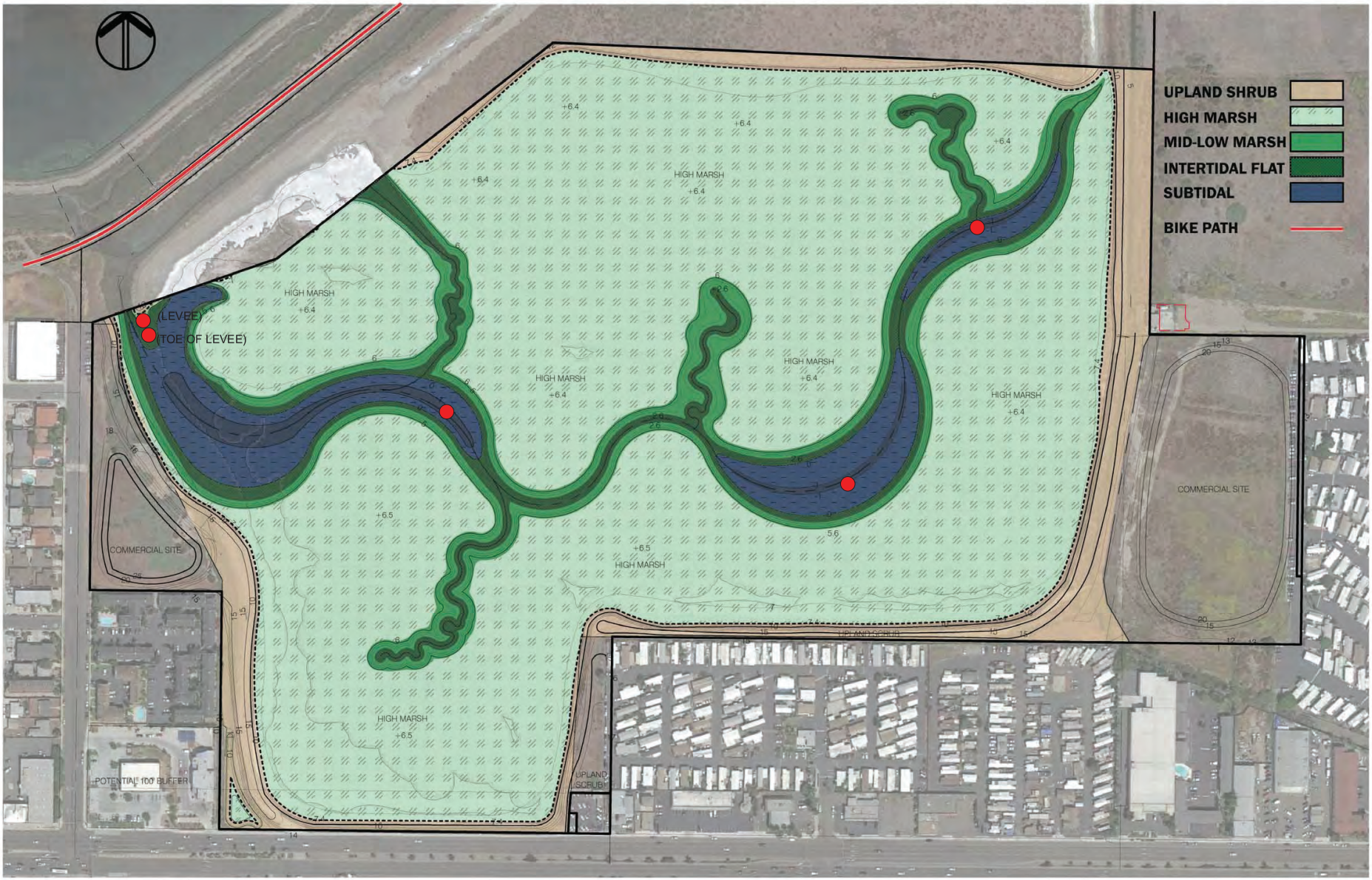
0 0.125 0.25 Miles

N

1:4,800

NAD 83 CALIFORNIA STATE PLANE FIPS IV

GREATecology
ENVIRONMENT • DESIGN



POND 20 MITIGATION DESIGN *DRAFT*
PLAN VIEW

SAN DIEGO UNIFIED PORT DISTRICT
APRIL 2016

PROPOSED SAMPLING LOCATION (APPROXIMATE)

FIGURE 2
N.T.S

GREATecology
ENVIRONMENT + DESIGN

APPENDIX B: FIELD LOGS

GREAT ecology

SOIL/SEDIMENT COLLECTION FIELD LOG

Pond 20 – Sediment/Soil Investigation		Date: 1/30/17
Latitude: 32° ~~35' 08"~~ NB	Longitude: 117° ~~06' 18"~~ NB	Station ID: P20-1
35' 14.91	06' 18.84"	Arrival Time: 2:30
Sampler Type: **Hand Auger**		Depart Time: 500
Weather: Sunny		Sampler Initials: AT, NB

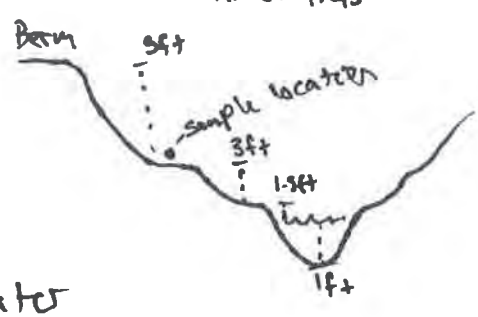
Core Description (grain size, color, odor, sheens, shell hash):

Archive:

Moist
Brown clay, mottling in soil

Moist
Gray clay w/minor lenses of fine sand

Time: 4:45



Photos Taken: (Yes) / No

Sample Inventory:

Comments: No ground water

4 oz:

16 oz: 6 (1T×2, 1M×2, 1Z×2

Bags: 1 (1Z)

Times: T - 1500
M - 1510
Z - 1520

GREATECOLOGY

SOIL/SEDIMENT COLLECTION FIELD LOG

Pond 20 – Sediment/Soil Investigation		Date: 1/30/17
Latitude: ~~32° 35' 9"~~ NB	Longitude: ~~117° 06' 17"~~ NB	Station ID: P20-2
35' 12.99	06' 09.36"	Arrival Time: 12:55
Sampler Type: **Hand Auger**		Depart Time: 1350
Weather: Sunny		Sampler Initials: AT, NB

Core Description (grain size, color, odor, sheens, shell hash):

Archive:

TOP

2T Moist, dark brown sand

1'0"

1'6" (hit water)

Wet, dark brown fine sand

2Z

BOTTOM 3'0"

Photos Taken: Yes / No

Sample Inventory: Comments:

4 oz:

16 oz: 4 (2x2T, [redacted], 2x2Z)

Bags: 1 (2Z)

Times: T - 13:20

[redacted]

Z - 13:40

GREATecology

SOIL/SEDIMENT COLLECTION FIELD LOG

Pond 20 – Sediment/Soil Investigation		Date: 1/30/17
Latitude: ~~32° 35' 11.0"~~ NB	Longitude: ~~117° 05' 59"~~ NB	Station ID: P20-3
35' 10.04"	05' 59.02"	Arrival Time: 11:30
Sampler Type: **Hand Auger**		Depart Time: 12:45
Weather: Sunny		Sampler Initials: AT, NB

Core Description (grain size, color, odor, sheens, shell hash):

Archive:

TOP

3T — Medium tan Sand

3ft (hit water)

Fine tan sand

3M

5ft

3Z — Gray, Medium-Coarse wet Sand w/ Mud

BOTTOM 8ft

Photos Taken: Yes / No

Sample Inventory:

4 oz:

16 oz: 6 (2x3T, 2x3M, 2x3Z

Bags: 1 (3Z)

Comments: Sample located just north of twin cypress trees

Times: T - 12:00
M - 12:10
Z - 12:20

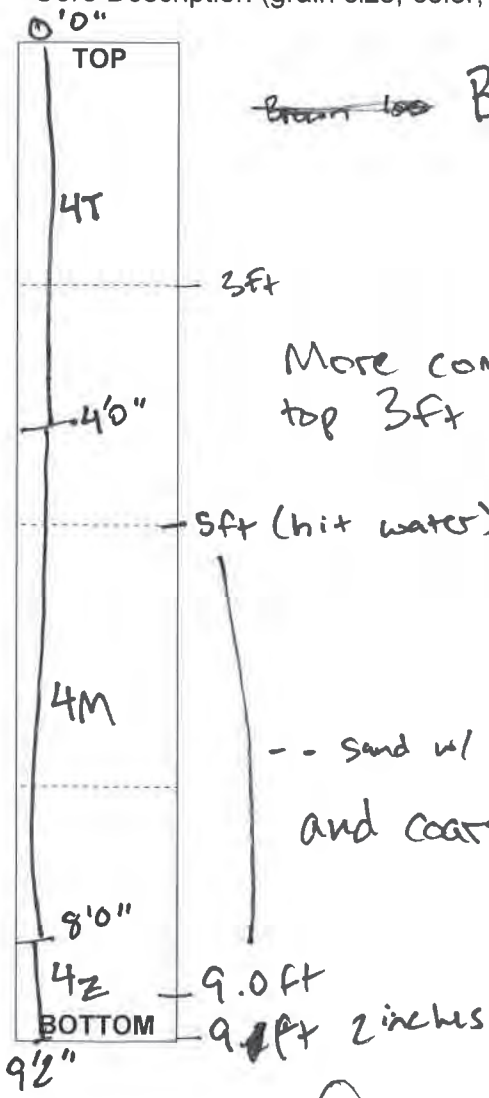
GREATecology

SOIL/SEDIMENT COLLECTION FIELD LOG

Pond 20 – Sediment/Soil Investigation		Date: 1/30/17
Latitude: ~~32° 55' 06.00"~~ NB	Longitude: ~~117° 05' 57.00"~~ NB	Station ID: P20-4
35' 17.09	05' 55.09	Arrival Time: 9:30
Sampler Type: **Hand Auger**		Depart Time: 11:15
Weather: Sunny		Sampler Initials: AT, NB

Core Description (grain size, color, odor, sheens, shell hash):

Archive:



Photos Taken: (Yes) / No

Sample Inventory:

Comments: sample located at transition from transition to brush from iceplant

4 oz:

16 oz: 6 (2x 4T, 2x 4M, 2x 4Z)

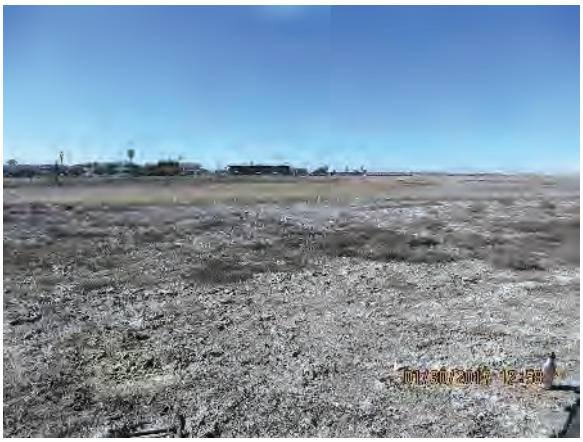
Bags: 1 (4Z)

Times: T - 10:15
M - 10:25
Z - 10:35

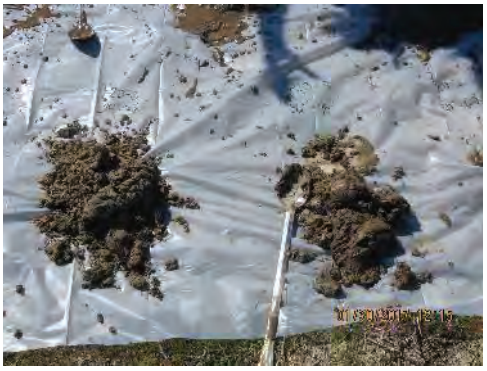
APPENDIX C: PHOTODOCUMENTATION

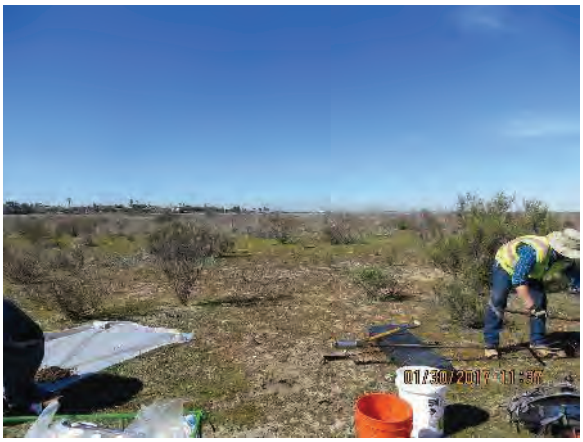
Photodocumentation of Location 1 (view to west, right), and 1-ft strata (left, presented from surface to depth).

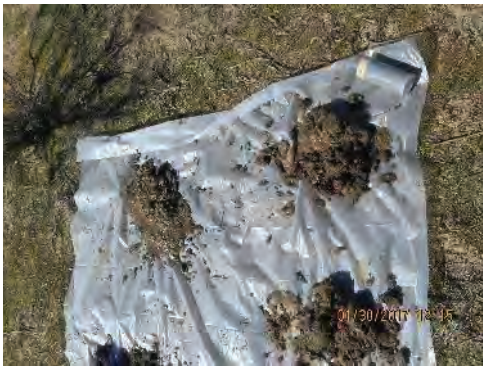
Photodocumentation of Location 2 (view to west, right), and 1-ft strata (left, presented from surface to depth).



Photodocumentation of Location 3 (view to west, right), and 1-ft strata (left, presented from surface to depth).

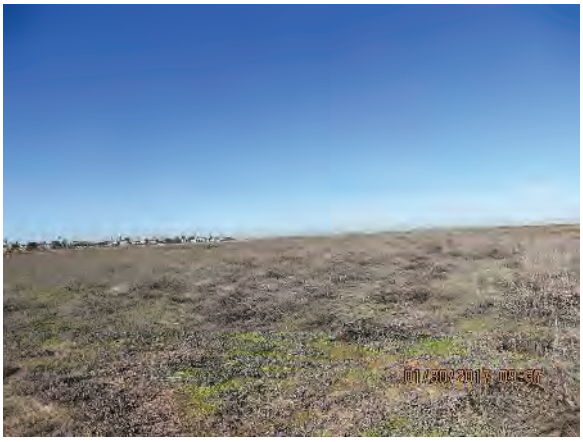






Photodocumentation of Location 4 (view to west, right), and

1-ft strata (left, presented from surface to depth [counter clockwise from lower left]).



APPENDIX D: SOIL ANALYTICAL DATA REPORT

Enthalpy Analytical, Inc.
Formerly Associated Labs
806 N. Batavia - Orange, CA 92868
Tel: (714)771-6900 Fax: (714)538-1209
www.associatedlabs.com
info-sc@enthalpy.com

MONTROSE ENVIRONMENTAL

Client:	Great Ecology	Lab Request:	387148
Address:	2251 San Diego Ave. Suite A218 San Diego, CA 92110	Report Date:	04/21/2017
		Date Received:	01/31/2017
		Client ID:	15631
Attn:	Nick Buhbe		

Comments: Pond 20 Mitigation Bank

All results have been dry weight corrected.

Supplemental Report 1

This laboratory request covers the following listed samples which were analyzed for the parameters indicated on the attached Analytical Result Report. All analyses were conducted using the appropriate methods. Methods accredited by NELAC are indicated on the report. This cover letter is an integral part of the final report.

Sample #	Client Sample ID
387148-001	P20-1T
387148-002	P20-1M
387148-003	P20-1Z
387148-004	P20-2T
387148-005	P20-2Z
387148-006	P20-3T
387148-007	P20-3M
387148-008	P20-3Z
387148-009	P20-4T
387148-010	P20-4M
387148-011	P20-4Z

Thank you for the opportunity to be of service to your company. Please feel free to call if there are any questions regarding this report or if we can be of further service.

Report Review performed by: Winston Yu, Project Manager

NOTE: Unless notified in writing, all samples will be discarded by appropriate disposal protocol 60 days from date received.

The reports of the Enthalpy Analytical, Inc. are confidential property of our clients and may not be reproduced or used for publication in part or in full without our written permission. This is for the mutual protection of the public, our clients, and ourselves.

Matrix:	Solid	**Client:**	Great Ecology	**Collector:**	
Sampled:	01/30/2017 15:00	**Site:**			
Sample #:	**387148-001**	**Client Sample #:**	P20-1T	**Sample Type:**	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Method: CFA S:18.0	Prep Method: Method						QCBatchID:		
See Attached		1							
Method: EPA 6010B *NELAC*	Prep Method: EPA 3050B						QCBatchID:	QC1174933	
Arsenic	**8.50**	1	0.50	1.40	mg/Kg	02/01/17	02/02/17	JN	
Cadmium	**0.72**	1	0.29	0.70	mg/Kg	02/01/17	02/02/17	JN	
Chromium	**30.2**	1	0.18	1.40	mg/Kg	02/01/17	02/02/17	JN	
Copper	**16.2**	1	0.43	1.40	mg/Kg	02/01/17	02/02/17	JN	
Lead	**5.68**	1	0.45	0.70	mg/Kg	02/01/17	02/02/17	JN	
Nickel	**11.7**	1	0.28	2.10	mg/Kg	02/01/17	02/02/17	JN	
Selenium	ND	1	1.01	1.40	mg/Kg	02/01/17	02/02/17	JN	
Silver	ND	1	0.18	0.70	mg/Kg	02/01/17	02/02/17	JN	
Zinc	**66.2**	1	0.39	7.00	mg/Kg	02/01/17	02/02/17	JN	
Method: EPA 7471A *NELAC*	Prep Method: EPA 7471A						QCBatchID:	QC1175029	
Mercury	ND	1	0.03	0.20	mg/Kg	02/03/17	02/03/17	JP	
Method: EPA 8015M	Prep Method:						QCBatchID:	QC1174924	
TPH (C10 to C28)	ND	1		14.00	mg/Kg	02/01/17	02/03/17	LT	
TPH (C28 to C40)	ND	1		28.01	mg/Kg	02/01/17	02/03/17	LT	
TPH (C8 to C10)	ND	1		14.00	mg/Kg	02/01/17	02/03/17	LT	
Method: EPA 8081A *NELAC*	Prep Method: EPA 3545						QCBatchID:	QC1174915	
4,4'-DDD	ND	1	0.94	7.00	ug/Kg	02/01/17	02/02/17	LW	
4,4'-DDE	ND	1	0.80	7.00	ug/Kg	02/01/17	02/02/17	LW	
4,4'-DDT	ND	1	1.33	7.00	ug/Kg	02/01/17	02/02/17	LW	
a-BHC	ND	1	0.28	7.00	ug/Kg	02/01/17	02/02/17	LW	
Aldrin	ND	1	0.48	7.00	ug/Kg	02/01/17	02/02/17	LW	
b-BHC	ND	1	1.68	7.00	ug/Kg	02/01/17	02/02/17	LW	
Chlordane (technical)	ND	1	16.80	70.02	ug/Kg	02/01/17	02/02/17	LW	
d-BHC	ND	1	0.63	7.00	ug/Kg	02/01/17	02/02/17	LW	
Dieldrin	ND	1	0.88	7.00	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan I	ND	1	0.39	7.00	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan II	ND	1	1.12	7.00	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan sulfate	ND	1	2.38	7.00	ug/Kg	02/01/17	02/02/17	LW	
Endrin	ND	1	0.87	7.00	ug/Kg	02/01/17	02/02/17	LW	
Endrin aldehyde	ND	1	1.26	7.00	ug/Kg	02/01/17	02/02/17	LW	
Endrin Ketone	ND	1	1.68	7.00	ug/Kg	02/01/17	02/02/17	LW	
Heptachlor	ND	1	0.62	7.00	ug/Kg	02/01/17	02/02/17	LW	
Heptachlor epoxide	ND	1	0.38	7.00	ug/Kg	02/01/17	02/02/17	LW	
Lindane (Gamma-BHC)	ND	1	0.42	7.00	ug/Kg	02/01/17	02/02/17	LW	
Methoxychlor	ND	1	7.28	14.00	ug/Kg	02/01/17	02/02/17	LW	
Toxaphene	ND	1	16.80	140.04	ug/Kg	02/01/17	02/02/17	LW	

Surrogate	*% Recovery*	*Limits*	*Notes*
Decachlorobiphenyl DCB (SUR)	*106*	*50-150*	
Tetrachloro-m-xylene TCMX (SUR)	*118*	*50-150*	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8082 *NELAC*	Prep Method: EPA 3545						QCBatchID:	QC1174916	
PCB-1016	ND	1	4.20	70.02	ug/Kg	02/01/17	02/02/17	LW	
PCB-1221	ND	1	19.61	70.02	ug/Kg	02/01/17	02/02/17	LW	
PCB-1232	ND	1	13.30	70.02	ug/Kg	02/01/17	02/02/17	LW	
PCB-1242	ND	1	19.61	70.02	ug/Kg	02/01/17	02/02/17	LW	
PCB-1248	ND	1	26.61	70.02	ug/Kg	02/01/17	02/02/17	LW	
PCB-1254	ND	1	28.01	70.02	ug/Kg	02/01/17	02/02/17	LW	
PCB-1260	ND	1	9.66	70.02	ug/Kg	02/01/17	02/02/17	LW	
PCB-1262	ND	1	23.81	70.02	ug/Kg	02/01/17	02/02/17	LW	
PCB-1268	ND	1	12.04	70.02	ug/Kg	02/01/17	02/02/17	LW	

Matrix:	Solid	**Client:**	Great Ecology	**Collector:**	
Sampled:	01/30/2017 15:00	**Site:**			
Sample #:	**387148-001**	**Client Sample #:**	P20-1T	**Sample Type:**	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Surrogate	*% Recovery*			*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*98*			*50-150*					
Method: EPA 8270CM Prep Method: EPA 3545							QCBatchID:		QC1174944
1-Methylnapthalene	ND	1	5.18	14.00	ug/Kg	02/02/17	02/02/17	BB	
2-Methylnaphthalene	ND	1	5.32	14.00	ug/Kg	02/02/17	02/02/17	BB	
Acenaphthene	ND	1	1.96	14.00	ug/Kg	02/02/17	02/02/17	BB	
Acenaphthylene	ND	1	4.62	14.00	ug/Kg	02/02/17	02/02/17	BB	
Anthracene	ND	1	1.68	14.00	ug/Kg	02/02/17	02/02/17	BB	
Benz(a)anthracene	ND	1	1.54	14.00	ug/Kg	02/02/17	02/02/17	BB	L
Benzo(a)pyrene	ND	1	2.52	14.00	ug/Kg	02/02/17	02/02/17	BB	
Benzo(b)fluoranthene	ND	1	2.38	14.00	ug/Kg	02/02/17	02/02/17	BB	L
Benzo(g,h,i)perylene	ND	1	1.68	14.00	ug/Kg	02/02/17	02/02/17	BB	
Benzo(k)fluoranthene	ND	1	2.38	14.00	ug/Kg	02/02/17	02/02/17	BB	
Chrysene	ND	1	1.16	14.00	ug/Kg	02/02/17	02/02/17	BB	
Dibenz(a,h)anthracene	ND	1	1.96	14.00	ug/Kg	02/02/17	02/02/17	BB	
Fluoranthene	ND	1	1.18	14.00	ug/Kg	02/02/17	02/02/17	BB	
Fluorene	ND	1	1.82	14.00	ug/Kg	02/02/17	02/02/17	BB	
Indeno(1,2,3-cd)pyrene	ND	1	2.52	14.00	ug/Kg	02/02/17	02/02/17	BB	
Naphthalene	ND	1	5.60	14.00	ug/Kg	02/02/17	02/02/17	BB	
Phenanthrene	ND	1	1.96	14.00	ug/Kg	02/02/17	02/02/17	BB	
Pyrene	ND	1	1.09	14.00	ug/Kg	02/02/17	02/02/17	BB	
Surrogate	*% Recovery*			*Limits*	*Notes*				
2-Fluorobiphenyl (SUR)	*75*			*30-120*					
Nitrobenzene-d5 (SUR)	*79*			*27-125*					
p-Terphenyl (SUR)	*114*			*33-155*					
Method: EPA 9034 *NELAC* Prep Method: See Attached							QCBatchID:		
See Attached		1							
Method: SM 2540-G Prep Method: Method							QCBatchID:		QC1175058
Total Solids	**71.4**	1			%	02/02/17	02/02/17	TP	

Matrix:	Solid	**Client:**	Great Ecology	**Collector:**	Client
Sampled:	01/30/2017 15:10	**Site:**			
Sample #:	387148-002	**Client Sample #:**	P20-1M	**Sample Type:**	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Method: CFA S:18.0	Prep Method: Method						QCBatchID:		
See Attached		1							
Method: EPA 6010B *NELAC*	Prep Method: EPA 1312/3010A						QCBatchID:	QC1177607	
Arsenic	**0.013**	1	0.004	0.01	mg/L	04/20/17	04/21/17	KLN	
Method: EPA 6010B *NELAC*	Prep Method: EPA 3050B						QCBatchID:	QC1174933	
Arsenic	**10.7**	1	0.59	1.63	mg/Kg	02/01/17	02/02/17	JN	
Cadmium	**1.07**	1	0.34	0.82	mg/Kg	02/01/17	02/03/17	JN	
Chromium	**41.3**	1	0.21	1.63	mg/Kg	02/01/17	02/02/17	JN	
Copper	**21.8**	1	0.51	1.63	mg/Kg	02/01/17	02/02/17	JN	
Lead	**5.49**	1	0.52	0.82	mg/Kg	02/01/17	02/02/17	JN	
Nickel	**16.0**	1	0.33	2.45	mg/Kg	02/01/17	02/02/17	JN	
Selenium	ND	1	1.18	1.63	mg/Kg	02/01/17	02/02/17	JN	
Silver	ND	1	0.21	0.82	mg/Kg	02/01/17	02/02/17	JN	
Zinc	**85.7**	1	0.46	8.17	mg/Kg	02/01/17	02/02/17	JN	
Method: EPA 7471A *NELAC*	Prep Method: EPA 7471A						QCBatchID:	QC1175029	
Mercury	**0.04 J**	1	0.03	0.23	mg/Kg	02/03/17	02/03/17	JP	J
Method: EPA 8015M	Prep Method:						QCBatchID:	QC1174924	
TPH (C10 to C28)	ND	1		16.33	mg/Kg	02/01/17	02/03/17	LT	
TPH (C28 to C40)	ND	1		32.66	mg/Kg	02/01/17	02/03/17	LT	
TPH (C8 to C10)	ND	1		16.33	mg/Kg	02/01/17	02/03/17	LT	
Method: EPA 8081A *NELAC*	Prep Method: EPA 3545						QCBatchID:	QC1174915	
4,4'-DDD	ND	1	1.09	8.17	ug/Kg	02/01/17	02/02/17	LW	
4,4'-DDE	ND	1	0.93	8.17	ug/Kg	02/01/17	02/02/17	LW	
4,4'-DDT	ND	1	1.55	8.17	ug/Kg	02/01/17	02/02/17	LW	
a-BHC	ND	1	0.33	8.17	ug/Kg	02/01/17	02/02/17	LW	
Aldrin	ND	1	0.56	8.17	ug/Kg	02/01/17	02/02/17	LW	
b-BHC	ND	1	1.96	8.17	ug/Kg	02/01/17	02/02/17	LW	
Chlordane (technical)	ND	1	19.60	81.66	ug/Kg	02/01/17	02/02/17	LW	
d-BHC	ND	1	0.73	8.17	ug/Kg	02/01/17	02/02/17	LW	
Dieldrin	ND	1	1.03	8.17	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan I	ND	1	0.46	8.17	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan II	ND	1	1.31	8.17	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan sulfate	ND	1	2.78	8.17	ug/Kg	02/01/17	02/02/17	LW	
Endrin	ND	1	1.01	8.17	ug/Kg	02/01/17	02/02/17	LW	
Endrin aldehyde	ND	1	1.47	8.17	ug/Kg	02/01/17	02/02/17	LW	
Endrin Ketone	ND	1	1.96	8.17	ug/Kg	02/01/17	02/02/17	LW	
Heptachlor	ND	1	0.72	8.17	ug/Kg	02/01/17	02/02/17	LW	
Heptachlor epoxide	ND	1	0.44	8.17	ug/Kg	02/01/17	02/02/17	LW	
Lindane (Gamma-BHC)	ND	1	0.49	8.17	ug/Kg	02/01/17	02/02/17	LW	
Methoxychlor	ND	1	8.49	16.33	ug/Kg	02/01/17	02/02/17	LW	
Toxaphene	ND	1	19.60	163.32	ug/Kg	02/01/17	02/02/17	LW	

Surrogate	*% Recovery*	*Limits*	*Notes*
Decachlorobiphenyl DCB (SUR)	*84*	*50-150*	
Tetrachloro-m-xylene TCMX (SUR)	*131*	*50-150*	

Method: EPA 8082 *NELAC*	Prep Method: EPA 3545						QCBatchID:	QC1174916	
PCB-1016	ND	1	4.90	81.66	ug/Kg	02/01/17	02/02/17	LW	
PCB-1221	ND	1	22.86	81.66	ug/Kg	02/01/17	02/02/17	LW	
PCB-1232	ND	1	15.52	81.66	ug/Kg	02/01/17	02/02/17	LW	
PCB-1242	ND	1	22.86	81.66	ug/Kg	02/01/17	02/02/17	LW	
PCB-1248	ND	1	31.03	81.66	ug/Kg	02/01/17	02/02/17	LW	
PCB-1254	ND	1	32.66	81.66	ug/Kg	02/01/17	02/02/17	LW	
PCB-1260	ND	1	11.27	81.66	ug/Kg	02/01/17	02/02/17	LW	

Matrix:	Solid	**Client:**	Great Ecology	**Collector:**	Client
Sampled:	01/30/2017 15:10	**Site:**			
Sample #:	**387148-002**	**Client Sample #:**	P20-1M	**Sample Type:**	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
PCB-1262	ND	1	27.76	81.66	ug/Kg	02/01/17	02/02/17	LW	
PCB-1268	ND	1	14.05	81.66	ug/Kg	02/01/17	02/02/17	LW	

Surrogate	*% Recovery*	*Limits*	*Notes*
Decachlorobiphenyl DCB (SUR)	*77*	*50-150*	

Method: EPA 8270CM Prep Method: EPA 3545 QCBatchID: QC1174944

1-Methylnapthalene	ND	1	6.04	16.33	ug/Kg	02/02/17	02/02/17	BB	
2-Methylnaphthalene	ND	1	6.21	16.33	ug/Kg	02/02/17	02/02/17	BB	
Acenaphthene	ND	1	2.29	16.33	ug/Kg	02/02/17	02/02/17	BB	
Acenaphthylene	ND	1	5.39	16.33	ug/Kg	02/02/17	02/02/17	BB	
Anthracene	ND	1	1.96	16.33	ug/Kg	02/02/17	02/02/17	BB	
Benz(a)anthracene	ND	1	1.80	16.33	ug/Kg	02/02/17	02/02/17	BB	L
Benzo(a)pyrene	ND	1	2.94	16.33	ug/Kg	02/02/17	02/02/17	BB	
Benzo(b)fluoranthene	ND	1	2.78	16.33	ug/Kg	02/02/17	02/02/17	BB	L
Benzo(g,h,i)perylene	ND	1	1.96	16.33	ug/Kg	02/02/17	02/02/17	BB	
Benzo(k)fluoranthene	ND	1	2.78	16.33	ug/Kg	02/02/17	02/02/17	BB	
Chrysene	ND	1	1.36	16.33	ug/Kg	02/02/17	02/02/17	BB	
Dibenz(a,h)anthracene	ND	1	2.29	16.33	ug/Kg	02/02/17	02/02/17	BB	
Fluoranthene	ND	1	1.37	16.33	ug/Kg	02/02/17	02/02/17	BB	
Fluorene	ND	1	2.12	16.33	ug/Kg	02/02/17	02/02/17	BB	
Indeno(1,2,3-cd)pyrene	ND	1	2.94	16.33	ug/Kg	02/02/17	02/02/17	BB	
Naphthalene	ND	1	6.53	16.33	ug/Kg	02/02/17	02/02/17	BB	
Phenanthrene	ND	1	2.29	16.33	ug/Kg	02/02/17	02/02/17	BB	
Pyrene	ND	1	1.27	16.33	ug/Kg	02/02/17	02/02/17	BB	

Surrogate	*% Recovery*	*Limits*	*Notes*
2-Fluorobiphenyl (SUR)	*67*	*30-120*	
Nitrobenzene-d5 (SUR)	*72*	*27-125*	
p-Terphenyl (SUR)	*108*	*33-155*	

Method: EPA 9034 *NELAC* Prep Method: See Attached QCBatchID:

See Attached		1							

Method: SM 2540-G Prep Method: Method QCBatchID: QC1175058

Total Solids	**61.2**	1			%	02/02/17	02/02/17	TP	

Matrix:	Solid	**Client:**	Great Ecology	**Collector:**	Client
Sampled:	01/30/2017 15:20	**Site:**			
Sample #:	**387148-003**	**Client Sample #:**	P20-1Z	**Sample Type:**	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Method: CFA S:18.0	Prep Method: Method						QCBatchID:		
See Attached		1							
Method: EPA 6010B *NELAC*	Prep Method: EPA 3050B						QCBatchID:	QC1174933	
Arsenic	**7.98**	1	0.53	1.46	mg/Kg	02/01/17	02/02/17	JN	
Cadmium	**0.89**	1	0.31	0.73	mg/Kg	02/01/17	02/03/17	JN	
Chromium	**23.9**	1	0.19	1.46	mg/Kg	02/01/17	02/02/17	JN	
Copper	**17.4**	1	0.45	1.46	mg/Kg	02/01/17	02/02/17	JN	
Lead	**5.83**	1	0.47	0.73	mg/Kg	02/01/17	02/02/17	JN	
Nickel	**11.3**	1	0.29	2.19	mg/Kg	02/01/17	02/02/17	JN	
Selenium	ND	1	1.05	1.46	mg/Kg	02/01/17	02/02/17	JN	
Silver	ND	1	0.19	0.73	mg/Kg	02/01/17	02/02/17	JN	
Zinc	**65.4**	1	0.41	7.29	mg/Kg	02/01/17	02/02/17	JN	
Method: EPA 7471A *NELAC*	Prep Method: EPA 7471A						QCBatchID:	QC1175029	
Mercury	ND	1	0.03	0.20	mg/Kg	02/03/17	02/03/17	JP	
Method: EPA 8015M	Prep Method:						QCBatchID:	QC1174924	
TPH (C10 to C28)	ND	1		14.58	mg/Kg	02/01/17	02/03/17	LT	
TPH (C28 to C40)	ND	1		29.17	mg/Kg	02/01/17	02/03/17	LT	
TPH (C8 to C10)	ND	1		14.58	mg/Kg	02/01/17	02/03/17	LT	
Method: EPA 8081A *NELAC*	Prep Method: EPA 3545						QCBatchID:	QC1174915	
4,4'-DDD	ND	1	0.98	7.29	ug/Kg	02/01/17	02/02/17	LW	
4,4'-DDE	ND	1	0.83	7.29	ug/Kg	02/01/17	02/02/17	LW	
4,4'-DDT	ND	1	1.39	7.29	ug/Kg	02/01/17	02/02/17	LW	
a-BHC	ND	1	0.29	7.29	ug/Kg	02/01/17	02/02/17	LW	
Aldrin	ND	1	0.50	7.29	ug/Kg	02/01/17	02/02/17	LW	
b-BHC	ND	1	1.75	7.29	ug/Kg	02/01/17	02/02/17	LW	
Chlordane (technical)	ND	1	17.50	72.92	ug/Kg	02/01/17	02/02/17	LW	
d-BHC	ND	1	0.66	7.29	ug/Kg	02/01/17	02/02/17	LW	
Dieldrin	ND	1	0.92	7.29	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan I	ND	1	0.41	7.29	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan II	ND	1	1.17	7.29	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan sulfate	ND	1	2.48	7.29	ug/Kg	02/01/17	02/02/17	LW	
Endrin	ND	1	0.90	7.29	ug/Kg	02/01/17	02/02/17	LW	
Endrin aldehyde	ND	1	1.31	7.29	ug/Kg	02/01/17	02/02/17	LW	
Endrin Ketone	ND	1	1.75	7.29	ug/Kg	02/01/17	02/02/17	LW	
Heptachlor	ND	1	0.64	7.29	ug/Kg	02/01/17	02/02/17	LW	
Heptachlor epoxide	ND	1	0.39	7.29	ug/Kg	02/01/17	02/02/17	LW	
Lindane (Gamma-BHC)	ND	1	0.44	7.29	ug/Kg	02/01/17	02/02/17	LW	
Methoxychlor	ND	1	7.58	14.58	ug/Kg	02/01/17	02/02/17	LW	
Toxaphene	ND	1	17.50	145.84	ug/Kg	02/01/17	02/02/17	LW	

Surrogate	*% Recovery*	*Limits*	*Notes*
Decachlorobiphenyl DCB (SUR)	*93*	*50-150*	
Tetrachloro-m-xylene TCMX (SUR)	*118*	*50-150*	

Method: EPA 8082 *NELAC*	Prep Method: EPA 3545						QCBatchID:	QC1174916	
PCB-1016	ND	1	4.38	72.92	ug/Kg	02/01/17	02/02/17	LW	
PCB-1221	ND	1	20.42	72.92	ug/Kg	02/01/17	02/02/17	LW	
PCB-1232	ND	1	13.85	72.92	ug/Kg	02/01/17	02/02/17	LW	
PCB-1242	ND	1	20.42	72.92	ug/Kg	02/01/17	02/02/17	LW	
PCB-1248	ND	1	27.71	72.92	ug/Kg	02/01/17	02/02/17	LW	
PCB-1254	ND	1	29.17	72.92	ug/Kg	02/01/17	02/02/17	LW	
PCB-1260	ND	1	10.06	72.92	ug/Kg	02/01/17	02/02/17	LW	
PCB-1262	ND	1	24.79	72.92	ug/Kg	02/01/17	02/02/17	LW	
PCB-1268	ND	1	12.54	72.92	ug/Kg	02/01/17	02/02/17	LW	

Matrix:	Solid	**Client:**	Great Ecology	**Collector:**	Client
Sampled:	01/30/2017 15:20	**Site:**			
Sample #:	**387148-003**	**Client Sample #:**	P20-1Z	**Sample Type:**	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Surrogate	*% Recovery*			*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*90*			*50-150*					
Method: EPA 8270CM Prep Method: EPA 3545							QCBatchID:		QC1174944
1-Methylnapthalene	ND	1	5.40	14.58	ug/Kg	02/02/17	02/02/17	BB	
2-Methylnaphthalene	ND	1	5.54	14.58	ug/Kg	02/02/17	02/02/17	BB	
Acenaphthene	ND	1	2.04	14.58	ug/Kg	02/02/17	02/02/17	BB	
Acenaphthylene	ND	1	4.81	14.58	ug/Kg	02/02/17	02/02/17	BB	
Anthracene	ND	1	1.75	14.58	ug/Kg	02/02/17	02/02/17	BB	
Benz(a)anthracene	**19**	1	1.60	14.58	ug/Kg	02/02/17	02/02/17	BB	L
Benzo(a)pyrene	**16**	1	2.63	14.58	ug/Kg	02/02/17	02/02/17	BB	
Benzo(b)fluoranthene	ND	1	2.48	14.58	ug/Kg	02/02/17	02/02/17	BB	L
Benzo(g,h,i)perylene	ND	1	1.75	14.58	ug/Kg	02/02/17	02/02/17	BB	
Benzo(k)fluoranthene	ND	1	2.48	14.58	ug/Kg	02/02/17	02/02/17	BB	
Chrysene	**22**	1	1.21	14.58	ug/Kg	02/02/17	02/02/17	BB	
Dibenz(a,h)anthracene	ND	1	2.04	14.58	ug/Kg	02/02/17	02/02/17	BB	
Fluoranthene	ND	1	1.23	14.58	ug/Kg	02/02/17	02/02/17	BB	
Fluorene	ND	1	1.90	14.58	ug/Kg	02/02/17	02/02/17	BB	
Indeno(1,2,3-cd)pyrene	ND	1	2.63	14.58	ug/Kg	02/02/17	02/02/17	BB	
Naphthalene	ND	1	5.83	14.58	ug/Kg	02/02/17	02/02/17	BB	
Phenanthrene	ND	1	2.04	14.58	ug/Kg	02/02/17	02/02/17	BB	
Pyrene	ND	1	1.14	14.58	ug/Kg	02/02/17	02/02/17	BB	
Surrogate	*% Recovery*			*Limits*	*Notes*				
2-Fluorobiphenyl (SUR)	*68*			*30-120*					
Nitrobenzene-d5 (SUR)	*72*			*27-125*					
p-Terphenyl (SUR)	*104*			*33-155*					
Method: EPA 9034 *NELAC* Prep Method: See Attached							QCBatchID:		
See Attached		1							
Method: SM 2540-G Prep Method: Method							QCBatchID:		QC1175058
Total Solids	**68.6**	1			%	02/02/17	02/02/17	TP	

Matrix:	Solid	**Client:**	Great Ecology	**Collector:**	Client
Sampled:	01/30/2017 13:20	**Site:**			
Sample #:	**387148-004**	**Client Sample #:**	P20-2T	**Sample Type:**	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Method: CFA S:18.0	Prep Method: Method						QCBatchID:		
See Attached		1							
Method: EPA 6010B *NELAC*	Prep Method: EPA 3050B						QCBatchID:	QC1174933	
Arsenic	**3.65**	1	0.46	1.26	mg/Kg	02/01/17	02/02/17	JN	
Cadmium	ND	1	0.27	0.63	mg/Kg	02/01/17	02/02/17	JN	
Chromium	**8.82**	1	0.16	1.26	mg/Kg	02/01/17	02/02/17	JN	
Copper	**6.07**	1	0.39	1.26	mg/Kg	02/01/17	02/02/17	JN	
Lead	**2.01**	1	0.40	0.63	mg/Kg	02/01/17	02/02/17	JN	
Nickel	**2.84**	1	0.25	1.90	mg/Kg	02/01/17	02/02/17	JN	
Selenium	ND	1	0.91	1.26	mg/Kg	02/01/17	02/02/17	JN	
Silver	**0.19 J**	1	0.16	0.63	mg/Kg	02/01/17	02/02/17	JN	J
Zinc	**22.0**	1	0.35	6.32	mg/Kg	02/01/17	02/02/17	JN	
Method: EPA 7471A *NELAC*	Prep Method: EPA 7471A						QCBatchID:	QC1175029	
Mercury	ND	1	0.03	0.18	mg/Kg	02/03/17	02/03/17	JP	
Method: EPA 8015M	Prep Method:						QCBatchID:	QC1174924	
TPH (C10 to C28)	ND	1		12.64	mg/Kg	02/01/17	02/03/17	LT	
TPH (C28 to C40)	ND	1		25.28	mg/Kg	02/01/17	02/03/17	LT	
TPH (C8 to C10)	ND	1		12.64	mg/Kg	02/01/17	02/03/17	LT	
Method: EPA 8081A *NELAC*	Prep Method: EPA 3545						QCBatchID:	QC1174915	
4,4'-DDD	ND	1	0.85	6.32	ug/Kg	02/01/17	02/02/17	LW	
4,4'-DDE	ND	1	0.72	6.32	ug/Kg	02/01/17	02/02/17	LW	
4,4'-DDT	ND	1	1.20	6.32	ug/Kg	02/01/17	02/02/17	LW	
a-BHC	ND	1	0.25	6.32	ug/Kg	02/01/17	02/02/17	LW	
Aldrin	ND	1	0.43	6.32	ug/Kg	02/01/17	02/02/17	LW	
b-BHC	ND	1	1.52	6.32	ug/Kg	02/01/17	02/02/17	LW	
Chlordane (technical)	ND	1	15.17	63.20	ug/Kg	02/01/17	02/02/17	LW	
d-BHC	ND	1	0.57	6.32	ug/Kg	02/01/17	02/02/17	LW	
Dieldrin	ND	1	0.80	6.32	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan I	ND	1	0.35	6.32	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan II	ND	1	1.01	6.32	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan sulfate	ND	1	2.15	6.32	ug/Kg	02/01/17	02/02/17	LW	
Endrin	ND	1	0.78	6.32	ug/Kg	02/01/17	02/02/17	LW	
Endrin aldehyde	ND	1	1.14	6.32	ug/Kg	02/01/17	02/02/17	LW	
Endrin Ketone	ND	1	1.52	6.32	ug/Kg	02/01/17	02/02/17	LW	
Heptachlor	ND	1	0.56	6.32	ug/Kg	02/01/17	02/02/17	LW	
Heptachlor epoxide	ND	1	0.34	6.32	ug/Kg	02/01/17	02/02/17	LW	
Lindane (Gamma-BHC)	ND	1	0.38	6.32	ug/Kg	02/01/17	02/02/17	LW	
Methoxychlor	ND	1	6.57	12.64	ug/Kg	02/01/17	02/02/17	LW	
Toxaphene	ND	1	15.17	126.41	ug/Kg	02/01/17	02/02/17	LW	

Surrogate	*% Recovery*	*Limits*	*Notes*
Decachlorobiphenyl DCB (SUR)	*88*	*50-150*	
Tetrachloro-m-xylene TCMX (SUR)	*102*	*50-150*	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8082 *NELAC*	Prep Method: EPA 3545						QCBatchID:	QC1174916	
PCB-1016	ND	1	3.79	63.20	ug/Kg	02/01/17	02/02/17	LW	
PCB-1221	ND	1	17.70	63.20	ug/Kg	02/01/17	02/02/17	LW	
PCB-1232	ND	1	12.01	63.20	ug/Kg	02/01/17	02/02/17	LW	
PCB-1242	ND	1	17.70	63.20	ug/Kg	02/01/17	02/02/17	LW	
PCB-1248	ND	1	24.02	63.20	ug/Kg	02/01/17	02/02/17	LW	
PCB-1254	ND	1	25.28	63.20	ug/Kg	02/01/17	02/02/17	LW	
PCB-1260	ND	1	8.72	63.20	ug/Kg	02/01/17	02/02/17	LW	
PCB-1262	ND	1	21.49	63.20	ug/Kg	02/01/17	02/02/17	LW	
PCB-1268	ND	1	10.87	63.20	ug/Kg	02/01/17	02/02/17	LW	

Matrix:	Solid	**Client:**	Great Ecology	**Collector:**	Client
Sampled:	01/30/2017 13:20	**Site:**			
Sample #:	**387148-004**	**Client Sample #:**	P20-2T	**Sample Type:**	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Surrogate	*% Recovery*			*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*91*			*50-150*					
Method: EPA 8270CM Prep Method: EPA 3545							QCBatchID:		QC1174944
1-Methylnapthalene	ND	1	4.68	12.64	ug/Kg	02/02/17	02/02/17	BB	
2-Methylnaphthalene	ND	1	4.80	12.64	ug/Kg	02/02/17	02/02/17	BB	
Acenaphthene	ND	1	1.77	12.64	ug/Kg	02/02/17	02/02/17	BB	
Acenaphthylene	ND	1	4.17	12.64	ug/Kg	02/02/17	02/02/17	BB	
Anthracene	ND	1	1.52	12.64	ug/Kg	02/02/17	02/02/17	BB	
Benz(a)anthracene	ND	1	1.39	12.64	ug/Kg	02/02/17	02/02/17	BB	L
Benzo(a)pyrene	ND	1	2.28	12.64	ug/Kg	02/02/17	02/02/17	BB	
Benzo(b)fluoranthene	ND	1	2.15	12.64	ug/Kg	02/02/17	02/02/17	BB	L
Benzo(g,h,i)perylene	ND	1	1.52	12.64	ug/Kg	02/02/17	02/02/17	BB	
Benzo(k)fluoranthene	ND	1	2.15	12.64	ug/Kg	02/02/17	02/02/17	BB	
Chrysene	ND	1	1.05	12.64	ug/Kg	02/02/17	02/02/17	BB	
Dibenz(a,h)anthracene	ND	1	1.77	12.64	ug/Kg	02/02/17	02/02/17	BB	
Fluoranthene	ND	1	1.06	12.64	ug/Kg	02/02/17	02/02/17	BB	
Fluorene	ND	1	1.64	12.64	ug/Kg	02/02/17	02/02/17	BB	
Indeno(1,2,3-cd)pyrene	ND	1	2.28	12.64	ug/Kg	02/02/17	02/02/17	BB	
Naphthalene	ND	1	5.06	12.64	ug/Kg	02/02/17	02/02/17	BB	
Phenanthrene	ND	1	1.77	12.64	ug/Kg	02/02/17	02/02/17	BB	
Pyrene	ND	1	0.99	12.64	ug/Kg	02/02/17	02/02/17	BB	
Surrogate	*% Recovery*			*Limits*	*Notes*				
2-Fluorobiphenyl (SUR)	*76*			*30-120*					
Nitrobenzene-d5 (SUR)	*83*			*27-125*					
p-Terphenyl (SUR)	*113*			*33-155*					
Method: EPA 9034 *NELAC* Prep Method: See Attached							QCBatchID:		
See Attached		1							
Method: SM 2540-G Prep Method: Method							QCBatchID:		QC1175058
Total Solids	**79.1**	1			%	02/02/17	02/02/17	TP	

Matrix:	Solid	**Client:**	Great Ecology	**Collector:**	Client
Sampled:	01/30/2017 13:40	**Site:**			
Sample #:	**387148-005**	**Client Sample #:**	P20-2Z	**Sample Type:**	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Method: CFA S:18.0	Prep Method: Method						QCBatchID:		
See Attached		1							
Method: EPA 6010B *NELAC*	Prep Method: EPA 1312/3010A						QCBatchID:	QC1177607	
Arsenic	ND	1	0.004	0.01	mg/L	04/20/17	04/21/17	KLN	
Method: EPA 6010B *NELAC*	Prep Method: EPA 3050B						QCBatchID:	QC1174933	
Arsenic	**5.57**	1	0.52	1.43	mg/Kg	02/01/17	02/02/17	JN	
Cadmium	**0.48 J**	1	0.30	0.72	mg/Kg	02/01/17	02/02/17	JN	J
Chromium	**15.8**	1	0.19	1.43	mg/Kg	02/01/17	02/02/17	JN	
Copper	**15.8**	1	0.44	1.43	mg/Kg	02/01/17	02/02/17	JN	
Lead	**3.72**	1	0.46	0.72	mg/Kg	02/01/17	02/02/17	JN	
Nickel	**7.32**	1	0.29	2.15	mg/Kg	02/01/17	02/02/17	JN	
Selenium	ND	1	1.03	1.43	mg/Kg	02/01/17	02/02/17	JN	
Silver	ND	1	0.19	0.72	mg/Kg	02/01/17	02/02/17	JN	
Zinc	**47.8**	1	0.40	7.17	mg/Kg	02/01/17	02/02/17	JN	
Method: EPA 7471A *NELAC*	Prep Method: EPA 7471A						QCBatchID:	QC1175029	
Mercury	ND	1	0.03	0.20	mg/Kg	02/03/17	02/03/17	JP	
Method: EPA 8015M	Prep Method:						QCBatchID:	QC1174924	
TPH (C10 to C28)	ND	1		14.33	mg/Kg	02/01/17	02/03/17	LT	
TPH (C28 to C40)	ND	1		28.67	mg/Kg	02/01/17	02/03/17	LT	
TPH (C8 to C10)	ND	1		14.33	mg/Kg	02/01/17	02/03/17	LT	
Method: EPA 8081A *NELAC*	Prep Method: EPA 3545						QCBatchID:	QC1174915	
4,4'-DDD	ND	1	0.96	7.17	ug/Kg	02/01/17	02/02/17	LW	
4,4'-DDE	ND	1	0.82	7.17	ug/Kg	02/01/17	02/02/17	LW	
4,4'-DDT	ND	1	1.36	7.17	ug/Kg	02/01/17	02/02/17	LW	
a-BHC	ND	1	0.29	7.17	ug/Kg	02/01/17	02/02/17	LW	
Aldrin	ND	1	0.49	7.17	ug/Kg	02/01/17	02/02/17	LW	
b-BHC	ND	1	1.72	7.17	ug/Kg	02/01/17	02/02/17	LW	
Chlordane (technical)	ND	1	17.20	71.66	ug/Kg	02/01/17	02/02/17	LW	
d-BHC	ND	1	0.64	7.17	ug/Kg	02/01/17	02/02/17	LW	
Dieldrin	ND	1	0.90	7.17	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan I	ND	1	0.40	7.17	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan II	ND	1	1.15	7.17	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan sulfate	ND	1	2.44	7.17	ug/Kg	02/01/17	02/02/17	LW	
Endrin	ND	1	0.89	7.17	ug/Kg	02/01/17	02/02/17	LW	
Endrin aldehyde	ND	1	1.29	7.17	ug/Kg	02/01/17	02/02/17	LW	
Endrin Ketone	ND	1	1.72	7.17	ug/Kg	02/01/17	02/02/17	LW	
Heptachlor	ND	1	0.63	7.17	ug/Kg	02/01/17	02/02/17	LW	
Heptachlor epoxide	ND	1	0.39	7.17	ug/Kg	02/01/17	02/02/17	LW	
Lindane (Gamma-BHC)	ND	1	0.43	7.17	ug/Kg	02/01/17	02/02/17	LW	
Methoxychlor	ND	1	7.45	14.33	ug/Kg	02/01/17	02/02/17	LW	
Toxaphene	ND	1	17.20	143.33	ug/Kg	02/01/17	02/02/17	LW	

Surrogate	*% Recovery*	*Limits*	*Notes*
Decachlorobiphenyl DCB (SUR)	*79*	*50-150*	
Tetrachloro-m-xylene TCMX (SUR)	*104*	*50-150*	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8082 *NELAC*	Prep Method: EPA 3545						QCBatchID:	QC1174916	
PCB-1016	ND	1	4.30	71.66	ug/Kg	02/01/17	02/02/17	LW	
PCB-1221	ND	1	20.07	71.66	ug/Kg	02/01/17	02/02/17	LW	
PCB-1232	ND	1	13.62	71.66	ug/Kg	02/01/17	02/02/17	LW	
PCB-1242	ND	1	20.07	71.66	ug/Kg	02/01/17	02/02/17	LW	
PCB-1248	ND	1	27.23	71.66	ug/Kg	02/01/17	02/02/17	LW	
PCB-1254	ND	1	28.67	71.66	ug/Kg	02/01/17	02/02/17	LW	
PCB-1260	ND	1	9.89	71.66	ug/Kg	02/01/17	02/02/17	LW	

Matrix:	Solid	**Client:**	Great Ecology	**Collector:**	Client
Sampled:	01/30/2017 13:40	**Site:**			
Sample #:	**387148-005**	**Client Sample #:**	P20-2Z	**Sample Type:**	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
PCB-1262	ND	1	24.37	71.66	ug/Kg	02/01/17	02/02/17	LW	
PCB-1268	ND	1	12.33	71.66	ug/Kg	02/01/17	02/02/17	LW	

Surrogate	*% Recovery*	*Limits*	*Notes*
Decachlorobiphenyl DCB (SUR)	*79*	*50-150*	

Method: EPA 8270CM Prep Method: EPA 3545 QCBatchID: QC1174944

1-Methylnapthalene	ND	1	5.30	14.33	ug/Kg	02/02/17	02/02/17	BB	
2-Methylnaphthalene	ND	1	5.45	14.33	ug/Kg	02/02/17	02/02/17	BB	
Acenaphthene	ND	1	2.01	14.33	ug/Kg	02/02/17	02/02/17	BB	
Acenaphthylene	ND	1	4.73	14.33	ug/Kg	02/02/17	02/02/17	BB	
Anthracene	ND	1	1.72	14.33	ug/Kg	02/02/17	02/02/17	BB	
Benz(a)anthracene	ND	1	1.58	14.33	ug/Kg	02/02/17	02/02/17	BB	L
Benzo(a)pyrene	ND	1	2.58	14.33	ug/Kg	02/02/17	02/02/17	BB	
Benzo(b)fluoranthene	ND	1	2.44	14.33	ug/Kg	02/02/17	02/02/17	BB	L
Benzo(g,h,i)perylene	ND	1	1.72	14.33	ug/Kg	02/02/17	02/02/17	BB	
Benzo(k)fluoranthene	ND	1	2.44	14.33	ug/Kg	02/02/17	02/02/17	BB	
Chrysene	ND	1	1.19	14.33	ug/Kg	02/02/17	02/02/17	BB	
Dibenz(a,h)anthracene	ND	1	2.01	14.33	ug/Kg	02/02/17	02/02/17	BB	
Fluoranthene	ND	1	1.20	14.33	ug/Kg	02/02/17	02/02/17	BB	
Fluorene	ND	1	1.86	14.33	ug/Kg	02/02/17	02/02/17	BB	
Indeno(1,2,3-cd)pyrene	ND	1	2.58	14.33	ug/Kg	02/02/17	02/02/17	BB	
Naphthalene	ND	1	5.73	14.33	ug/Kg	02/02/17	02/02/17	BB	
Phenanthrene	ND	1	2.01	14.33	ug/Kg	02/02/17	02/02/17	BB	
Pyrene	ND	1	1.12	14.33	ug/Kg	02/02/17	02/02/17	BB	

Surrogate	*% Recovery*	*Limits*	*Notes*
2-Fluorobiphenyl (SUR)	*67*	*30-120*	
Nitrobenzene-d5 (SUR)	*80*	*27-125*	
p-Terphenyl (SUR)	*116*	*33-155*	

Method: EPA 9034 *NELAC* Prep Method: See Attached QCBatchID:

See Attached		1							

Method: SM 2540-G Prep Method: Method QCBatchID: QC1175058

Total Solids	**69.8**	1			%	02/02/17	02/02/17	TP	

Matrix:	Solid	**Client:**	Great Ecology	**Collector:**	Client
Sampled:	01/30/2017 12:00	**Site:**			
Sample #:	**387148-006**	**Client Sample #:**	P20-3T	**Sample Type:**	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Method: CFA S:18.0	Prep Method: Method						QCBatchID:		
See Attached		1							
Method: EPA 6010B *NELAC*	Prep Method: EPA 3050B						QCBatchID:	QC1174933	
Arsenic	**2.26**	1	0.41	1.13	mg/Kg	02/01/17	02/02/17	JN	
Cadmium	ND	1	0.24	0.56	mg/Kg	02/01/17	02/02/17	JN	
Chromium	**5.23**	1	0.15	1.13	mg/Kg	02/01/17	02/02/17	JN	
Copper	**2.32**	1	0.35	1.13	mg/Kg	02/01/17	02/02/17	JN	
Lead	**1.93**	1	0.36	0.56	mg/Kg	02/01/17	02/02/17	JN	
Nickel	**1.51 J**	1	0.23	1.69	mg/Kg	02/01/17	02/02/17	JN	J
Selenium	ND	1	0.81	1.13	mg/Kg	02/01/17	02/02/17	JN	
Silver	ND	1	0.15	0.56	mg/Kg	02/01/17	02/02/17	JN	
Zinc	**13.2**	1	0.32	5.64	mg/Kg	02/01/17	02/02/17	JN	
Method: EPA 7471A *NELAC*	Prep Method: EPA 7471A						QCBatchID:	QC1175029	
Mercury	ND	1	0.02	0.16	mg/Kg	02/03/17	02/03/17	JP	
Method: EPA 8015M	Prep Method:						QCBatchID:	QC1174924	
TPH (C10 to C28)	ND	1		11.28	mg/Kg	02/01/17	02/03/17	LT	
TPH (C28 to C40)	ND	1		22.57	mg/Kg	02/01/17	02/03/17	LT	
TPH (C8 to C10)	ND	1		11.28	mg/Kg	02/01/17	02/03/17	LT	
Method: EPA 8081A *NELAC*	Prep Method: EPA 3545						QCBatchID:	QC1174915	
4,4'-DDD	ND	1	0.76	5.64	ug/Kg	02/01/17	02/02/17	LW	
4,4'-DDE	ND	1	0.64	5.64	ug/Kg	02/01/17	02/02/17	LW	
4,4'-DDT	ND	1	1.07	5.64	ug/Kg	02/01/17	02/02/17	LW	
a-BHC	ND	1	0.23	5.64	ug/Kg	02/01/17	02/02/17	LW	
Aldrin	ND	1	0.38	5.64	ug/Kg	02/01/17	02/02/17	LW	
b-BHC	ND	1	1.35	5.64	ug/Kg	02/01/17	02/02/17	LW	
Chlordane (technical)	ND	1	13.54	56.41	ug/Kg	02/01/17	02/02/17	LW	
d-BHC	ND	1	0.51	5.64	ug/Kg	02/01/17	02/02/17	LW	
Dieldrin	ND	1	0.71	5.64	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan I	ND	1	0.32	5.64	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan II	ND	1	0.90	5.64	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan sulfate	ND	1	1.92	5.64	ug/Kg	02/01/17	02/02/17	LW	
Endrin	ND	1	0.70	5.64	ug/Kg	02/01/17	02/02/17	LW	
Endrin aldehyde	ND	1	1.02	5.64	ug/Kg	02/01/17	02/02/17	LW	
Endrin Ketone	ND	1	1.35	5.64	ug/Kg	02/01/17	02/02/17	LW	
Heptachlor	ND	1	0.50	5.64	ug/Kg	02/01/17	02/02/17	LW	
Heptachlor epoxide	ND	1	0.30	5.64	ug/Kg	02/01/17	02/02/17	LW	
Lindane (Gamma-BHC)	ND	1	0.34	5.64	ug/Kg	02/01/17	02/02/17	LW	
Methoxychlor	ND	1	5.87	11.28	ug/Kg	02/01/17	02/02/17	LW	
Toxaphene	ND	1	13.54	112.83	ug/Kg	02/01/17	02/02/17	LW	

Surrogate	*% Recovery*	*Limits*	*Notes*
Decachlorobiphenyl DCB (SUR)	*98*	*50-150*	
Tetrachloro-m-xylene TCMX (SUR)	*103*	*50-150*	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8082 *NELAC*	Prep Method: EPA 3545						QCBatchID:	QC1174916	
PCB-1016	ND	1	3.38	56.41	ug/Kg	02/01/17	02/02/17	LW	
PCB-1221	ND	1	15.80	56.41	ug/Kg	02/01/17	02/02/17	LW	
PCB-1232	ND	1	10.72	56.41	ug/Kg	02/01/17	02/02/17	LW	
PCB-1242	ND	1	15.80	56.41	ug/Kg	02/01/17	02/02/17	LW	
PCB-1248	ND	1	21.44	56.41	ug/Kg	02/01/17	02/02/17	LW	
PCB-1254	ND	1	22.57	56.41	ug/Kg	02/01/17	02/02/17	LW	
PCB-1260	ND	1	7.79	56.41	ug/Kg	02/01/17	02/02/17	LW	
PCB-1262	ND	1	19.18	56.41	ug/Kg	02/01/17	02/02/17	LW	
PCB-1268	ND	1	9.70	56.41	ug/Kg	02/01/17	02/02/17	LW	

Matrix:	Solid	**Client:**	Great Ecology	**Collector:**	Client
Sampled:	01/30/2017 12:00	**Site:**			
Sample #:	**387148-006**	**Client Sample #:**	P20-3T	**Sample Type:**	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Surrogate	*% Recovery*			*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*101*			*50-150*					
Method: EPA 8270CM Prep Method: EPA 3545							QCBatchID:		QC1174944
1-Methylnapthalene	ND	1	4.17	11.28	ug/Kg	02/02/17	02/02/17	BB	
2-Methylnaphthalene	ND	1	4.29	11.28	ug/Kg	02/02/17	02/02/17	BB	
Acenaphthene	ND	1	1.58	11.28	ug/Kg	02/02/17	02/02/17	BB	
Acenaphthylene	ND	1	3.72	11.28	ug/Kg	02/02/17	02/02/17	BB	
Anthracene	ND	1	1.35	11.28	ug/Kg	02/02/17	02/02/17	BB	
Benz(a)anthracene	ND	1	1.24	11.28	ug/Kg	02/02/17	02/02/17	BB	L
Benzo(a)pyrene	ND	1	2.03	11.28	ug/Kg	02/02/17	02/02/17	BB	
Benzo(b)fluoranthene	ND	1	1.92	11.28	ug/Kg	02/02/17	02/02/17	BB	L
Benzo(g,h,i)perylene	ND	1	1.35	11.28	ug/Kg	02/02/17	02/02/17	BB	
Benzo(k)fluoranthene	ND	1	1.92	11.28	ug/Kg	02/02/17	02/02/17	BB	
Chrysene	ND	1	0.94	11.28	ug/Kg	02/02/17	02/02/17	BB	
Dibenz(a,h)anthracene	ND	1	1.58	11.28	ug/Kg	02/02/17	02/02/17	BB	
Fluoranthene	ND	1	0.95	11.28	ug/Kg	02/02/17	02/02/17	BB	
Fluorene	ND	1	1.47	11.28	ug/Kg	02/02/17	02/02/17	BB	
Indeno(1,2,3-cd)pyrene	ND	1	2.03	11.28	ug/Kg	02/02/17	02/02/17	BB	
Naphthalene	ND	1	4.51	11.28	ug/Kg	02/02/17	02/02/17	BB	
Phenanthrene	ND	1	1.58	11.28	ug/Kg	02/02/17	02/02/17	BB	
Pyrene	ND	1	0.88	11.28	ug/Kg	02/02/17	02/02/17	BB	
Surrogate	*% Recovery*			*Limits*	*Notes*				
2-Fluorobiphenyl (SUR)	*82*			*30-120*					
Nitrobenzene-d5 (SUR)	*90*			*27-125*					
p-Terphenyl (SUR)	*121*			*33-155*					
Method: EPA 9034 *NELAC* Prep Method: See Attached							QCBatchID:		
See Attached		1							
Method: SM 2540-G Prep Method: Method							QCBatchID:		QC1175058
Total Solids	**88.6**	1			%	02/02/17	02/02/17	TP	

Matrix:	Solid	**Client:**	Great Ecology	**Collector:**	Client
Sampled:	01/30/2017 12:10	**Site:**			
Sample #:	387148-007	**Client Sample #:**	P20-3M	**Sample Type:**	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Method: CFA S:18.0	Prep Method: Method						QCBatchID:		
See Attached		1							
Method: EPA 6010B *NELAC*	Prep Method: EPA 3050B						QCBatchID:	QC1174933	
Arsenic	**4.56**	1	0.47	1.31	mg/Kg	02/01/17	02/02/17	JN	
Cadmium	**0.47 J**	1	0.27	0.65	mg/Kg	02/01/17	02/02/17	JN	J
Chromium	**10.7**	1	0.17	1.31	mg/Kg	02/01/17	02/02/17	JN	
Copper	**9.31**	1	0.41	1.31	mg/Kg	02/01/17	02/02/17	JN	
Lead	**2.99**	1	0.42	0.65	mg/Kg	02/01/17	02/02/17	JN	
Nickel	**5.01**	1	0.26	1.96	mg/Kg	02/01/17	02/02/17	JN	
Selenium	ND	1	0.94	1.31	mg/Kg	02/01/17	02/02/17	JN	
Silver	**0.36 J**	1	0.17	0.65	mg/Kg	02/01/17	02/02/17	JN	J
Zinc	**35.8**	1	0.37	6.54	mg/Kg	02/01/17	02/02/17	JN	
Method: EPA 7471A *NELAC*	Prep Method: EPA 7471A						QCBatchID:	QC1175029	
Mercury	ND	1	0.03	0.18	mg/Kg	02/03/17	02/03/17	JP	
Method: EPA 8015M	Prep Method:						QCBatchID:	QC1174924	
TPH (C10 to C28)	ND	1		13.08	mg/Kg	02/01/17	02/03/17	LT	
TPH (C28 to C40)	ND	1		26.17	mg/Kg	02/01/17	02/03/17	LT	
TPH (C8 to C10)	ND	1		13.08	mg/Kg	02/01/17	02/03/17	LT	
Method: EPA 8081A *NELAC*	Prep Method: EPA 3545						QCBatchID:	QC1174915	
4,4'-DDD	ND	1	0.88	6.54	ug/Kg	02/01/17	02/02/17	LW	
4,4'-DDE	ND	1	0.75	6.54	ug/Kg	02/01/17	02/02/17	LW	
4,4'-DDT	ND	1	1.24	6.54	ug/Kg	02/01/17	02/02/17	LW	
a-BHC	ND	1	0.26	6.54	ug/Kg	02/01/17	02/02/17	LW	
Aldrin	ND	1	0.44	6.54	ug/Kg	02/01/17	02/02/17	LW	
b-BHC	ND	1	1.57	6.54	ug/Kg	02/01/17	02/02/17	LW	
Chlordane (technical)	ND	1	15.70	65.42	ug/Kg	02/01/17	02/02/17	LW	
d-BHC	ND	1	0.59	6.54	ug/Kg	02/01/17	02/02/17	LW	
Dieldrin	ND	1	0.82	6.54	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan I	ND	1	0.37	6.54	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan II	ND	1	1.05	6.54	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan sulfate	ND	1	2.22	6.54	ug/Kg	02/01/17	02/02/17	LW	
Endrin	ND	1	0.81	6.54	ug/Kg	02/01/17	02/02/17	LW	
Endrin aldehyde	ND	1	1.18	6.54	ug/Kg	02/01/17	02/02/17	LW	
Endrin Ketone	ND	1	1.57	6.54	ug/Kg	02/01/17	02/02/17	LW	
Heptachlor	ND	1	0.58	6.54	ug/Kg	02/01/17	02/02/17	LW	
Heptachlor epoxide	ND	1	0.35	6.54	ug/Kg	02/01/17	02/02/17	LW	
Lindane (Gamma-BHC)	ND	1	0.39	6.54	ug/Kg	02/01/17	02/02/17	LW	
Methoxychlor	ND	1	6.80	13.08	ug/Kg	02/01/17	02/02/17	LW	
Toxaphene	ND	1	15.70	130.84	ug/Kg	02/01/17	02/02/17	LW	

Surrogate	*% Recovery*	*Limits*	*Notes*
Decachlorobiphenyl DCB (SUR)	*86*	*50-150*	
Tetrachloro-m-xylene TCMX (SUR)	*98*	*50-150*	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8082 *NELAC*	Prep Method: EPA 3545						QCBatchID:	QC1174916	
PCB-1016	ND	1	3.93	65.42	ug/Kg	02/01/17	02/02/17	LW	
PCB-1221	ND	1	18.32	65.42	ug/Kg	02/01/17	02/02/17	LW	
PCB-1232	ND	1	12.43	65.42	ug/Kg	02/01/17	02/02/17	LW	
PCB-1242	ND	1	18.32	65.42	ug/Kg	02/01/17	02/02/17	LW	
PCB-1248	ND	1	24.86	65.42	ug/Kg	02/01/17	02/02/17	LW	
PCB-1254	ND	1	26.17	65.42	ug/Kg	02/01/17	02/02/17	LW	
PCB-1260	ND	1	9.03	65.42	ug/Kg	02/01/17	02/02/17	LW	
PCB-1262	ND	1	22.24	65.42	ug/Kg	02/01/17	02/02/17	LW	
PCB-1268	ND	1	11.25	65.42	ug/Kg	02/01/17	02/02/17	LW	

Matrix:	Solid	**Client:**	Great Ecology	**Collector:**	Client
Sampled:	01/30/2017 12:10	**Site:**			
Sample #:	**387148-007**	**Client Sample #:**	P20-3M	**Sample Type:**	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Surrogate	*% Recovery*			*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*86*			*50-150*					
Method: EPA 8270CM Prep Method: EPA 3545							QCBatchID:		QC1174944
1-Methylnapthalene	ND	1	4.84	13.08	ug/Kg	02/02/17	02/02/17	BB	
2-Methylnaphthalene	ND	1	4.97	13.08	ug/Kg	02/02/17	02/02/17	BB	
Acenaphthene	ND	1	1.83	13.08	ug/Kg	02/02/17	02/02/17	BB	
Acenaphthylene	ND	1	4.32	13.08	ug/Kg	02/02/17	02/02/17	BB	
Anthracene	ND	1	1.57	13.08	ug/Kg	02/02/17	02/02/17	BB	
Benz(a)anthracene	ND	1	1.44	13.08	ug/Kg	02/02/17	02/02/17	BB	L
Benzo(a)pyrene	ND	1	2.36	13.08	ug/Kg	02/02/17	02/02/17	BB	
Benzo(b)fluoranthene	ND	1	2.22	13.08	ug/Kg	02/02/17	02/02/17	BB	L
Benzo(g,h,i)perylene	ND	1	1.57	13.08	ug/Kg	02/02/17	02/02/17	BB	
Benzo(k)fluoranthene	ND	1	2.22	13.08	ug/Kg	02/02/17	02/02/17	BB	
Chrysene	ND	1	1.09	13.08	ug/Kg	02/02/17	02/02/17	BB	
Dibenz(a,h)anthracene	ND	1	1.83	13.08	ug/Kg	02/02/17	02/02/17	BB	
Fluoranthene	ND	1	1.10	13.08	ug/Kg	02/02/17	02/02/17	BB	
Fluorene	ND	1	1.70	13.08	ug/Kg	02/02/17	02/02/17	BB	
Indeno(1,2,3-cd)pyrene	ND	1	2.36	13.08	ug/Kg	02/02/17	02/02/17	BB	
Naphthalene	ND	1	5.23	13.08	ug/Kg	02/02/17	02/02/17	BB	
Phenanthrene	ND	1	1.83	13.08	ug/Kg	02/02/17	02/02/17	BB	
Pyrene	ND	1	1.02	13.08	ug/Kg	02/02/17	02/02/17	BB	
Surrogate	*% Recovery*			*Limits*	*Notes*				
2-Fluorobiphenyl (SUR)	*81*			*30-120*					
Nitrobenzene-d5 (SUR)	*86*			*27-125*					
p-Terphenyl (SUR)	*120*			*33-155*					
Method: EPA 9034 *NELAC* Prep Method: See Attached							QCBatchID:		
See Attached		1							
Method: SM 2540-G Prep Method: Method							QCBatchID:		QC1175058
Total Solids	**76.4**	1			%	02/02/17	02/02/17	TP	

Matrix:	Solid	**Client:**	Great Ecology	**Collector:**	Client
Sampled:	01/30/2017 12:20	**Site:**			
Sample #:	**387148-008**	**Client Sample #:**	P20-3Z	**Sample Type:**	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Method: CFA S:18.0	Prep Method: Method						QCBatchID:		
See Attached		1							
Method: EPA 6010B *NELAC*	Prep Method: EPA 1312/3010A						QCBatchID:	QC1177607	
Arsenic	ND	1	0.004	0.01	mg/L	04/20/17	04/21/17	KLN	
Method: EPA 6010B *NELAC*	Prep Method: EPA 3050B						QCBatchID:	QC1174933	
Arsenic	**4.86**	1	0.42	1.18	mg/Kg	02/01/17	02/02/17	JN	
Cadmium	**0.26 J**	1	0.25	0.59	mg/Kg	02/01/17	02/02/17	JN	J
Chromium	**7.40**	1	0.15	1.18	mg/Kg	02/01/17	02/02/17	JN	
Copper	**5.80**	1	0.37	1.18	mg/Kg	02/01/17	02/02/17	JN	
Lead	**2.12**	1	0.38	0.59	mg/Kg	02/01/17	02/02/17	JN	
Nickel	**2.91**	1	0.24	1.77	mg/Kg	02/01/17	02/02/17	JN	
Selenium	ND	1	0.85	1.18	mg/Kg	02/01/17	02/02/17	JN	
Silver	ND	1	0.15	0.59	mg/Kg	02/01/17	02/02/17	JN	
Zinc	**24.0**	1	0.33	5.89	mg/Kg	02/01/17	02/02/17	JN	
Method: EPA 7471A *NELAC*	Prep Method: EPA 7471A						QCBatchID:	QC1175029	
Mercury	ND	1	0.02	0.17	mg/Kg	02/03/17	02/03/17	JP	
Method: EPA 8015M	Prep Method:						QCBatchID:	QC1174924	
TPH (C10 to C28)	ND	1		11.79	mg/Kg	02/01/17	02/03/17	LT	
TPH (C28 to C40)	ND	1		23.58	mg/Kg	02/01/17	02/03/17	LT	
TPH (C8 to C10)	ND	1		11.79	mg/Kg	02/01/17	02/03/17	LT	
Method: EPA 8081A *NELAC*	Prep Method: EPA 3545						QCBatchID:	QC1174915	
4,4'-DDD	ND	1	0.79	5.89	ug/Kg	02/01/17	02/02/17	LW	
4,4'-DDE	ND	1	0.67	5.89	ug/Kg	02/01/17	02/02/17	LW	
4,4'-DDT	ND	1	1.12	5.89	ug/Kg	02/01/17	02/02/17	LW	
a-BHC	ND	1	0.24	5.89	ug/Kg	02/01/17	02/02/17	LW	
Aldrin	ND	1	0.40	5.89	ug/Kg	02/01/17	02/02/17	LW	
b-BHC	ND	1	1.41	5.89	ug/Kg	02/01/17	02/02/17	LW	
Chlordane (technical)	ND	1	14.15	58.94	ug/Kg	02/01/17	02/02/17	LW	
d-BHC	ND	1	0.53	5.89	ug/Kg	02/01/17	02/02/17	LW	
Dieldrin	ND	1	0.74	5.89	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan I	ND	1	0.33	5.89	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan II	ND	1	0.94	5.89	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan sulfate	ND	1	2.00	5.89	ug/Kg	02/01/17	02/02/17	LW	
Endrin	ND	1	0.73	5.89	ug/Kg	02/01/17	02/02/17	LW	
Endrin aldehyde	ND	1	1.06	5.89	ug/Kg	02/01/17	02/02/17	LW	
Endrin Ketone	ND	1	1.41	5.89	ug/Kg	02/01/17	02/02/17	LW	
Heptachlor	ND	1	0.52	5.89	ug/Kg	02/01/17	02/02/17	LW	
Heptachlor epoxide	ND	1	0.32	5.89	ug/Kg	02/01/17	02/02/17	LW	
Lindane (Gamma-BHC)	ND	1	0.35	5.89	ug/Kg	02/01/17	02/02/17	LW	
Methoxychlor	ND	1	6.13	11.79	ug/Kg	02/01/17	02/02/17	LW	
Toxaphene	ND	1	14.15	117.88	ug/Kg	02/01/17	02/02/17	LW	

Surrogate	*% Recovery*	*Limits*	*Notes*
Decachlorobiphenyl DCB (SUR)	*81*	*50-150*	
Tetrachloro-m-xylene TCMX (SUR)	*100*	*50-150*	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8082 *NELAC*	Prep Method: EPA 3545						QCBatchID:	QC1174916	
PCB-1016	ND	1	3.54	58.94	ug/Kg	02/01/17	02/02/17	LW	
PCB-1221	ND	1	16.50	58.94	ug/Kg	02/01/17	02/02/17	LW	
PCB-1232	ND	1	11.20	58.94	ug/Kg	02/01/17	02/02/17	LW	
PCB-1242	ND	1	16.50	58.94	ug/Kg	02/01/17	02/02/17	LW	
PCB-1248	ND	1	22.40	58.94	ug/Kg	02/01/17	02/02/17	LW	
PCB-1254	ND	1	23.58	58.94	ug/Kg	02/01/17	02/02/17	LW	
PCB-1260	ND	1	8.13	58.94	ug/Kg	02/01/17	02/02/17	LW	

Matrix:	Solid	**Client:**	Great Ecology	**Collector:**	Client
Sampled:	01/30/2017 12:20	**Site:**			
Sample #:	**387148-008**	**Client Sample #:**	P20-3Z	**Sample Type:**	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
PCB-1262	ND	1	20.04	58.94	ug/Kg	02/01/17	02/02/17	LW	
PCB-1268	ND	1	10.14	58.94	ug/Kg	02/01/17	02/02/17	LW	

Surrogate	*% Recovery*	*Limits*	*Notes*
Decachlorobiphenyl DCB (SUR)	*80*	*50-150*	

Method: EPA 8270CM Prep Method: EPA 3545 QCBatchID: QC1174944

1-Methylnapthalene	ND	1	4.36	11.79	ug/Kg	02/02/17	02/07/17	BB	
2-Methylnaphthalene	ND	1	4.48	11.79	ug/Kg	02/02/17	02/07/17	BB	
Acenaphthene	ND	1	1.65	11.79	ug/Kg	02/02/17	02/07/17	BB	
Acenaphthylene	ND	1	3.89	11.79	ug/Kg	02/02/17	02/07/17	BB	
Anthracene	ND	1	1.41	11.79	ug/Kg	02/02/17	02/07/17	BB	
Benz(a)anthracene	ND	1	1.30	11.79	ug/Kg	02/02/17	02/07/17	BB	L
Benzo(a)pyrene	ND	1	2.12	11.79	ug/Kg	02/02/17	02/07/17	BB	
Benzo(b)fluoranthene	ND	1	2.00	11.79	ug/Kg	02/02/17	02/07/17	BB	L
Benzo(g,h,i)perylene	ND	1	1.41	11.79	ug/Kg	02/02/17	02/07/17	BB	
Benzo(k)fluoranthene	ND	1	2.00	11.79	ug/Kg	02/02/17	02/07/17	BB	
Chrysene	ND	1	0.98	11.79	ug/Kg	02/02/17	02/07/17	BB	
Dibenz(a,h)anthracene	ND	1	1.65	11.79	ug/Kg	02/02/17	02/07/17	BB	
Fluoranthene	ND	1	0.99	11.79	ug/Kg	02/02/17	02/07/17	BB	
Fluorene	ND	1	1.53	11.79	ug/Kg	02/02/17	02/07/17	BB	
Indeno(1,2,3-cd)pyrene	ND	1	2.12	11.79	ug/Kg	02/02/17	02/07/17	BB	
Naphthalene	ND	1	4.72	11.79	ug/Kg	02/02/17	02/07/17	BB	
Phenanthrene	ND	1	1.65	11.79	ug/Kg	02/02/17	02/07/17	BB	
Pyrene	ND	1	0.92	11.79	ug/Kg	02/02/17	02/07/17	BB	

Surrogate	*% Recovery*	*Limits*	*Notes*
2-Fluorobiphenyl (SUR)	*78*	*30-120*	
Nitrobenzene-d5 (SUR)	*88*	*27-125*	
p-Terphenyl (SUR)	*120*	*33-155*	

Method: EPA 9034 *NELAC* Prep Method: See Attached QCBatchID:

See Attached		1							

Method: SM 2540-G Prep Method: Method QCBatchID: QC1175058

Total Solids	**84.8**	1			%	02/02/17	02/02/17	TP	

Matrix:	Solid	**Client:**	Great Ecology	**Collector:**	Client
Sampled:	01/30/2017 10:15	**Site:**			
Sample #:	**387148-009**	**Client Sample #:**	P20-4T	**Sample Type:**	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Method: CFA S:18.0	Prep Method: Method						QCBatchID:		
See Attached		1							
Method: EPA 6010B *NELAC*	Prep Method: EPA 3050B						QCBatchID:	QC1174933	
Arsenic	**2.47**	1	0.40	1.12	mg/Kg	02/01/17	02/02/17	JN	
Cadmium	**0.25 J**	1	0.24	0.56	mg/Kg	02/01/17	02/02/17	JN	J
Chromium	**6.12**	1	0.15	1.12	mg/Kg	02/01/17	02/02/17	JN	
Copper	**3.83**	1	0.35	1.12	mg/Kg	02/01/17	02/02/17	JN	
Lead	**2.44**	1	0.36	0.56	mg/Kg	02/01/17	02/02/17	JN	
Nickel	**2.28**	1	0.22	1.69	mg/Kg	02/01/17	02/02/17	JN	
Selenium	ND	1	0.81	1.12	mg/Kg	02/01/17	02/02/17	JN	
Silver	ND	1	0.15	0.56	mg/Kg	02/01/17	02/02/17	JN	
Zinc	**18.6**	1	0.31	5.62	mg/Kg	02/01/17	02/02/17	JN	
Method: EPA 7471A *NELAC*	Prep Method: EPA 7471A						QCBatchID:	QC1175029	
Mercury	ND	1	0.02	0.16	mg/Kg	02/03/17	02/03/17	JP	
Method: EPA 8015M	Prep Method:						QCBatchID:	QC1174924	
TPH (C10 to C28)	ND	1		11.24	mg/Kg	02/01/17	02/03/17	LT	
TPH (C28 to C40)	ND	1		22.48	mg/Kg	02/01/17	02/03/17	LT	
TPH (C8 to C10)	ND	1		11.24	mg/Kg	02/01/17	02/03/17	LT	
Method: EPA 8081A *NELAC*	Prep Method: EPA 3545						QCBatchID:	QC1174915	
4,4'-DDD	ND	1	0.75	5.62	ug/Kg	02/01/17	02/02/17	LW	
4,4'-DDE	ND	1	0.64	5.62	ug/Kg	02/01/17	02/02/17	LW	
4,4'-DDT	ND	1	1.07	5.62	ug/Kg	02/01/17	02/02/17	LW	
a-BHC	ND	1	0.22	5.62	ug/Kg	02/01/17	02/02/17	LW	
Aldrin	ND	1	0.38	5.62	ug/Kg	02/01/17	02/02/17	LW	
b-BHC	ND	1	1.35	5.62	ug/Kg	02/01/17	02/02/17	LW	
Chlordane (technical)	ND	1	13.49	56.20	ug/Kg	02/01/17	02/02/17	LW	
d-BHC	ND	1	0.51	5.62	ug/Kg	02/01/17	02/02/17	LW	
Dieldrin	ND	1	0.71	5.62	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan I	ND	1	0.31	5.62	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan II	ND	1	0.90	5.62	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan sulfate	ND	1	1.91	5.62	ug/Kg	02/01/17	02/02/17	LW	
Endrin	ND	1	0.70	5.62	ug/Kg	02/01/17	02/02/17	LW	
Endrin aldehyde	ND	1	1.01	5.62	ug/Kg	02/01/17	02/02/17	LW	
Endrin Ketone	ND	1	1.35	5.62	ug/Kg	02/01/17	02/02/17	LW	
Heptachlor	ND	1	0.49	5.62	ug/Kg	02/01/17	02/02/17	LW	
Heptachlor epoxide	ND	1	0.30	5.62	ug/Kg	02/01/17	02/02/17	LW	
Lindane (Gamma-BHC)	ND	1	0.34	5.62	ug/Kg	02/01/17	02/02/17	LW	
Methoxychlor	ND	1	5.84	11.24	ug/Kg	02/01/17	02/02/17	LW	
Toxaphene	ND	1	13.49	112.40	ug/Kg	02/01/17	02/02/17	LW	

Surrogate	*% Recovery*	*Limits*	*Notes*
Decachlorobiphenyl DCB (SUR)	*87*	*50-150*	
Tetrachloro-m-xylene TCMX (SUR)	*97*	*50-150*	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8082 *NELAC*	Prep Method: EPA 3545						QCBatchID:	QC1174916	
PCB-1016	ND	1	3.37	56.20	ug/Kg	02/01/17	02/02/17	LW	
PCB-1221	ND	1	15.74	56.20	ug/Kg	02/01/17	02/02/17	LW	
PCB-1232	ND	1	10.68	56.20	ug/Kg	02/01/17	02/02/17	LW	
PCB-1242	ND	1	15.74	56.20	ug/Kg	02/01/17	02/02/17	LW	
PCB-1248	ND	1	21.36	56.20	ug/Kg	02/01/17	02/02/17	LW	
PCB-1254	ND	1	22.48	56.20	ug/Kg	02/01/17	02/02/17	LW	
PCB-1260	ND	1	7.76	56.20	ug/Kg	02/01/17	02/02/17	LW	
PCB-1262	ND	1	19.11	56.20	ug/Kg	02/01/17	02/02/17	LW	
PCB-1268	ND	1	9.67	56.20	ug/Kg	02/01/17	02/02/17	LW	

Matrix:	Solid	**Client:**	Great Ecology	**Collector:**	Client
Sampled:	01/30/2017 10:15	**Site:**			
Sample #:	**387148-009**	**Client Sample #:**	P20-4T	**Sample Type:**	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Surrogate	*% Recovery*			*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*89*			*50-150*					
Method: EPA 8270CM Prep Method: EPA 3545							QCBatchID:		QC1174944
1-Methylnapthalene	ND	1	4.16	11.24	ug/Kg	02/02/17	02/02/17	BB	
2-Methylnaphthalene	ND	1	4.27	11.24	ug/Kg	02/02/17	02/02/17	BB	
Acenaphthene	ND	1	1.57	11.24	ug/Kg	02/02/17	02/02/17	BB	
Acenaphthylene	ND	1	3.71	11.24	ug/Kg	02/02/17	02/02/17	BB	
Anthracene	ND	1	1.35	11.24	ug/Kg	02/02/17	02/02/17	BB	
Benz(a)anthracene	ND	1	1.24	11.24	ug/Kg	02/02/17	02/02/17	BB	L
Benzo(a)pyrene	ND	1	2.02	11.24	ug/Kg	02/02/17	02/02/17	BB	
Benzo(b)fluoranthene	ND	1	1.91	11.24	ug/Kg	02/02/17	02/02/17	BB	L
Benzo(g,h,i)perylene	ND	1	1.35	11.24	ug/Kg	02/02/17	02/02/17	BB	
Benzo(k)fluoranthene	ND	1	1.91	11.24	ug/Kg	02/02/17	02/02/17	BB	
Chrysene	ND	1	0.93	11.24	ug/Kg	02/02/17	02/02/17	BB	
Dibenz(a,h)anthracene	ND	1	1.57	11.24	ug/Kg	02/02/17	02/02/17	BB	
Fluoranthene	ND	1	0.94	11.24	ug/Kg	02/02/17	02/02/17	BB	
Fluorene	ND	1	1.46	11.24	ug/Kg	02/02/17	02/02/17	BB	
Indeno(1,2,3-cd)pyrene	ND	1	2.02	11.24	ug/Kg	02/02/17	02/02/17	BB	
Naphthalene	ND	1	4.50	11.24	ug/Kg	02/02/17	02/02/17	BB	
Phenanthrene	ND	1	1.57	11.24	ug/Kg	02/02/17	02/02/17	BB	
Pyrene	ND	1	0.88	11.24	ug/Kg	02/02/17	02/02/17	BB	
Surrogate	*% Recovery*			*Limits*	*Notes*				
2-Fluorobiphenyl (SUR)	*77*			*30-120*					
Nitrobenzene-d5 (SUR)	*85*			*27-125*					
p-Terphenyl (SUR)	*116*			*33-155*					
Method: EPA 9034 *NELAC* Prep Method: See Attached							QCBatchID:		
See Attached		1							
Method: SM 2540-G Prep Method: Method							QCBatchID:		QC1175058
Total Solids	**89.0**	1			%	02/02/17	02/02/17	TP	

Matrix:	Solid	**Client:**	Great Ecology	**Collector:**	Client
Sampled:	01/30/2017 10:25	**Site:**			
Sample #:	**387148-010**	**Client Sample #:**	P20-4M	**Sample Type:**	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Method: CFA S:18.0	Prep Method: Method						QCBatchID:		
See Attached		1							
Method: EPA 6010B *NELAC*	Prep Method: EPA 3050B						QCBatchID:	QC1174933	
Arsenic	**3.14**	1	0.45	1.26	mg/Kg	02/01/17	02/02/17	JN	
Cadmium	**0.31 J**	1	0.26	0.63	mg/Kg	02/01/17	02/02/17	JN	J
Chromium	**9.71**	1	0.16	1.26	mg/Kg	02/01/17	02/02/17	JN	
Copper	**7.07**	1	0.39	1.26	mg/Kg	02/01/17	02/02/17	JN	
Lead	**2.53**	1	0.40	0.63	mg/Kg	02/01/17	02/02/17	JN	
Nickel	**4.14**	1	0.25	1.88	mg/Kg	02/01/17	02/02/17	JN	
Selenium	ND	1	0.90	1.26	mg/Kg	02/01/17	02/02/17	JN	
Silver	ND	1	0.16	0.63	mg/Kg	02/01/17	02/02/17	JN	
Zinc	**34.4**	1	0.35	6.28	mg/Kg	02/01/17	02/02/17	JN	
Method: EPA 7471A *NELAC*	Prep Method: EPA 7471A						QCBatchID:	QC1175029	
Mercury	ND	1	0.03	0.18	mg/Kg	02/03/17	02/03/17	JP	
Method: EPA 8015M	Prep Method:						QCBatchID:	QC1174924	
TPH (C10 to C28)	ND	1		12.55	mg/Kg	02/01/17	02/03/17	LT	
TPH (C28 to C40)	ND	1		25.10	mg/Kg	02/01/17	02/03/17	LT	
TPH (C8 to C10)	ND	1		12.55	mg/Kg	02/01/17	02/03/17	LT	
Method: EPA 8081A *NELAC*	Prep Method: EPA 3545						QCBatchID:	QC1174915	
4,4'-DDD	ND	1	0.84	6.28	ug/Kg	02/01/17	02/02/17	LW	
4,4'-DDE	ND	1	0.72	6.28	ug/Kg	02/01/17	02/02/17	LW	
4,4'-DDT	ND	1	1.19	6.28	ug/Kg	02/01/17	02/02/17	LW	
a-BHC	ND	1	0.25	6.28	ug/Kg	02/01/17	02/02/17	LW	
Aldrin	ND	1	0.43	6.28	ug/Kg	02/01/17	02/02/17	LW	
b-BHC	ND	1	1.51	6.28	ug/Kg	02/01/17	02/02/17	LW	
Chlordane (technical)	ND	1	15.06	62.76	ug/Kg	02/01/17	02/02/17	LW	
d-BHC	ND	1	0.56	6.28	ug/Kg	02/01/17	02/02/17	LW	
Dieldrin	ND	1	0.79	6.28	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan I	ND	1	0.35	6.28	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan II	ND	1	1.00	6.28	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan sulfate	ND	1	2.13	6.28	ug/Kg	02/01/17	02/02/17	LW	
Endrin	ND	1	0.78	6.28	ug/Kg	02/01/17	02/02/17	LW	
Endrin aldehyde	ND	1	1.13	6.28	ug/Kg	02/01/17	02/02/17	LW	
Endrin Ketone	ND	1	1.51	6.28	ug/Kg	02/01/17	02/02/17	LW	
Heptachlor	ND	1	0.55	6.28	ug/Kg	02/01/17	02/02/17	LW	
Heptachlor epoxide	ND	1	0.34	6.28	ug/Kg	02/01/17	02/02/17	LW	
Lindane (Gamma-BHC)	ND	1	0.38	6.28	ug/Kg	02/01/17	02/02/17	LW	
Methoxychlor	ND	1	6.53	12.55	ug/Kg	02/01/17	02/02/17	LW	
Toxaphene	ND	1	15.06	125.52	ug/Kg	02/01/17	02/02/17	LW	

Surrogate	*% Recovery*	*Limits*	*Notes*
Decachlorobiphenyl DCB (SUR)	*66*	*50-150*	
Tetrachloro-m-xylene TCMX (SUR)	*92*	*50-150*	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8082 *NELAC*	Prep Method: EPA 3545						QCBatchID:	QC1174916	
PCB-1016	ND	1	3.77	62.76	ug/Kg	02/01/17	02/02/17	LW	
PCB-1221	ND	1	17.57	62.76	ug/Kg	02/01/17	02/02/17	LW	
PCB-1232	ND	1	11.92	62.76	ug/Kg	02/01/17	02/02/17	LW	
PCB-1242	ND	1	17.57	62.76	ug/Kg	02/01/17	02/02/17	LW	
PCB-1248	ND	1	23.85	62.76	ug/Kg	02/01/17	02/02/17	LW	
PCB-1254	ND	1	25.10	62.76	ug/Kg	02/01/17	02/02/17	LW	
PCB-1260	ND	1	8.66	62.76	ug/Kg	02/01/17	02/02/17	LW	
PCB-1262	ND	1	21.34	62.76	ug/Kg	02/01/17	02/02/17	LW	
PCB-1268	ND	1	10.79	62.76	ug/Kg	02/01/17	02/02/17	LW	

Matrix:	Solid	**Client:**	Great Ecology	**Collector:**	Client
Sampled:	01/30/2017 10:25	**Site:**			
Sample #:	**387148-010**	**Client Sample #:**	P20-4M	**Sample Type:**	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Surrogate	*% Recovery*			*Limits*	*Notes*				
Decachlorobiphenyl DCB (SUR)	*66*			*50-150*					
Method: EPA 8270CM Prep Method: EPA 3545							QCBatchID:		QC1174944
1-Methylnapthalene	ND	1	4.64	12.55	ug/Kg	02/02/17	02/02/17	BB	
2-Methylnaphthalene	ND	1	4.77	12.55	ug/Kg	02/02/17	02/02/17	BB	
Acenaphthene	ND	1	1.76	12.55	ug/Kg	02/02/17	02/02/17	BB	
Acenaphthylene	ND	1	4.14	12.55	ug/Kg	02/02/17	02/02/17	BB	
Anthracene	ND	1	1.51	12.55	ug/Kg	02/02/17	02/02/17	BB	
Benz(a)anthracene	ND	1	1.38	12.55	ug/Kg	02/02/17	02/02/17	BB	L
Benzo(a)pyrene	ND	1	2.26	12.55	ug/Kg	02/02/17	02/02/17	BB	
Benzo(b)fluoranthene	ND	1	2.13	12.55	ug/Kg	02/02/17	02/02/17	BB	L
Benzo(g,h,i)perylene	ND	1	1.51	12.55	ug/Kg	02/02/17	02/02/17	BB	
Benzo(k)fluoranthene	ND	1	2.13	12.55	ug/Kg	02/02/17	02/02/17	BB	
Chrysene	ND	1	1.04	12.55	ug/Kg	02/02/17	02/02/17	BB	
Dibenz(a,h)anthracene	ND	1	1.76	12.55	ug/Kg	02/02/17	02/02/17	BB	
Fluoranthene	ND	1	1.05	12.55	ug/Kg	02/02/17	02/02/17	BB	
Fluorene	ND	1	1.63	12.55	ug/Kg	02/02/17	02/02/17	BB	
Indeno(1,2,3-cd)pyrene	ND	1	2.26	12.55	ug/Kg	02/02/17	02/02/17	BB	
Naphthalene	ND	1	5.02	12.55	ug/Kg	02/02/17	02/02/17	BB	
Phenanthrene	ND	1	1.76	12.55	ug/Kg	02/02/17	02/02/17	BB	
Pyrene	ND	1	0.98	12.55	ug/Kg	02/02/17	02/02/17	BB	
Surrogate	*% Recovery*			*Limits*	*Notes*				
2-Fluorobiphenyl (SUR)	*85*			*30-120*					
Nitrobenzene-d5 (SUR)	*85*			*27-125*					
p-Terphenyl (SUR)	*116*			*33-155*					
Method: EPA 9034 *NELAC* Prep Method: See Attached							QCBatchID:		
See Attached		1							
Method: SM 2540-G Prep Method: Method							QCBatchID:		QC1175059
Total Solids	**79.7**	1			%	02/02/17	02/02/17	TP	

Matrix:	Solid	**Client:**	Great Ecology	**Collector:**	Client
Sampled:	01/30/2017 10:35	**Site:**			
Sample #:	387148-011	**Client Sample #:**	P20-4Z	**Sample Type:**	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Method: CFA S:18.0	Prep Method: Method						QCBatchID:		
See Attached		1							
Method: EPA 6010B *NELAC*	Prep Method: EPA 1312/3010A						QCBatchID:	QC1177607	
Arsenic	**0.016**	1	0.004	0.01	mg/L	04/20/17	04/21/17	KLN	
Method: EPA 6010B *NELAC*	Prep Method: EPA 3050B						QCBatchID:	QC1174933	
Arsenic	**4.93**	1	0.45	1.24	mg/Kg	02/01/17	02/02/17	JN	
Cadmium	**0.27 J**	1	0.26	0.62	mg/Kg	02/01/17	02/02/17	JN	J
Chromium	**9.81**	1	0.16	1.24	mg/Kg	02/01/17	02/02/17	JN	
Copper	**6.73**	1	0.39	1.24	mg/Kg	02/01/17	02/02/17	JN	
Lead	**2.62**	1	0.40	0.62	mg/Kg	02/01/17	02/02/17	JN	
Nickel	**4.03**	1	0.25	1.87	mg/Kg	02/01/17	02/02/17	JN	
Selenium	ND	1	0.90	1.24	mg/Kg	02/01/17	02/02/17	JN	
Silver	ND	1	0.16	0.62	mg/Kg	02/01/17	02/02/17	JN	
Zinc	**30.9**	1	0.35	6.22	mg/Kg	02/01/17	02/02/17	JN	
Method: EPA 7471A *NELAC*	Prep Method: EPA 7471A						QCBatchID:	QC1175029	
Mercury	ND	1	0.02	0.17	mg/Kg	02/03/17	02/03/17	JP	
Method: EPA 8015M	Prep Method:						QCBatchID:	QC1174924	
TPH (C10 to C28)	ND	1		12.45	mg/Kg	02/01/17	02/03/17	LT	
TPH (C28 to C40)	ND	1		24.89	mg/Kg	02/01/17	02/03/17	LT	
TPH (C8 to C10)	ND	1		12.45	mg/Kg	02/01/17	02/03/17	LT	
Method: EPA 8081A *NELAC*	Prep Method: EPA 3545						QCBatchID:	QC1174915	
4,4'-DDD	ND	1	0.83	6.22	ug/Kg	02/01/17	02/02/17	LW	
4,4'-DDE	ND	1	0.71	6.22	ug/Kg	02/01/17	02/02/17	LW	
4,4'-DDT	ND	1	1.18	6.22	ug/Kg	02/01/17	02/02/17	LW	
a-BHC	ND	1	0.25	6.22	ug/Kg	02/01/17	02/02/17	LW	
Aldrin	ND	1	0.42	6.22	ug/Kg	02/01/17	02/02/17	LW	
b-BHC	ND	1	1.49	6.22	ug/Kg	02/01/17	02/02/17	LW	
Chlordane (technical)	ND	1	14.94	62.24	ug/Kg	02/01/17	02/02/17	LW	
d-BHC	ND	1	0.56	6.22	ug/Kg	02/01/17	02/02/17	LW	
Dieldrin	ND	1	0.78	6.22	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan I	ND	1	0.35	6.22	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan II	ND	1	1.00	6.22	ug/Kg	02/01/17	02/02/17	LW	
Endosulfan sulfate	ND	1	2.12	6.22	ug/Kg	02/01/17	02/02/17	LW	
Endrin	ND	1	0.77	6.22	ug/Kg	02/01/17	02/02/17	LW	
Endrin aldehyde	ND	1	1.12	6.22	ug/Kg	02/01/17	02/02/17	LW	
Endrin Ketone	ND	1	1.49	6.22	ug/Kg	02/01/17	02/02/17	LW	
Heptachlor	ND	1	0.55	6.22	ug/Kg	02/01/17	02/02/17	LW	
Heptachlor epoxide	ND	1	0.34	6.22	ug/Kg	02/01/17	02/02/17	LW	
Lindane (Gamma-BHC)	ND	1	0.37	6.22	ug/Kg	02/01/17	02/02/17	LW	
Methoxychlor	ND	1	6.47	12.45	ug/Kg	02/01/17	02/02/17	LW	
Toxaphene	ND	1	14.94	124.47	ug/Kg	02/01/17	02/02/17	LW	

Surrogate	*% Recovery*	*Limits*	*Notes*
Decachlorobiphenyl DCB (SUR)	*91*	*50-150*	
Tetrachloro-m-xylene TCMX (SUR)	*92*	*50-150*	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
Method: EPA 8082 *NELAC*	Prep Method: EPA 3545						QCBatchID:	QC1174916	
PCB-1016	ND	1	3.73	62.24	ug/Kg	02/01/17	02/02/17	LW	
PCB-1221	ND	1	17.43	62.24	ug/Kg	02/01/17	02/02/17	LW	
PCB-1232	ND	1	11.82	62.24	ug/Kg	02/01/17	02/02/17	LW	
PCB-1242	ND	1	17.43	62.24	ug/Kg	02/01/17	02/02/17	LW	
PCB-1248	ND	1	23.65	62.24	ug/Kg	02/01/17	02/02/17	LW	
PCB-1254	ND	1	24.89	62.24	ug/Kg	02/01/17	02/02/17	LW	
PCB-1260	ND	1	8.59	62.24	ug/Kg	02/01/17	02/02/17	LW	

Matrix:	Solid	**Client:**	Great Ecology	**Collector:**	Client
Sampled:	01/30/2017 10:35	**Site:**			
Sample #:	**387148-011**	**Client Sample #:**	P20-4Z	**Sample Type:**	

Analyte	Result	DF	MDL	RDL	Units	Prepared	Analyzed	By	Notes
PCB-1262	ND	1	21.16	62.24	ug/Kg	02/01/17	02/02/17	LW	
PCB-1268	ND	1	10.70	62.24	ug/Kg	02/01/17	02/02/17	LW	

Surrogate	*% Recovery*	*Limits*	*Notes*
Decachlorobiphenyl DCB (SUR)	*93*	*50-150*	

Method: EPA 8270CM Prep Method: EPA 3545 QCBatchID: QC1174944

1-Methylnapthalene	ND	1	4.61	12.45	ug/Kg	02/02/17	02/02/17	BB	
2-Methylnaphthalene	ND	1	4.73	12.45	ug/Kg	02/02/17	02/02/17	BB	
Acenaphthene	ND	1	1.74	12.45	ug/Kg	02/02/17	02/02/17	BB	
Acenaphthylene	ND	1	4.11	12.45	ug/Kg	02/02/17	02/02/17	BB	
Anthracene	ND	1	1.49	12.45	ug/Kg	02/02/17	02/02/17	BB	
Benz(a)anthracene	ND	1	1.37	12.45	ug/Kg	02/02/17	02/02/17	BB	L
Benzo(a)pyrene	ND	1	2.24	12.45	ug/Kg	02/02/17	02/02/17	BB	
Benzo(b)fluoranthene	ND	1	2.12	12.45	ug/Kg	02/02/17	02/02/17	BB	L
Benzo(g,h,i)perylene	ND	1	1.49	12.45	ug/Kg	02/02/17	02/02/17	BB	
Benzo(k)fluoranthene	ND	1	2.12	12.45	ug/Kg	02/02/17	02/02/17	BB	
Chrysene	ND	1	1.03	12.45	ug/Kg	02/02/17	02/02/17	BB	
Dibenz(a,h)anthracene	ND	1	1.74	12.45	ug/Kg	02/02/17	02/02/17	BB	
Fluoranthene	ND	1	1.05	12.45	ug/Kg	02/02/17	02/02/17	BB	
Fluorene	ND	1	1.62	12.45	ug/Kg	02/02/17	02/02/17	BB	
Indeno(1,2,3-cd)pyrene	ND	1	2.24	12.45	ug/Kg	02/02/17	02/02/17	BB	
Naphthalene	ND	1	4.98	12.45	ug/Kg	02/02/17	02/02/17	BB	
Phenanthrene	ND	1	1.74	12.45	ug/Kg	02/02/17	02/02/17	BB	
Pyrene	ND	1	0.97	12.45	ug/Kg	02/02/17	02/02/17	BB	

Surrogate	*% Recovery*	*Limits*	*Notes*
2-Fluorobiphenyl (SUR)	*38*	*30-120*	
Nitrobenzene-d5 (SUR)	*41*	*27-125*	
p-Terphenyl (SUR)	*60*	*33-155*	

Method: EPA 9034 *NELAC* Prep Method: See Attached QCBatchID:

See Attached		1							

Method: SM 2540-G Prep Method: Method QCBatchID: QC1175059

Total Solids	**80.3**	1			%	02/02/17	02/02/17	TP	

QCBatchID: QC1174915	Analyst: nhernandez	Method: EPA 8081A
Matrix: Solid	Analyzed: 02/01/2017	Instrument: SVOA-GC (group)

Blank Summary

Analyte	Blank Result	Units	MDL	RDL	Notes
QC1174915MB1					
4,4'-DDD	ND	ug/Kg	0.67	5	
4,4'-DDE	ND	ug/Kg	0.57	5	
4,4'-DDT	ND	ug/Kg	0.95	5	
a-BHC	ND	ug/Kg	0.2	5	
Aldrin	ND	ug/Kg	0.34	5	
b-BHC	ND	ug/Kg	1.2	5	
Chlordane (technical)	ND	ug/Kg	12	50	
d-BHC	ND	ug/Kg	0.45	5	
Dieldrin	ND	ug/Kg	0.63	5	
Endosulfan I	ND	ug/Kg	0.28	5	
Endosulfan II	ND	ug/Kg	0.8	5	
Endosulfan sulfate	ND	ug/Kg	1.7	5	
Endrin	ND	ug/Kg	0.62	5	
Endrin aldehyde	ND	ug/Kg	0.9	5	
Endrin Ketone	ND	ug/Kg	1.2	5	
Heptachlor	ND	ug/Kg	0.44	5	
Heptachlor epoxide	ND	ug/Kg	0.27	5	
Lindane (Gamma-BHC)	ND	ug/Kg	0.3	5	
Methoxychlor	ND	ug/Kg	5.2	10	
Toxaphene	ND	ug/Kg	12	100	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1174915LCS1											
4,4'-DDE	50		50		ug/Kg	100			70-130		
4,4'-DDT	50		50		ug/Kg	100			70-130		
a-BHC	50		55		ug/Kg	110			70-130		
Aldrin	50		52		ug/Kg	104			70-130		
b-BHC	50		53		ug/Kg	106			70-130		
d-BHC	50		52		ug/Kg	104			70-130		
Dieldrin	50		54		ug/Kg	108			70-130		
Endosulfan I	50		49		ug/Kg	98			70-130		
Endosulfan II	50		49		ug/Kg	98			70-130		
Endosulfan sulfate	50		55		ug/Kg	110			70-130		
Endrin	50		54		ug/Kg	108			70-130		
Endrin aldehyde	50		37		ug/Kg	74			70-130		
Heptachlor	50		54		ug/Kg	108			70-130		
Heptachlor epoxide	50		54		ug/Kg	108			70-130		
Lindane (Gamma-BHC)	50		53		ug/Kg	106			70-130		
Methoxychlor	50		54		ug/Kg	108			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1174915MS1, QC1174915MSD1												**Source: 387148-001**
4,4'-DDE	ND	50	50	52	43	ug/Kg	104	86	18.9	70-130	20	
4,4'-DDT	ND	50	50	48	42	ug/Kg	96	84	13.3	70-130	20	
a-BHC	ND	50	50	53	44	ug/Kg	106	88	18.6	70-130	20	
Aldrin	ND	50	50	50	42	ug/Kg	100	84	17.4	70-130	20	
b-BHC	ND	50	50	51	44	ug/Kg	102	88	14.7	70-130	20	

QCBatchID: QC1174915	Analyst: nhernandez	Method: EPA 8081A
Matrix: Solid	Analyzed: 02/01/2017	Instrument: SVOA-GC (group)

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1174915MS1, QC1174915MSD1												**Source: 387148-001**
d-BHC	ND	50	50	52	44	ug/Kg	104	88	16.7	70-130	20	
Dieldrin	ND	50	50	53	45	ug/Kg	106	90	16.3	70-130	20	
Endosulfan I	ND	50	50	49	41	ug/Kg	98	82	17.8	70-130	20	
Endosulfan II	ND	50	50	48	41	ug/Kg	96	82	15.7	70-130	20	
Endosulfan sulfate	ND	50	50	53	47	ug/Kg	106	94	12.0	70-130	20	
Endrin	ND	50	50	53	44	ug/Kg	106	88	18.6	70-130	20	
Endrin aldehyde	ND	50	50	38	37	ug/Kg	76	74	2.7	70-130	20	
Heptachlor	ND	50	50	52	44	ug/Kg	104	88	16.7	70-130	20	
Heptachlor epoxide	ND	50	50	53	44	ug/Kg	106	88	18.6	70-130	20	
Lindane (Gamma-BHC)	ND	50	50	51	43	ug/Kg	102	86	17.0	70-130	20	
Methoxychlor	ND	50	50	50	44	ug/Kg	100	88	12.8	70-130	20	

QCBatchID:	QC1174916	Analyst:	nhernandez	Method:	EPA 8082
Matrix:	Solid	Analyzed:	02/01/2017	Instrument:	SVOA-GC (group)

Blank Summary

Analyte	Blank Result	Units	MDL	RDL	Notes
QC1174916MB1					
PCB-1016	ND	ug/Kg	3	50	
PCB-1221	ND	ug/Kg	14	50	
PCB-1232	ND	ug/Kg	9.5	50	
PCB-1242	ND	ug/Kg	14	50	
PCB-1248	ND	ug/Kg	19	50	
PCB-1254	ND	ug/Kg	20	50	
PCB-1260	ND	ug/Kg	6.9	50	
PCB-1262	ND	ug/Kg	17	50	
PCB-1268	ND	ug/Kg	8.6	50	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1174916LCS1											
PCB-1016	500		440		ug/Kg	88			70-130		
PCB-1260	500		510		ug/Kg	102			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1174916MS1, QC1174916MSD1												**Source: 387148-001**
PCB-1016	ND	500	500	460	450	ug/Kg	92	90	2.2	70-130	20	
PCB-1260	ND	500	500	510	510	ug/Kg	102	102	0.0	70-130	20	

QCBatchID:	**QC1174924**	**Analyst:**	lytagas	**Method:**	EPA 8015M
Matrix:	Solid	**Analyzed:**	02/01/2017	**Instrument:**	SVOA-GC (group)

Blank Summary

Analyte	Blank Result	Units	MDL	RDL	Notes
QC1174924MB1					
TPH (C10 to C28)	ND	mg/Kg	10	10	
TPH (C28 to C40)	ND	mg/Kg	20	20	
TPH (C8 to C10)	ND	mg/Kg	10	10	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount		Spike Result		Units	Recoveries		RPD	Limits		Notes
	LCS	LCSD	LCS	LCSD		LCS	LCSD		%Rec	RPD	
QC1174924LCS1, QC1174924LCSD1											
TPH (C10 to C28)	250	250	240	230	mg/Kg	96	92	4	70-130	20	

QCBatchID: QC1174933	Analyst: kedy	Method: EPA 6010B
Matrix: Solid	Analyzed: 02/01/2017	Instrument: AAICP (group)

Blank Summary

Analyte	Blank Result	Units	MDL	RDL	Notes
QC1174933MB1					
Antimony	**0.49 J**	mg/Kg	0.37	3	
Arsenic	ND	mg/Kg	0.36	1	
Barium	ND	mg/Kg	0.23	1	
Beryllium	ND	mg/Kg	0.17	0.5	
Cadmium	ND	mg/Kg	0.21	0.5	
Chromium	ND	mg/Kg	0.13	1	
Cobalt	ND	mg/Kg	0.19	0.5	
Copper	ND	mg/Kg	0.31	1	
Lead	ND	mg/Kg	0.32	0.5	
Molybdenum	ND	mg/Kg	0.13	1	
Nickel	ND	mg/Kg	0.2	1.5	
Selenium	**0.97 J**	mg/Kg	0.72	1	
Silver	ND	mg/Kg	0.13	0.5	
Thallium	ND	mg/Kg	0.42	1	
Vanadium	ND	mg/Kg	0.37	0.5	
Zinc	**0.38 J**	mg/Kg	0.28	5	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1174933LCS1											
Antimony	100		97.5		mg/Kg	98			80-120		
Arsenic	100		101		mg/Kg	101			80-120		
Barium	100		103		mg/Kg	103			80-120		
Beryllium	100		96.6		mg/Kg	97			80-120		
Cadmium	100		100		mg/Kg	100			80-120		
Chromium	100		98.8		mg/Kg	99			80-120		
Cobalt	100		103		mg/Kg	103			80-120		
Copper	100		99.0		mg/Kg	99			80-120		
Lead	100		101		mg/Kg	101			80-120		
Molybdenum	100		103		mg/Kg	103			80-120		
Nickel	100		101		mg/Kg	101			80-120		
Selenium	100		93.6		mg/Kg	94			80-120		
Silver	100		91.4		mg/Kg	91			80-120		
Thallium	100		106		mg/Kg	106			80-120		
Vanadium	100		103		mg/Kg	103			80-120		
Zinc	100		99.5		mg/Kg	100			80-120		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1174933MS1, QC1174933MSD1												**Source: 387148-009**
Antimony	ND	100	100	43.4	49.4	mg/Kg	43	49	12.9	75-125	20	M
Arsenic	2.47	100	100	114	113	mg/Kg	112	111	0.9	75-125	20	
Barium	52.8	100	100	166	158	mg/Kg	113	105	4.9	75-125	20	
Beryllium	ND	100	100	111	116	mg/Kg	111	116	4.4	75-125	20	
Cadmium	0.25	100	100	116	119	mg/Kg	116	119	2.6	75-125	20	
Chromium	6.12	100	100	121	122	mg/Kg	115	116	0.8	75-125	20	
Cobalt	3.64	100	100	120	122	mg/Kg	116	118	1.7	75-125	20	
Copper	3.83	100	100	114	116	mg/Kg	110	112	1.7	75-125	20	
Lead	2.44	100	100	111	113	mg/Kg	109	111	1.8	75-125	20	

QCBatchID: QC1174933	Analyst: kedy	Method: EPA 6010B
Matrix: Solid	Analyzed: 02/01/2017	Instrument: AAICP (group)

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1174933MS1, QC1174933MSD1											**Source:**	**387148-009**
Molybdenum	ND	100	100	103	106	mg/Kg	103	106	2.9	75-125	20	
Nickel	2.28	100	100	118	119	mg/Kg	116	117	0.8	75-125	20	
Selenium	ND	100	100	86.9	92.7	mg/Kg	87	93	6.5	75-125	20	
Silver	ND	100	100	93.6	95.0	mg/Kg	94	95	1.5	75-125	20	
Thallium	ND	100	100	106	109	mg/Kg	106	109	2.8	75-125	20	
Vanadium	30.1	100	100	156	151	mg/Kg	126	121	3.3	75-125	20	M
Zinc	18.6	100	100	138	137	mg/Kg	119	118	0.7	75-125	20	

QCBatchID: QC1174944	Analyst: nhernandez	Method: EPA 8270CM
Matrix: Solid	Analyzed: 02/02/2017	Instrument: SVOA-MS (group)

Blank Summary

Analyte	Blank Result	Units	MDL	RDL	Notes
QC1174944MB1					
2-Methylnaphthalene	ND	ug/Kg	3.8	10	
Acenaphthene	ND	ug/Kg	1.4	10	
Acenaphthylene	ND	ug/Kg	3.3	10	
Anthracene	ND	ug/Kg	1.2	10	
Benz(a)anthracene	ND	ug/Kg	1.1	10	
Benzo(a)pyrene	ND	ug/Kg	1.8	10	
Benzo(b)fluoranthene	ND	ug/Kg	1.7	10	
Benzo(g,h,i)perylene	ND	ug/Kg	1.2	10	
Benzo(k)fluoranthene	ND	ug/Kg	1.7	10	
Chrysene	ND	ug/Kg	0.83	10	
Dibenz(a,h)anthracene	ND	ug/Kg	1.4	10	
Fluoranthene	ND	ug/Kg	0.84	10	
Fluorene	ND	ug/Kg	1.3	10	
Indeno(1,2,3-cd)pyrene	ND	ug/Kg	1.8	10	
Naphthalene	ND	ug/Kg	4	10	
Phenanthrene	ND	ug/Kg	1.4	10	
Pyrene	ND	ug/Kg	0.78	10	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1174944LCS1											
1-Methylnaphthalene	50		38.8650		ug/Kg	78			70-130		
2-Methylnaphthalene	50		39		ug/Kg	78			70-130		
Acenaphthene	50		47		ug/Kg	94			70-130		
Acenaphthylene	50		41		ug/Kg	82			70-130		
Anthracene	50		49		ug/Kg	98			70-130		
Benz(a)anthracene	50		68		ug/Kg	136			70-130		L
Benzo(a)pyrene	50		47		ug/Kg	94			70-130		
Benzo(b)fluoranthene	50		83		ug/Kg	166			70-130		L
Benzo(g,h,i)perylene	50		38		ug/Kg	76			70-130		
Benzo(k)fluoranthene	50		52		ug/Kg	104			70-130		
Chrysene	50		44		ug/Kg	88			70-130		
Dibenz(a,h)anthracene	50		52		ug/Kg	104			70-130		
Fluoranthene	50		56		ug/Kg	112			70-130		
Fluorene	50		46		ug/Kg	92			70-130		
Indeno(1,2,3-cd)pyrene	50		50		ug/Kg	100			70-130		
Naphthalene	50		37		ug/Kg	74			70-130		
Phenanthrene	50		52		ug/Kg	104			70-130		
Pyrene	50		54		ug/Kg	108			70-130		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1174944MS1, QC1174944MSD1												**Source: 387148-006**
2-Methylnaphthalene	ND	50	50	37	35	ug/Kg	74	70	5.6	70-130	35	
Acenaphthene	ND	50	50	47	43	ug/Kg	94	86	8.9	70-130	35	
Acenaphthylene	ND	50	50	39	38	ug/Kg	78	76	2.6	70-130	35	
Anthracene	ND	50	50	48	45	ug/Kg	96	90	6.5	70-130	35	
Benz(a)anthracene	ND	50	50	71	65	ug/Kg	142	130	8.8	70-130	35	M
Benzo(a)pyrene	ND	50	50	49	46	ug/Kg	98	92	6.3	70-130	35	

QCBatchID: QC1174944	Analyst: nhernandez	Method: EPA 8270CM
Matrix: Solid	Analyzed: 02/02/2017	Instrument: SVOA-MS (group)

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1174944MS1, QC1174944MSD1											**Source:**	**387148-006**
Benzo(b)fluoranthene	ND	50	50	91	85	ug/Kg	182	170	6.8	70-130	35	M
Benzo(g,h,i)perylene	ND	50	50	37	35	ug/Kg	74	70	5.6	70-130	35	
Benzo(k)fluoranthene	ND	50	50	49	46	ug/Kg	98	92	6.3	70-130	35	
Chrysene	ND	50	50	43	41	ug/Kg	86	82	4.8	70-130	35	
Dibenz(a,h)anthracene	ND	50	50	56	51	ug/Kg	112	102	9.3	70-130	35	
Fluoranthene	ND	50	50	55	51	ug/Kg	110	102	7.5	70-130	35	
Fluorene	ND	50	50	51	46	ug/Kg	102	92	10.3	70-130	35	
Indeno(1,2,3-cd)pyrene	ND	50	50	57	50	ug/Kg	114	100	13.1	70-130	35	
Naphthalene	ND	50	50	34	33	ug/Kg	68	66	3.0	70-130	35	M
Phenanthrene	ND	50	50	50	45	ug/Kg	100	90	10.5	70-130	35	
Pyrene	ND	50	50	53	50	ug/Kg	106	100	5.8	70-130	35	

QCBatchID:	**QC1175029**	**Analyst:**	dswafford	**Method:**	EPA 7471A
Matrix:	Solid	**Analyzed:**	02/03/2017	**Instrument:**	AAICP-HG1

Blank Summary

Analyte	Blank Result	Units	MDL	RDL	Notes
QC1175029MB1					
Mercury	ND	mg/Kg	0.02	0.14	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1175029LCS1											
Mercury	0.83		0.79		mg/Kg	95			80-120		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1175029MS1, QC1175029MSD1												**Source: 387148-009**
Mercury	ND	0.83	0.83	0.88	0.86	mg/Kg	104	101	2.3	75-125	20	

QCBatchID:	**QC1175058**	**Analyst:**	trinh	**Method:**	SM 2540-G
Matrix:	Solid	**Analyzed:**	02/02/2017	**Instrument:**	CHEM (group)

Duplicate Summary

Analyte	Sample Amount	Duplicate Amount	Units	RPD	Limits RPD	Notes
QC1175058DUP1						**Source: 387148-001**
Total Solids	71.4	71.0	%	0.6		

QCBatchID:	**QC1175059**	**Analyst:**	trinh	**Method:**	SM 2540-G
Matrix:	Solid	**Analyzed:**	02/02/2017	**Instrument:**	CHEM (group)

Duplicate Summary

Analyte	Sample Amount	Duplicate Amount	Units	RPD	Limits RPD	Notes
QC1175059DUP1						**Source: 387148-010**
Total Solids	79.7	78.8	%	2.7		

QCBatchID:	**QC1177607**	**Analyst:**	dswafford	**Method:**	EPA 6010B
Matrix:	Solid	**Analyzed:**	04/20/2017	**Instrument:**	AAICP (group)

Blank Summary

Analyte	Blank Result	Units	MDL	RDL	Notes
QC1177607MB1					
Arsenic	ND	mg/L	0.004	0.01	

Lab Control Spike/ Lab Control Spike Duplicate Summary

Analyte	Spike Amount LCS	Spike Amount LCSD	Spike Result LCS	Spike Result LCSD	Units	Recoveries LCS	Recoveries LCSD	RPD	Limits %Rec	Limits RPD	Notes
QC1177607LCS1											
Arsenic	2		1.82		mg/L	91			80-120		

Matrix Spike/Matrix Spike Duplicate Summary

Analyte	Sample Amount	Spike Amount MS	Spike Amount MSD	Spike Result MS	Spike Result MSD	Units	Recoveries MS	Recoveries MSD	RPD	Limits %Rec	Limits RPD	Notes
QC1177607MS1, QC1177607MSD1												**Source: 387148-005**
Arsenic	ND	1	1	1.01	1.00	mg/L	101	100	1.0	75-125	20	

Data Qualifiers and Definitions

Qualifiers

A	See Report Comments.
B	Analyte was present in an associated method blank.
B1	Analyte was present in a sample and associated method blank greater than MDL but less than RDL.
BQ1	No valid test replicates. Sample Toxicity is possible. Best result was reported.
BQ2	No valid test replicates.
BQ3	No valid test replicates. Final DO is less than 1.0 mg/L. Result may be greater.
C	Possible laboratory contamination.
D	RPD was not within control limits. The sample data was reported without further clarification.
D1	Lesser amount of sample was used due to insufficient amount of sample supplied.
D2	Reporting limit is elevated due to sample matrix. Target analyte was not detected above the elevated reporting limit.
DW	Sample result is calculated on a dry weigh basis.
E	Concentration is estimated because it exceeds the quantification limits of the method.
I	The sample was read outside of the method required incubation period.
J	Reported value is estimated
L	The laboratory control sample (LCS) or laboratory control sample duplicate (LCSD) was out of control limits. Associated sample data was reported with qualifier.
M	The matrix spike (MS) or matrix spike duplicate (MSD) was not within control limits due to matrix interference. The associated LCS and/or LCSD was within control limits and the sample data was reported without further clarification.
M1	The matrix spike (MS) or matrix spike duplicate (MSD) is not within control limits due to matrix interference.
M2	The matrix spike (MS) or matrix spike duplicate (MSD) was not within control limits. The associated LCS and/or LCSD was not within control limits. Sample result is estimated.
N1	Sample chromatography does not match the specified TPH standard pattern.
NC	The analyte concentration in the sample exceeded the spike level by a factor of four or greater, spike recovery and limits do not apply.
P	Sample was received without proper preservation according to EPA guidelines.
P1	Temperature of sample storage refrigerator was out of acceptance limits.
P2	The sample was preserved within 24 hours of collection in accordance with EPA 218.6.
Q1	Analyte Calibration Verification exceeds criteria. The result is estimated.
Q2	Analyte calibration was not verified and the result was estimated.
Q3	Analyte initial calibration was not available or exceeds criteria. The result was estimated.
S	The surrogate recovery was out of control limits due to matrix interference. The associated method blank surrogate recovery was within control limits and the sample data was reported without further clarification.
S1	The associated surrogate recovery was out of control limits; result is estimated.
S2	The surrogate was diluted out due to the presence of high concentrations of target and/or non-target compounds. Surrogate recoveries in the associated batch QC met recovery criteria.
S3	Internal Standard did not meet recovery limits. Analyte concentration is estimated.
T	Sample was extracted/analyzed past the holding time.
T1	Reanalysis was reported past hold time due to failing replicates in the original analysis (BOD only).
T2	Sample was analyzed ASAP but received and analyzed past the 15 minute holding time.
T3	Sample received and analyzed out of hold time per client's request.
T4	Sample was analyzed out of hold time per client's request.
T5	Reanalysis was reported past hold time. The original analysis was within hold time, but not reportable.
T6	Hold time is indeterminable due to unspecified sampling time.
T7	Sample was analyzed past hold time due to insufficient time remaining at time of receipt.

Definitions

DF	Dilution Factor
MDL	Method Detection Limit. Result is reported ND when it is less than or equal to MDL.
ND	Analyte was not detected or was less than the detection limit.
NR	Not Reported. See Report Comments.
RDL	Reporting Detection Limit
TIC	Tentatively Identified Compounds

ENTHALPHY ANALYTICAL, INC.	Chain of Custody Record	Turn Around Time (Rush by advanced notice only)
806 N. Batavia St., Orange, CA 92868 Phone: (714) 771-6900 Fax: (714)771-9933	Lab No: 387148 Page: of	Standard: ✓ 4 Day: 3 Day: 2 Day: 1 Day: Same Day:
Billing: Enthalpy - SoCal c/o Montrose Environmental Group 1 Park Plaza, Suite 1000, Irvine, CA 92614	Matrix: A = Air DW = Drinking Water FL = Food Liquid FS = Food Solid L = Liquid PP = Pure Product S = Solid SeaW = Sea Water SW = Swab W = Water WP = Wipe O = Other	Preservatives: 1 = $Na_2S_2O_3$ 2 = HCl 3 = HNO_3 4 = H_2SO_4 5 = NaOH 6 = Other

ENTHALPY analytical, inc.

CUSTOMER INFORMATION		PROJECT INFORMATION	
Company:	Great Ecology	Name:	Pond 20 Mitigation Bank
Report To:	Nick Buhbe	Number:	
Email:	nbuhbe@greatecology.com	P.O. #:	
Address:	2251 San Diego Ave., Suite A218	Address:	
	San Diego, CA 92110		
Phone:	858-750-3201	Global ID:	
Fax:		Sampled By:	Nick Buhbe, Ashley Tuggle

Analysis Request

	Sample ID	Sampling Date	Sampling Time	Matrix	Container No. / Size	Pres.	Percent Solids, TOC	Total Sulfides, Dissolved Sulfides	Plasticity Index, In-Situ Moisture, Shear Strength	Grain Size (ASTM D422)	Grain Size (ASTM D4464M)	As, Cd, Cr, Cu, Pb, Ni, Se, Ag, Zn	Hg	TRPH	Pesticides	PCBs, PAHs
1	P20-1T	1/30/17	15:00	Soil	2-16oz		X	X				X	X	X	X	X
2	P20-1M		15:10													
3	P20-1Z		15:20													
4	P20-2T		13:20													
5	P20-2Z		13:40													
6	P20-3T		12:00													
7	P20-3M		12:10													
8	P20-3Z		12:20													
9	P20-4T		10:15													
10	P20-4M		10:25													

Test Instructions / Comments

Please send a copy of results to: atuggle@greatecology.com

~~homogenize all samples~~
~~b/f taking aliquo~~
samples not homogenized
collect representative samples from containers, retain excess sample

	Signature	Print Name	Company / Title	Date / Time
1 Relinquished By:	[signature]	N. BUHBE	Great Ecology	1/31/17
1 Received By:	[signature]	L. Marrolett		1/31/17 1200
2 Relinquished By:	[signature]	L. Marrolett		1/31/17 1336
2 Received By:	[signature]	T. Nash	EA	1/31/17 1407
3 Relinquished By:				
3 Received By:				

ENTHALPHY ANALYTICAL, INC.	Chain of Custody Record	Turn Around Time (Rush by advanced notice only)
806 N. Batavia St., Orange, CA 92868 Phone: (714) 771-6900 Fax: (714)771-9933	Lab No: 387148 Page: of	Standard: ✓ 4 Day: 3 Day: 2 Day: 1 Day: Same Day:
Billing: Enthalpy - SoCal c/o Montrose Environmental Group 1 Park Plaza, Suite 1000, Irvine, CA 92614	**Matrix:** A = Air DW = Drinking Water FL = Food Liquid FS = Food Solid L = Liquid PP = Pure Product S = Solid SeaW = Sea Water SW = Swab W = Water WP = Wipe O = Other	**Preservatives:** 1 = $Na_2S_2O_3$ 2 = HCl 3 = HNO_3 4 = H_2SO_4 5 = NaOH 6 = Other

CUSTOMER INFORMATION		PROJECT INFORMATION	
Company:	Great Ecology	Name:	Pond 20 Mitigation Bank
Report To:	Nick Buhbe	Number:	
Email:	nbuhbe@greatecology.com	P.O. #:	
Address:	2251 San Diego Ave., Suite A218	Address:	
	San Diego, CA 92110		
Phone:	858-750-3201	Global ID:	
Fax:		Sampled By:	Nick Buhbe, Ashley Tuggle

	Sample ID	Sampling Date	Sampling Time	Matrix	Container No. / Size	Pres.	Percent Solids , TOC	Total Sulfides, Dissolved Sulfides	Plasticity Index, In-Situ Moisture, Shear Strength	~~Grain Size (ASTM D422)~~	~~Grain Size (ASTM D4464M)~~	As, Cd, Cr, Cu, Pb, Ni, Se, Ag , Zn	Hg	TRPH	Pesticides	PCBs, PAHs
1	P20-4Z	1/30/17	10:35				X	X				X	X	X	X	X
2																
3																
4																
5																
6																
7																
8																
9																
10																

Test Instructions / Comments

Please send a copy of results to:
atuggle@greatecology.com

~~homogenized~~ samples
not homogenized collect
representative samples
from containers,
retain excess sample
material

	Signature	Print Name	Company / Title	Date / Time
1 Relinquished By:		N. BUHBE	Great Ecology	1/31/17
1 Received By:		L. Marrokki		1/31/17 1200
2 Relinquished By:		L. Marrokki		1/31/17 1336
2 Received By:		T. Nash	EA	1/31/17 1407
3 Relinquished By:				
3 Received By:				

ENTHALPY analytical inc

SAMPLE ACCEPTANCE CHECKLIST

Section 1

Client: GREAT ECOLOGY Project: POND 20 MITIGATION BANK

Date Received: 1/31/17 Sampler's Name Present: (Yes) No

Sample(s) received in a cooler? (Yes) How many? 1 No (skip section 2) Sample Temp (°C):_____

Sample Temp (°C) from each cooler: #1: 9.7C #2: _____ #3: _____ #4: _____

(Acceptance range is 0 to 6°C or, for samples collected the same day as sample receipt, arrival on ice; For Microbiology sample 0 to 10°C or, for samples collected the same day as sample receipt, arrival on ice)

Shipping Information:_____

Section 2

Was the cooler packed with: ✓ Ice ___ Ice Packs ___ Bubble Wrap ___ Styrofoam ___ Paper ___ None ___ Other_____

Cooler Temp (°C): #1: 2.3°C #2: _____ #3: _____ #4: _____

Section 3	YES	NO	N/A
Was a COC received?	✓		
Were sample IDs present?	✓		
Were sampling dates & times present?	✓		
Was a relinquished signature present?	✓		
Were the tests required clearly indicated?	✓		
Were custody seals present?		✓	
If Yes – were they intact?			✓
Were all samples sealed in plastic bags?	✓		
Did all samples arrive intact? If no, indicate below.	✓		
Did all bottle labels agree with COC? (ID, dates and times)	✓		
Were correct containers used for the tests required?	✓		
Was a sufficient amount of sample sent for tests indicated?	✓		
Was there headspace in VOA vials?			✓
Were the containers labeled with correct preservatives?			✓

Section 4

Explanations/Comments:_____

Section 5

For discrepancies, how was the Project Manager notified? Verbal PM Initials:_____ Date/Time_____

Email (email sent to/on):_____ / _____

Project Manager's response:

Completed By: [signature] Date: 1/31/17

Ranjit Clarke

From: Nick Buhbe <nbuhbe@greatecology.com>
Sent: Thursday, April 13, 2017 9:27 AM
To: Ranjit Clarke
Subject: RE: Pond 20 Mitigation Bank (01/30/17) - Enthalpy Analytical Final Report #387148

Ranjit-
Good morning,
We would like to proceed with running the Pond 20 samples for SPLP, and analyze for arsenic. We will run the samples with the highest dry weight values in each core: P20-1M (Berm), and also samples P20-2Z, P20-3Z, and P20-4Z (Interior). So four samples total of the batch. From a QA perspective, there will be a duplicate in the batch, correct? (i.e., not necessarily one of our samples).

Thanks
Nick

Nick Buhbe, M.S.
Director, Western Region

GREAT ecology

P | 858.750.3201 C | 619.985.9111 E | nbuhbe@greatecology.com

---

From: Ranjit Clarke [mailto:Ranjit.Clarke@enthalpy.com]
Sent: Thursday, April 06, 2017 3:01 PM
To: Nick Buhbe <nbuhbe@greatecology.com>
Subject: RE: Pond 20 Mitigation Bank (01/30/17) - Enthalpy Analytical Final Report #387148

Nick,

SPLP extraction = $35
EPA 6010B As = $15

Total = $50 per sample (standard 5-7 business day TAT)

Ranjit

ENTHALPY ANALYTICAL

Ranjit Clarke
Senior Project Manager
O: 714-771-9906 / M: 657-274-9864 / F: 714-538-1209
Ranjit.Clarke@enthalpy.com

From: Nick Buhbe [mailto:nbuhbe@greatecology.com]
Sent: Tuesday, April 04, 2017 2:39 PM
To: Ranjit Clarke <Ranjit.Clarke@enthalpy.com>
Subject: RE: Pond 20 Mitigation Bank (01/30/17) - Enthalpy Analytical Final Report #387148

Ranjit-
How much would it cost to run SPLP analyses for arsenic alone, for four of the samples?

I think there may be a set-up fee, then a per sample cost? At least that's how they used to price these at CEL, for dredge material.

And are there holding time restrictions on this analysis that would come into play?

Thanks,
Nick

Nick Buhbe, M.S.
Director, Western Region

GREAT ecology

P | 858.750.3201 C | 619.985.9111 E | nbuhbe@greatecology.com

From: Ranjit Clarke [mailto:Ranjit.Clarke@enthalpy.com]
Sent: Monday, April 03, 2017 6:19 PM
To: Nick Buhbe <nbuhbe@greatecology.com>
Subject: RE: Pond 20 Mitigation Bank (01/30/17) - Enthalpy Analytical Final Report #387148

Nick,

We still have the samples.

Ranjit

ENTHALPY ANALYTICAL

Ranjit Clarke
Senior Project Manager
O: 714-771-9906 / M: 657-274-9864 / F: 714-538-1209
Ranjit.Clarke@enthalpy.com

From: Nick Buhbe [mailto:nbuhbe@greatecology.com]
Sent: Monday, April 03, 2017 10:15 AM
To: Ranjit Clarke <Ranjit.Clarke@enthalpy.com>
Subject: FW: Pond 20 Mitigation Bank (01/30/17) - Enthalpy Analytical Final Report #387148

Ranjit-
Good morning,

We have a potential request from this client to perform SPLP analyses on these samples. We are working out the precise request in terms of how many samples, modifications to the method, etc., but first things first:

Can you verify that you still have the samples on-hand?

Thank you.
Nick

Nick Buhbe, M.S.
Director, Western Region

GREATecology

P | 858.750.3201 C | 619.985.9111 E | nbuhbe@greatecology.com

---

From: Ranjit Clarke [mailto:Ranjit.Clarke@enthalpy.com]
Sent: Monday, February 13, 2017 4:32 PM
To: Nick Buhbe <nbuhbe@greatecology.com>
Subject: RE: Pond 20 Mitigation Bank (01/30/17) - Enthalpy Analytical Final Report #387148

Nick,

I generated an EDD and Calscience sent one as well. I guess I forgot to attach them. Here you go.

ENTHALPY analytical, inc

Ranjit Clarke
Senior Project Manager
O: 714-771-9906 / M: 657-274-9864 / F: 714-538-1209
Ranjit.Clarke@enthalpy.com

From: Nick Buhbe [mailto:nbuhbe@greatecology.com]
Sent: Monday, February 13, 2017 3:46 PM
To: Ranjit Clarke <Ranjit.Clarke@enthalpy.com>
Subject: RE: Pond 20 Mitigation Bank (01/30/17) - Enthalpy Analytical Final Report #387148

Ranjit-
Do you happen to have an EDD?
We would like the data in a 'manipulable' form for conversion to report tables.

Thanks,
Nick

PS, I hope to see Dennis tomorrow at the SDEP meeting.

Nick Buhbe, M.S.
Director, Western Region

P | 858.750.3201 C | 619.985.9111 E | nbuhbe@greatecology.com

---

From: Ranjit Clarke [mailto:Ranjit.Clarke@enthalpy.com]
Sent: Thursday, February 09, 2017 6:17 PM
To: Nick Buhbe <nbuhbe@greatecology.com>
Subject: Pond 20 Mitigation Bank (01/30/17) - Enthalpy Analytical Final Report #387148

Hi Nick Buhbe,

Attached is your final report #387148.

Thank you.

In accordance with our paperless initiative, we are no longer mailing or faxing reports by default. If you require a hard copy, please inform your Project Manager.

Data qualifiers and additional information necessary for the interpretation of the test results are contained in the PDF file and may not be included in the EDD.

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WORK ORDER NUMBER: 17-02-0124

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Enthalpy Analytical, Inc.

Client Project Name: 387148

Attention: Ranjit Clarke
931 W. Barkley Avenue
Orange, CA 92868-1208

Approved for release on 02/09/2017 by:
Xuan Dang
Project Manager

ResultLink

Email your PM

Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

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Work Order Number: 17-02-0124

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Work Order Narrative

Work Order: 17-02-0124 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 02/01/17. They were assigned to Work Order 17-02-0124.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

SM 2540B - TOTAL SOLIDS:
The values for % solids were provided by Enthalpy.

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Sample Summary

Client:	Enthalpy Analytical, Inc. 931 W. Barkley Avenue Orange, CA 92868-1208	Work Order:	17-02-0124
		Project Name:	387148
		PO Number:	
		Date/Time Received:	02/01/17 16:07
		Number of Containers:	11
Attn:	Ranjit Clarke		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
P20-1T (387148-001)	17-02-0124-1	01/30/17 15:00	1	Solid
P20-1M (387148-002)	17-02-0124-2	01/30/17 15:10	1	Solid
P20-1Z (387148-003)	17-02-0124-3	01/30/17 15:20	1	Solid
P20-2T (387148-004)	17-02-0124-4	01/30/17 13:20	1	Solid
P20-2Z (387148-005)	17-02-0124-5	01/30/17 13:40	1	Solid
P20-3T (387148-006)	17-02-0124-6	01/30/17 12:00	1	Solid
P20-3M (387148-007)	17-02-0124-7	01/30/17 12:10	1	Solid
P20-3Z (387148-008)	17-02-0124-8	01/30/17 12:20	1	Solid
P20-4T (387148-009)	17-02-0124-9	01/30/17 10:15	1	Solid
P20-4M (387148-010)	17-02-0124-10	01/30/17 10:25	1	Solid
P20-4Z (387148-011)	17-02-0124-11	01/30/17 10:35	1	Solid

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Detections Summary

Client:	Enthalpy Analytical, Inc. 931 W. Barkley Avenue Orange, CA 92868-1208	Work Order: Project Name: Received:	17-02-0124 387148 02/01/17
Attn:	Ranjit Clarke		

Client SampleID Analyte	Result	Qualifiers	RL	Units	Method	Extraction
P20-1T (387148-001) (17-02-0124-1)						
Carbon, Total Organic	6300		700	mg/kg	EPA 9060A	N/A
Solids, Total	71.4		0.100	%	SM 2540 B (M)	N/A
P20-1M (387148-002) (17-02-0124-2)						
Sulfide, Total	9.8		0.82	mg/kg	EPA 376.2M	N/A
Carbon, Total Organic	16000		820	mg/kg	EPA 9060A	N/A
Solids, Total	61.2		0.100	%	SM 2540 B (M)	N/A
P20-1Z (387148-003) (17-02-0124-3)						
Sulfide, Total	230		15	mg/kg	EPA 376.2M	N/A
Carbon, Total Organic	11000		730	mg/kg	EPA 9060A	N/A
Solids, Total	68.6		0.100	%	SM 2540 B (M)	N/A
P20-2T (387148-004) (17-02-0124-4)						
Solids, Total	79.1		0.100	%	SM 2540 B (M)	N/A
P20-2Z (387148-005) (17-02-0124-5)						
Sulfide, Total	0.72		0.72	mg/kg	EPA 376.2M	N/A
Carbon, Total Organic	9400		720	mg/kg	EPA 9060A	N/A
Solids, Total	69.8		0.100	%	SM 2540 B (M)	N/A
P20-3T (387148-006) (17-02-0124-6)						
Solids, Total	88.6		0.100	%	SM 2540 B (M)	N/A
P20-3M (387148-007) (17-02-0124-7)						
Carbon, Total Organic	2500		650	mg/kg	EPA 9060A	N/A
Solids, Total	76.4		0.100	%	SM 2540 B (M)	N/A
P20-3Z (387148-008) (17-02-0124-8)						
Solids, Total	84.8		0.100	%	SM 2540 B (M)	N/A
P20-4T (387148-009) (17-02-0124-9)						
Carbon, Total Organic	600		560	mg/kg	EPA 9060A	N/A
Solids, Total	89.0		0.100	%	SM 2540 B (M)	N/A
P20-4M (387148-010) (17-02-0124-10)						
Solids, Total	79.7		0.100	%	SM 2540 B (M)	N/A
P20-4Z (387148-011) (17-02-0124-11)						
Solids, Total	80.3		0.100	%	SM 2540 B (M)	N/A

Subcontracted analyses, if any, are not included in this summary.

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* MDL is shown

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Analytical Report

Enthalpy Analytical, Inc.		Date Received:	02/01/17
931 W. Barkley Avenue		Work Order:	17-02-0124
Orange, CA 92868-1208		Preparation:	N/A
		Method:	EPA 376.2M
		Units:	mg/kg
Project: 387148			Page 1 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
P20-1T (387148-001)	**17-02-0124-1-A**	**01/30/17 15:00**	**Solid**	**N/A**	**02/03/17**	**02/03/17 15:28**	**H0203SL2**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Sulfide, Total	ND	0.70	0.54	1.00	

P20-1M (387148-002)	**17-02-0124-2-A**	**01/30/17 15:10**	**Solid**	**N/A**	**02/03/17**	**02/03/17 15:28**	**H0203SL2**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Sulfide, Total	9.8	0.82	0.63	1.00	

P20-1Z (387148-003)	**17-02-0124-3-A**	**01/30/17 15:20**	**Solid**	**N/A**	**02/03/17**	**02/03/17 15:28**	**H0203SL2**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Sulfide, Total	230	15	11	20.0	

P20-2T (387148-004)	**17-02-0124-4-A**	**01/30/17 13:20**	**Solid**	**N/A**	**02/03/17**	**02/03/17 15:28**	**H0203SL2**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Sulfide, Total	ND	0.63	0.48	1.00	

P20-2Z (387148-005)	**17-02-0124-5-A**	**01/30/17 13:40**	**Solid**	**N/A**	**02/03/17**	**02/03/17 15:28**	**H0203SL2**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Sulfide, Total	0.72	0.72	0.55	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Enthalpy Analytical, Inc.		Date Received:	02/01/17
931 W. Barkley Avenue		Work Order:	17-02-0124
Orange, CA 92868-1208		Preparation:	N/A
		Method:	EPA 376.2M
		Units:	mg/kg
Project: 387148			Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
P20-3T (387148-006)	**17-02-0124-6-A**	**01/30/17 12:00**	**Solid**	**N/A**	**02/03/17**	**02/03/17 15:28**	**H0203SL2**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Sulfide, Total	ND	0.56	0.43	1.00	

P20-3M (387148-007)	**17-02-0124-7-A**	**01/30/17 12:10**	**Solid**	**N/A**	**02/03/17**	**02/03/17 15:28**	**H0203SL2**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Sulfide, Total	ND	0.65	0.50	1.00	

P20-3Z (387148-008)	**17-02-0124-8-A**	**01/30/17 12:20**	**Solid**	**N/A**	**02/03/17**	**02/03/17 15:28**	**H0203SL2**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Sulfide, Total	ND	0.59	0.45	1.00	

P20-4T (387148-009)	**17-02-0124-9-A**	**01/30/17 10:15**	**Solid**	**N/A**	**02/03/17**	**02/03/17 15:28**	**H0203SL2**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Sulfide, Total	ND	0.56	0.43	1.00	

P20-4M (387148-010)	**17-02-0124-10-A**	**01/30/17 10:25**	**Solid**	**N/A**	**02/03/17**	**02/03/17 15:28**	**H0203SL2**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Sulfide, Total	ND	0.63	0.48	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Enthalpy Analytical, Inc.		Date Received:	02/01/17
931 W. Barkley Avenue		Work Order:	17-02-0124
Orange, CA 92868-1208		Preparation:	N/A
		Method:	EPA 376.2M
		Units:	mg/kg
Project: 387148			Page 3 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
P20-4Z (387148-011)	**17-02-0124-11-A**	**01/30/17 10:35**	**Solid**	**N/A**	**02/03/17**	**02/03/17 15:28**	**H0203SL2**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Sulfide, Total	ND	0.62	0.48	1.00	

Method Blank	**099-05-001-5954**	**N/A**	**Solid**	**N/A**	**02/03/17**	**02/03/17 15:28**	**H0203SL2**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Sulfide, Total	ND	0.50	0.38	1.00	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Enthalpy Analytical, Inc.		Date Received:	02/01/17
931 W. Barkley Avenue		Work Order:	17-02-0124
Orange, CA 92868-1208		Preparation:	N/A
		Method:	EPA 376.2M
		Units:	mg/kg
Project: 387148			Page 1 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
P20-1T (387148-001)	**17-02-0124-1-A**	**01/30/17 15:00**	**Solid**	**N/A**	**02/03/17**	**02/03/17 13:15**	**H0203DSL1**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Sulfide, Dissolved	ND	0.70	0.42	1.00	

P20-1M (387148-002)	**17-02-0124-2-A**	**01/30/17 15:10**	**Solid**	**N/A**	**02/03/17**	**02/03/17 13:15**	**H0203DSL1**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Sulfide, Dissolved	ND	0.82	0.49	1.00	

P20-1Z (387148-003)	**17-02-0124-3-A**	**01/30/17 15:20**	**Solid**	**N/A**	**02/03/17**	**02/03/17 13:15**	**H0203DSL1**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Sulfide, Dissolved	ND	0.73	0.43	1.00	

P20-2T (387148-004)	**17-02-0124-4-A**	**01/30/17 13:20**	**Solid**	**N/A**	**02/03/17**	**02/03/17 13:15**	**H0203DSL1**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Sulfide, Dissolved	ND	0.63	0.38	1.00	

P20-2Z (387148-005)	**17-02-0124-5-A**	**01/30/17 13:40**	**Solid**	**N/A**	**02/03/17**	**02/03/17 13:15**	**H0203DSL1**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Sulfide, Dissolved	ND	0.72	0.43	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Enthalpy Analytical, Inc.		Date Received:	02/01/17
931 W. Barkley Avenue		Work Order:	17-02-0124
Orange, CA 92868-1208		Preparation:	N/A
		Method:	EPA 376.2M
		Units:	mg/kg
Project: 387148			Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
P20-3T (387148-006)	**17-02-0124-6-A**	**01/30/17 12:00**	**Solid**	**N/A**	**02/03/17**	**02/03/17 13:15**	**H0203DSL1**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Sulfide, Dissolved	ND	0.56	0.34	1.00	

P20-3M (387148-007)	**17-02-0124-7-A**	**01/30/17 12:10**	**Solid**	**N/A**	**02/03/17**	**02/03/17 13:15**	**H0203DSL1**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Sulfide, Dissolved	ND	0.65	0.39	1.00	

P20-3Z (387148-008)	**17-02-0124-8-A**	**01/30/17 12:20**	**Solid**	**N/A**	**02/03/17**	**02/03/17 13:15**	**H0203DSL1**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Sulfide, Dissolved	ND	0.59	0.35	1.00	

P20-4T (387148-009)	**17-02-0124-9-A**	**01/30/17 10:15**	**Solid**	**N/A**	**02/03/17**	**02/03/17 13:15**	**H0203DSL1**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Sulfide, Dissolved	ND	0.56	0.33	1.00	

P20-4M (387148-010)	**17-02-0124-10-A**	**01/30/17 10:25**	**Solid**	**N/A**	**02/03/17**	**02/03/17 13:15**	**H0203DSL1**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Sulfide, Dissolved	ND	0.63	0.37	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Enthalpy Analytical, Inc.		Date Received:	02/01/17
931 W. Barkley Avenue		Work Order:	17-02-0124
Orange, CA 92868-1208		Preparation:	N/A
		Method:	EPA 376.2M
		Units:	mg/kg
Project: 387148			Page 3 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
P20-4Z (387148-011)	**17-02-0124-11-A**	**01/30/17 10:35**	**Solid**	**N/A**	**02/03/17**	**02/03/17 13:15**	**H0203DSL1**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Sulfide, Dissolved	ND	0.62	0.37	1.00	

Method Blank	**099-05-001-5955**	**N/A**	**Solid**	**N/A**	**02/03/17**	**02/03/17 13:15**	**H0203DSL1**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Sulfide, Dissolved	ND	0.50	0.30	1.00	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Enthalpy Analytical, Inc.		Date Received:	02/01/17
931 W. Barkley Avenue		Work Order:	17-02-0124
Orange, CA 92868-1208		Preparation:	N/A
		Method:	EPA 9060A
		Units:	mg/kg
Project: 387148			Page 1 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
P20-1T (387148-001)	**17-02-0124-1-A**	**01/30/17 15:00**	**Solid**	**TOC 9**	**02/07/17**	**02/07/17 17:00**	**H0207TOCL1**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	6300	700	240	1.00	

P20-1M (387148-002)	**17-02-0124-2-A**	**01/30/17 15:10**	**Solid**	**TOC 9**	**02/07/17**	**02/07/17 17:00**	**H0207TOCL1**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	16000	820	280	1.00	

P20-1Z (387148-003)	**17-02-0124-3-A**	**01/30/17 15:20**	**Solid**	**TOC 9**	**02/07/17**	**02/07/17 17:00**	**H0207TOCL1**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	11000	730	250	1.00	

P20-2T (387148-004)	**17-02-0124-4-A**	**01/30/17 13:20**	**Solid**	**TOC 9**	**02/07/17**	**02/07/17 17:00**	**H0207TOCL1**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	ND	630	220	1.00	

P20-2Z (387148-005)	**17-02-0124-5-A**	**01/30/17 13:40**	**Solid**	**TOC 9**	**02/07/17**	**02/07/17 17:00**	**H0207TOCL1**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	9400	720	250	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Enthalpy Analytical, Inc.		Date Received:	02/01/17
931 W. Barkley Avenue		Work Order:	17-02-0124
Orange, CA 92868-1208		Preparation:	N/A
		Method:	EPA 9060A
		Units:	mg/kg
Project: 387148			Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
P20-3T (387148-006)	**17-02-0124-6-A**	**01/30/17 12:00**	**Solid**	**TOC 9**	**02/07/17**	**02/07/17 17:00**	**H0207TOCL1**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	ND	560	200	1.00	

P20-3M (387148-007)	**17-02-0124-7-A**	**01/30/17 12:10**	**Solid**	**TOC 9**	**02/07/17**	**02/07/17 17:00**	**H0207TOCL1**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	2500	650	230	1.00	

P20-3Z (387148-008)	**17-02-0124-8-A**	**01/30/17 12:20**	**Solid**	**TOC 9**	**02/07/17**	**02/07/17 17:00**	**H0207TOCL1**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	ND	590	200	1.00	

P20-4T (387148-009)	**17-02-0124-9-A**	**01/30/17 10:15**	**Solid**	**TOC 9**	**02/07/17**	**02/07/17 17:00**	**H0207TOCL1**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	600	560	200	1.00	

P20-4M (387148-010)	**17-02-0124-10-A**	**01/30/17 10:25**	**Solid**	**TOC 9**	**02/07/17**	**02/07/17 17:00**	**H0207TOCL1**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	ND	630	220	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Enthalpy Analytical, Inc.		Date Received:	02/01/17
931 W. Barkley Avenue		Work Order:	17-02-0124
Orange, CA 92868-1208		Preparation:	N/A
		Method:	EPA 9060A
		Units:	mg/kg
Project: 387148			Page 3 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
P20-4Z (387148-011)	**17-02-0124-11-A**	**01/30/17 10:35**	**Solid**	**TOC 9**	**02/07/17**	**02/07/17 17:00**	**H0207TOCL1**

Comment(s): - Results are reported on a dry weight basis.
- Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	ND	620	220	1.00	

Method Blank	**099-06-013-1666**	**N/A**	**Solid**	**TOC 9**	**02/07/17**	**02/07/17 17:00**	**H0207TOCL1**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Carbon, Total Organic	ND	500	170	1.00	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Enthalpy Analytical, Inc.		Date Received:	02/01/17
931 W. Barkley Avenue		Work Order:	17-02-0124
Orange, CA 92868-1208		Preparation:	N/A
		Method:	SM 2540 B (M)
		Units:	%
Project: 387148			Page 1 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
P20-1T (387148-001)	**17-02-0124-1-A**	**01/30/17 15:00**	**Solid**	**N/A**	**N/A**	**02/04/17 12:00**	**H0204TSB3**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Please see Work Order Narrative, additional comments section.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	71.4	0.100	0.100	1.00	

P20-1M (387148-002)	**17-02-0124-2-A**	**01/30/17 15:10**	**Solid**	**N/A**	**N/A**	**02/04/17 12:00**	**H0204TSB3**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Please see Work Order Narrative, additional comments section.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	61.2	0.100	0.100	1.00	

P20-1Z (387148-003)	**17-02-0124-3-A**	**01/30/17 15:20**	**Solid**	**N/A**	**N/A**	**02/04/17 12:00**	**H0204TSB3**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Please see Work Order Narrative, additional comments section.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	68.6	0.100	0.100	1.00	

P20-2T (387148-004)	**17-02-0124-4-A**	**01/30/17 13:20**	**Solid**	**N/A**	**N/A**	**02/04/17 12:00**	**H0204TSB3**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Please see Work Order Narrative, additional comments section.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	79.1	0.100	0.100	1.00	

P20-2Z (387148-005)	**17-02-0124-5-A**	**01/30/17 13:40**	**Solid**	**N/A**	**N/A**	**02/04/17 12:00**	**H0204TSB3**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Please see Work Order Narrative, additional comments section.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	69.8	0.100	0.100	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Enthalpy Analytical, Inc.		Date Received:	02/01/17
931 W. Barkley Avenue		Work Order:	17-02-0124
Orange, CA 92868-1208		Preparation:	N/A
		Method:	SM 2540 B (M)
		Units:	%
Project: 387148			Page 2 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
P20-3T (387148-006)	**17-02-0124-6-A**	**01/30/17 12:00**	**Solid**	**N/A**	**N/A**	**02/04/17 12:00**	**H0204TSB3**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Please see Work Order Narrative, additional comments section.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	88.6	0.100	0.100	1.00	

P20-3M (387148-007)	**17-02-0124-7-A**	**01/30/17 12:10**	**Solid**	**N/A**	**N/A**	**02/04/17 12:00**	**H0204TSB3**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Please see Work Order Narrative, additional comments section.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	76.4	0.100	0.100	1.00	

P20-3Z (387148-008)	**17-02-0124-8-A**	**01/30/17 12:20**	**Solid**	**N/A**	**N/A**	**02/04/17 12:00**	**H0204TSB3**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Please see Work Order Narrative, additional comments section.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	84.8	0.100	0.100	1.00	

P20-4T (387148-009)	**17-02-0124-9-A**	**01/30/17 10:15**	**Solid**	**N/A**	**N/A**	**02/04/17 12:00**	**H0204TSB3**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Please see Work Order Narrative, additional comments section.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	89.0	0.100	0.100	1.00	

P20-4M (387148-010)	**17-02-0124-10-A**	**01/30/17 10:25**	**Solid**	**N/A**	**N/A**	**02/04/17 12:00**	**H0204TSB3**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Please see Work Order Narrative, additional comments section.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	79.7	0.100	0.100	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Enthalpy Analytical, Inc.		Date Received:	02/01/17
931 W. Barkley Avenue		Work Order:	17-02-0124
Orange, CA 92868-1208		Preparation:	N/A
		Method:	SM 2540 B (M)
		Units:	%
Project: 387148			Page 3 of 3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
P20-4Z (387148-011)	**17-02-0124-11-A**	**01/30/17 10:35**	**Solid**	**N/A**	**N/A**	**02/04/17 12:00**	**H0204TSB3**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.
- Please see Work Order Narrative, additional comments section.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	80.3	0.100	0.100	1.00	

Method Blank	**099-05-019-3547**	**N/A**	**Solid**	**N/A**	**N/A**	**02/04/17 12:00**	**H0204TSB3**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Solids, Total	ND	0.100	0.100	1.00	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - Spike/Spike Duplicate

Enthalpy Analytical, Inc.		Date Received:	02/01/17
931 W. Barkley Avenue		Work Order:	17-02-0124
Orange, CA 92868-1208		Preparation:	N/A
		Method:	EPA 9060A
Project: 387148			Page 1 of 1

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
P20-1T (387148-001)	**Sample**	**Solid**	**TOC 9**	**02/07/17**	**02/07/17 17:00**	**H0207TOC1**
P20-1T (387148-001)	**Matrix Spike**	**Solid**	**TOC 9**	**02/07/17**	**02/07/17 17:00**	**H0207TOC1**
P20-1T (387148-001)	**Matrix Spike Duplicate**	**Solid**	**TOC 9**	**02/07/17**	**02/07/17 17:00**	**H0207TOC1**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Carbon, Total Organic	4520	30000	36810	108	35960	105	75-125	2	0-25	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Sample Duplicate

Enthalpy Analytical, Inc.		Date Received:	02/01/17
931 W. Barkley Avenue		Work Order:	17-02-0124
Orange, CA 92868-1208		Preparation:	N/A
		Method:	EPA 376.2M
Project: 387148			Page 1 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
P20-1T (387148-001)	**Sample**	**Solid**	**N/A**	**02/03/17 00:00**	**02/03/17 15:28**	**H0203SD2**
P20-1T (387148-001)	**Sample Duplicate**	**Solid**	**N/A**	**02/03/17 00:00**	**02/03/17 15:28**	**H0203SD2**

Parameter	Sample Conc.	DUP Conc.	RPD	RPD CL	Qualifiers
Sulfide, Total	ND	ND	N/A	0-25	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Sample Duplicate

Enthalpy Analytical, Inc.		Date Received:	02/01/17
931 W. Barkley Avenue		Work Order:	17-02-0124
Orange, CA 92868-1208		Preparation:	N/A
		Method:	EPA 376.2M
Project: 387148			Page 2 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	Duplicate Batch Number
P20-4Z (387148-011)	**Sample**	**Solid**	**N/A**	**02/03/17 00:00**	**02/03/17 13:15**	**H0203DSD1**
P20-4Z (387148-011)	**Sample Duplicate**	**Solid**	**N/A**	**02/03/17 00:00**	**02/03/17 13:15**	**H0203DSD1**

Parameter	Sample Conc.	DUP Conc.	RPD	RPD CL	Qualifiers
Sulfide, Dissolved	ND	ND	N/A	0-25	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

Enthalpy Analytical, Inc.		Date Received:	02/01/17
931 W. Barkley Avenue		Work Order:	17-02-0124
Orange, CA 92868-1208		Preparation:	N/A
		Method:	EPA 376.2M
Project: 387148			Page 1 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-05-001-5954	**LCS**	**Solid**	**N/A**	**02/03/17**	**02/03/17 15:28**	**H0203SL2**
099-05-001-5954	**LCSD**	**Solid**	**N/A**	**02/03/17**	**02/03/17 15:28**	**H0203SL2**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Sulfide, Total	5.000	4.000	80	4.250	85	80-120	6	0-20	

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

Enthalpy Analytical, Inc.		Date Received:	02/01/17
931 W. Barkley Avenue		Work Order:	17-02-0124
Orange, CA 92868-1208		Preparation:	N/A
		Method:	EPA 9060A
Project: 387148			Page 2 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-06-013-1666	**LCS**	**Solid**	**TOC 9**	**02/07/17**	**02/07/17 17:00**	**H0207TOCL1**
099-06-013-1666	**LCSD**	**Solid**	**TOC 9**	**02/07/17**	**02/07/17 17:00**	**H0207TOCL1**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Carbon, Total Organic	6000	6185	103	6219	104	80-120	1	0-20	

RPD: Relative Percent Difference. CL: Control Limits

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Glossary of Terms and Qualifiers

Work Order: 17-02-0124 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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RM

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Formerly Associated Labs
1 Park Plaza, Suite 1000
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MONTROSE ENVIRONMENTAL

Subcontract Laboratory:

Eurofins CalScience - Sub
7440 Lincoln Way
Garden Grove, CA 92841

ATTN: Xuan Dang
PO# 387148

Project: 387148 **Due:** **17-02-0124**
PM: Ranjit Clarke
Email: ranjit.clarke@enthalpy.com
CC: incomingreports@enthalpy.com

Require: ☑ EDD ☐ EDF ☐ EDT

Report To: ☐ MDL

Note:

	Matrix	Sampled	Sample ID	Analysis	Comment
	Solid	01/30/17 15:00	P20-1T (387148-001)	9034 Total Sulfide_OUT	Total & Dissolved
1	Solid	01/30/17 15:00	P20-1T (387148-001)	TOC Solid_OUT	
	Solid	01/30/17 15:10	P20-1M (387148-002)	9034 Total Sulfide_OUT	Total & Dissolved
2	Solid	01/30/17 15:10	P20-1M (387148-002)	TOC Solid_OUT	
	Solid	01/30/17 15:20	P20-1Z (387148-003)	9034 Total Sulfide_OUT	Total & Dissolved
3	Solid	01/30/17 15:20	P20-1Z (387148-003)	TOC Solid_OUT	
	Solid	01/30/17 13:20	P20-2T (387148-004)	9034 Total Sulfide_OUT	Total & Dissolved
4	Solid	01/30/17 13:20	P20-2T (387148-004)	TOC Solid_OUT	
	Solid	01/30/17 13:40	P20-2Z (387148-005)	9034 Total Sulfide_OUT	Total & Dissolved
5	Solid	01/30/17 13:40	P20-2Z (387148-005)	TOC Solid_OUT	
	Solid	01/30/17 12:00	P20-3T (387148-006)	9034 Total Sulfide_OUT	Total & Dissolved
6	Solid	01/30/17 12:00	P20-3T (387148-006)	TOC Solid_OUT	
	Solid	01/30/17 12:10	P20-3M (387148-007)	9034 Total Sulfide_OUT	Total & Dissolved
7	Solid	01/30/17 12:10	P20-3M (387148-007)	TOC Solid_OUT	
	Solid	01/30/17 12:20	P20-3Z (387148-008)	9034 Total Sulfide_OUT	Total & Dissolved
8	Solid	01/30/17 12:20	P20-3Z (387148-008)	TOC Solid_OUT	
	Solid	01/30/17 10:15	P20-4T (387148-009)	9034 Total Sulfide_OUT	Total & Dissolved
9	Solid	01/30/17 10:15	P20-4T (387148-009)	TOC Solid_OUT	
	Solid	01/30/17 10:25	P20-4M (387148-010)	9034 Total Sulfide_OUT	Total & Dissolved
10	Solid	01/30/17 10:25	P20-4M (387148-010)	TOC Solid_OUT	
	Solid	01/30/17 10:35	P20-4Z (387148-011)	9034 Total Sulfide_OUT	Total & Dissolved
11	Solid	01/30/17 10:35	P20-4Z (387148-011)	TOC Solid_OUT	

Note:
STANDARD TAT

9034: It is o.k. to run EPA 376.2M instead. Please report total and dissolved sulfides (if possible).

Relinquished By	Received By:
[signature]	Saul Rain
Date/Time 2/1/17 15:20	Date/Time 2/1/17 15:20
Saul R	Dannyle EIT
Date/Time 2/1/17 16:07	Date/Time 2/1/17 16:07

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WORK ORDER NUMBER: 17-02- 0124

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: Enthalpy Analytical

DATE: 02 / 01 / 2017

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC3B (CF: 0.0°C); Temperature (w/o CF): 3.8 °C (w/ CF): 3.8 °C; ☐ Blank ☑ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter

Checked by: 619

CUSTODY SEAL:

Cooler	☐ Present and Intact	☐ Present but Not Intact	☑ Not Present	☐ N/A	Checked by: 459
Sample(s)	☐ Present and Intact	☐ Present but Not Intact	☑ Not Present	☐ N/A	Checked by: 681

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☐	☐	☑
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☐	☐	☑
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOAh ☐ VOAna_2 ☐ 100PJ ☐ 100PJna_2 ☐ 125AGB ☐ 125AGBh ☐ 125AGBp ☐ 125PB ☐ 125PBznna ☐ 250AGB ☐ 250CGB ☐ 250CGBs ☐ 250PB ☐ 250PBn ☐ 500AGB ☐ 500AGJ ☐ 500AGJs ☐ 500PB ☐ 1AGB ☐ 1AGBna_2 ☐ 1AGBs ☐ 1PB ☐ 1PBna ☐ _____ ☐ _____ ☐ _____ ☐ _____

Solid: ☑ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (_____) ☐ EnCores® (_____) ☐ TerraCores® (_____) ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na_2** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: 681

Reviewed by: 1017

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APPENDIX E: SOIL AGRICULTURAL SUITABILITY REPORT

Anaheim Office
Lab No: 17-039-0008
February 17, 2017

Great Ecology
2251 San Diego Ave. Suite A218
San Diego, CA 92110

Attn: Nick Buhbe

POND 20 SAN DIEGO, CA-JOB # CA281.002

Attached are the results of the analyses performed on four soil samples that were received by our laboratory on February 8, 2017. These samples were analyzed to determine salinity (ECe), sodium adsorption ratio (SAR), soluble cations (calcium, magnesium, potassium and sodium), sulfate, boron, pH and qualitative lime.

Analytical Results:

Salinity (ECe) is elevated in all four samples, ranging from 60.4 dS/m in the P20-2Z to 88.6 dS/m in the P20-4Z sample. In all four samples, soluble sodium is the greatest contributor to salinity and is not properly balanced by calcium and magnesium in regards to soil structure formation and water infiltration, as indicated by the high sodium adsorption ratio (SAR) values ranging from 60.56 in the P20-2Z sample to 85.06 in the P20-1Z sample. Soils with an SAR of 15 or greater are described as "sodic". This is a condition in which sodium is expected to have a severe negative impact on soil structure and water infiltration.

Boron is elevated in the four samples, ranging from 2.42 parts per million (ppm) in the P20-1Z sample to 10.50 ppm in the P20-2Z sample. Elevated boron can cause burning of foliage and when very high can have a severe negative impact on plant growth of many species and, potentially, survivability.

The reaction of the soil represented by the P20-2Z sample is slightly alkaline at 7.2 on the pH scale, which is suitable for a broad range of plants. The other three samples are moderately alkaline with pH values ranging from 7.8 in the P20-Z sample to 8.0 in the P20-3Z sample. Salt marsh plants do tend to have some tolerance for alkaline soil conditions and this may not be an issue, though some plants could potentially show some yellowing of younger foliage. An absence of qualitative lime in all four samples indicates that the soil is weakly buffered in the alkaline range.

Comments

These salinity levels are even higher throughout than in the past analysis at Del Mar Phase 2.

We assume that salt marsh plants with a high tolerance of saline soil conditions are slated for this project.

In the event that an attempt is made to reclaim this soil for non-halophytes, the following comments are provided as they were in the previous report.

If there is a desire to reduce soluble salts then leaching irrigations should be applied to flush salts from the root zone. Drainage must be sufficient for leaching to be effective. Severely compacted areas should be ripped or tilled to a depth of at least 9 inches.

It would also be prudent to incorporate gypsum in areas to be leached to provide additional soluble calcium to help adjust SAR values downward. It is worth noting that we often see good downward water movement through the soil profile in sodic soils when the ECe value is also very high, as is the case in all of these samples. In those instances, water movement will often be sufficient at the start of leaching but as the ECe decreases and the SAR remains elevated, the soil can "lock up" and drainage will slow. Gypsum should help with this but it is something to monitor for.

Be sure to allow the soil to dry slightly between irrigations to avoid creating anaerobic soil conditions. Leaching irrigations should be applied evenly and in a manner that avoids run off and pooling.

The amount of leaching that will be applied to reduce salts should also reduce boron in the soil. After leaching, consider submitting samples for re-testing to determine post-leaching salinity, SAR and boron values. Additional leaching and/or gypsum application may be needed.

Also keep in mind that as salts are flushed out of the root zone, the sub soil is likely to remain saline and high in boron. Some plants could still potentially show burning of foliage.

Provided below are gypsum application rates and leaching recommendations. These estimates are designed with the goals of reducing salinity to less than 4.0 dS/m and reducing the SAR to less than 6.0. If the plants chosen for this project have a high tolerance to elevated salinity, less gypsum will be required.

Sample Identification	**Lbs. of gypsum to apply in lbs. per 1000 sq. ft. to a depth of 6 inches**	**Amount of leaching to apply in inches.**
P20-1Z	200	13
P20-2Z	200	12
P20-3Z	200	13
P20-4Z	200	14

There is some chance that pH values may also decrease as the SAR values decrease. However, high pH values due to sodic conditions are typically in the 8.5 to 9.0 range and it does not appear that, in this case, the alkaline reaction is due to sodicity. The pH values will likely remain in the alkaline range even as the SAR values decrease.

If follow up testing again shows moderately alkaline reaction and you wish to adjust the pH values downward to avoid any potential issues of alkalinity induced chlorosis that can be accomplished by incorporating soil sulfur. The rates of sulfur incorporation should be based on pH values after the SAR values have reached safely low levels.

If we can be of any further assistance, please feel free to contact us.

Joe Kiefer

4741 East Hunter Ave., Ste. A Anaheim CA 92807
(714) 282-8777 (714) 282-8575 fax
www.waypointanalytical.com

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www.waypointanalytical.com

Project : Pond 20
San Diego, Ca.
Job# Ca281.002

AGRICULTURAL SUITABILITY

Report No : **17-039-0008**
Purchase Order :
Date Printed : 02/13/2017
Date Recd : 02/08/2017

Sample Description - Sample Id - Plant Name	HalfSat %	pH s.u.	Qual. Lime	OM %	Saturation Extract									Bulk Density	Lab No
					ECe dS/m	Ca meq/L	Mg meq/L	Na meq/L	K meq/L	B ppm	SO_4 meq/L	Cl meq/L	SAR		
P20-1Z	33	7.9	None		69.2	25.5	119.0	723.0	14.7	2.42	58.4		85.06		05841
P20-2Z	20	7.8	None		60.4	58.4	112.0	559.0	18.4	10.50	103.0		60.56		05842
P20-3Z	14	8.0	None		71.9	17.7	117.0	613.0	16.4	8.18	91.1		74.70		05843
P20-4Z	16	7.2	None		88.6	35.9	161.0	746.0	12.4	3.63	73.7		75.18		05844

Half Saturation %= approximate field moisture capacity. Salinity , saturation extract = ECe (dS/m at 25 degree C)
SAR = Sodium Adsorption Ratio . Ca - calcium , Mg - magnesium , K - potassium , Na - sodium , B - boron , SO_4 - sulfate

GREATecology

ENVIRONMENT + DESIGN

APPENDIX C
Test Pit and Hand Auger Boring Logs

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SAMPLER AND DRILLING METHOD GRAPHICS

- BULK / GRAB / BAG SAMPLE
- MODIFIED CALIFORNIA SAMPLER (2 or 2-1/2 in. (50.8 or 63.5 mm.) outer diameter)
- CALIFORNIA SAMPLER (3 in. (76.2 mm.) outer diameter)
- STANDARD PENETRATION SPLIT SPOON SAMPLER (2 in. (50.8 mm.) outer diameter and 1-3/8 in. (34.9 mm.) inner diameter)
- HQ CORE SAMPLE (2.500 in. (63.5 mm.) core diameter)
- SHELBY TUBE SAMPLER
- HOLLOW STEM AUGER
- SOLID STEM AUGER
- WASH BORING
- SONIC CONTINUOUS SAMPLER

GROUND WATER GRAPHICS

- WATER LEVEL (level where first observed)
- WATER LEVEL (level after exploration completion)
- WATER LEVEL (additional levels after exploration)
- OBSERVED SEEPAGE

NOTES

- The report and graphics key are an integral part of these logs. All data and interpretations in this log are subject to the explanations and limitations stated in the report.
- Lines separating strata on the logs represent approximate boundaries only. Actual transitions may be gradual or differ from those shown.
- No warranty is provided as to the continuity of soil or rock conditions between individual sample locations.
- Logs represent general soil or rock conditions observed at the point of exploration on the date indicated.
- In general, Unified Soil Classification System designations presented on the logs were based on visual classification in the field and were modified where appropriate based on gradation and index property testing.
- Fine grained soils that plot within the hatched area on the Plasticity Chart, and coarse grained soils with between 5% and 12% passing the No. 200 sieve require dual USCS symbols, ie., GW-GM, GP-GM, GW-GC, GP-GC, GC-GM, SW-SM, SP-SM, SW-SC, SP-SC, SC-SM.
- If sampler is not able to be driven at least 6 inches then 50/X indicates number of blows required to drive the identified sampler X inches with a 140 pound hammer falling 30 inches.

ABBREVIATIONS
WOH - Weight of Hammer
WOR - Weight of Rod

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D 2487)

COARSE GRAINED SOILS (More than half of material is larger than the #200 sieve)	**GRAVELS** (More than half of coarse fraction is larger than the #4 sieve)	CLEAN GRAVEL WITH <5% FINES	Cu≥4 and 1≤Cc≤3	**GW**	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
			Cu<4 and/ or 1>Cc>3	**GP**	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
		GRAVELS WITH 5% TO 12% FINES	Cu≥4 and 1≤Cc≤3	**GW-GM**	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE FINES
				GW-GC	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE CLAY FINES
			Cu<4 and/ or 1>Cc>3	**GP-GM**	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE FINES
				GP-GC	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE CLAY FINES
		GRAVELS WITH > 12% FINES		**GM**	SILTY GRAVELS, GRAVEL-SILT-SAND MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
				GC-GM	CLAYEY GRAVELS, GRAVEL-SAND-CLAY-SILT MIXTURES
	SANDS (More than half of coarse fraction is smaller than the #4 sieve)	CLEAN SANDS WITH <5% FINES	Cu≥6 and 1≤Cc≤3	**SW**	WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE OR NO FINES
			Cu<6 and/ or 1>Cc>3	**SP**	POORLY GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE OR NO FINES
		SANDS WITH 5% TO 12% FINES	Cu≥6 and 1≤Cc≤3	**SW-SM**	WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE FINES
				SW-SC	WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE CLAY FINES
			Cu<6 and/ or 1>Cc>3	**SP-SM**	POORLY GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE FINES
				SP-SC	POORLY GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE CLAY FINES
		SANDS WITH > 12% FINES		**SM**	SILTY SANDS, SAND-GRAVEL-SILT MIXTURES
				SC	CLAYEY SANDS, SAND-GRAVEL-CLAY MIXTURES
				SC-SM	CLAYEY SANDS, SAND-SILT-CLAY MIXTURES

FINE GRAINED SOILS (More than half of material is smaller than the #200 sieve)	SILTS AND CLAYS (Liquid Limit less than 50)	**ML**	INORGANIC SILTS AND VERY FINE SANDS, SILTY OR CLAYEY FINE SANDS, SILTS WITH SLIGHT PLASTICITY
		CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
		CL-ML	INORGANIC CLAYS-SILTS OF LOW PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
		OL	ORGANIC SILTS & ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS (Liquid Limit greater than 50)	**MH**	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILT
		CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
		OH	ORGANIC CLAYS & ORGANIC SILTS OF MEDIUM-TO-HIGH PLASTICITY

KLEINFELDER
Bright People. Right Solutions.

PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

GRAPHICS KEY

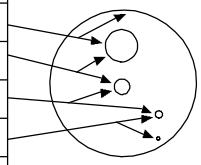
Salt Pond 20
San Diego, California

FIGURE
A-1

PLOTTED: 08/08/2018 02:53 PM BY: JBonifiglio
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 20164596.018A [LEGEND 1 (GRAPHICS KEY) USCS_SOU_CAL]
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:KLF_STANDARD_GINT_LIBRARY_2017.GLB

GRAIN SIZE

DESCRIPTION		SIEVE SIZE	GRAIN SIZE	APPROXIMATE SIZE
Boulders		>12 in. (304.8 mm.)	>12 in. (304.8 mm.)	Larger than basketball-sized
Cobbles		3 - 12 in. (76.2 - 304.8 mm.)	3 - 12 in. (76.2 - 304.8 mm.)	Fist-sized to basketball-sized
Gravel	coarse	3/4 -3 in. (19 - 76.2 mm.)	3/4 -3 in. (19 - 76.2 mm.)	Thumb-sized to fist-sized
	fine	#4 - 3/4 in. (#4 - 19 mm.)	0.19 - 0.75 in. (4.8 - 19 mm.)	Pea-sized to thumb-sized
Sand	coarse	#10 - #4	0.079 - 0.19 in. (2 - 4.9 mm.)	Rock salt-sized to pea-sized
	medium	#40 - #10	0.017 - 0.079 in. (0.43 - 2 mm.)	Sugar-sized to rock salt-sized
	fine	#200 - #40	0.0029 - 0.017 in. (0.07 - 0.43 mm.)	Flour-sized to sugar-sized
Fines		Passing #200	<0.0029 in. (<0.07 mm.)	Flour-sized and smaller



SECONDARY CONSTITUENT

	AMOUNT	
Term of Use	Secondary Constituent is Fine Grained	Secondary Constituent is Coarse Grained
Trace	<5%	<15%
With	≥5 to <15%	≥15 to <30%
Modifier	≥15%	≥30%

MOISTURE CONTENT

DESCRIPTION	FIELD TEST
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

CEMENTATION

DESCRIPTION	FIELD TEST
Weakly	Crumbles or breaks with handling or slight finger pressure
Moderately	Crumbles or breaks with considerable finger pressure
Strongly	Will not crumble or break with finger pressure

CONSISTENCY - FINE-GRAINED SOIL

CONSISTENCY	SPT - N_{60} (# blows / ft)	Pocket Pen (tsf)	UNCONFINED COMPRESSIVE STRENGTH (Q_u)(psf)	VISUAL / MANUAL CRITERIA
Very Soft	<2	PP < 0.25	<500	Thumb will penetrate more than 1 inch (25 mm). Extrudes between fingers when squeezed.
Soft	2 - 4	0.25 ≤ PP <0.5	500 - 1000	Thumb will penetrate soil about 1 inch (25 mm). Remolded by light finger pressure.
Medium Stiff	4 - 8	0.5 ≤ PP <1	1000 - 2000	Thumb will penetrate soil about 1/4 inch (6 mm). Remolded by strong finger pressure.
Stiff	8 - 15	1 ≤ PP <2	2000 - 4000	Can be imprinted with considerable pressure from thumb.
Very Stiff	15 - 30	2 ≤ PP <4	4000 - 8000	Thumb will not indent soil but readily indented with thumbnail.
Hard	>30	4 ≤ PP	>8000	Thumbnail will not indent soil.

FROM TERZAGHI AND PECK, 1948; LAMBE AND WHITMAN, 1969; FHWA, 2002; AND ASTM D2488

REACTION WITH HYDROCHLORIC ACID

DESCRIPTION	FIELD TEST
None	No visible reaction
Weak	Some reaction, with bubbles forming slowly
Strong	Violent reaction, with bubbles forming immediately

APPARENT / RELATIVE DENSITY - COARSE-GRAINED SOIL

APPARENT DENSITY	SPT-N_{60} (# blows/ft)	MODIFIED CA SAMPLER (# blows/ft)	CALIFORNIA SAMPLER (# blows/ft)	RELATIVE DENSITY (%)
Very Loose	<4	<4	<5	0 - 15
Loose	4 - 10	5 - 12	5 - 15	15 - 35
Medium Dense	10 - 30	12 - 35	15 - 40	35 - 65
Dense	30 - 50	35 - 60	40 - 70	65 - 85
Very Dense	>50	>60	>70	85 - 100

FROM TERZAGHI AND PECK, 1948

PLASTICITY

DESCRIPTION	LL	FIELD TEST
Non-plastic	NP	A 1/8-in. (3 mm.) thread cannot be rolled at any water content.
Low (L)	< 30	The thread can barely be rolled and the lump or thread cannot be formed when drier than the plastic limit.
Medium (M)	30 - 50	The thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. The lump or thread crumbles when drier than the plastic limit.
High (H)	> 50	It takes considerable time rolling and kneading to reach the plastic limit. The thread can be rerolled several times after reaching the plastic limit. The lump or thread can be formed without crumbling when drier than the plastic limit.

STRUCTURE

DESCRIPTION	CRITERIA
Stratified	Alternating layers of varying material or color with layers at least 1/4-in. thick, note thickness.
Laminated	Alternating layers of varying material or color with the layer less than 1/4-in. thick, note thickness.
Fissured	Breaks along definite planes of fracture with little resistance to fracturing.
Slickensided	Fracture planes appear polished or glossy, sometimes striated.
Blocky	Cohesive soil that can be broken down into small angular lumps which resist further breakdown.
Lensed	Inclusion of small pockets of different soils, such as small lenses of sand scattered through a mass of clay; note thickness.

ANGULARITY

DESCRIPTION	CRITERIA
Angular	Particles have sharp edges and relatively plane sides with unpolished surfaces.
Subangular	Particles are similar to angular description but have rounded edges.
Subrounded	Particles have nearly plane sides but have well-rounded corners and edges.
Rounded	Particles have smoothly curved sides and no edges.

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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

SOIL DESCRIPTION KEY

Salt Pond 20
San Diego, California

FIGURE

A-2

PLOTTED: 08/08/2018 02:54 PM BY: JBonifiglio
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 20164596.018A [LEGEND 2 (SOIL DESC KEY)]
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:KLF_STANDARD_GINT_LIBRARY_2017.GLB

Date Begin - End:	6/18/2018	**Excavation Company:**	Soclaris Contracting		**TEST PIT LOG TP-1**
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness		
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader		
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft		
Weather:	Sunny				

FIELD EXPLORATION

WGS84
Latitude: 32.58760° N
Longitude: -117.10425° E
Approximate Ground Surface Elevation (ft.): 5.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			SILT with Sand (SALT CRUST) (ML): non-plastic, yellow, dry	S1									
			Sandy Silty CLAY (CL-ML): low plasticity, dark brown, moist	S2									See report for sample compositing plan and Appendix B for laboratory test results.
0	5												
-5	10												

The test pit was terminated at approximately 2 ft. below ground surface. The test pit was backfilled with excavated material on June 18, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during excavation or after completion.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-1

Salt Pond 20
San Diego, California

FIGURE

A-3

PLOTTED: 08/08/2018 02:33 PM BY: JBonifiglio
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End:	6/18/2018	**Excavation Company:**	Soclaris Contracting		**TEST PIT LOG TP-2**
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness		
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader		
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft		
Weather:	Sunny				

FIELD EXPLORATION

WGS84
Latitude: 32.58706° N
Longitude: -117.10455° E
Approximate Ground Surface Elevation (ft.): 6.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			SILT with Sand (SALT CRUST) (ML): non-plastic, yellow, dry	S1									
5			**Sandy Silty CLAY (CL-ML)**: low plasticity, dark brown, moist	S2									See report for sample compositing plan and Appendix B for laboratory test results.
▽	5		**Sandy CLAY (CL)**: medium plasticity, dark gray, moist to wet, micaceous, some silt	S3									
0													
	10												
-5													

The test pit was terminated at approximately 10 ft. below ground surface. The test pit was backfilled with excavated material on June 18, 2018.

GROUNDWATER LEVEL INFORMATION:
▽ Groundwater was observed at approximately 4 ft. below ground surface during excavation.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-2

Salt Pond 20
San Diego, California

FIGURE
A-4

PLOTTED: 08/08/2018 02:34 PM BY: JBonifiglio
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End:	6/20/2018	**Excavation Company:**	Soclaris Contracting
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft
Weather:	Sunny		

TEST PIT LOG TP-3

FIELD EXPLORATION

WGS84
Latitude: 32.58618° N
Longitude: -117.10393° E
Approximate Ground Surface Elevation (ft.): 6.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			SILT with Sand (SALT CRUST) (ML): non-plastic, yellow, dry	S1									
5			**Silty SAND (SM)**: non-plastic, light brownish gray, dry to moist, trace clay	S2									See report for sample compositing plan and Appendix B for laboratory test results.
	5		**Silty Clayey SAND (SC-SM)**: low plasticity, dark brown, moist to wet	S3									
0													
	10		The test pit was terminated at approximately 9 ft. below ground surface. The test pit was backfilled with excavated material on June 20, 2018.										
-5													

GROUNDWATER LEVEL INFORMATION:
Groundwater was observed at approximately 7 ft. below ground surface during excavation.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-3

Salt Pond 20
San Diego, California

FIGURE

A-5

PLOTTED: 08/08/2018 02:34 PM BY: JBonifiglio
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PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End:	6/20/2018	**Excavation Company:**	Soclaris Contracting	**TEST PIT LOG TP-4**
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness	
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader	
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft	
Weather:	Sunny			

FIELD EXPLORATION

WGS84
Latitude: 32.58502° N
Longitude: -117.10355° E
Approximate Ground Surface Elevation (ft.): 6.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			SILT with Sand (SALT CRUST) (ML): non-plastic, yellow, dry	S1									
			CLAY and SILT (CL-ML): low to medium plasticity, dark gray and dark brown, moist	S2									See report for sample compositing plan and Appendix B for laboratory test results.
5													
	5												
0 ▽			**CLAY (CH)**: high plasticity, dark gray, wet, trace silt, micaceous	S3									
	10												
-5													

The test pit was terminated at approximately 8 ft. below ground surface. The test pit was backfilled with excavated material on June 20, 2018.

GROUNDWATER LEVEL INFORMATION:
▽ Groundwater was observed at approximately 6 ft. below ground surface during excavation.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-4

Salt Pond 20
San Diego, California

FIGURE
A-6

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TEST PIT LOG TP-5

Date Begin - End:	6/18/2018	**Excavation Company:**	Soclaris Contracting
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft
Weather:	Sunny		

FIELD EXPLORATION

WGS84
Latitude: 32.58799° N
Longitude: -117.10335° E
Approximate Ground Surface Elevation (ft.): 6.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			SILT with Sand (SALT CRUST) (ML): yellow, dry	S1									
5			**Silty SAND (SM)**: non-plastic, light brownish gray, moist, trace clay, shells, and roots	S2									See report for sample compositing plan and Appendix B for laboratory test results.
	5		**Sandy CLAY (CL)**: medium plasticity, dark gray, moist, micaceous, some silt	S3									
0													Caving at 7 ft
	10												
-5													

The test pit was terminated at approximately 7 ft. below ground surface. The test pit was backfilled with excavated material on June 18, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during excavation or after completion.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-5

Salt Pond 20
San Diego, California

FIGURE
A-7

PLOTTED: 08/08/2018 02:35 PM BY: JBonifiglio
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PROJECT NUMBER: 20164596.018A
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gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End:	6/18/2018	**Excavation Company:**	Soclaris Contracting		**TEST PIT LOG TP-6**
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness		
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader		
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft		
Weather:	Sunny				

FIELD EXPLORATION

WGS84
Latitude: 32.58739° N
Longitude: -117.10348° E
Approximate Ground Surface Elevation (ft.): 5.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			SILT with Sand (SALT CRUST) (ML): non-plastic, yellow, dry	S1									
			Sandy Silty CLAY (CL-ML): low to medium plasticity, dark brown, moist	S2									See report for sample compositing plan and Appendix B for laboratory test results.
			Sandy CLAY (CL): medium plasticity, dark gray, moist, micaceous, some silt	S3									
0	5												
-5	10												

The test pit was terminated at approximately 2 ft. below ground surface. The test pit was backfilled with excavated material on June 18, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during excavation or after completion.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-6

Salt Pond 20
San Diego, California

FIGURE

A-8

PLOTTED: 08/08/2018 02:36 PM BY: JBonifiglio
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End:	6/20/2018	**Excavation Company:**	Soclaris Contracting		**TEST PIT LOG TP-7**
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness		
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader		
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft		
Weather:	Sunny				

FIELD EXPLORATION

WGS84
Latitude: 32.58654° N
Longitude: -117.10308° E
Approximate Ground Surface Elevation (ft.): 6.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			SILT with Sand (SALT CRUST) (ML): non-plastic, yellow, dry	S1									
5			**Silty SAND (SM)**: non-plastic, light brownish gray, moist	S2									See report for sample compositing plan and Appendix B for laboratory test results.
			CLAY with Sand (CL): medium plasticity, brown, moist, trace silt, trace mica	S3									
	5												
0													
	10												
-5													

The test pit was terminated at approximately 2 ft. below ground surface. The test pit was backfilled with excavated material on June 20, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during excavation or after completion.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-7

Salt Pond 20
San Diego, California

FIGURE
A-9

PLOTTED: 08/08/2018 02:36 PM BY: JBonifiglio
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End:	6/20/2018	**Excavation Company:**	Soclaris Contracting		**TEST PIT LOG TP-8**
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness		
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader		
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft		
Weather:	Sunny				

FIELD EXPLORATION

WGS84
Latitude: 32.58608° N
Longitude: -117.10257° E
Approximate Ground Surface Elevation (ft.): 6.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			SILT with Sand (SALT CRUST) (ML): non-plastic, yellow, dry	S1									
			Silty SAND (SM): non-plastic, light brownish gray, moist	S2									See report for sample compositing plan and Appendix B for laboratory test results.
5			**CLAY with Sand (CL)**: medium plasticity, brown, moist, trace silt, trace mica	S3									
	5		**CLAY with Sand (CL)**: medium plasticity, dark gray, moist, micaceous, some silt	S4									
0													
	10												
-5													

The test pit was terminated at approximately 8 ft. below ground surface. The test pit was backfilled with excavated material on June 20, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during excavation or after completion.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-8

Salt Pond 20
San Diego, California

FIGURE

A-10

PLOTTED: 08/08/2018 02:37 PM BY: JBonifiglio
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End:	6/20/2018	**Excavation Company:**	Soclaris Contracting		**TEST PIT LOG TP-9**
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness		
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader		
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft		
Weather:	Sunny				

FIELD EXPLORATION

WGS84
Latitude: 32.58550° N
Longitude: -117.10289° E
Approximate Ground Surface Elevation (ft.): 6.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			SILT with Sand (SALT CRUST) (ML): non-plastic, yellow, dry	S1									
5			**Silty SAND (SM)**: non-plastic, light brownish gray, moist, trace clay, trace shells	S2									See report for sample compositing plan and Appendix B for laboratory test results.
	5		**CLAY and SILT (CL-ML)**: low to medium plasticity, dark gray and dark brown, moist, micaceous	S3									
0			**CLAY (CH)**: high plasticity, dark gray, some silt	S4									
	10		The test pit was terminated at approximately 9 ft. below ground surface. The test pit was backfilled with excavated material on June 20, 2018.										
-5													

GROUNDWATER LEVEL INFORMATION:
Groundwater was observed at approximately 7 ft. below ground surface during excavation.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-9

Salt Pond 20
San Diego, California

FIGURE

A-11

PLOTTED: 08/08/2018 02:37 PM BY: JBonifiglio
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End:	6/20/2018	**Excavation Company:**	Soclaris Contracting	**TEST PIT LOG TP-10**
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness	
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader	
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft	
Weather:	Sunny			

FIELD EXPLORATION

WGS84
Latitude: 32.58460° N
Longitude: -117.10244° E
Approximate Ground Surface Elevation (ft.): 6.00
Surface Condition: Bare Earth

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			SILT with Sand (SALT CRUST) (ML): yellow, dry	S1									
			CLAY with Sand (CL): low to medium plasticity, brown, moist, trace silt, trace mica	S2									See report for sample compositing plan and Appendix B for laboratory test results.
5													
	5												
0													
	10												
-5													

The test pit was terminated at approximately 2 ft. below ground surface. The test pit was backfilled with excavated material on June 20, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during excavation or after completion.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-10

Salt Pond 20
San Diego, California

FIGURE

A-12

PLOTTED: 08/08/2018 02:38 PM BY: JBonifiglio
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End:	6/19/2018	**Excavation Company:**	Soclaris Contracting		**TEST PIT LOG TP-11**
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness		
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader		
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft		
Weather:	Sunny				

FIELD EXPLORATION

WGS84
Latitude: 32.58897° N
Longitude: -117.10179° E
Approximate Ground Surface Elevation (ft.): 9.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Silty SAND (SM): non-plastic, light brownish gray, moist, trace clay, trace roots	S1									See report for sample compositing plan and Appendix B for laboratory test results.
5			**SILT (ML)**: medium plasticity, dark gray, moist, micaceous, some clay	S2									
	5		**Sandy Silty CLAY (CL-ML)**: low plasticity, dark brown, moist	S3									
0													
	10												
-5													

The test pit was terminated at approximately 10 ft. below ground surface. The test pit was backfilled with excavated material on June 19, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during excavation or after completion.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

KLEINFELDER
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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-11

Salt Pond 20
San Diego, California

FIGURE

A-13

PLOTTED: 08/08/2018 02:38 PM BY: JBonifiglio
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

TEST PIT LOG TP-12

Date Begin - End:	6/18/2018	**Excavation Company:**	Soclaris Contracting
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft
Weather:	Sunny		

FIELD EXPLORATION

WGS84
Latitude: 32.58856° N
Longitude: -117.10284° E
Approximate Ground Surface Elevation (ft.): 8.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Silty SAND and CLAY (SM/CL): low plasticity, light brownish gray and dark brown, moist, trace roots, trace shells	S1									See report for sample compositing plan and Appendix B for laboratory test results.
5													
	5		**Sandy CLAY (CL)**: medium plasticity, dark gray, moist, micaceous, some silt	S2									
0			**CLAY and SILT (CL-ML)**: medium plasticity, dark gray and dark brown, moist	S3									
	10												
-5													

The test pit was terminated at approximately 10 ft. below ground surface. The test pit was backfilled with excavated material on June 18, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during excavation or after completion.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

KLEINFELDER
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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-12

Salt Pond 20
San Diego, California

FIGURE

A-14

PLOTTED: 08/08/2018 02:39 PM BY: JBonifiglio
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 20164596.018A [_KLF_BORING/TEST PIT SOIL LOG]
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:KLF_STANDARD_GINT_LIBRARY_2017.GLB

TEST PIT LOG TP-13

Date Begin - End:	6/18/2018	**Excavation Company:**	Soclaris Contracting
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft
Weather:	Sunny		

FIELD EXPLORATION

WGS84
Latitude: 32.58826° N
Longitude: -117.10226° E
Approximate Ground Surface Elevation (ft.): 9.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Silty SAND (SM): non-plastic, light brownish gray, moist, trace clay	S1									See report for sample compositing plan and Appendix B for laboratory test results.
5			**Sandy CLAY (CL)**: medium plasticity, dark gray, moist, micaceous, some silt	S2									
	5												
0													
	10												
-5													

The test pit was terminated at approximately 5 ft. below ground surface. The test pit was backfilled with excavated material on June 18, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during excavation or after completion.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-13

Salt Pond 20
San Diego, California

FIGURE

A-15

PLOTTED: 08/08/2018 02:39 PM BY: JBonifiglio
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End:	6/18/2018	**Excavation Company:**	Soclaris Contracting		**TEST PIT LOG TP-14**
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness		
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader		
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft		
Weather:	Sunny				

FIELD EXPLORATION

WGS84
Latitude: 32.58775° N
Longitude: -117.10190° E
Approximate Ground Surface Elevation (ft.): 8.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Sandy Silty CLAY (CL-ML): dark brown, moist	S1									See report for sample compositing plan and Appendix B for laboratory test results.
5													
	5												
0			**Poorly Graded SAND with Silt (SP-SM)**: fine to medium-grained sand, olive brown, moist to wet, trace mica	S2									
	10												
-5													

The test pit was terminated at approximately 10 ft. below ground surface. The test pit was backfilled with excavated material on June 18, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was observed at approximately 9 ft. below ground surface during excavation.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-14

Salt Pond 20
San Diego, California

FIGURE

A-16

PLOTTED: 08/08/2018 02:40 PM BY: JBonifiglio
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
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TEST PIT LOG TP-15

Date Begin - End:	6/18/2018	**Excavation Company:**	Soclaris Contracting
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft
Weather:	Sunny		

FIELD EXPLORATION

WGS84
Latitude: 32.58734° N
Longitude: -117.10259° E
Approximate Ground Surface Elevation (ft.): 7.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			SILT with Sand (SALT CRUST) (ML): non-plastic, yellow, dry	S1									
			Sandy Silty CLAY (CL-ML): low plasticity, dark brown, moist	S2									See report for sample compositing plan and Appendix B for laboratory test results.
5													
	5		**Sandy CLAY (CL)**: medium plasticity, dark gray, moist, micaceous, some silt	S3									
0													
∇			**Poorly Graded SAND with Silt (SP-SM)**: fine to medium-grained sand, non-plastic, olive brown, wet, trace mica	S4									
	10		The test pit was terminated at approximately 9 ft. below ground surface. The test pit was backfilled with excavated material on June 18, 2018.										
-5													

GROUNDWATER LEVEL INFORMATION:
∇ Groundwater was observed at approximately 8 ft. below ground surface during excavation.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-15

Salt Pond 20
San Diego, California

FIGURE

A-17

PLOTTED: 08/08/2018 02:41 PM BY: JBonifiglio
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End:	6/19/2018	**Excavation Company:**	Soclaris Contracting		**TEST PIT LOG TP-16**
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness		
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader		
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft		
Weather:	Sunny				

FIELD EXPLORATION

WGS84
Latitude: 32.58675° N
Longitude: -117.10207° E
Approximate Ground Surface Elevation (ft.): 6.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			SILT with Sand (SALT CRUST) (ML): non-plastic, yellow, dry	S1									
5			**Silty SAND (SM)**: non-plastic, light brownish gray, moist, trace clay, trace shells	S2									See report for sample compositing plan and Appendix B for laboratory test results.
			CLAY with Sand (CL): medium plasticity, dark gray, moist, micaceous, some silt	S3									
	5		**Silty CLAY and SAND (CL/SM)**: fine to medium-grained sand, medium plasticity, dark gray and dark grayish brown, moist to wet, trace mica	S4									
0													
	10												
-5													

The test pit was terminated at approximately 10 ft. below ground surface. The test pit was backfilled with excavated material on June 19, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was observed at approximately 8 ft. below ground surface during excavation.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-16

Salt Pond 20
San Diego, California

FIGURE

A-18

PLOTTED: 08/08/2018 02:41 PM BY: JBonifiglio
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
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TEST PIT LOG TP-17

Date Begin - End:	6/20/2018	**Excavation Company:**	Soclaris Contracting
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft
Weather:	Sunny		

FIELD EXPLORATION

WGS84
Latitude: 32.58588° N
Longitude: -117.10173° E
Approximate Ground Surface Elevation (ft.): 6.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			SILT with Sand (SALT CRUST) (ML): non-plastic, yellow, dry	S1									
			CLAY with Sand (CL): low to medium plasticity, brown, moist, trace silt, trace mica	S2									See report for sample compositing plan and Appendix B for laboratory test results. Petroleum odor observed at 1.5 to 2 ft
5			**Silty Clayey SAND (SC-SM)**: low plasticity, dark brown, moist	S3									
	5												
0													
	10												
-5													

The test pit was terminated at approximately 2 ft. below ground surface. The test pit was backfilled with excavated material on June 20, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during excavation or after completion.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

KLEINFELDER
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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-17

Salt Pond 20
San Diego, California

FIGURE
A-19

PLOTTED: 08/08/2018 02:42 PM BY: JBonifiglio
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PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
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Date Begin - End:	6/19/2018	**Excavation Company:**	Soclaris Contracting
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft
Weather:	Sunny		

TEST PIT LOG TP-18

FIELD EXPLORATION

WGS84
Latitude: 32.58876° N
Longitude: -117.10064° E
Approximate Ground Surface Elevation (ft.): 10.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Poorly Graded SAND with Silt (SP-SM): non-plastic, light brownish gray, moist, trace clay	S1									See report for sample compositing plan and Appendix B for laboratory test results.
5	5		**Sandy Silty CLAY (CL-ML)**: low plasticity, dark brown, moist	S2									
0	10												

The test pit was terminated at approximately 6 ft. below ground surface. The test pit was backfilled with excavated material on June 19, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during excavation or after completion.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-18

Salt Pond 20
San Diego, California

FIGURE

A-20

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PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
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Date Begin - End:	6/19/2018	**Excavation Company:**	Soclaris Contracting
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft
Weather:	Sunny		

TEST PIT LOG TP-19

FIELD EXPLORATION

WGS84
Latitude: 32.58810° N
Longitude: -117.10045° E
Approximate Ground Surface Elevation (ft.): 9.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Silty SAND (SM): non-plastic, light brownish gray, moist, trace clay, shells, and roots	S1									See report for sample compositing plan and Appendix B for laboratory test results.
5	5		**Sandy Silty CLAY (CL-ML)**: low plasticity, dark brown, moist	S2									
0	10		**SILT (ML)**: medium plasticity, dark gray, moist, micaceous, some clay	S3									
-5													

The test pit was terminated at approximately 10 ft. below ground surface. The test pit was backfilled with excavated material on June 19, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during excavation or after completion.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-19

Salt Pond 20
San Diego, California

FIGURE

A-21

PLOTTED: 08/08/2018 02:43 PM BY: JBonifiglio
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PROJECT NUMBER: 20164596.018A
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TEST PIT LOG TP-20

Date Begin - End:	6/19/2018	**Excavation Company:**	Soclaris Contracting
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft
Weather:	Sunny		

FIELD EXPLORATION

WGS84
Latitude: 32.58773° N
Longitude: -117.10112° E
Approximate Ground Surface Elevation (ft.): 9.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			SILT with Sand (SALT CRUST) (ML): non-plastic, yellow, moist	S1									
			Silty SAND (SM): non-plastic, light brownish gray, moist, trace clay	S2									See report for sample compositing plan and Appendix B for laboratory test results.
5			**SILT (ML)**: medium plasticity, dark gray, moist, micaceous, some clay	S3									
	5												
0													
	10												
-5													

The test pit was terminated at approximately 5 ft. below ground surface. The test pit was backfilled with excavated material on June 19, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during excavation or after completion.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-20

Salt Pond 20
San Diego, California

FIGURE

A-22

PLOTTED: 08/08/2018 02:43 PM BY: JBonifiglio
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PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

TEST PIT LOG TP-21

Date Begin - End:	6/20/2018	**Excavation Company:**	Soclaris Contracting
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft
Weather:	Sunny		

FIELD EXPLORATION

WGS84
Latitude: 32.58692° N
Longitude: -117.10046° E
Approximate Ground Surface Elevation (ft.): 7.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Poorly Graded SAND with Silt (SP-SM): non-plastic, light brownish gray, moist, trace clay	S1									See report for sample compositing plan and Appendix B for laboratory test results.
5													
	5		**Silty CLAY (CL)**: medium plasticity, brown and dark brown, moist, trace sand, trace mica	S2									
0													
	10		The test pit was terminated at approximately 9 ft. below ground surface. The test pit was backfilled with excavated material on June 20, 2018.										
-5													

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during excavation or after completion.

GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-21

Salt Pond 20
San Diego, California

FIGURE

A-23

PLOTTED: 08/08/2018 02:44 PM BY: JBonifiglio
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

TEST PIT LOG TP-22

Date Begin - End:	6/19/2018	**Excavation Company:**	Soclaris Contracting
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft
Weather:	Sunny		

FIELD EXPLORATION

WGS84
Latitude: 32.58672° N
Longitude: -117.10128° E
Approximate Ground Surface Elevation (ft.): 7.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Silty SAND (SM): non-plastic, light brownish gray, moist, trace clay, trace roots	S1									See report for sample compositing plan and Appendix B for laboratory test results.
5			**CLAY and SILT (CL-ML)**: medium plasticity, darkbrown, moist, micaceous	S2									
	5												
0													
	10												
-5													

The test pit was terminated at approximately 3 ft. below ground surface. The test pit was backfilled with excavated material on June 19, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during excavation or after completion.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

KLEINFELDER
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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-22

Salt Pond 20
San Diego, California

FIGURE

A-24

PLOTTED: 08/08/2018 02:44 PM BY: JBonifiglio
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End:	6/20/2018	**Excavation Company:**	Soclaris Contracting		**TEST PIT LOG TP-23**
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness		
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader		
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft		
Weather:	Sunny				

FIELD EXPLORATION

WGS84
Latitude: 32.58623° N
Longitude: -117.10028° E
Approximate Ground Surface Elevation (ft.): 7.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			SILT with Sand (SALT CRUST) (ML): non-plastic, yellow, dry										
5			**Poorly Graded SAND with Silt (SP-SM)**: non-plastic, light brownish gray, moist, trace clay, shells, and roots										See report for sample compositing plan and Appendix B for laboratory test results.
0	5		**Sandy CLAY (CL)**: low plasticity, dark brown, moist, some silt										
▽	10		**CLAY with Sand (CL)**: low plasticity, dark gray, moist to wet, micaceous, some silt										
-5													

The test pit was terminated at approximately 10 ft. below ground surface. The test pit was backfilled with excavated material on June 20, 2018.

GROUNDWATER LEVEL INFORMATION:
▽ Groundwater was observed at approximately 9 ft. below ground surface during excavation.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

KLEINFELDER
Bright People. Right Solutions.

PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-23

Salt Pond 20
San Diego, California

FIGURE

A-25

PLOTTED: 08/08/2018 02:45 PM BY: JBonifiglio
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

TEST PIT LOG TP-24

Date Begin - End:	6/19/2018	**Excavation Company:**	Soclaris Contracting
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft
Weather:	Sunny		

FIELD EXPLORATION

WGS84
Latitude: 32.58917° N
Longitude: -117.09960° E
Approximate Ground Surface Elevation (ft.): 10.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Poorly Graded SAND with Silt (SP-SM): non-plastic, light brownish gray, moist, trace clay	S1									See report for sample compositing plan and Appendix B for laboratory test results.
5	5		**Sandy Silty CLAY (CL-ML)**: low plasticity, dark brown, moist	S2									
0	10												

The test pit was terminated at approximately 6 ft. below ground surface. The test pit was backfilled with excavated material on June 19, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during excavation or after completion.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

KLEINFELDER
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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-24

Salt Pond 20
San Diego, California

FIGURE

A-26

PLOTTED: 08/08/2018 02:45 PM BY: JBonifiglio
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End:	6/19/2018	**Excavation Company:**	Soclaris Contracting
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft
Weather:	Sunny		

TEST PIT LOG TP-25

FIELD EXPLORATION

WGS84
Latitude: 32.58863° N
Longitude: -117.09869° E
Approximate Ground Surface Elevation (ft.): 10.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Poorly Graded SAND with Silt (SP-SM): low plasticity, light brownish gray, moist, trace clay	S1									See report for sample compositing plan and Appendix B for laboratory test results.
5	5		**CLAY (CL)**: low plasticity, dark brown, moist, some silt, trace sand	S2									
0	10												

The test pit was terminated at approximately 6 ft. below ground surface. The test pit was backfilled with excavated material on June 19, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during excavation or after completion.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-25

Salt Pond 20
San Diego, California

FIGURE

A-27

PLOTTED: 08/08/2018 02:46 PM BY: JBonifiglio
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

TEST PIT LOG TP-26

Date Begin - End:	6/19/2018	**Excavation Company:**	Soclaris Contracting
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft
Weather:	Sunny		

FIELD EXPLORATION

WGS84
Latitude: 32.58828° N
Longitude: -117.09930° E
Approximate Ground Surface Elevation (ft.): 10.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Poorly Graded SAND with Silt (SP-SM): non-plastic, light brownish gray, moist, trace clay	S1									See report for sample compositing plan and Appendix B for laboratory test results.
5	5		**CLAY (CL)**: low plasticity, dark brown, moist, some silt, trace sand	S2									
▽			**Silty SAND (SM)**: fine to medium-grained sand, trace coarse-grained sand, non-plastic, brown, moist to wet, trace clay, trace mica	S3									Caving at 6.5 ft.
0	10												

The test pit was terminated at approximately 6.5 ft. below ground surface. The test pit was backfilled with excavated material on June 19, 2018.

GROUNDWATER LEVEL INFORMATION:
▽ Groundwater was observed at approximately 6.5 ft. below ground surface during excavation.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-26

Salt Pond 20
San Diego, California

FIGURE

A-28

PLOTTED: 10/02/2018 03:19 PM BY: JBonifiglio
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End:	6/19/2018	**Excavation Company:**	Soclaris Contracting
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft
Weather:	Sunny		

TEST PIT LOG TP-27

FIELD EXPLORATION

WGS84
Latitude: 32.58768° N
Longitude: -117.09976° E
Approximate Ground Surface Elevation (ft.): 9.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Poorly Graded SAND with Silt (SP-SM): non-plastic, light brownish gray, moist, trace clay, trace shells	S1									See report for sample compositing plan and Appendix B for laboratory test results.
5	5		**Silty SAND and SILT (SM/ML)**: fine to medium-grained sand, low plasticity, dark grayish brown and dark brown, moist, trace clay, micaceous	S2									
0	10												
-5													

The test pit was terminated at approximately 10 ft. below ground surface. The test pit was backfilled with excavated material on June 19, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during excavation or after completion.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-27

Salt Pond 20
San Diego, California

FIGURE

A-29

PLOTTED: 08/08/2018 02:47 PM BY: JBonifiglio
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End:	6/20/2018	**Excavation Company:**	Soclaris Contracting	**TEST PIT LOG TP-28**
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness	
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader	
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft	
Weather:	Sunny			

FIELD EXPLORATION

WGS84
Latitude: 32.58705° N
Longitude: -117.09932° E
Approximate Ground Surface Elevation (ft.): 6.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Poorly Graded SAND with Silt (SP-SM): non-plastic, light brownish gray, moist, trace clay, trace shells	S1									See report for sample compositing plan and Appendix B for laboratory test results.
5			**Sandy CLAY (CL)**: low plasticity, dark brown, moist, some silt	S2									
	5												
0													
	10												
-5													

The test pit was terminated at approximately 4 ft. below ground surface. The test pit was backfilled with excavated material on June 20, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during excavation or after completion.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-28

Salt Pond 20
San Diego, California

FIGURE

A-30

PLOTTED: 08/08/2018 02:48 PM BY: JBonifiglio
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 20164596.018A
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gINT TEMPLATE: E:KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End:	6/19/2018	**Excavation Company:**	Soclaris Contracting	**TEST PIT LOG TP-29**	
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness		
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader		
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft		
Weather:	Sunny				

FIELD EXPLORATION

WGS84
Latitude: 32.58827° N
Longitude: -117.09799° E
Approximate Ground Surface Elevation (ft.): 10.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Poorly Graded SAND with Silt (SP-SM): non-plastic, light brownish gray, moist, trace clay	S1									See report for sample compositing plan and Appendix B for laboratory test results.
5	5		**CLAY (CL)**: low plasticity, dark brown, moist, some silt, trace sand	S2									
▽			**Silty SAND (SM)**: fine to medium-grained sand, trace coarse-grained sand, non-plastic, brown, wet, trace clay, trace mica	S3									
0	10												

The test pit was terminated at approximately 10 ft. below ground surface. The test pit was backfilled with excavated material on June 19, 2018.

GROUNDWATER LEVEL INFORMATION:
▽ Groundwater was observed at approximately 8 ft. below ground surface during excavation.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-29

Salt Pond 20
San Diego, California

FIGURE

A-31

PLOTTED: 08/08/2018 02:48 PM BY: JBonifiglio
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PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End:	6/19/2018	**Excavation Company:**	Soclaris Contracting		**TEST PIT LOG TP-30**
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness		
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader		
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft		
Weather:	Sunny				

FIELD EXPLORATION

WGS84
Latitude: 32.58765° N
Longitude: -117.09874° E
Approximate Ground Surface Elevation (ft.): 9.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Poorly Graded SAND with Silt (SP-SM): non-plastic, light brownish gray, moist, trace clay, trace shells	S1									See report for sample compositing plan and Appendix B for laboratory test results.
5	5		**CLAY (CL)**: low plasticity, dark brown, moist, some silt, trace sand	S2									
∇ 0	10		**Silty SAND (SM)**: fine to medium-grained sand, trace coarse-grained sand, non-plastic, brown, wet, trace clay, trace mica	S3									
-5													

The test pit was terminated at approximately 10 ft. below ground surface. The test pit was backfilled with excavated material on June 19, 2018.

GROUNDWATER LEVEL INFORMATION:
∇ Groundwater was observed at approximately 8 ft. below ground surface during excavation.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-30

Salt Pond 20
San Diego, California

FIGURE

A-32

PLOTTED: 08/08/2018 02:49 PM BY: JBonifiglio
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PROJECT NUMBER: 20164596.018A
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gINT TEMPLATE: E:KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End:	6/20/2018	**Excavation Company:**	Soclaris Contracting
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft
Weather:	Sunny		

TEST PIT LOG TP-31

FIELD EXPLORATION

WGS84
Latitude: 32.58724° N
Longitude: -117.09810° E
Approximate Ground Surface Elevation (ft.): 9.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Poorly Graded SAND with Silt (SP-SM): non-plastic, light brownish gray, moist, trace clay	S1									See report for sample compositing plan and Appendix B for laboratory test results.
			Sandy CLAY (CL): low plasticity, dark brown, moist, some silt	S2									
5													
	5												
0													
	10												
-5													

The test pit was terminated at approximately 4 ft. below ground surface. The test pit was backfilled with excavated material on June 20, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during excavation or after completion.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

KLEINFELDER
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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-31

Salt Pond 20
San Diego, California

FIGURE

A-33

PLOTTED: 08/08/2018 02:49 PM BY: JBonifiglio
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PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

TEST PIT LOG TP-32

Date Begin - End:	6/20/2018	**Excavation Company:**	Soclaris Contracting
Logged By:	J. Lippman	**Excavation Crew:**	T. Harkness
Hor.-Vert. Datum:	WGS84 - NAVD88	**Excavation Equip.:**	Komatsu Track-Mounted Backhoe Loader
Plunge/Bearing:	-90 / 0 degrees	**Excav. Dimensions:**	10 x 5 ft
Weather:	Sunny		

FIELD EXPLORATION

WGS84
Latitude: 32.58618° N
Longitude: -117.09855° E
Approximate Ground Surface Elevation (ft.): 7.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
5			**Poorly Graded SAND with Silt (SP-SM)**: non-plastic, light brownish gray, moist, trace clay	S1									See report for sample compositing plan and Appendix B for laboratory test results.
	5		**Sandy CLAY (CL)**: low plasticity, dark brown, moist, some silt	S2									
0			**Silty SAND and CLAY (SM/CL)**: medium plasticity, light brownish gray and dark gray, moist to wet, trace clay, micaceous	S3									
	10		The test pit was terminated at approximately 9 ft. below ground surface. The test pit was backfilled with excavated material on June 20, 2018.										
-5													

GROUNDWATER LEVEL INFORMATION:
Groundwater was observed at approximately 8 ft. below ground surface during excavation.
GENERAL NOTES:
The excavation location and elevation are approximate and were estimated by Kleinfelder.

KLEINFELDER
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PROJECT NO.:	20164596
DRAWN BY:	JLB
CHECKED BY:	JL
DATE:	7/19/2018
REVISED:	8/8/2018

TEST PIT LOG TP-32

Salt Pond 20
San Diego, California

FIGURE

A-34

PLOTTED: 08/08/2018 02:50 PM BY: JBonifiglio
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End:	6/20/2018	**Drilling Company:**	Kleinfelder	**BORING LOG HA-1**
Logged By:	S. Hanrahan	**Drill Crew:**	S. Hanrahan	
Hor.-Vert. Datum:	WGS84 - NAVD88	**Drilling Equipment:**	Hand Auger	
Plunge/Bearing:	-90 / 0 degrees	**Drilling Method:**	Hand Auger	
Weather:	Sunny	**Exploration Diameter:**	4 in. O.D.	

FIELD EXPLORATION

WGS84
Latitude: 32.58730° N
Longitude: -117.10509° E
Approximate Ground Surface Elevation (ft.): 4.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in. Push Tube(PT)= psi Pocket Pen(PP)= tsf	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Sandy Silty CLAY (CL-ML): medium plasticity, gray/black, moist, pungent smell, angular salt grains	S1											
				S2											
				S3											
				S4											Stopped sampling due to hole caving in.
0 ∇															
	5														
-5															
	10														
-10															

The boring was terminated at approximately 4 ft. below ground surface. The boring was backfilled with auger cuttings on June 20, 2018.

GROUNDWATER LEVEL INFORMATION:
∇ Groundwater was observed at approximately 4 ft. below ground surface during drilling.
GENERAL NOTES:
The borehole location and elevation are approximate and were estimated by Kleinfelder.

KLEINFELDER
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PROJECT NO.:	20164596
DRAWN BY:	MAP
CHECKED BY:	JLB
DATE:	8/14/2018
REVISED:	8/14/2018

BORING LOG HA-1

Salt Pond 20
San Diego, California

FIGURE

A-35

PAGE: 1 of 1

PLOTTED: 08/14/2018 10:33 AM BY: JBonifiglio
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End:	6/20/2018	**Drilling Company:**	Kleinfelder
Logged By:	S. Birardi	**Drill Crew:**	S. Birardi
Hor.-Vert. Datum:	WGS84 - NAVD88	**Drilling Equipment:**	Hand Auger
Plunge/Bearing:	-90 / 0 degrees	**Drilling Method:**	Hand Auger
Weather:	Sunny	**Exploration Diameter:**	4 in. O.D.

BORING LOG HA-2

FIELD EXPLORATION

WGS84
Latitude: 32.58736° N
Longitude: -117.10487° E
Approximate Ground Surface Elevation (ft.): 4.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in. Push Tube(PT)= psi Pocket Pen(PP)= tsf	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			SILT with Sand (ML): fine to coarse-grained sand, trace gravel, non-plastic, pale olive (5Y 6/4), slight petroleum odor, moist	S1											
			Sandy CLAY (CL): medium plasticity, black (GLEY 2-4/5B), moist	S2											
0			**Sandy CLAY (CL)**: medium to high plasticity, gray (GLEY 1-6/N), moist to wet	S3											
	5			S4											
-5															
	10														
-10															

The boring was terminated at approximately 6.5 ft. below ground surface. The boring was backfilled with auger cuttings on June 20, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was observed at approximately 3.5 ft. below ground surface during drilling.
GENERAL NOTES:
The borehole location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	MAP
CHECKED BY:	JLB
DATE:	8/14/2018
REVISED:	8/14/2018

BORING LOG HA-2

Salt Pond 20
San Diego, California

FIGURE

A-36

PAGE: 1 of 1

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PROJECT NUMBER: 20164596.018A
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Date Begin - End:	6/20/2018	**Drilling Company:**	Kleinfelder	**BORING LOG HA-3**
Logged By:	S. Birardi	**Drill Crew:**	S. Birardi	
Hor.-Vert. Datum:	WGS84 - NAVD88	**Drilling Equipment:**	Hand Auger	
Plunge/Bearing:	-90 / 0 degrees	**Drilling Method:**	Hand Auger	
Weather:	Sunny	**Exploration Diameter:**	4 in. O.D.	

FIELD EXPLORATION

WGS84
Latitude: 32.58417° N
Longitude: -117.10319° E
Approximate Ground Surface Elevation (ft.): 4.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in. Push Tube(PT)= psi Pocket Pen(PP)= tsf	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Sandy Silty CLAY (CL-ML): trace gravel, medium plasticity, light brownish gray (2.5Y 6/2) to brown (2.5Y 5/3), moist to wet	S1											
				S2											
0 ▽				S3											
				S4											
	5														
-5															
	10														
-10															

The boring was terminated at approximately 5 ft. below ground surface. The boring was backfilled with auger cuttings on June 20, 2018.

GROUNDWATER LEVEL INFORMATION:
▽ Groundwater was observed at approximately 4 ft. below ground surface during drilling.
GENERAL NOTES:
The borehole location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	MAP
CHECKED BY:	JLB
DATE:	8/14/2018
REVISED:	8/14/2018

BORING LOG HA-3

Salt Pond 20
San Diego, California

FIGURE
A-37

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Date Begin - End:	6/20/2018	**Drilling Company:**	Kleinfelder	**BORING LOG HA-4**
Logged By:	S. Birardi	**Drill Crew:**	S. Birardi	
Hor.-Vert. Datum:	WGS84 - NAVD88	**Drilling Equipment:**	Hand Auger	
Plunge/Bearing:	-90 / 0 degrees	**Drilling Method:**	Hand Auger	
Weather:	Sunny	**Exploration Diameter:**	4 in. O.D.	

FIELD EXPLORATION

WGS84
Latitude: 32.58428° N
Longitude: -117.10315° E
Approximate Ground Surface Elevation (ft.): 4.00
Surface Condition: Bare Earth

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in. Push Tube(PT)= psi Pocket Pen(PP)= tsf	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			SILT with Sand (ML): non-plastic, pale olive (5Y 6/4), moist	S1											Water was observed flowing into hole from side wall at 1 foot
			Sandy Silty CLAY (CL-ML): low to medium plasticity, black (GLEY 2-4/5B) to gray (GLEY 1-6/N), moist to wet	S2											Hole began to cave in at 3 feet

The boring was terminated at approximately 3 ft. below ground surface. The boring was backfilled with auger cuttings on June 20, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was observed at approximately 3 ft. below ground surface during drilling.
GENERAL NOTES:
The borehole location and elevation are approximate and were estimated by Kleinfelder.

0
5
-5
10
-10

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PROJECT NO.:	20164596
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CHECKED BY:	JLB
DATE:	8/14/2018
REVISED:	8/14/2018

BORING LOG HA-4

Salt Pond 20
San Diego, California

FIGURE
A-38

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Date Begin - End:	6/19/2018	**Drilling Company:**	Kleinfelder
Logged By:	S. Birardi	**Drill Crew:**	S. Birardi
Hor.-Vert. Datum:	WGS84 - NAVD88	**Drilling Equipment:**	Hand Auger
Plunge/Bearing:	-90 / 0 degrees	**Drilling Method:**	Hand Auger
Weather:	Sunny	**Exploration Diameter:**	4 in. O.D.

BORING LOG HA-5

FIELD EXPLORATION

WGS84
Latitude: 32.58436° N
Longitude: -117.10168° E
Approximate Ground Surface Elevation (ft.): 13.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in. Push Tube(PT)= psi Pocket Pen(PP)= tsf	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			SILT with Sand (ML): fine to coarse-grained sand, trace gravel, non-plastic, light brownish gray (2.5Y 6/2), dry	S1											Plastic debris at 1 foot
			Silty SAND (SM): fine to coarse-grained sand, trace clay nodules, trace gravel, non-plastic, olive brown (2.5Y 4/3) to reddish brown (2.5YR 5/4), moist	S2											
10															Burnt ash/coal layer at 3 feet
			Silty SAND (SM): fine to coarse-grained sand, trace clay nodules, non-plastic to low plasticity, dark reddish brown (2.5YR 3/3), moist	S3											
	5			S4											
5															
	10														
0															

The boring was terminated at approximately 6.5 ft. below ground surface. The boring was backfilled with auger cuttings on June 19, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:
The borehole location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	MAP
CHECKED BY:	JLB
DATE:	8/14/2018
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BORING LOG HA-5

Salt Pond 20
San Diego, California

FIGURE

A-39

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PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
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Date Begin - End:	6/19/2018	**Drilling Company:**	Kleinfelder
Logged By:	S. Birardi	**Drill Crew:**	S. Birardi
Hor.-Vert. Datum:	WGS84 - NAVD88	**Drilling Equipment:**	Hand Auger
Plunge/Bearing:	-90 / 0 degrees	**Drilling Method:**	Hand Auger
Weather:	Sunny	**Exploration Diameter:**	4 in. O.D.

BORING LOG HA-6

FIELD EXPLORATION

WGS84
Latitude: 32.58439° N
Longitude: -117.10174° E
Approximate Ground Surface Elevation (ft.): 8.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in. Push Tube(PT)= psi Pocket Pen(PP)= tsf	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Silty SAND (SM): fine-grained sand, trace coarse-grained sand, non-plastic, olive yellow (2.5Y 6/6), dry, trace glass fragments	S1											
			Silty SAND (SM): fine-grained sand, trace gravel, non-plastic to low plasticity, olive brown (2.5Y 4/3), moist	S2											
5			**Poorly Graded SAND with Silt (SP-SM)**: trace clay nodules, low plasticity, dark reddish brown (2.5YR 3/4) to reddish brown (2.5YR 5/4), moist	S3											
	5			S4											
0			The boring was terminated at approximately 6.5 ft. below ground surface. The boring was backfilled with auger cuttings on June 19, 2018.												
	10														
-5															

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:
The borehole location and elevation are approximate and were estimated by Kleinfelder.

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BORING LOG HA-6

Salt Pond 20
San Diego, California

FIGURE

A-40

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Date Begin - End:	6/18/2018	**Drilling Company:**	Kleinfelder
Logged By:	S. Birardi	**Drill Crew:**	S. Birardi
Hor.-Vert. Datum:	WGS84 - NAVD88	**Drilling Equipment:**	Hand Auger
Plunge/Bearing:	-90 / 0 degrees	**Drilling Method:**	Hand Auger
Weather:	Sunny	**Exploration Diameter:**	4 in. O.D.

BORING LOG HA-7

FIELD EXPLORATION

WGS84
Latitude: 32.58434° N
Longitude: -117.10143° E
Approximate Ground Surface Elevation (ft.): 18.00
Surface Condition: Concrete

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in. Push Tube(PT)= psi Pocket Pen(PP)= tsf	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			CONCRETE: 2"	S1											
			Poorly Graded SAND with Silt (SP-SM): trace fine to coarse-grained gravel, trace clay nodules, low plasticity, olive brown (2.5Y 4/3), moist - 2" gravel fragment at 1.5 feet											
				S2											
15			- 1" gravel fragment at 3 feet												
				S3											
	5														
			Silty SAND (SM): low plasticity, brown (7.5YR 5/3), moist - 1" gravel fragment at 6 feet	S4											
10															
	10														
5															

The boring was terminated at approximately 6.5 ft. below ground surface. The boring was backfilled with auger cuttings on June 18, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:
The borehole location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	MAP
CHECKED BY:	JLB
DATE:	8/14/2018
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BORING LOG HA-7

Salt Pond 20
San Diego, California

FIGURE

A-41

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Date Begin - End:	6/18/2018	**Drilling Company:**	Kleinfelder	**BORING LOG HA-8**
Logged By:	S. Birardi	**Drill Crew:**	S. Birardi	
Hor.-Vert. Datum:	WGS84 - NAVD88	**Drilling Equipment:**	Hand Auger	
Plunge/Bearing:	-90 / 0 degrees	**Drilling Method:**	Hand Auger	
Weather:	Sunny	**Exploration Diameter:**	4 in. O.D.	

FIELD EXPLORATION

WGS84
Latitude: 32.58791° N
Longitude: -117.09848° E
Approximate Ground Surface Elevation (ft.): 10.00
Surface Condition: Bare Earth

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in. Push Tube(PT)= psi Pocket Pen(PP)= tsf	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Poorly Graded SAND with Silt (SP-SM): fine to coarse-grained sand, olive yellow (2.5Y 6/6), dry	S1											
				S2											
				S3											
5	5		**CLAY (CL)**: low to medium plasticity, dark brown (7.5YR 3/4), moist, some silt, some sand												
				S4											
0	10														

LABORATORY RESULTS

The boring was terminated at approximately 6.5 ft. below ground surface. The boring was backfilled with auger cuttings on June 18, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:
The borehole location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	MAP
CHECKED BY:	JLB
DATE:	8/14/2018
REVISED:	8/14/2018

BORING LOG HA-8

Salt Pond 20
San Diego, California

FIGURE

A-42

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Date Begin - End:	6/18/2018	**Drilling Company:**	Kleinfelder
Logged By:	S. Hanrahan	**Drill Crew:**	S. Hanrahan
Hor.-Vert. Datum:	WGS84 - NAVD88	**Drilling Equipment:**	Hand Auger
Plunge/Bearing:	-90 / 0 degrees	**Drilling Method:**	Hand Auger
Weather:	Sunny	**Exploration Diameter:**	4 in. O.D.

BORING LOG HA-9

FIELD EXPLORATION

WGS84
Latitude: 32.58792° N
Longitude: -117.09814° E
Approximate Ground Surface Elevation (ft.): 10.00
Surface Condition: Bare Earth

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in. Push Tube(PT)= psi Pocket Pen(PP)= tsf	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Poorly Graded SAND with Silt (SP-SM): fine to coarse-grained sand, non-plastic, yellow, dry	S1											
			- olive yellow below 1.5 feet	S2											
			CLAY (CL): medium plasticity, dark brown, moist, some silt, some sand	S3											
5	5		- dark brown, wet below 5.5 feet	S4											
0	10														

The boring was terminated at approximately 6 ft. below ground surface. The boring was backfilled with auger cuttings on June 18, 2018.

GROUNDWATER LEVEL INFORMATION:
▽ Groundwater was observed at approximately 6 ft. below ground surface during drilling.
GENERAL NOTES:
The borehole location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	MAP
CHECKED BY:	JLB
DATE:	8/14/2018
REVISED:	8/14/2018

BORING LOG HA-9

Salt Pond 20
San Diego, California

FIGURE
A-43

PAGE: 1 of 1

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Date Begin - End:	6/18/2018	**Drilling Company:**	Kleinfelder
Logged By:	S. Birardi	**Drill Crew:**	S. Birardi
Hor.-Vert. Datum:	WGS84 - NAVD88	**Drilling Equipment:**	Hand Auger
Plunge/Bearing:	-90 / 0 degrees	**Drilling Method:**	Hand Auger
Weather:	Sunny	**Exploration Diameter:**	4 in. O.D.

BORING LOG HA-10

FIELD EXPLORATION

WGS84
Latitude: 32.58769° N
Longitude: -117.09813° E
Approximate Ground Surface Elevation (ft.): 9.00
Surface Condition: Bare Earth

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in. Push Tube(PT)= psi Pocket Pen(PP)= tsf	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Poorly Graded SAND with Silt (SP-SM): fine to coarse-grained sand, trace gravel, non-plastic, olive yellow (2.5Y 6/6), dry	S1											
			Poorly Graded SAND with Silt (SP-SM): fine to coarse-grained sand, trace clay nodules, low plasticity, dark brown (7.5YR 3/4), moist	S2											
5				S3											
	5		**CLAY (CL)**: some sand, trace silt, trace gravel, medium plasticity, dark brown (7.5YR 3/4), moist	S4											
0															
	10														
-5															

LABORATORY RESULTS

The boring was terminated at approximately 6.5 ft. below ground surface. The boring was backfilled with auger cuttings on June 18, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was not observed during drilling or after completion.
GENERAL NOTES:
The borehole location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	MAP
CHECKED BY:	JLB
DATE:	8/14/2018
REVISED:	8/14/2018

BORING LOG HA-10

Salt Pond 20
San Diego, California

FIGURE

A-44

PAGE: 1 of 1

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PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End:	6/18/2018	**Drilling Company:**	Kleinfelder
Logged By:	S. Birardi	**Drill Crew:**	S. Birardi
Hor.-Vert. Datum:	WGS84 - NAVD88	**Drilling Equipment:**	Hand Auger
Plunge/Bearing:	-90 / 0 degrees	**Drilling Method:**	Hand Auger
Weather:	Sunny	**Exploration Diameter:**	4 in. O.D.

BORING LOG HA-11

FIELD EXPLORATION

WGS84
Latitude: 32.58770° N
Longitude: -117.09848° E
Approximate Ground Surface Elevation (ft.): 10.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in. Push Tube(PT)= psi Pocket Pen(PP)= tsf	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Poorly Graded SAND with Silt (SP-SM): fine to coarse-grained sand, non-plastic, olive yellow (2.5Y 6/6), dry	S1											
			- moist below 2 feet	S2											
			Sandy CLAY (CL): fine-grained sand, low plasticity, dark brown (7.5YR 3/4), moist	S3											
5	5		- wet below 6 feet	S4											
0	10														

The boring was terminated at approximately 6.5 ft. below ground surface. The boring was backfilled with auger cuttings on June 18, 2018.

GROUNDWATER LEVEL INFORMATION:
Groundwater was observed at approximately 6 ft. below ground surface during drilling.
GENERAL NOTES:
The borehole location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	MAP
CHECKED BY:	JLB
DATE:	8/14/2018
REVISED:	8/14/2018

BORING LOG HA-11

Salt Pond 20
San Diego, California

FIGURE

A-45

PAGE: 1 of 1

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PROJECT NUMBER: 20164596.018A
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gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End:	6/19/2018	**Drilling Company:**	Kleinfelder
Logged By:	S. Birardi	**Drill Crew:**	S. Birardi
Hor.-Vert. Datum:	WGS84 - NAVD88	**Drilling Equipment:**	Hand Auger
Plunge/Bearing:	-90 / 0 degrees	**Drilling Method:**	Hand Auger
Weather:	Sunny	**Exploration Diameter:**	4 in. O.D.

BORING LOG HA-12

FIELD EXPLORATION

WGS84
Latitude: 32.58459° N
Longitude: -117.10335° E
Approximate Ground Surface Elevation (ft.): 6.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in. Push Tube(PT)= psi Pocket Pen(PP)= tsf	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			SILT with Sand (ML): fine to coarse-grained sand, non-plastic, pale red (2.5YR 6/2), dry	S1											
5			**Clayey SAND (SC)**: trace coarse-grained sand, low to medium plasticity, dark brown (7.5YR 3/4), moist to wet												
				S2											
			Clayey SAND (SC): trace coarse-grained sand, medium plasticity, light brownish gray (2.5Y 6/2), moist												
∇			- wet below 4 feet	S3											
	5														
0				S4											
	10														
-5															

The boring was terminated at approximately 6.5 ft. below ground surface. The boring was backfilled with auger cuttings on June 19, 2018.

GROUNDWATER LEVEL INFORMATION:
∇ Groundwater was observed at approximately 4 ft. below ground surface during drilling.
GENERAL NOTES:
The borehole location and elevation are approximate and were estimated by Kleinfelder.

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PROJECT NO.:	20164596
DRAWN BY:	MAP
CHECKED BY:	JLB
DATE:	8/14/2018
REVISED:	8/14/2018

BORING LOG HA-12

Salt Pond 20
San Diego, California

FIGURE

A-46

PAGE: 1 of 1

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gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

Date Begin - End:	6/19/2018	**Drilling Company:**	Kleinfelder
Logged By:	S. Birardi	**Drill Crew:**	S. Birardi
Hor.-Vert. Datum:	WGS84 - NAVD88	**Drilling Equipment:**	Hand Auger
Plunge/Bearing:	-90 / 0 degrees	**Drilling Method:**	Hand Auger
Weather:	Sunny	**Exploration Diameter:**	4 in. O.D.

BORING LOG HA-13

FIELD EXPLORATION

WGS84
Latitude: 32.58588° N
Longitude: -117.09971° E
Approximate Ground Surface Elevation (ft.): 6.00
Surface Condition: Bare Earth

LABORATORY RESULTS

Approximate Elevation (feet)	Depth (feet)	Graphical Log	Lithologic Description	Sample Number	Sample Type	Blow Counts(BC)= Uncorr. Blows/6 in. Push Tube(PT)= psi Pocket Pen(PP)= tsf	Recovery (NR=No Recovery)	USCS Symbol	Water Content (%)	Dry Unit Wt. (pcf)	Passing #4 (%)	Passing #200 (%)	Liquid Limit	Plasticity Index (NP=NonPlastic)	Additional Tests/ Remarks
			Silty SAND (SM): fine to coarse-grained sand, non-plastic, yellow (2.5Y 7/6), dry	S1											
5			- low plasticity, olive brown (2.5Y 4/3), moist below 2 feet	S2											
▽	5		**Sandy CLAY (CL)**: medium plasticity, dark brown (7.5YR 3/4), moist	S3											
0				S4											
	10														
-5															

The boring was terminated at approximately 6.5 ft. below ground surface. The boring was backfilled with auger cuttings on June 19, 2018.

GROUNDWATER LEVEL INFORMATION:
▽ Groundwater was observed at approximately 4.5 ft. below ground surface during drilling.
GENERAL NOTES:
The borehole location and elevation are approximate and were estimated by Kleinfelder.

KLEINFELDER
Bright People. Right Solutions.

PROJECT NO.:	20164596
DRAWN BY:	MAP
CHECKED BY:	JLB
DATE:	8/14/2018
REVISED:	8/14/2018

BORING LOG HA-13

Salt Pond 20
San Diego, California

FIGURE

A-47

PLOTTED: 08/14/2018 10:23 AM BY: JBonifiglio
OFFICE FILTER: SAN DIEGO
PROJECT NUMBER: 20164596.018A
gINT FILE: Klf_gint_master_2017
gINT TEMPLATE: E:\KLF_STANDARD_GINT_LIBRARY_2017.GLB [_KLF_BORING/TEST PIT SOIL LOG]

APPENDIX D
Hand Auger Boring Photographs

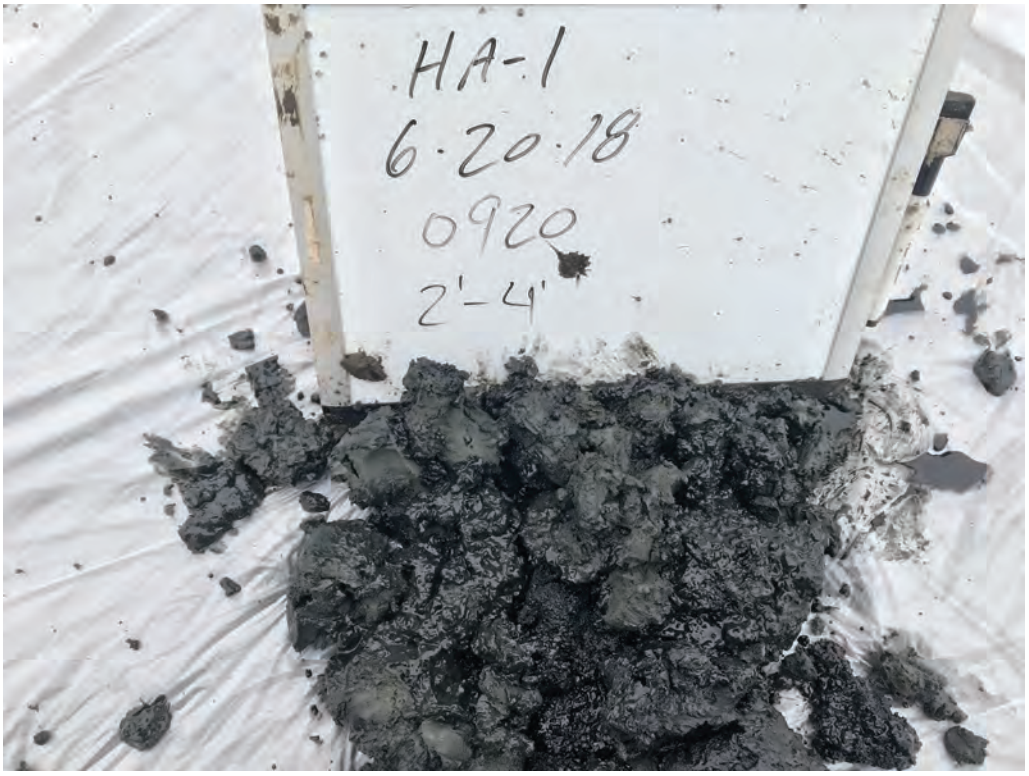
© 2019 Kleinfelder

Photograph 1 - HA-1 from 0 to 0.5 foot bgs

Photograph 2 - HA-1 from 1 foot bgs

KLEINFELDER Bright People. Right Solutions.	PROJECT NO. 20172923.002A DRAWN BY: JL CHECKED BY: BG DATE: REVISED:	SITE PHOTOGRAPHS Tenth Avenue Marine Terminal Investigation Area Sediment Chemistry Assessment San Diego, California	FIGURE A-1

Photograph 3 - HA-1 from 0.5 to 2 feet bgs



Photograph 4 - HA-1 from 2 to 4 feet bgs

KLEINFELDER Bright People. Right Solutions.	PROJECT NO. DRAWN BY: CHECKED BY: DATE: REVISED:	SITE PHOTOGRAPHS	FIGURE

Photograph 5 - HA-2 from 0.5 to 2 feet bgs

Photograph 6 - HA-2 from 2 to 4 feet bgs

KLEINFELDER Bright People. Right Solutions.	PROJECT NO. DRAWN BY: CHECKED BY: DATE: REVISED:	SITE PHOTOGRAPHS	FIGURE

Photograph 7 - HA-2 from 4 to 6 feet bgs

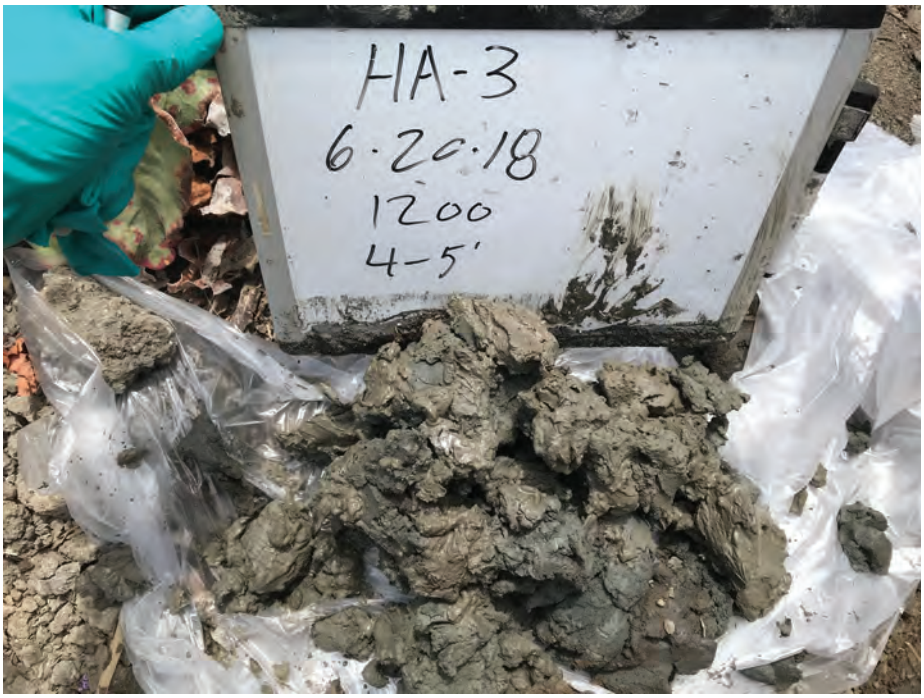
Photograph 8 - HA-3 from 0 to 0.5 foot bgs

KLEINFELDER Bright People. Right Solutions.	PROJECT NO. DRAWN BY: CHECKED BY: DATE: REVISED:	SITE PHOTOGRAPHS	FIGURE

Photograph 9 - HA-3 from 0.5 to 2 feet bgs

Photograph 10 - HA-3 from 2 to 4 feet bgs

KLEINFELDER Bright People. Right Solutions.	PROJECT NO. DRAWN BY: CHECKED BY: DATE: REVISED:	SITE PHOTOGRAPHS	FIGURE



Photograph 11 - HA-3 from 4 to 5 feet bgs

Photograph 12 - HA-4 from 0.5 to 2 feet bgs

KLEINFELDER Bright People. Right Solutions.	PROJECT NO. 20172923.002A DRAWN BY: JL CHECKED BY: BG DATE: REVISED:	SITE PHOTOGRAPHS Tenth Avenue Marine Terminal Investigation Area Sediment Chemistry Assessment San Diego, California	FIGURE A-1

Photograph 13 - HA-4 from 2 to 3 feet bgs

Photograph 14 - HA-5 from 0 to 0.5 foot bgs

KLEINFELDER Bright People. Right Solutions.	PROJECT NO. DRAWN BY: CHECKED BY: DATE: REVISED:	SITE PHOTOGRAPHS	FIGURE

Photograph 15 - HA-5 from 0.5 to 2 feet bgs

Photograph 16 - HA-5 from 2 to 4 feet bgs

KLEINFELDER Bright People. Right Solutions.	PROJECT NO. DRAWN BY: CHECKED BY: DATE: REVISED:	SITE PHOTOGRAPHS	FIGURE

Photograph 17 - HA-5 from 4 to 6 feet bgs

Photograph 18 - HA-6 from 0 to 0.5 foot bgs

KLEINFELDER Bright People. Right Solutions.	PROJECT NO. DRAWN BY: CHECKED BY: DATE: REVISED:	SITE PHOTOGRAPHS	FIGURE

Photograph 19 - HA-6 from 0.5 to 2 feet bgs

Photograph 20 - HA-6 from 2 to 4 feet bgs

KLEINFELDER Bright People. Right Solutions.	PROJECT NO. DRAWN BY: CHECKED BY: DATE: REVISED:	SITE PHOTOGRAPHS	FIGURE

Photograph 21 - HA-6 from 4 to 6 feet bgs

Photograph 22 - HA-7 from 0 to 0.5 foot bgs

KLEINFELDER Bright People. Right Solutions.	PROJECT NO. 20172923.002A DRAWN BY: JL CHECKED BY: BG DATE: REVISED:	SITE PHOTOGRAPHS Tenth Avenue Marine Terminal Investigation Area Sediment Chemistry Assessment San Diego, California	FIGURE A-1

Photograph 23 - HA-7 from 0.5 to 2 feet bgs

Photograph 24 - HA-7 from 2 to 4 feet bgs

KLEINFELDER Bright People. Right Solutions.	PROJECT NO. DRAWN BY: CHECKED BY: DATE: REVISED:	SITE PHOTOGRAPHS	FIGURE

Photograph 25 - HA-7 from 4 to 6 feet bgs

Photograph 26 - HA-8 from 0.5 to 2 feet bgs

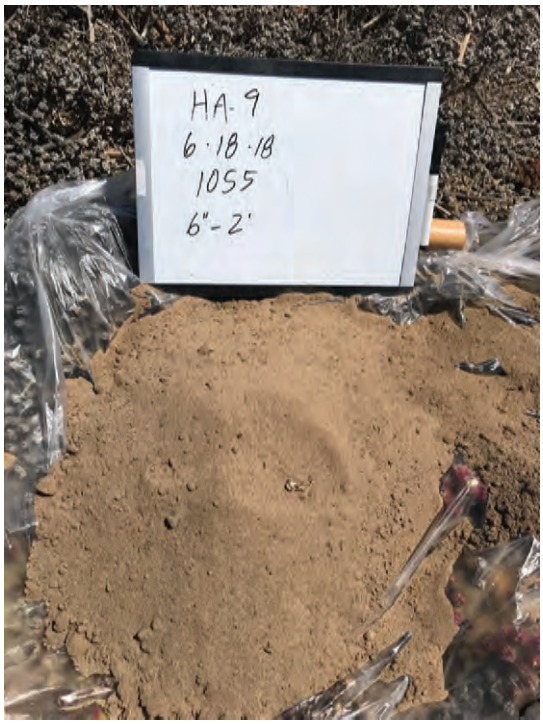
KLEINFELDER Bright People. Right Solutions.	PROJECT NO. DRAWN BY: CHECKED BY: DATE: REVISED:	SITE PHOTOGRAPHS	FIGURE

Photograph 27 - HA-8 from 2 to 4 feet bgs

Photograph 28 - HA-8 from 4 to 6 feet bgs

KLEINFELDER Bright People. Right Solutions.	PROJECT NO. DRAWN BY: CHECKED BY: DATE: REVISED:	SITE PHOTOGRAPHS	FIGURE

Photograph 29 - HA-9 from 0 to 0.5 foot bgs



Photograph 30 - HA-9 from 0.5 to 2 feet bgs

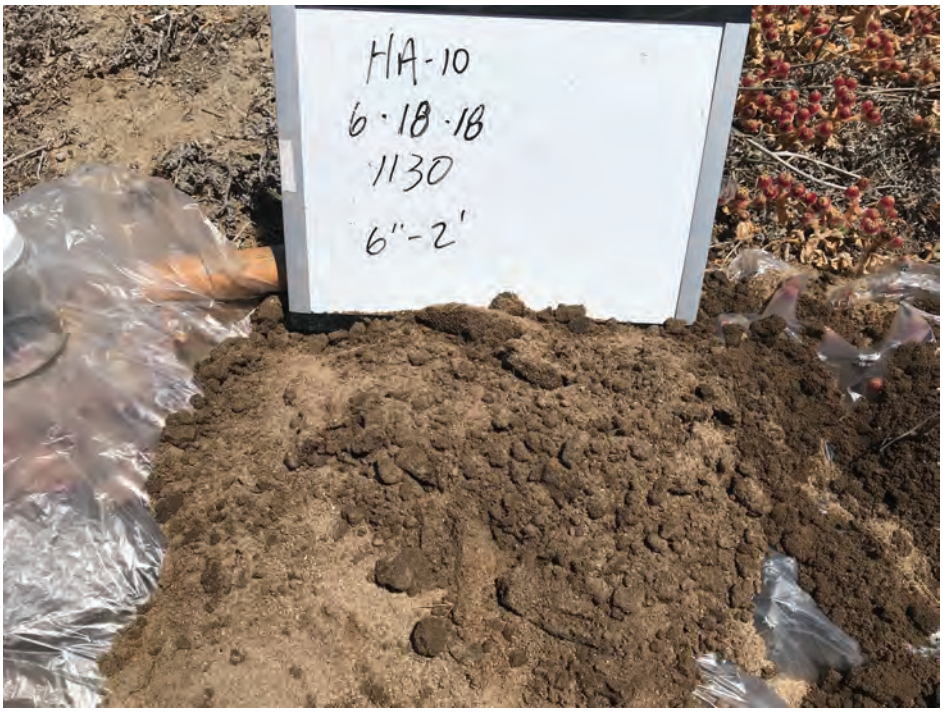
KLEINFELDER Bright People. Right Solutions.	PROJECT NO. DRAWN BY: CHECKED BY: DATE: REVISED:	SITE PHOTOGRAPHS	FIGURE

Photograph 31 - HA-9 from 2 to 4 feet bgs

Photograph 32 - HA-9 from 4 to 6 feet bgs

KLEINFELDER Bright People. Right Solutions.	PROJECT NO. 20172923.002A DRAWN BY: JL CHECKED BY: BG DATE: REVISED:	SITE PHOTOGRAPHS Tenth Avenue Marine Terminal Investigation Area Sediment Chemistry Assessment San Diego, California	FIGURE A-1

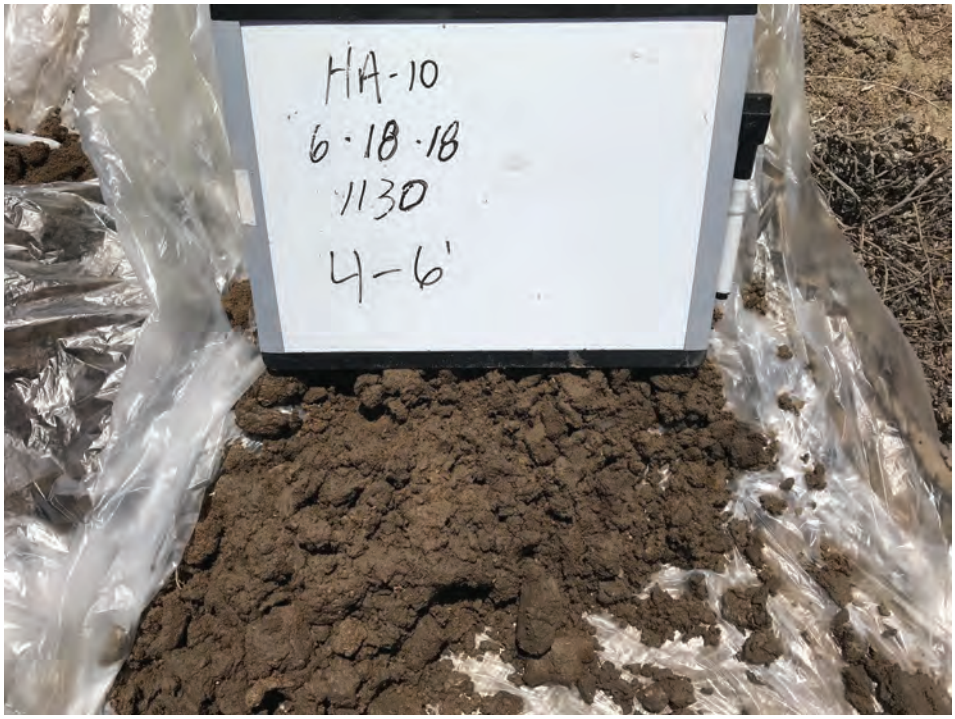
Photograph 33 - HA-10 from 0 to 0.5 foot bgs



Photograph 34 - HA-10 from 0.5 to 2 feet bgs

KLEINFELDER Bright People. Right Solutions.	PROJECT NO. DRAWN BY: CHECKED BY: DATE: REVISED:	SITE PHOTOGRAPHS	FIGURE

Photograph 35 - HA-10 from 2 to 4 feet bgs



Photograph 36 - HA-10 from 4 to 6 feet bgs

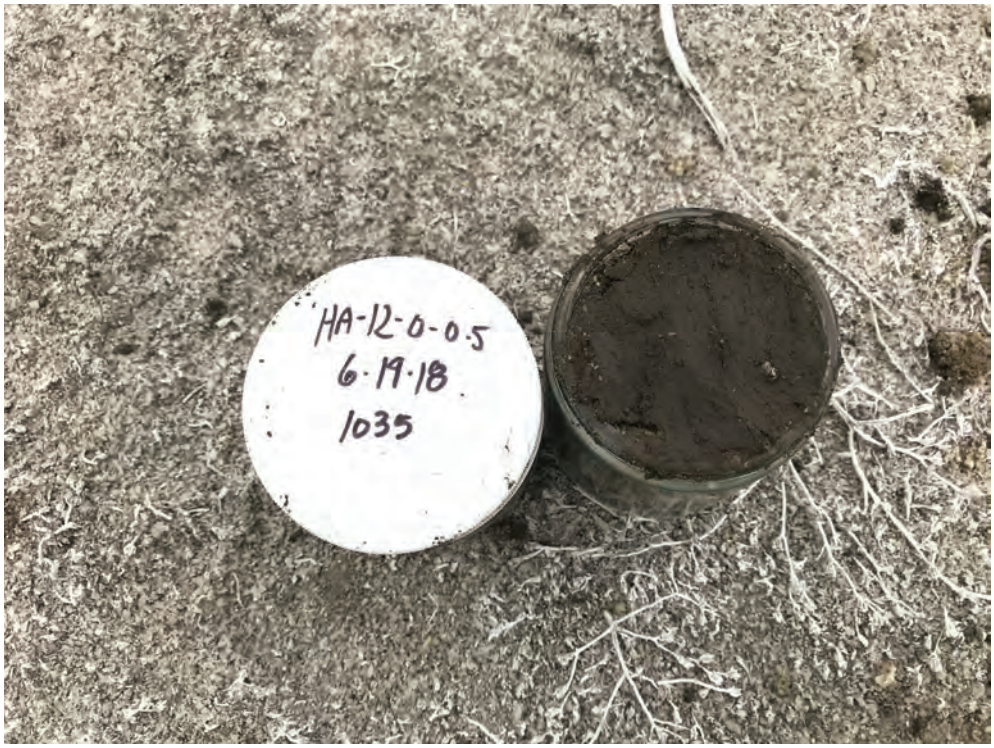
KLEINFELDER Bright People. Right Solutions.	PROJECT NO. DRAWN BY: CHECKED BY: DATE: REVISED:	SITE PHOTOGRAPHS	FIGURE

Photograph 37 - HA-11 from 0.5 to 2 feet bgs

Photograph 38 - HA-11 from 2 to 4 feet bgs

KLEINFELDER Bright People. Right Solutions.	PROJECT NO. DRAWN BY: CHECKED BY: DATE: REVISED:	SITE PHOTOGRAPHS	FIGURE

Photograph 39 - HA-11 from 4 to 6 feet bgs



Photograph 40 - HA-12 from 0 to 0.5 foot bgs

KLEINFELDER Bright People. Right Solutions.	PROJECT NO. DRAWN BY: CHECKED BY: DATE: REVISED:	SITE PHOTOGRAPHS	FIGURE

Photograph 41 - HA-12 from 0.5 to 2 feet bgs

Photograph 42 - HA-12 from 2 to 4 feet bgs

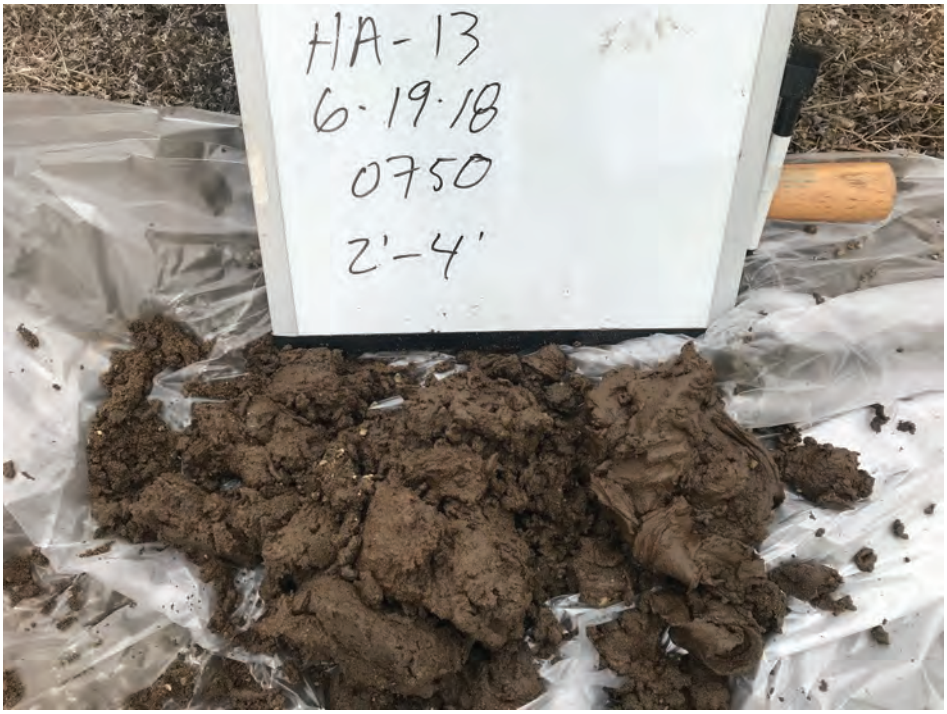
KLEINFELDER Bright People. Right Solutions.	PROJECT NO. 20172923.002A DRAWN BY: JL CHECKED BY: BG DATE: REVISED:	SITE PHOTOGRAPHS Tenth Avenue Marine Terminal Investigation Area Sediment Chemistry Assessment San Diego, California	FIGURE A-1

Photograph 43 - HA-12 from 4 to 6 feet bgs

Photograph 44 - HA-13 from 0 to 0.5 foot bgs

KLEINFELDER Bright People. Right Solutions.	PROJECT NO. DRAWN BY: CHECKED BY: DATE: REVISED:	SITE PHOTOGRAPHS	FIGURE

Photograph 45 - HA-13 from 0.5 to 2 feet bgs



Photograph 46 - HA-13 from 2 to 4 feet bgs

KLEINFELDER Bright People. Right Solutions.	PROJECT NO. DRAWN BY: CHECKED BY: DATE: REVISED:	SITE PHOTOGRAPHS	FIGURE

Photograph 47 - HA-13 from 4 to 6 feet bgs

KLEINFELDER Bright People. Right Solutions.	PROJECT NO. DRAWN BY: CHECKED BY: DATE: REVISED:	SITE PHOTOGRAPHS	FIGURE

APPENDIX E
Drum Waste Manifest

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NO. 742747

NON-HAZARDOUS WASTE DATA FORM

BESI # 296387

GENERATOR

Generator's Name and Mailing Address
SAN DIEGO UNIFIED PORT DISTRICT
PO BOX 120488
SAN DIEGO, CA 92112

Generator's Site Address (if different than mailing address)
SALT POND 20
APNS 615-020-08/12, 616-021-08, 616-021-09, 621-020-04/08
SAN DIEGO, CA 92154

Generator's Phone:

Container type removed from site:
XX ☐ Drums ☐ Vacuum Truck ☐ Roll-off Truck ☐ Dump Truck
☐ Other
Quantity 1

Container type transported to receiving facility:
☐ Drums XX ☐ Vacuum Truck ☐ Roll-off Truck ☐ Dump Truck
☐ Other
Quantity Volume

WASTE DESCRIPTION NON-HAZARDOUS WATER

GENERATING PROCESS ~~WELL PURGING~~ Soil Sampling / DECON WATER

COMPONENTS OF WASTE	PPM	%
1. WATER		99-100%
2. TPH		<1%
3.		
4.		

Waste Profile

PROPERTIES: pH 7-10 ☐ SOLID XX ☐ LIQUID ☐ SLUDGE ☐ SLURRY ☐ OTHER

HANDLING INSTRUCTIONS: WEAR ALL APPROPRIATE PERSONAL PROTECTIVE CLOTHING.

Generator Printed/Typed Name: Paul Brown
Signature:
Month 7 Day 31 Year 18

The Generator certifies that the waste as described is 100% non-hazardous

TRANSPORTER

Transporter 1 Company Name: BELSHIRE
Phone#: 949-460-5200

Transporter 1 Printed/Typed Name: Thomas Bull
Signature:
Month 07 Day 31 Year 18

Transporter Acknowledgment of Receipt of Materials

Transporter 2 Company Name: NIETO & SONS TRUCKING, INC.
Phone#: 714-990-6855

Transporter 2 Printed/Typed Name
Signature
Month Day Year

Transporter Acknowledgment of Receipt of Materials

RECEIVING FACILITY

Designated Facility Name and Site Address
DEMENNO KERDOON
2000 N. ALAMEDA ST.
COMPTON, CA 90222

Phone#: 310-537-7100

Printed/Typed Name
Signature
Month Day Year

Designated Facility Owner or Operator: Certification of receipt of materials covered by this data form.

APPENDIX F

San Diego Department of Environmental Health 60-Day Boring Permit Report

© 2019 Kleinfelder

August 17, 2018
Kleinfelder Project No. 20164596.018A

Mr. Jon Senaha
Monitoring Well Program
County of San Diego Department of Environmental Health
5500 Overland Avenue, Suite 110
San Diego, California 92112-9261

SUBJECT: 60-Day Report – Retroactive Boring Construction Permit
Salt Pond 20
San Diego, California 92154
Permit No. LMWP-003499

Dear Mr. Senaha:

Kleinfelder, on behalf of the San Diego Unified Port District (SDUPD), collected soil samples from 4 hand auger borings and 12 test pits which encountered groundwater (an additional 9 hand auger borings and 20 test pits did not encounter groundwater) at the Salt Pond 20 site located in San Diego, California. The Site is identified as Assessor's Parcel Numbers 616-020-08, 616-020-12, 616-021-08, 616-021-09 (Portion), 621-020-04, and 621-020-08. The site is not an open assessment or cleanup site. This work was completed for the SDUPD to evaluate the suitability for reuse of the soil.

Due to the unknown depth to groundwater at the Site prior to sample collection, Kleinfelder obtained permit number LMWP-003499 on July 10, 2018 after the work had been completed. Attached to this letter includes a copy of the retroactive boring construction permit (Attachment A), boring logs (Attachment B), and laboratory analytical reports (Attachment C).

A summary of the field activities is presented below:

From June 18 through 20, 2018 Kleinfelder staff advanced 13 soil borings (4 encountered groundwater) by hand auger and oversaw the excavations of 32 soil test pits (12 encountered groundwater) by Soclaris Contracting using a track-mounted backhoe. The locations that encountered groundwater are circled on the attached site map (Attachment A). Total hand auger boring depths ranged from 2 to 6 feet below ground surface (bgs) and total test pit depths ranged from 2 to 10 feet bgs. Depths to first encountered groundwater in the hand auger borings and test pit locations ranged from 3 to 9 feet bgs.

Soil samples for environmental analysis from the hand auger borings were collected every 2 feet beginning from the surface (additionally, one sample was collected at HA-1 from 1-foot bgs due to potential contamination and from 5 feet bgs at HA-3 due to refusal). Soil samples for environmental and geotechnical analyses were collected from the test pit locations at various depths based on the encountered lithology. A total of 116 samples from the hand auger and test

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550 West C Street, Suite 1200, San Diego, CA 92101 p | 619-831-4600 f | 619-232-1039

pits were analyzed for environmental purposes and 19 composited soil samples were analyzed for geotechnical purposes. Groundwater was not sampled during this investigation.

The environmental analyses included total metals by United States Environmental Protection Agency (USEPA) methods 6020/7471A, polyaromatic hydrocarbons, phenols/phthalates, and semi-volatile organic compounds by USEPA method 8270C SIM, organochlorine pesticides by USEPA method 8081A, polychlorinated biphenyls by USEPA method 8082, total petroleum hydrocarbons by USEPA method 8015B, and volatile organic compounds by USEPA method 8260B. Geotechnical analyses included density - Modified Proctor, 4" mold (ASTM D1557), water content (ASTM D2216/D4363), sieve analysis – coarse to fine (ASTM D422/D6913), expansion index (ASTM D4829), Atterberg Limits – multiple points (ASTM D4318-A), organic content (ASTM D2974-C), resistivity (ASTM G187), pH (ASTM D4972/G51), and chloride and sulfate content.

All soil borings and test pits were abandoned by backfilling with the soil cuttings. Waste water generated from equipment decontamination procedures was transported to Demenno Kerdoon in Compton, California for disposal.

Please contact the undersigned at 619.831.4600 if you have any questions.

Respectfully submitted,

KLEINFELDER

PROFESSIONAL GEOLOGIST
JAKE D. LIPPMAN
No. 1028
CERTIFIED HYDROGEOLOGIST
Exp. 5/31/19
STATE OF CALIFORNIA

PROFESSIONAL GEOLOGIST
ELIZABETH ANNE SIMMONS
No. 7431
Exp. 8/31/2019
STATE OF CALIFORNIA

Jake Lippman, PG 9127, CHg 1028
Project Manager

Lizanne Simmons, PG 7431
Senior Principal Geologist

Attachments: Attachment A – County of San Diego Boring Construction Permit
Attachment B – Soil Boring Logs
Attachment C – Laboratory Analytical Reports

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APPENDIX A

COUNTY OF SAN DIEGO BORING CONSTRUCTION PERMIT

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PERMIT #: LMWP-003499
A.P.N. #: 616-020-08 + 5 Parcels
EST #: None

COUNTY OF SAN DIEGO
DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
MONITORING WELL PROGRAM

RETROACTIVE BORING CONSTRUCTION PERMIT

SITE NAME: SALT POND 20

SITE ADDRESS: 0 BAY BOULEVARD, SAN DIEGO 92154

PERMIT FOR: CONSTRUCTION OF SOIL BORINGS (4) & TEST PITS (12)

PERMIT APPROVAL DATE: 7/10/2018

PERMIT EXPIRES ON: 11/7/2018

RESPONSIBLE PARTY: SAN DIEGO UNIFIED PORT DISTRICT (George Liddle)

PERMIT CONDITIONS: Conditions below do not apply, except Condition #5

1. All borings must be sealed from the bottom of the boring to the ground surface with an approved sealing material as specified in California Well Standards Bulletin 74-90, Part III, Section 19.D. **Drill cuttings are not an acceptable fill material. Bentonite slurries are not an acceptable fill material in the unsaturated zone.**

2. All borings must be properly destroyed within 24 hours of drilling.

3. Placement of any sealing material at a depth greater than 30 feet must be done using the tremie method.

4. This work is not connected to any known unauthorized release of hazardous substances. Any contamination found in the course of drilling and sampling must be reported to DEH. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, D-4. In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.

5. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

6. This office must be given 24-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at (858) 505-6688.

NOTE: **This permit does not constitute approval of a work plan as defined in Section 2722 of Article 11 of C.C.R., Title 23. Work plans are required for all unauthorized release investigations in San Diego County.**

Jon Senaha Digitally signed by Jon Senaha Date: 2018.07.10 09:52:29 -07'00'

APPROVED BY: _____ DATE: 7/10/2018

Jon Senaha

Retroactive

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMWP# 003499
SAM CASE Y/N # None
DATE RECEIVED: 7/3/2018
FEE PAID: $1,165.00
CHECK # Online

A. RESPONSIBLE PARTY San Diego Unified Port District E-mail gliddle@portofsandiego.org
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)

Mailing Address 3165 Pacific Highway City San Diego State CA Zip 92101

Contact Person George Liddle Phone 619-686-7295 Ext. _____

B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE # _____

C. CONSULTING FIRM Kleinfelder, Inc.

Mailing Address 550 West C Street, Suite 1200 City San Diego State CA Zip 92101

Registered Professional Jake Lippman Phone 6193488415 Registration #9127(PG)

E-mail jlippman@kleinfelder.com

Contact Person Same Phone _____ Ext _____ Email _____

D. DRILLING COMPANY N/A Kleinfelder performed hand augering and Soclaris Contracting excavated test pits C57# N/A

Contact Name _____ E-mail _____

Mailing Address _____ City _____ State _____ Zip _____

Phone _____ Ext. _____

E. CONSTRUCTION INFORMATION

TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED

	#
☐ Groundwater	___
☐ Vadose	___
☒ Boring	4
☐ Soil Vapor	___
☒ Other	12 Test Pits

NUMBER OF WELLS TO BE DESTROYED

☐ Destruction ___

MATERIALS TO BE USED

CASING

Not Applicable N/A
Type _____
Gauge _____
Diameter _____
Screen Size _____
Filter Pack _____

SEAL/BORING BACKFILL

☐ Neat Cement
☐ Cement & Bentonite
☐ Sand-Cement
☐ Bentonite
☒ Other Soil Cuttings

Borehole diameter 3.25"
Test Pits: 8' long x 3' wide

Drilling Method

☒ Auger
☐ Direct Push
☒ Other Excavator
☐ Air Rotary
☐ Sonic
☐ Percussion

PROPOSED CONSTRUCTION

Estimated Groundwater Depth: 2-9 ft.
Estimated Depth of Boring: 2-10 ft.
Concrete Seal: 0 to 3
Annular Seal: N/A to _____
Filter Pack: N/A to _____
Perforation: N/A to _____

NOTE: Attach a well construction diagram

I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.

DRILLER'S SIGNATURE Jake Lippman DATE 6/25/18

Within 60 days of completion, I will furnish the Monitoring Well Permit Desk (858) 505-6688 with a complete well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.

PG/RCE/CEG SIGNATURE Jake Lippman DATE 6/25/18

F. SITE INFORMATION - A Property Owner Consent agreement is required for all applications, except for onsite, open LOP/SAM site assessment cases, Caltrans properties and military properties. Submit a separate sheet for additional parcels.

1. ASSESSOR'S PARCEL NUMBER 616-020-08, 616-020-12, 616-021-08, 616-021-09 (portion), 621-020-04, 621-020-08

Site Name Salt Pond 20

Site Address N/A City San Diego Zip 92154

PROPERTY OWNER San Diego Unified Port District

Phone 619-686-7295 Ext. _____ Fax _____

Mailing Address 3165 Pacific Highway City San Diego State CA Zip92101

NUMBER OF WELLS 4 soil borings, 12 test pits **TYPE OF WELLS** N/A

2. ASSESSOR'S PARCEL NUMBER _____

Site Address _____ City _____ Zip _____

PROPERTY OWNER _____

Phone _____ Ext. _____ Fax _____

Mailing Address _____ City _____ State _____ Zip _____

NUMBER OF WELLS _____ **TYPE OF WELLS** _____

G. QUESTIONNAIRE: Please answer all applicable questions completely *and submit any required supportive documentation*.

1. What is the purpose of the well/boring investigation?

☐ a. Part of an ongoing site assessment case in which a government regulator is the lead agency. If yes, indicate which government regulator is the lead agency and the case number.

_____ DEH _____ RWQCB _____ DTSC

☐ b. Part of a Phase I investigation for property ownership transfer.

☒ c. Geotechnical investigation for proposed construction or land stabilization.

☒ d. Other: Phase II Environmental Site Assessment for proposed construction

2. If wells are to be destroyed, provide a description of method of destruction _____

3. Are you proposing a variation from current SAM Manual Requirements for the construction or destruction of borings, Vadose and/or Groundwater Monitoring Wells? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines. Yes ☐ No ☒

The work was already completed from June 18-20, 2018. The DEH was notified prior to the work that depth to groundwater was unknown. The DEH approved application of this permit following the work if and when groundwater was encountered.

H. FEES

ACTIVITY	FEE SCHEDULE	AMOUNT	
Permit for Well Installations Only *(Groundwater Monitoring Wells, Vapor Extraction Wells)*	$351.00 for the first monitoring well	**$351.00**	_____
	$224.00 for each additional well installation	_____x **$224.00**	_____
Permit for Borings Only *(CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)*	$235.00 for the first boring	**$235.00**	**235**
	$62.00 for each additional boring	15x **$ 62.00**	**930**
Permit for Well Destructions Only	$235.00 for the first destruction	**$235.00**	_____
	$143.00 for each additional destruction	_____x **$143.00**	_____
Permit for any Combination of Well Installations, Borings, & Destructions *(Except Enhanced Leak Detection & Soil Vapor Survey)*	First Activity: $351.00 (if monitoring wells will be installed) OR $235.00 (for borings and destructions only)	**$351.00** **OR** **$235.00**	_____ _____
	$224.00 for each additional well	_____x **$224.00**	_____
	$ 62.00 for each additional boring	_____x **$ 62.00**	_____
	$143.00 for each additional well destruction	_____x **$143.00**	_____
Permit for Soil Vapor Survey *(Vadose Monitoring Wells)*	$388.00 (flat fee per site)	**$388.00**	_____
Permit for Enhanced Leak Detection	$235.00 for the first boring	**$368.00**	_____
	TOTAL COST OF PERMIT		**$1,165**

County of San Diego

JACK MILLER
DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
LAND AND WATER QUALITY DIVISION
P.O. BOX 129261, SAN DIEGO, CA 92112-9261
(858)505-6688
www.sdcdeh.org

ELIZABETH POZZEBON
ASSISTANT DIRECTOR

PROPERTY OWNER CONSENT

Proposed locations for subsurface work:

Property Address:

N/A

Assessor's Parcel Number (APN):

616-020-08, 616-020-12, 616-021-08, 616-021-09(portion)

621-020-04, 621-020-08

I, Paul Braun, owner of the property/properties listed above, give my permission to Kleinfelder, Inc. (consulting company, contractor) to conduct the following work at the locations stated above.

☐ Install _____ monitoring wells ☐ Destroy _____ monitoring wells ☒ Drill 4 soil borings and 12 test pits

I understand that Jake Lippman (registered professional) of Kleinfelder, Inc. (consulting company) and an authorized signer for Kleinfelder and Soclaris Contracting (drilling company) have submitted a signed application to the Department of Environmental Health in which they have agreed to complete the above-stated work according the requirements of the current SAM Manual, all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction. I have arranged with the Responsible Party, the person who causes to have monitoring wells/borings installed or existing wells destroyed on this property, to ensure proper closure of the monitoring wells/borings.

Property Owner Signature: _____ Date: Paul Braun, 7/3/18

Print Name: _____ Title: Paul Braun, Program Manager

Company: Port of San Diego

Mailing Address: PO Box 120488, S.D. CA. 92112

0 150 300 600 Feet

The information included on this graphic representation has been compiled from a variety of sources and is subject to change without notice. Kleinfelder makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. This document is not intended for use as a land survey product nor is it designed or intended as a construction design document. The use or misuse of the information contained on this graphic representation is at the sole risk of the party using or misusing the information.

LEGEND

- TEST PIT LOCATION
- HAND AUGER LOCATION
- EXCAVATION CHANNELS
- PREVIOUS SOIL SAMPLE LOCATION (GREAT ECOLOGY, 2017)

SOURCE FOR EXCAVATION CHANNELS: SDUPD, 2017. WETLAND RESTORATION OF SALT POND 20 PRELIMINARY DESIGN, OCTOBER 6.

KLEINFELDER
Bright People. Right Solutions.
www.kleinfelder.com

PROJECT NO.	20164596.018
DRAWN:	6/7/2018
DRAWN BY:	JP
CHECKED BY:	JL
FILE NAME:	20164596_SaltPondCh.mxd

PROPOSED SOIL SAMPLING LOCATION MAP

SOIL SAMPLING AND ANALYSIS WORK PLAN
SALT POND 20
SAN DIEGO, CALIFORNIA

FIGURE
2

\\sandiego\sandiego-data\GRAPHICS_clients\PortOfSanDiego\20164596.018\mxd\20164596_SaltPondCh.mxd

APPENDIX G
Laboratory Analytical Reports

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EnviroMatrix Analytical, Inc.

29 June 2018

Kleinfelder, Inc.
Attn: Jake Lippman
550 West C Street Suite 200
San Diego, CA 92101

EMA Log #: 18F0764

Project Name: POND 20
Project Desc./#: 20164596.018A

Enclosed are the results of analyses for samples received by the laboratory on 06/21/18 14:05. Samples were analyzed pursuant to client request utilizing EPA or other ELAP approved methodologies. I certify that this data is in compliance both technically and for completeness.

Dan Verdon
Laboratory Director

CA ELAP Certification #: 2564

4340 Viewridge Avenue, Suite A - San Diego, California 92123 - (858) 560-7717 - Fax (858) 560-7763
Analytical Chemistry Laboratory

Client Name: Kleinfelder, Inc.
Project Name: POND 20

EMA Log #: 18F0764

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Pond 20-Drum	18F0764-01	Water	06/20/18 15:00	06/21/18 14:05

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Kleinfelder, Inc.
Project Name: POND 20

EMA Log #: 18F0764

Total Metals by EPA 6000/7000 Series Methods

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pond 20-Drum (18F0764-01) Water Sampled: 06/20/18 15:00 Received: 06/21/18 14:05										
Antimony	ND	0.10	0.10	mg/l	1	8062735	06/27/18	06/28/18	EPA 6010	
Arsenic	ND	0.004	0.01	"	"	"	"	06/28/18	"	
Barium	**0.04**	0.004	0.10	"	"	"	"	06/28/18	"	J
Beryllium	ND	0.001	0.01	"	"	"	"	06/28/18	"	
Cadmium	ND	0.001	0.01	"	"	"	"	06/28/18	"	
Chromium	**0.01**	0.002	0.05	"	"	"	"	"	"	J
Cobalt	**0.01**	0.002	0.05	"	"	"	"	"	"	J
Copper	**0.005**	0.005	0.05	"	"	"	"	"	"	J
Lead	ND	0.008	0.01	"	"	"	"	"	"	
Molybdenum	ND	0.009	0.05	"	"	"	"	"	"	
Nickel	ND	0.004	0.05	"	"	"	"	"	"	
Selenium	ND	0.005	0.01	"	"	"	"	"	"	
Silver	ND	0.001	0.005	"	"	"	"	06/28/18	"	
Thallium	ND	0.005	0.01	"	"	"	"	06/28/18	"	
Vanadium	**0.03**	0.002	0.05	"	"	"	"	"	"	J
Zinc	**0.02**	0.004	0.05	"	"	"	"	"	"	J
Mercury	**0.0002**	0.00008	0.0001	"	"	8062733	06/27/18	06/27/18	EPA 7470	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Kleinfelder, Inc.
Project Name: POND 20

EMA Log #: 18F0764

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pond 20-Drum (18F0764-01) Water Sampled: 06/20/18 15:00 Received: 06/21/18 14:05										**R-04, R-06**
Acetone	ND	499	1250	ug/l	50	8062050	06/22/18	06/22/18	EPA 8260B	
Acetonitrile	ND	2050	2500	"	"	"	"	"	"	
Acrolein	ND	140	5000	"	"	"	"	"	"	
Acrylonitrile	ND	18.5	500	"	"	"	"	"	"	
Allyl chloride	ND	19.0	50.0	"	"	"	"	"	"	
Benzene	ND	12.0	50.0	"	"	"	"	"	"	
Bromobenzene	ND	11.5	50.0	"	"	"	"	"	"	
Bromochloromethane	ND	13.0	50.0	"	"	"	"	"	"	
Bromodichloromethane	ND	8.50	50.0	"	"	"	"	"	"	
Bromoform	ND	8.50	50.0	"	"	"	"	"	"	
Bromomethane	ND	33.5	100	"	"	"	"	"	"	
2-Butanone	ND	207	1250	"	"	"	"	"	"	
n-Butylbenzene	ND	10.0	50.0	"	"	"	"	"	"	
sec-Butylbenzene	ND	12.5	50.0	"	"	"	"	"	"	
tert-Butylbenzene	ND	10.5	50.0	"	"	"	"	"	"	
Carbon disulfide	ND	18.5	50.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	13.0	25.0	"	"	"	"	"	"	
Chlorobenzene	ND	10.5	50.0	"	"	"	"	"	"	
Chlorodibromomethane	ND	11.5	50.0	"	"	"	"	"	"	
Chloroethane	ND	44.0	100	"	"	"	"	"	"	
2-Chloroethylvinyl ether	ND	18.0	100	"	"	"	"	"	"	
Chloroform	ND	14.0	50.0	"	"	"	"	"	"	
Chloromethane	ND	38.0	100	"	"	"	"	"	"	
2-Chlorotoluene	ND	9.50	50.0	"	"	"	"	"	"	
4-Chlorotoluene	ND	12.0	50.0	"	"	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	12.0	100	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	13.0	50.0	"	"	"	"	"	"	
Dibromomethane	ND	10.5	50.0	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	4.50	50.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	7.50	50.0	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	7.00	50.0	"	"	"	"	"	"	
trans-1,4-Dichloro-2-butene	ND	23.0	100	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	13.0	100	"	"	"	"	"	"	
1,1-Dichloroethane	ND	15.5	50.0	"	"	"	"	"	"	
1,2-Dichloroethane	ND	10.5	25.0	"	"	"	"	"	"	
1,1-Dichloroethene	ND	15.5	50.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	18.0	50.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	9.50	50.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	10.5	50.0	"	"	"	"	"	"	
1,3-Dichloropropane	ND	9.00	50.0	"	"	"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Kleinfelder, Inc.
Project Name: POND 20

EMA Log #: 18F0764

Volatile Organic Compounds by EPA Method 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pond 20-Drum (18F0764-01) Water	**Sampled: 06/20/18 15:00**		**Received: 06/21/18 14:05**							**R-04, R-06**
2,2-Dichloropropane	ND	25.5	50.0	ug/l	50	8062050	06/22/18	06/22/18	EPA 8260B	
1,1-Dichloropropene	ND	10.5	50.0	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	11.0	25.0	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	8.50	25.0	"	"	"	"	"	"	
Diethyl ether	ND	21.5	100	"	"	"	"	"	"	
Ethylbenzene	ND	9.00	50.0	"	"	"	"	"	"	
Hexachlorobutadiene	ND	22.5	50.0	"	"	"	"	"	"	
Hexachloroethane	ND	11.5	50.0	"	"	"	"	"	"	
2-Hexanone	ND	15.5	250	"	"	"	"	"	"	
Iodomethane	ND	11.0	50.0	"	"	"	"	"	"	
Isopropylbenzene	ND	11.0	50.0	"	"	"	"	"	"	
Methylene chloride	ND	17.5	250	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	23.5	50.0	"	"	"	"	"	"	
4-Methyl-2-pentanone	ND	104	1250	"	"	"	"	"	"	
Naphthalene	**61.0**	9.00	100	"	"	"	"	"	"	J
n-Propylbenzene	ND	14.5	50.0	"	"	"	"	"	"	
Styrene	ND	10.0	50.0	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	9.00	50.0	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	10.5	50.0	"	"	"	"	"	"	
Tetrachloroethene	ND	33.0	50.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	231	500	"	"	"	"	"	"	
Toluene	ND	10.5	50.0	"	"	"	"	"	"	
1,2,3-Trichlorobenzene	ND	12.0	50.0	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	12.0	50.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	20.5	100	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	11.0	50.0	"	"	"	"	"	"	
Trichloroethene	ND	6.00	50.0	"	"	"	"	"	"	
Trichlorofluoromethane	ND	18.0	100	"	"	"	"	"	"	
1,2,3-Trichloropropane	ND	13.5	100	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane	ND	12.0	100	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	10.0	50.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	10.5	50.0	"	"	"	"	"	"	
Vinyl acetate	ND	13.0	250	"	"	"	"	"	"	
Vinyl chloride	ND	21.5	25.0	"	"	"	"	"	"	
m,p-Xylene	**22.5**	15.0	100	"	"	"	"	"	"	J
o-Xylene	**10.5**	9.00	50.0	"	"	"	"	"	"	J
Surrogate: Dibromofluoromethane		*111 %*	*79-115*			"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*86 %*	*80-135*			"	"	"	"	
Surrogate: Toluene-d8		*93 %*	*78-118*			"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Kleinfelder, Inc.
Project Name: POND 20

EMA Log #: 18F0764

TPH by EPA 8015B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Pond 20-Drum (18F0764-01) Water	**Sampled: 06/20/18 15:00**		**Received: 06/21/18 14:05**							
Diesel (C10-C28)	**11400**	146	500	ug/l	1	8062682	06/26/18	06/27/18	EPA 8015B	D-40
Extended Range HC (C28-C40)	ND	500	500	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*110 %*	*69-139*			"	"	"	"	
Gasoline (C6-C10)	**407**	240	500	"	10	8062814	06/28/18	06/29/18	"	R-04, J
Surrogate: 4-Bromofluorobenzene		*86 %*	*77-135*			"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Kleinfelder, Inc.
Project Name: POND 20

EMA Log #: 18F0764

Total Metals by EPA 6000/7000 Series Methods - Quality Control

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8062733											
Blank (8062733-BLK1)					Prepared & Analyzed: 06/27/18						
Mercury	ND	0.00008	0.0001	mg/l							
LCS (8062733-BS1)					Prepared & Analyzed: 06/27/18						
Mercury	0.002	0.00008	0.0001	mg/l	0.00200		100	75-125			
LCS Dup (8062733-BSD1)					Prepared & Analyzed: 06/27/18						
Mercury	0.002	0.00008	0.0001	mg/l	0.00200		100	75-125	0.1	20	
Duplicate (8062733-DUP1)			**Source: 18F0751-02**		Prepared & Analyzed: 06/27/18						
Mercury	ND	0.00008	0.0001	mg/l		ND				20	
Matrix Spike (8062733-MS1)			**Source: 18F0751-02**		Prepared & Analyzed: 06/27/18						
Mercury	0.002	0.00008	0.0001	mg/l	0.00200	ND	107	75-125			
Matrix Spike Dup (8062733-MSD1)			**Source: 18F0751-02**		Prepared & Analyzed: 06/27/18						
Mercury	0.002	0.00008	0.0001	mg/l	0.00200	ND	103	75-125	4	20	
Batch 8062735											
Blank (8062735-BLK1)					Prepared: 06/27/18 Analyzed: 06/28/18						
Antimony	ND	0.10	0.10	mg/l							
Arsenic	ND	0.004	0.01	"							
Barium	ND	0.004	0.10	"							
Beryllium	ND	0.001	0.01	"							
Cadmium	ND	0.001	0.01	"							
Chromium	ND	0.002	0.05	"							
Cobalt	ND	0.002	0.05	"							
Copper	ND	0.005	0.05	"							
Lead	ND	0.008	0.01	"							
Molybdenum	ND	0.009	0.05	"							
Nickel	ND	0.004	0.05	"							
Selenium	ND	0.005	0.01	"							
Silver	ND	0.001	0.005	"							
Thallium	ND	0.005	0.01	"							
Vanadium	ND	0.002	0.05	"							
Zinc	ND	0.004	0.05	"							

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Kleinfelder, Inc.
Project Name: POND 20

EMA Log #: 18F0764

Total Metals by EPA 6000/7000 Series Methods - Quality Control

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8062735											
LCS (8062735-BS1)					Prepared: 06/27/18	Analyzed: 06/28/18					
Antimony	1.12	0.10	0.10	mg/l	1.00		112	75-125			
Arsenic	1.04	0.004	0.01	"	1.00		104	75-125			
Barium	1.14	0.004	0.10	"	1.00		114	75-125			
Beryllium	1.06	0.001	0.01	"	1.00		106	75-125			
Cadmium	1.11	0.001	0.01	"	1.00		111	75-125			
Chromium	1.15	0.002	0.05	"	1.00		115	75-125			
Cobalt	1.03	0.002	0.05	"	1.00		103	75-125			
Copper	1.13	0.005	0.05	"	1.00		113	75-125			
Lead	1.14	0.008	0.01	"	1.00		114	75-125			
Molybdenum	1.09	0.009	0.05	"	1.00		109	75-125			
Nickel	1.10	0.004	0.05	"	1.00		110	75-125			
Selenium	1.04	0.005	0.01	"	1.00		104	75-125			
Silver	0.61	0.001	0.005	"	0.500		121	75-125			
Thallium	1.08	0.005	0.01	"	1.00		108	75-125			
Vanadium	1.13	0.002	0.05	"	1.00		113	75-125			
Zinc	1.07	0.004	0.05	"	1.00		107	75-125			
LCS Dup (8062735-BSD1)					Prepared: 06/27/18	Analyzed: 06/28/18					
Antimony	1.08	0.10	0.10	mg/l	1.00		108	75-125	4	20	
Arsenic	1.03	0.004	0.01	"	1.00		103	75-125	0.8	20	
Barium	1.13	0.004	0.10	"	1.00		113	75-125	1	20	
Beryllium	1.06	0.001	0.01	"	1.00		106	75-125	0.09	20	
Cadmium	1.10	0.001	0.01	"	1.00		110	75-125	1	20	
Chromium	1.13	0.002	0.05	"	1.00		113	75-125	1	20	
Cobalt	1.02	0.002	0.05	"	1.00		102	75-125	1	20	
Copper	1.11	0.005	0.05	"	1.00		111	75-125	1	20	
Lead	1.12	0.008	0.01	"	1.00		112	75-125	2	20	
Molybdenum	1.09	0.009	0.05	"	1.00		109	75-125	0.09	20	
Nickel	1.08	0.004	0.05	"	1.00		108	75-125	2	20	
Selenium	1.04	0.005	0.01	"	1.00		104	75-125	0.3	20	
Silver	0.59	0.001	0.005	"	0.500		118	75-125	2	20	
Thallium	1.06	0.005	0.01	"	1.00		106	75-125	2	20	
Vanadium	1.12	0.002	0.05	"	1.00		112	75-125	1	20	
Zinc	1.05	0.004	0.05	"	1.00		105	75-125	2	20	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Kleinfelder, Inc.
Project Name: POND 20

EMA Log #: 18F0764

Total Metals by EPA 6000/7000 Series Methods - Quality Control

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8062735											
Duplicate (8062735-DUP1)			**Source: 18F0374-01**		Prepared: 06/27/18	Analyzed: 06/28/18					
Antimony	ND	1.00	1.00	mg/l		ND				20	
Arsenic	ND	0.04	0.10	"		0.07				20	
Barium	0.26	0.04	1.00	"		ND				20	J
Beryllium	ND	0.01	0.10	"		ND				20	
Cadmium	ND	0.01	0.10	"		ND				20	
Chromium	0.05	0.02	0.50	"		ND				20	J
Cobalt	ND	0.02	0.50	"		ND				20	
Copper	ND	0.05	0.50	"		ND				20	
Lead	ND	0.08	0.10	"		ND				20	
Molybdenum	ND	0.09	0.50	"		ND				20	
Nickel	ND	0.04	0.50	"		ND				20	
Selenium	ND	0.05	0.10	"		ND				20	
Silver	ND	0.01	0.05	"		ND				20	
Thallium	ND	0.05	0.10	"		ND				20	
Vanadium	0.02	0.02	0.50	"		ND				20	J
Zinc	ND	0.04	0.50	"		ND				20	
Matrix Spike (8062735-MS1)			**Source: 18F0374-01**		Prepared: 06/27/18	Analyzed: 06/28/18					
Antimony	9.85	1.00	1.00	mg/l	10.0	ND	99	75-125			
Arsenic	10.1	0.04	0.10	"	10.0	0.07	100	75-125			
Barium	10.5	0.04	1.00	"	10.0	ND	105	75-125			
Beryllium	9.72	0.01	0.10	"	10.0	ND	97	75-125			
Cadmium	10.0	0.01	0.10	"	10.0	ND	100	75-125			
Chromium	10.4	0.02	0.50	"	10.0	ND	104	75-125			
Cobalt	9.80	0.02	0.50	"	10.0	ND	98	75-125			
Copper	10.4	0.05	0.50	"	10.0	ND	104	75-125			
Lead	9.86	0.08	0.10	"	10.0	ND	99	75-125			
Molybdenum	10.3	0.09	0.50	"	10.0	ND	103	75-125			
Nickel	10.3	0.04	0.50	"	10.0	ND	103	75-125			
Selenium	9.59	0.05	0.10	"	10.0	ND	96	75-125			
Silver	5.79	0.01	0.05	"	5.00	ND	116	75-125			
Thallium	9.41	0.05	0.10	"	10.0	ND	94	75-125			
Vanadium	10.3	0.02	0.50	"	10.0	ND	103	75-125			
Zinc	9.68	0.04	0.50	"	10.0	ND	97	75-125			

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Client Name: Kleinfelder, Inc.
Project Name: POND 20

EMA Log #: 18F0764

Total Metals by EPA 6000/7000 Series Methods - Quality Control

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8062735											
Matrix Spike (8062735-MS2)			**Source: 18F0860-01**		Prepared: 06/27/18	Analyzed: 06/28/18					
Antimony	1.22	0.10	0.10	mg/l	1.00	0.23	99	75-125			
Arsenic	1.01	0.004	0.01	"	1.00	ND	101	75-125			
Barium	0.99	0.004	0.10	"	1.00	0.02	97	75-125			
Beryllium	1.02	0.001	0.01	"	1.00	ND	102	75-125			
Cadmium	0.97	0.001	0.01	"	1.00	0.002	96	75-125			
Chromium	1.02	0.002	0.05	"	1.00	0.04	98	75-125			
Cobalt	0.93	0.002	0.05	"	1.00	0.02	90	75-125			
Copper	1.12	0.005	0.05	"	1.00	0.07	104	75-125			
Lead	0.92	0.008	0.01	"	1.00	ND	92	75-125			
Molybdenum	1.03	0.009	0.05	"	1.00	0.08	95	75-125			
Nickel	0.97	0.004	0.05	"	1.00	0.03	95	75-125			
Selenium	1.04	0.005	0.01	"	1.00	0.008	103	75-125			
Silver	0.65	0.001	0.005	"	0.500	ND	129	75-125			QM-05
Thallium	0.82	0.005	0.01	"	1.00	ND	82	75-125			
Vanadium	0.99	0.002	0.05	"	1.00	ND	99	75-125			
Zinc	1.01	0.004	0.05	"	1.00	0.09	92	75-125			
Matrix Spike Dup (8062735-MSD1)			**Source: 18F0374-01**		Prepared: 06/27/18	Analyzed: 06/28/18					
Antimony	10.0	1.00	1.00	mg/l	10.0	ND	100	75-125	1	20	
Arsenic	10.3	0.04	0.10	"	10.0	0.07	103	75-125	2	20	
Barium	10.8	0.04	1.00	"	10.0	ND	108	75-125	3	20	
Beryllium	9.98	0.01	0.10	"	10.0	ND	100	75-125	3	20	
Cadmium	10.3	0.01	0.10	"	10.0	ND	103	75-125	3	20	
Chromium	10.7	0.02	0.50	"	10.0	ND	107	75-125	3	20	
Cobalt	9.95	0.02	0.50	"	10.0	ND	99	75-125	1	20	
Copper	10.7	0.05	0.50	"	10.0	ND	107	75-125	4	20	
Lead	9.98	0.08	0.10	"	10.0	ND	100	75-125	1	20	
Molybdenum	10.5	0.09	0.50	"	10.0	ND	105	75-125	3	20	
Nickel	10.5	0.04	0.50	"	10.0	ND	105	75-125	2	20	
Selenium	10.0	0.05	0.10	"	10.0	ND	100	75-125	4	20	
Silver	5.88	0.01	0.05	"	5.00	ND	118	75-125	2	20	
Thallium	9.51	0.05	0.10	"	10.0	ND	95	75-125	1	20	
Vanadium	10.6	0.02	0.50	"	10.0	ND	106	75-125	3	20	
Zinc	9.94	0.04	0.50	"	10.0	ND	99	75-125	3	20	

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Client Name: Kleinfelder, Inc.
Project Name: POND 20

EMA Log #: 18F0764

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8062050											
Blank (8062050-BLK1)					Prepared & Analyzed: 06/22/18						
Acetone	ND	9.98	25.0	ug/l							
Acetonitrile	ND	41.1	50.0	"							
Acrolein	ND	2.80	100	"							
Acrylonitrile	ND	0.37	10.0	"							
Allyl chloride	ND	0.38	1.00	"							
Benzene	ND	0.24	1.00	"							
Bromobenzene	ND	0.23	1.00	"							
Bromochloromethane	ND	0.26	1.00	"							
Bromodichloromethane	ND	0.17	1.00	"							
Bromoform	ND	0.17	1.00	"							
Bromomethane	ND	0.67	2.00	"							
2-Butanone	ND	4.14	25.0	"							
n-Butylbenzene	ND	0.20	1.00	"							
sec-Butylbenzene	ND	0.25	1.00	"							
tert-Butylbenzene	ND	0.21	1.00	"							
Carbon disulfide	ND	0.37	1.00	"							
Carbon tetrachloride	ND	0.26	0.50	"							
Chlorobenzene	ND	0.21	1.00	"							
Chlorodibromomethane	ND	0.23	1.00	"							
Chloroethane	ND	0.88	2.00	"							
2-Chloroethylvinyl ether	ND	0.36	2.00	"							
Chloroform	ND	0.28	1.00	"							
Chloromethane	ND	0.76	2.00	"							
2-Chlorotoluene	ND	0.19	1.00	"							
4-Chlorotoluene	ND	0.24	1.00	"							
1,2-Dibromo-3-chloropropane	ND	0.24	2.00	"							
1,2-Dibromoethane (EDB)	ND	0.26	1.00	"							
Dibromomethane	ND	0.21	1.00	"							
1,2-Dichlorobenzene	ND	0.09	1.00	"							
1,3-Dichlorobenzene	ND	0.15	1.00	"							
1,4-Dichlorobenzene	ND	0.14	1.00	"							
trans-1,4-Dichloro-2-butene	ND	0.46	2.00	"							
Dichlorodifluoromethane	ND	0.26	2.00	"							
1,1-Dichloroethane	ND	0.31	1.00	"							
1,2-Dichloroethane	ND	0.21	0.50	"							
1,1-Dichloroethene	ND	0.31	1.00	"							
cis-1,2-Dichloroethene	ND	0.36	1.00	"							
trans-1,2-Dichloroethene	ND	0.19	1.00	"							

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Client Name: Kleinfelder, Inc.
Project Name: POND 20

EMA Log #: 18F0764

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8062050											
Blank (8062050-BLK1)					Prepared & Analyzed: 06/22/18						
1,2-Dichloropropane	ND	0.21	1.00	ug/l							
1,3-Dichloropropane	ND	0.18	1.00	"							
2,2-Dichloropropane	ND	0.51	1.00	"							
1,1-Dichloropropene	ND	0.21	1.00	"							
cis-1,3-Dichloropropene	ND	0.22	0.50	"							
trans-1,3-Dichloropropene	ND	0.17	0.50	"							
Diethyl ether	ND	0.43	2.00	"							
Ethylbenzene	ND	0.18	1.00	"							
Hexachlorobutadiene	ND	0.45	1.00	"							
Hexachloroethane	ND	0.23	1.00	"							
2-Hexanone	ND	0.31	5.00	"							
Iodomethane	ND	0.22	1.00	"							
Isopropylbenzene	ND	0.22	1.00	"							
Methylene chloride	ND	0.35	5.00	"							
Methyl tert-butyl ether	ND	0.47	1.00	"							
4-Methyl-2-pentanone	ND	2.09	25.0	"							
Naphthalene	ND	0.18	2.00	"							
n-Propylbenzene	ND	0.29	1.00	"							
Styrene	ND	0.20	1.00	"							
1,1,1,2-Tetrachloroethane	ND	0.18	1.00	"							
1,1,2,2-Tetrachloroethane	ND	0.21	1.00	"							
Tetrachloroethene	ND	0.66	1.00	"							
Tetrahydrofuran	ND	4.62	10.0	"							
Toluene	ND	0.21	1.00	"							
1,2,3-Trichlorobenzene	ND	0.24	1.00	"							
1,2,4-Trichlorobenzene	ND	0.24	1.00	"							
1,1,1-Trichloroethane	ND	0.41	2.00	"							
1,1,2-Trichloroethane	ND	0.22	1.00	"							
Trichloroethene	ND	0.12	1.00	"							
Trichlorofluoromethane	ND	0.36	2.00	"							
1,2,3-Trichloropropane	ND	0.27	2.00	"							
1,1,2-Trichlorotrifluoroethane	ND	0.24	2.00	"							
1,2,4-Trimethylbenzene	ND	0.20	1.00	"							
1,3,5-Trimethylbenzene	ND	0.21	1.00	"							
Vinyl acetate	ND	0.26	5.00	"							
Vinyl chloride	ND	0.43	0.50	"							
m,p-Xylene	ND	0.30	2.00	"							
o-Xylene	ND	0.18	1.00	"							

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Client Name: Kleinfelder, Inc.
Project Name: POND 20

EMA Log #: 18F0764

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8062050											
Blank (8062050-BLK1)					Prepared & Analyzed: 06/22/18						
Surrogate: Dibromofluoromethane	*50.5*			*ug/l*	*50.0*		*101*	*79-115*			
Surrogate: 4-Bromofluorobenzene	*53.4*			*"*	*50.0*		*107*	*80-135*			
Surrogate: Toluene-d8	*50.9*			*"*	*50.0*		*102*	*78-118*			
LCS (8062050-BS1)					Prepared & Analyzed: 06/22/18						
Benzene	46.7	0.24	1.00	ug/l	50.0		93	88-106			
Chlorobenzene	50.4	0.21	1.00	"	50.0		101	90-109			
1,1-Dichloroethene	44.8	0.31	1.00	"	50.0		90	70-105			
Toluene	45.2	0.21	1.00	"	50.0		90	81-106			
Trichloroethene	48.4	0.12	1.00	"	50.0		97	90-108			
Surrogate: Dibromofluoromethane	*47.9*			*"*	*50.0*		*96*	*79-115*			
Surrogate: 4-Bromofluorobenzene	*52.7*			*"*	*50.0*		*105*	*80-135*			
Surrogate: Toluene-d8	*51.3*			*"*	*50.0*		*103*	*78-118*			
LCS Dup (8062050-BSD1)					Prepared & Analyzed: 06/22/18						
Benzene	47.1	0.24	1.00	ug/l	50.0		94	88-106	0.8	30	
Chlorobenzene	51.0	0.21	1.00	"	50.0		102	90-109	1	30	
1,1-Dichloroethene	45.8	0.31	1.00	"	50.0		92	70-105	2	30	
Toluene	45.7	0.21	1.00	"	50.0		91	81-106	1	30	
Trichloroethene	48.8	0.12	1.00	"	50.0		98	90-108	0.9	30	
Surrogate: Dibromofluoromethane	*48.6*			*"*	*50.0*		*97*	*79-115*			
Surrogate: 4-Bromofluorobenzene	*52.9*			*"*	*50.0*		*106*	*80-135*			
Surrogate: Toluene-d8	*51.0*			*"*	*50.0*		*102*	*78-118*			
Duplicate (8062050-DUP1)		**Source: 18F0646-04**			Prepared & Analyzed: 06/22/18						
Acetone	ND	9.98	25.0	ug/l		ND				30	
Acetonitrile	ND	41.1	50.0	"		ND				30	
Acrolein	ND	2.80	100	"		ND				30	
Acrylonitrile	ND	0.37	10.0	"		ND				30	
Allyl chloride	ND	0.38	1.00	"		ND				30	
Benzene	ND	0.24	1.00	"		ND				30	
Bromobenzene	ND	0.23	1.00	"		ND				30	
Bromochloromethane	ND	0.26	1.00	"		ND				30	
Bromodichloromethane	ND	0.17	1.00	"		ND				30	
Bromoform	ND	0.17	1.00	"		ND				30	
Bromomethane	ND	0.67	2.00	"		ND				30	
2-Butanone	ND	4.14	25.0	"		ND				30	
n-Butylbenzene	ND	0.20	1.00	"		ND				30	
sec-Butylbenzene	ND	0.25	1.00	"		ND				30	
tert-Butylbenzene	ND	0.21	1.00	"		ND				30	

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Client Name: Kleinfelder, Inc.
Project Name: POND 20

EMA Log #: 18F0764

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8062050											
Duplicate (8062050-DUP1)			**Source: 18F0646-04**		Prepared & Analyzed: 06/22/18						
Carbon disulfide	ND	0.37	1.00	ug/l		ND				30	
Carbon tetrachloride	ND	0.26	0.50	"		ND				30	
Chlorobenzene	ND	0.21	1.00	"		ND				30	
Chlorodibromomethane	ND	0.23	1.00	"		ND				30	
Chloroethane	ND	0.88	2.00	"		ND				30	
2-Chloroethylvinyl ether	ND	0.36	2.00	"		ND				30	
Chloroform	ND	0.28	1.00	"		ND				30	
Chloromethane	ND	0.76	2.00	"		ND				30	
2-Chlorotoluene	ND	0.19	1.00	"		ND				30	
4-Chlorotoluene	ND	0.24	1.00	"		ND				30	
1,2-Dibromo-3-chloropropane	ND	0.24	2.00	"		ND				30	
1,2-Dibromoethane (EDB)	ND	0.26	1.00	"		ND				30	
Dibromomethane	ND	0.21	1.00	"		ND				30	
1,2-Dichlorobenzene	ND	0.09	1.00	"		ND				30	
1,3-Dichlorobenzene	ND	0.15	1.00	"		ND				30	
1,4-Dichlorobenzene	ND	0.14	1.00	"		ND				30	
trans-1,4-Dichloro-2-butene	ND	0.46	2.00	"		ND				30	
Dichlorodifluoromethane	ND	0.26	2.00	"		ND				30	
1,1-Dichloroethane	ND	0.31	1.00	"		ND				30	
1,2-Dichloroethane	ND	0.21	0.50	"		ND				30	
1,1-Dichloroethene	ND	0.31	1.00	"		ND				30	
cis-1,2-Dichloroethene	ND	0.36	1.00	"		ND				30	
trans-1,2-Dichloroethene	ND	0.19	1.00	"		ND				30	
1,2-Dichloropropane	ND	0.21	1.00	"		ND				30	
1,3-Dichloropropane	ND	0.18	1.00	"		ND				30	
2,2-Dichloropropane	ND	0.51	1.00	"		ND				30	
1,1-Dichloropropene	ND	0.21	1.00	"		ND				30	
cis-1,3-Dichloropropene	ND	0.22	0.50	"		ND				30	
trans-1,3-Dichloropropene	ND	0.17	0.50	"		ND				30	
Diethyl ether	ND	0.43	2.00	"		ND				30	
Ethylbenzene	ND	0.18	1.00	"		ND				30	
Hexachlorobutadiene	ND	0.45	1.00	"		ND				30	
Hexachloroethane	ND	0.23	1.00	"		ND				30	
2-Hexanone	ND	0.31	5.00	"		ND				30	
Iodomethane	ND	0.22	1.00	"		ND				30	
Isopropylbenzene	ND	0.22	1.00	"		ND				30	
Methylene chloride	ND	0.35	5.00	"		ND				30	
Methyl tert-butyl ether	ND	0.47	1.00	"		ND				30	

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Client Name: Kleinfelder, Inc.
Project Name: POND 20

EMA Log #: 18F0764

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8062050											
Duplicate (8062050-DUP1)			**Source: 18F0646-04**		Prepared & Analyzed: 06/22/18						
4-Methyl-2-pentanone	ND	2.09	25.0	ug/l		ND				30	
Naphthalene	ND	0.18	2.00	"		ND				30	
n-Propylbenzene	ND	0.29	1.00	"		ND				30	
Styrene	ND	0.20	1.00	"		ND				30	
1,1,1,2-Tetrachloroethane	ND	0.18	1.00	"		ND				30	
1,1,2,2-Tetrachloroethane	ND	0.21	1.00	"		ND				30	
Tetrachloroethene	ND	0.66	1.00	"		ND				30	
Tetrahydrofuran	ND	4.62	10.0	"		ND				30	
Toluene	ND	0.21	1.00	"		ND				30	
1,2,3-Trichlorobenzene	ND	0.24	1.00	"		ND				30	
1,2,4-Trichlorobenzene	ND	0.24	1.00	"		ND				30	
1,1,1-Trichloroethane	ND	0.41	2.00	"		ND				30	
1,1,2-Trichloroethane	ND	0.22	1.00	"		ND				30	
Trichloroethene	ND	0.12	1.00	"		ND				30	
Trichlorofluoromethane	ND	0.36	2.00	"		ND				30	
1,2,3-Trichloropropane	ND	0.27	2.00	"		ND				30	
1,1,2-Trichlorotrifluoroethane	ND	0.24	2.00	"		ND				30	
1,2,4-Trimethylbenzene	ND	0.20	1.00	"		ND				30	
1,3,5-Trimethylbenzene	ND	0.21	1.00	"		ND				30	
Vinyl acetate	ND	0.26	5.00	"		ND				30	
Vinyl chloride	ND	0.43	0.50	"		ND				30	
m,p-Xylene	ND	0.30	2.00	"		ND				30	
o-Xylene	ND	0.18	1.00	"		ND				30	
Surrogate: Dibromofluoromethane	*50.1*			*"*	*50.0*		*100*	*79-115*			
Surrogate: 4-Bromofluorobenzene	*52.8*			*"*	*50.0*		*106*	*80-135*			
Surrogate: Toluene-d8	*50.7*			*"*	*50.0*		*101*	*78-118*			
Matrix Spike (8062050-MS1)			**Source: 18F0646-04**		Prepared & Analyzed: 06/22/18						
Benzene	48.2	0.24	1.00	ug/l	50.0	ND	96	82-116			
Chlorobenzene	52.3	0.21	1.00	"	50.0	ND	105	86-115			
1,1-Dichloroethene	46.5	0.31	1.00	"	50.0	ND	93	60-133			
Toluene	46.6	0.21	1.00	"	50.0	ND	93	76-111			
Trichloroethene	49.8	0.12	1.00	"	50.0	ND	100	88-112			
Surrogate: Dibromofluoromethane	*48.6*			*"*	*50.0*		*97*	*79-115*			
Surrogate: 4-Bromofluorobenzene	*53.1*			*"*	*50.0*		*106*	*80-135*			
Surrogate: Toluene-d8	*50.8*			*"*	*50.0*		*102*	*78-118*			

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Client Name: Kleinfelder, Inc.
Project Name: POND 20

EMA Log #: 18F0764

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8062050											
Matrix Spike Dup (8062050-MSD1)			**Source: 18F0646-04**		Prepared & Analyzed: 06/22/18						
Benzene	47.0	0.24	1.00	ug/l	50.0	ND	94	82-116	2	30	
Chlorobenzene	50.8	0.21	1.00	"	50.0	ND	102	86-115	3	30	
1,1-Dichloroethene	45.4	0.31	1.00	"	50.0	ND	91	60-133	2	30	
Toluene	45.6	0.21	1.00	"	50.0	ND	91	76-111	2	30	
Trichloroethene	48.6	0.12	1.00	"	50.0	ND	97	88-112	2	30	
Surrogate: Dibromofluoromethane	*48.7*			*"*	*50.0*		*97*	*79-115*			
Surrogate: 4-Bromofluorobenzene	*52.9*			*"*	*50.0*		*106*	*80-135*			
Surrogate: Toluene-d8	*50.9*			*"*	*50.0*		*102*	*78-118*			

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Client Name: Kleinfelder, Inc.
Project Name: POND 20

EMA Log #: 18F0764

TPH by EPA 8015B - Quality Control

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8062682											
Blank (8062682-BLK1)					Prepared: 06/26/18		Analyzed: 06/27/18				
Diesel (C10-C28)	ND	146	500	ug/l							
Extended Range HC (C28-C40)	ND	500	500	"							
Surrogate: 4-Bromofluorobenzene	*2540*			*"*	*3330*		*76*	*69-139*			
LCS (8062682-BS1)					Prepared: 06/26/18		Analyzed: 06/27/18				
Diesel (C10-C28)	4390	146	500	ug/l	5000		88	75-125			
Surrogate: 4-Bromofluorobenzene	*2610*			*"*	*3330*		*78*	*69-139*			
LCS Dup (8062682-BSD1)					Prepared: 06/26/18		Analyzed: 06/27/18				
Diesel (C10-C28)	4920	146	500	ug/l	5000		98	75-125	11	30	
Surrogate: 4-Bromofluorobenzene	*3180*			*"*	*3330*		*95*	*69-139*			
Duplicate (8062682-DUP1)		**Source: 18F0764-01**			Prepared: 06/26/18		Analyzed: 06/27/18				
Diesel (C10-C28)	12700	146	500	ug/l		11400			11	30	D-40
Extended Range HC (C28-C40)	ND	500	500	"		ND				30	
Surrogate: 4-Bromofluorobenzene	*3380*			*"*	*3330*		*102*	*69-139*			
Matrix Spike (8062682-MS1)		**Source: 18F0903-01**			Prepared: 06/26/18		Analyzed: 06/27/18				
Diesel (C10-C28)	4790	146	500	ug/l	5000	ND	96	75-125			
Surrogate: 4-Bromofluorobenzene	*3650*			*"*	*3330*		*109*	*69-139*			
Matrix Spike Dup (8062682-MSD1)		**Source: 18F0903-01**			Prepared: 06/26/18		Analyzed: 06/27/18				
Diesel (C10-C28)	5320	146	500	ug/l	5000	ND	106	75-125	10	30	
Surrogate: 4-Bromofluorobenzene	*3660*			*"*	*3330*		*110*	*69-139*			
Batch 8062814											
Blank (8062814-BLK1)					Prepared: 06/28/18		Analyzed: 06/29/18				
Gasoline (C6-C10)	ND	24	50	ug/l							
Surrogate: 4-Bromofluorobenzene	*21.5*			*"*	*25.0*		*86*	*77-135*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Client Name: Kleinfelder, Inc.
Project Name: POND 20

EMA Log #: 18F0764

TPH by EPA 8015B - Quality Control

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 8062814											
LCS (8062814-BS1)					Prepared & Analyzed: 06/28/18						
Gasoline (C6-C10)	186	24	50	ug/l	200		93	75-125			
Surrogate: 4-Bromofluorobenzene	*22.2*			*"*	*25.0*		*89*	*77-135*			
LCS Dup (8062814-BSD1)					Prepared & Analyzed: 06/28/18						
Gasoline (C6-C10)	197	24	50	ug/l	200		98	75-125	6	30	
Surrogate: 4-Bromofluorobenzene	*21.9*			*"*	*25.0*		*88*	*77-135*			
Duplicate (8062814-DUP1)		**Source: 18F0903-01**			Prepared: 06/28/18 Analyzed: 06/29/18						
Gasoline (C6-C10)	ND	24	50	ug/l		ND				30	
Surrogate: 4-Bromofluorobenzene	*22.3*			*"*	*25.0*		*89*	*77-135*			
Matrix Spike (8062814-MS1)		**Source: 18F0903-01**			Prepared & Analyzed: 06/28/18						
Gasoline (C6-C10)	206	24	50	ug/l	200	ND	103	75-125			
Surrogate: 4-Bromofluorobenzene	*24.5*			*"*	*25.0*		*98*	*77-135*			
Matrix Spike Dup (8062814-MSD1)		**Source: 18F0903-01**			Prepared & Analyzed: 06/28/18						
Gasoline (C6-C10)	195	24	50	ug/l	200	ND	97	75-125	6	30	
Surrogate: 4-Bromofluorobenzene	*24.3*			*"*	*25.0*		*97*	*77-135*			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Notes and Definitions

R-06	Sample dilution was necessary due to nature of the matrix.
R-04	The reporting limits for this analysis are elevated due to sample foaming.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
D-40	Diesel Range Organics (DRO) present but do not match diesel fuel pattern.
ND	Analyte NOT DETECTED at or above the reporting limit (or method detection limit when specified)
NR	Not Reported
dry	Sample results reported on a dry weight basis (if indicated in units column)
RPD	Relative Percent Difference
MDL	Method detection limit (indicated per client's request)

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

KLEINFELDER
Bright People. Right Solutions.

18F0764

PROJECT NO.	PROJECT NAME
20184596.018A	Pond 20

L.P. NO. (PO. NO.):

SAMPLERS: (Signature/Number):

RECEIVING LAB:

SEND REPORT INSTRUCTIONS/REMARKS: to Jake Lippman JLippman@kleinfelder.com

	DATE MM/DD/YY	SAMPLE I.D. TIME HH-MM-SS	SAMPLE I.D.	MATRIX	NO. OF CON-TAINERS	TYPE OF CON-TAINERS	ANALYSIS: VOC 8260	TPH 8015	Metals 6010/7471									
1	06/20/18	1500	Pond 20 - Drum	H2O	6		X	X	X									
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
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17																		
18																		
19																		
20																		

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	6/21/18 1405	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)

Instructions/Remarks:
7 DAY TAT
6" ONICE

Send Results To:

Attn:

ENV-02 REV 05/08)

White – Sampler Canary – Return Copy To Shipper Pink – Lab Copy

CHAIN OF CUSTODY

COC No. 31941

ADVANCED TECHNOLOGY LABORATORIES

July 11, 2018

Jake Lippman
Kleinfelder
550 W. C. Suite 1200
San Diego, CA 92101
Tel: (619) 831-4600
Fax:

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003

Re: ATL Work Order Number : 1802237
Client Reference : Salt Pond 20, 20164596.018A

Enclosed are the results for sample(s) received on June 19, 2018 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HA-7-0-0.5	1802237-01	Soil	6/18/18 8:35	6/19/18 15:30
HA-7-2.0	1802237-02	Soil	6/18/18 8:35	6/19/18 15:30
HA-8-0-0.5	1802237-05	Soil	6/18/18 12:55	6/19/18 15:30
HA-8-2.0	1802237-06	Soil	6/18/18 12:55	6/19/18 15:30
HA-8-4.0	1802237-07	Soil	6/18/18 12:55	6/19/18 15:30
HA-8-6.0	1802237-08	Soil	6/18/18 12:55	6/19/18 15:30
HA-9-0-0.5	1802237-09	Soil	6/18/18 10:55	6/19/18 15:30
HA-9-2.0	1802237-10	Soil	6/18/18 10:55	6/19/18 15:30
HA-10-0-0.5	1802237-13	Soil	6/18/18 11:30	6/19/18 15:30
HA-10-2.0	1802237-14	Soil	6/18/18 11:30	6/19/18 15:30
HA-11-0-0.5	1802237-18	Soil	6/18/18 12:22	6/19/18 15:30
HA-11-2.0	1802237-19	Soil	6/18/18 12:22	6/19/18 15:30
EB-061818	1802237-22	Water	6/18/18 16:10	6/19/18 15:30
TP-5-0.5-2	1802237-24	Soil	6/18/18 10:05	6/19/18 15:30
TP-6-0-0.5	1802237-25	Soil	6/18/18 9:30	6/19/18 15:30
TP-6-0.5-1.5	1802237-26	Soil	6/18/18 9:35	6/19/18 15:30
TP-6-1.5-2	1802237-27	Soil	6/18/18 9:40	6/19/18 15:30
TP-12-0-5	1802237-28	Soil	6/18/18 8:45	6/19/18 15:30
TP-12-5-8	1802237-29	Soil	6/18/18 8:50	6/19/18 15:30
TP-12-8-10	1802237-30	Soil	6/18/18 9:00	6/19/18 15:30
TP-13-0-4	1802237-31	Soil	6/18/18 9:05	6/19/18 15:30
TP-13-4-5	1802237-32	Soil	6/18/18 9:10	6/19/18 15:30
TP-14-0-8	1802237-33	Soil	6/18/18 14:00	6/19/18 15:30
ENVCOMP-4	1802237-34	Soil	6/18/18 16:10	6/19/18 15:30
ENVCOMP-4-DUP	1802237-35	Soil	6/18/18 16:10	6/19/18 15:30
ENVCOMP-1	1802237-36	Soil	6/18/18 16:00	6/19/18 15:30
ENVCOMP-2	1802237-37	Soil	6/18/18 15:40	6/19/18 15:30
ENVCOMP-3	1802237-38	Soil	6/18/18 15:30	6/19/18 15:30
ENVCOMP-3-DUP	1802237-39	Soil	6/18/18 15:30	6/19/18 15:30

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

CASE NARRATIVE

The soil samples for EPA 8270 SIM (Semivolatile Organic Compounds) analysis were subcontracted to Eurofins Calscience, Inc. with ELAP Cert.#1230.

The samples for EPA 8270 SIM (Phenols/Phthalates) were subcontracted to AETL with ELAP Cert.# 1541.

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

DETECTION SUMMARY

Client Sample ID HA-7-0-0.5

Lab ID: 1802237-01

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2200**	1000	20	B8F0665	06/26/2018	06/28/18 12:18	D1
Barium	**57000**	1000	20	B8F0665	06/26/2018	06/28/18 12:18	D1
Chromium	**11000**	2000	20	B8F0665	06/26/2018	06/28/18 12:18	D1
Cobalt	**12000**	1000	20	B8F0665	06/26/2018	06/28/18 12:18	D1
Copper	**23000**	1000	20	B8F0665	06/26/2018	06/28/18 12:18	D1
Lead	**7800**	1000	20	B8F0665	06/26/2018	06/28/18 12:18	D1
Nickel	**5400**	1000	20	B8F0665	06/26/2018	06/28/18 12:18	D1
Silver	**3300**	1000	20	B8F0665	06/26/2018	06/28/18 12:18	D1
Vanadium	**41000**	2000	20	B8F0665	06/26/2018	06/28/18 12:18	D1
Zinc	**29000**	5000	20	B8F0665	06/26/2018	06/28/18 12:18	D1

Client Sample ID HA-7-2.0

Lab ID: 1802237-02

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2000**	1000	20	B8F0665	06/26/2018	06/28/18 12:26	D1
Barium	**68000**	1000	20	B8F0665	06/26/2018	06/28/18 12:26	D1
Chromium	**11000**	2000	20	B8F0665	06/26/2018	06/28/18 12:26	D1
Cobalt	**5700**	1000	20	B8F0665	06/26/2018	06/28/18 12:26	D1
Copper	**16000**	1000	20	B8F0665	06/26/2018	06/28/18 12:26	D1
Lead	**24000**	1000	20	B8F0665	06/26/2018	06/28/18 12:26	D1
Nickel	**5300**	1000	20	B8F0665	06/26/2018	06/28/18 12:26	D1
Vanadium	**45000**	2000	20	B8F0665	06/26/2018	06/28/18 12:26	D1
Zinc	**30000**	5000	20	B8F0665	06/26/2018	06/28/18 12:26	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

DETECTION SUMMARY

Client Sample ID HA-8-0-0.5

Lab ID: 1802237-05

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2000**	1000	20	B8F0665	06/26/2018	06/28/18 12:27	D1
Barium	**32000**	1000	20	B8F0665	06/26/2018	06/28/18 12:27	D1
Chromium	**4700**	2000	20	B8F0665	06/26/2018	06/28/18 12:27	D1
Cobalt	**2500**	1000	20	B8F0665	06/26/2018	06/28/18 12:27	D1
Copper	**4300**	1000	20	B8F0665	06/26/2018	06/28/18 12:27	D1
Lead	**6000**	1000	20	B8F0665	06/26/2018	06/28/18 12:27	D1
Nickel	**2200**	1000	20	B8F0665	06/26/2018	06/28/18 12:27	D1
Vanadium	**32000**	2000	20	B8F0665	06/26/2018	06/28/18 12:27	D1
Zinc	**15000**	5000	20	B8F0665	06/26/2018	06/28/18 12:27	D1

Client Sample ID HA-8-2.0

Lab ID: 1802237-06

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1100**	1000	20	B8F0665	06/26/2018	06/28/18 12:29	D1
Barium	**31000**	1000	20	B8F0665	06/26/2018	06/28/18 12:29	D1
Chromium	**3900**	2000	20	B8F0665	06/26/2018	06/28/18 12:29	D1
Cobalt	**2100**	1000	20	B8F0665	06/26/2018	06/28/18 12:29	D1
Copper	**3200**	1000	20	B8F0665	06/26/2018	06/28/18 12:29	D1
Lead	**1800**	1000	20	B8F0665	06/26/2018	06/28/18 12:29	D1
Nickel	**1600**	1000	20	B8F0665	06/26/2018	06/28/18 12:29	D1
Vanadium	**23000**	2000	20	B8F0665	06/26/2018	06/28/18 12:29	D1
Zinc	**9700**	5000	20	B8F0665	06/26/2018	06/28/18 12:29	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

DETECTION SUMMARY

Client Sample ID HA-8-4.0

Lab ID: 1802237-07

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1900**	1000	20	B8F0665	06/26/2018	06/28/18 12:31	D1
Barium	**64000**	1000	20	B8F0665	06/26/2018	06/28/18 12:31	D1
Chromium	**8100**	2000	20	B8F0665	06/26/2018	06/28/18 12:31	D1
Cobalt	**4600**	1000	20	B8F0665	06/26/2018	06/28/18 12:31	D1
Copper	**8500**	1000	20	B8F0665	06/26/2018	06/28/18 12:31	D1
Lead	**3000**	1000	20	B8F0665	06/26/2018	06/28/18 12:31	D1
Nickel	**4000**	1000	20	B8F0665	06/26/2018	06/28/18 12:31	D1
Vanadium	**38000**	2000	20	B8F0665	06/26/2018	06/28/18 12:31	D1
Zinc	**30000**	5000	20	B8F0665	06/26/2018	06/28/18 12:31	D1

Client Sample ID HA-8-6.0

Lab ID: 1802237-08

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1900**	1000	20	B8F0665	06/26/2018	06/28/18 12:37	D1
Barium	**91000**	1000	20	B8F0665	06/26/2018	06/28/18 12:37	D1
Chromium	**8700**	2000	20	B8F0665	06/26/2018	06/28/18 12:37	D1
Cobalt	**4800**	1000	20	B8F0665	06/26/2018	06/28/18 12:37	D1
Copper	**8500**	1000	20	B8F0665	06/26/2018	06/28/18 12:37	D1
Lead	**3400**	1000	20	B8F0665	06/26/2018	06/28/18 12:37	D1
Nickel	**4500**	1000	20	B8F0665	06/26/2018	06/28/18 12:37	D1
Vanadium	**34000**	2000	20	B8F0665	06/26/2018	06/28/18 12:37	D1
Zinc	**24000**	5000	20	B8F0665	06/26/2018	06/28/18 12:37	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

DETECTION SUMMARY

Client Sample ID HA-9-0-0.5

Lab ID: 1802237-09

Total Metals by ICP-MS EPA 6020 — **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1000**	1000	20	B8F0665	06/26/2018	06/28/18 12:39	D1
Barium	**37000**	1000	20	B8F0665	06/26/2018	06/28/18 12:39	D1
Chromium	**6600**	2000	20	B8F0665	06/26/2018	06/28/18 12:39	D1
Cobalt	**2800**	1000	20	B8F0665	06/26/2018	06/28/18 12:39	D1
Copper	**6800**	1000	20	B8F0665	06/26/2018	06/28/18 12:39	D1
Lead	**10000**	1000	20	B8F0665	06/26/2018	06/28/18 12:39	D1
Nickel	**3100**	1000	20	B8F0665	06/26/2018	06/28/18 12:39	D1
Vanadium	**32000**	2000	20	B8F0665	06/26/2018	06/28/18 12:39	D1
Zinc	**23000**	5000	20	B8F0665	06/26/2018	06/28/18 12:39	D1

Hydrocarbon Chain Distribution by EPA 8015B (Modified) — **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	**12**	10	1	B8F0604	06/22/2018	06/24/18 21:53	
C31	**15**	10	1	B8F0604	06/22/2018	06/24/18 21:53	

Client Sample ID HA-9-2.0

Lab ID: 1802237-10

Total Metals by ICP-MS EPA 6020 — **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1200**	1000	20	B8F0665	06/26/2018	06/28/18 12:40	D1
Barium	**29000**	1000	20	B8F0665	06/26/2018	06/28/18 12:40	D1
Chromium	**4200**	2000	20	B8F0665	06/26/2018	06/28/18 12:40	D1
Cobalt	**2000**	1000	20	B8F0665	06/26/2018	06/28/18 12:40	D1
Copper	**3500**	1000	20	B8F0665	06/26/2018	06/28/18 12:40	D1
Lead	**1800**	1000	20	B8F0665	06/26/2018	06/28/18 12:40	D1
Nickel	**1700**	1000	20	B8F0665	06/26/2018	06/28/18 12:40	D1
Vanadium	**23000**	2000	20	B8F0665	06/26/2018	06/28/18 12:40	D1
Zinc	**10000**	5000	20	B8F0665	06/26/2018	06/28/18 12:40	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

DETECTION SUMMARY

Client Sample ID HA-10-0-0.5

Lab ID: 1802237-13

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1300**	1000	20	B8F0665	06/26/2018	06/28/18 12:42	D1
Barium	**39000**	1000	20	B8F0665	06/26/2018	06/28/18 12:42	D1
Chromium	**6300**	2000	20	B8F0665	06/26/2018	06/28/18 12:42	D1
Cobalt	**3000**	1000	20	B8F0665	06/26/2018	06/28/18 12:42	D1
Copper	**5900**	1000	20	B8F0665	06/26/2018	06/28/18 12:42	D1
Lead	**8100**	1000	20	B8F0665	06/26/2018	06/28/18 12:42	D1
Nickel	**3000**	1000	20	B8F0665	06/26/2018	06/28/18 12:42	D1
Vanadium	**33000**	2000	20	B8F0665	06/26/2018	06/28/18 12:42	D1
Zinc	**20000**	5000	20	B8F0665	06/26/2018	06/28/18 12:42	D1

Client Sample ID HA-10-2.0

Lab ID: 1802237-14

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1800**	1000	20	B8F0665	06/26/2018	06/28/18 12:44	D1
Barium	**55000**	1000	20	B8F0665	06/26/2018	06/28/18 12:44	D1
Chromium	**7900**	2000	20	B8F0665	06/26/2018	06/28/18 12:44	D1
Cobalt	**4200**	1000	20	B8F0665	06/26/2018	06/28/18 12:44	D1
Copper	**9600**	1000	20	B8F0665	06/26/2018	06/28/18 12:44	D1
Lead	**3000**	1000	20	B8F0665	06/26/2018	06/28/18 12:44	D1
Nickel	**3400**	1000	20	B8F0665	06/26/2018	06/28/18 12:44	D1
Vanadium	**37000**	2000	20	B8F0665	06/26/2018	06/28/18 12:44	D1
Zinc	**22000**	5000	20	B8F0665	06/26/2018	06/28/18 12:44	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

DETECTION SUMMARY

Client Sample ID HA-11-0-0.5

Lab ID: 1802237-18

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1100**	1000	20	B8F0665	06/26/2018	06/28/18 12:46	D1
Barium	**21000**	1000	20	B8F0665	06/26/2018	06/28/18 12:46	D1
Chromium	**3900**	2000	20	B8F0665	06/26/2018	06/28/18 12:46	D1
Cobalt	**1700**	1000	20	B8F0665	06/26/2018	06/28/18 12:46	D1
Copper	**3400**	1000	20	B8F0665	06/26/2018	06/28/18 12:46	D1
Lead	**4400**	1000	20	B8F0665	06/26/2018	06/28/18 12:46	D1
Nickel	**1700**	1000	20	B8F0665	06/26/2018	06/28/18 12:46	D1
Vanadium	**23000**	2000	20	B8F0665	06/26/2018	06/28/18 12:46	D1
Zinc	**11000**	5000	20	B8F0665	06/26/2018	06/28/18 12:46	D1

Client Sample ID HA-11-2.0

Lab ID: 1802237-19

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1400**	1000	20	B8F0665	06/26/2018	06/28/18 12:48	D1
Barium	**33000**	1000	20	B8F0665	06/26/2018	06/28/18 12:48	D1
Chromium	**4600**	2000	20	B8F0665	06/26/2018	06/28/18 12:48	D1
Cobalt	**2300**	1000	20	B8F0665	06/26/2018	06/28/18 12:48	D1
Copper	**4100**	1000	20	B8F0665	06/26/2018	06/28/18 12:48	D1
Lead	**2000**	1000	20	B8F0665	06/26/2018	06/28/18 12:48	D1
Nickel	**1700**	1000	20	B8F0665	06/26/2018	06/28/18 12:48	D1
Vanadium	**26000**	2000	20	B8F0665	06/26/2018	06/28/18 12:48	D1
Zinc	**11000**	5000	20	B8F0665	06/26/2018	06/28/18 12:48	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

DETECTION SUMMARY

Client Sample ID EB-061818

Lab ID: 1802237-22

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Barium	**4.7**	1.0	1	B8F0662	06/26/2018	06/26/18 16:28	
Chromium	**1.4**	0.50	1	B8F0662	06/26/2018	06/26/18 16:28	
Copper	**1.3**	1.0	1	B8F0662	06/26/2018	06/26/18 16:28	

Client Sample ID TP-5-0.5-2

Lab ID: 1802237-24

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1300**	1000	20	B8F0665	06/26/2018	06/28/18 12:50	D1
Barium	**28000**	1000	20	B8F0665	06/26/2018	06/28/18 12:50	D1
Chromium	**4700**	2000	20	B8F0665	06/26/2018	06/28/18 12:50	D1
Cobalt	**2000**	1000	20	B8F0665	06/26/2018	06/28/18 12:50	D1
Copper	**3200**	1000	20	B8F0665	06/26/2018	06/28/18 12:50	D1
Lead	**2200**	1000	20	B8F0665	06/26/2018	06/28/18 12:50	D1
Nickel	**1600**	1000	20	B8F0665	06/26/2018	06/28/18 12:50	D1
Vanadium	**27000**	2000	20	B8F0665	06/26/2018	06/28/18 12:50	D1
Zinc	**11000**	5000	20	B8F0665	06/26/2018	06/28/18 12:50	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

DETECTION SUMMARY

Client Sample ID TP-6-0-0.5

Lab ID: 1802237-25

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Barium	**5400**	1000	20	B8F0665	06/26/2018	06/28/18 12:52	D1
Copper	**2700**	1000	20	B8F0665	06/26/2018	06/28/18 12:52	D1
Lead	**5100**	1000	20	B8F0665	06/26/2018	06/28/18 12:52	D1
Nickel	**2100**	1000	20	B8F0665	06/26/2018	06/28/18 12:52	D1
Vanadium	**3500**	2000	20	B8F0665	06/26/2018	06/28/18 12:52	D1
Zinc	**7600**	5000	20	B8F0665	06/26/2018	06/28/18 12:52	D1

Client Sample ID TP-6-0.5-1.5

Lab ID: 1802237-26

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1400**	1000	20	B8F0665	06/26/2018	06/28/18 12:53	D1
Barium	**51000**	1000	20	B8F0665	06/26/2018	06/28/18 12:53	D1
Chromium	**8200**	2000	20	B8F0665	06/26/2018	06/28/18 12:53	D1
Cobalt	**3700**	1000	20	B8F0665	06/26/2018	06/28/18 12:53	D1
Copper	**8000**	1000	20	B8F0665	06/26/2018	06/28/18 12:53	D1
Lead	**2300**	1000	20	B8F0665	06/26/2018	06/28/18 12:53	D1
Nickel	**3000**	1000	20	B8F0665	06/26/2018	06/28/18 12:53	D1
Vanadium	**44000**	2000	20	B8F0665	06/26/2018	06/28/18 12:53	D1
Zinc	**19000**	5000	20	B8F0665	06/26/2018	06/28/18 12:53	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

DETECTION SUMMARY

Client Sample ID TP-6-1.5-2

Lab ID: 1802237-27

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1600**	1000	20	B8F0665	06/26/2018	06/28/18 12:59	D1
Barium	**86000**	1000	20	B8F0665	06/26/2018	06/28/18 12:59	D1
Chromium	**8600**	2000	20	B8F0665	06/26/2018	06/28/18 12:59	D1
Cobalt	**5300**	1000	20	B8F0665	06/26/2018	06/28/18 12:59	D1
Copper	**13000**	1000	20	B8F0665	06/26/2018	06/28/18 12:59	D1
Lead	**2800**	1000	20	B8F0665	06/26/2018	06/28/18 12:59	D1
Nickel	**5000**	1000	20	B8F0665	06/26/2018	06/28/18 12:59	D1
Vanadium	**40000**	2000	20	B8F0665	06/26/2018	06/28/18 12:59	D1
Zinc	**25000**	5000	20	B8F0665	06/26/2018	06/28/18 12:59	D1

Client Sample ID TP-12-0-5

Lab ID: 1802237-28

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1700**	1000	20	B8F0665	06/26/2018	06/28/18 13:01	D1
Barium	**72000**	1000	20	B8F0665	06/26/2018	06/28/18 13:01	D1
Chromium	**8600**	2000	20	B8F0665	06/26/2018	06/28/18 13:01	D1
Cobalt	**6700**	1000	20	B8F0665	06/26/2018	06/28/18 13:01	D1
Copper	**11000**	1000	20	B8F0665	06/26/2018	06/28/18 13:01	D1
Lead	**5700**	1000	20	B8F0665	06/26/2018	06/28/18 13:01	D1
Nickel	**4900**	1000	20	B8F0665	06/26/2018	06/28/18 13:01	D1
Vanadium	**39000**	2000	20	B8F0665	06/26/2018	06/28/18 13:01	D1
Zinc	**24000**	5000	20	B8F0665	06/26/2018	06/28/18 13:01	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
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DETECTION SUMMARY

Client Sample ID TP-12-5-8

Lab ID: 1802237-29

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2100**	1000	20	B8F0665	06/26/2018	06/28/18 13:03	D1
Barium	**49000**	1000	20	B8F0665	06/26/2018	06/28/18 13:03	D1
Chromium	**6700**	2000	20	B8F0665	06/26/2018	06/28/18 13:03	D1
Cobalt	**3600**	1000	20	B8F0665	06/26/2018	06/28/18 13:03	D1
Copper	**7100**	1000	20	B8F0665	06/26/2018	06/28/18 13:03	D1
Lead	**2200**	1000	20	B8F0665	06/26/2018	06/28/18 13:03	D1
Nickel	**3000**	1000	20	B8F0665	06/26/2018	06/28/18 13:03	D1
Vanadium	**31000**	2000	20	B8F0665	06/26/2018	06/28/18 13:03	D1
Zinc	**18000**	5000	20	B8F0665	06/26/2018	06/28/18 13:03	D1

Client Sample ID TP-12-8-10

Lab ID: 1802237-30

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**3300**	1000	20	B8F0665	06/26/2018	06/28/18 13:05	D1
Barium	**83000**	1000	20	B8F0665	06/26/2018	06/28/18 13:05	D1
Chromium	**8500**	2000	20	B8F0665	06/26/2018	06/28/18 13:05	D1
Cobalt	**5300**	1000	20	B8F0665	06/26/2018	06/28/18 13:05	D1
Copper	**10000**	1000	20	B8F0665	06/26/2018	06/28/18 13:05	D1
Lead	**3200**	1000	20	B8F0665	06/26/2018	06/28/18 13:05	D1
Nickel	**4400**	1000	20	B8F0665	06/26/2018	06/28/18 13:05	D1
Vanadium	**43000**	2000	20	B8F0665	06/26/2018	06/28/18 13:05	D1
Zinc	**27000**	5000	20	B8F0665	06/26/2018	06/28/18 13:05	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
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DETECTION SUMMARY

Client Sample ID TP-13-0-4

Lab ID: 1802237-31

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1500**	1000	20	B8F0665	06/26/2018	06/28/18 13:06	D1
Barium	**42000**	1000	20	B8F0665	06/26/2018	06/28/18 13:06	D1
Chromium	**5100**	2000	20	B8F0665	06/26/2018	06/28/18 13:06	D1
Cobalt	**2600**	1000	20	B8F0665	06/26/2018	06/28/18 13:06	D1
Copper	**4200**	1000	20	B8F0665	06/26/2018	06/28/18 13:06	D1
Lead	**2700**	1000	20	B8F0665	06/26/2018	06/28/18 13:06	D1
Nickel	**2000**	1000	20	B8F0665	06/26/2018	06/28/18 13:06	D1
Vanadium	**31000**	2000	20	B8F0665	06/26/2018	06/28/18 13:06	D1
Zinc	**14000**	5000	20	B8F0665	06/26/2018	06/28/18 13:06	D1

Client Sample ID TP-13-4-5

Lab ID: 1802237-32

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2800**	1000	20	B8F0666	06/26/2018	06/28/18 13:12	D1
Barium	**73000**	1000	20	B8F0666	06/26/2018	06/28/18 13:12	D1
Chromium	**9200**	2000	20	B8F0666	06/26/2018	06/28/18 13:12	D1
Cobalt	**5500**	1000	20	B8F0666	06/26/2018	06/28/18 13:12	D1
Copper	**13000**	1000	20	B8F0666	06/26/2018	06/28/18 13:12	D1
Lead	**2600**	1000	20	B8F0666	06/26/2018	06/28/18 13:12	D1
Nickel	**4700**	1000	20	B8F0666	06/26/2018	06/28/18 13:12	D1
Vanadium	**41000**	2000	20	B8F0666	06/26/2018	06/28/18 13:12	D1
Zinc	**26000**	5000	20	B8F0666	06/26/2018	06/28/18 13:12	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
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DETECTION SUMMARY

Client Sample ID TP-14-0-8

Lab ID: 1802237-33

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2300**	1000	20	B8F0666	06/26/2018	06/28/18 13:23	D1
Barium	**98000**	1000	20	B8F0666	06/26/2018	06/28/18 13:23	D1
Chromium	**8700**	2000	20	B8F0666	06/26/2018	06/28/18 13:23	D1
Cobalt	**5200**	1000	20	B8F0666	06/26/2018	06/28/18 13:23	D1
Copper	**12000**	1000	20	B8F0666	06/26/2018	06/28/18 13:23	D1
Lead	**3100**	1000	20	B8F0666	06/26/2018	06/28/18 13:23	D1
Nickel	**4700**	1000	20	B8F0666	06/26/2018	06/28/18 13:23	D1
Vanadium	**38000**	2000	20	B8F0666	06/26/2018	06/28/18 13:23	D1
Zinc	**30000**	5000	20	B8F0666	06/26/2018	06/28/18 13:23	D1

Client Sample ID ENVCOMP-4

Lab ID: 1802237-34

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Barium	**10000**	1000	20	B8F0666	06/26/2018	06/28/18 13:25	D1
Copper	**1600**	1000	20	B8F0666	06/26/2018	06/28/18 13:25	D1
Vanadium	**11000**	2000	20	B8F0666	06/26/2018	06/28/18 13:25	D1
Zinc	**6500**	5000	20	B8F0666	06/26/2018	06/28/18 13:25	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
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DETECTION SUMMARY

Client Sample ID ENVCOMP-4-DUP

Lab ID: 1802237-35

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Barium	**7500**	1000	20	B8F0666	06/26/2018	06/28/18 13:27	D1
Chromium	**2100**	2000	20	B8F0666	06/26/2018	06/28/18 13:27	D1
Cobalt	**1100**	1000	20	B8F0666	06/26/2018	06/28/18 13:27	D1
Copper	**1600**	1000	20	B8F0666	06/26/2018	06/28/18 13:27	D1
Lead	**1100**	1000	20	B8F0666	06/26/2018	06/28/18 13:27	D1
Vanadium	**10000**	2000	20	B8F0666	06/26/2018	06/28/18 13:27	D1
Zinc	**6300**	5000	20	B8F0666	06/26/2018	06/28/18 13:27	D1

Client Sample ID ENVCOMP-1

Lab ID: 1802237-36

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**3200**	1000	20	B8F0666	06/26/2018	06/28/18 13:29	D1
Barium	**140000**	1000	20	B8F0666	06/26/2018	06/28/18 13:29	D1
Chromium	**12000**	2000	20	B8F0666	06/26/2018	06/28/18 13:29	D1
Cobalt	**9700**	1000	20	B8F0666	06/26/2018	06/28/18 13:29	D1
Copper	**21000**	1000	20	B8F0666	06/26/2018	06/28/18 13:29	D1
Lead	**4200**	1000	20	B8F0666	06/26/2018	06/28/18 13:29	D1
Nickel	**7100**	1000	20	B8F0666	06/26/2018	06/28/18 13:29	D1
Vanadium	**49000**	2000	20	B8F0666	06/26/2018	06/28/18 13:29	D1
Zinc	**40000**	5000	20	B8F0666	06/26/2018	06/28/18 13:29	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
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San Diego , CA 92101		Reported :	07/11/2018

DETECTION SUMMARY

Client Sample ID ENVCOMP-2

Lab ID: 1802237-37

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**4100**	1000	20	B8F0666	06/26/2018	06/28/18 13:30	D1
Barium	**63000**	1000	20	B8F0666	06/26/2018	06/28/18 13:30	D1
Chromium	**11000**	2000	20	B8F0666	06/26/2018	06/28/18 13:30	D1
Cobalt	**6600**	1000	20	B8F0666	06/26/2018	06/28/18 13:30	D1
Copper	**9500**	1000	20	B8F0666	06/26/2018	06/28/18 13:30	D1
Lead	**4200**	1000	20	B8F0666	06/26/2018	06/28/18 13:30	D1
Nickel	**5200**	1000	20	B8F0666	06/26/2018	06/28/18 13:30	D1
Vanadium	**44000**	2000	20	B8F0666	06/26/2018	06/28/18 13:30	D1
Zinc	**28000**	5000	20	B8F0666	06/26/2018	06/28/18 13:30	D1

Client Sample ID ENVCOMP-3

Lab ID: 1802237-38

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Barium	**12000**	1000	20	B8F0666	06/26/2018	06/28/18 13:32	D1
Cobalt	**1200**	1000	20	B8F0666	06/26/2018	06/28/18 13:32	D1
Copper	**4200**	1000	20	B8F0666	06/26/2018	06/28/18 13:32	D1
Lead	**7700**	1000	20	B8F0666	06/26/2018	06/28/18 13:32	D1
Nickel	**3300**	1000	20	B8F0666	06/26/2018	06/28/18 13:32	D1
Vanadium	**7600**	2000	20	B8F0666	06/26/2018	06/28/18 13:32	D1
Zinc	**16000**	5000	20	B8F0666	06/26/2018	06/28/18 13:32	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
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San Diego , CA 92101		Reported :	07/11/2018

DETECTION SUMMARY

Client Sample ID ENVCOMP-3-DUP

Lab ID: 1802237-39

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Barium	**13000**	1000	20	B8F0666	06/26/2018	06/28/18 13:34	D1
Cobalt	**1200**	1000	20	B8F0666	06/26/2018	06/28/18 13:34	D1
Copper	**4400**	1000	20	B8F0666	06/26/2018	06/28/18 13:34	D1
Lead	**7400**	1000	20	B8F0666	06/26/2018	06/28/18 13:34	D1
Nickel	**3700**	1000	20	B8F0666	06/26/2018	06/28/18 13:34	D1
Vanadium	**7400**	2000	20	B8F0666	06/26/2018	06/28/18 13:34	D1
Zinc	**17000**	5000	20	B8F0666	06/26/2018	06/28/18 13:34	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
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Client Sample ID HA-7-0-0.5
Lab ID: 1802237-01

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:18	D1, U
Arsenic	**2200**	1000	20	B8F0665	06/26/2018	06/28/18 12:18	D1
Barium	**57000**	1000	20	B8F0665	06/26/2018	06/28/18 12:18	D1
Beryllium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:18	D1, U
Cadmium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:18	D1, U
Chromium	**11000**	2000	20	B8F0665	06/26/2018	06/28/18 12:18	D1
Cobalt	**12000**	1000	20	B8F0665	06/26/2018	06/28/18 12:18	D1
Copper	**23000**	1000	20	B8F0665	06/26/2018	06/28/18 12:18	D1
Lead	**7800**	1000	20	B8F0665	06/26/2018	06/28/18 12:18	D1
Molybdenum	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:18	D1, U
Nickel	**5400**	1000	20	B8F0665	06/26/2018	06/28/18 12:18	D1
Selenium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:18	D1, U
Silver	**3300**	1000	20	B8F0665	06/26/2018	06/28/18 12:18	D1
Thallium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:18	D1, U
Vanadium	**41000**	2000	20	B8F0665	06/26/2018	06/28/18 12:18	D1
Zinc	**29000**	5000	20	B8F0665	06/26/2018	06/28/18 12:18	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0639	06/25/2018	06/26/18 11:05	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0499	06/20/2018	06/20/18 19:25	U
C7	ND	1.0	1	B8F0499	06/20/2018	06/20/18 19:25	U
C8	ND	1.0	1	B8F0499	06/20/2018	06/20/18 19:25	U
C9	ND	1.0	1	B8F0499	06/20/2018	06/20/18 19:25	U
C10	ND	1.0	1	B8F0499	06/20/2018	06/20/18 19:25	U
C11	ND	1.0	1	B8F0499	06/20/2018	06/20/18 19:25	U
C12	ND	1.0	1	B8F0499	06/20/2018	06/20/18 19:25	U
Surrogate: 4-Bromofluorobenzene	*92.7 %*	*57 - 144*		B8F0499	06/20/2018	*06/20/18 19:25*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-7-0-0.5

Lab ID: 1802237-01

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C14	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C15	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C16	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C17	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C18	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C19	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C20	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C21	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C22	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C23	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C24	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C25	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C26	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C27	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C28	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C29	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C30	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C31	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C32	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C33	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C34	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C35	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C36	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C37	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C38	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C39	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
C40	ND	10	1	B8F0604	06/22/2018	06/24/18 21:03	U
Surrogate: p-Terphenyl	*112 %*	*58 - 172*		B8F0604	06/22/2018	*06/24/18 21:03*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-7-0-0.5
Lab ID: 1802237-01

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
1,1-Dichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
1,1-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
1,1-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0563	06/21/2018	06/21/18 20:19	U
1,2-Dibromoethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
1,2-Dichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
1,2-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
1,3-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
2,2-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
2-Chlorotoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
4-Chlorotoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
4-Isopropyltoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Benzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Bromobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Bromochloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Bromodichloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Bromoform	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Bromomethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Carbon disulfide	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Carbon tetrachloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Chlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Chloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Chloroform	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Chloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-7-0-0.5

Lab ID: 1802237-01

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
cis-1,3-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Di-isopropyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Dibromochloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Dibromomethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Dichlorodifluoromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Ethyl Acetate	ND	50	1	B8F0563	06/21/2018	06/21/18 20:19	U
Ethyl Ether	ND	50	1	B8F0563	06/21/2018	06/21/18 20:19	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Ethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Freon-113	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Hexachlorobutadiene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Isopropylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
m,p-Xylene	ND	10	1	B8F0563	06/21/2018	06/21/18 20:19	U
Methylene chloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
MTBE	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
n-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
n-Propylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Naphthalene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
o-Xylene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
sec-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Styrene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
tert-Amyl methyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
tert-Butanol	ND	100	1	B8F0563	06/21/2018	06/21/18 20:19	U
tert-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Tetrachloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Toluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Trichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Trichlorofluoromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Vinyl acetate	ND	50	1	B8F0563	06/21/2018	06/21/18 20:19	U
Vinyl chloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:19	U
Surrogate: 1,2-Dichloroethane-d4	*94.1 %*	*58 - 144*		B8F0563	06/21/2018	*06/21/18 20:19*	
Surrogate: 4-Bromofluorobenzene	*95.6 %*	*60 - 137*		B8F0563	06/21/2018	*06/21/18 20:19*	
Surrogate: Dibromofluoromethane	*99.9 %*	*70 - 131*		B8F0563	06/21/2018	*06/21/18 20:19*	
Surrogate: Toluene-d8	*95.0 %*	*79 - 131*		B8F0563	06/21/2018	*06/21/18 20:19*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-7-2.0
Lab ID: 1802237-02

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:26	D1, U
Arsenic	**2000**	1000	20	B8F0665	06/26/2018	06/28/18 12:26	D1
Barium	**68000**	1000	20	B8F0665	06/26/2018	06/28/18 12:26	D1
Beryllium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:26	D1, U
Cadmium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:26	D1, U
Chromium	**11000**	2000	20	B8F0665	06/26/2018	06/28/18 12:26	D1
Cobalt	**5700**	1000	20	B8F0665	06/26/2018	06/28/18 12:26	D1
Copper	**16000**	1000	20	B8F0665	06/26/2018	06/28/18 12:26	D1
Lead	**24000**	1000	20	B8F0665	06/26/2018	06/28/18 12:26	D1
Molybdenum	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:26	D1, U
Nickel	**5300**	1000	20	B8F0665	06/26/2018	06/28/18 12:26	D1
Selenium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:26	D1, U
Silver	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:26	D1, U
Thallium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:26	D1, U
Vanadium	**45000**	2000	20	B8F0665	06/26/2018	06/28/18 12:26	D1
Zinc	**30000**	5000	20	B8F0665	06/26/2018	06/28/18 12:26	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0639	06/25/2018	06/26/18 11:12	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0499	06/20/2018	06/20/18 19:43	U
C7	ND	1.0	1	B8F0499	06/20/2018	06/20/18 19:43	U
C8	ND	1.0	1	B8F0499	06/20/2018	06/20/18 19:43	U
C9	ND	1.0	1	B8F0499	06/20/2018	06/20/18 19:43	U
C10	ND	1.0	1	B8F0499	06/20/2018	06/20/18 19:43	U
C11	ND	1.0	1	B8F0499	06/20/2018	06/20/18 19:43	U
C12	ND	1.0	1	B8F0499	06/20/2018	06/20/18 19:43	U
Surrogate: 4-Bromofluorobenzene	*98.0 %*	*57 - 144*		B8F0499	06/20/2018	*06/20/18 19:43*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-7-2.0

Lab ID: 1802237-02

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C14	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C15	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C16	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C17	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C18	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C19	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C20	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C21	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C22	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C23	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C24	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C25	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C26	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C27	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C28	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C29	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C30	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C31	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C32	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C33	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C34	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C35	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C36	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C37	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C38	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C39	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
C40	ND	10	1	B8F0604	06/22/2018	06/24/18 22:10	U
Surrogate: p-Terphenyl	*113 %*	*58 - 172*		B8F0604	06/22/2018	*06/24/18 22:10*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-7-2.0

Lab ID: 1802237-02

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
1,1-Dichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
1,1-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
1,1-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0563	06/21/2018	06/21/18 20:38	U
1,2-Dibromoethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
1,2-Dichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
1,2-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
1,3-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
2,2-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
2-Chlorotoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
4-Chlorotoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
4-Isopropyltoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Benzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Bromobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Bromochloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Bromodichloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Bromoform	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Bromomethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Carbon disulfide	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Carbon tetrachloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Chlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Chloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Chloroform	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Chloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-7-2.0
Lab ID: 1802237-02

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
cis-1,3-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Di-isopropyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Dibromochloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Dibromomethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Dichlorodifluoromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Ethyl Acetate	ND	50	1	B8F0563	06/21/2018	06/21/18 20:38	U
Ethyl Ether	ND	50	1	B8F0563	06/21/2018	06/21/18 20:38	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Ethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Freon-113	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Hexachlorobutadiene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Isopropylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
m,p-Xylene	ND	10	1	B8F0563	06/21/2018	06/21/18 20:38	U
Methylene chloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
MTBE	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
n-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
n-Propylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Naphthalene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
o-Xylene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
sec-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Styrene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
tert-Amyl methyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
tert-Butanol	ND	100	1	B8F0563	06/21/2018	06/21/18 20:38	U
tert-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Tetrachloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Toluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Trichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Trichlorofluoromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Vinyl acetate	ND	50	1	B8F0563	06/21/2018	06/21/18 20:38	U
Vinyl chloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:38	U
Surrogate: 1,2-Dichloroethane-d4	*96.9 %*	*58 - 144*		B8F0563	06/21/2018	*06/21/18 20:38*	
Surrogate: 4-Bromofluorobenzene	*89.4 %*	*60 - 137*		B8F0563	06/21/2018	*06/21/18 20:38*	
Surrogate: Dibromofluoromethane	*97.9 %*	*70 - 131*		B8F0563	06/21/2018	*06/21/18 20:38*	
Surrogate: Toluene-d8	*93.0 %*	*79 - 131*		B8F0563	06/21/2018	*06/21/18 20:38*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-8-0-0.5
Lab ID: 1802237-05

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:27	D1, U
Arsenic	**2000**	1000	20	B8F0665	06/26/2018	06/28/18 12:27	D1
Barium	**32000**	1000	20	B8F0665	06/26/2018	06/28/18 12:27	D1
Beryllium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:27	D1, U
Cadmium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:27	D1, U
Chromium	**4700**	2000	20	B8F0665	06/26/2018	06/28/18 12:27	D1
Cobalt	**2500**	1000	20	B8F0665	06/26/2018	06/28/18 12:27	D1
Copper	**4300**	1000	20	B8F0665	06/26/2018	06/28/18 12:27	D1
Lead	**6000**	1000	20	B8F0665	06/26/2018	06/28/18 12:27	D1
Molybdenum	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:27	D1, U
Nickel	**2200**	1000	20	B8F0665	06/26/2018	06/28/18 12:27	D1
Selenium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:27	D1, U
Silver	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:27	D1, U
Thallium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:27	D1, U
Vanadium	**32000**	2000	20	B8F0665	06/26/2018	06/28/18 12:27	D1
Zinc	**15000**	5000	20	B8F0665	06/26/2018	06/28/18 12:27	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0639	06/25/2018	06/26/18 11:14	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0499	06/20/2018	06/20/18 20:02	U
C7	ND	1.0	1	B8F0499	06/20/2018	06/20/18 20:02	U
C8	ND	1.0	1	B8F0499	06/20/2018	06/20/18 20:02	U
C9	ND	1.0	1	B8F0499	06/20/2018	06/20/18 20:02	U
C10	ND	1.0	1	B8F0499	06/20/2018	06/20/18 20:02	U
C11	ND	1.0	1	B8F0499	06/20/2018	06/20/18 20:02	U
C12	ND	1.0	1	B8F0499	06/20/2018	06/20/18 20:02	U
Surrogate: 4-Bromofluorobenzene	*86.6 %*	*57 - 144*		B8F0499	06/20/2018	*06/20/18 20:02*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-8-0-0.5
Lab ID: 1802237-05

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C14	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C15	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C16	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C17	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C18	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C19	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C20	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C21	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C22	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C23	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C24	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C25	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C26	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C27	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C28	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C29	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C30	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C31	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C32	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C33	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C34	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C35	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C36	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C37	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C38	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C39	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
C40	ND	10	1	B8F0604	06/22/2018	06/24/18 22:26	U
Surrogate: p-Terphenyl	*120 %*	*58 - 172*		B8F0604	06/22/2018	*06/24/18 22:26*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-8-0-0.5
Lab ID: 1802237-05

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0617	06/23/2018	06/24/18 20:34	U
Aroclor 1221	ND	16	1	B8F0617	06/23/2018	06/24/18 20:34	U
Aroclor 1232	ND	16	1	B8F0617	06/23/2018	06/24/18 20:34	U
Aroclor 1242	ND	16	1	B8F0617	06/23/2018	06/24/18 20:34	U
Aroclor 1248	ND	16	1	B8F0617	06/23/2018	06/24/18 20:34	U
Aroclor 1254	ND	16	1	B8F0617	06/23/2018	06/24/18 20:34	U
Aroclor 1260	ND	16	1	B8F0617	06/23/2018	06/24/18 20:34	U
Aroclor 1262	ND	16	1	B8F0617	06/23/2018	06/24/18 20:34	U
Aroclor 1268	ND	16	1	B8F0617	06/23/2018	06/24/18 20:34	U
Surrogate: Decachlorobiphenyl	*71.6 %*	*14 - 109*		B8F0617	06/23/2018	*06/24/18 20:34*	
Surrogate: Tetrachloro-m-xylene	*72.5 %*	*18 - 114*		B8F0617	06/23/2018	*06/24/18 20:34*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
1,1-Dichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
1,1-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
1,1-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0563	06/21/2018	06/21/18 20:57	U
1,2-Dibromoethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
1,2-Dichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
1,2-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
1,3-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
2,2-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-8-0-0.5
Lab ID: 1802237-05

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
4-Chlorotoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
4-Isopropyltoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Benzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Bromobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Bromochloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Bromodichloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Bromoform	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Bromomethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Carbon disulfide	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Carbon tetrachloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Chlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Chloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Chloroform	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Chloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
cis-1,3-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Di-isopropyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Dibromochloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Dibromomethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Dichlorodifluoromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Ethyl Acetate	ND	50	1	B8F0563	06/21/2018	06/21/18 20:57	U
Ethyl Ether	ND	50	1	B8F0563	06/21/2018	06/21/18 20:57	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Ethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Freon-113	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Hexachlorobutadiene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Isopropylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
m,p-Xylene	ND	10	1	B8F0563	06/21/2018	06/21/18 20:57	U
Methylene chloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
MTBE	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
n-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
n-Propylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Naphthalene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
o-Xylene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
sec-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Styrene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-8-0-0.5

Lab ID: 1802237-05

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
tert-Butanol	ND	100	1	B8F0563	06/21/2018	06/21/18 20:57	U
tert-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Tetrachloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Toluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Trichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Trichlorofluoromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Vinyl acetate	ND	50	1	B8F0563	06/21/2018	06/21/18 20:57	U
Vinyl chloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 20:57	U
Surrogate: 1,2-Dichloroethane-d4	*99.9 %*	*58 - 144*		B8F0563	06/21/2018	*06/21/18 20:57*	
Surrogate: 4-Bromofluorobenzene	*89.1 %*	*60 - 137*		B8F0563	06/21/2018	*06/21/18 20:57*	
Surrogate: Dibromofluoromethane	*104 %*	*70 - 131*		B8F0563	06/21/2018	*06/21/18 20:57*	
Surrogate: Toluene-d8	*94.8 %*	*79 - 131*		B8F0563	06/21/2018	*06/21/18 20:57*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-8-2.0
Lab ID: 1802237-06

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:29	D1, U
Arsenic	**1100**	1000	20	B8F0665	06/26/2018	06/28/18 12:29	D1
Barium	**31000**	1000	20	B8F0665	06/26/2018	06/28/18 12:29	D1
Beryllium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:29	D1, U
Cadmium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:29	D1, U
Chromium	**3900**	2000	20	B8F0665	06/26/2018	06/28/18 12:29	D1
Cobalt	**2100**	1000	20	B8F0665	06/26/2018	06/28/18 12:29	D1
Copper	**3200**	1000	20	B8F0665	06/26/2018	06/28/18 12:29	D1
Lead	**1800**	1000	20	B8F0665	06/26/2018	06/28/18 12:29	D1
Molybdenum	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:29	D1, U
Nickel	**1600**	1000	20	B8F0665	06/26/2018	06/28/18 12:29	D1
Selenium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:29	D1, U
Silver	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:29	D1, U
Thallium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:29	D1, U
Vanadium	**23000**	2000	20	B8F0665	06/26/2018	06/28/18 12:29	D1
Zinc	**9700**	5000	20	B8F0665	06/26/2018	06/28/18 12:29	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0639	06/25/2018	06/26/18 11:16	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0499	06/20/2018	06/20/18 20:21	U
C7	ND	1.0	1	B8F0499	06/20/2018	06/20/18 20:21	U
C8	ND	1.0	1	B8F0499	06/20/2018	06/20/18 20:21	U
C9	ND	1.0	1	B8F0499	06/20/2018	06/20/18 20:21	U
C10	ND	1.0	1	B8F0499	06/20/2018	06/20/18 20:21	U
C11	ND	1.0	1	B8F0499	06/20/2018	06/20/18 20:21	U
C12	ND	1.0	1	B8F0499	06/20/2018	06/20/18 20:21	U
Surrogate: 4-Bromofluorobenzene	*99.9 %*	*57 - 144*		B8F0499	06/20/2018	*06/20/18 20:21*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-8-2.0
Lab ID: 1802237-06

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C14	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C15	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C16	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C17	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C18	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C19	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C20	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C21	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C22	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C23	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C24	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C25	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C26	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C27	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C28	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C29	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C30	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C31	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C32	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C33	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C34	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C35	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C36	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C37	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C38	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C39	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
C40	ND	10	1	B8F0604	06/22/2018	06/24/18 16:49	U
Surrogate: p-Terphenyl	*103 %*	*58 - 172*		B8F0604	06/22/2018	*06/24/18 16:49*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-8-2.0
Lab ID: 1802237-06

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0617	06/23/2018	06/24/18 20:52	U
Aroclor 1221	ND	16	1	B8F0617	06/23/2018	06/24/18 20:52	U
Aroclor 1232	ND	16	1	B8F0617	06/23/2018	06/24/18 20:52	U
Aroclor 1242	ND	16	1	B8F0617	06/23/2018	06/24/18 20:52	U
Aroclor 1248	ND	16	1	B8F0617	06/23/2018	06/24/18 20:52	U
Aroclor 1254	ND	16	1	B8F0617	06/23/2018	06/24/18 20:52	U
Aroclor 1260	ND	16	1	B8F0617	06/23/2018	06/24/18 20:52	U
Aroclor 1262	ND	16	1	B8F0617	06/23/2018	06/24/18 20:52	U
Aroclor 1268	ND	16	1	B8F0617	06/23/2018	06/24/18 20:52	U
Surrogate: Decachlorobiphenyl	*70.7 %*	*14 - 109*		B8F0617	06/23/2018	*06/24/18 20:52*	
Surrogate: Tetrachloro-m-xylene	*70.9 %*	*18 - 114*		B8F0617	06/23/2018	*06/24/18 20:52*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
1,1-Dichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
1,1-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
1,1-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0563	06/21/2018	06/21/18 21:15	U
1,2-Dibromoethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
1,2-Dichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
1,2-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
1,3-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
2,2-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-8-2.0

Lab ID: 1802237-06

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
4-Chlorotoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
4-Isopropyltoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Benzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Bromobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Bromochloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Bromodichloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Bromoform	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Bromomethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Carbon disulfide	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Carbon tetrachloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Chlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Chloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Chloroform	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Chloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
cis-1,3-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Di-isopropyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Dibromochloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Dibromomethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Dichlorodifluoromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Ethyl Acetate	ND	50	1	B8F0563	06/21/2018	06/21/18 21:15	U
Ethyl Ether	ND	50	1	B8F0563	06/21/2018	06/21/18 21:15	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Ethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Freon-113	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Hexachlorobutadiene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Isopropylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
m,p-Xylene	ND	10	1	B8F0563	06/21/2018	06/21/18 21:15	U
Methylene chloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
MTBE	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
n-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
n-Propylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Naphthalene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
o-Xylene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
sec-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Styrene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-8-2.0
Lab ID: 1802237-06

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
tert-Butanol	ND	100	1	B8F0563	06/21/2018	06/21/18 21:15	U
tert-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Tetrachloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Toluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Trichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Trichlorofluoromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Vinyl acetate	ND	50	1	B8F0563	06/21/2018	06/21/18 21:15	U
Vinyl chloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:15	U
Surrogate: 1,2-Dichloroethane-d4	*90.9 %*	*58 - 144*		B8F0563	06/21/2018	*06/21/18 21:15*	
Surrogate: 4-Bromofluorobenzene	*87.6 %*	*60 - 137*		B8F0563	06/21/2018	*06/21/18 21:15*	
Surrogate: Dibromofluoromethane	*95.2 %*	*70 - 131*		B8F0563	06/21/2018	*06/21/18 21:15*	
Surrogate: Toluene-d8	*94.0 %*	*79 - 131*		B8F0563	06/21/2018	*06/21/18 21:15*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-8-4.0
Lab ID: 1802237-07

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:31	D1, U
Arsenic	**1900**	1000	20	B8F0665	06/26/2018	06/28/18 12:31	D1
Barium	**64000**	1000	20	B8F0665	06/26/2018	06/28/18 12:31	D1
Beryllium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:31	D1, U
Cadmium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:31	D1, U
Chromium	**8100**	2000	20	B8F0665	06/26/2018	06/28/18 12:31	D1
Cobalt	**4600**	1000	20	B8F0665	06/26/2018	06/28/18 12:31	D1
Copper	**8500**	1000	20	B8F0665	06/26/2018	06/28/18 12:31	D1
Lead	**3000**	1000	20	B8F0665	06/26/2018	06/28/18 12:31	D1
Molybdenum	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:31	D1, U
Nickel	**4000**	1000	20	B8F0665	06/26/2018	06/28/18 12:31	D1
Selenium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:31	D1, U
Silver	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:31	D1, U
Thallium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:31	D1, U
Vanadium	**38000**	2000	20	B8F0665	06/26/2018	06/28/18 12:31	D1
Zinc	**30000**	5000	20	B8F0665	06/26/2018	06/28/18 12:31	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0639	06/25/2018	06/26/18 11:18	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0488	06/20/2018	06/20/18 13:32	U
C7	ND	1.0	1	B8F0488	06/20/2018	06/20/18 13:32	U
C8	ND	1.0	1	B8F0488	06/20/2018	06/20/18 13:32	U
C9	ND	1.0	1	B8F0488	06/20/2018	06/20/18 13:32	U
C10	ND	1.0	1	B8F0488	06/20/2018	06/20/18 13:32	U
C11	ND	1.0	1	B8F0488	06/20/2018	06/20/18 13:32	U
C12	ND	1.0	1	B8F0488	06/20/2018	06/20/18 13:32	U
Surrogate: 4-Bromofluorobenzene	*96.0 %*	*57 - 144*		B8F0488	06/20/2018	*06/20/18 13:32*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-8-4.0

Lab ID: 1802237-07

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C14	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C15	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C16	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C17	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C18	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C19	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C20	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C21	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C22	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C23	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C24	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C25	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C26	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C27	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C28	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C29	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C30	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C31	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C32	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C33	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C34	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C35	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C36	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C37	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C38	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C39	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
C40	ND	10	1	B8F0604	06/22/2018	06/24/18 17:06	U
Surrogate: p-Terphenyl	*113 %*	*58 - 172*		B8F0604	06/22/2018	*06/24/18 17:06*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-8-4.0
Lab ID: 1802237-07

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0617	06/23/2018	06/24/18 21:11	U
Aroclor 1221	ND	16	1	B8F0617	06/23/2018	06/24/18 21:11	U
Aroclor 1232	ND	16	1	B8F0617	06/23/2018	06/24/18 21:11	U
Aroclor 1242	ND	16	1	B8F0617	06/23/2018	06/24/18 21:11	U
Aroclor 1248	ND	16	1	B8F0617	06/23/2018	06/24/18 21:11	U
Aroclor 1254	ND	16	1	B8F0617	06/23/2018	06/24/18 21:11	U
Aroclor 1260	ND	16	1	B8F0617	06/23/2018	06/24/18 21:11	U
Aroclor 1262	ND	16	1	B8F0617	06/23/2018	06/24/18 21:11	U
Aroclor 1268	ND	16	1	B8F0617	06/23/2018	06/24/18 21:11	U
Surrogate: Decachlorobiphenyl	*80.5 %*	*14 - 109*		B8F0617	06/23/2018	*06/24/18 21:11*	
Surrogate: Tetrachloro-m-xylene	*73.3 %*	*18 - 114*		B8F0617	06/23/2018	*06/24/18 21:11*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
1,1-Dichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
1,1-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
1,1-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0563	06/21/2018	06/21/18 21:34	U
1,2-Dibromoethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
1,2-Dichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
1,2-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
1,3-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
2,2-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-8-4.0

Lab ID: 1802237-07

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
4-Chlorotoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
4-Isopropyltoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Benzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Bromobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Bromochloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Bromodichloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Bromoform	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Bromomethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Carbon disulfide	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Carbon tetrachloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Chlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Chloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Chloroform	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Chloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
cis-1,3-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Di-isopropyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Dibromochloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Dibromomethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Dichlorodifluoromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Ethyl Acetate	ND	50	1	B8F0563	06/21/2018	06/21/18 21:34	U
Ethyl Ether	ND	50	1	B8F0563	06/21/2018	06/21/18 21:34	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Ethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Freon-113	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Hexachlorobutadiene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Isopropylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
m,p-Xylene	ND	10	1	B8F0563	06/21/2018	06/21/18 21:34	U
Methylene chloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
MTBE	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
n-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
n-Propylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Naphthalene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
o-Xylene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
sec-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Styrene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-8-4.0
Lab ID: 1802237-07

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
tert-Butanol	ND	100	1	B8F0563	06/21/2018	06/21/18 21:34	U
tert-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Tetrachloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Toluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Trichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Trichlorofluoromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Vinyl acetate	ND	50	1	B8F0563	06/21/2018	06/21/18 21:34	U
Vinyl chloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:34	U
Surrogate: 1,2-Dichloroethane-d4	*94.7 %*	*58 - 144*		B8F0563	06/21/2018	*06/21/18 21:34*	
Surrogate: 4-Bromofluorobenzene	*89.9 %*	*60 - 137*		B8F0563	06/21/2018	*06/21/18 21:34*	
Surrogate: Dibromofluoromethane	*99.6 %*	*70 - 131*		B8F0563	06/21/2018	*06/21/18 21:34*	
Surrogate: Toluene-d8	*95.5 %*	*79 - 131*		B8F0563	06/21/2018	*06/21/18 21:34*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-8-6.0
Lab ID: 1802237-08

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:37	D1, U
Arsenic	**1900**	1000	20	B8F0665	06/26/2018	06/28/18 12:37	D1
Barium	**91000**	1000	20	B8F0665	06/26/2018	06/28/18 12:37	D1
Beryllium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:37	D1, U
Cadmium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:37	D1, U
Chromium	**8700**	2000	20	B8F0665	06/26/2018	06/28/18 12:37	D1
Cobalt	**4800**	1000	20	B8F0665	06/26/2018	06/28/18 12:37	D1
Copper	**8500**	1000	20	B8F0665	06/26/2018	06/28/18 12:37	D1
Lead	**3400**	1000	20	B8F0665	06/26/2018	06/28/18 12:37	D1
Molybdenum	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:37	D1, U
Nickel	**4500**	1000	20	B8F0665	06/26/2018	06/28/18 12:37	D1
Selenium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:37	D1, U
Silver	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:37	D1, U
Thallium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:37	D1, U
Vanadium	**34000**	2000	20	B8F0665	06/26/2018	06/28/18 12:37	D1
Zinc	**24000**	5000	20	B8F0665	06/26/2018	06/28/18 12:37	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0639	06/25/2018	06/26/18 11:24	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0488	06/20/2018	06/20/18 13:51	U
C7	ND	1.0	1	B8F0488	06/20/2018	06/20/18 13:51	U
C8	ND	1.0	1	B8F0488	06/20/2018	06/20/18 13:51	U
C9	ND	1.0	1	B8F0488	06/20/2018	06/20/18 13:51	U
C10	ND	1.0	1	B8F0488	06/20/2018	06/20/18 13:51	U
C11	ND	1.0	1	B8F0488	06/20/2018	06/20/18 13:51	U
C12	ND	1.0	1	B8F0488	06/20/2018	06/20/18 13:51	U
Surrogate: 4-Bromofluorobenzene	*92.0 %*	*57 - 144*		B8F0488	06/20/2018	*06/20/18 13:51*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-8-6.0

Lab ID: 1802237-08

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C14	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C15	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C16	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C17	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C18	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C19	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C20	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C21	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C22	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C23	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C24	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C25	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C26	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C27	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C28	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C29	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C30	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C31	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C32	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C33	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C34	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C35	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C36	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C37	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C38	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C39	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
C40	ND	10	1	B8F0604	06/22/2018	06/24/18 17:23	U
Surrogate: p-Terphenyl	*105 %*	*58 - 172*		B8F0604	06/22/2018	*06/24/18 17:23*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-8-6.0

Lab ID: 1802237-08

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0617	06/23/2018	06/24/18 21:30	U
Aroclor 1221	ND	16	1	B8F0617	06/23/2018	06/24/18 21:30	U
Aroclor 1232	ND	16	1	B8F0617	06/23/2018	06/24/18 21:30	U
Aroclor 1242	ND	16	1	B8F0617	06/23/2018	06/24/18 21:30	U
Aroclor 1248	ND	16	1	B8F0617	06/23/2018	06/24/18 21:30	U
Aroclor 1254	ND	16	1	B8F0617	06/23/2018	06/24/18 21:30	U
Aroclor 1260	ND	16	1	B8F0617	06/23/2018	06/24/18 21:30	U
Aroclor 1262	ND	16	1	B8F0617	06/23/2018	06/24/18 21:30	U
Aroclor 1268	ND	16	1	B8F0617	06/23/2018	06/24/18 21:30	U
Surrogate: Decachlorobiphenyl	*74.4 %*	*14 - 109*		B8F0617	06/23/2018	*06/24/18 21:30*	
Surrogate: Tetrachloro-m-xylene	*85.1 %*	*18 - 114*		B8F0617	06/23/2018	*06/24/18 21:30*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
1,1-Dichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
1,1-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
1,1-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0563	06/21/2018	06/21/18 21:53	U
1,2-Dibromoethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
1,2-Dichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
1,2-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
1,3-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
2,2-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-8-6.0

Lab ID: 1802237-08

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
4-Chlorotoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
4-Isopropyltoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Benzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Bromobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Bromochloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Bromodichloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Bromoform	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Bromomethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Carbon disulfide	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Carbon tetrachloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Chlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Chloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Chloroform	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Chloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
cis-1,3-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Di-isopropyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Dibromochloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Dibromomethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Dichlorodifluoromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Ethyl Acetate	ND	50	1	B8F0563	06/21/2018	06/21/18 21:53	U
Ethyl Ether	ND	50	1	B8F0563	06/21/2018	06/21/18 21:53	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Ethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Freon-113	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Hexachlorobutadiene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Isopropylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
m,p-Xylene	ND	10	1	B8F0563	06/21/2018	06/21/18 21:53	U
Methylene chloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
MTBE	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
n-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
n-Propylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Naphthalene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
o-Xylene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
sec-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Styrene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-8-6.0
Lab ID: 1802237-08

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
tert-Butanol	ND	100	1	B8F0563	06/21/2018	06/21/18 21:53	U
tert-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Tetrachloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Toluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Trichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Trichlorofluoromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Vinyl acetate	ND	50	1	B8F0563	06/21/2018	06/21/18 21:53	U
Vinyl chloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 21:53	U
Surrogate: 1,2-Dichloroethane-d4	*92.5 %*	*58 - 144*		B8F0563	06/21/2018	*06/21/18 21:53*	
Surrogate: 4-Bromofluorobenzene	*88.2 %*	*60 - 137*		B8F0563	06/21/2018	*06/21/18 21:53*	
Surrogate: Dibromofluoromethane	*94.6 %*	*70 - 131*		B8F0563	06/21/2018	*06/21/18 21:53*	
Surrogate: Toluene-d8	*91.0 %*	*79 - 131*		B8F0563	06/21/2018	*06/21/18 21:53*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-9-0-0.5
Lab ID: 1802237-09

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:39	D1, U
Arsenic	**1000**	1000	20	B8F0665	06/26/2018	06/28/18 12:39	D1
Barium	**37000**	1000	20	B8F0665	06/26/2018	06/28/18 12:39	D1
Beryllium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:39	D1, U
Cadmium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:39	D1, U
Chromium	**6600**	2000	20	B8F0665	06/26/2018	06/28/18 12:39	D1
Cobalt	**2800**	1000	20	B8F0665	06/26/2018	06/28/18 12:39	D1
Copper	**6800**	1000	20	B8F0665	06/26/2018	06/28/18 12:39	D1
Lead	**10000**	1000	20	B8F0665	06/26/2018	06/28/18 12:39	D1
Molybdenum	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:39	D1, U
Nickel	**3100**	1000	20	B8F0665	06/26/2018	06/28/18 12:39	D1
Selenium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:39	D1, U
Silver	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:39	D1, U
Thallium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:39	D1, U
Vanadium	**32000**	2000	20	B8F0665	06/26/2018	06/28/18 12:39	D1
Zinc	**23000**	5000	20	B8F0665	06/26/2018	06/28/18 12:39	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0639	06/25/2018	06/26/18 11:25	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0488	06/20/2018	06/20/18 14:09	U
C7	ND	1.0	1	B8F0488	06/20/2018	06/20/18 14:09	U
C8	ND	1.0	1	B8F0488	06/20/2018	06/20/18 14:09	U
C9	ND	1.0	1	B8F0488	06/20/2018	06/20/18 14:09	U
C10	ND	1.0	1	B8F0488	06/20/2018	06/20/18 14:09	U
C11	ND	1.0	1	B8F0488	06/20/2018	06/20/18 14:09	U
C12	ND	1.0	1	B8F0488	06/20/2018	06/20/18 14:09	U
Surrogate: 4-Bromofluorobenzene	*90.6 %*	*57 - 144*		B8F0488	06/20/2018	*06/20/18 14:09*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-9-0-0.5
Lab ID: 1802237-09

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	**12**	10	1	B8F0604	06/22/2018	06/24/18 21:53	
C14	ND	10	1	B8F0604	06/22/2018	06/24/18 21:53	U
C15	ND	10	1	B8F0604	06/22/2018	06/24/18 21:53	U
C16	ND	10	1	B8F0604	06/22/2018	06/24/18 21:53	U
C17	ND	10	1	B8F0604	06/22/2018	06/24/18 21:53	U
C18	ND	10	1	B8F0604	06/22/2018	06/24/18 21:53	U
C19	ND	10	1	B8F0604	06/22/2018	06/24/18 21:53	U
C20	ND	10	1	B8F0604	06/22/2018	06/24/18 21:53	U
C21	ND	10	1	B8F0604	06/22/2018	06/24/18 21:53	U
C22	ND	10	1	B8F0604	06/22/2018	06/24/18 21:53	U
C23	ND	10	1	B8F0604	06/22/2018	06/24/18 21:53	U
C24	ND	10	1	B8F0604	06/22/2018	06/24/18 21:53	U
C25	ND	10	1	B8F0604	06/22/2018	06/24/18 21:53	U
C26	ND	10	1	B8F0604	06/22/2018	06/24/18 21:53	U
C27	ND	10	1	B8F0604	06/22/2018	06/24/18 21:53	U
C28	ND	10	1	B8F0604	06/22/2018	06/24/18 21:53	U
C29	ND	10	1	B8F0604	06/22/2018	06/24/18 21:53	U
C30	ND	10	1	B8F0604	06/22/2018	06/24/18 21:53	U
C31	**15**	10	1	B8F0604	06/22/2018	06/24/18 21:53	
C32	ND	10	1	B8F0604	06/22/2018	06/24/18 21:53	U
C33	ND	10	1	B8F0604	06/22/2018	06/24/18 21:53	U
C34	ND	10	1	B8F0604	06/22/2018	06/24/18 21:53	U
C35	ND	10	1	B8F0604	06/22/2018	06/24/18 21:53	U
C36	ND	10	1	B8F0604	06/22/2018	06/24/18 21:53	U
C37	ND	10	1	B8F0604	06/22/2018	06/24/18 21:53	U
C38	ND	10	1	B8F0604	06/22/2018	06/24/18 21:53	U
C39	ND	10	1	B8F0604	06/22/2018	06/24/18 21:53	U
C40	ND	10	1	B8F0604	06/22/2018	06/24/18 21:53	U
Surrogate: p-Terphenyl	*124 %*	*58 - 172*		B8F0604	06/22/2018	*06/24/18 21:53*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-9-0-0.5

Lab ID: 1802237-09

SPLP Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:03	U
C14	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:03	U
C15	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:03	U
C16	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:03	U
C17	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:03	U
C18	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:03	U
C19	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:03	U
C20	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:03	U
C21	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:03	U
C22	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:03	U
C23	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:03	U
C24	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:03	U
C25	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:03	U
C26	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:03	U
C27	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:03	U
C28	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:03	U
C29	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:03	U
C30	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:03	U
C31	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:03	U
Surrogate: p-Terphenyl	*99.1 %*	*32 - 169*		B8G0211	07/10/2018	*07/10/18 23:03*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-9-2.0
Lab ID: 1802237-10

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:40	D1, U
Arsenic	**1200**	1000	20	B8F0665	06/26/2018	06/28/18 12:40	D1
Barium	**29000**	1000	20	B8F0665	06/26/2018	06/28/18 12:40	D1
Beryllium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:40	D1, U
Cadmium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:40	D1, U
Chromium	**4200**	2000	20	B8F0665	06/26/2018	06/28/18 12:40	D1
Cobalt	**2000**	1000	20	B8F0665	06/26/2018	06/28/18 12:40	D1
Copper	**3500**	1000	20	B8F0665	06/26/2018	06/28/18 12:40	D1
Lead	**1800**	1000	20	B8F0665	06/26/2018	06/28/18 12:40	D1
Molybdenum	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:40	D1, U
Nickel	**1700**	1000	20	B8F0665	06/26/2018	06/28/18 12:40	D1
Selenium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:40	D1, U
Silver	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:40	D1, U
Thallium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:40	D1, U
Vanadium	**23000**	2000	20	B8F0665	06/26/2018	06/28/18 12:40	D1
Zinc	**10000**	5000	20	B8F0665	06/26/2018	06/28/18 12:40	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0639	06/25/2018	06/26/18 11:27	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0488	06/20/2018	06/20/18 14:28	U
C7	ND	1.0	1	B8F0488	06/20/2018	06/20/18 14:28	U
C8	ND	1.0	1	B8F0488	06/20/2018	06/20/18 14:28	U
C9	ND	1.0	1	B8F0488	06/20/2018	06/20/18 14:28	U
C10	ND	1.0	1	B8F0488	06/20/2018	06/20/18 14:28	U
C11	ND	1.0	1	B8F0488	06/20/2018	06/20/18 14:28	U
C12	ND	1.0	1	B8F0488	06/20/2018	06/20/18 14:28	U
Surrogate: 4-Bromofluorobenzene	*93.6 %*	*57 - 144*		B8F0488	06/20/2018	*06/20/18 14:28*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-9-2.0
Lab ID: 1802237-10

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C14	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C15	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C16	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C17	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C18	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C19	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C20	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C21	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C22	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C23	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C24	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C25	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C26	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C27	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C28	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C29	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C30	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C31	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C32	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C33	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C34	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C35	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C36	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C37	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C38	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C39	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
C40	ND	10	1	B8F0604	06/22/2018	06/24/18 17:40	U
Surrogate: p-Terphenyl	*125 %*	*58 - 172*		B8F0604	06/22/2018	*06/24/18 17:40*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-10-0-0.5
Lab ID: 1802237-13

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:42	D1, U
Arsenic	**1300**	1000	20	B8F0665	06/26/2018	06/28/18 12:42	D1
Barium	**39000**	1000	20	B8F0665	06/26/2018	06/28/18 12:42	D1
Beryllium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:42	D1, U
Cadmium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:42	D1, U
Chromium	**6300**	2000	20	B8F0665	06/26/2018	06/28/18 12:42	D1
Cobalt	**3000**	1000	20	B8F0665	06/26/2018	06/28/18 12:42	D1
Copper	**5900**	1000	20	B8F0665	06/26/2018	06/28/18 12:42	D1
Lead	**8100**	1000	20	B8F0665	06/26/2018	06/28/18 12:42	D1
Molybdenum	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:42	D1, U
Nickel	**3000**	1000	20	B8F0665	06/26/2018	06/28/18 12:42	D1
Selenium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:42	D1, U
Silver	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:42	D1, U
Thallium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:42	D1, U
Vanadium	**33000**	2000	20	B8F0665	06/26/2018	06/28/18 12:42	D1
Zinc	**20000**	5000	20	B8F0665	06/26/2018	06/28/18 12:42	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0639	06/25/2018	06/26/18 11:29	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0488	06/20/2018	06/20/18 14:46	U
C7	ND	1.0	1	B8F0488	06/20/2018	06/20/18 14:46	U
C8	ND	1.0	1	B8F0488	06/20/2018	06/20/18 14:46	U
C9	ND	1.0	1	B8F0488	06/20/2018	06/20/18 14:46	U
C10	ND	1.0	1	B8F0488	06/20/2018	06/20/18 14:46	U
C11	ND	1.0	1	B8F0488	06/20/2018	06/20/18 14:46	U
C12	ND	1.0	1	B8F0488	06/20/2018	06/20/18 14:46	U
Surrogate: 4-Bromofluorobenzene	*68.7 %*	*57 - 144*		B8F0488	06/20/2018	*06/20/18 14:46*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-10-0-0.5
Lab ID: 1802237-13

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C14	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C15	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C16	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C17	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C18	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C19	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C20	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C21	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C22	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C23	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C24	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C25	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C26	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C27	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C28	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C29	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C30	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C31	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C32	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C33	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C34	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C35	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C36	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C37	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C38	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C39	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
C40	ND	10	1	B8F0604	06/22/2018	06/24/18 17:57	U
Surrogate: p-Terphenyl	*121 %*	*58 - 172*		B8F0604	06/22/2018	*06/24/18 17:57*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-10-2.0
Lab ID: 1802237-14

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:44	D1, U
Arsenic	**1800**	1000	20	B8F0665	06/26/2018	06/28/18 12:44	D1
Barium	**55000**	1000	20	B8F0665	06/26/2018	06/28/18 12:44	D1
Beryllium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:44	D1, U
Cadmium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:44	D1, U
Chromium	**7900**	2000	20	B8F0665	06/26/2018	06/28/18 12:44	D1
Cobalt	**4200**	1000	20	B8F0665	06/26/2018	06/28/18 12:44	D1
Copper	**9600**	1000	20	B8F0665	06/26/2018	06/28/18 12:44	D1
Lead	**3000**	1000	20	B8F0665	06/26/2018	06/28/18 12:44	D1
Molybdenum	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:44	D1, U
Nickel	**3400**	1000	20	B8F0665	06/26/2018	06/28/18 12:44	D1
Selenium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:44	D1, U
Silver	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:44	D1, U
Thallium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:44	D1, U
Vanadium	**37000**	2000	20	B8F0665	06/26/2018	06/28/18 12:44	D1
Zinc	**22000**	5000	20	B8F0665	06/26/2018	06/28/18 12:44	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0639	06/25/2018	06/26/18 11:31	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0506	06/21/2018	06/21/18 03:45	U
C7	ND	1.0	1	B8F0506	06/21/2018	06/21/18 03:45	U
C8	ND	1.0	1	B8F0506	06/21/2018	06/21/18 03:45	U
C9	ND	1.0	1	B8F0506	06/21/2018	06/21/18 03:45	U
C10	ND	1.0	1	B8F0506	06/21/2018	06/21/18 03:45	U
C11	ND	1.0	1	B8F0506	06/21/2018	06/21/18 03:45	U
C12	ND	1.0	1	B8F0506	06/21/2018	06/21/18 03:45	U
Surrogate: 4-Bromofluorobenzene	*95.1 %*	*57 - 144*		B8F0506	06/21/2018	*06/21/18 03:45*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-10-2.0

Lab ID: 1802237-14

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C14	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C15	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C16	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C17	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C18	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C19	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C20	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C21	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C22	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C23	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C24	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C25	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C26	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C27	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C28	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C29	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C30	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C31	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C32	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C33	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C34	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C35	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C36	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C37	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C38	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C39	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
C40	ND	10	1	B8F0604	06/22/2018	06/24/18 18:14	U
Surrogate: p-Terphenyl	*125 %*	*58 - 172*		B8F0604	06/22/2018	*06/24/18 18:14*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-11-0-0.5
Lab ID: 1802237-18

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:46	D1, U
Arsenic	**1100**	1000	20	B8F0665	06/26/2018	06/28/18 12:46	D1
Barium	**21000**	1000	20	B8F0665	06/26/2018	06/28/18 12:46	D1
Beryllium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:46	D1, U
Cadmium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:46	D1, U
Chromium	**3900**	2000	20	B8F0665	06/26/2018	06/28/18 12:46	D1
Cobalt	**1700**	1000	20	B8F0665	06/26/2018	06/28/18 12:46	D1
Copper	**3400**	1000	20	B8F0665	06/26/2018	06/28/18 12:46	D1
Lead	**4400**	1000	20	B8F0665	06/26/2018	06/28/18 12:46	D1
Molybdenum	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:46	D1, U
Nickel	**1700**	1000	20	B8F0665	06/26/2018	06/28/18 12:46	D1
Selenium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:46	D1, U
Silver	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:46	D1, U
Thallium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:46	D1, U
Vanadium	**23000**	2000	20	B8F0665	06/26/2018	06/28/18 12:46	D1
Zinc	**11000**	5000	20	B8F0665	06/26/2018	06/28/18 12:46	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0639	06/25/2018	06/26/18 11:33	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0488	06/20/2018	06/20/18 15:24	U
C7	ND	1.0	1	B8F0488	06/20/2018	06/20/18 15:24	U
C8	ND	1.0	1	B8F0488	06/20/2018	06/20/18 15:24	U
C9	ND	1.0	1	B8F0488	06/20/2018	06/20/18 15:24	U
C10	ND	1.0	1	B8F0488	06/20/2018	06/20/18 15:24	U
C11	ND	1.0	1	B8F0488	06/20/2018	06/20/18 15:24	U
C12	ND	1.0	1	B8F0488	06/20/2018	06/20/18 15:24	U
Surrogate: 4-Bromofluorobenzene	*94.1 %*	*57 - 144*		B8F0488	06/20/2018	*06/20/18 15:24*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-11-0-0.5
Lab ID: 1802237-18

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C14	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C15	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C16	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C17	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C18	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C19	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C20	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C21	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C22	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C23	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C24	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C25	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C26	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C27	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C28	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C29	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C30	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C31	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C32	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C33	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C34	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C35	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C36	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C37	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C38	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C39	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
C40	ND	10	1	B8F0604	06/22/2018	06/24/18 18:31	U
Surrogate: p-Terphenyl	*124 %*	*58 - 172*		B8F0604	06/22/2018	*06/24/18 18:31*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-11-2.0
Lab ID: 1802237-19

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:48	D1, U
Arsenic	**1400**	1000	20	B8F0665	06/26/2018	06/28/18 12:48	D1
Barium	**33000**	1000	20	B8F0665	06/26/2018	06/28/18 12:48	D1
Beryllium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:48	D1, U
Cadmium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:48	D1, U
Chromium	**4600**	2000	20	B8F0665	06/26/2018	06/28/18 12:48	D1
Cobalt	**2300**	1000	20	B8F0665	06/26/2018	06/28/18 12:48	D1
Copper	**4100**	1000	20	B8F0665	06/26/2018	06/28/18 12:48	D1
Lead	**2000**	1000	20	B8F0665	06/26/2018	06/28/18 12:48	D1
Molybdenum	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:48	D1, U
Nickel	**1700**	1000	20	B8F0665	06/26/2018	06/28/18 12:48	D1
Selenium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:48	D1, U
Silver	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:48	D1, U
Thallium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:48	D1, U
Vanadium	**26000**	2000	20	B8F0665	06/26/2018	06/28/18 12:48	D1
Zinc	**11000**	5000	20	B8F0665	06/26/2018	06/28/18 12:48	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0639	06/25/2018	06/26/18 11:35	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0488	06/20/2018	06/20/18 15:42	U
C7	ND	1.0	1	B8F0488	06/20/2018	06/20/18 15:42	U
C8	ND	1.0	1	B8F0488	06/20/2018	06/20/18 15:42	U
C9	ND	1.0	1	B8F0488	06/20/2018	06/20/18 15:42	U
C10	ND	1.0	1	B8F0488	06/20/2018	06/20/18 15:42	U
C11	ND	1.0	1	B8F0488	06/20/2018	06/20/18 15:42	U
C12	ND	1.0	1	B8F0488	06/20/2018	06/20/18 15:42	U
Surrogate: 4-Bromofluorobenzene	*96.5 %*	*57 - 144*		B8F0488	06/20/2018	*06/20/18 15:42*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID HA-11-2.0

Lab ID: 1802237-19

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C14	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C15	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C16	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C17	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C18	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C19	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C20	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C21	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C22	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C23	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C24	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C25	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C26	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C27	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C28	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C29	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C30	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C31	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C32	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C33	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C34	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C35	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C36	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C37	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C38	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C39	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
C40	ND	10	1	B8F0604	06/22/2018	06/24/18 18:48	U
Surrogate: p-Terphenyl	*125 %*	*58 - 172*		B8F0604	06/22/2018	*06/24/18 18:48*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
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Lab ID: 1802237-22

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:28	U
Arsenic	ND	1.0	1	B8F0662	06/26/2018	06/26/18 16:28	U
Barium	**4.7**	1.0	1	B8F0662	06/26/2018	06/26/18 16:28	
Beryllium	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:28	U
Cadmium	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:28	U
Chromium	**1.4**	0.50	1	B8F0662	06/26/2018	06/26/18 16:28	
Cobalt	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:28	U
Copper	**1.3**	1.0	1	B8F0662	06/26/2018	06/26/18 16:28	
Lead	ND	1.0	1	B8F0662	06/26/2018	06/26/18 16:28	U
Molybdenum	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:28	U
Nickel	ND	1.0	1	B8F0662	06/26/2018	06/26/18 16:28	U
Selenium	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:28	U
Silver	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:28	U
Thallium	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:28	U
Vanadium	ND	1.0	1	B8F0662	06/26/2018	06/26/18 16:28	U
Zinc	ND	10	1	B8F0662	06/26/2018	06/26/18 16:28	U

Mercury by AA (Cold Vapor) EPA 7470A

Analyst: KEK

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.20	1	B8F0677	06/26/2018	06/27/18 11:18	U

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	0.20	1	B8F0489	06/21/2018	06/21/18 11:05	U
C7	ND	0.20	1	B8F0489	06/21/2018	06/21/18 11:05	U
C8	ND	0.20	1	B8F0489	06/21/2018	06/21/18 11:05	U
C9	ND	0.20	1	B8F0489	06/21/2018	06/21/18 11:05	U
C10	ND	0.20	1	B8F0489	06/21/2018	06/21/18 11:05	U
C11	ND	0.20	1	B8F0489	06/21/2018	06/21/18 11:05	U
C12	ND	0.20	1	B8F0489	06/21/2018	06/21/18 11:05	U
Surrogate: 4-Bromofluorobenzene	*91.8 %*	*70 - 130*		B8F0489	06/21/2018	*06/21/18 11:05*	

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Lab ID: 1802237-22

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C14	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C15	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C16	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C17	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C18	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C19	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C20	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C21	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C22	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C23	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C24	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C25	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C26	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C27	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C28	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C29	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C30	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C31	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C32	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C33	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C34	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C35	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C36	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C37	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C38	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C39	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
C40	ND	0.20	1	B8F0550	06/21/2018	06/21/18 15:42	U
Surrogate: p-Terphenyl	*115 %*	*32 - 169*		B8F0550	06/21/2018	*06/21/18 15:42*	

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Lab ID: 1802237-22

Organochlorine Pesticides by EPA 8081 **Analyst: CO**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	0.05	1	B8F0616	06/23/2018	06/24/18 18:41	U
4,4´-DDE	ND	0.05	1	B8F0616	06/23/2018	06/24/18 18:41	U
4,4´-DDT	ND	0.05	1	B8F0616	06/23/2018	06/24/18 18:41	U
Aldrin	ND	0.02	1	B8F0616	06/23/2018	06/24/18 18:41	U
alpha-BHC	ND	0.02	1	B8F0616	06/23/2018	06/24/18 18:41	U
alpha-Chlordane	ND	0.02	1	B8F0616	06/23/2018	06/24/18 18:41	U
beta-BHC	ND	0.02	1	B8F0616	06/23/2018	06/24/18 18:41	U
Chlordane	ND	0.25	1	B8F0616	06/23/2018	06/24/18 18:41	U
delta-BHC	ND	0.02	1	B8F0616	06/23/2018	06/24/18 18:41	U
Dieldrin	ND	0.05	1	B8F0616	06/23/2018	06/24/18 18:41	U
Endosulfan I	ND	0.02	1	B8F0616	06/23/2018	06/24/18 18:41	U
Endosulfan II	ND	0.05	1	B8F0616	06/23/2018	06/24/18 18:41	U
Endosulfan sulfate	ND	0.05	1	B8F0616	06/23/2018	06/24/18 18:41	U
Endrin	ND	0.05	1	B8F0616	06/23/2018	06/24/18 18:41	U
Endrin aldehyde	ND	0.05	1	B8F0616	06/23/2018	06/24/18 18:41	U
Endrin ketone	ND	0.05	1	B8F0616	06/23/2018	06/24/18 18:41	U
gamma-BHC	ND	0.02	1	B8F0616	06/23/2018	06/24/18 18:41	U
gamma-Chlordane	ND	0.02	1	B8F0616	06/23/2018	06/24/18 18:41	U
Heptachlor	ND	0.02	1	B8F0616	06/23/2018	06/24/18 18:41	U
Heptachlor epoxide	ND	0.02	1	B8F0616	06/23/2018	06/24/18 18:41	U
Methoxychlor	ND	0.25	1	B8F0616	06/23/2018	06/24/18 18:41	U
Toxaphene	ND	2.5	1	B8F0616	06/23/2018	06/24/18 18:41	U
Surrogate: Decachlorobiphenyl	*76.7 %*	*1 - 110*		B8F0616	06/23/2018	*06/24/18 18:41*	
Surrogate: Tetrachloro-m-xylene	*77.6 %*	*19 - 117*		B8F0616	06/23/2018	*06/24/18 18:41*	

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Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
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Lab ID: 1802237-22

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	0.50	1	B8F0616	06/23/2018	06/24/18 17:06	U
Aroclor 1221	ND	1.0	1	B8F0616	06/23/2018	06/24/18 17:06	U
Aroclor 1232	ND	0.50	1	B8F0616	06/23/2018	06/24/18 17:06	U
Aroclor 1242	ND	0.50	1	B8F0616	06/23/2018	06/24/18 17:06	U
Aroclor 1248	ND	0.50	1	B8F0616	06/23/2018	06/24/18 17:06	U
Aroclor 1254	ND	0.50	1	B8F0616	06/23/2018	06/24/18 17:06	U
Aroclor 1260	ND	0.50	1	B8F0616	06/23/2018	06/24/18 17:06	U
Aroclor 1262	ND	0.50	1	B8F0616	06/23/2018	06/24/18 17:06	U
Aroclor 1268	ND	0.50	1	B8F0616	06/23/2018	06/24/18 17:06	U
Surrogate: Decachlorobiphenyl	*77.8 %*	*1 - 110*		B8F0616	06/23/2018	*06/24/18 17:06*	
Surrogate: Tetrachloro-m-xylene	*81.9 %*	*19 - 117*		B8F0616	06/23/2018	*06/24/18 17:06*	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
1,1-Dichloroethane	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
1,1-Dichloroethene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
1,1-Dichloropropene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
1,2-Dibromo-3-chloropropane	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
1,2-Dibromoethane	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
1,2-Dichloroethane	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
1,2-Dichloropropane	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
1,3-Dichloropropane	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
2,2-Dichloropropane	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U

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Lab ID: 1802237-22

Volatile Organic Compounds by EPA 8260B **Analyst: QP**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
4-Chlorotoluene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
4-Isopropyltoluene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Benzene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Bromobenzene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Bromochloromethane	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Bromodichloromethane	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Bromoform	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Bromomethane	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Carbon disulfide	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Carbon tetrachloride	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Chlorobenzene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Chloroethane	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Chloroform	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Chloromethane	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
cis-1,3-Dichloropropene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Di-isopropyl ether	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Dibromochloromethane	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Dibromomethane	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Dichlorodifluoromethane	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Ethyl Acetate	ND	50	1	B8F0569	06/22/2018	06/22/18 14:08	U
Ethyl Ether	ND	50	1	B8F0569	06/22/2018	06/22/18 14:08	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Ethylbenzene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Freon-113	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Hexachlorobutadiene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Isopropylbenzene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
m,p-Xylene	ND	10	1	B8F0569	06/22/2018	06/22/18 14:08	U
Methylene chloride	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
MTBE	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
n-Butylbenzene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
n-Propylbenzene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Naphthalene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
o-Xylene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
sec-Butylbenzene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Styrene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID EB-061818

Lab ID: 1802237-22

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
tert-Butanol	ND	100	1	B8F0569	06/22/2018	06/22/18 14:08	U
tert-Butylbenzene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Tetrachloroethene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Toluene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Trichloroethene	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Trichlorofluoromethane	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Vinyl acetate	ND	50	1	B8F0569	06/22/2018	06/22/18 14:08	U
Vinyl chloride	ND	5.0	1	B8F0569	06/22/2018	06/22/18 14:08	U
Surrogate: 1,2-Dichloroethane-d4	*98.7 %*	*74 - 132*		B8F0569	06/22/2018	*06/22/18 14:08*	
Surrogate: 4-Bromofluorobenzene	*98.3 %*	*82 - 123*		B8F0569	06/22/2018	*06/22/18 14:08*	
Surrogate: Dibromofluoromethane	*96.0 %*	*76 - 135*		B8F0569	06/22/2018	*06/22/18 14:08*	
Surrogate: Toluene-d8	*102 %*	*85 - 125*		B8F0569	06/22/2018	*06/22/18 14:08*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	0.20	1	B8F0538	06/21/2018	06/21/18 17:28	U
Acenaphthene	ND	0.20	1	B8F0538	06/21/2018	06/21/18 17:28	U
Acenaphthylene	ND	0.20	1	B8F0538	06/21/2018	06/21/18 17:28	U
Anthracene	ND	0.20	1	B8F0538	06/21/2018	06/21/18 17:28	U
Benzo(a)anthracene	ND	0.20	1	B8F0538	06/21/2018	06/21/18 17:28	U
Benzo(a)pyrene	ND	0.20	1	B8F0538	06/21/2018	06/21/18 17:28	U
Benzo(b)fluoranthene	ND	0.20	1	B8F0538	06/21/2018	06/21/18 17:28	U
Benzo(g,h,i)perylene	ND	0.20	1	B8F0538	06/21/2018	06/21/18 17:28	U
Benzo(k)fluoranthene	ND	0.20	1	B8F0538	06/21/2018	06/21/18 17:28	U
Chrysene	ND	0.20	1	B8F0538	06/21/2018	06/21/18 17:28	U
Dibenz(a,h)anthracene	ND	0.20	1	B8F0538	06/21/2018	06/21/18 17:28	U
Fluoranthene	ND	0.20	1	B8F0538	06/21/2018	06/21/18 17:28	U
Fluorene	ND	0.20	1	B8F0538	06/21/2018	06/21/18 17:28	U
Indeno(1,2,3-cd)pyrene	ND	0.20	1	B8F0538	06/21/2018	06/21/18 17:28	U
Naphthalene	ND	0.20	1	B8F0538	06/21/2018	06/21/18 17:28	U
Phenanthrene	ND	0.20	1	B8F0538	06/21/2018	06/21/18 17:28	U
Pyrene	ND	0.20	1	B8F0538	06/21/2018	06/21/18 17:28	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID EB-061818

Lab ID: 1802237-22

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: 1,2-Dichlorobenzene-d4	*66.5 %*	*36 - 99*		B8F0538	06/21/2018	*06/21/18 17:28*	
Surrogate: 2-Fluorobiphenyl	*72.5 %*	*33 - 111*		B8F0538	06/21/2018	*06/21/18 17:28*	
Surrogate: Nitrobenzene-d5	*56.9 %*	*12 - 124*		B8F0538	06/21/2018	*06/21/18 17:28*	
Surrogate: 4-Terphenyl-d14	*82.6 %*	*43 - 118*		B8F0538	06/21/2018	*06/21/18 17:28*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-5-0.5-2
Lab ID: 1802237-24

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:50	D1, U
Arsenic	**1300**	1000	20	B8F0665	06/26/2018	06/28/18 12:50	D1
Barium	**28000**	1000	20	B8F0665	06/26/2018	06/28/18 12:50	D1
Beryllium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:50	D1, U
Cadmium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:50	D1, U
Chromium	**4700**	2000	20	B8F0665	06/26/2018	06/28/18 12:50	D1
Cobalt	**2000**	1000	20	B8F0665	06/26/2018	06/28/18 12:50	D1
Copper	**3200**	1000	20	B8F0665	06/26/2018	06/28/18 12:50	D1
Lead	**2200**	1000	20	B8F0665	06/26/2018	06/28/18 12:50	D1
Molybdenum	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:50	D1, U
Nickel	**1600**	1000	20	B8F0665	06/26/2018	06/28/18 12:50	D1
Selenium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:50	D1, U
Silver	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:50	D1, U
Thallium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:50	D1, U
Vanadium	**27000**	2000	20	B8F0665	06/26/2018	06/28/18 12:50	D1
Zinc	**11000**	5000	20	B8F0665	06/26/2018	06/28/18 12:50	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0639	06/25/2018	06/26/18 11:37	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-6-0-0.5
Lab ID: 1802237-25

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:52	D1, U
Arsenic	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:52	D1, U
Barium	**5400**	1000	20	B8F0665	06/26/2018	06/28/18 12:52	D1
Beryllium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:52	D1, U
Cadmium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:52	D1, U
Chromium	ND	2000	20	B8F0665	06/26/2018	06/28/18 12:52	D1, U
Cobalt	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:52	D1, U
Copper	**2700**	1000	20	B8F0665	06/26/2018	06/28/18 12:52	D1
Lead	**5100**	1000	20	B8F0665	06/26/2018	06/28/18 12:52	D1
Molybdenum	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:52	D1, U
Nickel	**2100**	1000	20	B8F0665	06/26/2018	06/28/18 12:52	D1
Selenium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:52	D1, U
Silver	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:52	D1, U
Thallium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:52	D1, U
Vanadium	**3500**	2000	20	B8F0665	06/26/2018	06/28/18 12:52	D1
Zinc	**7600**	5000	20	B8F0665	06/26/2018	06/28/18 12:52	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0639	06/25/2018	06/26/18 11:39	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:01	U
C7	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:01	U
C8	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:01	U
C9	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:01	U
C10	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:01	U
C11	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:01	U
C12	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:01	U
Surrogate: 4-Bromofluorobenzene	*101 %*	*57 - 144*		B8F0488	06/20/2018	*06/20/18 16:01*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-6-0-0.5

Lab ID: 1802237-25

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C14	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C15	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C16	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C17	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C18	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C19	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C20	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C21	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C22	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C23	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C24	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C25	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C26	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C27	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C28	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C29	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C30	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C31	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C32	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C33	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C34	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C35	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C36	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C37	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C38	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C39	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
C40	ND	10	1	B8F0604	06/22/2018	06/24/18 22:43	U
Surrogate: p-Terphenyl	*110 %*	*58 - 172*		B8F0604	06/22/2018	*06/24/18 22:43*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-6-0-0.5
Lab ID: 1802237-25

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0617	06/23/2018	06/24/18 21:49	U
Aroclor 1221	ND	16	1	B8F0617	06/23/2018	06/24/18 21:49	U
Aroclor 1232	ND	16	1	B8F0617	06/23/2018	06/24/18 21:49	U
Aroclor 1242	ND	16	1	B8F0617	06/23/2018	06/24/18 21:49	U
Aroclor 1248	ND	16	1	B8F0617	06/23/2018	06/24/18 21:49	U
Aroclor 1254	ND	16	1	B8F0617	06/23/2018	06/24/18 21:49	U
Aroclor 1260	ND	16	1	B8F0617	06/23/2018	06/24/18 21:49	U
Aroclor 1262	ND	16	1	B8F0617	06/23/2018	06/24/18 21:49	U
Aroclor 1268	ND	16	1	B8F0617	06/23/2018	06/24/18 21:49	U
Surrogate: Decachlorobiphenyl	*77.0 %*	*14 - 109*		B8F0617	06/23/2018	*06/24/18 21:49*	
Surrogate: Tetrachloro-m-xylene	*81.2 %*	*18 - 114*		B8F0617	06/23/2018	*06/24/18 21:49*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
1,1-Dichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
1,1-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
1,1-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0563	06/21/2018	06/21/18 22:12	U
1,2-Dibromoethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
1,2-Dichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
1,2-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
1,3-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
2,2-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-6-0-0.5
Lab ID: 1802237-25

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
4-Chlorotoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
4-Isopropyltoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Benzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Bromobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Bromochloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Bromodichloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Bromoform	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Bromomethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Carbon disulfide	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Carbon tetrachloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Chlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Chloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Chloroform	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Chloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
cis-1,3-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Di-isopropyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Dibromochloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Dibromomethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Dichlorodifluoromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Ethyl Acetate	ND	50	1	B8F0563	06/21/2018	06/21/18 22:12	U
Ethyl Ether	ND	50	1	B8F0563	06/21/2018	06/21/18 22:12	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Ethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Freon-113	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Hexachlorobutadiene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Isopropylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
m,p-Xylene	ND	10	1	B8F0563	06/21/2018	06/21/18 22:12	U
Methylene chloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
MTBE	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
n-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
n-Propylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Naphthalene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
o-Xylene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
sec-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Styrene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-6-0-0.5

Lab ID: 1802237-25

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
tert-Butanol	ND	100	1	B8F0563	06/21/2018	06/21/18 22:12	U
tert-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Tetrachloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Toluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Trichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Trichlorofluoromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Vinyl acetate	ND	50	1	B8F0563	06/21/2018	06/21/18 22:12	U
Vinyl chloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:12	U
Surrogate: 1,2-Dichloroethane-d4	*102 %*	*58 - 144*		B8F0563	06/21/2018	*06/21/18 22:12*	
Surrogate: 4-Bromofluorobenzene	*88.1 %*	*60 - 137*		B8F0563	06/21/2018	*06/21/18 22:12*	
Surrogate: Dibromofluoromethane	*101 %*	*70 - 131*		B8F0563	06/21/2018	*06/21/18 22:12*	
Surrogate: Toluene-d8	*94.6 %*	*79 - 131*		B8F0563	06/21/2018	*06/21/18 22:12*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-6-0.5-1.5
Lab ID: 1802237-26

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:53	D1, U
Arsenic	**1400**	1000	20	B8F0665	06/26/2018	06/28/18 12:53	D1
Barium	**51000**	1000	20	B8F0665	06/26/2018	06/28/18 12:53	D1
Beryllium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:53	D1, U
Cadmium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:53	D1, U
Chromium	**8200**	2000	20	B8F0665	06/26/2018	06/28/18 12:53	D1
Cobalt	**3700**	1000	20	B8F0665	06/26/2018	06/28/18 12:53	D1
Copper	**8000**	1000	20	B8F0665	06/26/2018	06/28/18 12:53	D1
Lead	**2300**	1000	20	B8F0665	06/26/2018	06/28/18 12:53	D1
Molybdenum	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:53	D1, U
Nickel	**3000**	1000	20	B8F0665	06/26/2018	06/28/18 12:53	D1
Selenium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:53	D1, U
Silver	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:53	D1, U
Thallium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:53	D1, U
Vanadium	**44000**	2000	20	B8F0665	06/26/2018	06/28/18 12:53	D1
Zinc	**19000**	5000	20	B8F0665	06/26/2018	06/28/18 12:53	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0639	06/25/2018	06/26/18 11:41	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:19	U
C7	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:19	U
C8	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:19	U
C9	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:19	U
C10	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:19	U
C11	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:19	U
C12	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:19	U
Surrogate: 4-Bromofluorobenzene	*92.7 %*	*57 - 144*		B8F0488	06/20/2018	*06/20/18 16:19*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-6-0.5-1.5

Lab ID: 1802237-26

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C14	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C15	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C16	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C17	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C18	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C19	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C20	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C21	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C22	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C23	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C24	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C25	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C26	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C27	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C28	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C29	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C30	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C31	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C32	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C33	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C34	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C35	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C36	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C37	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C38	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C39	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
C40	ND	10	1	B8F0604	06/22/2018	06/24/18 19:05	U
Surrogate: p-Terphenyl	*112 %*	*58 - 172*		B8F0604	06/22/2018	*06/24/18 19:05*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-6-0.5-1.5
Lab ID: 1802237-26

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0617	06/23/2018	06/24/18 22:08	U
Aroclor 1221	ND	16	1	B8F0617	06/23/2018	06/24/18 22:08	U
Aroclor 1232	ND	16	1	B8F0617	06/23/2018	06/24/18 22:08	U
Aroclor 1242	ND	16	1	B8F0617	06/23/2018	06/24/18 22:08	U
Aroclor 1248	ND	16	1	B8F0617	06/23/2018	06/24/18 22:08	U
Aroclor 1254	ND	16	1	B8F0617	06/23/2018	06/24/18 22:08	U
Aroclor 1260	ND	16	1	B8F0617	06/23/2018	06/24/18 22:08	U
Aroclor 1262	ND	16	1	B8F0617	06/23/2018	06/24/18 22:08	U
Aroclor 1268	ND	16	1	B8F0617	06/23/2018	06/24/18 22:08	U
Surrogate: Decachlorobiphenyl	*86.5 %*	*14 - 109*		B8F0617	06/23/2018	*06/24/18 22:08*	
Surrogate: Tetrachloro-m-xylene	*98.2 %*	*18 - 114*		B8F0617	06/23/2018	*06/24/18 22:08*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
1,1-Dichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
1,1-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
1,1-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0563	06/21/2018	06/21/18 22:30	U
1,2-Dibromoethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
1,2-Dichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
1,2-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
1,3-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
2,2-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-6-0.5-1.5
Lab ID: 1802237-26

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
4-Chlorotoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
4-Isopropyltoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Benzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Bromobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Bromochloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Bromodichloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Bromoform	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Bromomethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Carbon disulfide	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Carbon tetrachloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Chlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Chloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Chloroform	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Chloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
cis-1,3-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Di-isopropyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Dibromochloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Dibromomethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Dichlorodifluoromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Ethyl Acetate	ND	50	1	B8F0563	06/21/2018	06/21/18 22:30	U
Ethyl Ether	ND	50	1	B8F0563	06/21/2018	06/21/18 22:30	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Ethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Freon-113	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Hexachlorobutadiene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Isopropylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
m,p-Xylene	ND	10	1	B8F0563	06/21/2018	06/21/18 22:30	U
Methylene chloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
MTBE	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
n-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
n-Propylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Naphthalene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
o-Xylene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
sec-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Styrene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-6-0.5-1.5
Lab ID: 1802237-26

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
tert-Butanol	ND	100	1	B8F0563	06/21/2018	06/21/18 22:30	U
tert-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Tetrachloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Toluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Trichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Trichlorofluoromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Vinyl acetate	ND	50	1	B8F0563	06/21/2018	06/21/18 22:30	U
Vinyl chloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:30	U
Surrogate: 1,2-Dichloroethane-d4	*97.3 %*	*58 - 144*		B8F0563	06/21/2018	*06/21/18 22:30*	
Surrogate: 4-Bromofluorobenzene	*88.4 %*	*60 - 137*		B8F0563	06/21/2018	*06/21/18 22:30*	
Surrogate: Dibromofluoromethane	*102 %*	*70 - 131*		B8F0563	06/21/2018	*06/21/18 22:30*	
Surrogate: Toluene-d8	*97.2 %*	*79 - 131*		B8F0563	06/21/2018	*06/21/18 22:30*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-6-1.5-2
Lab ID: 1802237-27

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:59	D1, U
Arsenic	**1600**	1000	20	B8F0665	06/26/2018	06/28/18 12:59	D1
Barium	**86000**	1000	20	B8F0665	06/26/2018	06/28/18 12:59	D1
Beryllium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:59	D1, U
Cadmium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:59	D1, U
Chromium	**8600**	2000	20	B8F0665	06/26/2018	06/28/18 12:59	D1
Cobalt	**5300**	1000	20	B8F0665	06/26/2018	06/28/18 12:59	D1
Copper	**13000**	1000	20	B8F0665	06/26/2018	06/28/18 12:59	D1
Lead	**2800**	1000	20	B8F0665	06/26/2018	06/28/18 12:59	D1
Molybdenum	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:59	D1, U
Nickel	**5000**	1000	20	B8F0665	06/26/2018	06/28/18 12:59	D1
Selenium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:59	D1, U
Silver	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:59	D1, U
Thallium	ND	1000	20	B8F0665	06/26/2018	06/28/18 12:59	D1, U
Vanadium	**40000**	2000	20	B8F0665	06/26/2018	06/28/18 12:59	D1
Zinc	**25000**	5000	20	B8F0665	06/26/2018	06/28/18 12:59	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0639	06/25/2018	06/26/18 11:46	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:38	U
C7	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:38	U
C8	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:38	U
C9	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:38	U
C10	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:38	U
C11	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:38	U
C12	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:38	U
Surrogate: 4-Bromofluorobenzene	*99.1 %*	*57 - 144*		B8F0488	06/20/2018	*06/20/18 16:38*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-6-1.5-2

Lab ID: 1802237-27

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C14	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C15	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C16	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C17	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C18	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C19	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C20	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C21	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C22	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C23	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C24	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C25	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C26	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C27	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C28	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C29	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C30	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C31	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C32	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C33	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C34	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C35	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C36	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C37	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C38	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C39	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
C40	ND	10	1	B8F0604	06/22/2018	06/24/18 19:22	U
Surrogate: p-Terphenyl	*71.3 %*	*58 - 172*		B8F0604	06/22/2018	*06/24/18 19:22*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-6-1.5-2

Lab ID: 1802237-27

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0617	06/23/2018	06/24/18 22:26	U
Aroclor 1221	ND	16	1	B8F0617	06/23/2018	06/24/18 22:26	U
Aroclor 1232	ND	16	1	B8F0617	06/23/2018	06/24/18 22:26	U
Aroclor 1242	ND	16	1	B8F0617	06/23/2018	06/24/18 22:26	U
Aroclor 1248	ND	16	1	B8F0617	06/23/2018	06/24/18 22:26	U
Aroclor 1254	ND	16	1	B8F0617	06/23/2018	06/24/18 22:26	U
Aroclor 1260	ND	16	1	B8F0617	06/23/2018	06/24/18 22:26	U
Aroclor 1262	ND	16	1	B8F0617	06/23/2018	06/24/18 22:26	U
Aroclor 1268	ND	16	1	B8F0617	06/23/2018	06/24/18 22:26	U
Surrogate: Decachlorobiphenyl	*83.0 %*	*14 - 109*		B8F0617	06/23/2018	*06/24/18 22:26*	
Surrogate: Tetrachloro-m-xylene	*97.8 %*	*18 - 114*		B8F0617	06/23/2018	*06/24/18 22:26*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
1,1-Dichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
1,1-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
1,1-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0563	06/21/2018	06/21/18 22:49	U
1,2-Dibromoethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
1,2-Dichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
1,2-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
1,3-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
2,2-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-6-1.5-2

Lab ID: 1802237-27

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
4-Chlorotoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
4-Isopropyltoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Benzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Bromobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Bromochloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Bromodichloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Bromoform	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Bromomethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Carbon disulfide	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Carbon tetrachloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Chlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Chloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Chloroform	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Chloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
cis-1,3-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Di-isopropyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Dibromochloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Dibromomethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Dichlorodifluoromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Ethyl Acetate	ND	50	1	B8F0563	06/21/2018	06/21/18 22:49	U
Ethyl Ether	ND	50	1	B8F0563	06/21/2018	06/21/18 22:49	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Ethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Freon-113	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Hexachlorobutadiene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Isopropylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
m,p-Xylene	ND	10	1	B8F0563	06/21/2018	06/21/18 22:49	U
Methylene chloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
MTBE	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
n-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
n-Propylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Naphthalene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
o-Xylene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
sec-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Styrene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-6-1.5-2

Lab ID: 1802237-27

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
tert-Butanol	ND	100	1	B8F0563	06/21/2018	06/21/18 22:49	U
tert-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Tetrachloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Toluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Trichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Trichlorofluoromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Vinyl acetate	ND	50	1	B8F0563	06/21/2018	06/21/18 22:49	U
Vinyl chloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 22:49	U
Surrogate: 1,2-Dichloroethane-d4	*107 %*	*58 - 144*		B8F0563	06/21/2018	*06/21/18 22:49*	
Surrogate: 4-Bromofluorobenzene	*90.6 %*	*60 - 137*		B8F0563	06/21/2018	*06/21/18 22:49*	
Surrogate: Dibromofluoromethane	*105 %*	*70 - 131*		B8F0563	06/21/2018	*06/21/18 22:49*	
Surrogate: Toluene-d8	*97.6 %*	*79 - 131*		B8F0563	06/21/2018	*06/21/18 22:49*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-12-0-5
Lab ID: 1802237-28

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:01	D1, U
Arsenic	**1700**	1000	20	B8F0665	06/26/2018	06/28/18 13:01	D1
Barium	**72000**	1000	20	B8F0665	06/26/2018	06/28/18 13:01	D1
Beryllium	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:01	D1, U
Cadmium	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:01	D1, U
Chromium	**8600**	2000	20	B8F0665	06/26/2018	06/28/18 13:01	D1
Cobalt	**6700**	1000	20	B8F0665	06/26/2018	06/28/18 13:01	D1
Copper	**11000**	1000	20	B8F0665	06/26/2018	06/28/18 13:01	D1
Lead	**5700**	1000	20	B8F0665	06/26/2018	06/28/18 13:01	D1
Molybdenum	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:01	D1, U
Nickel	**4900**	1000	20	B8F0665	06/26/2018	06/28/18 13:01	D1
Selenium	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:01	D1, U
Silver	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:01	D1, U
Thallium	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:01	D1, U
Vanadium	**39000**	2000	20	B8F0665	06/26/2018	06/28/18 13:01	D1
Zinc	**24000**	5000	20	B8F0665	06/26/2018	06/28/18 13:01	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0639	06/25/2018	06/26/18 11:48	

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:02	U
4,4´-DDE	ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:02	U
4,4´-DDT	ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:02	U
Aldrin	ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:02	U
alpha-BHC	ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:02	U
alpha-Chlordane	ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:02	U
beta-BHC	ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:02	U
Chlordane	ND	8.5	1	B8F0705	06/26/2018	06/27/18 11:02	U
delta-BHC	ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:02	U
Dieldrin	ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:02	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-12-0-5
Lab ID: 1802237-28

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Endosulfan I		ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:02	U
Endosulfan II		ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:02	U
Endosulfan sulfate		ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:02	U
Endrin		ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:02	U
Endrin aldehyde		ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:02	U
Endrin ketone		ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:02	U
gamma-BHC		ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:02	U
gamma-Chlordane		ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:02	U
Heptachlor		ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:02	U
Heptachlor epoxide		ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:02	U
Methoxychlor		ND	5.0	1	B8F0705	06/26/2018	06/27/18 11:02	U
Toxaphene		ND	50	1	B8F0705	06/26/2018	06/27/18 11:02	U
Surrogate: Decachlorobiphenyl	*90.9 %*		*15 - 100*		B8F0705	06/26/2018	*06/27/18 11:02*	
Surrogate: Tetrachloro-m-xylene	*65.2 %*		*16 - 100*		B8F0705	06/26/2018	*06/27/18 11:02*	

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016		ND	16	1	B8F0705	06/26/2018	06/27/18 11:12	U
Aroclor 1221		ND	16	1	B8F0705	06/26/2018	06/27/18 11:12	U
Aroclor 1232		ND	16	1	B8F0705	06/26/2018	06/27/18 11:12	U
Aroclor 1242		ND	16	1	B8F0705	06/26/2018	06/27/18 11:12	U
Aroclor 1248		ND	16	1	B8F0705	06/26/2018	06/27/18 11:12	U
Aroclor 1254		ND	16	1	B8F0705	06/26/2018	06/27/18 11:12	U
Aroclor 1260		ND	16	1	B8F0705	06/26/2018	06/27/18 11:12	U
Aroclor 1262		ND	16	1	B8F0705	06/26/2018	06/27/18 11:12	U
Aroclor 1268		ND	16	1	B8F0705	06/26/2018	06/27/18 11:12	U
Surrogate: Decachlorobiphenyl	*80.2 %*		*14 - 109*		B8F0705	06/26/2018	*06/27/18 11:12*	
Surrogate: Tetrachloro-m-xylene	*92.9 %*		*18 - 114*		B8F0705	06/26/2018	*06/27/18 11:12*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-12-5-8
Lab ID: 1802237-29

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:03	D1, U
Arsenic	**2100**	1000	20	B8F0665	06/26/2018	06/28/18 13:03	D1
Barium	**49000**	1000	20	B8F0665	06/26/2018	06/28/18 13:03	D1
Beryllium	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:03	D1, U
Cadmium	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:03	D1, U
Chromium	**6700**	2000	20	B8F0665	06/26/2018	06/28/18 13:03	D1
Cobalt	**3600**	1000	20	B8F0665	06/26/2018	06/28/18 13:03	D1
Copper	**7100**	1000	20	B8F0665	06/26/2018	06/28/18 13:03	D1
Lead	**2200**	1000	20	B8F0665	06/26/2018	06/28/18 13:03	D1
Molybdenum	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:03	D1, U
Nickel	**3000**	1000	20	B8F0665	06/26/2018	06/28/18 13:03	D1
Selenium	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:03	D1, U
Silver	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:03	D1, U
Thallium	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:03	D1, U
Vanadium	**31000**	2000	20	B8F0665	06/26/2018	06/28/18 13:03	D1
Zinc	**18000**	5000	20	B8F0665	06/26/2018	06/28/18 13:03	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0639	06/25/2018	06/26/18 11:50	

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:12	U
4,4´-DDE	ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:12	U
4,4´-DDT	ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:12	U
Aldrin	ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:12	U
alpha-BHC	ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:12	U
alpha-Chlordane	ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:12	U
beta-BHC	ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:12	U
Chlordane	ND	8.5	1	B8F0705	06/26/2018	06/27/18 11:12	U
delta-BHC	ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:12	U
Dieldrin	ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:12	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-12-5-8
Lab ID: 1802237-29

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Endosulfan I		ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:12	U
Endosulfan II		ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:12	U
Endosulfan sulfate		ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:12	U
Endrin		ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:12	U
Endrin aldehyde		ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:12	U
Endrin ketone		ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:12	U
gamma-BHC		ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:12	U
gamma-Chlordane		ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:12	U
Heptachlor		ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:12	U
Heptachlor epoxide		ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:12	U
Methoxychlor		ND	5.0	1	B8F0705	06/26/2018	06/27/18 11:12	U
Toxaphene		ND	50	1	B8F0705	06/26/2018	06/27/18 11:12	U
Surrogate: Decachlorobiphenyl [2C]	*97.0 %*		*15 - 100*		B8F0705	06/26/2018	*06/27/18 11:12*	
Surrogate: Tetrachloro-m-xylene	*72.1 %*		*16 - 100*		B8F0705	06/26/2018	*06/27/18 11:12*	

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016		ND	16	1	B8F0705	06/26/2018	06/27/18 17:03	U
Aroclor 1221		ND	16	1	B8F0705	06/26/2018	06/27/18 17:03	U
Aroclor 1232		ND	16	1	B8F0705	06/26/2018	06/27/18 17:03	U
Aroclor 1242		ND	16	1	B8F0705	06/26/2018	06/27/18 17:03	U
Aroclor 1248		ND	16	1	B8F0705	06/26/2018	06/27/18 17:03	U
Aroclor 1254		ND	16	1	B8F0705	06/26/2018	06/27/18 17:03	U
Aroclor 1260		ND	16	1	B8F0705	06/26/2018	06/27/18 17:03	U
Aroclor 1262		ND	16	1	B8F0705	06/26/2018	06/27/18 17:03	U
Aroclor 1268		ND	16	1	B8F0705	06/26/2018	06/27/18 17:03	U
Surrogate: Decachlorobiphenyl	*84.1 %*		*14 - 109*		B8F0705	06/26/2018	*06/27/18 17:03*	
Surrogate: Tetrachloro-m-xylene	*96.0 %*		*18 - 114*		B8F0705	06/26/2018	*06/27/18 17:03*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-12-8-10
Lab ID: 1802237-30

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:05	D1, U
Arsenic	**3300**	1000	20	B8F0665	06/26/2018	06/28/18 13:05	D1
Barium	**83000**	1000	20	B8F0665	06/26/2018	06/28/18 13:05	D1
Beryllium	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:05	D1, U
Cadmium	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:05	D1, U
Chromium	**8500**	2000	20	B8F0665	06/26/2018	06/28/18 13:05	D1
Cobalt	**5300**	1000	20	B8F0665	06/26/2018	06/28/18 13:05	D1
Copper	**10000**	1000	20	B8F0665	06/26/2018	06/28/18 13:05	D1
Lead	**3200**	1000	20	B8F0665	06/26/2018	06/28/18 13:05	D1
Molybdenum	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:05	D1, U
Nickel	**4400**	1000	20	B8F0665	06/26/2018	06/28/18 13:05	D1
Selenium	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:05	D1, U
Silver	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:05	D1, U
Thallium	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:05	D1, U
Vanadium	**43000**	2000	20	B8F0665	06/26/2018	06/28/18 13:05	D1
Zinc	**27000**	5000	20	B8F0665	06/26/2018	06/28/18 13:05	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0639	06/25/2018	06/26/18 11:52	

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:23	U
4,4´-DDE	ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:23	U
4,4´-DDT	ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:23	U
Aldrin	ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:23	U
alpha-BHC	ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:23	U
alpha-Chlordane	ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:23	U
beta-BHC	ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:23	U
Chlordane	ND	8.5	1	B8F0705	06/26/2018	06/27/18 11:23	U
delta-BHC	ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:23	U
Dieldrin	ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:23	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-12-8-10
Lab ID: 1802237-30

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Endosulfan I		ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:23	U
Endosulfan II		ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:23	U
Endosulfan sulfate		ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:23	U
Endrin		ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:23	U
Endrin aldehyde		ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:23	U
Endrin ketone		ND	2.0	1	B8F0705	06/26/2018	06/27/18 11:23	U
gamma-BHC		ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:23	U
gamma-Chlordane		ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:23	U
Heptachlor		ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:23	U
Heptachlor epoxide		ND	1.0	1	B8F0705	06/26/2018	06/27/18 11:23	U
Methoxychlor		ND	5.0	1	B8F0705	06/26/2018	06/27/18 11:23	U
Toxaphene		ND	50	1	B8F0705	06/26/2018	06/27/18 11:23	U
Surrogate: Decachlorobiphenyl	*99.8 %*		*15 - 100*		B8F0705	06/26/2018	*06/27/18 11:23*	
Surrogate: Tetrachloro-m-xylene	*68.9 %*		*16 - 100*		B8F0705	06/26/2018	*06/27/18 11:23*	

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016		ND	16	1	B8F0705	06/26/2018	06/27/18 17:21	U
Aroclor 1221		ND	16	1	B8F0705	06/26/2018	06/27/18 17:21	U
Aroclor 1232		ND	16	1	B8F0705	06/26/2018	06/27/18 17:21	U
Aroclor 1242		ND	16	1	B8F0705	06/26/2018	06/27/18 17:21	U
Aroclor 1248		ND	16	1	B8F0705	06/26/2018	06/27/18 17:21	U
Aroclor 1254		ND	16	1	B8F0705	06/26/2018	06/27/18 17:21	U
Aroclor 1260		ND	16	1	B8F0705	06/26/2018	06/27/18 17:21	U
Aroclor 1262		ND	16	1	B8F0705	06/26/2018	06/27/18 17:21	U
Aroclor 1268		ND	16	1	B8F0705	06/26/2018	06/27/18 17:21	U
Surrogate: Decachlorobiphenyl	*84.9 %*		*14 - 109*		B8F0705	06/26/2018	*06/27/18 17:21*	
Surrogate: Tetrachloro-m-xylene	*91.1 %*		*18 - 114*		B8F0705	06/26/2018	*06/27/18 17:21*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-13-0-4
Lab ID: 1802237-31

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:06	D1, U
Arsenic	**1500**	1000	20	B8F0665	06/26/2018	06/28/18 13:06	D1
Barium	**42000**	1000	20	B8F0665	06/26/2018	06/28/18 13:06	D1
Beryllium	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:06	D1, U
Cadmium	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:06	D1, U
Chromium	**5100**	2000	20	B8F0665	06/26/2018	06/28/18 13:06	D1
Cobalt	**2600**	1000	20	B8F0665	06/26/2018	06/28/18 13:06	D1
Copper	**4200**	1000	20	B8F0665	06/26/2018	06/28/18 13:06	D1
Lead	**2700**	1000	20	B8F0665	06/26/2018	06/28/18 13:06	D1
Molybdenum	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:06	D1, U
Nickel	**2000**	1000	20	B8F0665	06/26/2018	06/28/18 13:06	D1
Selenium	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:06	D1, U
Silver	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:06	D1, U
Thallium	ND	1000	20	B8F0665	06/26/2018	06/28/18 13:06	D1, U
Vanadium	**31000**	2000	20	B8F0665	06/26/2018	06/28/18 13:06	D1
Zinc	**14000**	5000	20	B8F0665	06/26/2018	06/28/18 13:06	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0639	06/25/2018	06/26/18 11:54	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:56	U
C7	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:56	U
C8	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:56	U
C9	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:56	U
C10	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:56	U
C11	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:56	U
C12	ND	1.0	1	B8F0488	06/20/2018	06/20/18 16:56	U
Surrogate: 4-Bromofluorobenzene	*90.9 %*	*57 - 144*		B8F0488	06/20/2018	*06/20/18 16:56*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-13-0-4

Lab ID: 1802237-31

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C14	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C15	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C16	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C17	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C18	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C19	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C20	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C21	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C22	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C23	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C24	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C25	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C26	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C27	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C28	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C29	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C30	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C31	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C32	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C33	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C34	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C35	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C36	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C37	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C38	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C39	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
C40	ND	10	1	B8F0604	06/22/2018	06/24/18 19:38	U
Surrogate: p-Terphenyl	*117 %*	*58 - 172*		B8F0604	06/22/2018	*06/24/18 19:38*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-13-0-4
Lab ID: 1802237-31

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0617	06/23/2018	06/24/18 22:45	U
Aroclor 1221	ND	16	1	B8F0617	06/23/2018	06/24/18 22:45	U
Aroclor 1232	ND	16	1	B8F0617	06/23/2018	06/24/18 22:45	U
Aroclor 1242	ND	16	1	B8F0617	06/23/2018	06/24/18 22:45	U
Aroclor 1248	ND	16	1	B8F0617	06/23/2018	06/24/18 22:45	U
Aroclor 1254	ND	16	1	B8F0617	06/23/2018	06/24/18 22:45	U
Aroclor 1260	ND	16	1	B8F0617	06/23/2018	06/24/18 22:45	U
Aroclor 1262	ND	16	1	B8F0617	06/23/2018	06/24/18 22:45	U
Aroclor 1268	ND	16	1	B8F0617	06/23/2018	06/24/18 22:45	U
Surrogate: Decachlorobiphenyl	*72.6 %*	*14 - 109*		B8F0617	06/23/2018	*06/24/18 22:45*	
Surrogate: Tetrachloro-m-xylene	*83.1 %*	*18 - 114*		B8F0617	06/23/2018	*06/24/18 22:45*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
1,1-Dichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
1,1-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
1,1-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0563	06/21/2018	06/21/18 23:08	U
1,2-Dibromoethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
1,2-Dichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
1,2-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
1,3-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
2,2-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-13-0-4

Lab ID: 1802237-31

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
4-Chlorotoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
4-Isopropyltoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Benzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Bromobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Bromochloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Bromodichloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Bromoform	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Bromomethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Carbon disulfide	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Carbon tetrachloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Chlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Chloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Chloroform	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Chloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
cis-1,3-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Di-isopropyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Dibromochloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Dibromomethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Dichlorodifluoromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Ethyl Acetate	ND	50	1	B8F0563	06/21/2018	06/21/18 23:08	U
Ethyl Ether	ND	50	1	B8F0563	06/21/2018	06/21/18 23:08	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Ethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Freon-113	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Hexachlorobutadiene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Isopropylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
m,p-Xylene	ND	10	1	B8F0563	06/21/2018	06/21/18 23:08	U
Methylene chloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
MTBE	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
n-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
n-Propylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Naphthalene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
o-Xylene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
sec-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Styrene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-13-0-4

Lab ID: 1802237-31

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
tert-Butanol	ND	100	1	B8F0563	06/21/2018	06/21/18 23:08	U
tert-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Tetrachloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Toluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Trichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Trichlorofluoromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Vinyl acetate	ND	50	1	B8F0563	06/21/2018	06/21/18 23:08	U
Vinyl chloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:08	U
Surrogate: 1,2-Dichloroethane-d4	*94.2 %*	*58 - 144*		B8F0563	06/21/2018	*06/21/18 23:08*	
Surrogate: 4-Bromofluorobenzene	*87.3 %*	*60 - 137*		B8F0563	06/21/2018	*06/21/18 23:08*	
Surrogate: Dibromofluoromethane	*98.9 %*	*70 - 131*		B8F0563	06/21/2018	*06/21/18 23:08*	
Surrogate: Toluene-d8	*93.0 %*	*79 - 131*		B8F0563	06/21/2018	*06/21/18 23:08*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-13-4-5
Lab ID: 1802237-32

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:12	D1, U
Arsenic	**2800**	1000	20	B8F0666	06/26/2018	06/28/18 13:12	D1
Barium	**73000**	1000	20	B8F0666	06/26/2018	06/28/18 13:12	D1
Beryllium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:12	D1, U
Cadmium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:12	D1, U
Chromium	**9200**	2000	20	B8F0666	06/26/2018	06/28/18 13:12	D1
Cobalt	**5500**	1000	20	B8F0666	06/26/2018	06/28/18 13:12	D1
Copper	**13000**	1000	20	B8F0666	06/26/2018	06/28/18 13:12	D1
Lead	**2600**	1000	20	B8F0666	06/26/2018	06/28/18 13:12	D1
Molybdenum	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:12	D1, U
Nickel	**4700**	1000	20	B8F0666	06/26/2018	06/28/18 13:12	D1
Selenium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:12	D1, U
Silver	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:12	D1, U
Thallium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:12	D1, U
Vanadium	**41000**	2000	20	B8F0666	06/26/2018	06/28/18 13:12	D1
Zinc	**26000**	5000	20	B8F0666	06/26/2018	06/28/18 13:12	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0640	06/25/2018	06/26/18 11:59	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0488	06/20/2018	06/20/18 17:15	U
C7	ND	1.0	1	B8F0488	06/20/2018	06/20/18 17:15	U
C8	ND	1.0	1	B8F0488	06/20/2018	06/20/18 17:15	U
C9	ND	1.0	1	B8F0488	06/20/2018	06/20/18 17:15	U
C10	ND	1.0	1	B8F0488	06/20/2018	06/20/18 17:15	U
C11	ND	1.0	1	B8F0488	06/20/2018	06/20/18 17:15	U
C12	ND	1.0	1	B8F0488	06/20/2018	06/20/18 17:15	U
Surrogate: 4-Bromofluorobenzene	*97.2 %*	*57 - 144*		B8F0488	06/20/2018	*06/20/18 17:15*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-13-4-5

Lab ID: 1802237-32

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C14	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C15	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C16	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C17	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C18	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C19	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C20	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C21	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C22	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C23	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C24	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C25	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C26	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C27	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C28	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C29	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C30	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C31	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C32	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C33	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C34	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C35	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C36	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C37	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C38	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C39	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
C40	ND	10	1	B8F0604	06/22/2018	06/24/18 19:55	U
Surrogate: p-Terphenyl	*84.2 %*	*58 - 172*		B8F0604	06/22/2018	*06/24/18 19:55*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-13-4-5
Lab ID: 1802237-32

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0617	06/23/2018	06/24/18 23:04	U
Aroclor 1221	ND	16	1	B8F0617	06/23/2018	06/24/18 23:04	U
Aroclor 1232	ND	16	1	B8F0617	06/23/2018	06/24/18 23:04	U
Aroclor 1242	ND	16	1	B8F0617	06/23/2018	06/24/18 23:04	U
Aroclor 1248	ND	16	1	B8F0617	06/23/2018	06/24/18 23:04	U
Aroclor 1254	ND	16	1	B8F0617	06/23/2018	06/24/18 23:04	U
Aroclor 1260	ND	16	1	B8F0617	06/23/2018	06/24/18 23:04	U
Aroclor 1262	ND	16	1	B8F0617	06/23/2018	06/24/18 23:04	U
Aroclor 1268	ND	16	1	B8F0617	06/23/2018	06/24/18 23:04	U
Surrogate: Decachlorobiphenyl	*81.4 %*	*14 - 109*		B8F0617	06/23/2018	*06/24/18 23:04*	
Surrogate: Tetrachloro-m-xylene	*91.2 %*	*18 - 114*		B8F0617	06/23/2018	*06/24/18 23:04*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
1,1-Dichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
1,1-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
1,1-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0563	06/21/2018	06/21/18 23:27	U
1,2-Dibromoethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
1,2-Dichloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
1,2-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
1,3-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
2,2-Dichloropropane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-13-4-5

Lab ID: 1802237-32

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
4-Chlorotoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
4-Isopropyltoluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Benzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Bromobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Bromochloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Bromodichloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Bromoform	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Bromomethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Carbon disulfide	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Carbon tetrachloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Chlorobenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Chloroethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Chloroform	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Chloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
cis-1,3-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Di-isopropyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Dibromochloromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Dibromomethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Dichlorodifluoromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Ethyl Acetate	ND	50	1	B8F0563	06/21/2018	06/21/18 23:27	U
Ethyl Ether	ND	50	1	B8F0563	06/21/2018	06/21/18 23:27	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Ethylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Freon-113	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Hexachlorobutadiene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Isopropylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
m,p-Xylene	ND	10	1	B8F0563	06/21/2018	06/21/18 23:27	U
Methylene chloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
MTBE	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
n-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
n-Propylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Naphthalene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
o-Xylene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
sec-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Styrene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-13-4-5
Lab ID: 1802237-32

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
tert-Butanol	ND	100	1	B8F0563	06/21/2018	06/21/18 23:27	U
tert-Butylbenzene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Tetrachloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Toluene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Trichloroethene	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Trichlorofluoromethane	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Vinyl acetate	ND	50	1	B8F0563	06/21/2018	06/21/18 23:27	U
Vinyl chloride	ND	5.0	1	B8F0563	06/21/2018	06/21/18 23:27	U
Surrogate: 1,2-Dichloroethane-d4	*97.5 %*	*58 - 144*		B8F0563	06/21/2018	*06/21/18 23:27*	
Surrogate: 4-Bromofluorobenzene	*88.5 %*	*60 - 137*		B8F0563	06/21/2018	*06/21/18 23:27*	
Surrogate: Dibromofluoromethane	*101 %*	*70 - 131*		B8F0563	06/21/2018	*06/21/18 23:27*	
Surrogate: Toluene-d8	*95.3 %*	*79 - 131*		B8F0563	06/21/2018	*06/21/18 23:27*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID TP-14-0-8
Lab ID: 1802237-33

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:23	D1, U
Arsenic	**2300**	1000	20	B8F0666	06/26/2018	06/28/18 13:23	D1
Barium	**98000**	1000	20	B8F0666	06/26/2018	06/28/18 13:23	D1
Beryllium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:23	D1, U
Cadmium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:23	D1, U
Chromium	**8700**	2000	20	B8F0666	06/26/2018	06/28/18 13:23	D1
Cobalt	**5200**	1000	20	B8F0666	06/26/2018	06/28/18 13:23	D1
Copper	**12000**	1000	20	B8F0666	06/26/2018	06/28/18 13:23	D1
Lead	**3100**	1000	20	B8F0666	06/26/2018	06/28/18 13:23	D1
Molybdenum	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:23	D1, U
Nickel	**4700**	1000	20	B8F0666	06/26/2018	06/28/18 13:23	D1
Selenium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:23	D1, U
Silver	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:23	D1, U
Thallium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:23	D1, U
Vanadium	**38000**	2000	20	B8F0666	06/26/2018	06/28/18 13:23	D1
Zinc	**30000**	5000	20	B8F0666	06/26/2018	06/28/18 13:23	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0640	06/25/2018	06/26/18 12:11	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID ENVCOMP-4
Lab ID: 1802237-34

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:25	D1, U
Arsenic	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:25	D1, U
Barium	**10000**	1000	20	B8F0666	06/26/2018	06/28/18 13:25	D1
Beryllium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:25	D1, U
Cadmium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:25	D1, U
Chromium	ND	2000	20	B8F0666	06/26/2018	06/28/18 13:25	D1, U
Cobalt	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:25	D1, U
Copper	**1600**	1000	20	B8F0666	06/26/2018	06/28/18 13:25	D1
Lead	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:25	D1, U
Molybdenum	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:25	D1, U
Nickel	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:25	D1, U
Selenium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:25	D1, U
Silver	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:25	D1, U
Thallium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:25	D1, U
Vanadium	**11000**	2000	20	B8F0666	06/26/2018	06/28/18 13:25	D1
Zinc	**6500**	5000	20	B8F0666	06/26/2018	06/28/18 13:25	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0640	06/25/2018	06/26/18 12:13	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID ENVCOMP-4-DUP
Lab ID: 1802237-35

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:27	D1, U
Arsenic	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:27	D1, U
Barium	**7500**	1000	20	B8F0666	06/26/2018	06/28/18 13:27	D1
Beryllium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:27	D1, U
Cadmium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:27	D1, U
Chromium	**2100**	2000	20	B8F0666	06/26/2018	06/28/18 13:27	D1
Cobalt	**1100**	1000	20	B8F0666	06/26/2018	06/28/18 13:27	D1
Copper	**1600**	1000	20	B8F0666	06/26/2018	06/28/18 13:27	D1
Lead	**1100**	1000	20	B8F0666	06/26/2018	06/28/18 13:27	D1
Molybdenum	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:27	D1, U
Nickel	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:27	D1, U
Selenium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:27	D1, U
Silver	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:27	D1, U
Thallium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:27	D1, U
Vanadium	**10000**	2000	20	B8F0666	06/26/2018	06/28/18 13:27	D1
Zinc	**6300**	5000	20	B8F0666	06/26/2018	06/28/18 13:27	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0640	06/25/2018	06/26/18 12:14	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID ENVCOMP-1
Lab ID: 1802237-36

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:29	D1, U
Arsenic	**3200**	1000	20	B8F0666	06/26/2018	06/28/18 13:29	D1
Barium	**140000**	1000	20	B8F0666	06/26/2018	06/28/18 13:29	D1
Beryllium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:29	D1, U
Cadmium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:29	D1, U
Chromium	**12000**	2000	20	B8F0666	06/26/2018	06/28/18 13:29	D1
Cobalt	**9700**	1000	20	B8F0666	06/26/2018	06/28/18 13:29	D1
Copper	**21000**	1000	20	B8F0666	06/26/2018	06/28/18 13:29	D1
Lead	**4200**	1000	20	B8F0666	06/26/2018	06/28/18 13:29	D1
Molybdenum	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:29	D1, U
Nickel	**7100**	1000	20	B8F0666	06/26/2018	06/28/18 13:29	D1
Selenium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:29	D1, U
Silver	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:29	D1, U
Thallium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:29	D1, U
Vanadium	**49000**	2000	20	B8F0666	06/26/2018	06/28/18 13:29	D1
Zinc	**40000**	5000	20	B8F0666	06/26/2018	06/28/18 13:29	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0640	06/25/2018	06/26/18 12:16	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID ENVCOMP-2
Lab ID: 1802237-37

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:30	D1, U
Arsenic	**4100**	1000	20	B8F0666	06/26/2018	06/28/18 13:30	D1
Barium	**63000**	1000	20	B8F0666	06/26/2018	06/28/18 13:30	D1
Beryllium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:30	D1, U
Cadmium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:30	D1, U
Chromium	**11000**	2000	20	B8F0666	06/26/2018	06/28/18 13:30	D1
Cobalt	**6600**	1000	20	B8F0666	06/26/2018	06/28/18 13:30	D1
Copper	**9500**	1000	20	B8F0666	06/26/2018	06/28/18 13:30	D1
Lead	**4200**	1000	20	B8F0666	06/26/2018	06/28/18 13:30	D1
Molybdenum	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:30	D1, U
Nickel	**5200**	1000	20	B8F0666	06/26/2018	06/28/18 13:30	D1
Selenium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:30	D1, U
Silver	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:30	D1, U
Thallium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:30	D1, U
Vanadium	**44000**	2000	20	B8F0666	06/26/2018	06/28/18 13:30	D1
Zinc	**28000**	5000	20	B8F0666	06/26/2018	06/28/18 13:30	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0640	06/25/2018	06/26/18 12:18	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID ENVCOMP-3
Lab ID: 1802237-38

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:32	D1, U
Arsenic	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:32	D1, U
Barium	**12000**	1000	20	B8F0666	06/26/2018	06/28/18 13:32	D1
Beryllium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:32	D1, U
Cadmium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:32	D1, U
Chromium	ND	2000	20	B8F0666	06/26/2018	06/28/18 13:32	D1, U
Cobalt	**1200**	1000	20	B8F0666	06/26/2018	06/28/18 13:32	D1
Copper	**4200**	1000	20	B8F0666	06/26/2018	06/28/18 13:32	D1
Lead	**7700**	1000	20	B8F0666	06/26/2018	06/28/18 13:32	D1
Molybdenum	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:32	D1, U
Nickel	**3300**	1000	20	B8F0666	06/26/2018	06/28/18 13:32	D1
Selenium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:32	D1, U
Silver	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:32	D1, U
Thallium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:32	D1, U
Vanadium	**7600**	2000	20	B8F0666	06/26/2018	06/28/18 13:32	D1
Zinc	**16000**	5000	20	B8F0666	06/26/2018	06/28/18 13:32	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0640	06/25/2018	06/26/18 12:20	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Client Sample ID ENVCOMP-3-DUP
Lab ID: 1802237-39

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:34	D1, U
Arsenic	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:34	D1, U
Barium	**13000**	1000	20	B8F0666	06/26/2018	06/28/18 13:34	D1
Beryllium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:34	D1, U
Cadmium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:34	D1, U
Chromium	ND	2000	20	B8F0666	06/26/2018	06/28/18 13:34	D1, U
Cobalt	**1200**	1000	20	B8F0666	06/26/2018	06/28/18 13:34	D1
Copper	**4400**	1000	20	B8F0666	06/26/2018	06/28/18 13:34	D1
Lead	**7400**	1000	20	B8F0666	06/26/2018	06/28/18 13:34	D1
Molybdenum	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:34	D1, U
Nickel	**3700**	1000	20	B8F0666	06/26/2018	06/28/18 13:34	D1
Selenium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:34	D1, U
Silver	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:34	D1, U
Thallium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:34	D1, U
Vanadium	**7400**	2000	20	B8F0666	06/26/2018	06/28/18 13:34	D1
Zinc	**17000**	5000	20	B8F0666	06/26/2018	06/28/18 13:34	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0640	06/25/2018	06/26/18 12:22	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

QUALITY CONTROL SECTION

Total Metals by ICP-MS EPA 6020 - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0662 - EPA 3010A MS_W										
Blank (B8F0662-BLK1)					Prepared: 6/26/2018 Analyzed: 6/26/2018					
Antimony	ND	0.50	0.06							U
Arsenic	ND	1.0	0.39							U
Barium	ND	1.0	0.14							U
Beryllium	ND	0.50	0.08							U
Cadmium	ND	0.50	0.14							U
Chromium	ND	0.50	0.09							U
Cobalt	ND	0.50	0.05							U
Copper	ND	1.0	0.10							U
Lead	ND	1.0	0.32							U
Molybdenum	ND	0.50	0.08							U
Nickel	ND	1.0	0.16							U
Selenium	ND	0.50	0.22							U
Silver	ND	0.50	0.08							U
Thallium	ND	0.50	0.14							U
Vanadium	ND	1.0	0.59							U
Zinc	ND	10	1.6							U
LCS (B8F0662-BS1)					Prepared: 6/26/2018 Analyzed: 6/26/2018					
Antimony	10.3938	0.50	0.06	10.0000		104	85 - 115			
Arsenic	9.77330	1.0	0.39	10.0000		97.7	85 - 115			
Barium	10.2504	1.0	0.14	10.0000		103	85 - 115			
Beryllium	9.82296	0.50	0.08	10.0000		98.2	85 - 115			
Cadmium	9.87712	0.50	0.14	10.0000		98.8	85 - 115			
Chromium	10.1319	0.50	0.09	10.0000		101	85 - 115			
Cobalt	9.79577	0.50	0.05	10.0000		98.0	85 - 115			
Copper	9.79152	1.0	0.10	10.0000		97.9	85 - 115			
Lead	9.98270	1.0	0.32	10.0000		99.8	85 - 115			
Molybdenum	9.74877	0.50	0.08	10.0000		97.5	85 - 115			
Nickel	9.73333	1.0	0.16	10.0000		97.3	85 - 115			
Selenium	9.96620	0.50	0.22	10.0000		99.7	85 - 115			
Silver	9.87298	0.50	0.08	10.0000		98.7	85 - 115			
Thallium	10.0743	0.50	0.14	10.0000		101	85 - 115			
Vanadium	10.5274	1.0	0.59	10.0000		105	85 - 115			
Zinc	97.4094	10	1.6	100.000		97.4	85 - 115			
Matrix Spike (B8F0662-MS1)			**Source: 1802292-01**		Prepared: 6/26/2018 Analyzed: 6/26/2018					
Antimony	10.1132	0.50	0.06	10.0000	ND	101	75 - 125			
Arsenic	9.15822	1.0	0.39	10.0000	ND	91.6	75 - 125			
Barium	10.3226	1.0	0.14	10.0000	1.04118	92.8	75 - 125			
Beryllium	9.14562	0.50	0.08	10.0000	ND	91.5	75 - 125			

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Total Metals by ICP-MS EPA 6020 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0662 - EPA 3010A MS_W (continued)										
Matrix Spike (B8F0662-MS1) - Continued			**Source: 1802292-01**		Prepared: 6/26/2018 Analyzed: 6/26/2018					
Cadmium	9.88144	0.50	0.14	10.0000	ND	98.8	75 - 125			
Chromium	10.4544	0.50	0.09	10.0000	ND	105	75 - 125			
Cobalt	10.7575	0.50	0.05	10.0000	ND	108	75 - 125			
Copper	11.9589	1.0	0.10	10.0000	0.938270	110	75 - 125			
Lead	10.1987	1.0	0.32	10.0000	ND	102	75 - 125			
Molybdenum	10.6540	0.50	0.08	10.0000	ND	107	75 - 125			
Nickel	10.9155	1.0	0.16	10.0000	0.268750	106	75 - 125			
Selenium	9.00981	0.50	0.22	10.0000	ND	90.1	75 - 125			
Silver	10.4730	0.50	0.08	10.0000	ND	105	75 - 125			
Thallium	10.0624	0.50	0.14	10.0000	ND	101	75 - 125			
Vanadium	10.6072	1.0	0.59	10.0000	ND	106	75 - 125			
Zinc	97.7254	10	1.6	100.000	2.46000	95.3	75 - 125			
Matrix Spike Dup (B8F0662-MSD1)			**Source: 1802292-01**		Prepared: 6/26/2018 Analyzed: 6/26/2018					
Antimony	10.4292	0.50	0.06	10.0000	ND	104	75 - 125	3.08	20	
Arsenic	9.48039	1.0	0.39	10.0000	ND	94.8	75 - 125	3.46	20	
Barium	10.8011	1.0	0.14	10.0000	1.04118	97.6	75 - 125	4.53	20	
Beryllium	9.09060	0.50	0.08	10.0000	ND	90.9	75 - 125	0.603	20	
Cadmium	9.85266	0.50	0.14	10.0000	ND	98.5	75 - 125	0.292	20	
Chromium	10.9270	0.50	0.09	10.0000	ND	109	75 - 125	4.42	20	
Cobalt	11.4394	0.50	0.05	10.0000	ND	114	75 - 125	6.14	20	
Copper	12.3005	1.0	0.10	10.0000	0.938270	114	75 - 125	2.82	20	
Lead	10.4841	1.0	0.32	10.0000	ND	105	75 - 125	2.76	20	
Molybdenum	10.9352	0.50	0.08	10.0000	ND	109	75 - 125	2.61	20	
Nickel	11.6599	1.0	0.16	10.0000	0.268750	114	75 - 125	6.59	20	
Selenium	9.24542	0.50	0.22	10.0000	ND	92.5	75 - 125	2.58	20	
Silver	10.6918	0.50	0.08	10.0000	ND	107	75 - 125	2.07	20	
Thallium	10.2745	0.50	0.14	10.0000	ND	103	75 - 125	2.09	20	
Vanadium	10.9896	1.0	0.59	10.0000	ND	110	75 - 125	3.54	20	
Zinc	96.2025	10	1.6	100.000	2.46000	93.7	75 - 125	1.57	20	
Post Spike (B8F0662-PS1)			**Source: 1802292-01**		Prepared: 6/26/2018 Analyzed: 6/26/2018					
Antimony	10.2188			10.0000	0.02342	102	75 - 125			
Arsenic	8.98115			10.0000	-0.198750	89.8	75 - 125			
Barium	10.8829			10.0000	1.04118	98.4	75 - 125			
Beryllium	8.89789			10.0000	0.01189	88.9	75 - 125			
Cadmium	9.69513			10.0000	0.00873	96.9	75 - 125			
Chromium	10.6440			10.0000	0.02635	106	75 - 125			
Cobalt	10.8081			10.0000	0.04849	108	75 - 125			
Copper	12.0468			10.0000	0.938270	111	75 - 125			
Lead	10.0193			10.0000	0.130250	98.9	75 - 125			
Molybdenum	10.5105			10.0000	0.04856	105	75 - 125			

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Total Metals by ICP-MS EPA 6020 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0662 - EPA 3010A MS_W (continued)									
Post Spike (B8F0662-PS1) - Continued			**Source: 1802292-01**		Prepared: 6/26/2018 Analyzed: 6/26/2018				
Nickel	11.0709		10.0000	0.268750	108	75 - 125			
Selenium	8.71079		10.0000	-0.00889	87.1	75 - 125			
Silver	10.4556		10.0000	0.00581	104	75 - 125			
Thallium	9.91830		10.0000	0.01073	99.1	75 - 125			
Vanadium	10.8197		10.0000	-0.100690	108	75 - 125			
Zinc	93.0454		100.000	2.46000	90.6	75 - 125			

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Total Metals by ICP-MS EPA 6020 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0665 - EPA 3050B MS_S										
Blank (B8F0665-BLK1)					Prepared: 6/26/2018 Analyzed: 6/28/2018					
Antimony	ND	250	71							U
Arsenic	ND	250	44							U
Barium	ND	250	37							U
Beryllium	ND	250	23							U
Cadmium	ND	250	17							U
Chromium	ND	500	110							U
Cobalt	ND	250	19							U
Copper	ND	250	25							U
Lead	ND	250	28							U
Molybdenum	ND	250	49							U
Nickel	ND	250	16							U
Selenium	ND	250	55							U
Silver	ND	250	10							U
Thallium	ND	250	16							U
Vanadium	ND	500	72							U
Zinc	ND	1200	720							U
LCS (B8F0665-BS1)					Prepared: 6/26/2018 Analyzed: 6/28/2018					
Antimony	5046.04	250	71	5000.00		101	70 - 130			
Arsenic	5137.30	250	44	5000.00		103	70 - 130			
Barium	5161.18	250	37	5000.00		103	70 - 130			
Beryllium	4966.10	250	23	5000.00		99.3	70 - 130			
Cadmium	5148.87	250	17	5000.00		103	70 - 130			
Chromium	5132.80	500	110	5000.00		103	70 - 130			
Cobalt	5113.59	250	19	5000.00		102	70 - 130			
Copper	5086.08	250	25	5000.00		102	70 - 130			
Lead	5075.98	250	28	5000.00		102	70 - 130			
Molybdenum	5105.67	250	49	5000.00		102	70 - 130			
Nickel	5031.14	250	16	5000.00		101	70 - 130			
Selenium	5146.47	250	55	5000.00		103	70 - 130			
Silver	4972.27	250	10	5000.00		99.4	70 - 130			
Thallium	5144.24	250	16	5000.00		103	70 - 130			
Vanadium	5007.66	500	72	5000.00		100	70 - 130			
Zinc	51559.1	1200	720	50000.0		103	70 - 130			
Matrix Spike (B8F0665-MS1)			**Source: 1802237-01**		Prepared: 6/26/2018 Analyzed: 6/28/2018					
Antimony	2186.85	1000	280	5000.00	ND	43.7	75 - 125			
Arsenic	6251.31	1000	180	5000.00	2227.54	80.5	75 - 125			
Barium	62540.6	1000	150	5000.00	56721.1	116	75 - 125			
Beryllium	3997.47	1000	93	5000.00	231.108	75.3	75 - 125			
Cadmium	4638.47	1000	69	5000.00	146.076	89.8	75 - 125			
Chromium	15439.0	2000	450	5000.00	10689.1	95.0	75 - 125			

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Total Metals by ICP-MS EPA 6020 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0665 - EPA 3050B MS_S (continued)										
Matrix Spike (B8F0665-MS1) - Continued			**Source: 1802237-01**		Prepared: 6/26/2018 Analyzed: 6/28/2018					
Cobalt	17335.9	1000	75	5000.00	12361.8	99.5	75 - 125			
Copper	36177.5	1000	100	5000.00	23373.4	256	75 - 125			M1
Lead	13104.9	1000	110	5000.00	7756.93	107	75 - 125			
Molybdenum	5124.17	1000	200	5000.00	277.748	96.9	75 - 125			
Nickel	10459.0	1000	64	5000.00	5354.57	102	75 - 125			
Selenium	3391.04	1000	220	5000.00	ND	67.8	75 - 125			M1
Silver	6253.68	1000	41	5000.00	3304.63	59.0	75 - 125			M1
Thallium	4695.92	1000	62	5000.00	117.250	91.6	75 - 125			
Vanadium	45155.4	2000	290	5000.00	40800.5	87.1	75 - 125			
Zinc	74975.9	5000	2900	50000.0	29208.2	91.5	75 - 125			
Matrix Spike Dup (B8F0665-MSD1)			**Source: 1802237-01**		Prepared: 6/26/2018 Analyzed: 6/28/2018					
Antimony	2074.99	1000	280	5000.00	ND	41.5	75 - 125	5.25	20	M1
Arsenic	6063.97	1000	180	5000.00	2227.54	76.7	75 - 125	3.04	20	
Barium	57212.5	1000	150	5000.00	56721.1	9.83	75 - 125	8.90	20	M1
Beryllium	4060.53	1000	93	5000.00	231.108	76.6	75 - 125	1.57	20	
Cadmium	4731.57	1000	69	5000.00	146.076	91.7	75 - 125	1.99	20	
Chromium	14615.5	2000	450	5000.00	10689.1	78.5	75 - 125	5.48	20	
Cobalt	16596.5	1000	75	5000.00	12361.8	84.7	75 - 125	4.36	20	
Copper	27911.8	1000	100	5000.00	23373.4	90.8	75 - 125	25.8	20	R
Lead	12022.3	1000	110	5000.00	7756.93	85.3	75 - 125	8.62	20	
Molybdenum	5121.80	1000	200	5000.00	277.748	96.9	75 - 125	0.0462	20	
Nickel	9972.81	1000	64	5000.00	5354.57	92.4	75 - 125	4.76	20	
Selenium	3318.14	1000	220	5000.00	ND	66.4	75 - 125	2.17	20	M1
Silver	4666.23	1000	41	5000.00	3304.63	27.2	75 - 125	29.1	20	M1, R
Thallium	4787.51	1000	62	5000.00	117.250	93.4	75 - 125	1.93	20	
Vanadium	41140.3	2000	290	5000.00	40800.5	6.80	75 - 125	9.31	20	M1
Zinc	65539.4	5000	2900	50000.0	29208.2	72.7	75 - 125	13.4	20	M1
Post Spike (B8F0665-PS1)			**Source: 1802237-01**		Prepared: 6/26/2018 Analyzed: 6/28/2018					
Antimony	4.97104			5.00000	0.077512	97.9	75 - 125			
Arsenic	5.48062			5.00000	1.11377	87.3	75 - 125			
Barium	30.2634			5.00000	28.3606	38.1	75 - 125			M1
Beryllium	4.05789			5.00000	0.115554	78.8	75 - 125			
Cadmium	4.78013			5.00000	0.073038	94.1	75 - 125			
Chromium	10.1249			5.00000	5.34457	95.6	75 - 125			
Cobalt	11.4889			5.00000	6.18088	106	75 - 125			
Copper	19.0084			5.00000	11.6867	146	75 - 125			M1
Lead	9.08228			5.00000	3.87847	104	75 - 125			
Molybdenum	5.62926			5.00000	0.138874	110	75 - 125			
Nickel	7.67952			5.00000	2.67728	100	75 - 125			
Selenium	3.85291			5.00000	-0.104798	77.1	75 - 125			

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Total Metals by ICP-MS EPA 6020 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0665 - EPA 3050B MS_S (continued)									
Post Spike (B8F0665-PS1) - Continued			**Source: 1802237-01**		Prepared: 6/26/2018 Analyzed: 6/28/2018				
Silver	7.31757		5.00000	1.65232	113	75 - 125			
Thallium	4.84526		5.00000	0.058625	95.7	75 - 125			
Vanadium	23.3530		5.00000	20.4003	59.1	75 - 125			M1
Zinc	57.3761		50.0000	14.6041	85.5	75 - 125			

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Total Metals by ICP-MS EPA 6020 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0666 - EPA 3050B MS_S										
Blank (B8F0666-BLK1)					Prepared: 6/26/2018 Analyzed: 6/28/2018					
Antimony	ND	250	71							U
Arsenic	ND	250	44							U
Barium	ND	250	37							U
Beryllium	ND	250	23							U
Cadmium	ND	250	17							U
Chromium	ND	500	110							U
Cobalt	ND	250	19							U
Copper	ND	250	25							U
Lead	ND	250	28							U
Molybdenum	ND	250	49							U
Nickel	ND	250	16							U
Selenium	ND	250	55							U
Silver	ND	250	10							U
Thallium	ND	250	16							U
Vanadium	ND	500	72							U
Zinc	ND	1200	720							U
LCS (B8F0666-BS1)					Prepared: 6/26/2018 Analyzed: 6/28/2018					
Antimony	4943.37	250	71	5000.00		98.9	70 - 130			
Arsenic	4981.19	250	44	5000.00		99.6	70 - 130			
Barium	5073.63	250	37	5000.00		101	70 - 130			
Beryllium	5001.64	250	23	5000.00		100	70 - 130			
Cadmium	4992.18	250	17	5000.00		99.8	70 - 130			
Chromium	4872.21	500	110	5000.00		97.4	70 - 130			
Cobalt	4771.22	250	19	5000.00		95.4	70 - 130			
Copper	4792.89	250	25	5000.00		95.9	70 - 130			
Lead	5010.72	250	28	5000.00		100	70 - 130			
Molybdenum	4845.29	250	49	5000.00		96.9	70 - 130			
Nickel	4814.24	250	16	5000.00		96.3	70 - 130			
Selenium	4869.62	250	55	5000.00		97.4	70 - 130			
Silver	4764.26	250	10	5000.00		95.3	70 - 130			
Thallium	5077.27	250	16	5000.00		102	70 - 130			
Vanadium	4936.34	500	72	5000.00		98.7	70 - 130			
Zinc	50304.7	1200	720	50000.0		101	70 - 130			
Matrix Spike (B8F0666-MS1)			**Source: 1802237-32**		Prepared: 6/26/2018 Analyzed: 6/28/2018					
Antimony	1308.93	1000	280	5000.00	ND	26.2	75 - 125			M1
Arsenic	5631.99	1000	180	5000.00	2786.80	56.9	75 - 125			M1
Barium	100436	1000	150	5000.00	72755.3	554	75 - 125			M1
Beryllium	3675.94	1000	93	5000.00	205.932	69.4	75 - 125			M1
Cadmium	4445.78	1000	69	5000.00	72.9900	87.5	75 - 125			
Chromium	15352.5	2000	450	5000.00	9174.14	124	75 - 125			

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Total Metals by ICP-MS EPA 6020 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0666 - EPA 3050B MS_S (continued)										
Matrix Spike (B8F0666-MS1) - Continued			**Source: 1802237-32**		Prepared: 6/26/2018 Analyzed: 6/28/2018					
Cobalt	10827.4	1000	75	5000.00	5511.40	106	75 - 125			
Copper	20522.7	1000	100	5000.00	12863.0	153	75 - 125			M1
Lead	7187.97	1000	110	5000.00	2621.42	91.3	75 - 125			
Molybdenum	4566.81	1000	200	5000.00	374.496	83.8	75 - 125			
Nickel	10466.5	1000	64	5000.00	4747.56	114	75 - 125			
Selenium	3135.47	1000	220	5000.00	ND	62.7	75 - 125			M1
Silver	4208.39	1000	41	5000.00	ND	84.2	75 - 125			
Thallium	4603.78	1000	62	5000.00	127.984	89.5	75 - 125			
Vanadium	52268.1	2000	290	5000.00	41194.5	221	75 - 125			M1
Zinc	67976.7	5000	2900	50000.0	25525.8	84.9	75 - 125			
Matrix Spike Dup (B8F0666-MSD1)			**Source: 1802237-32**		Prepared: 6/26/2018 Analyzed: 6/28/2018					
Antimony	1148.01	1000	280	5000.00	ND	23.0	75 - 125	13.1	20	M1
Arsenic	6953.45	1000	180	5000.00	2786.80	83.3	75 - 125	21.0	20	R
Barium	111684	1000	150	5000.00	72755.3	779	75 - 125	10.6	20	M1
Beryllium	3639.67	1000	93	5000.00	205.932	68.7	75 - 125	0.992	20	M1
Cadmium	4582.84	1000	69	5000.00	72.9900	90.2	75 - 125	3.04	20	
Chromium	15791.5	2000	450	5000.00	9174.14	132	75 - 125	2.82	20	M1
Cobalt	12175.9	1000	75	5000.00	5511.40	133	75 - 125	11.7	20	M1
Copper	20529.2	1000	100	5000.00	12863.0	153	75 - 125	0.0314	20	M1
Lead	7883.33	1000	110	5000.00	2621.42	105	75 - 125	9.23	20	
Molybdenum	4585.38	1000	200	5000.00	374.496	84.2	75 - 125	0.406	20	
Nickel	11061.8	1000	64	5000.00	4747.56	126	75 - 125	5.53	20	M1
Selenium	3787.84	1000	220	5000.00	ND	75.8	75 - 125	18.8	20	
Silver	4527.42	1000	41	5000.00	ND	90.5	75 - 125	7.30	20	
Thallium	4576.74	1000	62	5000.00	127.984	89.0	75 - 125	0.589	20	
Vanadium	52996.7	2000	290	5000.00	41194.5	236	75 - 125	1.38	20	M1
Zinc	70556.0	5000	2900	50000.0	25525.8	90.1	75 - 125	3.72	20	
Post Spike (B8F0666-PS1)			**Source: 1802237-32**		Prepared: 6/26/2018 Analyzed: 6/28/2018					
Antimony	5.03697			5.00000	0.024736	100	75 - 125			
Arsenic	5.61850			5.00000	0.557359	101	75 - 125			
Barium	44.7714			5.00000	14.5511	604	75 - 125			M1
Beryllium	3.80239			5.00000	0.041186	75.2	75 - 125			
Cadmium	4.74041			5.00000	0.014598	94.5	75 - 125			
Chromium	9.36731			5.00000	1.83483	151	75 - 125			M1
Cobalt	7.70950			5.00000	1.10228	132	75 - 125			M1
Copper	11.2838			5.00000	2.57260	174	75 - 125			M1
Lead	5.95372			5.00000	0.524283	109	75 - 125			
Molybdenum	5.47148			5.00000	0.074899	108	75 - 125			
Nickel	7.35663			5.00000	0.949511	128	75 - 125			M1
Selenium	4.01260			5.00000	-0.060954	80.3	75 - 125			

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Total Metals by ICP-MS EPA 6020 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0666 - EPA 3050B MS_S (continued)									
Post Spike (B8F0666-PS1) - Continued			**Source: 1802237-32**	Prepared: 6/26/2018 Analyzed: 6/28/2018					
Silver	5.13567		5.00000	2.0936E-3	103	75 - 125			
Thallium	4.76712		5.00000	0.025597	94.8	75 - 125			
Vanadium	26.1690		5.00000	8.23891	359	75 - 125			M1
Zinc	54.5810		50.0000	5.10516	99.0	75 - 125			

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Mercury by AA (Cold Vapor) EPA 7470A - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0677 - EPA 245.1/7470_W										
Blank (B8F0677-BLK1)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	ND	0.20	0.03							U
LCS (B8F0677-BS1)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	9.62451	0.20	0.03	10.0000		96.2	80 - 120			
Matrix Spike (B8F0677-MS1)			**Source: 1802237-22**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	9.58006	0.20	0.03	10.0000	ND	95.8	70 - 130			
Matrix Spike Dup (B8F0677-MSD1)			**Source: 1802237-22**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	9.47061	0.20	0.03	10.0000	ND	94.7	70 - 130	1.15	20	
Post Spike (B8F0677-PS1)			**Source: 1802237-22**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	4.85579			5.00000	0.000187	97.1	85 - 115			

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Mercury by AA (Cold Vapor) EPA 7471A - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0639 - EPA 7471_S										
Blank (B8F0639-BLK1)					Prepared: 6/25/2018 Analyzed: 6/26/2018					
Mercury	ND	0.10	0.006							
LCS (B8F0639-BS1)					Prepared: 6/25/2018 Analyzed: 6/26/2018					
Mercury	0.984336	0.10	0.006	0.833333		118	80 - 120			
Matrix Spike (B8F0639-MS1)			**Source: 1802237-01**		Prepared: 6/25/2018 Analyzed: 6/26/2018					
Mercury	0.982071	0.10	0.006	0.819672	0.011704	118	70 - 130			
Matrix Spike Dup (B8F0639-MSD1)			**Source: 1802237-01**		Prepared: 6/25/2018 Analyzed: 6/26/2018					
Mercury	0.983158	0.10	0.006	0.833333	0.011704	117	70 - 130	0.111	20	
Post Spike (B8F0639-PS1)			**Source: 1802237-01**		Prepared: 6/25/2018 Analyzed: 6/26/2018					
Mercury	0.006539			5.00000E-3	0.000140	128	85 - 115			M1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Mercury by AA (Cold Vapor) EPA 7471A - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0640 - EPA 7471_S										
Blank (B8F0640-BLK1)					Prepared: 6/25/2018 Analyzed: 6/26/2018					
Mercury	ND	0.10	0.006							
LCS (B8F0640-BS1)					Prepared: 6/25/2018 Analyzed: 6/26/2018					
Mercury	0.958452	0.10	0.006	0.833333		115	80 - 120			
Matrix Spike (B8F0640-MS1)			**Source: 1802237-32**		Prepared: 6/25/2018 Analyzed: 6/26/2018					
Mercury	0.987548	0.10	0.006	0.833333	0.009597	117	70 - 130			
Matrix Spike Dup (B8F0640-MSD1)			**Source: 1802237-32**		Prepared: 6/25/2018 Analyzed: 6/26/2018					
Mercury	0.996082	0.10	0.006	0.833333	0.009597	118	70 - 130	0.860	20	
Post Spike (B8F0640-PS1)			**Source: 1802237-32**		Prepared: 6/25/2018 Analyzed: 6/26/2018					
Mercury	0.007254			5.00000E-3	0.000115	143	85 - 115			M1

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San Diego , CA 92101	Reported :	07/11/2018

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0488 - GCVOA_S										
Blank (B8F0488-BLK1)					Prepared: 6/20/2018 Analyzed: 6/20/2018					
C6	ND	1.0	0.20							U
C7	ND	1.0	0.20							U
C8	ND	1.0	0.20							U
C9	ND	1.0	0.20							U
C10	ND	1.0	0.20							U
C11	ND	1.0	0.20							U
C12	ND	1.0	0.20							U
Surrogate: 4-Bromofluorobenzene	*0.1867*			*0.200000*		*93.3*	*57 - 144*			
LCS (B8F0488-BS1)					Prepared: 6/20/2018 Analyzed: 6/20/2018					
Gasoline Range Organics	4.16500	1.0	0.20	5.00000		83.3	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.1803*			*0.200000*		*90.1*	*57 - 144*			
Matrix Spike (B8F0488-MS1)			**Source: 1802239-01**		Prepared: 6/20/2018 Analyzed: 6/20/2018					
Gasoline Range Organics	2.86200	1.0	0.20	5.00000	ND	57.2	28 - 118			
Surrogate: 4-Bromofluorobenzene	*0.1818*			*0.200000*		*90.9*	*57 - 144*			
Matrix Spike Dup (B8F0488-MSD1)			**Source: 1802239-01**		Prepared: 6/20/2018 Analyzed: 6/20/2018					
Gasoline Range Organics	2.59400	1.0	0.20	5.00000	ND	51.9	28 - 118	9.82	20	
Surrogate: 4-Bromofluorobenzene	*0.1883*			*0.200000*		*94.2*	*57 - 144*			

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550 W. C. Suite 1200	Report To :	Jake Lippman
San Diego , CA 92101	Reported :	07/11/2018

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0489 - GCVOA_W										
Blank (B8F0489-BLK1)					Prepared: 6/21/2018 Analyzed: 6/21/2018					
C6	ND	0.20	0.05							U
C7	ND	0.20	0.05							U
C8	ND	0.20	0.05							U
C9	ND	0.20	0.05							U
C10	ND	0.20	0.05							U
C11	ND	0.20	0.05							U
C12	ND	0.20	0.05							U
Surrogate: 4-Bromofluorobenzene	*0.09832*			*0.100000*		*98.3*	*70 - 130*			
LCS (B8F0489-BS1)					Prepared: 6/21/2018 Analyzed: 6/21/2018					
Gasoline Range Organics	0.864000	0.20	0.05	1.00000		86.4	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.09920*			*0.100000*		*99.2*	*70 - 130*			
LCS Dup (B8F0489-BSD1)					Prepared: 6/21/2018 Analyzed: 6/21/2018					
Gasoline Range Organics	0.866000	0.20	0.05	1.00000		86.6	70 - 130	0.231	20	
Surrogate: 4-Bromofluorobenzene	*0.09718*			*0.100000*		*97.2*	*70 - 130*			
Matrix Spike (B8F0489-MS1)			**Source: 1802252-01**		Prepared: 6/21/2018 Analyzed: 6/21/2018					
Gasoline Range Organics	1.20900	0.20	0.05	1.00000	0.380000	82.9	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.1119*			*0.100000*		*112*	*70 - 130*			
Matrix Spike Dup (B8F0489-MSD1)			**Source: 1802252-01**		Prepared: 6/21/2018 Analyzed: 6/21/2018					
Gasoline Range Organics	1.21400	0.20	0.05	1.00000	0.380000	83.4	70 - 130	0.413	20	
Surrogate: 4-Bromofluorobenzene	*0.1119*			*0.100000*		*112*	*70 - 130*			

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Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0499 - GCVOA_S										
Blank (B8F0499-BLK1)					Prepared: 6/20/2018 Analyzed: 6/20/2018					
C6	ND	1.0	0.20							U
C7	ND	1.0	0.20							U
C8	ND	1.0	0.20							U
C9	ND	1.0	0.20							U
C10	ND	1.0	0.20							U
C11	ND	1.0	0.20							U
C12	ND	1.0	0.20							U
Surrogate: 4-Bromofluorobenzene	*0.1769*			*0.200000*		*88.5*	*57 - 144*			
LCS (B8F0499-BS1)					Prepared: 6/20/2018 Analyzed: 6/20/2018					
Gasoline Range Organics	4.05600	1.0	0.20	5.00000		81.1	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.1828*			*0.200000*		*91.4*	*57 - 144*			
Matrix Spike (B8F0499-MS1)			**Source: 1802237-01**		Prepared: 6/20/2018 Analyzed: 6/20/2018					
Gasoline Range Organics	3.33800	1.0	0.20	5.00000	ND	66.8	28 - 118			
Surrogate: 4-Bromofluorobenzene	*0.1711*			*0.200000*		*85.5*	*57 - 144*			
Matrix Spike Dup (B8F0499-MSD1)			**Source: 1802237-01**		Prepared: 6/20/2018 Analyzed: 6/20/2018					
Gasoline Range Organics	3.27900	1.0	0.20	5.00000	ND	65.6	28 - 118	1.78	20	
Surrogate: 4-Bromofluorobenzene	*0.1771*			*0.200000*		*88.6*	*57 - 144*			

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Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0506 - GCVOA_S										
Blank (B8F0506-BLK1)					Prepared: 6/21/2018 Analyzed: 6/21/2018					
C6	ND	1.0	0.20							U
C7	ND	1.0	0.20							U
C8	ND	1.0	0.20							U
C9	ND	1.0	0.20							U
C10	ND	1.0	0.20							U
C11	ND	1.0	0.20							U
C12	ND	1.0	0.20							U
Surrogate: 4-Bromofluorobenzene	*0.1779*			*0.200000*		*89.0*	*57 - 144*			
LCS (B8F0506-BS1)					Prepared: 6/21/2018 Analyzed: 6/21/2018					
Gasoline Range Organics	4.14400	1.0	0.20	5.00000		82.9	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.1947*			*0.200000*		*97.3*	*57 - 144*			
Matrix Spike (B8F0506-MS1)			**Source: 1802240-02**		Prepared: 6/21/2018 Analyzed: 6/21/2018					
Gasoline Range Organics	2.89800	1.0	0.20	5.00000	ND	58.0	28 - 118			
Surrogate: 4-Bromofluorobenzene	*0.1512*			*0.200000*		*75.6*	*57 - 144*			
Matrix Spike Dup (B8F0506-MSD1)			**Source: 1802240-02**		Prepared: 6/21/2018 Analyzed: 6/21/2018					
Gasoline Range Organics	3.44600	1.0	0.20	5.00000	ND	68.9	28 - 118	17.3	20	
Surrogate: 4-Bromofluorobenzene	*0.1844*			*0.200000*		*92.2*	*57 - 144*			

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San Diego , CA 92101		Reported :	07/11/2018

Hydrocarbon Chain Distribution by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0550 - GCSEMI_DRO_W										
Blank (B8F0550-BLK1)					Prepared: 6/21/2018 Analyzed: 6/21/2018					
C13	ND	0.20	0.20							U
C14	ND	0.20	0.20							U
C15	ND	0.20	0.20							U
C16	ND	0.20	0.20							U
C17	ND	0.20	0.20							U
C18	ND	0.20	0.20							U
C19	ND	0.20	0.20							U
C20	ND	0.20	0.20							U
C21	ND	0.20	0.20							U
C22	ND	0.20	0.20							U
C23	ND	0.20	0.20							U
C24	ND	0.20	0.20							U
C25	ND	0.20	0.20							U
C26	ND	0.20	0.20							U
C27	ND	0.20	0.20							U
C28	ND	0.20	0.20							U
C29	ND	0.20	0.20							U
C30	ND	0.20	0.20							U
C31	ND	0.20	0.20							U
C32	ND	0.20	0.20							U
C33	ND	0.20	0.20							U
C34	ND	0.20	0.20							U
C35	ND	0.20	0.20							U
C36	ND	0.20	0.20							U
C37	ND	0.20	0.20							U
C38	ND	0.20	0.20							U
C39	ND	0.20	0.20							U
C40	ND	0.20	0.20							U
Surrogate: p-Terphenyl	*0.09714*			*8.00000E-2*		*121*	*32 - 169*			
LCS (B8F0550-BS1)					Prepared: 6/21/2018 Analyzed: 6/21/2018					
DRO	1.43338	0.20	0.20	1.00000		143	45 - 161			
Surrogate: p-Terphenyl	*0.09532*			*8.00000E-2*		*119*	*32 - 169*			
LCS Dup (B8F0550-BSD1)					Prepared: 6/21/2018 Analyzed: 6/21/2018					
DRO	1.41055	0.20	0.20	1.00000		141	45 - 161	1.61	20	
Surrogate: p-Terphenyl	*0.09737*			*8.00000E-2*		*122*	*32 - 169*			

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San Diego , CA 92101		Reported :	07/11/2018

Hydrocarbon Chain Distribution by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0604 - GCSEMI_DRO_S										
Blank (B8F0604-BLK1)					Prepared: 6/22/2018 Analyzed: 6/24/2018					
C13	ND	10	10							U
C14	ND	10	10							U
C15	ND	10	10							U
C16	ND	10	10							U
C17	ND	10	10							U
C18	ND	10	10							U
C19	ND	10	10							U
C20	ND	10	10							U
C21	ND	10	10							U
C22	ND	10	10							U
C23	ND	10	10							U
C24	ND	10	10							U
C25	ND	10	10							U
C26	ND	10	10							U
C27	ND	10	10							U
C28	ND	10	10							U
C29	ND	10	10							U
C30	ND	10	10							U
C31	ND	10	10							U
C32	ND	10	10							U
C33	ND	10	10							U
C34	ND	10	10							U
C35	ND	10	10							U
C36	ND	10	10							U
C37	ND	10	10							U
C38	ND	10	10							U
C39	ND	10	10							U
C40	ND	10	10							U
Surrogate: p-Terphenyl	*91.68*			*80.0000*		*115*	*58 - 172*			
LCS (B8F0604-BS1)					Prepared: 6/22/2018 Analyzed: 6/24/2018					
DRO	1365.98	10	10	1000.00		137	71 - 165			
Surrogate: p-Terphenyl	*98.29*			*80.0000*		*123*	*58 - 172*			
Matrix Spike (B8F0604-MS1)			**Source: 1802237-01**		Prepared: 6/22/2018 Analyzed: 6/24/2018					
DRO	1289.45	10	10	1000.00	ND	129	61 - 171			
Surrogate: p-Terphenyl	*90.67*			*80.0000*		*113*	*58 - 172*			
Matrix Spike Dup (B8F0604-MSD1)			**Source: 1802237-01**		Prepared: 6/22/2018 Analyzed: 6/24/2018					
DRO	1355.19	10	10	1000.00	ND	136	61 - 171	4.97	20	
Surrogate: p-Terphenyl	*97.74*			*80.0000*		*122*	*58 - 172*			

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San Diego , CA 92101		Reported :	07/11/2018

SPLP Hydrocarbon Chain Distribution by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8G0211 - GCSEMI_DSL_LEACHEATE_W										
Blank (B8G0211-BLK1)					Prepared: 7/10/2018 Analyzed: 7/10/2018					
C13	ND	0.20	0.20							U
C14	ND	0.20	0.20							U
C15	ND	0.20	0.20							U
C16	ND	0.20	0.20							U
C17	ND	0.20	0.20							U
C18	ND	0.20	0.20							U
C19	ND	0.20	0.20							U
C20	ND	0.20	0.20							U
C21	ND	0.20	0.20							U
C22	ND	0.20	0.20							U
C23	ND	0.20	0.20							U
C24	ND	0.20	0.20							U
C25	ND	0.20	0.20							U
C26	ND	0.20	0.20							U
C27	ND	0.20	0.20							U
C28	ND	0.20	0.20							U
C29	ND	0.20	0.20							U
C30	ND	0.20	0.20							U
C31	ND	0.20	0.20							U
Surrogate: p-Terphenyl	*0.08022*			*8.00000E-2*		*100*	*32 - 169*			
LCS (B8G0211-BS1)					Prepared: 7/10/2018 Analyzed: 7/10/2018					
DRO	1.07619	0.20	0.20	1.00000		108	45 - 161			
Surrogate: p-Terphenyl	*0.08316*			*8.00000E-2*		*104*	*32 - 169*			

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Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
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Organochlorine Pesticides by EPA 8081 - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0616 - GCSEMI_PCB/PEST_W										
Blank (B8F0616-BLK1)					Prepared: 6/23/2018 Analyzed: 6/24/2018					
4,4´-DDD	ND	0.05	0.006							U
4,4´-DDD [2C]	ND	0.05	0.006							U
4,4´-DDE	ND	0.05	0.005							U
4,4´-DDE [2C]	ND	0.05	0.005							U
4,4´-DDT	ND	0.05	0.01							U
4,4´-DDT [2C]	ND	0.05	0.01							U
Aldrin	ND	0.02	0.002							U
Aldrin [2C]	ND	0.02	0.002							U
alpha-BHC	ND	0.02	0.002							U
alpha-BHC [2C]	ND	0.02	0.002							U
alpha-Chlordane	ND	0.02	0.003							U
alpha-Chlordane [2C]	ND	0.02	0.003							U
beta-BHC	ND	0.02	0.002							U
beta-BHC [2C]	ND	0.02	0.002							U
Chlordane	ND	0.25	0.03							U
Chlordane [2C]	ND	0.25	0.03							U
delta-BHC	ND	0.02	0.002							U
delta-BHC [2C]	ND	0.02	0.002							U
Dieldrin	ND	0.05	0.002							U
Dieldrin [2C]	ND	0.05	0.002							U
Endosulfan I	ND	0.02	0.005							U
Endosulfan I [2C]	ND	0.02	0.005							U
Endosulfan II	ND	0.05	0.009							U
Endosulfan II [2C]	ND	0.05	0.009							U
Endosulfan sulfate	ND	0.05	0.01							U
Endosulfan Sulfate [2C]	ND	0.05	0.01							U
Endrin	ND	0.05	0.005							U
Endrin [2C]	ND	0.05	0.005							U
Endrin aldehyde	ND	0.05	0.003							U
Endrin aldehyde [2C]	ND	0.05	0.003							U
Endrin ketone	ND	0.05	0.003							U
Endrin ketone [2C]	ND	0.05	0.003							U
gamma-BHC	ND	0.02	0.002							U
gamma-BHC [2C]	ND	0.02	0.002							U
gamma-Chlordane	ND	0.02	0.002							U
gamma-Chlordane [2C]	ND	0.02	0.002							U
Heptachlor	ND	0.02	0.002							U
Heptachlor [2C]	ND	0.02	0.002							U
Heptachlor epoxide	ND	0.02	0.002							U
Heptachlor epoxide [2C]	ND	0.02	0.002							U
Methoxychlor	ND	0.25	0.008							U

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Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0616 - GCSEMI_PCB/PEST_W (continued)										
Blank (B8F0616-BLK1) - Continued					Prepared: 6/23/2018 Analyzed: 6/24/2018					
Methoxychlor [2C]	ND	0.25	0.008							U
Toxaphene	ND	2.5	0.23							U
Toxaphene [2C]	ND	2.5	0.23							U
Surrogate: Decachlorobiphenyl	*0.3976*			*0.500000*		*79.5*	*1 - 110*			
Surrogate: Decachlorobiphenyl [	*0.3325*			*0.500000*		*66.5*	*1 - 110*			
Surrogate: Tetrachloro-m-xylene	*0.4055*			*0.500000*		*81.1*	*19 - 117*			
Surrogate: Tetrachloro-m-xylene	*0.3808*			*0.500000*		*76.2*	*19 - 117*			
LCS (B8F0616-BS1)					Prepared: 6/23/2018 Analyzed: 6/24/2018					
4,4´-DDD	0.521215	0.05	0.006	0.500000		104	51 - 125			
4,4´-DDD [2C]	0.508690	0.05	0.006	0.500000		102	51 - 125			
4,4´-DDE	0.470755	0.05	0.005	0.500000		94.2	41 - 121			
4,4´-DDE [2C]	0.443940	0.05	0.005	0.500000		88.8	41 - 121			
4,4´-DDT	0.289665	0.05	0.01	0.500000		57.9	11 - 131			
4,4´-DDT [2C]	0.297685	0.05	0.01	0.500000		59.5	11 - 131			
Aldrin	0.467130	0.02	0.002	0.500000		93.4	43 - 116			
Aldrin [2C]	0.461705	0.02	0.002	0.500000		92.3	43 - 116			
alpha-BHC	0.469220	0.02	0.002	0.500000		93.8	53 - 114			
alpha-BHC [2C]	0.466135	0.02	0.002	0.500000		93.2	53 - 114			
alpha-Chlordane	0.469575	0.02	0.003	0.500000		93.9	44 - 117			
alpha-Chlordane [2C]	0.440500	0.02	0.003	0.500000		88.1	44 - 117			
beta-BHC	0.453460	0.02	0.002	0.500000		90.7	49 - 111			
beta-BHC [2C]	0.450870	0.02	0.002	0.500000		90.2	49 - 111			
delta-BHC	0.505800	0.02	0.002	0.500000		101	38 - 108			
delta-BHC [2C]	0.486355	0.02	0.002	0.500000		97.3	38 - 108			
Dieldrin	0.441860	0.05	0.002	0.500000		88.4	43 - 112			
Dieldrin [2C]	0.424070	0.05	0.002	0.500000		84.8	43 - 112			
Endosulfan I	0.449705	0.02	0.005	0.500000		89.9	37 - 111			
Endosulfan I [2C]	0.435015	0.02	0.005	0.500000		87.0	37 - 111			
Endosulfan II	0.510800	0.05	0.009	0.500000		102	46 - 121			
Endosulfan II [2C]	0.460415	0.05	0.009	0.500000		92.1	46 - 121			
Endosulfan sulfate	0.475240	0.05	0.01	0.500000		95.0	41 - 123			
Endosulfan Sulfate [2C]	0.439280	0.05	0.01	0.500000		87.9	41 - 123			
Endrin	0.441830	0.05	0.005	0.500000		88.4	46 - 125			
Endrin [2C]	0.428125	0.05	0.005	0.500000		85.6	46 - 125			
Endrin aldehyde	0.525350	0.05	0.003	0.500000		105	41 - 129			
Endrin aldehyde [2C]	0.495890	0.05	0.003	0.500000		99.2	41 - 129			
Endrin ketone	0.464650	0.05	0.003	0.500000		92.9	35 - 134			
Endrin ketone [2C]	0.454450	0.05	0.003	0.500000		90.9	35 - 134			
gamma-BHC	0.451375	0.02	0.002	0.500000		90.3	51 - 112			
gamma-BHC [2C]	0.453210	0.02	0.002	0.500000		90.6	51 - 112			

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Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0616 - GCSEMI_PCB/PEST_W (continued)										
LCS (B8F0616-BS1) - Continued					Prepared: 6/23/2018 Analyzed: 6/24/2018					
gamma-Chlordane	0.456915	0.02	0.002	0.500000		91.4	41 - 116			
gamma-Chlordane [2C]	0.447145	0.02	0.002	0.500000		89.4	41 - 116			
Heptachlor	0.427140	0.02	0.002	0.500000		85.4	49 - 120			
Heptachlor [2C]	0.446595	0.02	0.002	0.500000		89.3	49 - 120			
Heptachlor epoxide	0.439705	0.02	0.002	0.500000		87.9	46 - 110			
Heptachlor epoxide [2C]	0.435985	0.02	0.002	0.500000		87.2	46 - 110			
Methoxychlor	0.340695	0.25	0.008	0.500000		68.1	25 - 155			
Methoxychlor [2C]	0.337950	0.25	0.008	0.500000		67.6	25 - 155			
Surrogate: Decachlorobiphenyl	*0.4302*			*0.500000*		*86.0*	*1 - 110*			
Surrogate: Decachlorobiphenyl [	*0.3730*			*0.500000*		*74.6*	*1 - 110*			
Surrogate: Tetrachloro-m-xylene	*0.4298*			*0.500000*		*86.0*	*19 - 117*			
Surrogate: Tetrachloro-m-xylene	*0.4211*			*0.500000*		*84.2*	*19 - 117*			
LCS Dup (B8F0616-BSD1)					Prepared: 6/23/2018 Analyzed: 6/24/2018					
4,4´-DDD	0.544255	0.05	0.006	0.500000		109	51 - 125	4.32	20	
4,4´-DDD [2C]	0.506780	0.05	0.006	0.500000		101	51 - 125	0.376	20	
4,4´-DDE	0.488525	0.05	0.005	0.500000		97.7	41 - 121	3.70	20	
4,4´-DDE [2C]	0.439435	0.05	0.005	0.500000		87.9	41 - 121	1.02	20	
4,4´-DDT	0.274090	0.05	0.01	0.500000		54.8	11 - 131	5.53	20	
4,4´-DDT [2C]	0.277880	0.05	0.01	0.500000		55.6	11 - 131	6.88	20	
Aldrin	0.480690	0.02	0.002	0.500000		96.1	43 - 116	2.86	20	
Aldrin [2C]	0.455625	0.02	0.002	0.500000		91.1	43 - 116	1.33	20	
alpha-BHC	0.480745	0.02	0.002	0.500000		96.1	53 - 114	2.43	20	
alpha-BHC [2C]	0.458345	0.02	0.002	0.500000		91.7	53 - 114	1.69	20	
alpha-Chlordane	0.485730	0.02	0.003	0.500000		97.1	44 - 117	3.38	20	
alpha-Chlordane [2C]	0.434485	0.02	0.003	0.500000		86.9	44 - 117	1.37	20	
beta-BHC	0.464045	0.02	0.002	0.500000		92.8	49 - 111	2.31	20	
beta-BHC [2C]	0.442875	0.02	0.002	0.500000		88.6	49 - 111	1.79	20	
delta-BHC	0.517690	0.02	0.002	0.500000		104	38 - 108	2.32	20	
delta-BHC [2C]	0.476445	0.02	0.002	0.500000		95.3	38 - 108	2.06	20	
Dieldrin	0.456885	0.05	0.002	0.500000		91.4	43 - 112	3.34	20	
Dieldrin [2C]	0.418995	0.05	0.002	0.500000		83.8	43 - 112	1.20	20	
Endosulfan I	0.465680	0.02	0.005	0.500000		93.1	37 - 111	3.49	20	
Endosulfan I [2C]	0.431145	0.02	0.005	0.500000		86.2	37 - 111	0.894	20	
Endosulfan II	0.526925	0.05	0.009	0.500000		105	46 - 121	3.11	20	
Endosulfan II [2C]	0.456015	0.05	0.009	0.500000		91.2	46 - 121	0.960	20	
Endosulfan sulfate	0.498860	0.05	0.01	0.500000		99.8	41 - 123	4.85	20	
Endosulfan Sulfate [2C]	0.431845	0.05	0.01	0.500000		86.4	41 - 123	1.71	20	
Endrin	0.442715	0.05	0.005	0.500000		88.5	46 - 125	0.200	20	
Endrin [2C]	0.409615	0.05	0.005	0.500000		81.9	46 - 125	4.42	20	
Endrin aldehyde	0.547925	0.05	0.003	0.500000		110	41 - 129	4.21	20	

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Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0616 - GCSEMI_PCB/PEST_W (continued)										
LCS Dup (B8F0616-BSD1) - Continued					Prepared: 6/23/2018 Analyzed: 6/24/2018					
Endrin aldehyde [2C]	0.497465	0.05	0.003	0.500000		99.5	41 - 129	0.317	20	
Endrin ketone	0.487105	0.05	0.003	0.500000		97.4	35 - 134	4.72	20	
Endrin ketone [2C]	0.444590	0.05	0.003	0.500000		88.9	35 - 134	2.19	20	
gamma-BHC	0.464270	0.02	0.002	0.500000		92.9	51 - 112	2.82	20	
gamma-BHC [2C]	0.445485	0.02	0.002	0.500000		89.1	51 - 112	1.72	20	
gamma-Chlordane	0.471380	0.02	0.002	0.500000		94.3	41 - 116	3.12	20	
gamma-Chlordane [2C]	0.438900	0.02	0.002	0.500000		87.8	41 - 116	1.86	20	
Heptachlor	0.432450	0.02	0.002	0.500000		86.5	49 - 120	1.24	20	
Heptachlor [2C]	0.432215	0.02	0.002	0.500000		86.4	49 - 120	3.27	20	
Heptachlor epoxide	0.452965	0.02	0.002	0.500000		90.6	46 - 110	2.97	20	
Heptachlor epoxide [2C]	0.426120	0.02	0.002	0.500000		85.2	46 - 110	2.29	20	
Methoxychlor	0.330845	0.25	0.008	0.500000		66.2	25 - 155	2.93	20	
Methoxychlor [2C]	0.312390	0.25	0.008	0.500000		62.5	25 - 155	7.86	20	
Surrogate: Decachlorobiphenyl	*0.4554*			*0.500000*		*91.1*	*1 - 110*			
Surrogate: Decachlorobiphenyl [	*0.3536*			*0.500000*		*70.7*	*1 - 110*			
Surrogate: Tetrachloro-m-xylene	*0.4368*			*0.500000*		*87.4*	*19 - 117*			
Surrogate: Tetrachloro-m-xylene	*0.4069*			*0.500000*		*81.4*	*19 - 117*			

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Organochlorine Pesticides by EPA 8081 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0705 - GCSEMI_PCB/PEST_S										
Blank (B8F0705-BLK1)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
4,4´-DDD	ND	2.0	0.10							U
4,4´-DDD [2C]	ND	2.0	0.10							U
4,4´-DDE	ND	2.0	0.07							U
4,4´-DDE [2C]	ND	2.0	0.07							U
4,4´-DDT	ND	2.0	0.14							U
4,4´-DDT [2C]	ND	2.0	0.14							U
Aldrin	ND	1.0	0.08							U
Aldrin [2C]	ND	1.0	0.08							U
alpha-BHC	ND	1.0	0.04							U
alpha-BHC [2C]	ND	1.0	0.04							U
alpha-Chlordane	ND	1.0	0.04							U
alpha-Chlordane [2C]	ND	1.0	0.04							U
beta-BHC	ND	1.0	0.04							U
beta-BHC [2C]	ND	1.0	0.04							U
Chlordane	ND	8.5	0.90							U
Chlordane [2C]	ND	8.5	0.90							U
delta-BHC	ND	1.0	0.04							U
delta-BHC [2C]	ND	1.0	0.04							U
Dieldrin	ND	2.0	0.05							U
Dieldrin [2C]	ND	2.0	0.05							U
Endosulfan I	ND	1.0	0.04							U
Endosulfan I [2C]	ND	1.0	0.04							U
Endosulfan II	ND	2.0	0.10							U
Endosulfan II [2C]	ND	2.0	0.10							U
Endosulfan sulfate	ND	2.0	0.06							U
Endosulfan Sulfate [2C]	ND	2.0	0.06							U
Endrin	ND	2.0	0.08							U
Endrin [2C]	ND	2.0	0.08							U
Endrin aldehyde	ND	2.0	0.09							U
Endrin aldehyde [2C]	ND	2.0	0.09							U
Endrin ketone	ND	2.0	0.07							U
Endrin ketone [2C]	ND	2.0	0.07							U
gamma-BHC	ND	1.0	0.05							U
gamma-BHC [2C]	ND	1.0	0.05							U
gamma-Chlordane	ND	1.0	0.04							U
gamma-Chlordane [2C]	ND	1.0	0.04							U
Heptachlor	ND	1.0	0.07							U
Heptachlor [2C]	ND	1.0	0.07							U
Heptachlor epoxide	ND	1.0	0.04							U
Heptachlor epoxide [2C]	ND	1.0	0.04							U
Methoxychlor	ND	5.0	0.10							U

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Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0705 - GCSEMI_PCB/PEST_S (continued)										
Blank (B8F0705-BLK1) - Continued					Prepared: 6/26/2018 Analyzed: 6/27/2018					
Methoxychlor [2C]	ND	5.0	0.10							U
Toxaphene	ND	50	8.2							U
Toxaphene [2C]	ND	50	8.2							U
Surrogate: Decachlorobiphenyl	*15.34*			*16.6667*		*92.0*	*15 - 100*			
Surrogate: Decachlorobiphenyl [	*15.11*			*16.6667*		*90.7*	*15 - 100*			
Surrogate: Tetrachloro-m-xylene	*12.96*			*16.6667*		*77.8*	*16 - 100*			
Surrogate: Tetrachloro-m-xylene	*16.11*			*16.6667*		*96.7*	*16 - 100*			
LCS (B8F0705-BS1)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
4,4´-DDD	15.2950	2.0	0.10	16.6667		91.8	62 - 129			
4,4´-DDD [2C]	13.5015	2.0	0.10	16.6667		81.0	62 - 129			
4,4´-DDE	15.0463	2.0	0.07	16.6667		90.3	65 - 117			
4,4´-DDE [2C]	11.6060	2.0	0.07	16.6667		69.6	65 - 117			
4,4´-DDT	13.3947	2.0	0.14	16.6667		80.4	35 - 136			
4,4´-DDT [2C]	13.2305	2.0	0.14	16.6667		79.4	35 - 136			
Aldrin	14.5728	1.0	0.08	16.6667		87.4	67 - 110			
Aldrin [2C]	13.7355	1.0	0.08	16.6667		82.4	67 - 110			
alpha-BHC	14.4365	1.0	0.04	16.6667		86.6	69 - 110			
alpha-BHC [2C]	13.7735	1.0	0.04	16.6667		82.6	69 - 110			
alpha-Chlordane	14.9017	1.0	0.04	16.6667		89.4	65 - 114			
alpha-Chlordane [2C]	13.4202	1.0	0.04	16.6667		80.5	65 - 114			
beta-BHC	13.6960	1.0	0.04	16.6667		82.2	64 - 108			
beta-BHC [2C]	13.2832	1.0	0.04	16.6667		79.7	64 - 108			
delta-BHC	12.0297	1.0	0.04	16.6667		72.2	44 - 110			
delta-BHC [2C]	14.2615	1.0	0.04	16.6667		85.6	44 - 110			
Dieldrin	14.2103	2.0	0.05	16.6667		85.3	63 - 107			
Dieldrin [2C]	12.9382	2.0	0.05	16.6667		77.6	63 - 107			
Endosulfan I	11.5760	1.0	0.04	16.6667		69.5	63 - 103			
Endosulfan I [2C]	13.3333	1.0	0.04	16.6667		80.0	63 - 103			
Endosulfan II	16.0647	2.0	0.10	16.6667		96.4	62 - 122			
Endosulfan II [2C]	13.8993	2.0	0.10	16.6667		83.4	62 - 122			
Endosulfan sulfate	14.5833	2.0	0.06	16.6667		87.5	53 - 127			
Endosulfan Sulfate [2C]	12.6145	2.0	0.06	16.6667		75.7	53 - 127			
Endrin	14.9607	2.0	0.08	16.6667		89.8	66 - 120			
Endrin [2C]	13.9227	2.0	0.08	16.6667		83.5	66 - 120			
Endrin aldehyde	13.9948	2.0	0.09	16.6667		84.0	67 - 121			
Endrin aldehyde [2C]	14.6302	2.0	0.09	16.6667		87.8	67 - 121			
Endrin ketone	14.1515	2.0	0.07	16.6667		84.9	41 - 146			
Endrin ketone [2C]	12.8698	2.0	0.07	16.6667		77.2	41 - 146			
gamma-BHC	14.0640	1.0	0.05	16.6667		84.4	67 - 109			
gamma-BHC [2C]	13.5810	1.0	0.05	16.6667		81.5	67 - 109			

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Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0705 - GCSEMI_PCB/PEST_S (continued)										
LCS (B8F0705-BS1) - Continued						Prepared: 6/26/2018 Analyzed: 6/27/2018				
gamma-Chlordane	14.3755	1.0	0.04	16.6667		86.3	63 - 110			
gamma-Chlordane [2C]	13.2072	1.0	0.04	16.6667		79.2	63 - 110			
Heptachlor	14.2863	1.0	0.07	16.6667		85.7	67 - 120			
Heptachlor [2C]	13.4742	1.0	0.07	16.6667		80.8	67 - 120			
Heptachlor epoxide	13.8442	1.0	0.04	16.6667		83.1	62 - 108			
Heptachlor epoxide [2C]	13.1023	1.0	0.04	16.6667		78.6	62 - 108			
Methoxychlor	13.6927	5.0	0.10	16.6667		82.2	47 - 152			
Methoxychlor [2C]	14.1165	5.0	0.10	16.6667		84.7	47 - 152			
Surrogate: Decachlorobiphenyl	*14.46*			*16.6667*		*86.7*	*15 - 100*			
Surrogate: Decachlorobiphenyl [	*12.81*			*16.6667*		*76.9*	*15 - 100*			
Surrogate: Tetrachloro-m-xylene	*14.27*			*16.6667*		*85.6*	*16 - 100*			
Surrogate: Tetrachloro-m-xylene	*14.41*			*16.6667*		*86.5*	*16 - 100*			
Matrix Spike (B8F0705-MS1)			**Source: 1802237-29**			Prepared: 6/26/2018 Analyzed: 6/27/2018				
4,4´-DDD	15.3592	2.0	0.10	16.6667	ND	92.2	0 - 127			
4,4´-DDD [2C]	14.6473	2.0	0.10	16.6667	ND	87.9	0 - 127			
4,4´-DDE	14.6520	2.0	0.07	16.6667	ND	87.9	0 - 125			
4,4´-DDE [2C]	12.0638	2.0	0.07	16.6667	ND	72.4	0 - 125			
4,4´-DDT	15.5715	2.0	0.14	16.6667	ND	93.4	0 - 103			
4,4´-DDT [2C]	14.9377	2.0	0.14	16.6667	ND	89.6	0 - 103			
Aldrin	13.5302	1.0	0.08	16.6667	ND	81.2	6 - 104			
Aldrin [2C]	13.8737	1.0	0.08	16.6667	ND	83.2	6 - 104			
alpha-BHC	13.4827	1.0	0.04	16.6667	ND	80.9	0 - 114			
alpha-BHC [2C]	14.0620	1.0	0.04	16.6667	ND	84.4	0 - 114			
alpha-Chlordane	14.1845	1.0	0.04	16.6667	ND	85.1	0 - 110			
alpha-Chlordane [2C]	13.7665	1.0	0.04	16.6667	ND	82.6	0 - 110			
beta-BHC	13.1785	1.0	0.04	16.6667	ND	79.1	0 - 129			
beta-BHC [2C]	14.2005	1.0	0.04	16.6667	ND	85.2	0 - 129			
delta-BHC	11.3575	1.0	0.04	16.6667	ND	68.1	18 - 99			
delta-BHC [2C]	14.6595	1.0	0.04	16.6667	ND	88.0	18 - 99			
Dieldrin	13.9002	2.0	0.05	16.6667	ND	83.4	0 - 124			
Dieldrin [2C]	13.5697	2.0	0.05	16.6667	ND	81.4	0 - 124			
Endosulfan I	10.9293	1.0	0.04	16.6667	ND	65.6	0 - 106			
Endosulfan I [2C]	13.4232	1.0	0.04	16.6667	ND	80.5	0 - 106			
Endosulfan II	16.1278	2.0	0.10	16.6667	ND	96.8	20 - 130			
Endosulfan II [2C]	14.9165	2.0	0.10	16.6667	ND	89.5	20 - 130			
Endosulfan sulfate	14.6323	2.0	0.06	16.6667	ND	87.8	24 - 119			
Endosulfan Sulfate [2C]	14.1303	2.0	0.06	16.6667	ND	84.8	24 - 119			
Endrin	14.8410	2.0	0.08	16.6667	ND	89.0	0 - 135			
Endrin [2C]	14.7897	2.0	0.08	16.6667	ND	88.7	0 - 135			
Endrin aldehyde	15.2912	2.0	0.09	16.6667	ND	91.7	19 - 132			

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Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0705 - GCSEMI_PCB/PEST_S (continued)										
Matrix Spike (B8F0705-MS1) - Continued			**Source: 1802237-29**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Endrin aldehyde [2C]	12.3138	2.0	0.09	16.6667	ND	73.9	19 - 132			
Endrin ketone	14.1213	2.0	0.07	16.6667	ND	84.7	7 - 141			
Endrin ketone [2C]	14.7967	2.0	0.07	16.6667	ND	88.8	7 - 141			
gamma-BHC	13.2802	1.0	0.05	16.6667	ND	79.7	0 - 117			
gamma-BHC [2C]	14.0890	1.0	0.05	16.6667	ND	84.5	0 - 117			
gamma-Chlordane	59.2992	1.0	0.04	16.6667	ND	356	0 - 156			M2
gamma-Chlordane [2C]	12.5203	1.0	0.04	16.6667	ND	75.1	0 - 156			
Heptachlor	13.4132	1.0	0.07	16.6667	ND	80.5	3 - 112			
Heptachlor [2C]	13.6185	1.0	0.07	16.6667	ND	81.7	3 - 112			
Heptachlor epoxide	13.0188	1.0	0.04	16.6667	ND	78.1	0 - 118			
Heptachlor epoxide [2C]	13.0100	1.0	0.04	16.6667	ND	78.1	0 - 118			
Methoxychlor	14.5257	5.0	0.10	16.6667	ND	87.2	0 - 161			
Methoxychlor [2C]	16.8103	5.0	0.10	16.6667	ND	101	0 - 161			
Surrogate: Decachlorobiphenyl	*14.97*			*16.6667*		*89.8*	*15 - 100*			
Surrogate: Decachlorobiphenyl [	*15.33*			*16.6667*		*92.0*	*15 - 100*			
Surrogate: Tetrachloro-m-xylene	*12.43*			*16.6667*		*74.6*	*16 - 100*			
Surrogate: Tetrachloro-m-xylene	*15.88*			*16.6667*		*95.3*	*16 - 100*			
Matrix Spike Dup (B8F0705-MSD1)			**Source: 1802237-29**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
4,4´-DDD	14.8755	2.0	0.10	16.6667	ND	89.3	0 - 127	3.20	20	
4,4´-DDD [2C]	13.5278	2.0	0.10	16.6667	ND	81.2	0 - 127	7.95	20	
4,4´-DDE	14.1192	2.0	0.07	16.6667	ND	84.7	0 - 125	3.70	20	
4,4´-DDE [2C]	11.1043	2.0	0.07	16.6667	ND	66.6	0 - 125	8.28	20	
4,4´-DDT	15.1758	2.0	0.14	16.6667	ND	91.1	0 - 103	2.57	20	
4,4´-DDT [2C]	13.7613	2.0	0.14	16.6667	ND	82.6	0 - 103	8.20	20	
Aldrin	13.0750	1.0	0.08	16.6667	ND	78.4	6 - 104	3.42	20	
Aldrin [2C]	12.8113	1.0	0.08	16.6667	ND	76.9	6 - 104	7.96	20	
alpha-BHC	13.0830	1.0	0.04	16.6667	ND	78.5	0 - 114	3.01	20	
alpha-BHC [2C]	13.0438	1.0	0.04	16.6667	ND	78.3	0 - 114	7.51	20	
alpha-Chlordane	13.7148	1.0	0.04	16.6667	ND	82.3	0 - 110	3.37	20	
alpha-Chlordane [2C]	12.6547	1.0	0.04	16.6667	ND	75.9	0 - 110	8.42	20	
beta-BHC	12.8487	1.0	0.04	16.6667	ND	77.1	0 - 129	2.53	20	
beta-BHC [2C]	13.2192	1.0	0.04	16.6667	ND	79.3	0 - 129	7.16	20	
delta-BHC	11.1560	1.0	0.04	16.6667	ND	66.9	18 - 99	1.79	20	
delta-BHC [2C]	13.5810	1.0	0.04	16.6667	ND	81.5	18 - 99	7.64	20	
Dieldrin	13.4763	2.0	0.05	16.6667	ND	80.9	0 - 124	3.10	20	
Dieldrin [2C]	12.4848	2.0	0.05	16.6667	ND	74.9	0 - 124	8.33	20	
Endosulfan I	10.7162	1.0	0.04	16.6667	ND	64.3	0 - 106	1.97	20	
Endosulfan I [2C]	12.4753	1.0	0.04	16.6667	ND	74.9	0 - 106	7.32	20	
Endosulfan II	15.7123	2.0	0.10	16.6667	ND	94.3	20 - 130	2.61	20	
Endosulfan II [2C]	13.8065	2.0	0.10	16.6667	ND	82.8	20 - 130	7.73	20	

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San Diego , CA 92101	Reported :	07/11/2018

Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0705 - GCSEMI_PCB/PEST_S (continued)										
Matrix Spike Dup (B8F0705-MSD1) - Continued			**Source: 1802237-29**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Endosulfan sulfate	14.4547	2.0	0.06	16.6667	ND	86.7	24 - 119	1.22	20	
Endosulfan Sulfate [2C]	13.2672	2.0	0.06	16.6667	ND	79.6	24 - 119	6.30	20	
Endrin	14.3822	2.0	0.08	16.6667	ND	86.3	0 - 135	3.14	20	
Endrin [2C]	13.6202	2.0	0.08	16.6667	ND	81.7	0 - 135	8.23	20	
Endrin aldehyde	15.2503	2.0	0.09	16.6667	ND	91.5	19 - 132	0.267	20	
Endrin aldehyde [2C]	11.3868	2.0	0.09	16.6667	ND	68.3	19 - 132	7.82	20	
Endrin ketone	13.7885	2.0	0.07	16.6667	ND	82.7	7 - 141	2.39	20	
Endrin ketone [2C]	13.9962	2.0	0.07	16.6667	ND	84.0	7 - 141	5.56	20	
gamma-BHC	12.8745	1.0	0.05	16.6667	ND	77.2	0 - 117	3.10	20	
gamma-BHC [2C]	13.0708	1.0	0.05	16.6667	ND	78.4	0 - 117	7.50	20	
gamma-Chlordane	59.2312	1.0	0.04	16.6667	ND	355	0 - 156	0.115	20	M2
gamma-Chlordane [2C]	11.6273	1.0	0.04	16.6667	ND	69.8	0 - 156	7.40	20	
Heptachlor	12.9877	1.0	0.07	16.6667	ND	77.9	3 - 112	3.22	20	
Heptachlor [2C]	12.6572	1.0	0.07	16.6667	ND	75.9	3 - 112	7.32	20	
Heptachlor epoxide	12.5907	1.0	0.04	16.6667	ND	75.5	0 - 118	3.34	20	
Heptachlor epoxide [2C]	12.0255	1.0	0.04	16.6667	ND	72.2	0 - 118	7.86	20	
Methoxychlor	13.8345	5.0	0.10	16.6667	ND	83.0	0 - 161	4.87	20	
Methoxychlor [2C]	15.3340	5.0	0.10	16.6667	ND	92.0	0 - 161	9.19	20	
Surrogate: Decachlorobiphenyl	*15.21*			*16.6667*		*91.3*	*15 - 100*			
Surrogate: Decachlorobiphenyl [	*14.03*			*16.6667*		*84.2*	*15 - 100*			
Surrogate: Tetrachloro-m-xylene	*12.14*			*16.6667*		*72.8*	*16 - 100*			
Surrogate: Tetrachloro-m-xylene	*14.72*			*16.6667*		*88.3*	*16 - 100*			

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Polychlorinated Biphenyls by EPA 8082 - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0616 - GCSEMI_PCB/PEST_W										
Blank (B8F0616-BLK2)					Prepared: 6/23/2018 Analyzed: 6/24/2018					
Aroclor 1016	ND	0.50	0.04							U
Aroclor 1221	ND	1.0	0.04							U
Aroclor 1232	ND	0.50	0.04							U
Aroclor 1242	ND	0.50	0.04							U
Aroclor 1248	ND	0.50	0.04							U
Aroclor 1254	ND	0.50	0.04							U
Aroclor 1260	ND	0.50	0.04							U
Aroclor 1262	ND	0.50	0.04							U
Aroclor 1268	ND	0.50	0.04							U
Surrogate: Decachlorobiphenyl	*0.3984*			*0.500000*		*79.7*	*1 - 110*			
Surrogate: Tetrachloro-m-xylene	*0.4306*			*0.500000*		*86.1*	*19 - 117*			
LCS (B8F0616-BS2)					Prepared: 6/23/2018 Analyzed: 6/24/2018					
Aroclor 1016	4.35058	0.50	0.04	5.00000		87.0	60 - 110			
Aroclor 1260	4.73685	0.50	0.04	5.00000		94.7	44 - 119			
Surrogate: Decachlorobiphenyl	*0.4121*			*0.500000*		*82.4*	*1 - 110*			
Surrogate: Tetrachloro-m-xylene	*0.4461*			*0.500000*		*89.2*	*19 - 117*			
LCS Dup (B8F0616-BSD2)					Prepared: 6/23/2018 Analyzed: 6/24/2018					
Aroclor 1016	4.29838	0.50	0.04	5.00000		86.0	60 - 110	1.21	20	
Aroclor 1260	4.67278	0.50	0.04	5.00000		93.5	44 - 119	1.36	20	
Surrogate: Decachlorobiphenyl	*0.4053*			*0.500000*		*81.1*	*1 - 110*			
Surrogate: Tetrachloro-m-xylene	*0.4424*			*0.500000*		*88.5*	*19 - 117*			

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Polychlorinated Biphenyls by EPA 8082 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0617 - GCSEMI_PCB/PEST_S										
Blank (B8F0617-BLK1)					Prepared: 6/23/2018 Analyzed: 6/24/2018					
Aroclor 1016	ND	16	4.6							U
Aroclor 1221	ND	16	4.6							U
Aroclor 1232	ND	16	4.6							U
Aroclor 1242	ND	16	4.6							U
Aroclor 1248	ND	16	4.6							U
Aroclor 1254	ND	16	4.6							U
Aroclor 1260	ND	16	4.6							U
Aroclor 1262	ND	16	4.6							U
Aroclor 1268	ND	16	4.6							U
Surrogate: Decachlorobiphenyl	*13.91*			*16.6667*		*83.5*	*14 - 109*			
Surrogate: Tetrachloro-m-xylene	*14.84*			*16.6667*		*89.0*	*18 - 114*			
LCS (B8F0617-BS1)					Prepared: 6/23/2018 Analyzed: 6/24/2018					
Aroclor 1016	144.326	16	4.6	166.667		86.6	67 - 120			
Aroclor 1260	159.485	16	4.6	166.667		95.7	75 - 125			
Surrogate: Decachlorobiphenyl	*14.13*			*16.6667*		*84.8*	*14 - 109*			
Surrogate: Tetrachloro-m-xylene	*14.97*			*16.6667*		*89.8*	*18 - 114*			
Matrix Spike (B8F0617-MS1)			**Source: 1802237-06**		Prepared: 6/23/2018 Analyzed: 6/24/2018					
Aroclor 1016	140.943	16	4.6	166.667	ND	84.6	18 - 133			
Aroclor 1260	165.941	16	4.6	166.667	ND	99.6	15 - 145			
Surrogate: Decachlorobiphenyl	*14.10*			*16.6667*		*84.6*	*14 - 109*			
Surrogate: Tetrachloro-m-xylene	*13.62*			*16.6667*		*81.7*	*18 - 114*			
Matrix Spike Dup (B8F0617-MSD1)			**Source: 1802237-06**		Prepared: 6/23/2018 Analyzed: 6/24/2018					
Aroclor 1016	138.767	16	4.6	166.667	ND	83.3	18 - 133	1.56	20	
Aroclor 1260	159.830	16	4.6	166.667	ND	95.9	15 - 145	3.75	20	
Surrogate: Decachlorobiphenyl	*13.73*			*16.6667*		*82.4*	*14 - 109*			
Surrogate: Tetrachloro-m-xylene	*13.23*			*16.6667*		*79.4*	*18 - 114*			

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Polychlorinated Biphenyls by EPA 8082 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0705 - GCSEMI_PCB/PEST_S										
Blank (B8F0705-BLK2)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
Aroclor 1016	ND	16	4.6							U
Aroclor 1221	ND	16	4.6							U
Aroclor 1232	ND	16	4.6							U
Aroclor 1242	ND	16	4.6							U
Aroclor 1248	ND	16	4.6							U
Aroclor 1254	ND	16	4.6							U
Aroclor 1260	ND	16	4.6							U
Aroclor 1262	ND	16	4.6							U
Aroclor 1268	ND	16	4.6							U
Surrogate: Decachlorobiphenyl	*13.41*			*16.6667*		*80.5*	*14 - 109*			
Surrogate: Tetrachloro-m-xylene	*18.72*			*16.6667*		*112*	*18 - 114*			
LCS (B8F0705-BS2)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
Aroclor 1016	153.204	16	4.6	166.667		91.9	67 - 120			
Aroclor 1260	151.188	16	4.6	166.667		90.7	75 - 125			
Surrogate: Decachlorobiphenyl	*13.94*			*16.6667*		*83.7*	*14 - 109*			
Surrogate: Tetrachloro-m-xylene	*18.51*			*16.6667*		*111*	*18 - 114*			
Matrix Spike (B8F0705-MS2)			**Source: 1802237-30**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Aroclor 1016	107.859	16	4.6	166.667	ND	64.7	18 - 133			
Aroclor 1260	129.681	16	4.6	166.667	ND	77.8	15 - 145			
Surrogate: Decachlorobiphenyl	*13.68*			*16.6667*		*82.1*	*14 - 109*			
Surrogate: Tetrachloro-m-xylene	*12.97*			*16.6667*		*77.8*	*18 - 114*			
Matrix Spike Dup (B8F0705-MSD2)			**Source: 1802237-30**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Aroclor 1016	102.787	16	4.6	166.667	ND	61.7	18 - 133	4.82	20	
Aroclor 1260	128.766	16	4.6	166.667	ND	77.3	15 - 145	0.708	20	
Surrogate: Decachlorobiphenyl	*13.22*			*16.6667*		*79.3*	*14 - 109*			
Surrogate: Tetrachloro-m-xylene	*12.52*			*16.6667*		*75.1*	*18 - 114*			

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Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0563 - MSVOA_S										
Blank (B8F0563-BLK1)					Prepared: 6/21/2018 Analyzed: 6/21/2018					
1,1,1,2-Tetrachloroethane	ND	5.0	0.96							U
1,1,1-Trichloroethane	ND	5.0	1.1							U
1,1,2,2-Tetrachloroethane	ND	5.0	0.62							U
1,1,2-Trichloroethane	ND	5.0	1.6							U
1,1-Dichloroethane	ND	5.0	0.81							U
1,1-Dichloroethene	ND	5.0	2.6							U
1,1-Dichloropropene	ND	5.0	2.3							U
1,2,3-Trichloropropane	ND	5.0	0.54							U
1,2,3-Trichlorobenzene	ND	5.0	1.2							U
1,2,4-Trichlorobenzene	ND	5.0	1.1							U
1,2,4-Trimethylbenzene	ND	5.0	1.5							U
1,2-Dibromo-3-chloropropane	ND	10	1.6							U
1,2-Dibromoethane	ND	5.0	3.2							U
1,2-Dichlorobenzene	ND	5.0	1.1							U
1,2-Dichloroethane	ND	5.0	1.2							U
1,2-Dichloropropane	ND	5.0	1.8							U
1,3,5-Trimethylbenzene	ND	5.0	1.7							U
1,3-Dichlorobenzene	ND	5.0	1.3							U
1,3-Dichloropropane	ND	5.0	1.1							U
1,4-Dichlorobenzene	ND	5.0	1.2							U
2,2-Dichloropropane	ND	5.0	1.2							U
2-Chlorotoluene	ND	5.0	1.6							U
4-Chlorotoluene	ND	5.0	1.5							U
4-Isopropyltoluene	ND	5.0	2.3							U
Benzene	ND	5.0	0.64							U
Bromobenzene	ND	5.0	1.1							U
Bromochloromethane	ND	5.0	0.64							U
Bromodichloromethane	ND	5.0	1.2							U
Bromoform	ND	5.0	0.80							U
Bromomethane	ND	5.0	2.5							U
Carbon disulfide	ND	5.0	3.5							U
Carbon tetrachloride	ND	5.0	1.2							U
Chlorobenzene	ND	5.0	1.0							U
Chloroethane	ND	5.0	1.1							U
Chloroform	ND	5.0	0.82							U
Chloromethane	ND	5.0	1.4							U
cis-1,2-Dichloroethene	ND	5.0	0.67							U
cis-1,3-Dichloropropene	ND	5.0	1.9							U
Di-isopropyl ether	ND	5.0	0.55							U
Dibromochloromethane	ND	5.0	1.0							U
Dibromomethane	ND	5.0	1.6							U

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0563 - MSVOA_S (continued)										
Blank (B8F0563-BLK1) - Continued					Prepared: 6/21/2018 Analyzed: 6/21/2018					
Dichlorodifluoromethane	ND	5.0	2.2							U
Ethyl Acetate	ND	50	8.1							U
Ethyl Ether	ND	50	6.1							U
Ethyl tert-butyl ether	ND	5.0	0.67							U
Ethylbenzene	ND	5.0	0.91							U
Freon-113	ND	5.0	2.8							U
Hexachlorobutadiene	ND	5.0	2.5							U
Isopropylbenzene	ND	5.0	1.8							U
m,p-Xylene	ND	10	1.5							U
Methylene chloride	ND	5.0	2.3							U
MTBE	ND	5.0	0.63							U
n-Butylbenzene	ND	5.0	2.4							U
n-Propylbenzene	ND	5.0	2.2							U
Naphthalene	ND	5.0	0.97							U
o-Xylene	ND	5.0	0.87							U
sec-Butylbenzene	ND	5.0	2.3							U
Styrene	ND	5.0	1.5							U
tert-Amyl methyl ether	ND	5.0	0.59							U
tert-Butanol	ND	100	19							U
tert-Butylbenzene	ND	5.0	2.0							U
Tetrachloroethene	ND	5.0	1.6							U
Toluene	ND	5.0	0.94							U
trans-1,2-Dichloroethene	ND	5.0	0.59							U
trans-1,3-Dichloropropene	ND	5.0	2.1							U
Trichloroethene	ND	5.0	3.1							U
Trichlorofluoromethane	ND	5.0	1.4							U
Vinyl acetate	ND	50	9.8							U
Vinyl chloride	ND	5.0	1.7							U
Surrogate: 1,2-Dichloroethane-d4	*41.65*			*50.0000*		*83.3*	*58 - 144*			
Surrogate: 4-Bromofluorobenzene	*44.75*			*50.0000*		*89.5*	*60 - 137*			
Surrogate: Dibromofluoromethan	*45.51*			*50.0000*		*91.0*	*70 - 131*			
Surrogate: Toluene-d8	*47.11*			*50.0000*		*94.2*	*79 - 131*			
LCS (B8F0563-BS1)					Prepared: 6/21/2018 Analyzed: 6/21/2018					
1,1,1,2-Tetrachloroethane	49.5400	5.0	0.96	50.0000		99.1	82 - 113			
1,1,1-Trichloroethane	44.5800	5.0	1.1	50.0000		89.2	75 - 123			
1,1,2,2-Tetrachloroethane	42.7800	5.0	0.62	50.0000		85.6	70 - 115			
1,1,2-Trichloroethane	44.7700	5.0	1.6	50.0000		89.5	84 - 113			
1,1-Dichloroethane	43.0100	5.0	0.81	50.0000		86.0	75 - 119			
1,1-Dichloroethene	41.4000	5.0	2.6	50.0000		82.8	65 - 116			
1,1-Dichloropropene	53.6900	5.0	2.3	50.0000		107	80 - 117			

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Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0563 - MSVOA_S (continued)										
LCS (B8F0563-BS1) - Continued					Prepared: 6/21/2018 Analyzed: 6/21/2018					
1,2,3-Trichloropropane	41.1900	5.0	0.54	50.0000		82.4	75 - 113			
1,2,3-Trichlorobenzene	55.2300	5.0	1.2	50.0000		110	80 - 119			
1,2,4-Trichlorobenzene	55.7100	5.0	1.1	50.0000		111	83 - 124			
1,2,4-Trimethylbenzene	49.6300	5.0	1.5	50.0000		99.3	87 - 114			
1,2-Dibromo-3-chloropropane	43.7900	10	1.6	50.0000		87.6	70 - 130			
1,2-Dibromoethane	46.7000	5.0	3.2	50.0000		93.4	81 - 117			
1,2-Dichlorobenzene	49.9200	5.0	1.1	50.0000		99.8	84 - 113			
1,2-Dichloroethane	42.0600	5.0	1.2	50.0000		84.1	77 - 126			
1,2-Dichloropropane	44.3800	5.0	1.8	50.0000		88.8	81 - 115			
1,3,5-Trimethylbenzene	50.2900	5.0	1.7	50.0000		101	85 - 115			
1,3-Dichlorobenzene	49.3100	5.0	1.3	50.0000		98.6	84 - 112			
1,3-Dichloropropane	46.8700	5.0	1.1	50.0000		93.7	84 - 110			
1,4-Dichlorobenzene	49.1000	5.0	1.2	50.0000		98.2	86 - 112			
2,2-Dichloropropane	49.8200	5.0	1.2	50.0000		99.6	59 - 139			
2-Chlorotoluene	47.0700	5.0	1.6	50.0000		94.1	82 - 111			
4-Chlorotoluene	45.8500	5.0	1.5	50.0000		91.7	81 - 113			
4-Isopropyltoluene	51.9600	5.0	2.3	50.0000		104	88 - 118			
Benzene	89.7400	5.0	0.64	100.000		89.7	83 - 112			
Bromobenzene	48.5700	5.0	1.1	50.0000		97.1	80 - 108			
Bromochloromethane	46.3300	5.0	0.64	50.0000		92.7	74 - 117			
Bromodichloromethane	45.4100	5.0	1.2	50.0000		90.8	83 - 112			
Bromoform	49.9800	5.0	0.80	50.0000		100	74 - 116			
Bromomethane	40.7600	5.0	2.5	50.0000		81.5	55 - 149			
Carbon disulfide	40.3500	5.0	3.5	50.0000		80.7	65 - 131			
Carbon tetrachloride	49.9500	5.0	1.2	50.0000		99.9	72 - 128			
Chlorobenzene	49.2000	5.0	1.0	50.0000		98.4	85 - 109			
Chloroethane	33.1400	5.0	1.1	50.0000		66.3	53 - 143			
Chloroform	43.9100	5.0	0.82	50.0000		87.8	79 - 117			
Chloromethane	30.6400	5.0	1.4	50.0000		61.3	50 - 134			
cis-1,2-Dichloroethene	46.1900	5.0	0.67	50.0000		92.4	75 - 116			
cis-1,3-Dichloropropene	46.6600	5.0	1.9	50.0000		93.3	80 - 118			
Di-isopropyl ether	39.2900	5.0	0.55	50.0000		78.6	72 - 123			
Dibromochloromethane	48.7600	5.0	1.0	50.0000		97.5	79 - 110			
Dibromomethane	44.5000	5.0	1.6	50.0000		89.0	82 - 114			
Dichlorodifluoromethane	36.4700	5.0	2.2	50.0000		72.9	42 - 144			
Ethyl Acetate	361.520	50	8.1	500.000		72.3	70 - 134			
Ethyl Ether	366.900	50	6.1	500.000		73.4	63 - 119			
Ethyl tert-butyl ether	42.5000	5.0	0.67	50.0000		85.0	61 - 136			
Ethylbenzene	98.2900	5.0	0.91	100.000		98.3	84 - 119			
Freon-113	44.1600	5.0	2.8	50.0000		88.3	71 - 126			
Hexachlorobutadiene	57.6300	5.0	2.5	50.0000		115	78 - 133			
Isopropylbenzene	50.6700	5.0	1.8	50.0000		101	73 - 123			

Certificate of Analysis

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0563 - MSVOA_S (continued)										
LCS (B8F0563-BS1) - Continued						Prepared: 6/21/2018 Analyzed: 6/21/2018				
m,p-Xylene	103.330	10	1.5	100.000		103	86 - 121			
Methylene chloride	42.4500	5.0	2.3	50.0000		84.9	47 - 137			
MTBE	42.7300	5.0	0.63	50.0000		85.5	67 - 124			
n-Butylbenzene	51.5600	5.0	2.4	50.0000		103	89 - 125			
n-Propylbenzene	49.1800	5.0	2.2	50.0000		98.4	81 - 116			
Naphthalene	49.2900	5.0	0.97	50.0000		98.6	70 - 130			
o-Xylene	99.9300	5.0	0.87	100.000		99.9	84 - 114			
sec-Butylbenzene	51.4800	5.0	2.3	50.0000		103	84 - 118			
Styrene	50.0200	5.0	1.5	50.0000		100	82 - 117			
tert-Amyl methyl ether	43.0500	5.0	0.59	50.0000		86.1	60 - 129			
tert-Butanol	175.690	100	19	250.000		70.3	22 - 150			
tert-Butylbenzene	50.7800	5.0	2.0	50.0000		102	83 - 112			
Tetrachloroethene	58.4200	5.0	1.6	50.0000		117	75 - 117			
Toluene	93.1900	5.0	0.94	100.000		93.2	85 - 122			
trans-1,2-Dichloroethene	45.6000	5.0	0.59	50.0000		91.2	70 - 116			
trans-1,3-Dichloropropene	44.8400	5.0	2.1	50.0000		89.7	76 - 127			
Trichloroethene	52.8400	5.0	3.1	50.0000		106	79 - 116			
Trichlorofluoromethane	43.5900	5.0	1.4	50.0000		87.2	63 - 135			
Vinyl acetate	347.810	50	9.8	500.000		69.6	69 - 136			
Vinyl chloride	33.8300	5.0	1.7	50.0000		67.7	53 - 136			
Surrogate: 1,2-Dichloroethane-d4	*39.20*			*50.0000*		*78.4*	*58 - 144*			
Surrogate: 4-Bromofluorobenzene	*49.40*			*50.0000*		*98.8*	*60 - 137*			
Surrogate: Dibromofluoromethan	*44.45*			*50.0000*		*88.9*	*70 - 131*			
Surrogate: Toluene-d8	*48.00*			*50.0000*		*96.0*	*79 - 131*			
Matrix Spike (B8F0563-MS1)			**Source: 1802237-01**			Prepared: 6/21/2018 Analyzed: 6/21/2018				
1,1,1,2-Tetrachloroethane	48.9900	5.0	0.96	50.0000	ND	98.0	41 - 125			
1,1,1-Trichloroethane	46.5200	5.0	1.1	50.0000	ND	93.0	49 - 131			
1,1,2,2-Tetrachloroethane	41.8700	5.0	0.62	50.0000	ND	83.7	28 - 134			
1,1,2-Trichloroethane	45.1100	5.0	1.6	50.0000	ND	90.2	44 - 127			
1,1-Dichloroethane	43.3500	5.0	0.81	50.0000	ND	86.7	54 - 119			
1,1-Dichloroethene	44.8400	5.0	2.6	50.0000	ND	89.7	48 - 123			
1,1-Dichloropropene	55.8400	5.0	2.3	50.0000	ND	112	47 - 131			
1,2,3-Trichloropropane	41.4400	5.0	0.54	50.0000	ND	82.9	42 - 124			
1,2,3-Trichlorobenzene	50.4600	5.0	1.2	50.0000	ND	101	0 - 131			
1,2,4-Trichlorobenzene	54.3200	5.0	1.1	50.0000	ND	109	7 - 131			
1,2,4-Trimethylbenzene	49.3700	5.0	1.5	50.0000	ND	98.7	26 - 135			
1,2-Dibromo-3-chloropropane	46.3200	10	1.6	50.0000	ND	92.6	31 - 139			
1,2-Dibromoethane	45.8700	5.0	3.2	50.0000	ND	91.7	41 - 128			
1,2-Dichlorobenzene	48.4400	5.0	1.1	50.0000	ND	96.9	21 - 129			
1,2-Dichloroethane	40.8100	5.0	1.2	50.0000	ND	81.6	46 - 128			

Certificate of Analysis

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0563 - MSVOA_S (continued)										
Matrix Spike (B8F0563-MS1) - Continued			**Source: 1802237-01**		Prepared: 6/21/2018 Analyzed: 6/21/2018					
1,2-Dichloropropane	44.5900	5.0	1.8	50.0000	ND	89.2	52 - 118			
1,3,5-Trimethylbenzene	50.2300	5.0	1.7	50.0000	ND	100	26 - 136			
1,3-Dichlorobenzene	48.2700	5.0	1.3	50.0000	ND	96.5	22 - 129			
1,3-Dichloropropane	46.0400	5.0	1.1	50.0000	ND	92.1	47 - 120			
1,4-Dichlorobenzene	47.6100	5.0	1.2	50.0000	ND	95.2	22 - 130			
2,2-Dichloropropane	52.5100	5.0	1.2	50.0000	ND	105	38 - 139			
2-Chlorotoluene	46.5400	5.0	1.6	50.0000	ND	93.1	29 - 130			
4-Chlorotoluene	46.4900	5.0	1.5	50.0000	ND	93.0	28 - 130			
4-Isopropyltoluene	52.8600	5.0	2.3	50.0000	ND	106	23 - 141			
Benzene	90.6200	5.0	0.64	100.000	ND	90.6	52 - 119			
Bromobenzene	48.3500	5.0	1.1	50.0000	ND	96.7	33 - 122			
Bromochloromethane	45.7500	5.0	0.64	50.0000	ND	91.5	51 - 116			
Bromodichloromethane	45.1200	5.0	1.2	50.0000	ND	90.2	47 - 120			
Bromoform	49.2100	5.0	0.80	50.0000	ND	98.4	35 - 127			
Bromomethane	40.9000	5.0	2.5	50.0000	ND	81.8	34 - 143			
Carbon disulfide	43.5900	5.0	3.5	50.0000	ND	87.2	42 - 137			
Carbon tetrachloride	54.4200	5.0	1.2	50.0000	ND	109	44 - 138			
Chlorobenzene	49.1900	5.0	1.0	50.0000	ND	98.4	38 - 124			
Chloroethane	34.2500	5.0	1.1	50.0000	ND	68.5	37 - 140			
Chloroform	44.3000	5.0	0.82	50.0000	ND	88.6	54 - 118			
Chloromethane	31.4800	5.0	1.4	50.0000	ND	63.0	32 - 139			
cis-1,2-Dichloroethene	45.7200	5.0	0.67	50.0000	ND	91.4	51 - 116			
cis-1,3-Dichloropropene	46.2200	5.0	1.9	50.0000	ND	92.4	41 - 126			
Di-isopropyl ether	39.2900	5.0	0.55	50.0000	ND	78.6	50 - 122			
Dibromochloromethane	48.8900	5.0	1.0	50.0000	ND	97.8	42 - 118			
Dibromomethane	44.0300	5.0	1.6	50.0000	ND	88.1	46 - 122			
Dichlorodifluoromethane	38.2100	5.0	2.2	50.0000	ND	76.4	31 - 146			
Ethyl Acetate	346.860	50	8.1	500.000	ND	69.4	17 - 148			
Ethyl Ether	351.140	50	6.1	500.000	ND	70.2	42 - 120			
Ethyl tert-butyl ether	42.1600	5.0	0.67	50.0000	ND	84.3	41 - 133			
Ethylbenzene	99.7800	5.0	0.91	100.000	ND	99.8	38 - 136			
Freon-113	47.6700	5.0	2.8	50.0000	ND	95.3	43 - 139			
Hexachlorobutadiene	48.8100	5.0	2.5	50.0000	ND	97.6	2 - 135			
Isopropylbenzene	52.1000	5.0	1.8	50.0000	ND	104	31 - 136			
m,p-Xylene	103.460	10	1.5	100.000	ND	103	36 - 137			
Methylene chloride	41.7000	5.0	2.3	50.0000	ND	83.4	28 - 137			
MTBE	42.1700	5.0	0.63	50.0000	ND	84.3	44 - 126			
n-Butylbenzene	51.9900	5.0	2.4	50.0000	ND	104	8 - 154			
n-Propylbenzene	50.5900	5.0	2.2	50.0000	ND	101	28 - 135			
Naphthalene	51.2800	5.0	0.97	50.0000	ND	103	7 - 136			
o-Xylene	99.9300	5.0	0.87	100.000	ND	99.9	35 - 129			
sec-Butylbenzene	52.0400	5.0	2.3	50.0000	ND	104	25 - 138			

Certificate of Analysis

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0563 - MSVOA_S (continued)										
Matrix Spike (B8F0563-MS1) - Continued			**Source: 1802237-01**		Prepared: 6/21/2018 Analyzed: 6/21/2018					
Styrene	48.9900	5.0	1.5	50.0000	ND	98.0	33 - 128			
tert-Amyl methyl ether	42.4400	5.0	0.59	50.0000	ND	84.9	41 - 124			
tert-Butanol	256.070	100	19	250.000	ND	102	8 - 157			
tert-Butylbenzene	51.9100	5.0	2.0	50.0000	ND	104	26 - 134			
Tetrachloroethene	61.1200	5.0	1.6	50.0000	ND	122	36 - 130			
Toluene	94.5200	5.0	0.94	100.000	ND	94.5	44 - 136			
trans-1,2-Dichloroethene	46.7200	5.0	0.59	50.0000	ND	93.4	49 - 119			
trans-1,3-Dichloropropene	44.1500	5.0	2.1	50.0000	ND	88.3	33 - 136			
Trichloroethene	56.1800	5.0	3.1	50.0000	ND	112	32 - 147			
Trichlorofluoromethane	46.7300	5.0	1.4	50.0000	ND	93.5	41 - 144			
Vinyl acetate	260.250	50	9.8	500.000	ND	52.0	0 - 146			
Vinyl chloride	35.0000	5.0	1.7	50.0000	ND	70.0	39 - 142			
Surrogate: 1,2-Dichloroethane-d4	*42.06*			*50.0000*		*84.1*	*58 - 144*			
Surrogate: 4-Bromofluorobenzene	*48.84*			*50.0000*		*97.7*	*60 - 137*			
Surrogate: Dibromofluoromethan	*43.30*			*50.0000*		*86.6*	*70 - 131*			
Surrogate: Toluene-d8	*47.87*			*50.0000*		*95.7*	*79 - 131*			
Matrix Spike Dup (B8F0563-MSD1)			**Source: 1802237-01**		Prepared: 6/21/2018 Analyzed: 6/21/2018					
1,1,1,2-Tetrachloroethane	45.9000	5.0	0.96	50.0000	ND	91.8	41 - 125	6.51	20	
1,1,1-Trichloroethane	42.4400	5.0	1.1	50.0000	ND	84.9	49 - 131	9.17	20	
1,1,2,2-Tetrachloroethane	41.0700	5.0	0.62	50.0000	ND	82.1	28 - 134	1.93	20	
1,1,2-Trichloroethane	43.6900	5.0	1.6	50.0000	ND	87.4	44 - 127	3.20	20	
1,1-Dichloroethane	40.4000	5.0	0.81	50.0000	ND	80.8	54 - 119	7.04	20	
1,1-Dichloroethene	38.2600	5.0	2.6	50.0000	ND	76.5	48 - 123	15.8	20	
1,1-Dichloropropene	51.0600	5.0	2.3	50.0000	ND	102	47 - 131	8.94	20	
1,2,3-Trichloropropane	41.1200	5.0	0.54	50.0000	ND	82.2	42 - 124	0.775	20	
1,2,3-Trichlorobenzene	49.1800	5.0	1.2	50.0000	ND	98.4	0 - 131	2.57	20	
1,2,4-Trichlorobenzene	52.1100	5.0	1.1	50.0000	ND	104	7 - 131	4.15	20	
1,2,4-Trimethylbenzene	45.6900	5.0	1.5	50.0000	ND	91.4	26 - 135	7.74	20	
1,2-Dibromo-3-chloropropane	47.2000	10	1.6	50.0000	ND	94.4	31 - 139	1.88	20	
1,2-Dibromoethane	45.1500	5.0	3.2	50.0000	ND	90.3	41 - 128	1.58	20	
1,2-Dichlorobenzene	46.9600	5.0	1.1	50.0000	ND	93.9	21 - 129	3.10	20	
1,2-Dichloroethane	40.4000	5.0	1.2	50.0000	ND	80.8	46 - 128	1.01	20	
1,2-Dichloropropane	42.3500	5.0	1.8	50.0000	ND	84.7	52 - 118	5.15	20	
1,3,5-Trimethylbenzene	46.1700	5.0	1.7	50.0000	ND	92.3	26 - 136	8.42	20	
1,3-Dichlorobenzene	45.9500	5.0	1.3	50.0000	ND	91.9	22 - 129	4.92	20	
1,3-Dichloropropane	44.8300	5.0	1.1	50.0000	ND	89.7	47 - 120	2.66	20	
1,4-Dichlorobenzene	46.3700	5.0	1.2	50.0000	ND	92.7	22 - 130	2.64	20	
2,2-Dichloropropane	47.0600	5.0	1.2	50.0000	ND	94.1	38 - 139	10.9	20	
2-Chlorotoluene	43.7200	5.0	1.6	50.0000	ND	87.4	29 - 130	6.25	20	
4-Chlorotoluene	43.9900	5.0	1.5	50.0000	ND	88.0	28 - 130	5.53	20	

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0563 - MSVOA_S (continued)										
Matrix Spike Dup (B8F0563-MSD1) - Continued			**Source: 1802237-01**		Prepared: 6/21/2018 Analyzed: 6/21/2018					
4-Isopropyltoluene	48.0100	5.0	2.3	50.0000	ND	96.0	23 - 141	9.62	20	
Benzene	84.9300	5.0	0.64	100.000	ND	84.9	52 - 119	6.48	20	
Bromobenzene	46.8900	5.0	1.1	50.0000	ND	93.8	33 - 122	3.07	20	
Bromochloromethane	44.5100	5.0	0.64	50.0000	ND	89.0	51 - 116	2.75	20	
Bromodichloromethane	43.6900	5.0	1.2	50.0000	ND	87.4	47 - 120	3.22	20	
Bromoform	48.3300	5.0	0.80	50.0000	ND	96.7	35 - 127	1.80	20	
Bromomethane	37.5000	5.0	2.5	50.0000	ND	75.0	34 - 143	8.67	20	
Carbon disulfide	37.0000	5.0	3.5	50.0000	ND	74.0	42 - 137	16.4	20	
Carbon tetrachloride	48.4800	5.0	1.2	50.0000	ND	97.0	44 - 138	11.5	20	
Chlorobenzene	45.8300	5.0	1.0	50.0000	ND	91.7	38 - 124	7.07	20	
Chloroethane	31.7700	5.0	1.1	50.0000	ND	63.5	37 - 140	7.51	20	
Chloroform	41.6600	5.0	0.82	50.0000	ND	83.3	54 - 118	6.14	20	
Chloromethane	28.9800	5.0	1.4	50.0000	ND	58.0	32 - 139	8.27	20	
cis-1,2-Dichloroethene	43.1200	5.0	0.67	50.0000	ND	86.2	51 - 116	5.85	20	
cis-1,3-Dichloropropene	44.5500	5.0	1.9	50.0000	ND	89.1	41 - 126	3.68	20	
Di-isopropyl ether	37.9600	5.0	0.55	50.0000	ND	75.9	50 - 122	3.44	20	
Dibromochloromethane	47.6900	5.0	1.0	50.0000	ND	95.4	42 - 118	2.48	20	
Dibromomethane	42.8500	5.0	1.6	50.0000	ND	85.7	46 - 122	2.72	20	
Dichlorodifluoromethane	34.2000	5.0	2.2	50.0000	ND	68.4	31 - 146	11.1	20	
Ethyl Acetate	327.730	50	8.1	500.000	ND	65.5	17 - 148	5.67	20	
Ethyl Ether	352.160	50	6.1	500.000	ND	70.4	42 - 120	0.290	20	
Ethyl tert-butyl ether	41.1600	5.0	0.67	50.0000	ND	82.3	41 - 133	2.40	20	
Ethylbenzene	90.5900	5.0	0.91	100.000	ND	90.6	38 - 136	9.65	20	
Freon-113	40.5900	5.0	2.8	50.0000	ND	81.2	43 - 139	16.0	20	
Hexachlorobutadiene	44.8800	5.0	2.5	50.0000	ND	89.8	2 - 135	8.39	20	
Isopropylbenzene	48.1100	5.0	1.8	50.0000	ND	96.2	31 - 136	7.96	20	
m,p-Xylene	92.9200	10	1.5	100.000	ND	92.9	36 - 137	10.7	20	
Methylene chloride	39.2700	5.0	2.3	50.0000	ND	78.5	28 - 137	6.00	20	
MTBE	42.4300	5.0	0.63	50.0000	ND	84.9	44 - 126	0.615	20	
n-Butylbenzene	46.7800	5.0	2.4	50.0000	ND	93.6	8 - 154	10.5	20	
n-Propylbenzene	45.9100	5.0	2.2	50.0000	ND	91.8	28 - 135	9.70	20	
Naphthalene	51.5600	5.0	0.97	50.0000	ND	103	7 - 136	0.545	20	
o-Xylene	91.6500	5.0	0.87	100.000	ND	91.6	35 - 129	8.64	20	
sec-Butylbenzene	47.0700	5.0	2.3	50.0000	ND	94.1	25 - 138	10.0	20	
Styrene	45.3800	5.0	1.5	50.0000	ND	90.8	33 - 128	7.65	20	
tert-Amyl methyl ether	42.1200	5.0	0.59	50.0000	ND	84.2	41 - 124	0.757	20	
tert-Butanol	256.490	100	19	250.000	ND	103	8 - 157	0.164	20	
tert-Butylbenzene	47.3200	5.0	2.0	50.0000	ND	94.6	26 - 134	9.25	20	
Tetrachloroethene	54.9900	5.0	1.6	50.0000	ND	110	36 - 130	10.6	20	
Toluene	88.1600	5.0	0.94	100.000	ND	88.2	44 - 136	6.96	20	
trans-1,2-Dichloroethene	42.3900	5.0	0.59	50.0000	ND	84.8	49 - 119	9.72	20	
trans-1,3-Dichloropropene	42.6400	5.0	2.1	50.0000	ND	85.3	33 - 136	3.48	20	

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0563 - MSVOA_S (continued)										
Matrix Spike Dup (B8F0563-MSD1) - Continued			**Source: 1802237-01**		Prepared: 6/21/2018 Analyzed: 6/21/2018					
Trichloroethene	53.0200	5.0	3.1	50.0000	ND	106	32 - 147	5.79	20	
Trichlorofluoromethane	40.3600	5.0	1.4	50.0000	ND	80.7	41 - 144	14.6	20	
Vinyl acetate	183.170	50	9.8	500.000	ND	36.6	0 - 146	34.8	20	R
Vinyl chloride	31.6600	5.0	1.7	50.0000	ND	63.3	39 - 142	10.0	20	
Surrogate: 1,2-Dichloroethane-d4	*40.61*			*50.0000*		*81.2*	*58 - 144*			
Surrogate: 4-Bromofluorobenzene	*49.25*			*50.0000*		*98.5*	*60 - 137*			
Surrogate: Dibromofluoromethan	*44.25*			*50.0000*		*88.5*	*70 - 131*			
Surrogate: Toluene-d8	*48.11*			*50.0000*		*96.2*	*79 - 131*			

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Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0569 - MSVOA_W										
Blank (B8F0569-BLK1)					Prepared: 6/22/2018 Analyzed: 6/22/2018					
1,1,1,2-Tetrachloroethane	ND	5.0	0.13							U
1,1,1-Trichloroethane	ND	5.0	0.38							U
1,1,2,2-Tetrachloroethane	ND	5.0	0.20							U
1,1,2-Trichloroethane	ND	5.0	0.19							U
1,1-Dichloroethane	ND	5.0	0.20							U
1,1-Dichloroethene	ND	5.0	0.28							U
1,1-Dichloropropene	ND	5.0	0.36							U
1,2,3-Trichloropropane	ND	5.0	0.16							U
1,2,3-Trichlorobenzene	ND	5.0	0.06							U
1,2,4-Trichlorobenzene	ND	5.0	0.07							U
1,2,4-Trimethylbenzene	ND	5.0	0.09							U
1,2-Dibromo-3-chloropropane	ND	5.0	0.20							U
1,2-Dibromoethane	ND	5.0	0.13							U
1,2-Dichlorobenzene	ND	5.0	0.12							U
1,2-Dichloroethane	ND	5.0	0.39							U
1,2-Dichloropropane	ND	5.0	0.47							U
1,3,5-Trimethylbenzene	ND	5.0	0.08							U
1,3-Dichlorobenzene	ND	5.0	0.13							U
1,3-Dichloropropane	ND	5.0	0.08							U
1,4-Dichlorobenzene	ND	5.0	0.18							U
2,2-Dichloropropane	ND	5.0	0.23							U
2-Chlorotoluene	ND	5.0	0.12							U
4-Chlorotoluene	ND	5.0	0.11							U
4-Isopropyltoluene	ND	5.0	0.12							U
Benzene	ND	5.0	0.21							U
Bromobenzene	ND	5.0	0.12							U
Bromochloromethane	ND	5.0	0.10							U
Bromodichloromethane	ND	5.0	0.32							U
Bromoform	ND	5.0	0.14							U
Bromomethane	ND	5.0	0.22							U
Carbon disulfide	ND	5.0	0.21							U
Carbon tetrachloride	ND	5.0	0.31							U
Chlorobenzene	ND	5.0	0.16							U
Chloroethane	ND	5.0	0.29							U
Chloroform	ND	5.0	0.16							U
Chloromethane	ND	5.0	0.19							U
cis-1,2-Dichloroethene	ND	5.0	0.39							U
cis-1,3-Dichloropropene	ND	5.0	0.08							U
Di-isopropyl ether	ND	5.0	0.14							U
Dibromochloromethane	ND	5.0	0.11							U
Dibromomethane	ND	5.0	0.09							U

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0569 - MSVOA_W (continued)										
Blank (B8F0569-BLK1) - Continued					Prepared: 6/22/2018 Analyzed: 6/22/2018					
Dichlorodifluoromethane	ND	5.0	0.31							U
Ethyl Acetate	ND	50	1.1							U
Ethyl Ether	ND	50	1.4							U
Ethyl tert-butyl ether	ND	5.0	0.08							U
Ethylbenzene	ND	5.0	0.08							U
Freon-113	ND	5.0	0.34							U
Hexachlorobutadiene	ND	5.0	0.22							U
Isopropylbenzene	ND	5.0	0.10							U
m,p-Xylene	ND	10	0.18							U
Methylene chloride	ND	5.0	0.26							U
MTBE	ND	5.0	0.09							U
n-Butylbenzene	ND	5.0	0.15							U
n-Propylbenzene	ND	5.0	0.14							U
Naphthalene	ND	5.0	0.09							U
o-Xylene	ND	5.0	0.04							U
sec-Butylbenzene	ND	5.0	0.15							U
Styrene	ND	5.0	0.05							U
tert-Amyl methyl ether	ND	5.0	0.10							U
tert-Butanol	ND	100	3.0							U
tert-Butylbenzene	ND	5.0	0.11							U
Tetrachloroethene	ND	5.0	0.18							U
Toluene	ND	5.0	0.14							U
trans-1,2-Dichloroethene	ND	5.0	0.15							U
trans-1,3-Dichloropropene	ND	5.0	0.09							U
Trichloroethene	ND	5.0	0.15							U
Trichlorofluoromethane	ND	5.0	0.33							U
Vinyl acetate	ND	50	1.9							U
Vinyl chloride	ND	5.0	0.25							U
Surrogate: 1,2-Dichloroethane-d4	*25.36*			*25.0000*		*101*	*74 - 132*			
Surrogate: 4-Bromofluorobenzene	*24.84*			*25.0000*		*99.4*	*82 - 123*			
Surrogate: Dibromofluoromethan	*25.51*			*25.0000*		*102*	*76 - 135*			
Surrogate: Toluene-d8	*25.51*			*25.0000*		*102*	*85 - 125*			
LCS (B8F0569-BS1)					Prepared: 6/22/2018 Analyzed: 6/22/2018					
1,1,1,2-Tetrachloroethane	17.5000	5.0	0.13	20.0000		87.5	67 - 140			
1,1,1-Trichloroethane	19.2700	5.0	0.38	20.0000		96.4	74 - 136			
1,1,2,2-Tetrachloroethane	17.2400	5.0	0.20	20.0000		86.2	73 - 116			
1,1,2-Trichloroethane	16.9700	5.0	0.19	20.0000		84.8	78 - 116			
1,1-Dichloroethane	17.9400	5.0	0.20	20.0000		89.7	64 - 134			
1,1-Dichloroethene	18.8700	5.0	0.28	20.0000		94.4	72 - 123			
1,1-Dichloropropene	19.5500	5.0	0.36	20.0000		97.8	79 - 137			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0569 - MSVOA_W (continued)										
LCS (B8F0569-BS1) - Continued					Prepared: 6/22/2018 Analyzed: 6/22/2018					
1,2,3-Trichloropropane	17.0100	5.0	0.16	20.0000		85.0	81 - 121			
1,2,3-Trichlorobenzene	17.5800	5.0	0.06	20.0000		87.9	71 - 114			
1,2,4-Trichlorobenzene	17.6500	5.0	0.07	20.0000		88.2	80 - 119			
1,2,4-Trimethylbenzene	18.6300	5.0	0.09	20.0000		93.2	78 - 142			
1,2-Dibromo-3-chloropropane	14.6700	5.0	0.20	20.0000		73.4	47 - 130			
1,2-Dibromoethane	16.6700	5.0	0.13	20.0000		83.4	79 - 116			
1,2-Dichlorobenzene	17.8500	5.0	0.12	20.0000		89.2	82 - 121			
1,2-Dichloroethane	17.7400	5.0	0.39	20.0000		88.7	71 - 126			
1,2-Dichloropropane	17.3900	5.0	0.47	20.0000		87.0	76 - 119			
1,3,5-Trimethylbenzene	19.0400	5.0	0.08	20.0000		95.2	78 - 144			
1,3-Dichlorobenzene	18.3800	5.0	0.13	20.0000		91.9	83 - 125			
1,3-Dichloropropane	17.0200	5.0	0.08	20.0000		85.1	78 - 117			
1,4-Dichlorobenzene	18.2500	5.0	0.18	20.0000		91.2	82 - 118			
2,2-Dichloropropane	20.6100	5.0	0.23	20.0000		103	67 - 144			
2-Chlorotoluene	18.8400	5.0	0.12	20.0000		94.2	73 - 143			
4-Chlorotoluene	18.6700	5.0	0.11	20.0000		93.4	72 - 143			
4-Isopropyltoluene	19.4000	5.0	0.12	20.0000		97.0	77 - 149			
Benzene	36.3900	5.0	0.21	40.0000		91.0	77 - 139			
Bromobenzene	17.9600	5.0	0.12	20.0000		89.8	83 - 121			
Bromochloromethane	18.8100	5.0	0.10	20.0000		94.0	73 - 121			
Bromodichloromethane	17.3500	5.0	0.32	20.0000		86.8	73 - 125			
Bromoform	16.0100	5.0	0.14	20.0000		80.0	73 - 125			
Bromomethane	13.1300	5.0	0.22	20.0000		65.6	48 - 144			
Carbon disulfide	19.8900	5.0	0.21	20.0000		99.4	73 - 132			
Carbon tetrachloride	19.4700	5.0	0.31	20.0000		97.4	75 - 151			
Chlorobenzene	18.4000	5.0	0.16	20.0000		92.0	82 - 123			
Chloroethane	19.6700	5.0	0.29	20.0000		98.4	55 - 170			
Chloroform	18.1200	5.0	0.16	20.0000		90.6	74 - 125			
Chloromethane	16.6200	5.0	0.19	20.0000		83.1	34 - 146			
cis-1,2-Dichloroethene	17.7100	5.0	0.39	20.0000		88.6	69 - 124			
cis-1,3-Dichloropropene	17.0500	5.0	0.08	20.0000		85.2	71 - 123			
Di-isopropyl ether	16.9300	5.0	0.14	20.0000		84.6	54 - 147			
Dibromochloromethane	16.5600	5.0	0.11	20.0000		82.8	57 - 140			
Dibromomethane	17.2100	5.0	0.09	20.0000		86.0	78 - 115			
Dichlorodifluoromethane	19.5800	5.0	0.31	20.0000		97.9	67 - 136			
Ethyl Acetate	160.810	50	1.1	200.000		80.4	49 - 121			
Ethyl Ether	165.140	50	1.4	200.000		82.6	62 - 120			
Ethyl tert-butyl ether	17.5700	5.0	0.08	20.0000		87.8	62 - 123			
Ethylbenzene	38.3800	5.0	0.08	40.0000		96.0	80 - 142			
Freon-113	19.9600	5.0	0.34	20.0000		99.8	77 - 147			
Hexachlorobutadiene	19.4900	5.0	0.22	20.0000		97.4	83 - 135			
Isopropylbenzene	19.4800	5.0	0.10	20.0000		97.4	75 - 147			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0569 - MSVOA_W (continued)										
LCS (B8F0569-BS1) - Continued					Prepared: 6/22/2018 Analyzed: 6/22/2018					
m,p-Xylene	38.5800	10	0.18	40.0000		96.4	74 - 148			
Methylene chloride	18.3400	5.0	0.26	20.0000		91.7	67 - 135			
MTBE	17.0500	5.0	0.09	20.0000		85.2	55 - 128			
n-Butylbenzene	19.5500	5.0	0.15	20.0000		97.8	76 - 153			
n-Propylbenzene	19.6300	5.0	0.14	20.0000		98.2	72 - 155			
Naphthalene	16.3300	5.0	0.09	20.0000		81.6	69 - 113			
o-Xylene	37.5600	5.0	0.04	40.0000		93.9	71 - 153			
sec-Butylbenzene	19.5700	5.0	0.15	20.0000		97.8	74 - 154			
Styrene	17.7900	5.0	0.05	20.0000		89.0	75 - 143			
tert-Amyl methyl ether	16.5400	5.0	0.10	20.0000		82.7	61 - 123			
tert-Butanol	73.0800	100	3.0	100.000		73.1	40 - 112			U
tert-Butylbenzene	19.1900	5.0	0.11	20.0000		96.0	77 - 144			
Tetrachloroethene	19.6400	5.0	0.18	20.0000		98.2	82 - 136			
Toluene	37.7000	5.0	0.14	40.0000		94.2	75 - 142			
trans-1,2-Dichloroethene	18.1700	5.0	0.15	20.0000		90.8	63 - 135			
trans-1,3-Dichloropropene	16.8300	5.0	0.09	20.0000		84.2	65 - 131			
Trichloroethene	17.7900	5.0	0.15	20.0000		89.0	82 - 124			
Trichlorofluoromethane	20.2200	5.0	0.33	20.0000		101	70 - 159			
Vinyl acetate	215.300	50	1.9	200.000		108	48 - 133			
Vinyl chloride	18.3500	5.0	0.25	20.0000		91.8	67 - 131			
Surrogate: 1,2-Dichloroethane-d4	*24.72*			*25.0000*		*98.9*	*74 - 132*			
Surrogate: 4-Bromofluorobenzene	*25.83*			*25.0000*		*103*	*82 - 123*			
Surrogate: Dibromofluoromethan	*25.07*			*25.0000*		*100*	*76 - 135*			
Surrogate: Toluene-d8	*25.87*			*25.0000*		*103*	*85 - 125*			
LCS Dup (B8F0569-BSD1)					Prepared: 6/22/2018 Analyzed: 6/22/2018					
1,1,1,2-Tetrachloroethane	19.1800	5.0	0.13	20.0000		95.9	67 - 140	9.16	20	
1,1,1-Trichloroethane	20.6900	5.0	0.38	20.0000		103	74 - 136	7.11	20	
1,1,2,2-Tetrachloroethane	20.1000	5.0	0.20	20.0000		100	73 - 116	15.3	20	
1,1,2-Trichloroethane	18.9700	5.0	0.19	20.0000		94.8	78 - 116	11.1	20	
1,1-Dichloroethane	19.7300	5.0	0.20	20.0000		98.6	64 - 134	9.50	20	
1,1-Dichloroethene	20.7900	5.0	0.28	20.0000		104	72 - 123	9.68	20	
1,1-Dichloropropene	21.3900	5.0	0.36	20.0000		107	79 - 137	8.99	20	
1,2,3-Trichloropropane	19.7100	5.0	0.16	20.0000		98.6	81 - 121	14.7	20	
1,2,3-Trichlorobenzene	19.6900	5.0	0.06	20.0000		98.4	71 - 114	11.3	20	
1,2,4-Trichlorobenzene	19.7000	5.0	0.07	20.0000		98.5	80 - 119	11.0	20	
1,2,4-Trimethylbenzene	20.7300	5.0	0.09	20.0000		104	78 - 142	10.7	20	
1,2-Dibromo-3-chloropropane	17.4500	5.0	0.20	20.0000		87.2	47 - 130	17.3	20	
1,2-Dibromoethane	18.7300	5.0	0.13	20.0000		93.6	79 - 116	11.6	20	
1,2-Dichlorobenzene	20.1700	5.0	0.12	20.0000		101	82 - 121	12.2	20	
1,2-Dichloroethane	19.5400	5.0	0.39	20.0000		97.7	71 - 126	9.66	20	

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0569 - MSVOA_W (continued)										
LCS Dup (B8F0569-BSD1) - Continued					Prepared: 6/22/2018 Analyzed: 6/22/2018					
1,2-Dichloropropane	19.3900	5.0	0.47	20.0000		97.0	76 - 119	10.9	20	
1,3,5-Trimethylbenzene	21.0900	5.0	0.08	20.0000		105	78 - 144	10.2	20	
1,3-Dichlorobenzene	20.4500	5.0	0.13	20.0000		102	83 - 125	10.7	20	
1,3-Dichloropropane	19.2900	5.0	0.08	20.0000		96.4	78 - 117	12.5	20	
1,4-Dichlorobenzene	20.4000	5.0	0.18	20.0000		102	82 - 118	11.1	20	
2,2-Dichloropropane	22.0200	5.0	0.23	20.0000		110	67 - 144	6.62	20	
2-Chlorotoluene	20.8700	5.0	0.12	20.0000		104	73 - 143	10.2	20	
4-Chlorotoluene	20.8000	5.0	0.11	20.0000		104	72 - 143	10.8	20	
4-Isopropyltoluene	21.4100	5.0	0.12	20.0000		107	77 - 149	9.85	20	
Benzene	40.3500	5.0	0.21	40.0000		101	77 - 139	10.3	20	
Bromobenzene	20.1000	5.0	0.12	20.0000		100	83 - 121	11.2	20	
Bromochloromethane	21.4900	5.0	0.10	20.0000		107	73 - 121	13.3	20	
Bromodichloromethane	19.0500	5.0	0.32	20.0000		95.2	73 - 125	9.34	20	
Bromoform	18.1100	5.0	0.14	20.0000		90.6	73 - 125	12.3	20	
Bromomethane	15.2500	5.0	0.22	20.0000		76.2	48 - 144	14.9	20	
Carbon disulfide	21.8100	5.0	0.21	20.0000		109	73 - 132	9.21	20	
Carbon tetrachloride	20.7200	5.0	0.31	20.0000		104	75 - 151	6.22	20	
Chlorobenzene	20.1400	5.0	0.16	20.0000		101	82 - 123	9.03	20	
Chloroethane	21.9400	5.0	0.29	20.0000		110	55 - 170	10.9	20	
Chloroform	19.9400	5.0	0.16	20.0000		99.7	74 - 125	9.56	20	
Chloromethane	18.2900	5.0	0.19	20.0000		91.4	34 - 146	9.57	20	
cis-1,2-Dichloroethene	19.6100	5.0	0.39	20.0000		98.0	69 - 124	10.2	20	
cis-1,3-Dichloropropene	18.5200	5.0	0.08	20.0000		92.6	71 - 123	8.27	20	
Di-isopropyl ether	19.0700	5.0	0.14	20.0000		95.4	54 - 147	11.9	20	
Dibromochloromethane	18.4800	5.0	0.11	20.0000		92.4	57 - 140	11.0	20	
Dibromomethane	18.9300	5.0	0.09	20.0000		94.6	78 - 115	9.52	20	
Dichlorodifluoromethane	21.1500	5.0	0.31	20.0000		106	67 - 136	7.71	20	
Ethyl Acetate	186.630	50	1.1	200.000		93.3	49 - 121	14.9	20	
Ethyl Ether	184.680	50	1.4	200.000		92.3	62 - 120	11.2	20	
Ethyl tert-butyl ether	19.6000	5.0	0.08	20.0000		98.0	62 - 123	10.9	20	
Ethylbenzene	42.2100	5.0	0.08	40.0000		106	80 - 142	9.50	20	
Freon-113	21.4900	5.0	0.34	20.0000		107	77 - 147	7.38	20	
Hexachlorobutadiene	21.0600	5.0	0.22	20.0000		105	83 - 135	7.74	20	
Isopropylbenzene	21.8400	5.0	0.10	20.0000		109	75 - 147	11.4	20	
m,p-Xylene	42.3400	10	0.18	40.0000		106	74 - 148	9.29	20	
Methylene chloride	20.3900	5.0	0.26	20.0000		102	67 - 135	10.6	20	
MTBE	19.1200	5.0	0.09	20.0000		95.6	55 - 128	11.4	20	
n-Butylbenzene	21.4100	5.0	0.15	20.0000		107	76 - 153	9.08	20	
n-Propylbenzene	21.8000	5.0	0.14	20.0000		109	72 - 155	10.5	20	
Naphthalene	19.0100	5.0	0.09	20.0000		95.0	69 - 113	15.2	20	
o-Xylene	41.3200	5.0	0.04	40.0000		103	71 - 153	9.53	20	
sec-Butylbenzene	21.7200	5.0	0.15	20.0000		109	74 - 154	10.4	20	

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San Diego , CA 92101		Reported :	07/11/2018

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0569 - MSVOA_W (continued)										
LCS Dup (B8F0569-BSD1) - Continued					Prepared: 6/22/2018 Analyzed: 6/22/2018					
Styrene	19.6600	5.0	0.05	20.0000		98.3	75 - 143	9.99	20	
tert-Amyl methyl ether	18.7500	5.0	0.10	20.0000		93.8	61 - 123	12.5	20	
tert-Butanol	89.9600	100	3.0	100.000		90.0	40 - 112	20.7	20	R, U
tert-Butylbenzene	21.4200	5.0	0.11	20.0000		107	77 - 144	11.0	20	
Tetrachloroethene	21.3100	5.0	0.18	20.0000		107	82 - 136	8.16	20	
Toluene	41.0800	5.0	0.14	40.0000		103	75 - 142	8.58	20	
trans-1,2-Dichloroethene	20.1700	5.0	0.15	20.0000		101	63 - 135	10.4	20	
trans-1,3-Dichloropropene	18.5800	5.0	0.09	20.0000		92.9	65 - 131	9.88	20	
Trichloroethene	19.8500	5.0	0.15	20.0000		99.2	82 - 124	10.9	20	
Trichlorofluoromethane	22.1600	5.0	0.33	20.0000		111	70 - 159	9.16	20	
Vinyl acetate	247.070	50	1.9	200.000		124	48 - 133	13.7	20	
Vinyl chloride	20.5000	5.0	0.25	20.0000		102	67 - 131	11.1	20	
Surrogate: 1,2-Dichloroethane-d4	*24.89*			*25.0000*		*99.6*	*74 - 132*			
Surrogate: 4-Bromofluorobenzene	*25.93*			*25.0000*		*104*	*82 - 123*			
Surrogate: Dibromofluoromethan	*25.23*			*25.0000*		*101*	*76 - 135*			
Surrogate: Toluene-d8	*26.01*			*25.0000*		*104*	*85 - 125*			
Matrix Spike (B8F0569-MS1)				**Source: 1802226-06RE2**	Prepared: 6/22/2018 Analyzed: 6/22/2018					
1,1,1,2-Tetrachloroethane	18.6000			20.0000	0.00000	93.0	67 - 140			
1,1,1-Trichloroethane	19.9200			20.0000	0.00000	99.6	74 - 136			
1,1,2,2-Tetrachloroethane	19.7700			20.0000	0.00000	98.8	73 - 116			
1,1,2-Trichloroethane	19.2300			20.0000	0.00000	96.2	78 - 116			
1,1-Dichloroethane	18.9900			20.0000	0.00000	95.0	64 - 134			
1,1-Dichloroethene	19.3200			20.0000	0.00000	96.6	72 - 123			
1,1-Dichloropropene	20.3500			20.0000	0.00000	102	79 - 137			
1,2,3-Trichloropropane	19.2900			20.0000	0.00000	96.4	81 - 121			
1,2,3-Trichlorobenzene	19.0200			20.0000	0.00000	95.1	71 - 114			
1,2,4-Trichlorobenzene	19.0700			20.0000	0.00000	95.4	80 - 119			
1,2,4-Trimethylbenzene	21.7500			20.0000	0.910000	104	78 - 142			
1,2-Dibromo-3-chloropropane	17.2500			20.0000	0.00000	86.2	47 - 130			
1,2-Dibromoethane	18.8000			20.0000	0.00000	94.0	79 - 116			
1,2-Dichlorobenzene	19.5000			20.0000	0.00000	97.5	82 - 121			
1,2-Dichloroethane	19.0000			20.0000	0.00000	95.0	71 - 126			
1,2-Dichloropropane	18.9500			20.0000	0.00000	94.8	76 - 119			
1,3,5-Trimethylbenzene	20.6900			20.0000	0.00000	103	78 - 144			
1,3-Dichlorobenzene	19.7200			20.0000	0.00000	98.6	83 - 125			
1,3-Dichloropropane	18.9200			20.0000	0.00000	94.6	78 - 117			
1,4-Dichlorobenzene	19.6000			20.0000	0.00000	98.0	82 - 118			
2,2-Dichloropropane	20.3100			20.0000	0.00000	102	67 - 144			
2-Chlorotoluene	20.4600			20.0000	0.00000	102	73 - 143			
4-Chlorotoluene	19.9100			20.0000	0.00000	99.6	72 - 143			

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San Diego , CA 92101		Reported :	07/11/2018

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0569 - MSVOA_W (continued)									
Matrix Spike (B8F0569-MS1) - Continued			**Source: 1802226-06RE2**	Prepared: 6/22/2018 Analyzed: 6/22/2018					
4-Isopropyltoluene	20.4600		20.0000	0.00000	102	77 - 149			
Benzene	39.9500		40.0000	0.00000	99.9	77 - 139			
Bromobenzene	19.4600		20.0000	0.00000	97.3	83 - 121			
Bromochloromethane	20.5100		20.0000	0.00000	103	73 - 121			
Bromodichloromethane	18.3000		20.0000	0.00000	91.5	73 - 125			
Bromoform	17.1400		20.0000	0.00000	85.7	73 - 125			
Bromomethane	15.6800		20.0000	0.00000	78.4	48 - 144			
Carbon disulfide	20.3500		20.0000	0.00000	102	73 - 132			
Carbon tetrachloride	19.9100		20.0000	0.00000	99.6	75 - 151			
Chlorobenzene	19.8400		20.0000	0.00000	99.2	82 - 123			
Chloroethane	20.5600		20.0000	0.00000	103	55 - 170			
Chloroform	19.0800		20.0000	0.00000	95.4	74 - 125			
Chloromethane	17.4200		20.0000	0.00000	87.1	34 - 146			
cis-1,2-Dichloroethene	18.7600		20.0000	0.00000	93.8	69 - 124			
cis-1,3-Dichloropropene	17.9700		20.0000	0.00000	89.8	71 - 123			
Di-isopropyl ether	17.7700		20.0000	0.00000	88.8	54 - 147			
Dibromochloromethane	18.0100		20.0000	0.00000	90.0	57 - 140			
Dibromomethane	18.9300		20.0000	0.00000	94.6	78 - 115			
Dichlorodifluoromethane	20.0600		20.0000	0.00000	100	67 - 136			
Ethyl Acetate	182.630		200.000	0.00000	91.3	49 - 121			
Ethyl Ether	175.240		200.000	0.00000	87.6	62 - 120			
Ethyl tert-butyl ether	18.7800		20.0000	0.00000	93.9	62 - 123			
Ethylbenzene	43.9600		40.0000	1.92000	105	80 - 142			
Freon-113	20.3900		20.0000	0.00000	102	77 - 147			
Hexachlorobutadiene	19.5500		20.0000	0.00000	97.8	83 - 135			
Isopropylbenzene	20.8900		20.0000	0.00000	104	75 - 147			
m,p-Xylene	51.8000		40.0000	7.74000	110	74 - 148			
Methylene chloride	19.4000		20.0000	0.00000	97.0	67 - 135			
MTBE	18.4400		20.0000	0.00000	92.2	55 - 128			
n-Butylbenzene	20.2300		20.0000	0.00000	101	79 - 153			
n-Propylbenzene	21.1200		20.0000	0.00000	106	72 - 155			
Naphthalene	19.2900		20.0000	0.690000	93.0	69 - 113			
o-Xylene	44.9400		40.0000	3.50000	104	71 - 153			
sec-Butylbenzene	20.9200		20.0000	0.00000	105	74 - 154			
Styrene	19.3500		20.0000	0.00000	96.8	75 - 143			
tert-Amyl methyl ether	18.4600		20.0000	0.00000	92.3	61 - 123			
tert-Butanol	87.0700		100.000	0.00000	87.1	40 - 112			
tert-Butylbenzene	20.6000		20.0000	0.00000	103	77 - 144			
Tetrachloroethene	20.6600		20.0000	0.00000	103	82 - 136			
Toluene	61.3900		40.0000	20.1000	103	75 - 142			
trans-1,2-Dichloroethene	19.1900		20.0000	0.00000	96.0	63 - 135			
trans-1,3-Dichloropropene	17.5600		20.0000	0.00000	87.8	65 - 131			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0569 - MSVOA_W (continued)									
Matrix Spike (B8F0569-MS1) - Continued			**Source: 1802226-06RE2**	Prepared: 6/22/2018 Analyzed: 6/22/2018					
Trichloroethene	19.1600		20.0000	0.00000	95.8	82 - 124			
Trichlorofluoromethane	20.9300		20.0000	0.00000	105	70 - 159			
Vinyl acetate	236.540		200.000	0.00000	118	48 - 133			
Vinyl chloride	19.5600		20.0000	0.00000	97.8	67 - 131			
Surrogate: 1,2-Dichloroethane-d4	*24.70*		*25.0000*		*98.8*	*74 - 132*			
Surrogate: 4-Bromofluorobenzene	*25.90*		*25.0000*		*104*	*82 - 123*			
Surrogate: Dibromofluoromethan	*24.70*		*25.0000*		*98.8*	*76 - 135*			
Surrogate: Toluene-d8	*26.01*		*25.0000*		*104*	*85 - 125*			
Matrix Spike Dup (B8F0569-MSD1)			**Source: 1802226-06RE2**	Prepared: 6/22/2018 Analyzed: 6/22/2018					
1,1,1,2-Tetrachloroethane	18.6100		20.0000	0.00000	93.0	67 - 140	NR	20	
1,1,1-Trichloroethane	19.9800		20.0000	0.00000	99.9	74 - 136	NR	20	
1,1,2,2-Tetrachloroethane	19.3500		20.0000	0.00000	96.8	73 - 116	NR	20	
1,1,2-Trichloroethane	18.8000		20.0000	0.00000	94.0	78 - 116	NR	20	
1,1-Dichloroethane	19.0100		20.0000	0.00000	95.0	64 - 134	NR	20	
1,1-Dichloroethene	19.8500		20.0000	0.00000	99.2	72 - 123	NR	20	
1,1-Dichloropropene	20.8900		20.0000	0.00000	104	79 - 137	NR	20	
1,2,3-Trichloropropane	18.7600		20.0000	0.00000	93.8	81 - 121	NR	20	
1,2,3-Trichlorobenzene	18.8600		20.0000	0.00000	94.3	71 - 114	NR	20	
1,2,4-Trichlorobenzene	18.7100		20.0000	0.00000	93.6	80 - 119	NR	20	
1,2,4-Trimethylbenzene	21.8700		20.0000	0.910000	105	78 - 142	NR	20	
1,2-Dibromo-3-chloropropane	16.8700		20.0000	0.00000	84.4	47 - 130	NR	20	
1,2-Dibromoethane	18.6700		20.0000	0.00000	93.4	79 - 116	NR	20	
1,2-Dichlorobenzene	19.3400		20.0000	0.00000	96.7	82 - 121	NR	20	
1,2-Dichloroethane	19.0400		20.0000	0.00000	95.2	71 - 126	NR	20	
1,2-Dichloropropane	19.2500		20.0000	0.00000	96.2	76 - 119	NR	20	
1,3,5-Trimethylbenzene	20.6800		20.0000	0.00000	103	78 - 144	NR	20	
1,3-Dichlorobenzene	19.5300		20.0000	0.00000	97.6	83 - 125	NR	20	
1,3-Dichloropropane	19.0400		20.0000	0.00000	95.2	78 - 117	NR	20	
1,4-Dichlorobenzene	19.5400		20.0000	0.00000	97.7	82 - 118	NR	20	
2,2-Dichloropropane	20.2800		20.0000	0.00000	101	67 - 144	NR	20	
2-Chlorotoluene	20.3100		20.0000	0.00000	102	73 - 143	NR	20	
4-Chlorotoluene	19.8300		20.0000	0.00000	99.2	72 - 143	NR	20	
4-Isopropyltoluene	20.3100		20.0000	0.00000	102	77 - 149	NR	20	
Benzene	40.2100		40.0000	0.00000	101	77 - 139	NR	20	
Bromobenzene	19.5700		20.0000	0.00000	97.8	83 - 121	NR	20	
Bromochloromethane	20.3700		20.0000	0.00000	102	73 - 121	NR	20	
Bromodichloromethane	18.2900		20.0000	0.00000	91.4	73 - 125	NR	20	
Bromoform	17.0700		20.0000	0.00000	85.4	73 - 125	NR	20	
Bromomethane	16.0600		20.0000	0.00000	80.3	48 - 144	NR	20	
Carbon disulfide	20.7100		20.0000	0.00000	104	73 - 132	NR	20	

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0569 - MSVOA_W (continued)									
Matrix Spike Dup (B8F0569-MSD1) - Continued			**Source: 1802226-06RE2**	Prepared: 6/22/2018 Analyzed: 6/22/2018					
Carbon tetrachloride	19.8000		20.0000	0.00000	99.0	75 - 151	NR	20	
Chlorobenzene	19.7900		20.0000	0.00000	99.0	82 - 123	NR	20	
Chloroethane	19.9900		20.0000	0.00000	100	55 - 170	NR	20	
Chloroform	18.9900		20.0000	0.00000	95.0	74 - 125	NR	20	
Chloromethane	18.1300		20.0000	0.00000	90.6	34 - 146	NR	20	
cis-1,2-Dichloroethene	18.8900		20.0000	0.00000	94.4	69 - 124	NR	20	
cis-1,3-Dichloropropene	18.2100		20.0000	0.00000	91.0	71 - 123	NR	20	
Di-isopropyl ether	18.2100		20.0000	0.00000	91.0	54 - 147	NR	20	
Dibromochloromethane	18.2500		20.0000	0.00000	91.2	57 - 140	NR	20	
Dibromomethane	18.8600		20.0000	0.00000	94.3	78 - 115	NR	20	
Dichlorodifluoromethane	20.2700		20.0000	0.00000	101	67 - 136	NR	20	
Ethyl Acetate	180.740		200.000	0.00000	90.4	49 - 121	NR	20	
Ethyl Ether	178.450		200.000	0.00000	89.2	62 - 120	NR	20	
Ethyl tert-butyl ether	18.9000		20.0000	0.00000	94.5	62 - 123	NR	20	
Ethylbenzene	43.5800		40.0000	1.92000	104	80 - 142	NR	20	
Freon-113	20.4500		20.0000	0.00000	102	77 - 147	NR	20	
Hexachlorobutadiene	19.8400		20.0000	0.00000	99.2	83 - 135	NR	20	
Isopropylbenzene	20.7400		20.0000	0.00000	104	75 - 147	NR	20	
m,p-Xylene	51.3900		40.0000	7.74000	109	74 - 148	NR	20	
Methylene chloride	19.2700		20.0000	0.00000	96.4	67 - 135	NR	20	
MTBE	18.7900		20.0000	0.00000	94.0	55 - 128	NR	20	
n-Butylbenzene	20.2600		20.0000	0.00000	101	79 - 153	NR	20	
n-Propylbenzene	20.9300		20.0000	0.00000	105	72 - 155	NR	20	
Naphthalene	19.0400		20.0000	0.690000	91.8	69 - 113	NR	20	
o-Xylene	44.6200		40.0000	3.50000	103	71 - 153	NR	20	
sec-Butylbenzene	20.6800		20.0000	0.00000	103	74 - 154	NR	20	
Styrene	19.4300		20.0000	0.00000	97.2	75 - 143	NR	20	
tert-Amyl methyl ether	18.4800		20.0000	0.00000	92.4	61 - 123	NR	20	
tert-Butanol	87.8000		100.000	0.00000	87.8	40 - 112	NR	20	
tert-Butylbenzene	20.4300		20.0000	0.00000	102	77 - 144	NR	20	
Tetrachloroethene	20.5300		20.0000	0.00000	103	82 - 136	NR	20	
Toluene	60.7900		40.0000	20.1000	102	75 - 142	NR	20	
trans-1,2-Dichloroethene	19.3700		20.0000	0.00000	96.8	63 - 135	NR	20	
trans-1,3-Dichloropropene	17.9200		20.0000	0.00000	89.6	65 - 131	NR	20	
Trichloroethene	19.8500		20.0000	0.00000	99.2	82 - 124	NR	20	
Trichlorofluoromethane	21.0500		20.0000	0.00000	105	70 - 159	NR	20	
Vinyl acetate	238.050		200.000	0.00000	119	48 - 133	NR	20	
Vinyl chloride	20.2500		20.0000	0.00000	101	67 - 131	NR	20	
Surrogate: 1,2-Dichloroethane-d4	*24.49*		*25.0000*		*98.0*	*74 - 132*			
Surrogate: 4-Bromofluorobenzene	*25.52*		*25.0000*		*102*	*82 - 123*			
Surrogate: Dibromofluoromethan	*24.57*		*25.0000*		*98.3*	*76 - 135*			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0569 - MSVOA_W (continued)									
Matrix Spike Dup (B8F0569-MSD1) - Continued			**Source: 1802226-06RE2**		Prepared: 6/22/2018 Analyzed: 6/22/2018				
Surrogate: Toluene-d8	*26.08*		*25.0000*		*104*	*85 - 125*			

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Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0538 - MSSEMI_W										
Blank (B8F0538-BLK1)					Prepared: 6/21/2018 Analyzed: 6/21/2018					
2-Methylnaphthalene	ND	0.20	0.02							U
Acenaphthene	ND	0.20	0.02							U
Acenaphthylene	ND	0.20	0.02							U
Anthracene	ND	0.20	0.01							U
Benzo(a)anthracene	ND	0.20	0.01							U
Benzo(a)pyrene	ND	0.20	0.01							U
Benzo(b)fluoranthene	ND	0.20	0.06							U
Benzo(g,h,i)perylene	ND	0.20	0.02							U
Benzo(k)fluoranthene	ND	0.20	0.02							U
Chrysene	ND	0.20	0.02							U
Dibenz(a,h)anthracene	ND	0.20	0.02							U
Fluoranthene	ND	0.20	0.02							U
Fluorene	ND	0.20	0.02							U
Indeno(1,2,3-cd)pyrene	ND	0.20	0.02							U
Naphthalene	ND	0.20	0.02							U
Phenanthrene	ND	0.20	0.02							U
Pyrene	ND	0.20	0.02							U
Surrogate: 1,2-Dichlorobenzene-d	*0.6958*			*1.00000*		*69.6*	*36 - 99*			
Surrogate: 2-Fluorobiphenyl	*0.7190*			*1.00000*		*71.9*	*33 - 111*			
Surrogate: Nitrobenzene-d5	*0.5666*			*1.00000*		*56.7*	*12 - 124*			
Surrogate: 4-Terphenyl-d14	*0.7496*			*1.00000*		*75.0*	*43 - 118*			
LCS (B8F0538-BS1)					Prepared: 6/21/2018 Analyzed: 6/21/2018					
2-Methylnaphthalene	0.615810	0.20	0.02	1.00000		61.6	7 - 150			
Acenaphthene	0.714660	0.20	0.02	1.00000		71.5	42 - 97			
Acenaphthylene	0.752270	0.20	0.02	1.00000		75.2	45 - 95			
Anthracene	0.853470	0.20	0.01	1.00000		85.3	49 - 91			
Benzo(a)anthracene	0.892320	0.20	0.01	1.00000		89.2	58 - 93			
Benzo(a)pyrene	0.734720	0.20	0.01	1.00000		73.5	58 - 92			
Benzo(b)fluoranthene	0.628980	0.20	0.06	1.00000		62.9	61 - 100			
Benzo(g,h,i)perylene	0.744900	0.20	0.02	1.00000		74.5	48 - 100			
Benzo(k)fluoranthene	0.882270	0.20	0.02	1.00000		88.2	60 - 125			
Chrysene	0.842260	0.20	0.02	1.00000		84.2	60 - 97			
Dibenz(a,h)anthracene	0.796570	0.20	0.02	1.00000		79.7	43 - 104			
Fluoranthene	0.918260	0.20	0.02	1.00000		91.8	43 - 109			
Fluorene	0.763510	0.20	0.02	1.00000		76.4	49 - 97			
Indeno(1,2,3-cd)pyrene	0.986960	0.20	0.02	1.00000		98.7	48 - 99			
Naphthalene	0.675630	0.20	0.02	1.00000		67.6	25 - 129			
Phenanthrene	0.826790	0.20	0.02	1.00000		82.7	48 - 102			
Pyrene	0.904220	0.20	0.02	1.00000		90.4	51 - 100			
Surrogate: 1,2-Dichlorobenzene-d	*0.7461*			*1.00000*		*74.6*	*36 - 99*			

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)		Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0538 - MSSEMI_W (continued)										
LCS (B8F0538-BS1) - Continued					Prepared: 6/21/2018 Analyzed: 6/21/2018					
Surrogate: 2-Fluorobiphenyl	*0.8206*			*1.00000*		*82.1*	*33 - 111*			
Surrogate: Nitrobenzene-d5	*0.6396*			*1.00000*		*64.0*	*12 - 124*			
Surrogate: 4-Terphenyl-d14	*0.8954*			*1.00000*		*89.5*	*43 - 118*			
LCS Dup (B8F0538-BSD1)					Prepared: 6/21/2018 Analyzed: 6/21/2018					
2-Methylnaphthalene	0.564310	0.20	0.02	1.00000		56.4	7 - 150	8.73	20	
Acenaphthene	0.677900	0.20	0.02	1.00000		67.8	42 - 97	5.28	20	
Acenaphthylene	0.724040	0.20	0.02	1.00000		72.4	45 - 95	3.82	20	
Anthracene	0.749920	0.20	0.01	1.00000		75.0	49 - 91	12.9	20	
Benzo(a)anthracene	0.785790	0.20	0.01	1.00000		78.6	58 - 93	12.7	20	
Benzo(a)pyrene	0.742990	0.20	0.01	1.00000		74.3	58 - 92	1.12	20	
Benzo(b)fluoranthene	0.625550	0.20	0.06	1.00000		62.6	61 - 100	0.547	20	
Benzo(g,h,i)perylene	0.769970	0.20	0.02	1.00000		77.0	48 - 100	3.31	20	
Benzo(k)fluoranthene	0.906100	0.20	0.02	1.00000		90.6	60 - 125	2.66	20	
Chrysene	0.752240	0.20	0.02	1.00000		75.2	60 - 97	11.3	20	
Dibenz(a,h)anthracene	0.811360	0.20	0.02	1.00000		81.1	43 - 104	1.84	20	
Fluoranthene	0.807110	0.20	0.02	1.00000		80.7	43 - 109	12.9	20	
Fluorene	0.712180	0.20	0.02	1.00000		71.2	49 - 97	6.96	20	
Indeno(1,2,3-cd)pyrene	0.979010	0.20	0.02	1.00000		97.9	48 - 99	0.809	20	
Naphthalene	0.634140	0.20	0.02	1.00000		63.4	25 - 129	6.34	20	
Phenanthrene	0.732950	0.20	0.02	1.00000		73.3	48 - 102	12.0	20	
Pyrene	0.791320	0.20	0.02	1.00000		79.1	51 - 100	13.3	20	
Surrogate: 1,2-Dichlorobenzene-d	*0.7349*			*1.00000*		*73.5*	*36 - 99*			
Surrogate: 2-Fluorobiphenyl	*0.8013*			*1.00000*		*80.1*	*33 - 111*			
Surrogate: Nitrobenzene-d5	*0.5995*			*1.00000*		*60.0*	*12 - 124*			
Surrogate: 4-Terphenyl-d14	*0.7954*			*1.00000*		*79.5*	*43 - 118*			

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/11/2018

Notes and Definitions

U	Analyte included in the analysis, but not detected
S12	Surrogate recovery outside in-house established limit but within method default criteria.
R	RPD value outside acceptance criteria. Calculation is based on raw values.
M2	Matrix spike recovery outside of acceptance limit due to possible matrix interference. The analytical batch was validated by the laboratory control sample.
M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
D1	Sample required dilution due to possible matrix interference.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

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WORK ORDER NUMBER: 18-06-1645

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Advanced Technology Laboratories

Client Project Name: 1802237

Attention: Rachelle Arada
3275 Walnut Street
Signal Hill, CA 90755-5225

Approved for release on 07/09/2018 by:
Lori Thompson
Project Manager

ResultLink

Email your PM

Eurofins Calscience (Calscience) certifies that the test results provided in this report meet all NELAC Institute requirements for parameters for which accreditation is required or available. Any exceptions to NELAC Institute requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

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Work Order Number: 18-06-1645

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Work Order Narrative

Work Order: 18-06-1645 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 06/22/18. They were assigned to Work Order 18-06-1645.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.

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Sample Summary

Client:	Advanced Technology Laboratories	Work Order:	18-06-1645
	3275 Walnut Street	Project Name:	1802237
	Signal Hill, CA 90755-5225	PO Number:	SC12896
		Date/Time Received:	06/22/18 10:35
		Number of Containers:	9
Attn:	Rachelle Arada		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
1802237-05 / HA-8-0-0.5	18-06-1645-1	06/18/18 12:55	1	Solid
1802237-06 / HA-8-2.0	18-06-1645-2	06/18/18 12:55	1	Solid
1802237-07 / HA-8-4.0	18-06-1645-3	06/18/18 12:55	1	Solid
1802237-08 / HA-8-6.0	18-06-1645-4	06/18/18 12:55	1	Solid
1802237-25 / TP-6-0-0.5	18-06-1645-5	06/18/18 09:30	1	Solid
1802237-26 / TP-6-0.5-1.5	18-06-1645-6	06/18/18 09:35	1	Solid
1802237-27 / TP-6-1.5-2	18-06-1645-7	06/18/18 09:40	1	Solid
1802237-31 / TP-13-0-4	18-06-1645-8	06/18/18 09:05	1	Solid
1802237-32 / TP-13-4-5	18-06-1645-9	06/18/18 09:10	1	Solid

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 1 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802237-05 / HA-8-0-0.5	**18-06-1645-1-A**	**06/18/18 12:55**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 13:46**	**180626L08**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0099	1.00	
1,2-Dichlorobenzene	ND	0.0099	1.00	
1,3-Dichlorobenzene	ND	0.0099	1.00	
1,4-Dichlorobenzene	ND	0.0099	1.00	
1-Methylnaphthalene	ND	0.0099	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.0099	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.0099	1.00	
2-Chloronaphthalene	ND	0.0099	1.00	
2-Chlorophenol	ND	0.0099	1.00	
2-Methylnaphthalene	ND	0.0099	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.099	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0099	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0099	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.0099	1.00	
Acenaphthylene	ND	0.0099	1.00	
Aniline	ND	0.0099	1.00	
Anthracene	ND	0.0099	1.00	
Azobenzene	ND	0.0099	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 2 of 30

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0099	1.00	
Benzo (a) Pyrene	ND	0.0099	1.00	
Benzo (b) Fluoranthene	ND	0.0099	1.00	
Benzo (g,h,i) Perylene	ND	0.0099	1.00	
Benzo (k) Fluoranthene	ND	0.0099	1.00	
Benzyl Alcohol	ND	0.0099	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0099	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0099	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0099	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.0099	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.0099	1.00	
Dibenzofuran	ND	0.0099	1.00	
Diethyl Phthalate	ND	0.0099	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.0099	1.00	
Fluorene	ND	0.0099	1.00	
Hexachloro-1,3-Butadiene	ND	0.0099	1.00	
Hexachlorobenzene	ND	0.0099	1.00	
Hexachlorocyclopentadiene	ND	0.0099	1.00	
Hexachloroethane	ND	0.0099	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0099	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.0099	1.00	
N-Nitrosodimethylamine	ND	0.0099	1.00	
N-Nitrosodiphenylamine	ND	0.0099	1.00	
Naphthalene	ND	0.0099	1.00	
Nitrobenzene	ND	0.0099	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.0099	1.00	
Phenol	ND	0.0099	1.00	
Pyrene	ND	0.0099	1.00	
Pyridine	ND	0.0099	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	51	32-143	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1645
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802237		Page 3 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	62	14-146	
2-Fluorophenol	46	15-138	
Nitrobenzene-d5	51	18-162	
Phenol-d6	46	17-141	
p-Terphenyl-d14	62	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 4 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802237-06 / HA-8-2.0	**18-06-1645-2-A**	**06/18/18 12:55**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 14:04**	**180626L08**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 5 of 30

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	14	32-143	2,6

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1645
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802237		Page 6 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	32	14-146	
2-Fluorophenol	32	15-138	
Nitrobenzene-d5	32	18-162	
Phenol-d6	26	17-141	
p-Terphenyl-d14	27	34-148	2,6

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 7 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802237-07 / HA-8-4.0	**18-06-1645-3-A**	**06/18/18 12:55**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 14:22**	**180626L08**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0098	1.00	
1,2-Dichlorobenzene	ND	0.0098	1.00	
1,3-Dichlorobenzene	ND	0.0098	1.00	
1,4-Dichlorobenzene	ND	0.0098	1.00	
1-Methylnaphthalene	ND	0.0098	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.0098	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.0098	1.00	
2-Chloronaphthalene	ND	0.0098	1.00	
2-Chlorophenol	ND	0.0098	1.00	
2-Methylnaphthalene	ND	0.0098	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.098	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0098	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0098	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0098	1.00	
Acenaphthylene	ND	0.0098	1.00	
Aniline	ND	0.0098	1.00	
Anthracene	ND	0.0098	1.00	
Azobenzene	ND	0.0098	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 8 of 30

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0098	1.00	
Benzo (a) Pyrene	ND	0.0098	1.00	
Benzo (b) Fluoranthene	ND	0.0098	1.00	
Benzo (g,h,i) Perylene	ND	0.0098	1.00	
Benzo (k) Fluoranthene	ND	0.0098	1.00	
Benzyl Alcohol	ND	0.0098	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0098	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0098	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0098	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.0098	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.0098	1.00	
Dibenzofuran	ND	0.0098	1.00	
Diethyl Phthalate	ND	0.0098	1.00	
Dimethyl Phthalate	0.30	0.25	1.00	
Fluoranthene	ND	0.0098	1.00	
Fluorene	ND	0.0098	1.00	
Hexachloro-1,3-Butadiene	ND	0.0098	1.00	
Hexachlorobenzene	ND	0.0098	1.00	
Hexachlorocyclopentadiene	ND	0.0098	1.00	
Hexachloroethane	ND	0.0098	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0098	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0098	1.00	
N-Nitrosodimethylamine	ND	0.0098	1.00	
N-Nitrosodiphenylamine	ND	0.0098	1.00	
Naphthalene	ND	0.0098	1.00	
Nitrobenzene	ND	0.0098	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.0098	1.00	
Phenol	ND	0.0098	1.00	
Pyrene	ND	0.0098	1.00	
Pyridine	ND	0.0098	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	58	32-143	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1645
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802237		Page 9 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	68	14-146	
2-Fluorophenol	39	15-138	
Nitrobenzene-d5	55	18-162	
Phenol-d6	67	17-141	
p-Terphenyl-d14	69	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 10 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802237-08 / HA-8-6.0	**18-06-1645-4-A**	**06/18/18 12:55**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 14:40**	**180626L08**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0098	1.00	
1,2-Dichlorobenzene	ND	0.0098	1.00	
1,3-Dichlorobenzene	ND	0.0098	1.00	
1,4-Dichlorobenzene	ND	0.0098	1.00	
1-Methylnaphthalene	ND	0.0098	1.00	
2,4,5-Trichlorophenol	ND	0.24	1.00	
2,4,6-Trichlorophenol	ND	0.24	1.00	
2,4-Dichlorophenol	ND	0.24	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.24	1.00	
2,4-Dinitrotoluene	ND	0.0098	1.00	
2,6-Dichlorophenol	ND	0.24	1.00	
2,6-Dinitrotoluene	ND	0.0098	1.00	
2-Chloronaphthalene	ND	0.0098	1.00	
2-Chlorophenol	ND	0.0098	1.00	
2-Methylnaphthalene	ND	0.0098	1.00	
2-Methylphenol	ND	0.24	1.00	
2-Nitroaniline	ND	0.24	1.00	
2-Nitrophenol	ND	0.24	1.00	
3,3'-Dichlorobenzidine	ND	0.24	1.00	
3-Nitroaniline	ND	0.24	1.00	
3/4-Methylphenol	ND	0.098	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0098	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.24	1.00	
4-Chloro-3-Methylphenol	ND	0.24	1.00	
4-Chloroaniline	ND	0.24	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0098	1.00	
4-Nitroaniline	ND	0.24	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0098	1.00	
Acenaphthylene	ND	0.0098	1.00	
Aniline	ND	0.0098	1.00	
Anthracene	ND	0.0098	1.00	
Azobenzene	ND	0.0098	1.00	
Benzidine	ND	0.24	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1645
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802237		Page 11 of 30

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0098	1.00	
Benzo (a) Pyrene	ND	0.0098	1.00	
Benzo (b) Fluoranthene	ND	0.0098	1.00	
Benzo (g,h,i) Perylene	ND	0.0098	1.00	
Benzo (k) Fluoranthene	ND	0.0098	1.00	
Benzyl Alcohol	ND	0.0098	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0098	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0098	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0098	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.24	1.00	
Butyl Benzyl Phthalate	ND	0.24	1.00	
Chrysene	ND	0.0098	1.00	
Di-n-Butyl Phthalate	ND	0.24	1.00	
Di-n-Octyl Phthalate	ND	0.24	1.00	
Dibenz (a,h) Anthracene	ND	0.0098	1.00	
Dibenzofuran	ND	0.0098	1.00	
Diethyl Phthalate	ND	0.0098	1.00	
Dimethyl Phthalate	0.25	0.24	1.00	
Fluoranthene	ND	0.0098	1.00	
Fluorene	ND	0.0098	1.00	
Hexachloro-1,3-Butadiene	ND	0.0098	1.00	
Hexachlorobenzene	ND	0.0098	1.00	
Hexachlorocyclopentadiene	ND	0.0098	1.00	
Hexachloroethane	ND	0.0098	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0098	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0098	1.00	
N-Nitrosodimethylamine	ND	0.0098	1.00	
N-Nitrosodiphenylamine	ND	0.0098	1.00	
Naphthalene	ND	0.0098	1.00	
Nitrobenzene	ND	0.0098	1.00	
Pentachlorophenol	ND	0.24	1.00	
Phenanthrene	ND	0.0098	1.00	
Phenol	ND	0.0098	1.00	
Pyrene	ND	0.0098	1.00	
Pyridine	ND	0.0098	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	48	32-143	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1645
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802237		Page 12 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	55	14-146	
2-Fluorophenol	53	15-138	
Nitrobenzene-d5	45	18-162	
Phenol-d6	64	17-141	
p-Terphenyl-d14	71	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 13 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802237-25 / TP-6-0-0.5	**18-06-1645-5-A**	**06/18/18 09:30**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 14:58**	**180626L08**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 14 of 30

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	58	32-143	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1645
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802237		Page 15 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	72	14-146	
2-Fluorophenol	57	15-138	
Nitrobenzene-d5	58	18-162	
Phenol-d6	53	17-141	
p-Terphenyl-d14	72	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 16 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802237-26 / TP-6-0.5-1.5	**18-06-1645-6-A**	**06/18/18 09:35**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 15:16**	**180626L08**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 17 of 30

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	61	32-143	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1645
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802237		Page 18 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	42	14-146	
2-Fluorophenol	57	15-138	
Nitrobenzene-d5	40	18-162	
Phenol-d6	73	17-141	
p-Terphenyl-d14	69	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 19 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802237-27 / TP-6-1.5-2	**18-06-1645-7-A**	**06/18/18 09:40**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 15:34**	**180626L08**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0098	1.00	
1,2-Dichlorobenzene	ND	0.0098	1.00	
1,3-Dichlorobenzene	ND	0.0098	1.00	
1,4-Dichlorobenzene	ND	0.0098	1.00	
1-Methylnaphthalene	ND	0.0098	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.0098	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.0098	1.00	
2-Chloronaphthalene	ND	0.0098	1.00	
2-Chlorophenol	ND	0.0098	1.00	
2-Methylnaphthalene	ND	0.0098	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.098	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0098	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0098	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0098	1.00	
Acenaphthylene	ND	0.0098	1.00	
Aniline	ND	0.0098	1.00	
Anthracene	ND	0.0098	1.00	
Azobenzene	ND	0.0098	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1645
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802237		Page 20 of 30

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0098	1.00	
Benzo (a) Pyrene	ND	0.0098	1.00	
Benzo (b) Fluoranthene	ND	0.0098	1.00	
Benzo (g,h,i) Perylene	ND	0.0098	1.00	
Benzo (k) Fluoranthene	ND	0.0098	1.00	
Benzyl Alcohol	ND	0.0098	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0098	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0098	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0098	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.0098	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.0098	1.00	
Dibenzofuran	ND	0.0098	1.00	
Diethyl Phthalate	ND	0.0098	1.00	
Dimethyl Phthalate	0.32	0.25	1.00	
Fluoranthene	ND	0.0098	1.00	
Fluorene	ND	0.0098	1.00	
Hexachloro-1,3-Butadiene	ND	0.0098	1.00	
Hexachlorobenzene	ND	0.0098	1.00	
Hexachlorocyclopentadiene	ND	0.0098	1.00	
Hexachloroethane	ND	0.0098	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0098	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0098	1.00	
N-Nitrosodimethylamine	ND	0.0098	1.00	
N-Nitrosodiphenylamine	ND	0.0098	1.00	
Naphthalene	ND	0.0098	1.00	
Nitrobenzene	ND	0.0098	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.0098	1.00	
Phenol	ND	0.0098	1.00	
Pyrene	ND	0.0098	1.00	
Pyridine	ND	0.0098	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	65	32-143	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1645
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802237		Page 21 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	49	14-146	
2-Fluorophenol	55	15-138	
Nitrobenzene-d5	42	18-162	
Phenol-d6	68	17-141	
p-Terphenyl-d14	71	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 22 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802237-31 / TP-13-0-4	**18-06-1645-8-A**	**06/18/18 09:05**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 15:53**	**180626L08**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0098	1.00	
1,2-Dichlorobenzene	ND	0.0098	1.00	
1,3-Dichlorobenzene	ND	0.0098	1.00	
1,4-Dichlorobenzene	ND	0.0098	1.00	
1-Methylnaphthalene	ND	0.0098	1.00	
2,4,5-Trichlorophenol	ND	0.24	1.00	
2,4,6-Trichlorophenol	ND	0.24	1.00	
2,4-Dichlorophenol	ND	0.24	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.24	1.00	
2,4-Dinitrotoluene	ND	0.0098	1.00	
2,6-Dichlorophenol	ND	0.24	1.00	
2,6-Dinitrotoluene	ND	0.0098	1.00	
2-Chloronaphthalene	ND	0.0098	1.00	
2-Chlorophenol	ND	0.0098	1.00	
2-Methylnaphthalene	ND	0.0098	1.00	
2-Methylphenol	ND	0.24	1.00	
2-Nitroaniline	ND	0.24	1.00	
2-Nitrophenol	ND	0.24	1.00	
3,3'-Dichlorobenzidine	ND	0.24	1.00	
3-Nitroaniline	ND	0.24	1.00	
3/4-Methylphenol	ND	0.098	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0098	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.24	1.00	
4-Chloro-3-Methylphenol	ND	0.24	1.00	
4-Chloroaniline	ND	0.24	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0098	1.00	
4-Nitroaniline	ND	0.24	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0098	1.00	
Acenaphthylene	ND	0.0098	1.00	
Aniline	ND	0.0098	1.00	
Anthracene	ND	0.0098	1.00	
Azobenzene	ND	0.0098	1.00	
Benzidine	ND	0.24	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1645
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802237		Page 23 of 30

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0098	1.00	
Benzo (a) Pyrene	ND	0.0098	1.00	
Benzo (b) Fluoranthene	ND	0.0098	1.00	
Benzo (g,h,i) Perylene	ND	0.0098	1.00	
Benzo (k) Fluoranthene	ND	0.0098	1.00	
Benzyl Alcohol	ND	0.0098	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0098	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0098	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0098	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.24	1.00	
Butyl Benzyl Phthalate	ND	0.24	1.00	
Chrysene	ND	0.0098	1.00	
Di-n-Butyl Phthalate	ND	0.24	1.00	
Di-n-Octyl Phthalate	ND	0.24	1.00	
Dibenz (a,h) Anthracene	ND	0.0098	1.00	
Dibenzofuran	ND	0.0098	1.00	
Diethyl Phthalate	ND	0.0098	1.00	
Dimethyl Phthalate	ND	0.24	1.00	
Fluoranthene	ND	0.0098	1.00	
Fluorene	ND	0.0098	1.00	
Hexachloro-1,3-Butadiene	ND	0.0098	1.00	
Hexachlorobenzene	ND	0.0098	1.00	
Hexachlorocyclopentadiene	ND	0.0098	1.00	
Hexachloroethane	ND	0.0098	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0098	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0098	1.00	
N-Nitrosodimethylamine	ND	0.0098	1.00	
N-Nitrosodiphenylamine	ND	0.0098	1.00	
Naphthalene	ND	0.0098	1.00	
Nitrobenzene	ND	0.0098	1.00	
Pentachlorophenol	ND	0.24	1.00	
Phenanthrene	ND	0.0098	1.00	
Phenol	ND	0.0098	1.00	
Pyrene	ND	0.0098	1.00	
Pyridine	ND	0.0098	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	66	32-143	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1645
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802237		Page 24 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	40	14-146	
2-Fluorophenol	50	15-138	
Nitrobenzene-d5	33	18-162	
Phenol-d6	66	17-141	
p-Terphenyl-d14	68	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 25 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802237-32 / TP-13-4-5	**18-06-1645-9-A**	**06/18/18 09:10**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 16:11**	**180626L08**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0099	1.00	
1,2-Dichlorobenzene	ND	0.0099	1.00	
1,3-Dichlorobenzene	ND	0.0099	1.00	
1,4-Dichlorobenzene	ND	0.0099	1.00	
1-Methylnaphthalene	ND	0.0099	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.0099	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.0099	1.00	
2-Chloronaphthalene	ND	0.0099	1.00	
2-Chlorophenol	ND	0.0099	1.00	
2-Methylnaphthalene	ND	0.0099	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.099	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0099	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0099	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0099	1.00	
Acenaphthylene	ND	0.0099	1.00	
Aniline	ND	0.0099	1.00	
Anthracene	ND	0.0099	1.00	
Azobenzene	ND	0.0099	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1645
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802237		Page 26 of 30

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0099	1.00	
Benzo (a) Pyrene	ND	0.0099	1.00	
Benzo (b) Fluoranthene	ND	0.0099	1.00	
Benzo (g,h,i) Perylene	ND	0.0099	1.00	
Benzo (k) Fluoranthene	ND	0.0099	1.00	
Benzyl Alcohol	ND	0.0099	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0099	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0099	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0099	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.0099	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.0099	1.00	
Dibenzofuran	ND	0.0099	1.00	
Diethyl Phthalate	ND	0.0099	1.00	
Dimethyl Phthalate	0.31	0.25	1.00	
Fluoranthene	ND	0.0099	1.00	
Fluorene	ND	0.0099	1.00	
Hexachloro-1,3-Butadiene	ND	0.0099	1.00	
Hexachlorobenzene	ND	0.0099	1.00	
Hexachlorocyclopentadiene	ND	0.0099	1.00	
Hexachloroethane	ND	0.0099	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0099	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0099	1.00	
N-Nitrosodimethylamine	ND	0.0099	1.00	
N-Nitrosodiphenylamine	ND	0.0099	1.00	
Naphthalene	ND	0.0099	1.00	
Nitrobenzene	ND	0.0099	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.0099	1.00	
Phenol	ND	0.0099	1.00	
Pyrene	ND	0.0099	1.00	
Pyridine	ND	0.0099	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	54	32-143	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1645
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802237		Page 27 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	65	14-146	
2-Fluorophenol	64	15-138	
Nitrobenzene-d5	56	18-162	
Phenol-d6	79	17-141	
p-Terphenyl-d14	72	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 28 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-16-921-21**	**N/A**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 13:08**	**180626L08**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 29 of 30

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	67	32-143	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1645
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802237		Page 30 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	71	14-146	
2-Fluorophenol	62	15-138	
Nitrobenzene-d5	70	18-162	
Phenol-d6	70	17-141	
p-Terphenyl-d14	72	34-148	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - Spike/Spike Duplicate

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
Project: 1802237			Page 1 of 1

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
1802237-07 / HA-8-4.0	**Sample**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 14:22**	**180626S08**
1802237-07 / HA-8-4.0	**Matrix Spike**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 16:29**	**180626S08**
1802237-07 / HA-8-4.0	**Matrix Spike Duplicate**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 16:47**	**180626S08**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
2,4,6-Trichlorophenol	ND	1.000	0.5476	55	0.6112	61	40-160	11	0-20	
2,4-Dichlorophenol	ND	1.000	0.5730	57	0.6301	63	40-160	9	0-20	
2-Methylphenol	ND	1.000	0.4805	48	0.5460	55	50-130	13	0-20	3
2-Nitrophenol	ND	1.000	0.6251	63	0.7099	71	40-160	13	0-20	
4-Chloro-3-Methylphenol	ND	1.000	0.5913	59	0.6612	66	40-160	11	0-20	
Acenaphthene	ND	1.000	0.5770	58	0.6416	64	40-160	11	0-20	
Benzo (a) Pyrene	ND	1.000	0.7239	72	0.7665	77	17-163	6	0-20	
Chrysene	ND	1.000	0.7308	73	0.7807	78	17-168	7	0-20	
Di-n-Butyl Phthalate	ND	1.000	0.6717	67	0.7233	72	40-160	7	0-20	
Dimethyl Phthalate	0.3038	1.000	0.8010	50	0.9075	60	40-160	12	0-20	
Fluoranthene	ND	1.000	0.6883	69	0.7435	74	26-137	8	0-20	
Fluorene	ND	1.000	0.6090	61	0.6663	67	59-121	9	0-20	
Naphthalene	ND	1.000	0.5316	53	0.6011	60	21-133	12	0-20	
Phenanthrene	ND	1.000	0.6294	63	0.6881	69	54-120	9	0-20	
Phenol	ND	1.000	0.5683	57	0.6273	63	40-160	10	0-20	
Pyrene	ND	1.000	0.7135	71	0.7731	77	6-156	8	0-46	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
Project: 1802237			Page 1 of 1

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-16-921-21	**LCS**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 12:50**	**180626L08**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
2,4,6-Trichlorophenol	1.000	0.7586	76	40-160	20-180	
2,4-Dichlorophenol	1.000	0.7962	80	40-160	20-180	
2-Methylphenol	1.000	0.8117	81	40-160	20-180	
2-Nitrophenol	1.000	0.9120	91	40-160	20-180	
4-Chloro-3-Methylphenol	1.000	0.8227	82	40-160	20-180	
Acenaphthene	1.000	0.7951	80	40-160	20-180	
Benzo (a) Pyrene	1.000	0.8331	83	17-163	0-187	
Chrysene	1.000	0.8422	84	17-168	0-193	
Di-n-Butyl Phthalate	1.000	0.8437	84	40-160	20-180	
Dimethyl Phthalate	1.000	0.8356	84	40-160	20-180	
Fluoranthene	1.000	0.8408	84	26-137	8-156	
Fluorene	1.000	0.8205	82	59-121	49-131	
Naphthalene	1.000	0.7932	79	21-133	2-152	
Phenanthrene	1.000	0.8300	83	54-120	43-131	
Phenol	1.000	0.7895	79	40-160	20-180	
Pyrene	1.000	0.8745	87	28-106	15-119	

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 18-06-1645

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8270C SIM	EPA 3545	923	GC/MS JJJ	1

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Glossary of Terms and Qualifiers

Work Order: 18-06-1645 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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ADVANCED TECHNOLOGY LABORATORIES

SUBCONTRACT ORDER

Work Order: 1802237

18-06-1645

SENDING LABORATORY:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone: 562.989.4045
Fax: 562.989.6348
Project Manager: Rachelle Arada (Rachelle@atlglobal.com)
Sampler: Jake Lippman

RECEIVING LABORATORY:

Eurofins Calscience, Inc.
7440 Lincoln Way
Garden Grove, CA 92841-1427
Phone :(714) 895-5494
Fax: (714) 894-7501
PO#: SC12896-STANDARD TAT

IMPORTANT : Please include Work Order # and PO # in your invoice.

Special Instructions: Need EQUIS EDD.

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1802237-05 / HA-8-0-0.5	1	**Soil**	**06/18/18 12:55**	**Return samples when analysis is done. Call ATL for pick up.**
8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	**07/09/18 17:00**	07/02/18 12:55		
ATL Lab#: 1802237-06 / HA-8-2.0	2	**Soil**	**06/18/18 12:55**	
8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	**07/09/18 17:00**	07/02/18 12:55		
ATL Lab#: 1802237-07 / HA-8-4.0	3	**Soil**	**06/18/18 12:55**	
8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	**07/09/18 17:00**	07/02/18 12:55		
ATL Lab#: 1802237-08 / HA-8-6.0	4	**Soil**	**06/18/18 12:55**	
8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	**07/09/18 17:00**	07/02/18 12:55		

Released By	Date	Received By	Date
	6/22/18 1035		EC 6/22/18 1035

ADVANCED TECHNOLOGY LABORATORIES

SUBCONTRACT ORDER

Work Order: 1802237

1645

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1802237-25 / TP-6-0-0.5 5 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	**07/09/18 17:00**	**Soil** 07/02/18 09:30	**06/18/18 09:30**	
ATL Lab#: 1802237-26 / TP-6-0.5-1.5 6 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	**07/09/18 17:00**	**Soil** 07/02/18 09:35	**06/18/18 09:35**	
ATL Lab#: 1802237-27 / TP-6-1.5-2 7 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	**07/09/18 17:00**	**Soil** 07/02/18 09:40	**06/18/18 09:40**	
ATL Lab#: 1802237-31 / TP-13-0-4 8 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	**07/09/18 17:00**	**Soil** 07/02/18 09:05	**06/18/18 09:05**	
ATL Lab#: 1802237-32 / TP-13-4-5 9 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	**07/09/18 17:00**	**Soil** 07/02/18 09:10	**06/18/18 09:10**	

Released By	Date	Received By	Date
[signature]	6/20/18 1035	[signature] EC	6/20/18 1035

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WORK ORDER NUMBER: 18-06-1645

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: ATL

DATE: 06/22/2018

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC6 (CF: +0.1°C); Temperature (w/o CF): 2-8 °C (w/ CF): 2-9 °C; ☐ Blank ☑ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: SMG

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: SMG

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: ZB

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☐	☐	☑
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☐	☐	☑
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Acid/base preserved samples - pH within acceptable range	☐	☐	☑
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOAh ☐ VOAna_2 ☐ 100PJ ☐ 100PJna_2 ☐ 125AGB ☐ 125AGBh ☐ 125AGBp ☐ 125PB ☐ 125PBznna (pH__9) ☐ 250AGB ☐ 250CGB ☐ 250CGBs (pH__2) ☐ 250PB ☐ 250PBn (pH__2) ☐ 500AGB ☐ 500AGJ ☐ 500AGJs (pH__2) ☐ 500PB ☐ 1AGB ☐ 1AGBna_2 ☐ 1AGBs (pH__2) ☐ 1AGBs (O&G) ☐ 1PB ☐ 1PBna (pH__12) ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☑ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (___) ☐ EnCores® (___) ☐ TerraCores® (___) ☐ _____ ☐ _____ ☐ _____

Air: ☐ Tedlar™ ☑ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na_2** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: ZB

Reviewed by: MA

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2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

Ordered By

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225

Telephone: (562)989-4045
Attention: Rachelle Arada

Number of Pages 5
Date Received 06/20/2018
Date Reported 07/03/2018

Job Number	Order Date	Client
93026	06/20/2018	ATL

Project ID: 1802237
Project Name: PO# SC12883

Enclosed please find results of analyses of 3 soil and 1 water samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.
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Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225

Project ID: 1802237
Date Received 06/20/2018
Date Reported 07/03/2018

Telephone: (562)989-4045
Attention: Rachelle Arada

Job Number	Order Date	Client
93026	06/20/2018	ATL

CERTIFICATE OF ANALYSIS
CASE NARRATIVE

AETL received 4 samples with the following specification on 06/20/2018.

Lab ID	Sample ID	Sample Date	Matrix	Quantity Of Containers
93026.01	1802237-22	06/18/2018	Aqueous	1

Method ^ Submethod	Req Date	Priority	TAT	Units
8270C-SIM ^ ATL-P&P	06/27/2018	2	Normal	ug/L

Lab ID	Sample ID	Sample Date	Matrix	Quantity Of Containers
93026.02	1802237-28	06/18/2018	Soil	1
93026.03	1802237-29	06/18/2018	Soil	1
93026.04	1802237-30	06/18/2018	Soil	1

Method ^ Submethod	Req Date	Priority	TAT	Units
(8270C-SIM) ^ ATL-P&P	06/27/2018	2	Normal	ug/Kg

The samples were analyzed as specified on the enclosed chain of custody.
No analytical non-conformances were encountered.

Unless otherwise noted, all results of soil and solid samples are based on wet weight.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Direc

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ANALYTICAL RESULTS

Ordered By

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225

Telephone: (562)989-4045
Attn: Rachelle Arada
Page: 2

Project ID: 1802237
Project Name: PO# SC12883

AETL Job Number	Submitted	Client
93026	06/20/2018	ATL

Method: 8270C-SIM, Phenols and Phthalates by GC/MS SIM (Modified 8270C)

QC Batch No: 062518JB1

Our Lab I.D.			Method Blank	**93026.01**			
Client Sample I.D.				1802237-22			
Date Sampled				06/18/2018			
Date Prepared			06/25/2018	06/25/2018			
Preparation Method			3510C	3510C			
Date Analyzed			06/29/2018	06/29/2018			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Bis(2-ethylhexyl) phthalate	0.50	1.00	ND	ND			
Butyl benzyl phthalate	0.50	1.00	ND	ND			
Di-n-butyl phthalate	0.50	1.00	ND	ND			
Di-n-octyl phthalate	0.50	1.00	ND	ND			
Diethyl phthalate	0.50	1.00	ND	ND			
Dimethyl phthalate	0.50	1.00	ND	ND			
2-Nitrophenol	0.50	1.00	ND	ND			
Bisphenol A (BPA)	1.00	2.00	ND	ND			
4-Chloro-3-Methylphenol	0.50	1.00	ND	ND			
3,4-Dimethylphenol	0.50	1.00	ND	ND			
4,6-Dinitro-2-methylphenol	0.50	1.00	ND	ND			
2-Methylphenol (2-Cresol)	0.50	1.00	ND	ND			
Total Target Phenols	0.50	1.00	ND	ND			
Our Lab I.D.			Method Blank	**93026.01**			
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**			
2-Fluorophenol	40-130		60.0	61.4			
2-Fluorobiphenyl	40-130		79.3	78.0			
p-Terphenyl-D14	40-130		107	113			
Phenol-d6	40-130		41.6	40.8			

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ANALYTICAL RESULTS

Ordered By

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225

Telephone: (562)989-4045
Attn: Rachelle Arada
Page: 3

Project ID: 1802237
Project Name: PO# SC12883

AETL Job Number	Submitted	Client
93026	06/20/2018	ATL

Method: (8270C-SIM), Phenols and Phthalates by GC/MS SIM (Modified 8270C)

QC Batch No: 062618JB1

Our Lab I.D.			Method Blank	**93026.02**	**93026.03**	**93026.04**	
Client Sample I.D.				1802237-28	1802237-29	1802237-30	
Date Sampled				06/18/2018	06/18/2018	06/18/2018	
Date Prepared			06/26/2018	06/26/2018	06/26/2018	06/26/2018	
Preparation Method			3550B	3550B	3550B	3550B	
Date Analyzed			06/28/2018	06/28/2018	06/28/2018	06/29/2018	
Matrix			Soil	Soil	Soil	Soil	
Units			ug/Kg	ug/Kg	ug/Kg	ug/Kg	
Dilution Factor			1	1	1	1	
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	
Bis(2-ethylhexyl) phthalate	5.00	20.00	ND	ND	ND	ND	
Butyl benzyl phthalate	5.00	20.00	ND	ND	ND	ND	
Di-n-butyl phthalate	5.00	20.00	ND	ND	ND	ND	
Di-n-octyl phthalate	5.00	20.00	ND	ND	ND	ND	
Diethyl phthalate	5.00	20.00	ND	ND	ND	ND	
Dimethyl phthalate	5.00	20.00	ND	ND	ND	ND	
2-Nitrophenol	5.00	20.00	ND	ND	ND	ND	
Bisphenol A (BPA)	10.0	50.0	ND	ND	ND	ND	
4-Chloro-3-Methylphenol	5.00	20.00	ND	ND	ND	ND	
3,4-Dimethylphenol	5.00	20.00	ND	ND	ND	ND	
4,6-Dinitro-2-methylphenol	10.0	50.0	ND	ND	ND	ND	
2-Methylphenol (2-Cresol)	5.00	20.00	ND	ND	ND	ND	
Total Target Phenols	5.00	20.00	ND	ND	ND	ND	
Our Lab I.D.			Method Blank	**93026.02**	**93026.03**	**93026.04**	
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**	**% Rec.**	**% Rec.**	
2-Fluorophenol	40-140		76.5	59.8	59.5	63.0	
2-Fluorobiphenyl	40-140		90.0	75.5	70.0	76.5	
p-Terphenyl-D14	50-110		106	95.5	84.5	95.5	
Phenol-d6	40-140		75.3	55.5	60.3	61.0	

American Environmental Testing Laboratory Inc.
2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

QUALITY CONTROL RESULTS

Ordered By

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225

Telephone: (562)989-4045
Attn: Rachelle Arada
Page: 4

Project ID: 1802237
Project Name: PO# SC12883

AETL Job Number	Submitted	Client
93026	06/20/2018	ATL

Method: 8270C-SIM, Phenols and Phthalates by GC/MS SIM (Modified 8270C)

QC Batch No: 062518JB1; LCS: Clean Water; LCS Prepared: 06/25/2018; LCS Analyzed: 06/29/2018; Units: ug/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
4-Chloro-3-Methylphenol	20.0	14.2	71.0	20.0	13.9	69.5	2.1	20-130	<30	
2-Chlorophenol	20.0	14.2	71.0	20.0	13.5	67.5	5.1	20-130	<30	
4-Nitrophenol	20.0	5.20	26.0	20.0	4.60	23.0	12.2	20-130	<30	
Surrogates										
2-Fluorophenol	20.0	10.0	50.0	20.0	9.68	48.4	3.3	40-130	<30	
2-Fluorobiphenyl	10.0	8.52	85.2	10.0	8.25	82.5	3.2	40-130	<30	
p-Terphenyl-D14	10.0	12.3	123	10.0	11.3	113	8.5	40-130	<30	
Phenol-d6	20.0	8.10	40.5	20.0	8.48	42.4	4.6	40-130	<30	

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QUALITY CONTROL RESULTS

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Signal Hill, CA 90755-5225

Telephone: (562)989-4045
Attn: Rachelle Arada
Page: 5

Project ID: 1802237
Project Name: PO# SC12883

AETL Job Number	Submitted	Client
93026	06/20/2018	ATL

Method: (8270C-SIM), Phenols and Phthalates by GC/MS SIM (Modified 8270C)

QC Batch No: 062618JB1; Dup or Spiked Sample: 93026.02; LCS: Clean Sand; QC Prepared: 06/26/2018; QC Analyzed: 06/28/2018; Units: ug/Kg

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
4-Chloro-3-Methylphenol	0.00	400	259	64.8	400	248	62.0	4.4	40-140	<30
2-Chlorophenol	0.00	400	248	62.0	400	230	57.5	7.5	40-140	<30
4-Nitrophenol	0.00	400	166	41.5	400	161	40.3	2.9	40-140	<30
Surrogates										
2-Fluorophenol	0.00	400	247	61.8	400	245	61.3	<1	40-140	<30
2-Fluorobiphenyl	0.00	200	149	74.5	200	144	72.0	3.4	40-140	<30
p-Terphenyl-D14	0.00	200	178	89.0	200	178	89.0	<1	50-110	<30
Phenol-d6	0.00	400	247	61.8	400	240	60.0	3.0	40-140	<30

QC Batch No: 062618JB1; Dup or Spiked Sample: 93026.02; LCS: Clean Sand; QC Prepared: 06/26/2018; QC Analyzed: 06/28/2018; Units: ug/Kg

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
4-Chloro-3-Methylphenol	400	307	76.8	400	287	71.8	6.7	40-140	<30	
2-Chlorophenol	400	302	75.5	400	287	71.8	5.0	40-140	<30	
4-Nitrophenol	400	224	56.0	400	191	47.8	15.8	40-140	<30	
Surrogates										
2-Fluorophenol	400	302	75.5	400	287	71.8	5.0	40-140	<30	
2-Fluorobiphenyl	200	179	89.5	200	174	87.0	2.8	40-140	<30	
p-Terphenyl-D14	200	206	103	200	218	109	5.7	50-110	<30	
Phenol-d6	400	304	76.0	400	282	70.5	7.5	40-140	<30	

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Data Qualifiers and Descriptors

Data Qualifier:

#:	Recovery is not within acceptable control limits.
*:	In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied.
B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
H:	Analysis was performed over the allowed holding time due to circumstances which were beyond laboratory control.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).
M:	Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable.
MCL:	Maximum Contaminant Level
NS:	No Standard Available
S6:	Surrogate recovery is outside control limits due to matrix interference.
S8:	The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria.
X:	Results represent LCS and LCSD data.

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.

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Data Qualifiers and Descriptors

MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

ADVANCED TECHNOLOGY LABORATORIES

93026

SUBCONTRACT ORDER

Work Order: 1802237

SENDING LABORATORY:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone: 562.989.4045
Fax: 562.989.6348
Project Manager: Rachelle Arada (Rachelle@atlglobal.com)
Sampler: Jake Lippman

RECEIVING LABORATORY:

AETL
2834 North Naomi Street
Burbank, CA 91504
Phone :(818) 845-8200
Fax: (818) 845-8840
PO#: SC12883-STANDARD TAT

IMPORTANT : Please include Work Order # and PO # in your invoice.

Special Instructions: Need EQUIS EDD.

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1802237-22 / EB-061818	93026.01	**Water**	**06/18/18 16:10**	**Phenols/Phthalates 8270C SIM. See attached list. Archive remaining sample. Contact ATL prior to disposal**
8270_SIM_SUB [Semivolatile Organic Compounds] Amber Unpres - 1000mL	**06/27/18 17:00**	06/25/18 16:10		
ATL Lab#: 1802237-28 / TP-12-0-5	93026.02	**Soil**	**06/18/18 08:45**	
8270_SIM_SUB [Semivolatile Organic Compounds] Glass Jar - 8 oz	**06/27/18 17:00**	07/02/18 08:45		
ATL Lab#: 1802237-29 / TP-12-5-8	93026.03	**Soil**	**06/18/18 08:50**	
8270_SIM_SUB [Semivolatile Organic Compounds] Glass Jar - 8 oz	**06/27/18 17:00**	07/02/18 08:50		
ATL Lab#: 1802237-30 / TP-12-8-10	93026.04	**Soil**	**06/18/18 09:00**	
8270_SIM_SUB [Semivolatile Organic Compounds] Glass Jar - 8 oz	**06/27/18 17:00**	07/02/18 09:00		

Released By	Date	Received By	Date
MFR	6/20/18 09:58		6/20/18
	6/20/18 1407		06/20/18 1407

American Environmental Testing Laboratory Inc.
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Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

COOLER RECEIPT FORM

Client Name: ATL

Project Name:

AETL Job Number: 93026, 93027 & 93028

Date Received: 6/20/18 Received by: Jean Claude

Carrier: ☒ AETL Courier ☐ Client ☐ GSO ☐ FedEx ☐ UPS
☐ Others:

Samples were received in: ☒ Cooler (1) ☐ Other (Specify):

Inside temperature of shipping container No 1: 2.5°C, No 2: _____, No 3: _____

Type of sample containers: ☐ VOA, ☒ Glass bottles, ☒ Wide mouth jars, ☐ HDPE bottles, ☐ Metal sleeves, ☐ Others (Specify): _____

How are samples preserved: ☐ None, ☐ Ice , ☒ Blue Ice, ☐ Dry Ice
☒ None, _ HNO_3, _ NaOH, _ ZnOAc, _ HCl, _ $Na_2S_2O_3$, _ MeOH
_ Other (Specify):

	Yes	No, explain below	Name, if client was notified.
1. Are the COCs Correct?	X		
2. Are the Sample labels legible?	X		
3. Do samples match the COC?	X		
4. Are the required analyses clear?	X		
5. Is there enough samples for required analysis?	X		
6. Are samples sealed with evidence tape?	NA		
7. Are sample containers in good condition?	X		
8. Are samples preserved?	X		
9. Are samples preserved properly for the intended analysis?	X		
10. Are the VOAs free of headspace?	NA		
11. Are the jars free of headspace?	X		

Explain all "No" answers for above questions:

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 1 of 5

Temp blanks (°C): 2.6, 2.2, —

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver:20180321

Method of Transport: ☐ Client ☑ ATL ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other: _____

Sample Conditions Condition	Y	N	Receipt Condition	Y	N
1. CHILLED	☑	☐	5. # OF SAMPLES MATCH COC	☑	☐
2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☑	☐
3. CONTAINER INTACT	☑	☐	7. COOLER TEMP, deg C:		
4. SEALED	☐	☑	5.8, 5.1, 6.0		

CUSTOMER

Company: Kleinfelder, Inc.
Address: 550 West C Street, Suite 1200
City: San Diego State: CA Zip: 92101
Tel: 6198314677
Fax:

SEND REPORT TO:
Attn: Jake Lippman
Email: jlippman@kleinfelder.com
Company: Kleinfelder Inc
Address: 550 West C Street Suite 1200
City: San Diego State: CA Zip: 92101

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn:
Email: accountspayableus@kleinfelder.com
Company: Same
Address:
City: State: Zip:

EDD: ○ Excel ○ EDF ◉ Equis ○ _____

QA/QC: ☑ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV ☐ _____

PROJECT SAMPLES

Project Name: Salt Pond 20
Project No.: 20164596.018A
Sampler: Jake Lippman
Quote #:
PO #: 20164596.018A
Special Instructions/Comments: Archive remaining samples

ITEM	Laboratory ID (For Lab Use Only)	Sample ID / Location	Date	Time	8081 (Organochlorine Pesticides)	8082 (PCBs)	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	PAHs (8270C SIM)	Phenols/Phthalates (8270C SIM)	TPH C6-40 (8015B)	SVOCs (8270C SIM)	Title 22 Metals (6020/7471A)	VOC 8260				Soil	Select Solid Matrix	Select Water Matrix	Wastewater	Select Non-aqueous Matrix	Enter Custom Matrix	Turnaround Time (TAT)	Quantity	Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister	Material: 1=Glass; 2=Plastic; 3=Metal	Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn(Ac)2; 6=NaOH; 7=NA2S2O3	Remarks
1	1802237-01	HA-7-0-0.5	6.18.18	0835											X		X	X				X						5	2	5	1	—	
2	-02	HA-7-2.0													X		X	X															
3	-03	HA-7-4.0																															HOLD
4	-04	HA-7-6.0																															HOLD
5	-05	HA-8-0-0.5		1255		X									X	X	X	X															
6	-06	HA-8-2.0				X									X	X	X	X															
7	-07	HA-8-4.0				X									X	X	X	X															
8	-08	HA-8-6.0				X									X	X	X	X															
9	-09	HA-9-0-0.5		1055											X		X																
10	-10	HA-9-2.0													X		X																

TERMS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples submitted AFTER 3:00 PM are considered received the following business day at 8:00 AM.
3. The following turnaround time conditions apply:
   - TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   - TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   - TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   - TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   - TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   - TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work --- ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20 sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reformatted report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.
12. The laboratory will randomly select from all QC samples received the sample to spike for Matrix Spike/Matrix Spike Duplicate (MS/MSD) at no cost. However, if you want the laboratory to additionally perform MS/MSD on your sample, a charge will be assessed for the specific sample used.

SIGNATURE

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Jake Lippman	6/19/18	15:30	Matt Hoeflich	6/19/18	1530
Matt Hoeflich	6/19/18	1840	[illegible]	6/19/18	1840

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Printed Name _____ Signature _____

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 2 of 5

Instruction: Complete all shaded areas.

For Laboratory Use Only			ATLCOC Ver:20180321
Method of Transport	Sample Conditions: Condition	Y	N
☐ Client ☐ ATL ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other:	1. CHILLED	☐	☐
	2. HEADSPACE (VOA)	☐	☐
	3. CONTAINER INTACT	☐	☐
	4. SEALED	☐	☐
Receipt Condition	Y	N	
5. # OF SAMPLES MATCH COC	☐	☐	
6. PRESERVED	☐	☐	
7. COOLER TEMP, deg C:			

CUSTOMER

Company: Kleinfelder, Inc.
Address: 550 West C Street, Suite 1200
City: San Diego State: CA Zip: 92101
Tel: 6198314677
Fax:

SEND REPORT TO:
Attn: Jake Lippman
Email: jlippman@kleinfelder.com
Company: Kleinfelder Inc
Address: 550 West C Street Suite 1200
City: San Diego State: CA Zip: 92101

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn:
Email: accountspayableus@kleinfelder.com
Company: Same
Address:
City: State: Zip:

EDD: ○ Excel ○ EDF ◉ Equis ○ _____

QA/QC: ☑ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV ☐ _____

PROJECT SAMPLES

Project Name: Salt Pond 20
Project No.: 20164596.018A
Sampler: Jake Lippman
Quote #:
PO #: 20164596.018A
Special Instructions/Comments: Archive remaining samples

ITEM	Laboratory ID (For Lab Use Only)	Sample ID / Location	Date	Time	8081 (Organochlorine Pesticides)	8082 (PCBs)	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	PAHs (8270C SIM)	Phenols/Phthalates (8270C SIM)	TPH C6-40 (8015B)	SVOCs (8270C SIM)	Title 22 Metals (6020/7471A)						Soil	Select Solid Matrix	Select Water Matrix	Wastewater	Select Non-aqueous Matrix	Enter Custom Matrix	Turnaround Time (TAT)	Quantity	Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister	Material: 1=Glass; 2=Plastic; 3=Metal	Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn(Ac)2; 6=NaOH; 7=NAS2O3	Remarks
1	1802237-11	HA-9-4.0	6/18/18	1055																			X						5	2	5	1	—	HOLD
2	-12	HA-9-6.0		↓																														HOLD
3	-13	HA-10-0-0.5		1130											X		X																	
4	-14	HA-10-2.0													X		X																	
5	-15	HA-10-4.0																																HOLD
6	-16	HA-10-4.0-DUP																																HOLD
7	-17	HA-10-6.0		↓																														HOLD
8	-18	HA-11-0-0.5		1222											X		X																	
9	-19	HA-11-2.0													X		X																	
10	-20	HA-11-4.0	↓	↓																			↓							↓	↓	↓	↓	HOLD

TERMS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples submitted AFTER 3:00 PM are considered received the following business day at 8:00 AM.
3. The following turnaround time conditions apply:
   - TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   - TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   - TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   - TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   - TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   - TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work --- ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20 sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reformatted report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.
12. The laboratory will randomly select from all QC samples received the sample to spike for Matrix Spike/Matrix Spike Duplicate (MS/MSD) at no cost. However, if you want the laboratory to additionally perform MS/MSD on your sample, a charge will be assessed for the specific sample used.

CUSTODY

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Jake Lippman	6/18/18	15:30	[signature]	6/19/18	15:30
[signature]	6/19/18	1840	[signature]	6/19/18	1840

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Printed Name _____ Signature _____

ADVANCE TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 3 of 5

Instruction: Complete all shaded areas.

For Laboratory Use Only			ATLCOC Ver:20180321
Method of Transport	Sample Condition		Receipt
	Condition	Y N	Condition Y N
☐ Client ☐ ATL	1. CHILLED	☐ ☐	5. # OF SAMPLES MATCH COC ☐ ☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (VOA)	☐ ☐	6. PRESERVED ☐ ☐
☐ GSO	3. CONTAINER INTACT	☐ ☐	7. COOLER TEMP, deg C:
☐ Other: _____	4. SEALED	☐ ☐	

CUSTOMER

Company: Kleinfelder, Inc.
Address: 550 West C Street, Suite 1200
City: San Diego State: CA Zip: 92101
Tel: 6198314677
Fax:

SEND REPORT TO:
Attn: Jake Lippman
Email: jlippman@kleinfelder.com
Company: Kleinfelder Inc
Address: 550 West C Street Suite 1200
City: San diego State: CA Zip: 92101

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn:
Email: accountspayableus@kleinfelder.com
Company: Same
Address:
City: State: Zip:

EDD: ○ Excel ○ EDF ◉ Equis ○ _____

QA/QC: ☑ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV ☐ _____

PROJECT SAMPLES

Project Name: Salt Pond 20
Project No.: 20164596.018A
Sampler: Jake Lippman
Quote #:
PO #: 20164596.018A
Special Instructions/Comments: Archive remaining samples

ITEM	Laboratory ID (For Lab Use Only)	Sample ID / Location	Date	Time	8081 (Organochlorine Pesticides)	8082 (PCBs)	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	PAHs (8270C SIM)	Phenols/Phthalates (8270C SIM)	TPH C6-40 (8015B)	SVOCs (8270C SIM)	Title 22 Metals (6020/7471A)	VOC 8260					Soil	Select Solid Matrix	Select Water Matrix	Wastewater	Select Non-aqueous Matrix	Enter Custom Matrix	Turnaround Time (TAT)	Quantity	Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7 = Canister	Material: 1=Glass; 2=Plastic; 3=Metal	Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4 =4C; 5=Zn/AcIZ; 6=NaOH; 7=NA2S2O3	Remarks
1	1802237-21	HA-11-6.0	6.18.18	1222																			X						5	2	5	1	–	Hold
2	↓ -22	EB-061818	↓	1610	X	X							X	X	X	X	X	X							X				↓	11	2/3	1/2	1/2	
3																																		
4																																		
5																																		
6																																		
7																																		
8																																		
9																																		
10																																		

SB 6.18.18

TERMS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples submitted AFTER 3:00 PM are considered received the following business day at 8:00 AM.
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   - TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
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7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20 sample/week if extended storage is requested.
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10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction procedure.
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CUSTODY

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Jake Lippman	6/19/18	1530	[signature] ATL COC	6/19/18	1530
[signature] ATL COC	6/19/18	1840	[signature] MFK	6/19/18	1840
Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Printed Name _____ Signature _____

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 4 of 5

Instruction: Complete all shaded areas.

For Laboratory Use Only				ATLCOC Ver:20180321
Method of Transport	Sample Condition			celpt
	Condition	Y	N	Condition	Y	N
☐ Client ☐ ATL	1. CHILLED	☐	☐	5. # OF SAMPLES MATCH COC	☐	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☐
☐ GSO	3. CONTAINER INTACT	☐	☐	7. COOLER TEMP, deg C:		
☐ Other: _____	4. SEALED	☐	☐			

CUSTOMER

Company: Kleinfelder, Inc.
Address: 550 West C Street, Suite 1200
City: San Diego State: CA Zip: 92101
Tel: 6198314677
Fax:

SEND REPORT TO:
Attn: Jake Lippman Email: jlippman@kleinfelder.com
Company: Kleinfelder Inc.
Address: 550 W C Street, St. 1200
City: San Diego State: CA Zip: 92101

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Email: accountspayableus@kleinfelder.com
Company: Same
Address:
City: State: Zip:

EDD: ○ Excel ○ EDF ◉ Equis ○ _____

QA/QC: ☑ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV ☐ _____

PROJECT SAMPLES

Project Name: Salt Pond 20
Project No.: 20164596.018A
Sampler: Jake Lippman
Quote #:
PO #: 20164596.018A
Special Instructions/Comments: Archive remaining samples

Requested Analysis / Sample Matrix / Container

ITEM	Laboratory ID (For Lab Use Only)	Sample ID / Location	Date	Time	8081 (Organochlorine Pesticides)	8082 (PCBs)	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	PAHs (8270C SIM)	Phenols/Phthalates (8270C SIM)	TPH C6-40 (8015B)	SVOCs (8270C SIM)	Title 22 Metals (6020/7471A)	VOCs 8260B	Soil	Select Solid Matrix	Select Water Matrix	Wastewater	Select Non-aqueous Matrix	Enter Custom Matrix	Turnaround Time (TAT)	Quantity	Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister	Material: 1=Glass; 2=Plastic; 3=Metal	Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn(Ac)2; 6=NaOH; 7=NAS2S2O3	Remarks
1	1802237-23	TP-5-0.5-1	6/18/18	10:00	X	X							X	X	X	X	X		X						5	2	5	1	-	Hold
2	-24	TP-5-1-2		10:05																										Hold
3	-25	TP-6-0-0.5		09:30		X									X	X	X	X												
4	-26	TP-6-0.5-1.5		09:35		X									X	X	X	X												
5	-27	TP-6-1.5-2		09:40		X									X	X	X	X												
6	-28	TP-12-0-5		08:45	X	X								X			X													
7	-29	TP-12-5-8		08:50	X	X								X			X													
8	-30	TP-12-8-10		09:00	X	X								X			X													
9	-31	TP-13-0-4		09:05		X									X	X	X	X												
10	-32	TP-13-4-5		09:10		X									X	X	X	X												

TERMS

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CUSTODY

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Jake Lippman	6/19/18	15:30	[illegible]	6/19/18	1530
[illegible]	6/19/18	1840	[illegible]	6/19/18	1840

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Printed Name _____ Signature _____

ADVANCED TECHNOLOGY LABORATORIES
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CHAIN OF CUSTODY RECORD

Page 5 of 5

Instruction: Complete all shaded areas.

For Laboratory Use Only			ATLCOC Ver:20180321
Method of Transport	Sample Condition: Condition	Y	N
☐ Client ☐ ATL ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other:	1. CHILLED	☐	☐
	2. HEADSPACE (VOA)	☐	☐
	3. CONTAINER INTACT	☐	☐
	4. SEALED	☐	☐
	Receipt: Condition	Y	N
	5. # OF SAMPLES MATCH COC	☐	☐
	6. PRESERVED	☐	☐
	7. COOLER TEMP, deg C:		

CUSTOMER

Company: Kleinfelder, Inc.
Address: 550 West C Street, Suite 1200
City: San Diego State: CA Zip: 92101
Tel: 6198314677
Fax:

SEND REPORT TO:
Attn: Jake Lippman
Email: jlippman@kleinfelder.com
Company: Kleinfelder, Inc.
Address: 550 W C Street, St 1200
City: San Diego State: CA Zip: 92101

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn:
Email: accountspayableus@kleinfelder.com
Company: Same
Address:
City: State: Zip:

EDD: ○ Excel ○ EDF ◉ Equis ○ _____

QA/QC: ☑ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV ☐ _____

PROJECT SAMPLES

Project Name: Salt Pond 20
Project No.: 20164596.018A
Sampler: Jake Lippman
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PO #: 20164596.018A
Special Instructions/Comments: Archive remaining samples

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1	1802237-33	TP-14-0-8	6/18/18	14:00																		X						5	2	5	1	–	Hold
2	-34	TP-14/15-8-10		16:10																													
3	-35	TP-14/15-8-10-DUP		↓																													
4	-36	TP-1/2/15-0.5-4		16:00																													
5	-37	TP-2/5/15-2-10		15:40																													
6	-38	TP-1/2/5/15-0-0.5		15:30																													
7	-39	TP-1/2/5/15-0-0.5-DUP		↓																													
8																																	
9			6/18/18																														
10																																	

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[illegible]	6/19/18	1840	MTK	6/19/18	1840

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Printed Name _____ Signature _____

Carmen Aguila

From: Jake Lippman <JLippman@kleinfelder.com>
Sent: Friday, June 22, 2018 2:50 PM
To: Carmen Aguila
Cc: customer.relations@atlglobal.com; Marnellie Ramos
Subject: RE: Analyses

Carmen, we are good to run Title 22 metals 6020/7471A on the following as well:

TP-5-1-2 (Change ID to TP-5-0.5-2)
TP-14-0-8
TP-14/15-8-10
TP-14/15-8-10-DUP
TP-1/2/15-0.5-4
TP-2/5/15-2-10
TP-1/2/5/15-0-0.5
TP-1/2/5/15-0-0.5-DUP

Continue to hold TP-5-0.5-1

Thank you

Jake Lippman, PG, CHg
Project Manager

550 West C Street, Suite 1200
San Diego, CA 92101
d| 619.831.4677
o| 619.831.4600
m| 619.348.8415

This email may contain confidential information. If you have received this email—including any attachments—in error, please notify the sender promptly and delete the email and any attachments from all of your systems.

Carmen Aguila

From: Jake Lippman <JLippman@kleinfelder.com>
Sent: Friday, June 22, 2018 10:05 PM
To: Carmen Aguila
Cc: customer.relations@atlglobal.com; Marnellie Ramos
Subject: Re: Analyses

Thanks Carmen. Please also change the following IDs:

TP-14/15-8-10 to ENVCOMP-4

TP-14/15-8-10-DUP to ENVCOMP-4-DUP

TP-1/2/15-0.5-4 to ENVCOMP-1

TP-2/5/15-2-10 to ENVCOMP-2

TP-1/2/5/15-0-0.5 to ENVCOMP-3

TP-1/2/5/15-0-0.5-DUP to ENVCOMP-3-DUP

Thank you

Jake Lippman, PG, CHg
Project Manager

550 West C Street, Suite 1200
San Diego, CA 92101
d| 619.831.4677
o| 619.831.4600
m| 619.348.8415

This email may contain confidential information. If you have received this email—including any attachments—in error, please notify the sender promptly and delete the email and any attachments from all of your systems.

Rachelle Arada

From: Jake Lippman <JLippman@kleinfelder.com>
Sent: Tuesday, July 3, 2018 12:54 PM
To: Rachelle Arada
Subject: 20164596 SPLP

Rachelle,

Please run the following using SPLP:

HA-2-0-0.5: Pyrene
HA-2-0-0.5-DUP: Pyrene and Fluoranthene
HA-4-0-0.5: C23-C40
HA-4-0-0.5-DUP: C23-C40
HA-5-0-0.5: C13-C40, DDE, DDT, alpha-chlordane, chlordane, gamma-chlordane
HA-9-0-0.5: C13 and C31

Let me know if not possible on 8270.

Thank you

Jake Lippman, PG, CHg
Project Manager

550 West C Street, Suite 1200
San Diego, CA 92101
d| 619.831.4677
o| 619.831.4600
m| 619.348.8415

KLEINFELDER
Bright People. Right Solutions.

This email may contain confidential information. If you have received this email—including any attachments—in error, please notify the sender promptly and delete the email and any attachments from all of your systems.

ADVANCED TECHNOLOGY LABORATORIES

Sample Receipt Acknowledgement

Work Order # 1802237

Client:	**Kleinfelder - SD**	**Project Manager:**	**Rachelle Arada**
Project:	**Salt Pond 20, 20164596.018A**	**Project Number:**	**Salt Pond 20, 20164596.018A**

Report To:	**Invoice To:**
Kleinfelder	Kleinfelder
Jake Lippman	Accounts Payable
550 W. C. Suite 1200	550 W. C. Suite 1200
San Diego, CA 92101	San Diego, CA 92101
Phone: (619) 831-4600	Phone :(619) 831-4600
Fax:	Fax:

Date Due:	06/27/18 17:00 (5 day TAT)	Date Received:	06/19/18 15:30
Received By:	Joel Arceo	Date Logged In:	06/19/18 16:17
Logged In By:	Marnellie Ramos	Shipped by:	ATL

All samples that require thermal preservation are considered acceptable if the arrival temperature is within 2 °C of the required temperature or method-specified range. For samples with a specified temperature of 4 °C, samples received with a temperature ranging from just above freezing temperature of water to 6 °C shall be acceptable. Samples that are hand-delivered immediately following collection may not meet these criteria; however, they will be deemed acceptable according to NELAC standards if there is evidence that the chilling process has begun, such as arrival on ice, etc.

The laboratory documents the condition of the sample/s as received per requirement of laboratory certification. If the sample received is unpreserved or under-preserved, the laboratory will adjust the preservatives to bring the sample to preservation criteria.

Any sample compliance issues will be communicated to the client. If the client does not respond within 24 hours of sample receipt, all tests will be performed as requested regardless. For short holding time samples (< 24 hours), analysis will proceed regardless.

If you have any questions or further instructions, please contact your Project Manager at (562) 989-4045.

Sample(s) received on ice?	Yes	☑	No	☐
Sample(s) received on blue ice?	Yes	☐	No	☑
Cooler temperature within acceptance limit?	Yes	☑	No	☐
Shipping container received in good condition?	Not Applicable			
Chain of Custody (COC) present?	Yes	☑	No	☐
Sampler name present in COC?	Yes	☑	No	☐
COC signed when relinquished and received?	Yes	☑	No	☐
COC agrees with sample labels?	Yes	☑	No	☐
Samples in proper container/bottle?	Yes	☑	No	☐
Sample containers intact?	Yes	☑	No	☐
Sufficient sample amount for indicated tests?	Yes	☑	No	☐
All samples received within holding time?	Yes	☑	No	☐
Water samples submitted?	Yes	☑	No	☐
Water samples meet preservation criteria?	Yes	☑	No	☐
Water for VOC -- Were VOA vials submitted?	Yes	☑	No	☐
VOA vials for VOC meet headspace criteria?	Yes	☑	No	☐

Cooler #1	Temp: 5.8 °C
Cooler #2	Temp: 5.1 °C
Cooler #3	Temp: 6.0 °C

Sample Receipt Comments:

Temp Blank (C): 2.6, 2.2

Printed: 6/26/2018 11:27:06AM

Form Version: 12 Issued: 12/06/2016 12:55 PM

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Supplemental Report 1

The original report has been revised/corrected.

WORK ORDER NUMBER: 18-06-1645

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Advanced Technology Laboratories

Client Project Name: 1802237

Attention: Rachelle Arada
3275 Walnut Street
Signal Hill, CA 90755-5225

Approved for release on 12/17/2018 by:
Lori Thompson
Project Manager

ResultLink

Email your PM

Eurofins Calscience (Calscience) certifies that the test results provided in this report meet all NELAC Institute requirements for parameters for which accreditation is required or available. Any exceptions to NELAC Institute requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

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Client Project Name: 1802237
Work Order Number: 18-06-1645

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5.2 LCS/LCSD. 56

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Work Order Narrative

Work Order: 18-06-1645 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 06/22/18. They were assigned to Work Order 18-06-1645.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.

Return to Contents

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Sample Summary

Client:	Advanced Technology Laboratories 3275 Walnut Street Signal Hill, CA 90755-5225	Work Order:	18-06-1645
		Project Name:	1802237
		PO Number:	SC12896
		Date/Time Received:	06/22/18 10:35
		Number of Containers:	9
Attn:	Rachelle Arada		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
1802237-05 / HA-8-0-0.5	18-06-1645-1	06/18/18 12:55	1	Solid
1802237-06 / HA-8-2.0	18-06-1645-2	06/18/18 12:55	1	Solid
1802237-07 / HA-8-4.0	18-06-1645-3	06/18/18 12:55	1	Solid
1802237-08 / HA-8-6.0	18-06-1645-4	06/18/18 12:55	1	Solid
1802237-25 / TP-6-0-0.5	18-06-1645-5	06/18/18 09:30	1	Solid
1802237-26 / TP-6-0.5-1.5	18-06-1645-6	06/18/18 09:35	1	Solid
1802237-27 / TP-6-1.5-2	18-06-1645-7	06/18/18 09:40	1	Solid
1802237-31 / TP-13-0-4	18-06-1645-8	06/18/18 09:05	1	Solid
1802237-32 / TP-13-4-5	18-06-1645-9	06/18/18 09:10	1	Solid

Return to Contents

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 1 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802237-05 / HA-8-0-0.5	**18-06-1645-1-A**	**06/18/18 12:55**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 13:46**	**180626L08**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0099	1.00	
1,2-Dichlorobenzene	ND	0.0099	1.00	
1,3-Dichlorobenzene	ND	0.0099	1.00	
1,4-Dichlorobenzene	ND	0.0099	1.00	
1-Methylnaphthalene	ND	0.0099	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.0099	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.0099	1.00	
2-Chloronaphthalene	ND	0.0099	1.00	
2-Chlorophenol	ND	0.0099	1.00	
2-Methylnaphthalene	ND	0.0099	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.099	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0099	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0099	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.0099	1.00	
Acenaphthylene	ND	0.0099	1.00	
Aniline	ND	0.0099	1.00	
Anthracene	ND	0.0099	1.00	
Azobenzene	ND	0.0099	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 2 of 30

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0099	1.00	
Benzo (a) Pyrene	ND	0.0099	1.00	
Benzo (b) Fluoranthene	ND	0.0099	1.00	
Benzo (g,h,i) Perylene	ND	0.0099	1.00	
Benzo (k) Fluoranthene	ND	0.0099	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.0099	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0099	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0099	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0099	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.0099	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.0099	1.00	
Dibenzofuran	ND	0.0099	1.00	
Diethyl Phthalate	ND	0.0099	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.0099	1.00	
Fluorene	ND	0.0099	1.00	
Hexachloro-1,3-Butadiene	ND	0.0099	1.00	
Hexachlorobenzene	ND	0.0099	1.00	
Hexachlorocyclopentadiene	ND	0.0099	1.00	
Hexachloroethane	ND	0.0099	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0099	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.0099	1.00	
N-Nitrosodimethylamine	ND	0.0099	1.00	
N-Nitrosodiphenylamine	ND	0.0099	1.00	
Naphthalene	ND	0.0099	1.00	
Nitrobenzene	ND	0.0099	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.0099	1.00	
Phenol	ND	0.0099	1.00	
Pyrene	ND	0.0099	1.00	
Pyridine	ND	0.0099	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 3 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	51	32-143	
2-Fluorobiphenyl	62	14-146	
2-Fluorophenol	46	15-138	
Nitrobenzene-d5	51	18-162	
Phenol-d6	46	17-141	
p-Terphenyl-d14	62	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 4 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802237-06 / HA-8-2.0	**18-06-1645-2-A**	**06/18/18 12:55**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 14:04**	**180626L08**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 5 of 30

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1645
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802237		Page 6 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	14	32-143	2,6
2-Fluorobiphenyl	32	14-146	
2-Fluorophenol	32	15-138	
Nitrobenzene-d5	32	18-162	
Phenol-d6	26	17-141	
p-Terphenyl-d14	27	34-148	2,6

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 7 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802237-07 / HA-8-4.0	**18-06-1645-3-A**	**06/18/18 12:55**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 14:22**	**180626L08**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0098	1.00	
1,2-Dichlorobenzene	ND	0.0098	1.00	
1,3-Dichlorobenzene	ND	0.0098	1.00	
1,4-Dichlorobenzene	ND	0.0098	1.00	
1-Methylnaphthalene	ND	0.0098	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.0098	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.0098	1.00	
2-Chloronaphthalene	ND	0.0098	1.00	
2-Chlorophenol	ND	0.0098	1.00	
2-Methylnaphthalene	ND	0.0098	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.098	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0098	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0098	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0098	1.00	
Acenaphthylene	ND	0.0098	1.00	
Aniline	ND	0.0098	1.00	
Anthracene	ND	0.0098	1.00	
Azobenzene	ND	0.0098	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 8 of 30

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0098	1.00	
Benzo (a) Pyrene	ND	0.0098	1.00	
Benzo (b) Fluoranthene	ND	0.0098	1.00	
Benzo (g,h,i) Perylene	ND	0.0098	1.00	
Benzo (k) Fluoranthene	ND	0.0098	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.0098	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0098	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0098	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0098	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.0098	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.0098	1.00	
Dibenzofuran	ND	0.0098	1.00	
Diethyl Phthalate	ND	0.0098	1.00	
Dimethyl Phthalate	0.30	0.25	1.00	
Fluoranthene	ND	0.0098	1.00	
Fluorene	ND	0.0098	1.00	
Hexachloro-1,3-Butadiene	ND	0.0098	1.00	
Hexachlorobenzene	ND	0.0098	1.00	
Hexachlorocyclopentadiene	ND	0.0098	1.00	
Hexachloroethane	ND	0.0098	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0098	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0098	1.00	
N-Nitrosodimethylamine	ND	0.0098	1.00	
N-Nitrosodiphenylamine	ND	0.0098	1.00	
Naphthalene	ND	0.0098	1.00	
Nitrobenzene	ND	0.0098	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.0098	1.00	
Phenol	ND	0.0098	1.00	
Pyrene	ND	0.0098	1.00	
Pyridine	ND	0.0098	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1645
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802237		Page 9 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	58	32-143	
2-Fluorobiphenyl	68	14-146	
2-Fluorophenol	39	15-138	
Nitrobenzene-d5	55	18-162	
Phenol-d6	67	17-141	
p-Terphenyl-d14	69	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 10 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802237-08 / HA-8-6.0	**18-06-1645-4-A**	**06/18/18 12:55**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 14:40**	**180626L08**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0098	1.00	
1,2-Dichlorobenzene	ND	0.0098	1.00	
1,3-Dichlorobenzene	ND	0.0098	1.00	
1,4-Dichlorobenzene	ND	0.0098	1.00	
1-Methylnaphthalene	ND	0.0098	1.00	
2,4,5-Trichlorophenol	ND	0.24	1.00	
2,4,6-Trichlorophenol	ND	0.24	1.00	
2,4-Dichlorophenol	ND	0.24	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.24	1.00	
2,4-Dinitrotoluene	ND	0.0098	1.00	
2,6-Dichlorophenol	ND	0.24	1.00	
2,6-Dinitrotoluene	ND	0.0098	1.00	
2-Chloronaphthalene	ND	0.0098	1.00	
2-Chlorophenol	ND	0.0098	1.00	
2-Methylnaphthalene	ND	0.0098	1.00	
2-Methylphenol	ND	0.24	1.00	
2-Nitroaniline	ND	0.24	1.00	
2-Nitrophenol	ND	0.24	1.00	
3,3'-Dichlorobenzidine	ND	0.24	1.00	
3-Nitroaniline	ND	0.24	1.00	
3/4-Methylphenol	ND	0.098	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0098	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.24	1.00	
4-Chloro-3-Methylphenol	ND	0.24	1.00	
4-Chloroaniline	ND	0.24	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0098	1.00	
4-Nitroaniline	ND	0.24	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0098	1.00	
Acenaphthylene	ND	0.0098	1.00	
Aniline	ND	0.0098	1.00	
Anthracene	ND	0.0098	1.00	
Azobenzene	ND	0.0098	1.00	
Benzidine	ND	0.24	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 11 of 30

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0098	1.00	
Benzo (a) Pyrene	ND	0.0098	1.00	
Benzo (b) Fluoranthene	ND	0.0098	1.00	
Benzo (g,h,i) Perylene	ND	0.0098	1.00	
Benzo (k) Fluoranthene	ND	0.0098	1.00	
Benzoic Acid	ND	0.24	1.00	
Benzyl Alcohol	ND	0.0098	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0098	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0098	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0098	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.24	1.00	
Butyl Benzyl Phthalate	ND	0.24	1.00	
Chrysene	ND	0.0098	1.00	
Di-n-Butyl Phthalate	ND	0.24	1.00	
Di-n-Octyl Phthalate	ND	0.24	1.00	
Dibenz (a,h) Anthracene	ND	0.0098	1.00	
Dibenzofuran	ND	0.0098	1.00	
Diethyl Phthalate	ND	0.0098	1.00	
Dimethyl Phthalate	0.25	0.24	1.00	
Fluoranthene	ND	0.0098	1.00	
Fluorene	ND	0.0098	1.00	
Hexachloro-1,3-Butadiene	ND	0.0098	1.00	
Hexachlorobenzene	ND	0.0098	1.00	
Hexachlorocyclopentadiene	ND	0.0098	1.00	
Hexachloroethane	ND	0.0098	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0098	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0098	1.00	
N-Nitrosodimethylamine	ND	0.0098	1.00	
N-Nitrosodiphenylamine	ND	0.0098	1.00	
Naphthalene	ND	0.0098	1.00	
Nitrobenzene	ND	0.0098	1.00	
Pentachlorophenol	ND	0.24	1.00	
Phenanthrene	ND	0.0098	1.00	
Phenol	ND	0.0098	1.00	
Pyrene	ND	0.0098	1.00	
Pyridine	ND	0.0098	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1645
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802237		Page 12 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	48	32-143	
2-Fluorobiphenyl	55	14-146	
2-Fluorophenol	53	15-138	
Nitrobenzene-d5	45	18-162	
Phenol-d6	64	17-141	
p-Terphenyl-d14	71	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 13 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802237-25 / TP-6-0-0.5	**18-06-1645-5-A**	**06/18/18 09:30**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 14:58**	**180626L08**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 14 of 30

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1645
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802237		Page 15 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	58	32-143	
2-Fluorobiphenyl	72	14-146	
2-Fluorophenol	57	15-138	
Nitrobenzene-d5	58	18-162	
Phenol-d6	53	17-141	
p-Terphenyl-d14	72	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 16 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802237-26 / TP-6-0.5-1.5	**18-06-1645-6-A**	**06/18/18 09:35**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 15:16**	**180626L08**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 17 of 30

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1645
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802237		Page 18 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	61	32-143	
2-Fluorobiphenyl	42	14-146	
2-Fluorophenol	57	15-138	
Nitrobenzene-d5	40	18-162	
Phenol-d6	73	17-141	
p-Terphenyl-d14	69	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 19 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802237-27 / TP-6-1.5-2	**18-06-1645-7-A**	**06/18/18 09:40**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 15:34**	**180626L08**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0098	1.00	
1,2-Dichlorobenzene	ND	0.0098	1.00	
1,3-Dichlorobenzene	ND	0.0098	1.00	
1,4-Dichlorobenzene	ND	0.0098	1.00	
1-Methylnaphthalene	ND	0.0098	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.0098	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.0098	1.00	
2-Chloronaphthalene	ND	0.0098	1.00	
2-Chlorophenol	ND	0.0098	1.00	
2-Methylnaphthalene	ND	0.0098	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.098	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0098	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0098	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0098	1.00	
Acenaphthylene	ND	0.0098	1.00	
Aniline	ND	0.0098	1.00	
Anthracene	ND	0.0098	1.00	
Azobenzene	ND	0.0098	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 20 of 30

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0098	1.00	
Benzo (a) Pyrene	ND	0.0098	1.00	
Benzo (b) Fluoranthene	ND	0.0098	1.00	
Benzo (g,h,i) Perylene	ND	0.0098	1.00	
Benzo (k) Fluoranthene	ND	0.0098	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.0098	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0098	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0098	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0098	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.0098	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.0098	1.00	
Dibenzofuran	ND	0.0098	1.00	
Diethyl Phthalate	ND	0.0098	1.00	
Dimethyl Phthalate	0.32	0.25	1.00	
Fluoranthene	ND	0.0098	1.00	
Fluorene	ND	0.0098	1.00	
Hexachloro-1,3-Butadiene	ND	0.0098	1.00	
Hexachlorobenzene	ND	0.0098	1.00	
Hexachlorocyclopentadiene	ND	0.0098	1.00	
Hexachloroethane	ND	0.0098	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0098	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0098	1.00	
N-Nitrosodimethylamine	ND	0.0098	1.00	
N-Nitrosodiphenylamine	ND	0.0098	1.00	
Naphthalene	ND	0.0098	1.00	
Nitrobenzene	ND	0.0098	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.0098	1.00	
Phenol	ND	0.0098	1.00	
Pyrene	ND	0.0098	1.00	
Pyridine	ND	0.0098	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1645
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802237		Page 21 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	65	32-143	
2-Fluorobiphenyl	49	14-146	
2-Fluorophenol	55	15-138	
Nitrobenzene-d5	42	18-162	
Phenol-d6	68	17-141	
p-Terphenyl-d14	71	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 22 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802237-31 / TP-13-0-4	**18-06-1645-8-A**	**06/18/18 09:05**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 15:53**	**180626L08**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0098	1.00	
1,2-Dichlorobenzene	ND	0.0098	1.00	
1,3-Dichlorobenzene	ND	0.0098	1.00	
1,4-Dichlorobenzene	ND	0.0098	1.00	
1-Methylnaphthalene	ND	0.0098	1.00	
2,4,5-Trichlorophenol	ND	0.24	1.00	
2,4,6-Trichlorophenol	ND	0.24	1.00	
2,4-Dichlorophenol	ND	0.24	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.24	1.00	
2,4-Dinitrotoluene	ND	0.0098	1.00	
2,6-Dichlorophenol	ND	0.24	1.00	
2,6-Dinitrotoluene	ND	0.0098	1.00	
2-Chloronaphthalene	ND	0.0098	1.00	
2-Chlorophenol	ND	0.0098	1.00	
2-Methylnaphthalene	ND	0.0098	1.00	
2-Methylphenol	ND	0.24	1.00	
2-Nitroaniline	ND	0.24	1.00	
2-Nitrophenol	ND	0.24	1.00	
3,3'-Dichlorobenzidine	ND	0.24	1.00	
3-Nitroaniline	ND	0.24	1.00	
3/4-Methylphenol	ND	0.098	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0098	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.24	1.00	
4-Chloro-3-Methylphenol	ND	0.24	1.00	
4-Chloroaniline	ND	0.24	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0098	1.00	
4-Nitroaniline	ND	0.24	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0098	1.00	
Acenaphthylene	ND	0.0098	1.00	
Aniline	ND	0.0098	1.00	
Anthracene	ND	0.0098	1.00	
Azobenzene	ND	0.0098	1.00	
Benzidine	ND	0.24	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 23 of 30

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0098	1.00	
Benzo (a) Pyrene	ND	0.0098	1.00	
Benzo (b) Fluoranthene	ND	0.0098	1.00	
Benzo (g,h,i) Perylene	ND	0.0098	1.00	
Benzo (k) Fluoranthene	ND	0.0098	1.00	
Benzoic Acid	ND	0.24	1.00	
Benzyl Alcohol	ND	0.0098	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0098	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0098	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0098	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.24	1.00	
Butyl Benzyl Phthalate	ND	0.24	1.00	
Chrysene	ND	0.0098	1.00	
Di-n-Butyl Phthalate	ND	0.24	1.00	
Di-n-Octyl Phthalate	ND	0.24	1.00	
Dibenz (a,h) Anthracene	ND	0.0098	1.00	
Dibenzofuran	ND	0.0098	1.00	
Diethyl Phthalate	ND	0.0098	1.00	
Dimethyl Phthalate	ND	0.24	1.00	
Fluoranthene	ND	0.0098	1.00	
Fluorene	ND	0.0098	1.00	
Hexachloro-1,3-Butadiene	ND	0.0098	1.00	
Hexachlorobenzene	ND	0.0098	1.00	
Hexachlorocyclopentadiene	ND	0.0098	1.00	
Hexachloroethane	ND	0.0098	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0098	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0098	1.00	
N-Nitrosodimethylamine	ND	0.0098	1.00	
N-Nitrosodiphenylamine	ND	0.0098	1.00	
Naphthalene	ND	0.0098	1.00	
Nitrobenzene	ND	0.0098	1.00	
Pentachlorophenol	ND	0.24	1.00	
Phenanthrene	ND	0.0098	1.00	
Phenol	ND	0.0098	1.00	
Pyrene	ND	0.0098	1.00	
Pyridine	ND	0.0098	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1645
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802237		Page 24 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	66	32-143	
2-Fluorobiphenyl	40	14-146	
2-Fluorophenol	50	15-138	
Nitrobenzene-d5	33	18-162	
Phenol-d6	66	17-141	
p-Terphenyl-d14	68	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 25 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802237-32 / TP-13-4-5	**18-06-1645-9-A**	**06/18/18 09:10**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 16:11**	**180626L08**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0099	1.00	
1,2-Dichlorobenzene	ND	0.0099	1.00	
1,3-Dichlorobenzene	ND	0.0099	1.00	
1,4-Dichlorobenzene	ND	0.0099	1.00	
1-Methylnaphthalene	ND	0.0099	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.0099	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.0099	1.00	
2-Chloronaphthalene	ND	0.0099	1.00	
2-Chlorophenol	ND	0.0099	1.00	
2-Methylnaphthalene	ND	0.0099	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.099	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0099	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0099	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0099	1.00	
Acenaphthylene	ND	0.0099	1.00	
Aniline	ND	0.0099	1.00	
Anthracene	ND	0.0099	1.00	
Azobenzene	ND	0.0099	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 26 of 30

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0099	1.00	
Benzo (a) Pyrene	ND	0.0099	1.00	
Benzo (b) Fluoranthene	ND	0.0099	1.00	
Benzo (g,h,i) Perylene	ND	0.0099	1.00	
Benzo (k) Fluoranthene	ND	0.0099	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.0099	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0099	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0099	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0099	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.0099	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.0099	1.00	
Dibenzofuran	ND	0.0099	1.00	
Diethyl Phthalate	ND	0.0099	1.00	
Dimethyl Phthalate	0.31	0.25	1.00	
Fluoranthene	ND	0.0099	1.00	
Fluorene	ND	0.0099	1.00	
Hexachloro-1,3-Butadiene	ND	0.0099	1.00	
Hexachlorobenzene	ND	0.0099	1.00	
Hexachlorocyclopentadiene	ND	0.0099	1.00	
Hexachloroethane	ND	0.0099	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0099	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0099	1.00	
N-Nitrosodimethylamine	ND	0.0099	1.00	
N-Nitrosodiphenylamine	ND	0.0099	1.00	
Naphthalene	ND	0.0099	1.00	
Nitrobenzene	ND	0.0099	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.0099	1.00	
Phenol	ND	0.0099	1.00	
Pyrene	ND	0.0099	1.00	
Pyridine	ND	0.0099	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1645
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802237		Page 27 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	54	32-143	
2-Fluorobiphenyl	65	14-146	
2-Fluorophenol	64	15-138	
Nitrobenzene-d5	56	18-162	
Phenol-d6	79	17-141	
p-Terphenyl-d14	72	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 28 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-16-921-21**	**N/A**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 13:08**	**180626L08**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802237			Page 29 of 30

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1645
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802237		Page 30 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	67	32-143	
2-Fluorobiphenyl	71	14-146	
2-Fluorophenol	62	15-138	
Nitrobenzene-d5	70	18-162	
Phenol-d6	70	17-141	
p-Terphenyl-d14	72	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: **18-06-1645**
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-07-02 14:22
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180702\JJJ02JUL008.D\JJJ02JUL008.rr

 # 3 **CLIENT SAMPLE NUMBER: 1802237-07 / HA-8-4.0**

LCS/MB BATCH: 180626L08
MS/MSD BATCH: 180626S08
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.40 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.98

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
1,2,4-Trichlorobenzene	0.000	1.00	ND	0.0098	
1,2-Dichlorobenzene	0.000	1.00	ND	0.0098	
1,3-Dichlorobenzene	0.000	1.00	ND	0.0098	
1,4-Dichlorobenzene	0.000	1.00	ND	0.0098	
1-Methylnaphthalene	0.000	1.00	ND	0.0098	
2,4,5-Trichlorophenol	0.000	1.00	ND	0.25	
2,4,6-Trichlorophenol	0.000	1.00	ND	0.25	
2,4-Dichlorophenol	0.000	1.00	ND	0.25	
2,4-Dimethylphenol	0.000	1.00	ND	0.49	
2,4-Dinitrophenol	0.000	1.00	ND	0.25	
2,4-Dinitrotoluene	0.000	1.00	ND	0.0098	
2,6-Dichlorophenol	0.000	1.00	ND	0.25	
2,6-Dinitrotoluene	0.000	1.00	ND	0.0098	
2-Chloronaphthalene	0.000	1.00	ND	0.0098	
2-Chlorophenol	0.000	1.00	ND	0.0098	
2-Methylnaphthalene	0.000	1.00	ND	0.0098	
2-Methylphenol	0.000	1.00	ND	0.25	
2-Nitroaniline	0.000	1.00	ND	0.25	
2-Nitrophenol	0.000	1.00	ND	0.25	
3,3'-Dichlorobenzidine	0.000	1.00	ND	0.25	
3-Nitroaniline	0.000	1.00	ND	0.25	
3/4-Methylphenol	0.000	1.00	ND	0.098	
4-Bromophenyl-Phenyl Ether	0.000	1.00	ND	0.0098	
4,6-Dinitro-2-Methylphenol	0.000	1.00	ND	0.25	
4-Chloro-3-Methylphenol	0.000	1.00	ND	0.25	
4-Chloroaniline	0.000	1.00	ND	0.25	
4-Chlorophenyl-Phenyl Ether	0.000	1.00	ND	0.0098	
4-Nitroaniline	0.000	1.00	ND	0.25	
4-Nitrophenol	0.000	1.00	ND	0.49	
Acenaphthene	0.000	1.00	ND	0.0098	
Acenaphthylene	0.000	1.00	ND	0.0098	
Aniline	0.000	1.00	ND	0.0098	
Anthracene	0.000	1.00	ND	0.0098	
Azobenzene	0.000	1.00	ND	0.0098	
Benzidine	0.000	1.00	ND	0.25	
Benzo (a) Anthracene	0.000	1.00	ND	0.0098	
Benzo (a) Pyrene	0.000	1.00	ND	0.0098	
Benzo (b) Fluoranthene	0.000	1.00	ND	0.0098	
Benzo (g,h,i) Perylene	0.000	1.00	ND	0.0098	
Benzo (k) Fluoranthene	0.000	1.00	ND	0.0098	

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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: **18-06-1645**
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-07-02 14:22
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180702\JJJ02JUL008.D\JJJ02JUL008.rr

 # 3 **CLIENT SAMPLE NUMBER: 1802237-07 / HA-8-4.0**

LCS/MB BATCH: 180626L08
MS/MSD BATCH: 180626S08
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.40 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.98

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
Benzyl Alcohol	0.000	1.00	ND	0.0098	
Bis(2-Chloroethoxy) Methane	0.000	1.00	ND	0.0098	
Bis(2-Chloroethyl) Ether	0.000	1.00	ND	0.0098	
Bis(2-Chloroisopropyl) Ether	0.000	1.00	ND	0.0098	
Bis(2-Ethylhexyl) Phthalate	0.000	1.00	ND	0.25	
Butyl Benzyl Phthalate	0.000	1.00	ND	0.25	
Chrysene	0.000	1.00	ND	0.0098	
Di-n-Butyl Phthalate	0.0781	1.00	ND	0.25	
Di-n-Octyl Phthalate	0.000	1.00	ND	0.25	
Dibenz (a,h) Anthracene	0.000	1.00	ND	0.0098	
Dibenzofuran	0.000	1.00	ND	0.0098	
Diethyl Phthalate	0.000	1.00	ND	0.0098	
Dimethyl Phthalate	3.10	1.00	0.304	0.25	
Fluoranthene	0.000	1.00	ND	0.0098	
Fluorene	0.000	1.00	ND	0.0098	
Hexachloro-1,3-Butadiene	0.000	1.00	ND	0.0098	
Hexachlorobenzene	0.000	1.00	ND	0.0098	
Hexachlorocyclopentadiene	0.000	1.00	ND	0.0098	
Hexachloroethane	0.000	1.00	ND	0.0098	
Indeno (1,2,3-c,d) Pyrene	0.000	1.00	ND	0.0098	
Isophorone	0.000	1.00	ND	0.49	
N-Nitroso-di-n-propylamine	0.000	1.00	ND	0.0098	
N-Nitrosodimethylamine	0.000	1.00	ND	0.0098	
N-Nitrosodiphenylamine	0.000	1.00	ND	0.0098	
Naphthalene	0.000	1.00	ND	0.0098	
Nitrobenzene	0.000	1.00	ND	0.0098	
Pentachlorophenol	0.000	1.00	ND	0.25	
Phenanthrene	0.000	1.00	ND	0.0098	
Phenol	0.000	1.00	ND	0.0098	
Pyrene	0.000	1.00	ND	0.0098	
Pyridine	0.000	1.00	ND	0.0098	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180702\JJJ02JUL008.D Vial: 8
Acq On : 2 Jul 2018 2:22 pm Operator: N8CZ
Sample : 18-06-1645-3 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 11:05:19 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Mon Jul 02 11:11:04 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	3.395	152	264685	5.00 mg/l	0.00
19) Naphthalene-d8	4.642	136	989935	5.00 mg/l	0.00
36) Acenaphthene-d10	6.415	164	392371	5.00 mg/l	0.00
56) Phenanthrene-d10	7.867	188	1427352	5.00 mg/l	0.00
69) Chrysene-d12	10.558	240	1621297	5.00 mg/l	0.00
81) Perylene-d12	12.385	264	1526423	5.00 mg/l	0.00
System Monitoring Compounds					
4) 2-Fluorophenol	2.352	112	230455	3.85 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 38.50%	
6) Phenol-d6	3.056	99	508121	6.68 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 66.80%	
20) Nitrobenzene-d5	3.945	82	400765	5.52 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 55.20%	
41) 2-Fluorobiphenyl	5.754	172	1014583	6.83 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 68.30%	
60) 2,4,6-Tribromophenol	7.205	330	198705	5.82 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 58.20%	
71) p-Terphenyl-d14	9.448	244	2311792	6.94 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 69.40%	
Target Compounds					Qvalue
2) Pyridine	0.000		0	N.D. d	
3) N-Nitrosodimethylamine	1.704	42	1949	Below Cal #	1
5) Aniline	3.167	93	872	N.D.	
7) Phenol	0.000		0	N.D. d	
8) Bis(2-Chloroethyl) Ether	3.167	93	999	N.D.	
9) 2-Chlorophenol	3.229	128	1151	N.D.	
10) 1,3-Dichlorobenzene	3.365	146	805	N.D.	
11) 1,4-Dichlorobenzene	3.408	146	973	N.D.	
12) Benzyl Alcohol	0.000		0	N.D. d	
13) 1,2-Dichlorobenzene	3.587	146	691	N.D.	
14) 2-Methylphenol	3.642	108	185	N.D.	
15) Bis(2-Chloroisopropyl)...	0.000		0	N.D. d	
16) 3/4-Methylphenol	0.000		0	N.D. d	
17) N-Nitroso-di-n-propyla...	3.815	70	759	N.D.	
18) Hexachloroethane	0.000		0	N.D. d	
21) Nitrobenzene	0.000		0	N.D. d	
22) Isophorone	4.192	82	2109	N.D.	
23) 2-Nitrophenol	4.297	139	237	N.D.	
24) 2,4-Dimethylphenol	4.315	107	352	N.D.	
25) Benzoic Acid	0.000		0	N.D. d	
26) Bis(2-Chloroethoxy) Me...	4.420	93	863	N.D.	
27) 2,4-Dichlorophenol	4.525	162	975	N.D.	
28) 1,2,4-Trichlorobenzene	4.605	180	1194	N.D.	
29) Naphthalene	4.667	128	3118	N.D.	
30) 2,6-Dichlorophenol	4.760	162	660	N.D.	
31) 4-Chloroaniline	4.834	127	300	N.D.	
32) Hexachloro-1,3-Butadiene	4.858	225	926	N.D.	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180702\JJJ02JUL008.D Vial: 8
Acq On : 2 Jul 2018 2:22 pm Operator: N8CZ
Sample : 18-06-1645-3 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 11:05:19 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Mon Jul 02 11:11:04 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
33) 4-Chloro-3-Methylphenol	5.247	107	1050	N.D.	
34) 2-Methylnaphthalene	5.365	142	1186	N.D.	
35) 1-Methylnaphthalene	5.470	142	1477	N.D.	
37) Hexachlorocyclopentadiene	5.599	237	206	N.D.	
38) 2,4,6-Trichlorophenol	5.680	196	349	N.D.	
39) 2,4,5-Trichlorophenol	5.871	196	275	N.D.	
40) 2-Chloronaphthalene	5.846	162	1289	N.D.	
42) 2-Nitroaniline	0.000		0	N.D. d	
43) Dimethyl Phthalate	6.199	163	475486	3.10 mg/l	100
44) Acenaphthylene	6.267	152	2417	N.D.	
45) 3-Nitroaniline	6.415	138	369	N.D.	
46) Acenaphthene	6.446	154	1331	N.D.	
47) 2,4-Dinitrophenol	0.000		0	N.D. d	
48) 4-Nitrophenol	0.000		0	N.D. d	
49) Dibenzofuran	6.606	168	1615	N.D.	
50) 2,4-Dinitrotoluene	0.000		0	N.D.	
51) 2,6-Dinitrotoluene	0.000		0	N.D. d	
52) Diethyl Phthalate	0.000		0	N.D. d	
53) 4-Chlorophenyl-Phenyl ...	6.952	204	762	N.D.	
54) Fluorene	6.946	166	1950	N.D.	
55) 4-Nitroaniline	6.971	138	44	N.D.	
57) 4,6-Dinitro-2-Methylph...	0.000		0	N.D. d	
58) N-Nitrosodiphenylamine	7.073	169	1284	N.D.	
59) Azobenzene	7.103	77	2722	N.D.	
61) 4-Bromophenyl-Phenyl E...	7.434	248	492	N.D.	
62) Hexachlorobenzene	7.570	284	751	N.D.	
63) Pentachlorophenol	0.000		0	N.D. d	
64) Phenanthrene	7.888	178	2912	N.D.	
65) Anthracene	7.935	178	2331	N.D.	
66) Di-n-Butyl Phthalate	8.499	149	27830	0.08 mg/l	96
67) Fluoranthene	9.063	202	2946	N.D.	
68) Benzidine	9.203	184	136	N.D.	
70) Pyrene	9.279	202	3579	N.D.	
72) Butyl Benzyl Phthalate	0.000		0	N.D. d	
73) 3,3'-Dichlorobenzidine	10.491	252	710	N.D.	
74) Benzo (a) Anthracene	10.558	228	5471	N.D.	
75) Bis(2-Ethylhexyl) Phth...	0.000		0	N.D. d	
76) Chrysene	10.635	228	154	N.D.	
77) Di-n-Octyl Phthalate	11.385	149	509	N.D.	
78) Benzo (b) Fluoranthene	11.893	252	2340	N.D.	
79) Benzo (k) Fluoranthene	11.918	252	683	N.D.	
80) Benzo (a) Pyrene	12.308	252	1008	N.D.	
82) Indeno (1,2,3-c,d) Pyrene	13.825	276	1747	N.D.	
83) Dibenz (a,h) Anthracene	13.851	278	1577	N.D.	
84) Benzo (g,h,i) Perylene	14.194	276	1554	Below Cal #	68

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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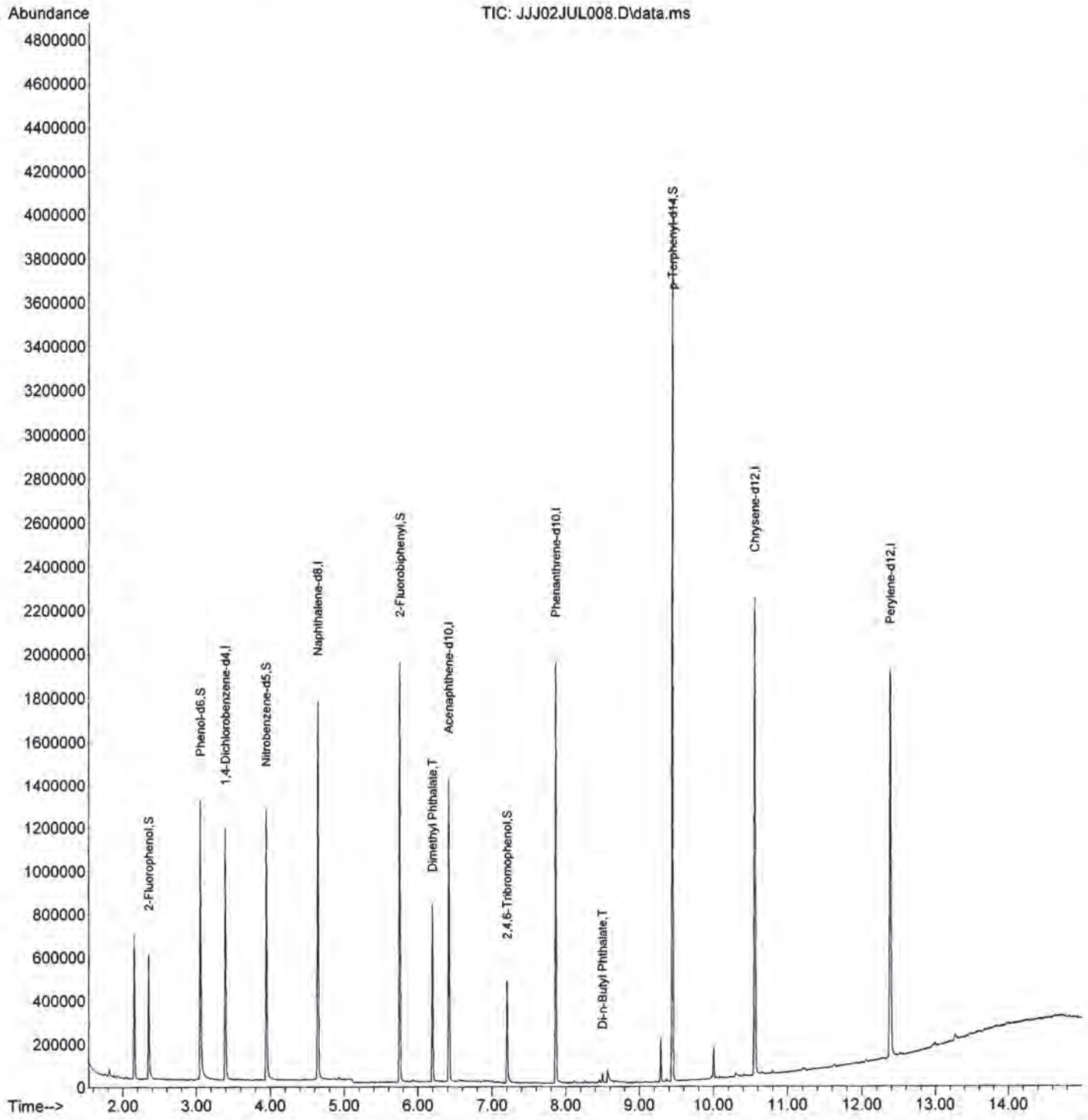
Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180702\JJJ02JUL008.D Vial: 8
Acq On : 2 Jul 2018 2:22 pm Operator: N8CZ
Sample : 18-06-1645-3 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 11:05:19 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Mon Jul 02 11:11:04 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M



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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: **18-06-1645**
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-07-02 14:40
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180702\JJJ02JUL009.D\JJJ02JUL009.rr

 # 4 **CLIENT SAMPLE NUMBER:** **1802237-08 / HA-8-6.0**

LCS/MB BATCH: 180626L08
MS/MSD BATCH: 180626S08
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.50 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.98

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
1,2,4-Trichlorobenzene	0.000	1.00	ND	0.0098	
1,2-Dichlorobenzene	0.000	1.00	ND	0.0098	
1,3-Dichlorobenzene	0.000	1.00	ND	0.0098	
1,4-Dichlorobenzene	0.000	1.00	ND	0.0098	
1-Methylnaphthalene	0.000	1.00	ND	0.0098	
2,4,5-Trichlorophenol	0.000	1.00	ND	0.24	
2,4,6-Trichlorophenol	0.000	1.00	ND	0.24	
2,4-Dichlorophenol	0.000	1.00	ND	0.24	
2,4-Dimethylphenol	0.000	1.00	ND	0.49	
2,4-Dinitrophenol	0.000	1.00	ND	0.24	
2,4-Dinitrotoluene	0.000	1.00	ND	0.0098	
2,6-Dichlorophenol	0.000	1.00	ND	0.24	
2,6-Dinitrotoluene	0.000	1.00	ND	0.0098	
2-Chloronaphthalene	0.000	1.00	ND	0.0098	
2-Chlorophenol	0.000	1.00	ND	0.0098	
2-Methylnaphthalene	0.000	1.00	ND	0.0098	
2-Methylphenol	0.000	1.00	ND	0.24	
2-Nitroaniline	0.000	1.00	ND	0.24	
2-Nitrophenol	0.000	1.00	ND	0.24	
3,3'-Dichlorobenzidine	0.000	1.00	ND	0.24	
3-Nitroaniline	0.000	1.00	ND	0.24	
3/4-Methylphenol	0.000	1.00	ND	0.098	
4-Bromophenyl-Phenyl Ether	0.000	1.00	ND	0.0098	
4,6-Dinitro-2-Methylphenol	0.000	1.00	ND	0.24	
4-Chloro-3-Methylphenol	0.000	1.00	ND	0.24	
4-Chloroaniline	0.000	1.00	ND	0.24	
4-Chlorophenyl-Phenyl Ether	0.000	1.00	ND	0.0098	
4-Nitroaniline	0.000	1.00	ND	0.24	
4-Nitrophenol	0.000	1.00	ND	0.49	
Acenaphthene	0.000	1.00	ND	0.0098	
Acenaphthylene	0.000	1.00	ND	0.0098	
Aniline	0.000	1.00	ND	0.0098	
Anthracene	0.000	1.00	ND	0.0098	
Azobenzene	0.000	1.00	ND	0.0098	
Benzidine	0.000	1.00	ND	0.24	
Benzo (a) Anthracene	0.000	1.00	ND	0.0098	
Benzo (a) Pyrene	0.000	1.00	ND	0.0098	
Benzo (b) Fluoranthene	0.000	1.00	ND	0.0098	
Benzo (g,h,i) Perylene	0.000	1.00	ND	0.0098	
Benzo (k) Fluoranthene	0.000	1.00	ND	0.0098	

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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: **18-06-1645**
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-07-02 14:40
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180702\JJJ02JUL009.D\JJJ02JUL009.rr

 # 4 **CLIENT SAMPLE NUMBER: 1802237-08 / HA-8-6.0**

LCS/MB BATCH: 180626L08
MS/MSD BATCH: 180626S08
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.50 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.98

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
Benzyl Alcohol	0.000	1.00	ND	0.0098	
Bis(2-Chloroethoxy) Methane	0.000	1.00	ND	0.0098	
Bis(2-Chloroethyl) Ether	0.000	1.00	ND	0.0098	
Bis(2-Chloroisopropyl) Ether	0.000	1.00	ND	0.0098	
Bis(2-Ethylhexyl) Phthalate	0.0516	1.00	ND	0.24	
Butyl Benzyl Phthalate	0.000	1.00	ND	0.24	
Chrysene	0.000	1.00	ND	0.0098	
Di-n-Butyl Phthalate	0.0693	1.00	ND	0.24	
Di-n-Octyl Phthalate	0.000	1.00	ND	0.24	
Dibenz (a,h) Anthracene	0.000	1.00	ND	0.0098	
Dibenzofuran	0.000	1.00	ND	0.0098	
Diethyl Phthalate	0.000	1.00	ND	0.0098	
Dimethyl Phthalate	2.53	1.00	0.247	0.24	
Fluoranthene	0.000	1.00	ND	0.0098	
Fluorene	0.000	1.00	ND	0.0098	
Hexachloro-1,3-Butadiene	0.000	1.00	ND	0.0098	
Hexachlorobenzene	0.000	1.00	ND	0.0098	
Hexachlorocyclopentadiene	0.000	1.00	ND	0.0098	
Hexachloroethane	0.000	1.00	ND	0.0098	
Indeno (1,2,3-c,d) Pyrene	0.000	1.00	ND	0.0098	
Isophorone	0.000	1.00	ND	0.49	
N-Nitroso-di-n-propylamine	0.000	1.00	ND	0.0098	
N-Nitrosodimethylamine	0.000	1.00	ND	0.0098	
N-Nitrosodiphenylamine	0.000	1.00	ND	0.0098	
Naphthalene	0.000	1.00	ND	0.0098	
Nitrobenzene	0.000	1.00	ND	0.0098	
Pentachlorophenol	0.000	1.00	ND	0.24	
Phenanthrene	0.000	1.00	ND	0.0098	
Phenol	0.000	1.00	ND	0.0098	
Pyrene	0.000	1.00	ND	0.0098	
Pyridine	0.000	1.00	ND	0.0098	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180702\JJJ02JUL009.D Vial: 9
Acq On : 2 Jul 2018 2:40 pm Operator: N8CZ
Sample : 18-06-1645-4 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 11:05:58 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Mon Jul 02 11:11:04 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.395	152	280128	5.00	mg/l	0.00
19) Naphthalene-d8	4.642	136	1029765	5.00	mg/l	0.00
36) Acenaphthene-d10	6.415	164	415854	5.00	mg/l	0.00
56) Phenanthrene-d10	7.862	188	1520932	5.00	mg/l	0.00
69) Chrysene-d12	10.558	240	1788932	5.00	mg/l	0.00
81) Perylene-d12	12.384	264	1684814	5.00	mg/l	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	2.352	112	332650	5.25	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 52.50%			
6) Phenol-d6	3.056	99	514377	6.39	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 63.90%			
20) Nitrobenzene-d5	3.945	82	340068	4.50	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 45.00%			
41) 2-Fluorobiphenyl	5.754	172	861814	5.47	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 54.70%			
60) 2,4,6-Tribromophenol	7.205	330	174137	4.78	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 47.80%			
71) p-Terphenyl-d14	9.448	244	2596884	7.07	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 70.70%			
Target Compounds						Qvalue
2) Pyridine	1.722	52	1439	N.D.		
3) N-Nitrosodimethylamine	0.000		0	N.D.		
5) Aniline	3.142	93	523	N.D.		
7) Phenol	3.068	94	1400	N.D.		
8) Bis(2-Chloroethyl) Ether	3.222	93	223	N.D.		
9) 2-Chlorophenol	3.222	128	646	N.D.		
10) 1,3-Dichlorobenzene	3.371	146	230	N.D.		
11) 1,4-Dichlorobenzene	3.408	146	273	N.D.		
12) Benzyl Alcohol	3.642	79	1074	N.D.		
13) 1,2-Dichlorobenzene	3.587	146	259	N.D.		
14) 2-Methylphenol	3.636	108	450	N.D.		
15) Bis(2-Chloroisopropyl)...	3.679	45	804	N.D.		
16) 3/4-Methylphenol	3.766	107	119	N.D.		
17) N-Nitroso-di-n-propyla...	3.809	70	819	N.D.		
18) Hexachloroethane	3.920	117	402	N.D.		
21) Nitrobenzene	0.000		0	N.D.	d	
22) Isophorone	4.185	82	896	N.D.		
23) 2-Nitrophenol	4.296	139	236	N.D.		
24) 2,4-Dimethylphenol	4.340	107	111	N.D.		
25) Benzoic Acid	0.000		0	N.D.	d	
26) Bis(2-Chloroethoxy) Me...	4.420	93	559	N.D.		
27) 2,4-Dichlorophenol	4.537	162	375	N.D.		
28) 1,2,4-Trichlorobenzene	4.605	180	508	N.D.		
29) Naphthalene	4.661	128	1748	N.D.		
30) 2,6-Dichlorophenol	4.975	162	217	N.D.		
31) 4-Chloroaniline	4.747	127	180	N.D.		
32) Hexachloro-1,3-Butadiene	4.852	225	233	N.D.		

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180702\JJJ02JUL009.D Vial: 9
Acq On : 2 Jul 2018 2:40 pm Operator: N8CZ
Sample : 18-06-1645-4 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 11:05:58 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Mon Jul 02 11:11:04 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
33) 4-Chloro-3-Methylphenol	5.216	107	71	N.D.	
34) 2-Methylnaphthalene	5.358	142	834	N.D.	
35) 1-Methylnaphthalene	5.470	142	717	N.D.	
37) Hexachlorocyclopentadiene	5.593	237	334	N.D.	
38) 2,4,6-Trichlorophenol	5.649	196	239	N.D.	
39) 2,4,5-Trichlorophenol	5.698	196	159	N.D.	
40) 2-Chloronaphthalene	5.846	162	310	N.D.	
42) 2-Nitroaniline	0.000		0	N.D. d	
43) Dimethyl Phthalate	6.198	163	411981	2.53 mg/l	100
44) Acenaphthylene	6.266	152	1239	N.D.	
45) 3-Nitroaniline	6.415	138	317	N.D.	
46) Acenaphthene	6.415	154	2000	N.D.	
47) 2,4-Dinitrophenol	0.000		0	N.D. d	
48) 4-Nitrophenol	6.544	65	376	N.D.	
49) Dibenzofuran	6.606	168	606	N.D.	
50) 2,4-Dinitrotoluene	0.000		0	N.D. d	
51) 2,6-Dinitrotoluene	0.000		0	N.D. d	
52) Diethyl Phthalate	6.896	149	3005	N.D.	
53) 4-Chlorophenyl-Phenyl ...	6.952	204	271	N.D.	
54) Fluorene	6.952	166	208	N.D.	
55) 4-Nitroaniline	6.989	138	161	N.D.	
57) 4,6-Dinitro-2-Methylph...	0.000		0	N.D. d	
58) N-Nitrosodiphenylamine	7.073	169	361	N.D.	
59) Azobenzene	7.099	77	541	N.D.	
61) 4-Bromophenyl-Phenyl E...	7.425	248	157	N.D.	
62) Hexachlorobenzene	7.553	284	124	N.D.	
63) Pentachlorophenol	0.000		0	N.D. d	
64) Phenanthrene	7.888	178	1476	N.D.	
65) Anthracene	7.930	178	885	N.D.	
66) Di-n-Butyl Phthalate	8.499	149	26310	0.07 mg/l	98
67) Fluoranthene	9.063	202	1229	N.D.	
68) Benzidine	9.198	184	237	N.D.	
70) Pyrene	9.283	202	1495	N.D.	
72) Butyl Benzyl Phthalate	9.927	149	510	N.D.	
73) 3,3'-Dichlorobenzidine	10.520	252	720	N.D.	
74) Benzo (a) Anthracene	10.558	228	5362	N.D.	
75) Bis(2-Ethylhexyl) Phth...	10.660	149	13068	0.05 mg/l	96
76) Chrysene	10.702	228	420	N.D.	
77) Di-n-Octyl Phthalate	11.406	149	1967	N.D.	
78) Benzo (b) Fluoranthene	11.893	252	2185	N.D.	
79) Benzo (k) Fluoranthene	0.000		0	N.D.	
80) Benzo (a) Pyrene	12.291	252	330	N.D.	
82) Indeno (1,2,3-c,d) Pyrene	13.863	276	114	N.D.	
83) Dibenz (a,h) Anthracene	13.808	278	536	N.D.	
84) Benzo (g,h,i) Perylene	14.189	276	1268	Below Cal #	37

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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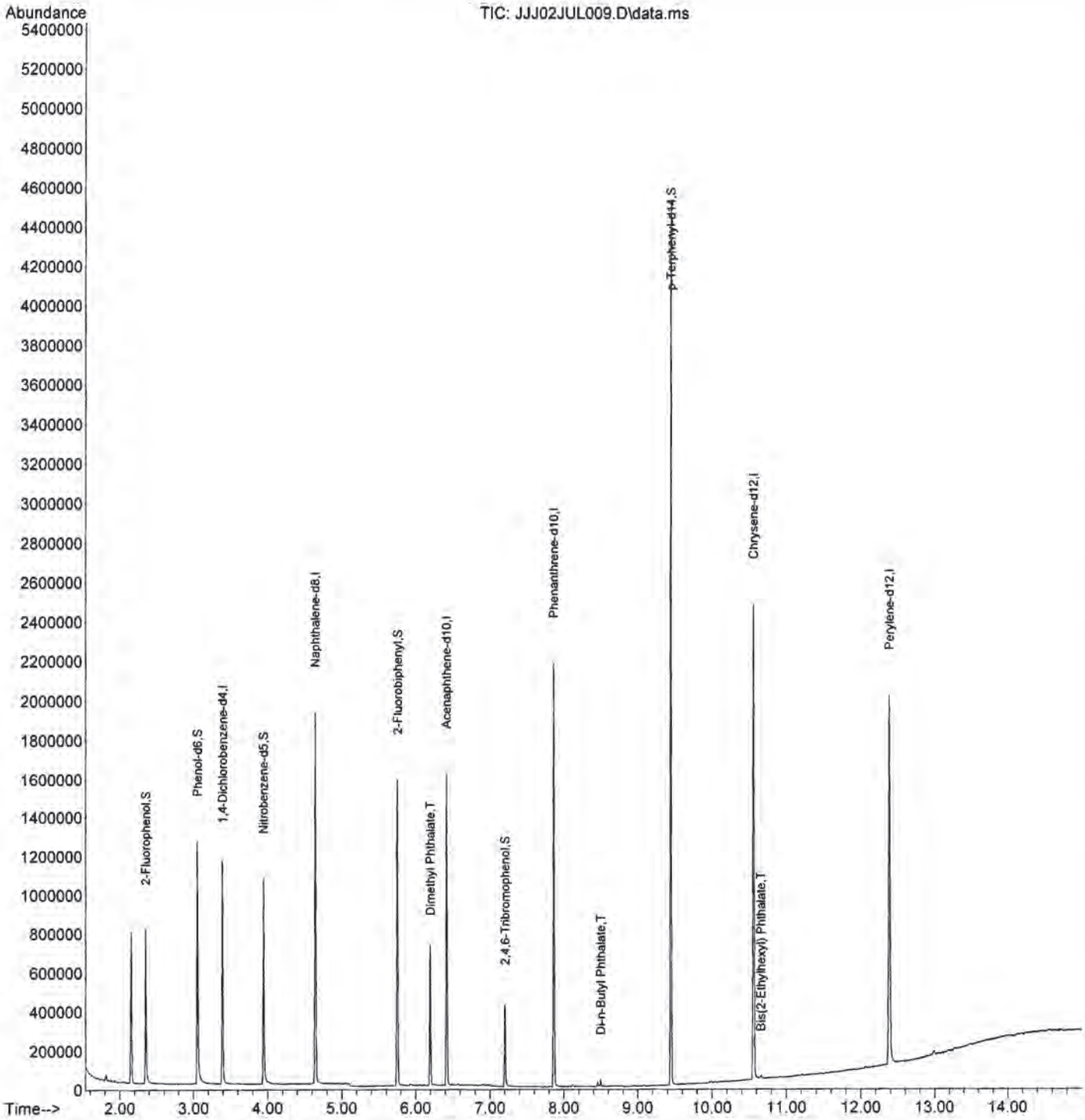
Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180702\JJJ02JUL009.D Vial: 9
Acq On : 2 Jul 2018 2:40 pm Operator: N8CZ
Sample : 18-06-1645-4 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 11:05:58 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Mon Jul 02 11:11:04 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M



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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: **18-06-1645**
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-07-02 15:34
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180702\JJJ02JUL012.D\JJJ02JUL012.rr

 # 7 **CLIENT SAMPLE NUMBER:** **1802237-27 / TP-6-1.5-2**

LCS/MB BATCH: 180626L08
MS/MSD BATCH: 180626S08
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.40 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.98

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
1,2,4-Trichlorobenzene	0.000	1.00	ND	0.0098	
1,2-Dichlorobenzene	0.000	1.00	ND	0.0098	
1,3-Dichlorobenzene	0.000	1.00	ND	0.0098	
1,4-Dichlorobenzene	0.000	1.00	ND	0.0098	
1-Methylnaphthalene	0.000	1.00	ND	0.0098	
2,4,5-Trichlorophenol	0.000	1.00	ND	0.25	
2,4,6-Trichlorophenol	0.000	1.00	ND	0.25	
2,4-Dichlorophenol	0.000	1.00	ND	0.25	
2,4-Dimethylphenol	0.000	1.00	ND	0.49	
2,4-Dinitrophenol	0.000	1.00	ND	0.25	
2,4-Dinitrotoluene	0.000	1.00	ND	0.0098	
2,6-Dichlorophenol	0.000	1.00	ND	0.25	
2,6-Dinitrotoluene	0.000	1.00	ND	0.0098	
2-Chloronaphthalene	0.000	1.00	ND	0.0098	
2-Chlorophenol	0.000	1.00	ND	0.0098	
2-Methylnaphthalene	0.000	1.00	ND	0.0098	
2-Methylphenol	0.000	1.00	ND	0.25	
2-Nitroaniline	0.000	1.00	ND	0.25	
2-Nitrophenol	0.000	1.00	ND	0.25	
3,3'-Dichlorobenzidine	0.000	1.00	ND	0.25	
3-Nitroaniline	0.000	1.00	ND	0.25	
3/4-Methylphenol	0.000	1.00	ND	0.098	
4-Bromophenyl-Phenyl Ether	0.000	1.00	ND	0.0098	
4,6-Dinitro-2-Methylphenol	0.000	1.00	ND	0.25	
4-Chloro-3-Methylphenol	0.000	1.00	ND	0.25	
4-Chloroaniline	0.000	1.00	ND	0.25	
4-Chlorophenyl-Phenyl Ether	0.000	1.00	ND	0.0098	
4-Nitroaniline	0.000	1.00	ND	0.25	
4-Nitrophenol	0.000	1.00	ND	0.49	
Acenaphthene	0.000	1.00	ND	0.0098	
Acenaphthylene	0.000	1.00	ND	0.0098	
Aniline	0.000	1.00	ND	0.0098	
Anthracene	0.000	1.00	ND	0.0098	
Azobenzene	0.000	1.00	ND	0.0098	
Benzidine	0.000	1.00	ND	0.25	
Benzo (a) Anthracene	0.000	1.00	ND	0.0098	
Benzo (a) Pyrene	0.000	1.00	ND	0.0098	
Benzo (b) Fluoranthene	0.000	1.00	ND	0.0098	
Benzo (g,h,i) Perylene	0.000	1.00	ND	0.0098	
Benzo (k) Fluoranthene	0.000	1.00	ND	0.0098	

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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: **18-06-1645**
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-07-02 15:34
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180702\JJJ02JUL012.D\JJJ02JUL012.rr

 # 7 **CLIENT SAMPLE NUMBER:** **1802237-27 / TP-6-1.5-2**

LCS/MB BATCH: 180626L08
MS/MSD BATCH: 180626S08
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.40 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.98

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
Benzyl Alcohol	0.000	1.00	ND	0.0098	
Bis(2-Chloroethoxy) Methane	0.000	1.00	ND	0.0098	
Bis(2-Chloroethyl) Ether	0.000	1.00	ND	0.0098	
Bis(2-Chloroisopropyl) Ether	0.000	1.00	ND	0.0098	
Bis(2-Ethylhexyl) Phthalate	0.000	1.00	ND	0.25	
Butyl Benzyl Phthalate	0.000	1.00	ND	0.25	
Chrysene	0.000	1.00	ND	0.0098	
Di-n-Butyl Phthalate	0.0870	1.00	ND	0.25	
Di-n-Octyl Phthalate	0.000	1.00	ND	0.25	
Dibenz (a,h) Anthracene	0.000	1.00	ND	0.0098	
Dibenzofuran	0.000	1.00	ND	0.0098	
Diethyl Phthalate	0.000	1.00	ND	0.0098	
Dimethyl Phthalate	3.29	1.00	0.322	0.25	
Fluoranthene	0.000	1.00	ND	0.0098	
Fluorene	0.000	1.00	ND	0.0098	
Hexachloro-1,3-Butadiene	0.000	1.00	ND	0.0098	
Hexachlorobenzene	0.000	1.00	ND	0.0098	
Hexachlorocyclopentadiene	0.000	1.00	ND	0.0098	
Hexachloroethane	0.000	1.00	ND	0.0098	
Indeno (1,2,3-c,d) Pyrene	0.000	1.00	ND	0.0098	
Isophorone	0.000	1.00	ND	0.49	
N-Nitroso-di-n-propylamine	0.000	1.00	ND	0.0098	
N-Nitrosodimethylamine	0.000	1.00	ND	0.0098	
N-Nitrosodiphenylamine	0.000	1.00	ND	0.0098	
Naphthalene	0.000	1.00	ND	0.0098	
Nitrobenzene	0.000	1.00	ND	0.0098	
Pentachlorophenol	0.000	1.00	ND	0.25	
Phenanthrene	0.000	1.00	ND	0.0098	
Phenol	0.000	1.00	ND	0.0098	
Pyrene	0.000	1.00	ND	0.0098	
Pyridine	0.000	1.00	ND	0.0098	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180702\JJJ02JUL012.D Vial: 12
Acq On : 2 Jul 2018 3:34 pm Operator: N8CZ
Sample : 18-06-1645-7 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 11:09:04 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Mon Jul 02 11:11:04 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	3.396	152	259216	5.00 mg/l	0.00
19) Naphthalene-d8	4.642	136	975268	5.00 mg/l	0.00
36) Acenaphthene-d10	6.415	164	399313	5.00 mg/l	0.00
56) Phenanthrene-d10	7.863	188	1478911	5.00 mg/l	0.00
69) Chrysene-d12	10.558	240	1718920	5.00 mg/l	0.00
81) Perylene-d12	12.385	264	1594488	5.00 mg/l	0.00
System Monitoring Compounds					
4) 2-Fluorophenol	2.352	112	320325	5.47 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 54.70%	
6) Phenol-d6	3.056	99	508663	6.83 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 68.30%	
20) Nitrobenzene-d5	3.945	82	303014	4.24 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 42.40%	
41) 2-Fluorobiphenyl	5.754	172	746890	4.94 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 49.40%	
60) 2,4,6-Tribromophenol	7.205	330	229979	6.50 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 65.00%	
71) p-Terphenyl-d14	9.448	244	2503428	7.09 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 70.90%	
Target Compounds					Qvalue
2) Pyridine	0.000		0	N.D. d	
3) N-Nitrosodimethylamine	1.698	42	6342	Below Cal #	7
5) Aniline	3.105	93	345	N.D.	
7) Phenol	0.000		0	N.D. d	
8) Bis(2-Chloroethyl) Ether	3.173	93	744	N.D.	
9) 2-Chlorophenol	3.229	128	555	N.D.	
10) 1,3-Dichlorobenzene	3.358	146	479	N.D.	
11) 1,4-Dichlorobenzene	3.408	146	677	N.D.	
12) Benzyl Alcohol	3.507	79	669	N.D.	
13) 1,2-Dichlorobenzene	3.587	146	566	N.D.	
14) 2-Methylphenol	3.649	108	390	N.D.	
15) Bis(2-Chloroisopropyl)...	0.000		0	N.D.	
16) 3/4-Methylphenol	0.000		0	N.D. d	
17) N-Nitroso-di-n-propyla...	3.815	70	574	N.D.	
18) Hexachloroethane	3.883	117	440	N.D.	
21) Nitrobenzene	0.000		0	N.D. d	
22) Isophorone	4.192	82	1961	N.D.	
23) 2-Nitrophenol	4.266	139	98	N.D.	
24) 2,4-Dimethylphenol	4.315	107	137	N.D.	
25) Benzoic Acid	0.000		0	N.D. d	
26) Bis(2-Chloroethoxy) Me...	4.420	93	934	N.D.	
27) 2,4-Dichlorophenol	4.525	162	657	N.D.	
28) 1,2,4-Trichlorobenzene	4.605	180	538	N.D.	
29) Naphthalene	0.000		0	N.D. d	
30) 2,6-Dichlorophenol	4.754	162	440	N.D.	
31) 4-Chloroaniline	4.729	127	184	N.D.	
32) Hexachloro-1,3-Butadiene	4.852	225	507	N.D.	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180702\JJJ02JUL012.D Vial: 12
Acq On : 2 Jul 2018 3:34 pm Operator: N8CZ
Sample : 18-06-1645-7 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 11:09:04 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Mon Jul 02 11:11:04 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
33) 4-Chloro-3-Methylphenol	5.198	107	265	N.D.	
34) 2-Methylnaphthalene	5.359	142	1190	N.D.	
35) 1-Methylnaphthalene	5.470	142	1176	N.D.	
37) Hexachlorocyclopentadiene	5.599	237	568	N.D.	
38) 2,4,6-Trichlorophenol	5.692	196	363	N.D.	
39) 2,4,5-Trichlorophenol	5.785	196	497	N.D.	
40) 2-Chloronaphthalene	5.847	162	702	N.D.	
42) 2-Nitroaniline	0.000		0	N.D. d	
43) Dimethyl Phthalate	6.192	163	513392	3.29 mg/l	100
44) Acenaphthylene	6.267	152	1639	N.D.	
45) 3-Nitroaniline	6.359	138	132	N.D.	
46) Acenaphthene	6.446	154	924	N.D.	
47) 2,4-Dinitrophenol	0.000		0	N.D. d	
48) 4-Nitrophenol	0.000		0	N.D. d	
49) Dibenzofuran	6.606	168	2604	N.D.	
50) 2,4-Dinitrotoluene	0.000		0	N.D. d	
51) 2,6-Dinitrotoluene	0.000		0	N.D. d	
52) Diethyl Phthalate	0.000		0	N.D. d	
53) 4-Chlorophenyl-Phenyl ...	6.952	204	463	N.D.	
54) Fluorene	6.946	166	1215	N.D.	
55) 4-Nitroaniline	7.039	138	190	N.D.	
57) 4,6-Dinitro-2-Methylph...	0.000		0	N.D. d	
58) N-Nitrosodiphenylamine	7.073	169	1108	N.D.	
59) Azobenzene	7.107	77	1518	N.D.	
61) 4-Bromophenyl-Phenyl E...	7.430	248	440	N.D.	
62) Hexachlorobenzene	7.566	284	914	N.D.	
63) Pentachlorophenol	0.000		0	N.D. d	
64) Phenanthrene	7.888	178	6083	N.D.	
65) Anthracene	7.930	178	2668	N.D.	
66) Di-n-Butyl Phthalate	8.499	149	32118	0.09 mg/l	97
67) Fluoranthene	9.059	202	6656	N.D.	
68) Benzidine	9.173	184	299	N.D.	
70) Pyrene	9.279	202	5439	N.D.	
72) Butyl Benzyl Phthalate	0.000		0	N.D. d	
73) 3,3'-Dichlorobenzidine	10.542	252	215	N.D.	
74) Benzo (a) Anthracene	10.558	228	7599	N.D.	
75) Bis(2-Ethylhexyl) Phth...	0.000		0	N.D. d	
76) Chrysene	10.588	228	3610	N.D.	
77) Di-n-Octyl Phthalate	11.423	149	2783	N.D.	
78) Benzo (b) Fluoranthene	11.885	252	3958	N.D.	
79) Benzo (k) Fluoranthene	12.024	252	508	N.D.	
80) Benzo (a) Pyrene	12.313	252	2214	N.D.	
82) Indeno (1,2,3-c,d) Pyrene	13.825	276	2466	N.D.	
83) Dibenz (a,h) Anthracene	13.851	278	1591	N.D.	
84) Benzo (g,h,i) Perylene	14.185	276	2499	Below Cal	80

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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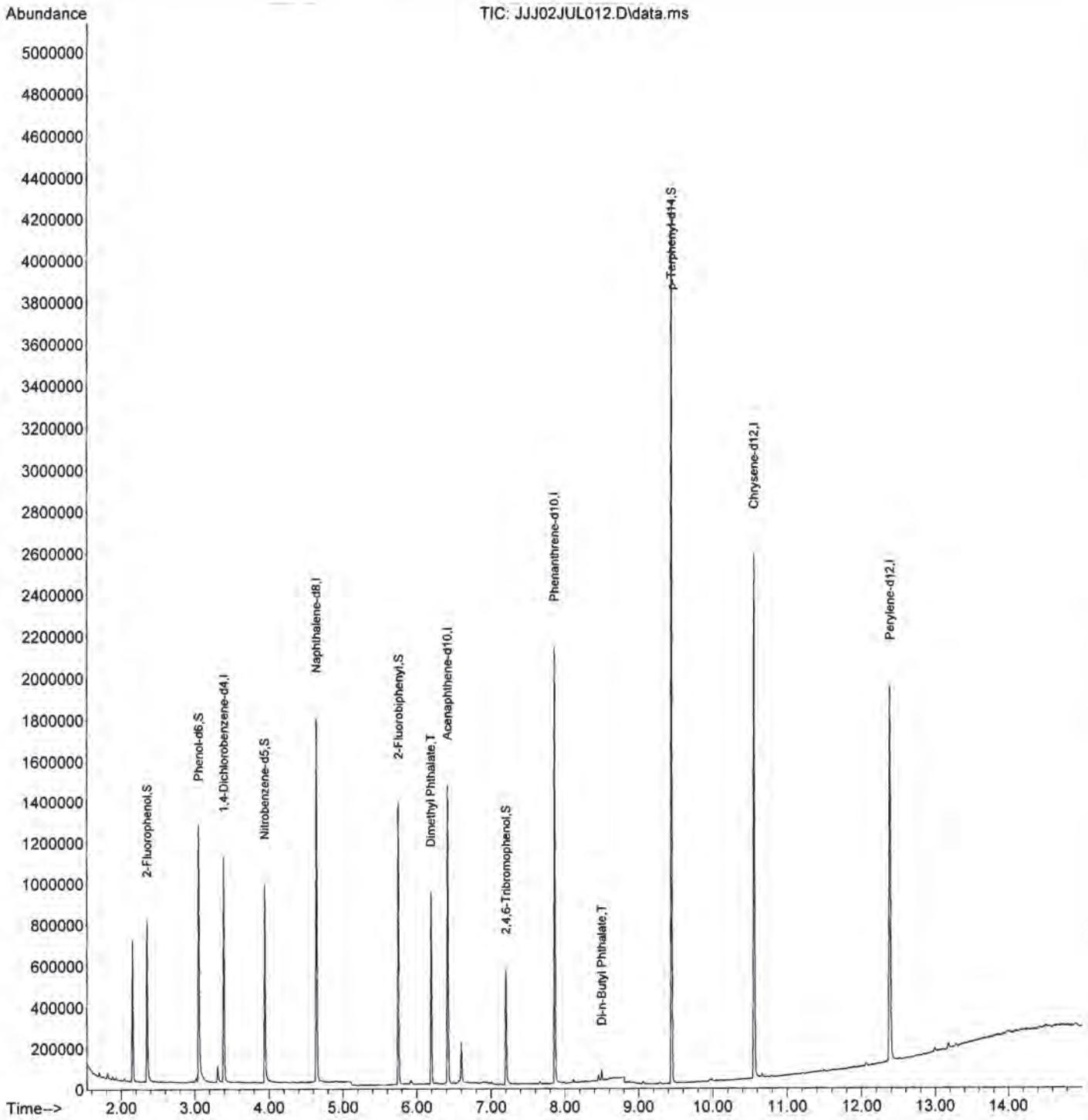
Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180702\JJJ02JUL012.D Vial: 12
Acq On : 2 Jul 2018 3:34 pm Operator: N8CZ
Sample : 18-06-1645-7 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 11:09:04 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Mon Jul 02 11:11:04 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M



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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: 18-06-1645
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-07-02 16:11
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180702\JJJ02JUL014.D\JJJ02JUL014.rr

 # 9 **CLIENT SAMPLE NUMBER: 1802237-32 / TP-13-4-5**

LCS/MB BATCH: 180626L08
MS/MSD BATCH: 180626S08
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.30 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.99

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
1,2,4-Trichlorobenzene	0.000	1.00	ND	0.0099	
1,2-Dichlorobenzene	0.000	1.00	ND	0.0099	
1,3-Dichlorobenzene	0.000	1.00	ND	0.0099	
1,4-Dichlorobenzene	0.000	1.00	ND	0.0099	
1-Methylnaphthalene	0.000	1.00	ND	0.0099	
2,4,5-Trichlorophenol	0.000	1.00	ND	0.25	
2,4,6-Trichlorophenol	0.000	1.00	ND	0.25	
2,4-Dichlorophenol	0.000	1.00	ND	0.25	
2,4-Dimethylphenol	0.000	1.00	ND	0.49	
2,4-Dinitrophenol	0.000	1.00	ND	0.25	
2,4-Dinitrotoluene	0.000	1.00	ND	0.0099	
2,6-Dichlorophenol	0.000	1.00	ND	0.25	
2,6-Dinitrotoluene	0.000	1.00	ND	0.0099	
2-Chloronaphthalene	0.000	1.00	ND	0.0099	
2-Chlorophenol	0.000	1.00	ND	0.0099	
2-Methylnaphthalene	0.000	1.00	ND	0.0099	
2-Methylphenol	0.000	1.00	ND	0.25	
2-Nitroaniline	0.000	1.00	ND	0.25	
2-Nitrophenol	0.000	1.00	ND	0.25	
3,3'-Dichlorobenzidine	0.000	1.00	ND	0.25	
3-Nitroaniline	0.000	1.00	ND	0.25	
3/4-Methylphenol	0.000	1.00	ND	0.099	
4-Bromophenyl-Phenyl Ether	0.000	1.00	ND	0.0099	
4,6-Dinitro-2-Methylphenol	0.000	1.00	ND	0.25	
4-Chloro-3-Methylphenol	0.000	1.00	ND	0.25	
4-Chloroaniline	0.000	1.00	ND	0.25	
4-Chlorophenyl-Phenyl Ether	0.000	1.00	ND	0.0099	
4-Nitroaniline	0.000	1.00	ND	0.25	
4-Nitrophenol	0.000	1.00	ND	0.49	
Acenaphthene	0.000	1.00	ND	0.0099	
Acenaphthylene	0.000	1.00	ND	0.0099	
Aniline	0.000	1.00	ND	0.0099	
Anthracene	0.000	1.00	ND	0.0099	
Azobenzene	0.000	1.00	ND	0.0099	
Benzidine	0.000	1.00	ND	0.25	
Benzo (a) Anthracene	0.000	1.00	ND	0.0099	
Benzo (a) Pyrene	0.000	1.00	ND	0.0099	
Benzo (b) Fluoranthene	0.000	1.00	ND	0.0099	
Benzo (g,h,i) Perylene	0.000	1.00	ND	0.0099	
Benzo (k) Fluoranthene	0.000	1.00	ND	0.0099	

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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: **18-06-1645**
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-07-02 16:11
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180702\JJJ02JUL014.D\JJJ02JUL014.rr

 # 9 **CLIENT SAMPLE NUMBER:** **1802237-32 / TP-13-4-5**

LCS/MB BATCH: 180626L08
MS/MSD BATCH: 180626S08
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.30 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.99

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
Benzyl Alcohol	0.000	1.00	ND	0.0099	
Bis(2-Chloroethoxy) Methane	0.000	1.00	ND	0.0099	
Bis(2-Chloroethyl) Ether	0.000	1.00	ND	0.0099	
Bis(2-Chloroisopropyl) Ether	0.000	1.00	ND	0.0099	
Bis(2-Ethylhexyl) Phthalate	0.000	1.00	ND	0.25	
Butyl Benzyl Phthalate	0.000	1.00	ND	0.25	
Chrysene	0.000	1.00	ND	0.0099	
Di-n-Butyl Phthalate	0.0528	1.00	ND	0.25	
Di-n-Octyl Phthalate	0.000	1.00	ND	0.25	
Dibenz (a,h) Anthracene	0.000	1.00	ND	0.0099	
Dibenzofuran	0.000	1.00	ND	0.0099	
Diethyl Phthalate	0.000	1.00	ND	0.0099	
Dimethyl Phthalate	3.11	1.00	0.307	0.25	
Fluoranthene	0.000	1.00	ND	0.0099	
Fluorene	0.000	1.00	ND	0.0099	
Hexachloro-1,3-Butadiene	0.000	1.00	ND	0.0099	
Hexachlorobenzene	0.000	1.00	ND	0.0099	
Hexachlorocyclopentadiene	0.000	1.00	ND	0.0099	
Hexachloroethane	0.000	1.00	ND	0.0099	
Indeno (1,2,3-c,d) Pyrene	0.000	1.00	ND	0.0099	
Isophorone	0.000	1.00	ND	0.49	
N-Nitroso-di-n-propylamine	0.000	1.00	ND	0.0099	
N-Nitrosodimethylamine	0.000	1.00	ND	0.0099	
N-Nitrosodiphenylamine	0.000	1.00	ND	0.0099	
Naphthalene	0.000	1.00	ND	0.0099	
Nitrobenzene	0.000	1.00	ND	0.0099	
Pentachlorophenol	0.000	1.00	ND	0.25	
Phenanthrene	0.000	1.00	ND	0.0099	
Phenol	0.000	1.00	ND	0.0099	
Pyrene	0.000	1.00	ND	0.0099	
Pyridine	0.000	1.00	ND	0.0099	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180702\JJJ02JUL014.D Vial: 14
Acq On : 2 Jul 2018 4:11 pm Operator: N8CZ
Sample : 18-06-1645-9 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 11:27:35 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Mon Jul 02 11:11:04 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	3.396	152	273432	5.00 mg/l	# 0.00
19) Naphthalene-d8	4.642	136	1030954	5.00 mg/l	0.00
36) Acenaphthene-d10	6.415	164	425634	5.00 mg/l	0.00
56) Phenanthrene-d10	7.862	188	1568590	5.00 mg/l	0.00
69) Chrysene-d12	10.558	240	1811150	5.00 mg/l	0.00
81) Perylene-d12	12.385	264	1685630	5.00 mg/l	0.00
System Monitoring Compounds					
4) 2-Fluorophenol	2.352	112	396188	6.41 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 64.10%	
6) Phenol-d6	3.056	99	617290	7.86 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 78.60%	
20) Nitrobenzene-d5	3.945	82	424513	5.61 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 56.10%	
41) 2-Fluorobiphenyl	5.748	172	1051487	6.53 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 65.30%	
60) 2,4,6-Tribromophenol	7.205	330	201176	5.36 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 53.60%	
71) p-Terphenyl-d14	9.448	244	2673446	7.19 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 71.90%	
Target Compounds					Qvalue
2) Pyridine	1.735	52	523	N.D.	
3) N-Nitrosodimethylamine	1.760	42	2019	Below Cal #	1
5) Aniline	3.130	93	584	N.D.	
7) Phenol	0.000		0	N.D. d	
8) Bis(2-Chloroethyl) Ether	3.155	93	546	N.D.	
9) 2-Chlorophenol	3.303	128	395	N.D.	
10) 1,3-Dichlorobenzene	3.365	146	443	N.D.	
11) 1,4-Dichlorobenzene	3.408	146	193	N.D.	
12) Benzyl Alcohol	3.500	79	191	N.D.	
13) 1,2-Dichlorobenzene	3.587	146	366	N.D.	
14) 2-Methylphenol	3.636	108	564	N.D.	
15) Bis(2-Chloroisopropyl)...	3.667	45	1532	N.D.	
16) 3/4-Methylphenol	3.791	107	913	N.D.	
17) N-Nitroso-di-n-propyla...	3.834	70	553	N.D.	
18) Hexachloroethane	3.920	117	236	N.D.	
21) Nitrobenzene	4.000	77	683	N.D.	
22) Isophorone	0.000		0	N.D.	
23) 2-Nitrophenol	4.284	139	154	N.D.	
24) 2,4-Dimethylphenol	4.321	107	426	N.D.	
25) Benzoic Acid	0.000		0	N.D. d	
26) Bis(2-Chloroethoxy) Me...	4.371	93	369	N.D.	
27) 2,4-Dichlorophenol	4.556	162	106	N.D.	
28) 1,2,4-Trichlorobenzene	4.605	180	398	N.D.	
29) Naphthalene	4.667	128	1404	N.D.	
30) 2,6-Dichlorophenol	4.963	162	142	N.D.	
31) 4-Chloroaniline	4.729	127	144	N.D.	
32) Hexachloro-1,3-Butadiene	4.852	225	358	N.D.	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180702\JJJ02JUL014.D Vial: 14
Acq On : 2 Jul 2018 4:11 pm Operator: N8CZ
Sample : 18-06-1645-9 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 11:27:35 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Mon Jul 02 11:11:04 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
33) 4-Chloro-3-Methylphenol	5.204	107	200	N.D.	
34) 2-Methylnaphthalene	5.365	142	413	N.D.	
35) 1-Methylnaphthalene	5.470	142	645	N.D.	
37) Hexachlorocyclopentadiene	5.593	237	441	N.D.	
38) 2,4,6-Trichlorophenol	5.680	196	338	N.D.	
39) 2,4,5-Trichlorophenol	5.704	196	96	N.D.	
40) 2-Chloronaphthalene	5.853	162	297	N.D.	
42) 2-Nitroaniline	0.000		0	N.D. d	
43) Dimethyl Phthalate	6.192	163	517984	3.11 mg/l	100
44) Acenaphthylene	6.260	152	1041	N.D.	
45) 3-Nitroaniline	6.409	138	332	N.D.	
46) Acenaphthene	0.000		0	N.D. d	
47) 2,4-Dinitrophenol	0.000		0	N.D. d	
48) 4-Nitrophenol	6.557	65	422	N.D.	
49) Dibenzofuran	6.606	168	403	N.D.	
50) 2,4-Dinitrotoluene	0.000		0	N.D. d	
51) 2,6-Dinitrotoluene	0.000		0	N.D. d	
52) Diethyl Phthalate	6.890	149	2742	N.D.	
53) 4-Chlorophenyl-Phenyl ...	6.952	204	219	N.D.	
54) Fluorene	6.946	166	491	N.D.	
55) 4-Nitroaniline	6.971	138	70	N.D.	
57) 4,6-Dinitro-2-Methylph...	0.000		0	N.D. d	
58) N-Nitrosodiphenylamine	7.073	169	153	N.D.	
59) Azobenzene	7.099	77	717	N.D.	
61) 4-Bromophenyl-Phenyl E...	7.434	248	86	N.D.	
62) Hexachlorobenzene	7.566	284	311	N.D.	
63) Pentachlorophenol	0.000		0	N.D. d	
64) Phenanthrene	7.888	178	3731	N.D.	
65) Anthracene	7.935	178	728	N.D.	
66) Di-n-Butyl Phthalate	8.495	149	20686	0.05 mg/l	94
67) Fluoranthene	9.059	202	4933	N.D.	
68) Benzidine	9.181	184	167	N.D.	
70) Pyrene	9.279	202	6508	N.D.	
72) Butyl Benzyl Phthalate	0.000		0	N.D. d	
73) 3,3'-Dichlorobenzidine	10.520	252	436	N.D.	
74) Benzo (a) Anthracene	10.558	228	6339	N.D.	
75) Bis(2-Ethylhexyl) Phth...	0.000		0	N.D. d	
76) Chrysene	10.588	228	3009	N.D.	
77) Di-n-Octyl Phthalate	11.385	149	555	N.D.	
78) Benzo (b) Fluoranthene	11.889	252	3460	N.D.	
79) Benzo (k) Fluoranthene	11.952	252	220	N.D.	
80) Benzo (a) Pyrene	12.304	252	1760	N.D.	
82) Indeno (1,2,3-c,d) Pyrene	13.825	276	2359	N.D.	
83) Dibenz (a,h) Anthracene	13.851	278	687	N.D.	
84) Benzo (g,h,i) Perylene	14.194	276	2712	Below Cal #	50

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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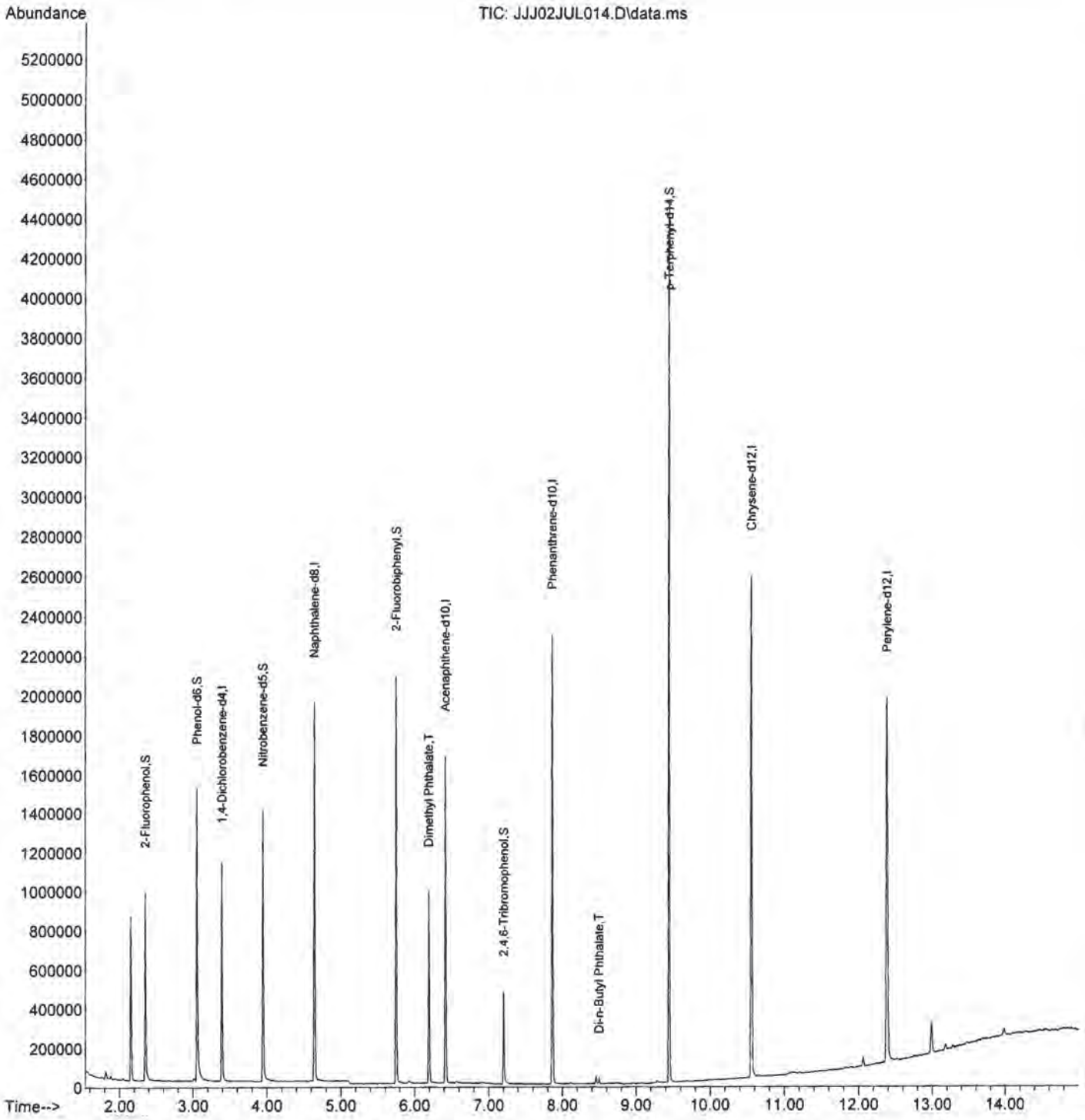
Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180702\JJJ02JUL014.D Vial: 14
Acq On : 2 Jul 2018 4:11 pm Operator: N8CZ
Sample : 18-06-1645-9 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 03 11:27:35 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Mon Jul 02 11:11:04 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M



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Quality Control - Spike/Spike Duplicate

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
Project: 1802237			Page 1 of 1

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
1802237-07 / HA-8-4.0	**Sample**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 14:22**	**180626S08**
1802237-07 / HA-8-4.0	**Matrix Spike**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 16:29**	**180626S08**
1802237-07 / HA-8-4.0	**Matrix Spike Duplicate**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 16:47**	**180626S08**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
2,4,6-Trichlorophenol	ND	1.000	0.5476	55	0.6112	61	40-160	11	0-20	
2,4-Dichlorophenol	ND	1.000	0.5730	57	0.6301	63	40-160	9	0-20	
2-Methylphenol	ND	1.000	0.4805	48	0.5460	55	50-130	13	0-20	3
2-Nitrophenol	ND	1.000	0.6251	63	0.7099	71	40-160	13	0-20	
4-Chloro-3-Methylphenol	ND	1.000	0.5913	59	0.6612	66	40-160	11	0-20	
Acenaphthene	ND	1.000	0.5770	58	0.6416	64	40-160	11	0-20	
Benzo (a) Pyrene	ND	1.000	0.7239	72	0.7665	77	17-163	6	0-20	
Chrysene	ND	1.000	0.7308	73	0.7807	78	17-168	7	0-20	
Di-n-Butyl Phthalate	ND	1.000	0.6717	67	0.7233	72	40-160	7	0-20	
Dimethyl Phthalate	0.3038	1.000	0.8010	50	0.9075	60	40-160	12	0-20	
Fluoranthene	ND	1.000	0.6883	69	0.7435	74	26-137	8	0-20	
Fluorene	ND	1.000	0.6090	61	0.6663	67	59-121	9	0-20	
Naphthalene	ND	1.000	0.5316	53	0.6011	60	21-133	12	0-20	
Phenanthrene	ND	1.000	0.6294	63	0.6881	69	54-120	9	0-20	
Phenol	ND	1.000	0.5683	57	0.6273	63	40-160	10	0-20	
Pyrene	ND	1.000	0.7135	71	0.7731	77	6-156	8	0-46	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1645
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
Project: 1802237			Page 1 of 1

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-16-921-21	**LCS**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 12:50**	**180626L08**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
2,4,6-Trichlorophenol	1.000	0.7586	76	40-160	20-180	
2,4-Dichlorophenol	1.000	0.7962	80	40-160	20-180	
2-Methylphenol	1.000	0.8117	81	40-160	20-180	
2-Nitrophenol	1.000	0.9120	91	40-160	20-180	
4-Chloro-3-Methylphenol	1.000	0.8227	82	40-160	20-180	
Acenaphthene	1.000	0.7951	80	40-160	20-180	
Benzo (a) Pyrene	1.000	0.8331	83	17-163	0-187	
Chrysene	1.000	0.8422	84	17-168	0-193	
Di-n-Butyl Phthalate	1.000	0.8437	84	40-160	20-180	
Dimethyl Phthalate	1.000	0.8356	84	40-160	20-180	
Fluoranthene	1.000	0.8408	84	26-137	8-156	
Fluorene	1.000	0.8205	82	59-121	49-131	
Naphthalene	1.000	0.7932	79	21-133	2-152	
Phenanthrene	1.000	0.8300	83	54-120	43-131	
Phenol	1.000	0.7895	79	40-160	20-180	
Pyrene	1.000	0.8745	87	28-106	15-119	

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 18-06-1645

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8270C SIM	EPA 3545	923	GC/MS JJJ	1

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Glossary of Terms and Qualifiers

Work Order: 18-06-1645 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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ADVANCED TECHNOLOGY LABORATORIES

SUBCONTRACT ORDER

Work Order: 1802237

18-06-1645

SENDING LABORATORY:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone: 562.989.4045
Fax: 562.989.6348
Project Manager: Rachelle Arada (Rachelle@atlglobal.com)
Sampler: Jake Lippman

RECEIVING LABORATORY:

Eurofins Calscience, Inc.
7440 Lincoln Way
Garden Grove, CA 92841-1427
Phone :(714) 895-5494
Fax: (714) 894-7501
PO#: SC12896-STANDARD TAT

IMPORTANT : Please include Work Order # and PO # in your invoice.

Special Instructions: Need EQUIS EDD.

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1802237-05 / HA-8-0-0.5	1	**Soil**	**06/18/18 12:55**	**Return samples when analysis is done. Call ATL for pick up.**
8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	**07/09/18 17:00**	07/02/18 12:55		
ATL Lab#: 1802237-06 / HA-8-2.0	2	**Soil**	**06/18/18 12:55**	
8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	**07/09/18 17:00**	07/02/18 12:55		
ATL Lab#: 1802237-07 / HA-8-4.0	3	**Soil**	**06/18/18 12:55**	
8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	**07/09/18 17:00**	07/02/18 12:55		
ATL Lab#: 1802237-08 / HA-8-6.0	4	**Soil**	**06/18/18 12:55**	
8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	**07/09/18 17:00**	07/02/18 12:55		

Released By	Date	Received By	Date
	6/22/18 1035		EC 6/22/18 1035

ADVANCED TECHNOLOGY LABORATORIES

SUBCONTRACT ORDER

Work Order: 1802237

1645

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1802237-25 / TP-6-0-0.5 5 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	**07/09/18 17:00**	**Soil** 07/02/18 09:30	**06/18/18 09:30**	
ATL Lab#: 1802237-26 / TP-6-0.5-1.5 6 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	**07/09/18 17:00**	**Soil** 07/02/18 09:35	**06/18/18 09:35**	
ATL Lab#: 1802237-27 / TP-6-1.5-2 7 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	**07/09/18 17:00**	**Soil** 07/02/18 09:40	**06/18/18 09:40**	
ATL Lab#: 1802237-31 / TP-13-0-4 8 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	**07/09/18 17:00**	**Soil** 07/02/18 09:05	**06/18/18 09:05**	
ATL Lab#: 1802237-32 / TP-13-4-5 9 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	**07/09/18 17:00**	**Soil** 07/02/18 09:10	**06/18/18 09:10**	

Released By	Date	Received By	Date
[signature]	6/20/18 1035	[signature] EC	6/20/18 1035

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WORK ORDER NUMBER: 18-06-1645

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: ATL

DATE: 06/22/2018

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC6 (CF: +0.1°C); Temperature (w/o CF): 2-8 °C (w/ CF): 2-9 °C; ☐ Blank ☑ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: SMG

CUSTODY SEAL:

Cooler	☐ Present and Intact	☐ Present but Not Intact	☑ Not Present	☐ N/A	Checked by: SMG
Sample(s)	☐ Present and Intact	☐ Present but Not Intact	☑ Not Present	☐ N/A	Checked by: ZB

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☐	☐	☑
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☐	☐	☑
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Acid/base preserved samples - pH within acceptable range	☐	☐	☑
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOAh ☐ VOAna_2 ☐ 100PJ ☐ 100PJna_2 ☐ 125AGB ☐ 125AGBh ☐ 125AGBp ☐ 125PB ☐ 125PBznna (pH__9) ☐ 250AGB ☐ 250CGB ☐ 250CGBs (pH__2) ☐ 250PB ☐ 250PBn (pH__2) ☐ 500AGB ☐ 500AGJ ☐ 500AGJs (pH__2) ☐ 500PB ☐ 1AGB ☐ 1AGBna_2 ☐ 1AGBs (pH__2) ☐ 1AGBs (O&G) ☐ 1PB ☐ 1PBna (pH__12) ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☑ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (___) ☐ EnCores® (___) ☐ TerraCores® (___) ☐ _____ ☐ _____ ☐ _____

Air: ☐ Tedlar™ ☑ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: ZB

Reviewed by: ma

ADVANCED TECHNOLOGY LABORATORIES

September 13, 2018

Jake Lippman
Kleinfelder
550 W. C. Suite 1200
San Diego, CA 92101
Tel: (619) 831-4600
Fax:

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003

Re: ATL Work Order Number : 1802237
Client Reference : Salt Pond 20, 20164596.018A

Enclosed are the results for sample(s) received on June 19, 2018 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	09/13/2018

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HA-7-4.0	1802237-03	Soil	6/18/18 8:35	6/19/18 15:30

DETECTION SUMMARY

Client Sample ID HA-7-4.0

Lab ID: 1802237-03

Total Metals by ICP-AES EPA 6010B **Analyst: GO**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**8.2**	1.0	1	B8I0237	09/11/2018	09/11/18 15:47	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	09/13/2018

Client Sample ID HA-7-4.0

Lab ID: 1802237-03

Total Metals by ICP-AES EPA 6010B **Analyst: GO**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**8.2**	1.0	1	B8I0237	09/11/2018	09/11/18 15:47	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	09/13/2018

QUALITY CONTROL SECTION

Total Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8I0237 - EPA 3050B_S										
Blank (B8I0237-BLK1)					Prepared: 9/11/2018 Analyzed: 9/11/2018					
Lead	ND	1.0	0.18							
LCS (B8I0237-BS1)					Prepared: 9/11/2018 Analyzed: 9/11/2018					
Lead	46.5645	1.0	0.18	50.0000		93.1	80 - 120			
Matrix Spike (B8I0237-MS1)			**Source: 1803317-44**		Prepared: 9/11/2018 Analyzed: 9/11/2018					
Lead	94.7737	1.0	0.18	125.000	6.14759	70.9	36 - 121			
Matrix Spike Dup (B8I0237-MSD1)			**Source: 1803317-44**		Prepared: 9/11/2018 Analyzed: 9/11/2018					
Lead	91.7432	1.0	0.18	125.000	6.14759	68.5	36 - 121	3.25	20	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	09/13/2018

Notes and Definitions

ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

Rachelle Arada

From: Jake Lippman <JLippman@kleinfelder.com>
Sent: Thursday, September 6, 2018 9:24 AM
To: Rachelle Arada
Cc: Carmen Aguila; customer.relations@atlglobal.com
Subject: RE: 20164596 STLC/TCLP

Thank you. Please also add Zinc 6010B to HA-5-4.

Jake Lippman, PG, CHg
Project Manager

550 West C Street, Suite 1200
San Diego, CA 92101
d| 619.831.4677
o| 619.831.4600
m| 619.348.8415

This email may contain confidential information. If you have received this email—including any attachments—in error, please notify the sender promptly and delete the email and any attachments from all of your systems.

From: Rachelle Arada <Rachelle@atlglobal.com>
Sent: Wednesday, September 5, 2018 5:18 PM
To: Jake Lippman <JLippman@kleinfelder.com>
Cc: Carmen Aguila <Carmen@atlglobal.com>; customer.relations@atlglobal.com
Subject: RE: 20164596 STLC/TCLP

External Email.

Good afternoon Jake,

We received your request. Thanks.

Rachelle

From: Jake Lippman [mailto:JLippman@kleinfelder.com]
Sent: Wednesday, September 5, 2018 5:14 PM
To: Carmen Aguila; Rachelle Arada
Subject: RE: 20164596 STLC/TCLP

Please analyze HA-5-4.0 and HA-7-4.0 for lead 6010B. Standard TAT.

Thank you

ADVANCED TECHNOLOGY LABORATORIES

July 13, 2018

Jake Lippman
Kleinfelder
550 W. C. Suite 1200
San Diego, CA 92101
Tel: (619) 831-4600
Fax:

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003

Re: ATL Work Order Number : 1802258
Client Reference : Salt Pond 20, 20164596.018A

Enclosed are the results for sample(s) received on June 20, 2018 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HA-5-0-0.5	1802258-01	Soil	6/19/18 9:40	6/20/18 15:58
HA-5-2.0	1802258-02	Soil	6/19/18 9:40	6/20/18 15:58
HA-6-0-0.5	1802258-05	Soil	6/19/18 8:55	6/20/18 15:58
HA-6-0.0.5-Dup	1802258-06	Soil	6/19/18 8:55	6/20/18 15:58
HA-6-2.0	1802258-07	Soil	6/19/18 8:55	6/20/18 15:58
HA-12-0-0.5	1802258-10	Soil	6/19/18 10:35	6/20/18 15:58
HA-12-2.0	1802258-11	Soil	6/19/18 10:35	6/20/18 15:58
HA-13-0-0.5	1802258-14	Soil	6/19/18 7:50	6/20/18 15:58
HA-13-0-0.5 Dup	1802258-15	Soil	6/19/18 7:50	6/20/18 15:58
HA-13-2.0	1802258-16	Soil	6/19/18 7:50	6/20/18 15:58
HA-13-2.0-Dup	1802258-17	Soil	6/19/18 7:50	6/20/18 15:58
EB-061918	1802258-20	Water	6/19/18 13:00	6/20/18 15:58
SW-061918	1802258-21	Water	6/19/18 13:00	6/20/18 15:58
TP-16-0-0.5	1802258-22	Soil	6/19/18 13:50	6/20/18 15:58
TP-16-0.5-3.5	1802258-23	Soil	6/19/18 13:55	6/20/18 15:58
TP-16-3.5-5	1802258-24	Soil	6/19/18 13:58	6/20/18 15:58
TP-16-5-10	1802258-25	Soil	6/19/18 14:00	6/20/18 15:58
TP-19-0-4	1802258-26	Soil	6/19/18 8:40	6/20/18 15:58
TP-19-4-8	1802258-27	Soil	6/19/18 8:45	6/20/18 15:58
TP-19-8-10	1802258-28	Soil	6/19/18 8:50	6/20/18 15:58
TP-25-0-4	1802258-29	Soil	6/19/18 10:40	6/20/18 15:58
TP-25-4-6	1802258-30	Soil	6/19/18 10:45	6/20/18 15:58
HA-3-0-0.5	1802258-31	Soil	6/20/18 12:00	6/20/18 15:58
HA-3-2.0	1802258-32	Soil	6/20/18 12:00	6/20/18 15:58
HA-4-0-0.5-Dup	1802258-35	Soil	6/20/18 11:10	6/20/18 15:58
HA-4-0-0.5	1802258-36	Soil	6/20/18 11:10	6/20/18 15:58
HA-4-2.0	1802258-37	Soil	6/20/18 11:10	6/20/18 15:58
HA-1-0-0.5	1802258-38	Soil	6/20/18 9:20	6/20/18 15:58
HA-1-0-0.5-Dup	1802258-39	Soil	6/20/18 9:20	6/20/18 15:58
HA-1-1.0	1802258-40	Soil	6/20/18 9:20	6/20/18 15:58
HA-1-2.0	1802258-41	Soil	6/20/18 9:20	6/20/18 15:58
HA-1-4.0	1802258-42	Soil	6/20/18 9:20	6/20/18 15:58
HA-2-0-0.5	1802258-43	Soil	6/20/18 7:55	6/20/18 15:58
HA-2-0-0.5-Dup	1802258-44	Soil	6/20/18 7:55	6/20/18 15:58
HA-2-2.0	1802258-45	Soil	6/20/18 7:55	6/20/18 15:58
TP-3-0-0.25	1802258-48	Soil	6/20/18 11:15	6/20/18 15:58
TP-3-0.25-2	1802258-49	Soil	6/20/18 11:20	6/20/18 15:58

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

TP-3-2-9	1802258-50	Soil	6/20/18 11:25	6/20/18 15:58
TP-4-0-0.25	1802258-51	Soil	6/20/18 11:55	6/20/18 15:58
TP-4-0.25-6	1802258-52	Soil	6/20/18 11:57	6/20/18 15:58
TP-4-6-8	1802258-53	Soil	6/20/18 12:00	6/20/18 15:58
TP-9-0-0.25	1802258-54	Soil	6/20/18 12:30	6/20/18 15:58
TP-9-0.25-2.5	1802258-55	Soil	6/20/18 12:35	6/20/18 15:58
TP-9-2.5-7	1802258-56	Soil	6/20/18 12:40	6/20/18 15:58
TP-9-7-9	1802258-57	Soil	6/20/18 12:45	6/20/18 15:58
TP-17-1.5-2	1802258-58	Soil	6/20/18 9:20	6/20/18 15:58
TP-21-0-5	1802258-59	Soil	6/20/18 13:15	6/20/18 15:58
TP-21-5-9	1802258-60	Soil	6/20/18 13:20	6/20/18 15:58
TP-23-0-0.5	1802258-61	Soil	6/20/18 8:45	6/20/18 15:58
TP-23-0.5-5	1802258-62	Soil	6/20/18 8:50	6/20/18 15:58
TP-23-5-8	1802258-63	Soil	6/20/18 8:55	6/20/18 15:58
TP-23-8-10	1802258-64	Soil	6/20/18 9:00	6/20/18 15:58

CASE NARRATIVE

The samples for EPA 8270 SIM (Semivolatile Organic Compounds) analysis were subcontracted to Eurofins Calscience, Inc. with ELAP Cert.#1230.

The samples for EPA 8270 SIM (Phenols/Phthalates) were subcontracted to AETL with ELAP Cert.# 1541.

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

DETECTION SUMMARY

Client Sample ID HA-5-0-0.5

Lab ID: 1802258-01

Total Metals by ICP-MS EPA 6020 — **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	**1100**	1000	20	B8F0667	06/26/2018	06/28/18 13:58	D1
Arsenic	**2300**	1000	20	B8F0667	06/26/2018	06/28/18 13:58	D1
Barium	**150000**	1000	20	B8F0667	06/26/2018	06/28/18 13:58	D1
Chromium	**51000**	2000	20	B8F0667	06/26/2018	06/28/18 13:58	D1
Cobalt	**5200**	1000	20	B8F0667	06/26/2018	06/28/18 13:58	D1
Copper	**98000**	1000	20	B8F0667	06/26/2018	06/28/18 13:58	D1
Lead	**250000**	2500	50	B8F0667	06/26/2018	06/28/18 16:01	D1, D6
Molybdenum	**8700**	1000	20	B8F0667	06/26/2018	06/28/18 13:58	D1
Nickel	**23000**	1000	20	B8F0667	06/26/2018	06/28/18 13:58	D1
Vanadium	**29000**	2000	20	B8F0667	06/26/2018	06/28/18 13:58	D1
Zinc	**350000**	5000	20	B8F0667	06/26/2018	06/28/18 13:58	D1

Hydrocarbon Chain Distribution by EPA 8015B (Modified) — **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	**36**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C14	**48**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C15	**34**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C16	**26**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C17	**33**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C18	**36**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C19	**49**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C20	**64**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C21	**78**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C22	**110**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C23	**110**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C24	**100**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C25	**110**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C26	**130**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C27	**150**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C28	**130**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C29	**150**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C30	**130**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C31	**130**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C32	**140**	10	1	B8F0691	06/26/2018	06/27/18 15:39	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

DETECTION SUMMARY

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C33	**180**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C34	**110**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C35	**140**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C36	**160**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C37	**140**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C38	**180**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C39	**110**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C40	**110**	10	1	B8F0691	06/26/2018	06/27/18 15:39	

Organochlorine Pesticides by EPA 8081 **Analyst: CO**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDE [2C]	**2.5**	2.0	1	B8F0682	06/26/2018	06/28/18 16:02	
4,4´-DDT	**4.7**	2.0	1	B8F0682	06/26/2018	06/28/18 16:02	
alpha-Chlordane [2C]	**2.7**	1.0	1	B8F0682	06/26/2018	06/28/18 16:02	
Chlordane	**26**	8.5	1	B8F0682	06/26/2018	06/28/18 16:02	
gamma-Chlordane [2C]	**4.3**	1.0	1	B8F0682	06/26/2018	06/28/18 16:02	

Client Sample ID HA-5-2.0

Lab ID: 1802258-02

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Barium	**72000**	1000	20	B8F0667	06/26/2018	06/28/18 14:09	D1
Chromium	**12000**	2000	20	B8F0667	06/26/2018	06/28/18 14:09	D1
Cobalt	**5700**	1000	20	B8F0667	06/26/2018	06/28/18 14:09	D1
Copper	**23000**	1000	20	B8F0667	06/26/2018	06/28/18 14:09	D1
Lead	**26000**	1000	20	B8F0667	06/26/2018	06/28/18 14:09	D1
Nickel	**10000**	1000	20	B8F0667	06/26/2018	06/28/18 14:09	D1
Vanadium	**32000**	2000	20	B8F0667	06/26/2018	06/28/18 14:09	D1
Zinc	**96000**	5000	20	B8F0667	06/26/2018	06/28/18 14:09	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

DETECTION SUMMARY

Client Sample ID HA-6-0-0.5

Lab ID: 1802258-05

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2100**	1000	20	B8F0667	06/26/2018	06/28/18 14:11	D1
Barium	**72000**	1000	20	B8F0667	06/26/2018	06/28/18 14:11	D1
Chromium	**13000**	2000	20	B8F0667	06/26/2018	06/28/18 14:11	D1
Cobalt	**4500**	1000	20	B8F0667	06/26/2018	06/28/18 14:11	D1
Copper	**17000**	1000	20	B8F0667	06/26/2018	06/28/18 14:11	D1
Lead	**93000**	1000	20	B8F0667	06/26/2018	06/28/18 14:11	D1
Nickel	**8700**	1000	20	B8F0667	06/26/2018	06/28/18 14:11	D1
Vanadium	**41000**	2000	20	B8F0667	06/26/2018	06/28/18 14:11	D1
Zinc	**65000**	5000	20	B8F0667	06/26/2018	06/28/18 14:11	D1

Client Sample ID HA-6-0.0.5-Dup

Lab ID: 1802258-06

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2000**	1000	20	B8F0667	06/26/2018	06/28/18 14:13	D1
Barium	**86000**	1000	20	B8F0667	06/26/2018	06/28/18 14:13	D1
Chromium	**15000**	2000	20	B8F0667	06/26/2018	06/28/18 14:13	D1
Cobalt	**13000**	1000	20	B8F0667	06/26/2018	06/28/18 14:13	D1
Copper	**14000**	1000	20	B8F0667	06/26/2018	06/28/18 14:13	D1
Lead	**5000**	1000	20	B8F0667	06/26/2018	06/28/18 14:13	D1
Nickel	**11000**	1000	20	B8F0667	06/26/2018	06/28/18 14:13	D1
Vanadium	**51000**	2000	20	B8F0667	06/26/2018	06/28/18 14:13	D1
Zinc	**32000**	5000	20	B8F0667	06/26/2018	06/28/18 14:13	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

DETECTION SUMMARY

Client Sample ID HA-6-2.0

Lab ID: 1802258-07

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2500**	1000	20	B8F0667	06/26/2018	06/28/18 14:15	D1
Barium	**72000**	1000	20	B8F0667	06/26/2018	06/28/18 14:15	D1
Chromium	**13000**	2000	20	B8F0667	06/26/2018	06/28/18 14:15	D1
Cobalt	**6400**	1000	20	B8F0667	06/26/2018	06/28/18 14:15	D1
Copper	**13000**	1000	20	B8F0667	06/26/2018	06/28/18 14:15	D1
Lead	**7400**	1000	20	B8F0667	06/26/2018	06/28/18 14:15	D1
Nickel	**8100**	1000	20	B8F0667	06/26/2018	06/28/18 14:15	D1
Vanadium	**37000**	2000	20	B8F0667	06/26/2018	06/28/18 14:15	D1
Zinc	**35000**	5000	20	B8F0667	06/26/2018	06/28/18 14:15	D1

Client Sample ID HA-12-0-0.5

Lab ID: 1802258-10

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**5500**	1000	20	B8F0667	06/26/2018	06/28/18 14:17	D1
Barium	**78000**	1000	20	B8F0667	06/26/2018	06/28/18 14:17	D1
Chromium	**19000**	2000	20	B8F0667	06/26/2018	06/28/18 14:17	D1
Cobalt	**9000**	1000	20	B8F0667	06/26/2018	06/28/18 14:17	D1
Copper	**19000**	1000	20	B8F0667	06/26/2018	06/28/18 14:17	D1
Lead	**3500**	1000	20	B8F0667	06/26/2018	06/28/18 14:17	D1
Nickel	**9600**	1000	20	B8F0667	06/26/2018	06/28/18 14:17	D1
Vanadium	**53000**	2000	20	B8F0667	06/26/2018	06/28/18 14:17	D1
Zinc	**41000**	5000	20	B8F0667	06/26/2018	06/28/18 14:17	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

DETECTION SUMMARY

Client Sample ID HA-12-2.0

Lab ID: 1802258-11

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1800**	1000	20	B8F0667	06/26/2018	06/28/18 14:19	D1
Barium	**41000**	1000	20	B8F0667	06/26/2018	06/28/18 14:19	D1
Chromium	**6200**	2000	20	B8F0667	06/26/2018	06/28/18 14:19	D1
Cobalt	**2900**	1000	20	B8F0667	06/26/2018	06/28/18 14:19	D1
Copper	**7000**	1000	20	B8F0667	06/26/2018	06/28/18 14:19	D1
Lead	**8800**	1000	20	B8F0667	06/26/2018	06/28/18 14:19	D1
Molybdenum	**2500**	1000	20	B8F0667	06/26/2018	06/28/18 14:19	D1
Nickel	**4700**	1000	20	B8F0667	06/26/2018	06/28/18 14:19	D1
Vanadium	**31000**	2000	20	B8F0667	06/26/2018	06/28/18 14:19	D1
Zinc	**20000**	5000	20	B8F0667	06/26/2018	06/28/18 14:19	D1

Client Sample ID HA-13-0-0.5

Lab ID: 1802258-14

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1500**	1000	20	B8F0667	06/26/2018	06/28/18 14:20	D1
Barium	**46000**	1000	20	B8F0667	06/26/2018	06/28/18 14:20	D1
Chromium	**6100**	2000	20	B8F0667	06/26/2018	06/28/18 14:20	D1
Cobalt	**3200**	1000	20	B8F0667	06/26/2018	06/28/18 14:20	D1
Copper	**7000**	1000	20	B8F0667	06/26/2018	06/28/18 14:20	D1
Lead	**9100**	1000	20	B8F0667	06/26/2018	06/28/18 14:20	D1
Molybdenum	**1700**	1000	20	B8F0667	06/26/2018	06/28/18 14:20	D1
Nickel	**4000**	1000	20	B8F0667	06/26/2018	06/28/18 14:20	D1
Vanadium	**27000**	2000	20	B8F0667	06/26/2018	06/28/18 14:20	D1
Zinc	**20000**	5000	20	B8F0667	06/26/2018	06/28/18 14:20	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

DETECTION SUMMARY

Client Sample ID HA-13-0-0.5 Dup

Lab ID: 1802258-15

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1600**	1000	20	B8F0667	06/26/2018	06/28/18 14:22	D1
Barium	**47000**	1000	20	B8F0667	06/26/2018	06/28/18 14:22	D1
Chromium	**6600**	2000	20	B8F0667	06/26/2018	06/28/18 14:22	D1
Cobalt	**3700**	1000	20	B8F0667	06/26/2018	06/28/18 14:22	D1
Copper	**7600**	1000	20	B8F0667	06/26/2018	06/28/18 14:22	D1
Lead	**3300**	1000	20	B8F0667	06/26/2018	06/28/18 14:22	D1
Nickel	**3400**	1000	20	B8F0667	06/26/2018	06/28/18 14:22	D1
Vanadium	**28000**	2000	20	B8F0667	06/26/2018	06/28/18 14:22	D1
Zinc	**19000**	5000	20	B8F0667	06/26/2018	06/28/18 14:22	D1

Client Sample ID HA-13-2.0

Lab ID: 1802258-16

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1700**	1000	20	B8F0667	06/26/2018	06/28/18 14:28	D1
Barium	**48000**	1000	20	B8F0667	06/26/2018	06/28/18 14:28	D1
Chromium	**6700**	2000	20	B8F0667	06/26/2018	06/28/18 14:28	D1
Cobalt	**3600**	1000	20	B8F0667	06/26/2018	06/28/18 14:28	D1
Copper	**6500**	1000	20	B8F0667	06/26/2018	06/28/18 14:28	D1
Lead	**3500**	1000	20	B8F0667	06/26/2018	06/28/18 14:28	D1
Nickel	**3600**	1000	20	B8F0667	06/26/2018	06/28/18 14:28	D1
Vanadium	**28000**	2000	20	B8F0667	06/26/2018	06/28/18 14:28	D1
Zinc	**18000**	5000	20	B8F0667	06/26/2018	06/28/18 14:28	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

DETECTION SUMMARY

Client Sample ID HA-13-2.0-Dup

Lab ID: 1802258-17

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1800**	1000	20	B8F0667	06/26/2018	06/28/18 14:30	D1
Barium	**76000**	1000	20	B8F0667	06/26/2018	06/28/18 14:30	D1
Chromium	**9100**	2000	20	B8F0667	06/26/2018	06/28/18 14:30	D1
Cobalt	**5400**	1000	20	B8F0667	06/26/2018	06/28/18 14:30	D1
Copper	**10000**	1000	20	B8F0667	06/26/2018	06/28/18 14:30	D1
Lead	**3400**	1000	20	B8F0667	06/26/2018	06/28/18 14:30	D1
Nickel	**5000**	1000	20	B8F0667	06/26/2018	06/28/18 14:30	D1
Vanadium	**34000**	2000	20	B8F0667	06/26/2018	06/28/18 14:30	D1
Zinc	**27000**	5000	20	B8F0667	06/26/2018	06/28/18 14:30	D1

Client Sample ID EB-061918

Lab ID: 1802258-20

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chromium	**0.90**	0.50	1	B8F0662	06/26/2018	06/26/18 16:30	

Client Sample ID TP-16-0-0.5

Lab ID: 1802258-22

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Barium	**14000**	1000	20	B8F0667	06/26/2018	06/28/18 14:32	D1
Copper	**2100**	1000	20	B8F0667	06/26/2018	06/28/18 14:32	D1
Lead	**7400**	1000	20	B8F0667	06/26/2018	06/28/18 14:32	D1
Nickel	**2900**	1000	20	B8F0667	06/26/2018	06/28/18 14:32	D1
Vanadium	**5400**	2000	20	B8F0667	06/26/2018	06/28/18 14:32	D1
Zinc	**6100**	5000	20	B8F0667	06/26/2018	06/28/18 14:32	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

DETECTION SUMMARY

Client Sample ID TP-16-0.5-3.5

Lab ID: 1802258-23

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1800**	1000	20	B8F0667	06/26/2018	06/28/18 14:33	D1
Barium	**47000**	1000	20	B8F0667	06/26/2018	06/28/18 14:33	D1
Chromium	**5700**	2000	20	B8F0667	06/26/2018	06/28/18 14:33	D1
Cobalt	**2700**	1000	20	B8F0667	06/26/2018	06/28/18 14:33	D1
Copper	**4800**	1000	20	B8F0667	06/26/2018	06/28/18 14:33	D1
Lead	**2500**	1000	20	B8F0667	06/26/2018	06/28/18 14:33	D1
Nickel	**2300**	1000	20	B8F0667	06/26/2018	06/28/18 14:33	D1
Vanadium	**31000**	2000	20	B8F0667	06/26/2018	06/28/18 14:33	D1
Zinc	**16000**	5000	20	B8F0667	06/26/2018	06/28/18 14:33	D1

Client Sample ID TP-16-3.5-5

Lab ID: 1802258-24

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Barium	**71000**	1000	20	B8F0667	06/26/2018	06/28/18 14:35	D1
Chromium	**12000**	2000	20	B8F0667	06/26/2018	06/28/18 14:35	D1
Cobalt	**4700**	1000	20	B8F0667	06/26/2018	06/28/18 14:35	D1
Copper	**11000**	1000	20	B8F0667	06/26/2018	06/28/18 14:35	D1
Lead	**4100**	1000	20	B8F0667	06/26/2018	06/28/18 14:35	D1
Nickel	**5600**	1000	20	B8F0667	06/26/2018	06/28/18 14:35	D1
Vanadium	**52000**	2000	20	B8F0667	06/26/2018	06/28/18 14:35	D1
Zinc	**34000**	5000	20	B8F0667	06/26/2018	06/28/18 14:35	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
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San Diego , CA 92101		Reported :	07/13/2018

DETECTION SUMMARY

Client Sample ID TP-16-5-10

Lab ID: 1802258-25

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1300**	1000	20	B8F0667	06/26/2018	06/28/18 14:37	D1
Barium	**100000**	1000	20	B8F0667	06/26/2018	06/28/18 14:37	D1
Chromium	**8100**	2000	20	B8F0667	06/26/2018	06/28/18 14:37	D1
Cobalt	**5800**	1000	20	B8F0667	06/26/2018	06/28/18 14:37	D1
Copper	**12000**	1000	20	B8F0667	06/26/2018	06/28/18 14:37	D1
Lead	**3200**	1000	20	B8F0667	06/26/2018	06/28/18 14:37	D1
Nickel	**4600**	1000	20	B8F0667	06/26/2018	06/28/18 14:37	D1
Vanadium	**40000**	2000	20	B8F0667	06/26/2018	06/28/18 14:37	D1
Zinc	**29000**	5000	20	B8F0667	06/26/2018	06/28/18 14:37	D1

Client Sample ID TP-19-0-4

Lab ID: 1802258-26

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1300**	1000	20	B8F0667	06/26/2018	06/28/18 14:39	D1
Barium	**29000**	1000	20	B8F0667	06/26/2018	06/28/18 14:39	D1
Chromium	**4600**	2000	20	B8F0667	06/26/2018	06/28/18 14:39	D1
Cobalt	**2100**	1000	20	B8F0667	06/26/2018	06/28/18 14:39	D1
Copper	**3700**	1000	20	B8F0667	06/26/2018	06/28/18 14:39	D1
Lead	**3100**	1000	20	B8F0667	06/26/2018	06/28/18 14:39	D1
Nickel	**1700**	1000	20	B8F0667	06/26/2018	06/28/18 14:39	D1
Vanadium	**27000**	2000	20	B8F0667	06/26/2018	06/28/18 14:39	D1
Zinc	**12000**	5000	20	B8F0667	06/26/2018	06/28/18 14:39	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
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San Diego , CA 92101		Reported :	07/13/2018

DETECTION SUMMARY

Client Sample ID TP-19-4-8

Lab ID: 1802258-27

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**7000**	1000	20	B8F0667	06/26/2018	06/28/18 14:41	D1
Barium	**67000**	1000	20	B8F0667	06/26/2018	06/28/18 14:41	D1
Chromium	**11000**	2000	20	B8F0667	06/26/2018	06/28/18 14:41	D1
Cobalt	**8300**	1000	20	B8F0667	06/26/2018	06/28/18 14:41	D1
Copper	**14000**	1000	20	B8F0667	06/26/2018	06/28/18 14:41	D1
Lead	**3800**	1000	20	B8F0667	06/26/2018	06/28/18 14:41	D1
Nickel	**7100**	1000	20	B8F0667	06/26/2018	06/28/18 14:41	D1
Vanadium	**51000**	2000	20	B8F0667	06/26/2018	06/28/18 14:41	D1
Zinc	**37000**	5000	20	B8F0667	06/26/2018	06/28/18 14:41	D1

Client Sample ID TP-19-8-10

Lab ID: 1802258-28

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2500**	1000	20	B8F0667	06/26/2018	06/28/18 14:43	D1
Barium	**45000**	1000	20	B8F0667	06/26/2018	06/28/18 14:43	D1
Chromium	**20000**	2000	20	B8F0667	06/26/2018	06/28/18 14:43	D1
Cobalt	**8600**	1000	20	B8F0667	06/26/2018	06/28/18 14:43	D1
Copper	**19000**	1000	20	B8F0667	06/26/2018	06/28/18 14:43	D1
Lead	**4700**	1000	20	B8F0667	06/26/2018	06/28/18 14:43	D1
Nickel	**9000**	1000	20	B8F0667	06/26/2018	06/28/18 14:43	D1
Vanadium	**51000**	2000	20	B8F0667	06/26/2018	06/28/18 14:43	D1
Zinc	**43000**	5000	20	B8F0667	06/26/2018	06/28/18 14:43	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
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DETECTION SUMMARY

Client Sample ID TP-25-0-4

Lab ID: 1802258-29

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1100**	1000	20	B8F0667	06/26/2018	06/28/18 14:45	D1
Barium	**31000**	1000	20	B8F0667	06/26/2018	06/28/18 14:45	D1
Chromium	**4200**	2000	20	B8F0667	06/26/2018	06/28/18 14:45	D1
Cobalt	**1900**	1000	20	B8F0667	06/26/2018	06/28/18 14:45	D1
Copper	**3200**	1000	20	B8F0667	06/26/2018	06/28/18 14:45	D1
Lead	**2300**	1000	20	B8F0667	06/26/2018	06/28/18 14:45	D1
Nickel	**1500**	1000	20	B8F0667	06/26/2018	06/28/18 14:45	D1
Vanadium	**23000**	2000	20	B8F0667	06/26/2018	06/28/18 14:45	D1
Zinc	**12000**	5000	20	B8F0667	06/26/2018	06/28/18 14:45	D1

Client Sample ID TP-25-4-6

Lab ID: 1802258-30

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2400**	1000	20	B8F0667	06/26/2018	06/28/18 14:50	D1
Barium	**110000**	1000	20	B8F0667	06/26/2018	06/28/18 14:50	D1
Chromium	**12000**	2000	20	B8F0667	06/26/2018	06/28/18 14:50	D1
Cobalt	**7400**	1000	20	B8F0667	06/26/2018	06/28/18 14:50	D1
Copper	**12000**	1000	20	B8F0667	06/26/2018	06/28/18 14:50	D1
Lead	**5500**	1000	20	B8F0667	06/26/2018	06/28/18 14:50	D1
Nickel	**7300**	1000	20	B8F0667	06/26/2018	06/28/18 14:50	D1
Vanadium	**39000**	2000	20	B8F0667	06/26/2018	06/28/18 14:50	D1
Zinc	**37000**	5000	20	B8F0667	06/26/2018	06/28/18 14:50	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
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DETECTION SUMMARY

Client Sample ID HA-3-0-0.5

Lab ID: 1802258-31

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**8600**	1000	20	B8F0668	06/26/2018	06/28/18 14:56	D1
Barium	**63000**	1000	20	B8F0668	06/26/2018	06/28/18 14:56	D1
Chromium	**25000**	2000	20	B8F0668	06/26/2018	06/28/18 14:56	D1
Cobalt	**12000**	1000	20	B8F0668	06/26/2018	06/28/18 14:56	D1
Copper	**17000**	1000	20	B8F0668	06/26/2018	06/28/18 14:56	D1
Lead	**7800**	1000	20	B8F0668	06/26/2018	06/28/18 14:56	D1
Nickel	**13000**	1000	20	B8F0668	06/26/2018	06/28/18 14:56	D1
Vanadium	**56000**	2000	20	B8F0668	06/26/2018	06/28/18 14:56	D1
Zinc	**64000**	5000	20	B8F0668	06/26/2018	06/28/18 14:56	D1

Client Sample ID HA-3-2.0

Lab ID: 1802258-32

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**3100**	1000	20	B8F0668	06/26/2018	06/28/18 15:03	D1
Barium	**49000**	1000	20	B8F0668	06/26/2018	06/28/18 15:03	D1
Chromium	**23000**	2000	20	B8F0668	06/26/2018	06/28/18 15:03	D1
Cobalt	**7900**	1000	20	B8F0668	06/26/2018	06/28/18 15:03	D1
Copper	**15000**	1000	20	B8F0668	06/26/2018	06/28/18 15:03	D1
Lead	**4900**	1000	20	B8F0668	06/26/2018	06/28/18 15:03	D1
Nickel	**10000**	1000	20	B8F0668	06/26/2018	06/28/18 15:03	D1
Vanadium	**49000**	2000	20	B8F0668	06/26/2018	06/28/18 15:03	D1
Zinc	**43000**	5000	20	B8F0668	06/26/2018	06/28/18 15:03	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
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DETECTION SUMMARY

Client Sample ID HA-4-0-0.5-Dup

Lab ID: 1802258-35

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1500**	1000	20	B8F0668	06/26/2018	06/28/18 15:05	D1
Barium	**22000**	1000	20	B8F0668	06/26/2018	06/28/18 15:05	D1
Chromium	**5700**	2000	20	B8F0668	06/26/2018	06/28/18 15:05	D1
Cobalt	**2200**	1000	20	B8F0668	06/26/2018	06/28/18 15:05	D1
Copper	**14000**	1000	20	B8F0668	06/26/2018	06/28/18 15:05	D1
Lead	**19000**	1000	20	B8F0668	06/26/2018	06/28/18 15:05	D1
Nickel	**3700**	1000	20	B8F0668	06/26/2018	06/28/18 15:05	D1
Vanadium	**17000**	2000	20	B8F0668	06/26/2018	06/28/18 15:05	D1
Zinc	**56000**	5000	20	B8F0668	06/26/2018	06/28/18 15:05	D1

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C23	**13**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C24	**16**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C25	**22**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C26	**23**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C27	**39**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C28	**39**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C29	**47**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C30	**59**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C31	**64**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C32	**65**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C33	**86**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C34	**68**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C35	**100**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C36	**76**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C37	**120**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C38	**110**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C39	**110**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C40	**75**	10	1	B8F0691	06/26/2018	06/27/18 15:57	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

DETECTION SUMMARY

Client Sample ID HA-4-0-0.5

Lab ID: 1802258-36

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2900**	1000	20	B8F0668	06/26/2018	06/28/18 15:07	D1
Barium	**29000**	1000	20	B8F0668	06/26/2018	06/28/18 15:07	D1
Chromium	**6600**	2000	20	B8F0668	06/26/2018	06/28/18 15:07	D1
Cobalt	**2800**	1000	20	B8F0668	06/26/2018	06/28/18 15:07	D1
Copper	**15000**	1000	20	B8F0668	06/26/2018	06/28/18 15:07	D1
Lead	**14000**	1000	20	B8F0668	06/26/2018	06/28/18 15:07	D1
Nickel	**4600**	1000	20	B8F0668	06/26/2018	06/28/18 15:07	D1
Vanadium	**20000**	2000	20	B8F0668	06/26/2018	06/28/18 15:07	D1
Zinc	**84000**	5000	20	B8F0668	06/26/2018	06/28/18 15:07	D1

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C23	**10**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C24	**14**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C25	**20**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C26	**24**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C27	**32**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C28	**35**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C29	**45**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C30	**42**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C31	**49**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C32	**43**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C33	**60**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C34	**44**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C35	**63**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C36	**53**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C37	**62**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C38	**62**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C39	**62**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C40	**43**	10	1	B8F0691	06/26/2018	06/27/18 15:22	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

DETECTION SUMMARY

Client Sample ID HA-4-2.0

Lab ID: 1802258-37

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1300**	1000	20	B8F0668	06/26/2018	06/28/18 15:12	D1
Barium	**42000**	1000	20	B8F0668	06/26/2018	06/28/18 15:12	D1
Chromium	**9400**	2000	20	B8F0668	06/26/2018	06/28/18 15:12	D1
Cobalt	**3900**	1000	20	B8F0668	06/26/2018	06/28/18 15:12	D1
Copper	**11000**	1000	20	B8F0668	06/26/2018	06/28/18 15:12	D1
Lead	**29000**	1000	20	B8F0668	06/26/2018	06/28/18 15:12	D1
Molybdenum	**4500**	1000	20	B8F0668	06/26/2018	06/28/18 15:12	D1
Nickel	**6000**	1000	20	B8F0668	06/26/2018	06/28/18 15:12	D1
Vanadium	**29000**	2000	20	B8F0668	06/26/2018	06/28/18 15:12	D1
Zinc	**32000**	5000	20	B8F0668	06/26/2018	06/28/18 15:12	D1

Client Sample ID HA-1-0-0.5

Lab ID: 1802258-38

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**3800**	1000	20	B8F0668	06/26/2018	06/28/18 15:14	D1
Barium	**54000**	1000	20	B8F0668	06/26/2018	06/28/18 15:14	D1
Chromium	**18000**	2000	20	B8F0668	06/26/2018	06/28/18 15:14	D1
Cobalt	**6500**	1000	20	B8F0668	06/26/2018	06/28/18 15:14	D1
Copper	**15000**	1000	20	B8F0668	06/26/2018	06/28/18 15:14	D1
Lead	**11000**	1000	20	B8F0668	06/26/2018	06/28/18 15:14	D1
Nickel	**9500**	1000	20	B8F0668	06/26/2018	06/28/18 15:14	D1
Vanadium	**44000**	2000	20	B8F0668	06/26/2018	06/28/18 15:14	D1
Zinc	**37000**	5000	20	B8F0668	06/26/2018	06/28/18 15:14	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

DETECTION SUMMARY

Client Sample ID HA-1-0-0.5-Dup

Lab ID: 1802258-39

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**5100**	1000	20	B8F0668	06/26/2018	06/28/18 15:16	D1
Barium	**45000**	1000	20	B8F0668	06/26/2018	06/28/18 15:16	D1
Chromium	**15000**	2000	20	B8F0668	06/26/2018	06/28/18 15:16	D1
Cobalt	**5500**	1000	20	B8F0668	06/26/2018	06/28/18 15:16	D1
Copper	**12000**	1000	20	B8F0668	06/26/2018	06/28/18 15:16	D1
Lead	**5700**	1000	20	B8F0668	06/26/2018	06/28/18 15:16	D1
Nickel	**7700**	1000	20	B8F0668	06/26/2018	06/28/18 15:16	D1
Vanadium	**38000**	2000	20	B8F0668	06/26/2018	06/28/18 15:16	D1
Zinc	**32000**	5000	20	B8F0668	06/26/2018	06/28/18 15:16	D1

Client Sample ID HA-1-1.0

Lab ID: 1802258-40

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**3000**	1000	20	B8F0668	06/26/2018	06/28/18 15:18	D1
Barium	**47000**	1000	20	B8F0668	06/26/2018	06/28/18 15:18	D1
Chromium	**15000**	2000	20	B8F0668	06/26/2018	06/28/18 15:18	D1
Cobalt	**6300**	1000	20	B8F0668	06/26/2018	06/28/18 15:18	D1
Copper	**14000**	1000	20	B8F0668	06/26/2018	06/28/18 15:18	D1
Lead	**14000**	1000	20	B8F0668	06/26/2018	06/28/18 15:18	D1
Molybdenum	**1400**	1000	20	B8F0668	06/26/2018	06/28/18 15:18	D1
Nickel	**9300**	1000	20	B8F0668	06/26/2018	06/28/18 15:18	D1
Vanadium	**40000**	2000	20	B8F0668	06/26/2018	06/28/18 15:18	D1
Zinc	**41000**	5000	20	B8F0668	06/26/2018	06/28/18 15:18	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

DETECTION SUMMARY

Client Sample ID HA-1-2.0

Lab ID: 1802258-41

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2200**	1000	20	B8F0668	06/26/2018	06/28/18 15:20	D1
Barium	**37000**	1000	20	B8F0668	06/26/2018	06/28/18 15:20	D1
Chromium	**11000**	2000	20	B8F0668	06/26/2018	06/28/18 15:20	D1
Cobalt	**4300**	1000	20	B8F0668	06/26/2018	06/28/18 15:20	D1
Copper	**9400**	1000	20	B8F0668	06/26/2018	06/28/18 15:20	D1
Lead	**6200**	1000	20	B8F0668	06/26/2018	06/28/18 15:20	D1
Nickel	**6100**	1000	20	B8F0668	06/26/2018	06/28/18 15:20	D1
Vanadium	**31000**	2000	20	B8F0668	06/26/2018	06/28/18 15:20	D1
Zinc	**26000**	5000	20	B8F0668	06/26/2018	06/28/18 15:20	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

DETECTION SUMMARY

Client Sample ID HA-2-0-0.5

Lab ID: 1802258-43

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Barium	**24000**	1000	20	B8F0668	06/26/2018	06/28/18 15:22	D1
Chromium	**3900**	2000	20	B8F0668	06/26/2018	06/28/18 15:22	D1
Cobalt	**2000**	1000	20	B8F0668	06/26/2018	06/28/18 15:22	D1
Copper	**6000**	1000	20	B8F0668	06/26/2018	06/28/18 15:22	D1
Lead	**9400**	1000	20	B8F0668	06/26/2018	06/28/18 15:22	D1
Nickel	**4600**	1000	20	B8F0668	06/26/2018	06/28/18 15:22	D1
Vanadium	**13000**	2000	20	B8F0668	06/26/2018	06/28/18 15:22	D1
Zinc	**17000**	5000	20	B8F0668	06/26/2018	06/28/18 15:22	D1

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Pyrene	**5.7**	5.0	1	B8F0650	06/25/2018	06/27/18 18:18	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
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San Diego , CA 92101		Reported :	07/13/2018

DETECTION SUMMARY

Client Sample ID HA-2-0-0.5-Dup

Lab ID: 1802258-44

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1000**	1000	20	B8F0668	06/26/2018	06/28/18 15:24	D1
Barium	**28000**	1000	20	B8F0668	06/26/2018	06/28/18 15:24	D1
Chromium	**4800**	2000	20	B8F0668	06/26/2018	06/28/18 15:24	D1
Cobalt	**2500**	1000	20	B8F0668	06/26/2018	06/28/18 15:24	D1
Copper	**6800**	1000	20	B8F0668	06/26/2018	06/28/18 15:24	D1
Lead	**11000**	1000	20	B8F0668	06/26/2018	06/28/18 15:24	D1
Nickel	**5100**	1000	20	B8F0668	06/26/2018	06/28/18 15:24	D1
Vanadium	**16000**	2000	20	B8F0668	06/26/2018	06/28/18 15:24	D1
Zinc	**21000**	5000	20	B8F0668	06/26/2018	06/28/18 15:24	D1

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Fluoranthene	**7.5**	5.0	1	B8F0650	06/25/2018	06/27/18 18:51	
Pyrene	**8.8**	5.0	1	B8F0650	06/25/2018	06/27/18 18:51	

Client Sample ID HA-2-2.0

Lab ID: 1802258-45

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**3600**	1000	20	B8F0668	06/26/2018	06/28/18 15:25	D1
Barium	**52000**	1000	20	B8F0668	06/26/2018	06/28/18 15:25	D1
Chromium	**26000**	2000	20	B8F0668	06/26/2018	06/28/18 15:25	D1
Cobalt	**8700**	1000	20	B8F0668	06/26/2018	06/28/18 15:25	D1
Copper	**15000**	1000	20	B8F0668	06/26/2018	06/28/18 15:25	D1
Lead	**4600**	1000	20	B8F0668	06/26/2018	06/28/18 15:25	D1
Nickel	**11000**	1000	20	B8F0668	06/26/2018	06/28/18 15:25	D1
Vanadium	**56000**	2000	20	B8F0668	06/26/2018	06/28/18 15:25	D1
Zinc	**47000**	5000	20	B8F0668	06/26/2018	06/28/18 15:25	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

DETECTION SUMMARY

Client Sample ID TP-3-0-0.25

Lab ID: 1802258-48

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Barium	**10000**	1000	20	B8F0668	06/26/2018	06/28/18 15:27	D1
Cobalt	**1100**	1000	20	B8F0668	06/26/2018	06/28/18 15:27	D1
Copper	**4100**	1000	20	B8F0668	06/26/2018	06/28/18 15:27	D1
Lead	**8000**	1000	20	B8F0668	06/26/2018	06/28/18 15:27	D1
Nickel	**3600**	1000	20	B8F0668	06/26/2018	06/28/18 15:27	D1
Vanadium	**7800**	2000	20	B8F0668	06/26/2018	06/28/18 15:27	D1
Zinc	**16000**	5000	20	B8F0668	06/26/2018	06/28/18 15:27	D1

Client Sample ID TP-3-0.25-2

Lab ID: 1802258-49

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1300**	1000	20	B8F0668	06/26/2018	06/28/18 15:29	D1
Barium	**47000**	1000	20	B8F0668	06/26/2018	06/28/18 15:29	D1
Chromium	**6600**	2000	20	B8F0668	06/26/2018	06/28/18 15:29	D1
Cobalt	**2600**	1000	20	B8F0668	06/26/2018	06/28/18 15:29	D1
Copper	**5700**	1000	20	B8F0668	06/26/2018	06/28/18 15:29	D1
Lead	**2400**	1000	20	B8F0668	06/26/2018	06/28/18 15:29	D1
Nickel	**2500**	1000	20	B8F0668	06/26/2018	06/28/18 15:29	D1
Vanadium	**32000**	2000	20	B8F0668	06/26/2018	06/28/18 15:29	D1
Zinc	**16000**	5000	20	B8F0668	06/26/2018	06/28/18 15:29	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
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San Diego , CA 92101		Reported :	07/13/2018

DETECTION SUMMARY

Client Sample ID TP-3-2-9

Lab ID: 1802258-50

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**5600**	1000	20	B8F0668	06/26/2018	06/28/18 15:35	D1
Barium	**56000**	1000	20	B8F0668	06/26/2018	06/28/18 15:35	D1
Chromium	**23000**	2000	20	B8F0668	06/26/2018	06/28/18 15:35	D1
Cobalt	**9200**	1000	20	B8F0668	06/26/2018	06/28/18 15:35	D1
Copper	**16000**	1000	20	B8F0668	06/26/2018	06/28/18 15:35	D1
Lead	**6800**	1000	20	B8F0668	06/26/2018	06/28/18 15:35	D1
Nickel	**10000**	1000	20	B8F0668	06/26/2018	06/28/18 15:35	D1
Vanadium	**66000**	2000	20	B8F0668	06/26/2018	06/28/18 15:35	D1
Zinc	**52000**	5000	20	B8F0668	06/26/2018	06/28/18 15:35	D1

Client Sample ID TP-4-0-0.25

Lab ID: 1802258-51

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Barium	**18000**	1000	20	B8F0668	06/26/2018	06/28/18 15:37	D1
Chromium	**4400**	2000	20	B8F0668	06/26/2018	06/28/18 15:37	D1
Cobalt	**2200**	1000	20	B8F0668	06/26/2018	06/28/18 15:37	D1
Copper	**9600**	1000	20	B8F0668	06/26/2018	06/28/18 15:37	D1
Lead	**17000**	1000	20	B8F0668	06/26/2018	06/28/18 15:37	D1
Nickel	**6900**	1000	20	B8F0668	06/26/2018	06/28/18 15:37	D1
Vanadium	**15000**	2000	20	B8F0668	06/26/2018	06/28/18 15:37	D1
Zinc	**27000**	5000	20	B8F0668	06/26/2018	06/28/18 15:37	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

DETECTION SUMMARY

Client Sample ID TP-4-0.25-6

Lab ID: 1802258-52

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**3500**	1000	20	B8F0668	06/26/2018	06/28/18 15:38	D1
Barium	**110000**	1000	20	B8F0668	06/26/2018	06/28/18 15:38	D1
Chromium	**13000**	2000	20	B8F0668	06/26/2018	06/28/18 15:38	D1
Cobalt	**9000**	1000	20	B8F0668	06/26/2018	06/28/18 15:38	D1
Copper	**21000**	1000	20	B8F0668	06/26/2018	06/28/18 15:38	D1
Lead	**4700**	1000	20	B8F0668	06/26/2018	06/28/18 15:38	D1
Nickel	**7700**	1000	20	B8F0668	06/26/2018	06/28/18 15:38	D1
Vanadium	**49000**	2000	20	B8F0668	06/26/2018	06/28/18 15:38	D1
Zinc	**43000**	5000	20	B8F0668	06/26/2018	06/28/18 15:38	D1

Client Sample ID TP-4-6-8

Lab ID: 1802258-53

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**3000**	1000	20	B8F0668	06/26/2018	06/28/18 15:40	D1
Barium	**38000**	1000	20	B8F0668	06/26/2018	06/28/18 15:40	D1
Chromium	**19000**	2000	20	B8F0668	06/26/2018	06/28/18 15:40	D1
Cobalt	**5400**	1000	20	B8F0668	06/26/2018	06/28/18 15:40	D1
Copper	**12000**	1000	20	B8F0668	06/26/2018	06/28/18 15:40	D1
Lead	**4100**	1000	20	B8F0668	06/26/2018	06/28/18 15:40	D1
Nickel	**7700**	1000	20	B8F0668	06/26/2018	06/28/18 15:40	D1
Vanadium	**42000**	2000	20	B8F0668	06/26/2018	06/28/18 15:40	D1
Zinc	**37000**	5000	20	B8F0668	06/26/2018	06/28/18 15:40	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

DETECTION SUMMARY

Client Sample ID TP-9-0-0.25

Lab ID: 1802258-54

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Barium	**10000**	1000	20	B8F0668	06/26/2018	06/28/18 15:42	D1
Cobalt	**1100**	1000	20	B8F0668	06/26/2018	06/28/18 15:42	D1
Copper	**4100**	1000	20	B8F0668	06/26/2018	06/28/18 15:42	D1
Lead	**9500**	1000	20	B8F0668	06/26/2018	06/28/18 15:42	D1
Nickel	**4000**	1000	20	B8F0668	06/26/2018	06/28/18 15:42	D1
Vanadium	**7500**	2000	20	B8F0668	06/26/2018	06/28/18 15:42	D1
Zinc	**14000**	5000	20	B8F0668	06/26/2018	06/28/18 15:42	D1

Client Sample ID TP-9-0.25-2.5

Lab ID: 1802258-55

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2000**	1000	20	B8F0668	06/26/2018	06/28/18 15:44	D1
Barium	**54000**	1000	20	B8F0668	06/26/2018	06/28/18 15:44	D1
Chromium	**7600**	2000	20	B8F0668	06/26/2018	06/28/18 15:44	D1
Cobalt	**3600**	1000	20	B8F0668	06/26/2018	06/28/18 15:44	D1
Copper	**6700**	1000	20	B8F0668	06/26/2018	06/28/18 15:44	D1
Lead	**2800**	1000	20	B8F0668	06/26/2018	06/28/18 15:44	D1
Nickel	**3100**	1000	20	B8F0668	06/26/2018	06/28/18 15:44	D1
Vanadium	**37000**	2000	20	B8F0668	06/26/2018	06/28/18 15:44	D1
Zinc	**19000**	5000	20	B8F0668	06/26/2018	06/28/18 15:44	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

DETECTION SUMMARY

Client Sample ID TP-9-2.5-7

Lab ID: 1802258-56

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**3700**	1000	20	B8F0666	06/26/2018	06/28/18 13:36	D1
Barium	**100000**	1000	20	B8F0666	06/26/2018	06/28/18 13:36	D1
Chromium	**9900**	2000	20	B8F0666	06/26/2018	06/28/18 13:36	D1
Cobalt	**4800**	1000	20	B8F0666	06/26/2018	06/28/18 13:36	D1
Copper	**9200**	1000	20	B8F0666	06/26/2018	06/28/18 13:36	D1
Lead	**3300**	1000	20	B8F0666	06/26/2018	06/28/18 13:36	D1
Nickel	**4800**	1000	20	B8F0666	06/26/2018	06/28/18 13:36	D1
Vanadium	**39000**	2000	20	B8F0666	06/26/2018	06/28/18 13:36	D1
Zinc	**29000**	5000	20	B8F0666	06/26/2018	06/28/18 13:36	D1

Client Sample ID TP-9-7-9

Lab ID: 1802258-57

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**3900**	1000	20	B8F0666	06/26/2018	06/28/18 13:38	D1
Barium	**50000**	1000	20	B8F0666	06/26/2018	06/28/18 13:38	D1
Chromium	**19000**	2000	20	B8F0666	06/26/2018	06/28/18 13:38	D1
Cobalt	**8000**	1000	20	B8F0666	06/26/2018	06/28/18 13:38	D1
Copper	**14000**	1000	20	B8F0666	06/26/2018	06/28/18 13:38	D1
Lead	**5000**	1000	20	B8F0666	06/26/2018	06/28/18 13:38	D1
Nickel	**8800**	1000	20	B8F0666	06/26/2018	06/28/18 13:38	D1
Vanadium	**48000**	2000	20	B8F0666	06/26/2018	06/28/18 13:38	D1
Zinc	**42000**	5000	20	B8F0666	06/26/2018	06/28/18 13:38	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

DETECTION SUMMARY

Client Sample ID TP-21-0-5

Lab ID: 1802258-59

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1400**	1000	20	B8F0666	06/26/2018	06/28/18 13:43	D1
Barium	**40000**	1000	20	B8F0666	06/26/2018	06/28/18 13:43	D1
Chromium	**5000**	2000	20	B8F0666	06/26/2018	06/28/18 13:43	D1
Cobalt	**2200**	1000	20	B8F0666	06/26/2018	06/28/18 13:43	D1
Copper	**3700**	1000	20	B8F0666	06/26/2018	06/28/18 13:43	D1
Lead	**2200**	1000	20	B8F0666	06/26/2018	06/28/18 13:43	D1
Nickel	**2000**	1000	20	B8F0666	06/26/2018	06/28/18 13:43	D1
Vanadium	**28000**	2000	20	B8F0666	06/26/2018	06/28/18 13:43	D1
Zinc	**14000**	5000	20	B8F0666	06/26/2018	06/28/18 13:43	D1

Client Sample ID TP-21-5-9

Lab ID: 1802258-60

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2700**	1000	20	B8F0666	06/26/2018	06/28/18 13:45	D1
Barium	**98000**	1000	20	B8F0666	06/26/2018	06/28/18 13:45	D1
Chromium	**10000**	2000	20	B8F0666	06/26/2018	06/28/18 13:45	D1
Cobalt	**6900**	1000	20	B8F0666	06/26/2018	06/28/18 13:45	D1
Copper	**12000**	1000	20	B8F0666	06/26/2018	06/28/18 13:45	D1
Lead	**4300**	1000	20	B8F0666	06/26/2018	06/28/18 13:45	D1
Nickel	**6200**	1000	20	B8F0666	06/26/2018	06/28/18 13:45	D1
Vanadium	**41000**	2000	20	B8F0666	06/26/2018	06/28/18 13:45	D1
Zinc	**37000**	5000	20	B8F0666	06/26/2018	06/28/18 13:45	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

DETECTION SUMMARY

Client Sample ID TP-23-0-0.5

Lab ID: 1802258-61

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2900**	1000	20	B8F0666	06/26/2018	06/28/18 13:47	D1
Barium	**45000**	1000	20	B8F0666	06/26/2018	06/28/18 13:47	D1
Chromium	**7700**	2000	20	B8F0666	06/26/2018	06/28/18 13:47	D1
Cobalt	**4300**	1000	20	B8F0666	06/26/2018	06/28/18 13:47	D1
Copper	**8700**	1000	20	B8F0666	06/26/2018	06/28/18 13:47	D1
Lead	**15000**	1000	20	B8F0666	06/26/2018	06/28/18 13:47	D1
Molybdenum	**1200**	1000	20	B8F0666	06/26/2018	06/28/18 13:47	D1
Nickel	**7200**	1000	20	B8F0666	06/26/2018	06/28/18 13:47	D1
Vanadium	**29000**	2000	20	B8F0666	06/26/2018	06/28/18 13:47	D1
Zinc	**35000**	5000	20	B8F0666	06/26/2018	06/28/18 13:47	D1

Client Sample ID TP-23-0.5-5

Lab ID: 1802258-62

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1300**	1000	20	B8F0666	06/26/2018	06/28/18 13:49	D1
Barium	**34000**	1000	20	B8F0666	06/26/2018	06/28/18 13:49	D1
Chromium	**5600**	2000	20	B8F0666	06/26/2018	06/28/18 13:49	D1
Cobalt	**2400**	1000	20	B8F0666	06/26/2018	06/28/18 13:49	D1
Copper	**4300**	1000	20	B8F0666	06/26/2018	06/28/18 13:49	D1
Lead	**3100**	1000	20	B8F0666	06/26/2018	06/28/18 13:49	D1
Nickel	**2500**	1000	20	B8F0666	06/26/2018	06/28/18 13:49	D1
Vanadium	**26000**	2000	20	B8F0666	06/26/2018	06/28/18 13:49	D1
Zinc	**13000**	5000	20	B8F0666	06/26/2018	06/28/18 13:49	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

DETECTION SUMMARY

Client Sample ID TP-23-5-8

Lab ID: 1802258-63

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2700**	1000	20	B8F0666	06/26/2018	06/28/18 13:51	D1
Barium	**91000**	1000	20	B8F0666	06/26/2018	06/28/18 13:51	D1
Chromium	**9300**	2000	20	B8F0666	06/26/2018	06/28/18 13:51	D1
Cobalt	**5600**	1000	20	B8F0666	06/26/2018	06/28/18 13:51	D1
Copper	**44000**	1000	20	B8F0666	06/26/2018	06/28/18 13:51	D1
Lead	**4100**	1000	20	B8F0666	06/26/2018	06/28/18 13:51	D1
Nickel	**4800**	1000	20	B8F0666	06/26/2018	06/28/18 13:51	D1
Vanadium	**41000**	2000	20	B8F0666	06/26/2018	06/28/18 13:51	D1
Zinc	**48000**	5000	20	B8F0666	06/26/2018	06/28/18 13:51	D1

Client Sample ID TP-23-8-10

Lab ID: 1802258-64

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**3500**	1000	20	B8F0666	06/26/2018	06/28/18 13:53	D1
Barium	**72000**	1000	20	B8F0666	06/26/2018	06/28/18 13:53	D1
Chromium	**13000**	2000	20	B8F0666	06/26/2018	06/28/18 13:53	D1
Cobalt	**6700**	1000	20	B8F0666	06/26/2018	06/28/18 13:53	D1
Copper	**12000**	1000	20	B8F0666	06/26/2018	06/28/18 13:53	D1
Lead	**4500**	1000	20	B8F0666	06/26/2018	06/28/18 13:53	D1
Nickel	**6600**	1000	20	B8F0666	06/26/2018	06/28/18 13:53	D1
Vanadium	**42000**	2000	20	B8F0666	06/26/2018	06/28/18 13:53	D1
Zinc	**35000**	5000	20	B8F0666	06/26/2018	06/28/18 13:53	D1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-5-0-0.5
Lab ID: 1802258-01

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	**1100**	1000	20	B8F0667	06/26/2018	06/28/18 13:58	D1
Arsenic	**2300**	1000	20	B8F0667	06/26/2018	06/28/18 13:58	D1
Barium	**150000**	1000	20	B8F0667	06/26/2018	06/28/18 13:58	D1
Beryllium	ND	1000	20	B8F0667	06/26/2018	06/28/18 13:58	D1, U
Cadmium	ND	1000	20	B8F0667	06/26/2018	06/28/18 13:58	D1, U
Chromium	**51000**	2000	20	B8F0667	06/26/2018	06/28/18 13:58	D1
Cobalt	**5200**	1000	20	B8F0667	06/26/2018	06/28/18 13:58	D1
Copper	**98000**	1000	20	B8F0667	06/26/2018	06/28/18 13:58	D1
Lead	**250000**	2500	50	B8F0667	06/26/2018	06/28/18 16:01	D1, D6
Molybdenum	**8700**	1000	20	B8F0667	06/26/2018	06/28/18 13:58	D1
Nickel	**23000**	1000	20	B8F0667	06/26/2018	06/28/18 13:58	D1
Selenium	ND	1000	20	B8F0667	06/26/2018	06/28/18 13:58	D1, U
Silver	ND	1000	20	B8F0667	06/26/2018	06/28/18 13:58	D1, U
Thallium	ND	1000	20	B8F0667	06/26/2018	06/28/18 13:58	D1, U
Vanadium	**29000**	2000	20	B8F0667	06/26/2018	06/28/18 13:58	D1
Zinc	**350000**	5000	20	B8F0667	06/26/2018	06/28/18 13:58	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0673	06/26/2018	06/27/18 14:16	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0528	06/21/2018	06/21/18 19:30	U
C7	ND	1.0	1	B8F0528	06/21/2018	06/21/18 19:30	U
C8	ND	1.0	1	B8F0528	06/21/2018	06/21/18 19:30	U
C9	ND	1.0	1	B8F0528	06/21/2018	06/21/18 19:30	U
C10	ND	1.0	1	B8F0528	06/21/2018	06/21/18 19:30	U
C11	ND	1.0	1	B8F0528	06/21/2018	06/21/18 19:30	U
C12	ND	1.0	1	B8F0528	06/21/2018	06/21/18 19:30	U
Surrogate: 4-Bromofluorobenzene	*75.9 %*	*57 - 144*		B8F0528	06/21/2018	*06/21/18 19:30*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-5-0-0.5
Lab ID: 1802258-01

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	**36**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C14	**48**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C15	**34**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C16	**26**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C17	**33**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C18	**36**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C19	**49**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C20	**64**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C21	**78**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C22	**110**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C23	**110**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C24	**100**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C25	**110**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C26	**130**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C27	**150**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C28	**130**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C29	**150**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C30	**130**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C31	**130**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C32	**140**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C33	**180**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C34	**110**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C35	**140**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C36	**160**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C37	**140**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C38	**180**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C39	**110**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
C40	**110**	10	1	B8F0691	06/26/2018	06/27/18 15:39	
Surrogate: p-Terphenyl	*141 %*	*58 - 172*		B8F0691	06/26/2018	*06/27/18 15:39*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-5-0-0.5

Lab ID: 1802258-01

SPLP Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:38	U
C14	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:38	U
C15	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:38	U
C16	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:38	U
C17	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:38	U
C18	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:38	U
C19	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:38	U
C20	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:38	U
C21	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:38	U
C22	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:38	U
C23	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:38	U
C24	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:38	U
C25	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:38	U
C26	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:38	U
C27	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:38	U
C28	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:38	U
C29	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:38	U
C30	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:38	U
C31	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:38	U
C32	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:38	U
C33	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:38	U
C34	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:38	U
C35	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:38	U
C36	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:38	U
C40	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:38	U
Surrogate: p-Terphenyl	*93.7 %*	*32 - 169*		B8G0211	07/10/2018	*07/10/18 23:38*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-5-0-0.5
Lab ID: 1802258-01

Organochlorine Pesticides by EPA 8081 **Analyst: CO**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD [2C]	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:02	U
4,4´-DDE [2C]	**2.5**	2.0	1	B8F0682	06/26/2018	06/28/18 16:02	
4,4´-DDT	**4.7**	2.0	1	B8F0682	06/26/2018	06/28/18 16:02	
Aldrin	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:02	U
alpha-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:02	U
alpha-Chlordane [2C]	**2.7**	1.0	1	B8F0682	06/26/2018	06/28/18 16:02	
beta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:02	U
Chlordane	**26**	8.5	1	B8F0682	06/26/2018	06/28/18 16:02	
delta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:02	U
Dieldrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:02	U
Endosulfan I	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:02	U
Endosulfan II	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:02	U
Endosulfan sulfate	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:02	U
Endrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:02	U
Endrin aldehyde	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:02	U
Endrin ketone	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:02	U
gamma-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:02	U
gamma-Chlordane [2C]	**4.3**	1.0	1	B8F0682	06/26/2018	06/28/18 16:02	
Heptachlor	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:02	U
Heptachlor epoxide	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:02	U
Methoxychlor	ND	5.0	1	B8F0682	06/26/2018	06/28/18 16:02	U
Toxaphene	ND	50	1	B8F0682	06/26/2018	06/28/18 16:02	U
Surrogate: Decachlorobiphenyl	*92.4 %*	*15 - 100*		B8F0682	06/26/2018	*06/28/18 16:02*	
Surrogate: Tetrachloro-m-xylene	*44.3 %*	*16 - 100*		B8F0682	06/26/2018	*06/28/18 16:02*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-5-0-0.5
Lab ID: 1802258-01

SPLP Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	0.05	1	B8G0214	07/10/2018	07/11/18 10:10	U
4,4´-DDE	ND	0.05	1	B8G0214	07/10/2018	07/11/18 10:10	U
4,4´-DDT	ND	0.05	1	B8G0214	07/10/2018	07/11/18 10:10	U
alpha-Chlordane	ND	0.02	1	B8G0214	07/10/2018	07/11/18 10:10	U
Chlordane	ND	0.25	1	B8G0214	07/10/2018	07/11/18 10:10	U
gamma-Chlordane	ND	0.02	1	B8G0214	07/10/2018	07/11/18 10:10	U
Surrogate: Decachlorobiphenyl	*69.4 %*	*1 - 110*		B8G0214	07/10/2018	*07/11/18 10:10*	
Surrogate: Tetrachloro-m-xylene	*77.4 %*	*19 - 117*		B8G0214	07/10/2018	*07/11/18 10:10*	

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0682	06/26/2018	06/26/18 14:57	U
Aroclor 1221	ND	16	1	B8F0682	06/26/2018	06/26/18 14:57	U
Aroclor 1232	ND	16	1	B8F0682	06/26/2018	06/26/18 14:57	U
Aroclor 1242	ND	16	1	B8F0682	06/26/2018	06/26/18 14:57	U
Aroclor 1248	ND	16	1	B8F0682	06/26/2018	06/26/18 14:57	U
Aroclor 1254	ND	16	1	B8F0682	06/26/2018	06/26/18 14:57	U
Aroclor 1260	ND	16	1	B8F0682	06/26/2018	06/26/18 14:57	U
Aroclor 1262	ND	16	1	B8F0682	06/26/2018	06/26/18 14:57	U
Aroclor 1268	ND	16	1	B8F0682	06/26/2018	06/26/18 14:57	U
Surrogate: Decachlorobiphenyl	*39.1 %*	*14 - 109*		B8F0682	06/26/2018	*06/26/18 14:57*	
Surrogate: Tetrachloro-m-xylene	*54.3 %*	*18 - 114*		B8F0682	06/26/2018	*06/26/18 14:57*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
1,1-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
1,1-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
1,1-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-5-0-0.5

Lab ID: 1802258-01

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0572	06/22/2018	06/22/18 10:41	U
1,2-Dibromoethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
1,2-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
1,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
1,3-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
2,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
2-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
4-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
4-Isopropyltoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Benzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Bromobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Bromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Bromodichloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Bromoform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Bromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Carbon disulfide	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Carbon tetrachloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Chlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Chloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Chloroform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Chloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
cis-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Di-isopropyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Dibromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Dibromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Dichlorodifluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Ethyl Acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 10:41	U
Ethyl Ether	ND	50	1	B8F0572	06/22/2018	06/22/18 10:41	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-5-0-0.5

Lab ID: 1802258-01

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Ethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Freon-113	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Hexachlorobutadiene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Isopropylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
m,p-Xylene	ND	10	1	B8F0572	06/22/2018	06/22/18 10:41	U
Methylene chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
MTBE	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
n-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
n-Propylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Naphthalene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
o-Xylene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
sec-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Styrene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
tert-Amyl methyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
tert-Butanol	ND	100	1	B8F0572	06/22/2018	06/22/18 10:41	U
tert-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Tetrachloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Toluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Trichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Trichlorofluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Vinyl acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 10:41	U
Vinyl chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:41	U
Surrogate: 1,2-Dichloroethane-d4	*101 %*	*58 - 144*		B8F0572	06/22/2018	*06/22/18 10:41*	
Surrogate: 4-Bromofluorobenzene	*85.7 %*	*60 - 137*		B8F0572	06/22/2018	*06/22/18 10:41*	
Surrogate: Dibromofluoromethane	*102 %*	*70 - 131*		B8F0572	06/22/2018	*06/22/18 10:41*	
Surrogate: Toluene-d8	*93.2 %*	*79 - 131*		B8F0572	06/22/2018	*06/22/18 10:41*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-5-2.0
Lab ID: 1802258-02

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:09	U, D1
Arsenic	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:09	D1, U
Barium	**72000**	1000	20	B8F0667	06/26/2018	06/28/18 14:09	D1
Beryllium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:09	D1, U
Cadmium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:09	D1, U
Chromium	**12000**	2000	20	B8F0667	06/26/2018	06/28/18 14:09	D1
Cobalt	**5700**	1000	20	B8F0667	06/26/2018	06/28/18 14:09	D1
Copper	**23000**	1000	20	B8F0667	06/26/2018	06/28/18 14:09	D1
Lead	**26000**	1000	20	B8F0667	06/26/2018	06/28/18 14:09	D1
Molybdenum	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:09	D1, U
Nickel	**10000**	1000	20	B8F0667	06/26/2018	06/28/18 14:09	D1
Selenium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:09	D1, U
Silver	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:09	D1, U
Thallium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:09	D1, U
Vanadium	**32000**	2000	20	B8F0667	06/26/2018	06/28/18 14:09	D1
Zinc	**96000**	5000	20	B8F0667	06/26/2018	06/28/18 14:09	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0673	06/26/2018	06/27/18 14:24	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0528	06/21/2018	06/21/18 19:48	U
C7	ND	1.0	1	B8F0528	06/21/2018	06/21/18 19:48	U
C8	ND	1.0	1	B8F0528	06/21/2018	06/21/18 19:48	U
C9	ND	1.0	1	B8F0528	06/21/2018	06/21/18 19:48	U
C10	ND	1.0	1	B8F0528	06/21/2018	06/21/18 19:48	U
C11	ND	1.0	1	B8F0528	06/21/2018	06/21/18 19:48	U
C12	ND	1.0	1	B8F0528	06/21/2018	06/21/18 19:48	U
Surrogate: 4-Bromofluorobenzene	*91.8 %*	*57 - 144*		B8F0528	06/21/2018	*06/21/18 19:48*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-5-2.0

Lab ID: 1802258-02

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C14	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C15	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C16	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C17	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C18	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C19	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C20	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C21	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C22	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C23	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C24	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C25	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C26	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C27	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C28	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C29	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C30	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C31	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C32	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C33	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C34	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C35	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C36	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C37	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C38	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C39	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
C40	ND	10	1	B8F0691	06/26/2018	06/27/18 10:53	U
Surrogate: p-Terphenyl	*102 %*	*58 - 172*		B8F0691	06/26/2018	*06/27/18 10:53*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-5-2.0
Lab ID: 1802258-02

Organochlorine Pesticides by EPA 8081 **Analyst: CO**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:13	U
4,4´-DDE	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:13	U
4,4´-DDT	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:13	U
Aldrin	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:13	U
alpha-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:13	U
alpha-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:13	U
beta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:13	U
Chlordane	ND	8.5	1	B8F0682	06/26/2018	06/28/18 16:13	U
delta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:13	U
Dieldrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:13	U
Endosulfan I	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:13	U
Endosulfan II	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:13	U
Endosulfan sulfate	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:13	U
Endrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:13	U
Endrin aldehyde	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:13	U
Endrin ketone	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:13	U
gamma-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:13	U
gamma-Chlordane [2C]	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:13	U
Heptachlor	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:13	U
Heptachlor epoxide	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:13	U
Methoxychlor	ND	5.0	1	B8F0682	06/26/2018	06/28/18 16:13	U
Toxaphene	ND	50	1	B8F0682	06/26/2018	06/28/18 16:13	U
Surrogate: Decachlorobiphenyl	*91.3 %*	*15 - 100*		B8F0682	06/26/2018	*06/28/18 16:13*	
Surrogate: Tetrachloro-m-xylene	*68.5 %*	*16 - 100*		B8F0682	06/26/2018	*06/28/18 16:13*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-5-2.0
Lab ID: 1802258-02

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0682	06/26/2018	06/26/18 15:16	U
Aroclor 1221	ND	16	1	B8F0682	06/26/2018	06/26/18 15:16	U
Aroclor 1232	ND	16	1	B8F0682	06/26/2018	06/26/18 15:16	U
Aroclor 1242	ND	16	1	B8F0682	06/26/2018	06/26/18 15:16	U
Aroclor 1248	ND	16	1	B8F0682	06/26/2018	06/26/18 15:16	U
Aroclor 1254	ND	16	1	B8F0682	06/26/2018	06/26/18 15:16	U
Aroclor 1260	ND	16	1	B8F0682	06/26/2018	06/26/18 15:16	U
Aroclor 1262	ND	16	1	B8F0682	06/26/2018	06/26/18 15:16	U
Aroclor 1268	ND	16	1	B8F0682	06/26/2018	06/26/18 15:16	U
Surrogate: Decachlorobiphenyl	*45.0 %*	*14 - 109*		B8F0682	06/26/2018	*06/26/18 15:16*	
Surrogate: Tetrachloro-m-xylene	*67.4 %*	*18 - 114*		B8F0682	06/26/2018	*06/26/18 15:16*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
1,1-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
1,1-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
1,1-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0572	06/22/2018	06/22/18 10:59	U
1,2-Dibromoethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
1,2-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
1,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
1,3-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
2,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-5-2.0

Lab ID: 1802258-02

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
4-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
4-Isopropyltoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Benzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Bromobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Bromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Bromodichloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Bromoform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Bromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Carbon disulfide	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Carbon tetrachloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Chlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Chloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Chloroform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Chloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
cis-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Di-isopropyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Dibromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Dibromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Dichlorodifluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Ethyl Acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 10:59	U
Ethyl Ether	ND	50	1	B8F0572	06/22/2018	06/22/18 10:59	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Ethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Freon-113	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Hexachlorobutadiene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Isopropylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
m,p-Xylene	ND	10	1	B8F0572	06/22/2018	06/22/18 10:59	U
Methylene chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
MTBE	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
n-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
n-Propylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Naphthalene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
o-Xylene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
sec-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Styrene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-5-2.0
Lab ID: 1802258-02

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
tert-Butanol	ND	100	1	B8F0572	06/22/2018	06/22/18 10:59	U
tert-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Tetrachloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Toluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Trichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Trichlorofluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Vinyl acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 10:59	U
Vinyl chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 10:59	U
Surrogate: 1,2-Dichloroethane-d4	*92.3 %*	*58 - 144*		B8F0572	06/22/2018	*06/22/18 10:59*	
Surrogate: 4-Bromofluorobenzene	*90.7 %*	*60 - 137*		B8F0572	06/22/2018	*06/22/18 10:59*	
Surrogate: Dibromofluoromethane	*97.2 %*	*70 - 131*		B8F0572	06/22/2018	*06/22/18 10:59*	
Surrogate: Toluene-d8	*94.4 %*	*79 - 131*		B8F0572	06/22/2018	*06/22/18 10:59*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-6-0-0.5
Lab ID: 1802258-05

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:11	U, D1
Arsenic	**2100**	1000	20	B8F0667	06/26/2018	06/28/18 14:11	D1
Barium	**72000**	1000	20	B8F0667	06/26/2018	06/28/18 14:11	D1
Beryllium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:11	D1, U
Cadmium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:11	D1, U
Chromium	**13000**	2000	20	B8F0667	06/26/2018	06/28/18 14:11	D1
Cobalt	**4500**	1000	20	B8F0667	06/26/2018	06/28/18 14:11	D1
Copper	**17000**	1000	20	B8F0667	06/26/2018	06/28/18 14:11	D1
Lead	**93000**	1000	20	B8F0667	06/26/2018	06/28/18 14:11	D1
Molybdenum	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:11	D1, U
Nickel	**8700**	1000	20	B8F0667	06/26/2018	06/28/18 14:11	D1
Selenium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:11	D1, U
Silver	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:11	D1, U
Thallium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:11	D1, U
Vanadium	**41000**	2000	20	B8F0667	06/26/2018	06/28/18 14:11	D1
Zinc	**65000**	5000	20	B8F0667	06/26/2018	06/28/18 14:11	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0673	06/26/2018	06/27/18 14:26	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0528	06/21/2018	06/21/18 20:07	U
C7	ND	1.0	1	B8F0528	06/21/2018	06/21/18 20:07	U
C8	ND	1.0	1	B8F0528	06/21/2018	06/21/18 20:07	U
C9	ND	1.0	1	B8F0528	06/21/2018	06/21/18 20:07	U
C10	ND	1.0	1	B8F0528	06/21/2018	06/21/18 20:07	U
C11	ND	1.0	1	B8F0528	06/21/2018	06/21/18 20:07	U
C12	ND	1.0	1	B8F0528	06/21/2018	06/21/18 20:07	U
Surrogate: 4-Bromofluorobenzene	*85.9 %*	*57 - 144*		B8F0528	06/21/2018	*06/21/18 20:07*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-6-0-0.5

Lab ID: 1802258-05

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C14	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C15	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C16	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C17	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C18	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C19	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C20	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C21	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C22	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C23	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C24	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C25	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C26	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C27	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C28	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C29	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C30	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C31	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C32	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C33	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C34	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C35	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C36	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C37	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C38	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C39	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
C40	ND	10	1	B8F0691	06/26/2018	06/27/18 14:29	U
Surrogate: p-Terphenyl	*112 %*	*58 - 172*		B8F0691	06/26/2018	*06/27/18 14:29*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-6-0-0.5
Lab ID: 1802258-05

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
1,1-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
1,1-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
1,1-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0572	06/22/2018	06/22/18 11:18	U
1,2-Dibromoethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
1,2-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
1,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
1,3-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
2,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
2-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
4-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
4-Isopropyltoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Benzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Bromobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Bromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Bromodichloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Bromoform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Bromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Carbon disulfide	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Carbon tetrachloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Chlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Chloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Chloroform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Chloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-6-0-0.5
Lab ID: 1802258-05

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
cis-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Di-isopropyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Dibromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Dibromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Dichlorodifluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Ethyl Acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 11:18	U
Ethyl Ether	ND	50	1	B8F0572	06/22/2018	06/22/18 11:18	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Ethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Freon-113	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Hexachlorobutadiene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Isopropylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
m,p-Xylene	ND	10	1	B8F0572	06/22/2018	06/22/18 11:18	U
Methylene chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
MTBE	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
n-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
n-Propylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Naphthalene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
o-Xylene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
sec-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Styrene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
tert-Amyl methyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
tert-Butanol	ND	100	1	B8F0572	06/22/2018	06/22/18 11:18	U
tert-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Tetrachloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Toluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Trichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Trichlorofluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Vinyl acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 11:18	U
Vinyl chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:18	U
Surrogate: 1,2-Dichloroethane-d4	*94.3 %*	*58 - 144*		B8F0572	06/22/2018	*06/22/18 11:18*	
Surrogate: 4-Bromofluorobenzene	*86.4 %*	*60 - 137*		B8F0572	06/22/2018	*06/22/18 11:18*	
Surrogate: Dibromofluoromethane	*99.0 %*	*70 - 131*		B8F0572	06/22/2018	*06/22/18 11:18*	
Surrogate: Toluene-d8	*92.4 %*	*79 - 131*		B8F0572	06/22/2018	*06/22/18 11:18*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-6-0.0.5-Dup
Lab ID: 1802258-06

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:13	D1, U
Arsenic	**2000**	1000	20	B8F0667	06/26/2018	06/28/18 14:13	D1
Barium	**86000**	1000	20	B8F0667	06/26/2018	06/28/18 14:13	D1
Beryllium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:13	D1, U
Cadmium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:13	D1, U
Chromium	**15000**	2000	20	B8F0667	06/26/2018	06/28/18 14:13	D1
Cobalt	**13000**	1000	20	B8F0667	06/26/2018	06/28/18 14:13	D1
Copper	**14000**	1000	20	B8F0667	06/26/2018	06/28/18 14:13	D1
Lead	**5000**	1000	20	B8F0667	06/26/2018	06/28/18 14:13	D1
Molybdenum	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:13	D1, U
Nickel	**11000**	1000	20	B8F0667	06/26/2018	06/28/18 14:13	D1
Selenium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:13	D1, U
Silver	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:13	D1, U
Thallium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:13	D1, U
Vanadium	**51000**	2000	20	B8F0667	06/26/2018	06/28/18 14:13	D1
Zinc	**32000**	5000	20	B8F0667	06/26/2018	06/28/18 14:13	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0673	06/26/2018	06/27/18 14:28	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0528	06/21/2018	06/21/18 20:26	U
C7	ND	1.0	1	B8F0528	06/21/2018	06/21/18 20:26	U
C8	ND	1.0	1	B8F0528	06/21/2018	06/21/18 20:26	U
C9	ND	1.0	1	B8F0528	06/21/2018	06/21/18 20:26	U
C10	ND	1.0	1	B8F0528	06/21/2018	06/21/18 20:26	U
C11	ND	1.0	1	B8F0528	06/21/2018	06/21/18 20:26	U
C12	ND	1.0	1	B8F0528	06/21/2018	06/21/18 20:26	U
Surrogate: 4-Bromofluorobenzene	*88.6 %*	*57 - 144*		B8F0528	06/21/2018	*06/21/18 20:26*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-6-0.0.5-Dup
Lab ID: 1802258-06

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C14	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C15	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C16	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C17	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C18	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C19	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C20	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C21	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C22	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C23	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C24	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C25	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C26	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C27	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C28	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C29	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C30	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C31	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C32	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C33	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C34	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C35	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C36	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C37	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C38	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C39	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
C40	ND	10	1	B8F0691	06/26/2018	06/27/18 14:47	U
Surrogate: p-Terphenyl	*110 %*	*58 - 172*		B8F0691	06/26/2018	*06/27/18 14:47*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-6-0.0.5-Dup
Lab ID: 1802258-06

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
1,1-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
1,1-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
1,1-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0572	06/22/2018	06/22/18 11:37	U
1,2-Dibromoethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
1,2-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
1,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
1,3-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
2,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
2-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
4-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
4-Isopropyltoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Benzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Bromobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Bromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Bromodichloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Bromoform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Bromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Carbon disulfide	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Carbon tetrachloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Chlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Chloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Chloroform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Chloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-6-0.0.5-Dup
Lab ID: 1802258-06

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
cis-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Di-isopropyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Dibromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Dibromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Dichlorodifluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Ethyl Acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 11:37	U
Ethyl Ether	ND	50	1	B8F0572	06/22/2018	06/22/18 11:37	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Ethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Freon-113	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Hexachlorobutadiene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Isopropylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
m,p-Xylene	ND	10	1	B8F0572	06/22/2018	06/22/18 11:37	U
Methylene chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
MTBE	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
n-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
n-Propylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Naphthalene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
o-Xylene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
sec-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Styrene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
tert-Amyl methyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
tert-Butanol	ND	100	1	B8F0572	06/22/2018	06/22/18 11:37	U
tert-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Tetrachloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Toluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Trichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Trichlorofluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Vinyl acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 11:37	U
Vinyl chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:37	U
Surrogate: 1,2-Dichloroethane-d4	*99.4 %*	*58 - 144*		B8F0572	06/22/2018	*06/22/18 11:37*	
Surrogate: 4-Bromofluorobenzene	*87.0 %*	*60 - 137*		B8F0572	06/22/2018	*06/22/18 11:37*	
Surrogate: Dibromofluoromethane	*106 %*	*70 - 131*		B8F0572	06/22/2018	*06/22/18 11:37*	
Surrogate: Toluene-d8	*95.1 %*	*79 - 131*		B8F0572	06/22/2018	*06/22/18 11:37*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-6-2.0
Lab ID: 1802258-07

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:15	U, D1
Arsenic	**2500**	1000	20	B8F0667	06/26/2018	06/28/18 14:15	D1
Barium	**72000**	1000	20	B8F0667	06/26/2018	06/28/18 14:15	D1
Beryllium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:15	D1, U
Cadmium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:15	D1, U
Chromium	**13000**	2000	20	B8F0667	06/26/2018	06/28/18 14:15	D1
Cobalt	**6400**	1000	20	B8F0667	06/26/2018	06/28/18 14:15	D1
Copper	**13000**	1000	20	B8F0667	06/26/2018	06/28/18 14:15	D1
Lead	**7400**	1000	20	B8F0667	06/26/2018	06/28/18 14:15	D1
Molybdenum	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:15	D1, U
Nickel	**8100**	1000	20	B8F0667	06/26/2018	06/28/18 14:15	D1
Selenium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:15	D1, U
Silver	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:15	D1, U
Thallium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:15	D1, U
Vanadium	**37000**	2000	20	B8F0667	06/26/2018	06/28/18 14:15	D1
Zinc	**35000**	5000	20	B8F0667	06/26/2018	06/28/18 14:15	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0673	06/26/2018	06/27/18 14:30	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0528	06/21/2018	06/21/18 20:44	U
C7	ND	1.0	1	B8F0528	06/21/2018	06/21/18 20:44	U
C8	ND	1.0	1	B8F0528	06/21/2018	06/21/18 20:44	U
C9	ND	1.0	1	B8F0528	06/21/2018	06/21/18 20:44	U
C10	ND	1.0	1	B8F0528	06/21/2018	06/21/18 20:44	U
C11	ND	1.0	1	B8F0528	06/21/2018	06/21/18 20:44	U
C12	ND	1.0	1	B8F0528	06/21/2018	06/21/18 20:44	U
Surrogate: 4-Bromofluorobenzene	*100 %*	*57 - 144*		B8F0528	06/21/2018	*06/21/18 20:44*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-6-2.0

Lab ID: 1802258-07

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C14	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C15	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C16	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C17	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C18	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C19	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C20	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C21	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C22	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C23	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C24	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C25	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C26	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C27	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C28	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C29	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C30	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C31	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C32	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C33	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C34	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C35	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C36	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C37	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C38	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C39	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
C40	ND	10	1	B8F0691	06/26/2018	06/27/18 08:12	U
Surrogate: p-Terphenyl	*131 %*	*58 - 172*		B8F0691	06/26/2018	*06/27/18 08:12*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-6-2.0

Lab ID: 1802258-07

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
1,1-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
1,1-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
1,1-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0572	06/22/2018	06/22/18 11:56	U
1,2-Dibromoethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
1,2-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
1,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
1,3-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
2,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
2-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
4-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
4-Isopropyltoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Benzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Bromobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Bromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Bromodichloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Bromoform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Bromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Carbon disulfide	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Carbon tetrachloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Chlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Chloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Chloroform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Chloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-6-2.0
Lab ID: 1802258-07

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
cis-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Di-isopropyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Dibromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Dibromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Dichlorodifluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Ethyl Acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 11:56	U
Ethyl Ether	ND	50	1	B8F0572	06/22/2018	06/22/18 11:56	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Ethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Freon-113	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Hexachlorobutadiene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Isopropylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
m,p-Xylene	ND	10	1	B8F0572	06/22/2018	06/22/18 11:56	U
Methylene chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
MTBE	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
n-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
n-Propylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Naphthalene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
o-Xylene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
sec-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Styrene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
tert-Amyl methyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
tert-Butanol	ND	100	1	B8F0572	06/22/2018	06/22/18 11:56	U
tert-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Tetrachloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Toluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Trichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Trichlorofluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Vinyl acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 11:56	U
Vinyl chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 11:56	U
Surrogate: 1,2-Dichloroethane-d4	*96.2 %*	*58 - 144*		B8F0572	06/22/2018	*06/22/18 11:56*	
Surrogate: 4-Bromofluorobenzene	*90.5 %*	*60 - 137*		B8F0572	06/22/2018	*06/22/18 11:56*	
Surrogate: Dibromofluoromethane	*103 %*	*70 - 131*		B8F0572	06/22/2018	*06/22/18 11:56*	
Surrogate: Toluene-d8	*96.2 %*	*79 - 131*		B8F0572	06/22/2018	*06/22/18 11:56*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-12-0-0.5
Lab ID: 1802258-10

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:17	U, D1
Arsenic	**5500**	1000	20	B8F0667	06/26/2018	06/28/18 14:17	D1
Barium	**78000**	1000	20	B8F0667	06/26/2018	06/28/18 14:17	D1
Beryllium	ND	2500	50	B8F0667	06/26/2018	06/28/18 16:03	D1, D5, U
Cadmium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:17	D1, U
Chromium	**19000**	2000	20	B8F0667	06/26/2018	06/28/18 14:17	D1
Cobalt	**9000**	1000	20	B8F0667	06/26/2018	06/28/18 14:17	D1
Copper	**19000**	1000	20	B8F0667	06/26/2018	06/28/18 14:17	D1
Lead	**3500**	1000	20	B8F0667	06/26/2018	06/28/18 14:17	D1
Molybdenum	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:17	D1, U
Nickel	**9600**	1000	20	B8F0667	06/26/2018	06/28/18 14:17	D1
Selenium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:17	D1, U
Silver	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:17	D1, U
Thallium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:17	D1, U
Vanadium	**53000**	2000	20	B8F0667	06/26/2018	06/28/18 14:17	D1
Zinc	**41000**	5000	20	B8F0667	06/26/2018	06/28/18 14:17	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0673	06/26/2018	06/27/18 14:35	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:03	U
C7	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:03	U
C8	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:03	U
C9	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:03	U
C10	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:03	U
C11	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:03	U
C12	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:03	U
Surrogate: 4-Bromofluorobenzene	*99.3 %*	*57 - 144*		B8F0528	06/21/2018	*06/21/18 21:03*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-12-0-0.5

Lab ID: 1802258-10

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C14	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C15	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C16	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C17	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C18	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C19	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C20	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C21	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C22	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C23	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C24	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C25	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C26	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C27	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C28	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C29	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C30	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C31	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C32	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C33	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C34	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C35	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C36	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C37	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C38	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C39	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
C40	ND	10	1	B8F0691	06/26/2018	06/27/18 09:21	U
Surrogate: p-Terphenyl	*118 %*	*58 - 172*		B8F0691	06/26/2018	*06/27/18 09:21*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-12-2.0
Lab ID: 1802258-11

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:19	D1, U
Arsenic	**1800**	1000	20	B8F0667	06/26/2018	06/28/18 14:19	D1
Barium	**41000**	1000	20	B8F0667	06/26/2018	06/28/18 14:19	D1
Beryllium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:19	D1, U
Cadmium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:19	D1, U
Chromium	**6200**	2000	20	B8F0667	06/26/2018	06/28/18 14:19	D1
Cobalt	**2900**	1000	20	B8F0667	06/26/2018	06/28/18 14:19	D1
Copper	**7000**	1000	20	B8F0667	06/26/2018	06/28/18 14:19	D1
Lead	**8800**	1000	20	B8F0667	06/26/2018	06/28/18 14:19	D1
Molybdenum	**2500**	1000	20	B8F0667	06/26/2018	06/28/18 14:19	D1
Nickel	**4700**	1000	20	B8F0667	06/26/2018	06/28/18 14:19	D1
Selenium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:19	D1, U
Silver	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:19	D1, U
Thallium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:19	D1, U
Vanadium	**31000**	2000	20	B8F0667	06/26/2018	06/28/18 14:19	D1
Zinc	**20000**	5000	20	B8F0667	06/26/2018	06/28/18 14:19	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0673	06/26/2018	06/27/18 14:37	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:21	U
C7	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:21	U
C8	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:21	U
C9	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:21	U
C10	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:21	U
C11	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:21	U
C12	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:21	U
Surrogate: 4-Bromofluorobenzene	*94.5 %*	*57 - 144*		B8F0528	06/21/2018	*06/21/18 21:21*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-12-2.0

Lab ID: 1802258-11

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C14	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C15	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C16	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C17	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C18	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C19	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C20	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C21	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C22	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C23	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C24	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C25	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C26	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C27	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C28	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C29	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C30	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C31	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C32	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C33	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C34	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C35	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C36	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C37	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C38	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C39	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
C40	ND	10	1	B8F0691	06/26/2018	06/27/18 08:29	U
Surrogate: p-Terphenyl	*113 %*	*58 - 172*		B8F0691	06/26/2018	*06/27/18 08:29*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-13-0-0.5
Lab ID: 1802258-14

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:20	D1, U
Arsenic	**1500**	1000	20	B8F0667	06/26/2018	06/28/18 14:20	D1
Barium	**46000**	1000	20	B8F0667	06/26/2018	06/28/18 14:20	D1
Beryllium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:20	D1, U
Cadmium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:20	D1, U
Chromium	**6100**	2000	20	B8F0667	06/26/2018	06/28/18 14:20	D1
Cobalt	**3200**	1000	20	B8F0667	06/26/2018	06/28/18 14:20	D1
Copper	**7000**	1000	20	B8F0667	06/26/2018	06/28/18 14:20	D1
Lead	**9100**	1000	20	B8F0667	06/26/2018	06/28/18 14:20	D1
Molybdenum	**1700**	1000	20	B8F0667	06/26/2018	06/28/18 14:20	D1
Nickel	**4000**	1000	20	B8F0667	06/26/2018	06/28/18 14:20	D1
Selenium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:20	D1, U
Silver	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:20	D1, U
Thallium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:20	D1, U
Vanadium	**27000**	2000	20	B8F0667	06/26/2018	06/28/18 14:20	D1
Zinc	**20000**	5000	20	B8F0667	06/26/2018	06/28/18 14:20	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0673	06/26/2018	06/27/18 14:39	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-13-0-0.5 Dup
Lab ID: 1802258-15

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:22	D1, U
Arsenic	**1600**	1000	20	B8F0667	06/26/2018	06/28/18 14:22	D1
Barium	**47000**	1000	20	B8F0667	06/26/2018	06/28/18 14:22	D1
Beryllium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:22	D1, U
Cadmium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:22	D1, U
Chromium	**6600**	2000	20	B8F0667	06/26/2018	06/28/18 14:22	D1
Cobalt	**3700**	1000	20	B8F0667	06/26/2018	06/28/18 14:22	D1
Copper	**7600**	1000	20	B8F0667	06/26/2018	06/28/18 14:22	D1
Lead	**3300**	1000	20	B8F0667	06/26/2018	06/28/18 14:22	D1
Molybdenum	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:22	D1, U
Nickel	**3400**	1000	20	B8F0667	06/26/2018	06/28/18 14:22	D1
Selenium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:22	D1, U
Silver	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:22	D1, U
Thallium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:22	D1, U
Vanadium	**28000**	2000	20	B8F0667	06/26/2018	06/28/18 14:22	D1
Zinc	**19000**	5000	20	B8F0667	06/26/2018	06/28/18 14:22	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0673	06/26/2018	06/27/18 14:41	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-13-2.0
Lab ID: 1802258-16

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:28	U, D1
Arsenic	**1700**	1000	20	B8F0667	06/26/2018	06/28/18 14:28	D1
Barium	**48000**	1000	20	B8F0667	06/26/2018	06/28/18 14:28	D1
Beryllium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:28	D1, U
Cadmium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:28	D1, U
Chromium	**6700**	2000	20	B8F0667	06/26/2018	06/28/18 14:28	D1
Cobalt	**3600**	1000	20	B8F0667	06/26/2018	06/28/18 14:28	D1
Copper	**6500**	1000	20	B8F0667	06/26/2018	06/28/18 14:28	D1
Lead	**3500**	1000	20	B8F0667	06/26/2018	06/28/18 14:28	D1
Molybdenum	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:28	D1, U
Nickel	**3600**	1000	20	B8F0667	06/26/2018	06/28/18 14:28	D1
Selenium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:28	D1, U
Silver	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:28	D1, U
Thallium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:28	D1, U
Vanadium	**28000**	2000	20	B8F0667	06/26/2018	06/28/18 14:28	D1
Zinc	**18000**	5000	20	B8F0667	06/26/2018	06/28/18 14:28	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0673	06/26/2018	06/27/18 14:43	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-13-2.0-Dup
Lab ID: 1802258-17

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:30	D1, U
Arsenic	**1800**	1000	20	B8F0667	06/26/2018	06/28/18 14:30	D1
Barium	**76000**	1000	20	B8F0667	06/26/2018	06/28/18 14:30	D1
Beryllium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:30	D1, U
Cadmium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:30	D1, U
Chromium	**9100**	2000	20	B8F0667	06/26/2018	06/28/18 14:30	D1
Cobalt	**5400**	1000	20	B8F0667	06/26/2018	06/28/18 14:30	D1
Copper	**10000**	1000	20	B8F0667	06/26/2018	06/28/18 14:30	D1
Lead	**3400**	1000	20	B8F0667	06/26/2018	06/28/18 14:30	D1
Molybdenum	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:30	D1, U
Nickel	**5000**	1000	20	B8F0667	06/26/2018	06/28/18 14:30	D1
Selenium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:30	D1, U
Silver	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:30	D1, U
Thallium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:30	D1, U
Vanadium	**34000**	2000	20	B8F0667	06/26/2018	06/28/18 14:30	D1
Zinc	**27000**	5000	20	B8F0667	06/26/2018	06/28/18 14:30	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0673	06/26/2018	06/27/18 14:45	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID EB-061918
Lab ID: 1802258-20

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:30	U
Arsenic	ND	1.0	1	B8F0662	06/26/2018	06/26/18 16:30	U
Barium	ND	1.0	1	B8F0662	06/26/2018	06/26/18 16:30	U
Beryllium	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:30	U
Cadmium	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:30	U
Chromium	**0.90**	0.50	1	B8F0662	06/26/2018	06/26/18 16:30	
Cobalt	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:30	U
Copper	ND	1.0	1	B8F0662	06/26/2018	06/26/18 16:30	U
Lead	ND	1.0	1	B8F0662	06/26/2018	06/26/18 16:30	U
Molybdenum	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:30	U
Nickel	ND	1.0	1	B8F0662	06/26/2018	06/26/18 16:30	U
Selenium	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:30	U
Silver	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:30	U
Thallium	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:30	U
Vanadium	ND	1.0	1	B8F0662	06/26/2018	06/26/18 16:30	U
Zinc	ND	10	1	B8F0662	06/26/2018	06/26/18 16:30	U

Mercury by AA (Cold Vapor) EPA 7470A

Analyst: KEK

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.20	1	B8F0677	06/26/2018	06/27/18 11:29	U

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	0.20	1	B8F0489	06/21/2018	06/21/18 17:15	U
C7	ND	0.20	1	B8F0489	06/21/2018	06/21/18 17:15	U
C8	ND	0.20	1	B8F0489	06/21/2018	06/21/18 17:15	U
C9	ND	0.20	1	B8F0489	06/21/2018	06/21/18 17:15	U
C10	ND	0.20	1	B8F0489	06/21/2018	06/21/18 17:15	U
C11	ND	0.20	1	B8F0489	06/21/2018	06/21/18 17:15	U
C12	ND	0.20	1	B8F0489	06/21/2018	06/21/18 17:15	U
Surrogate: 4-Bromofluorobenzene	*94.8 %*	*70 - 130*		B8F0489	06/21/2018	*06/21/18 17:15*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID EB-061918

Lab ID: 1802258-20

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: CR**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C14	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C15	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C16	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C17	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C18	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C19	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C20	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C21	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C22	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C23	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C24	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C25	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C26	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C27	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C28	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C29	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C30	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C31	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C32	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C33	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C34	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C35	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C36	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C37	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C38	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C39	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
C40	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:14	U
Surrogate: p-Terphenyl	*110 %*	*32 - 169*		B8F0704	06/26/2018	*06/27/18 17:14*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID EB-061918

Lab ID: 1802258-20

Organochlorine Pesticides by EPA 8081 **Analyst: CO**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	0.05	1	B8F0616	06/23/2018	06/24/18 18:51	U
4,4´-DDE	ND	0.05	1	B8F0616	06/23/2018	06/24/18 18:51	U
4,4´-DDT	ND	0.05	1	B8F0616	06/23/2018	06/24/18 18:51	U
Aldrin	ND	0.02	1	B8F0616	06/23/2018	06/24/18 18:51	U
alpha-BHC	ND	0.02	1	B8F0616	06/23/2018	06/24/18 18:51	U
alpha-Chlordane	ND	0.02	1	B8F0616	06/23/2018	06/24/18 18:51	U
beta-BHC	ND	0.02	1	B8F0616	06/23/2018	06/24/18 18:51	U
Chlordane	ND	0.25	1	B8F0616	06/23/2018	06/24/18 18:51	U
delta-BHC	ND	0.02	1	B8F0616	06/23/2018	06/24/18 18:51	U
Dieldrin	ND	0.05	1	B8F0616	06/23/2018	06/24/18 18:51	U
Endosulfan I	ND	0.02	1	B8F0616	06/23/2018	06/24/18 18:51	U
Endosulfan II	ND	0.05	1	B8F0616	06/23/2018	06/24/18 18:51	U
Endosulfan sulfate	ND	0.05	1	B8F0616	06/23/2018	06/24/18 18:51	U
Endrin	ND	0.05	1	B8F0616	06/23/2018	06/24/18 18:51	U
Endrin aldehyde	ND	0.05	1	B8F0616	06/23/2018	06/24/18 18:51	U
Endrin ketone	ND	0.05	1	B8F0616	06/23/2018	06/24/18 18:51	U
gamma-BHC	ND	0.02	1	B8F0616	06/23/2018	06/24/18 18:51	U
gamma-Chlordane	ND	0.02	1	B8F0616	06/23/2018	06/24/18 18:51	U
Heptachlor	ND	0.02	1	B8F0616	06/23/2018	06/24/18 18:51	U
Heptachlor epoxide	ND	0.02	1	B8F0616	06/23/2018	06/24/18 18:51	U
Methoxychlor	ND	0.25	1	B8F0616	06/23/2018	06/24/18 18:51	U
Toxaphene	ND	2.5	1	B8F0616	06/23/2018	06/24/18 18:51	U
Surrogate: Decachlorobiphenyl	*89.8 %*	*1 - 110*		B8F0616	06/23/2018	*06/24/18 18:51*	
Surrogate: Tetrachloro-m-xylene	*83.4 %*	*19 - 117*		B8F0616	06/23/2018	*06/24/18 18:51*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID EB-061918

Lab ID: 1802258-20

Polychlorinated Biphenyls by EPA 8082 **Analyst: CO**

Analyte		Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016		ND	0.50	1	B8F0616	06/23/2018	06/24/18 17:25	U
Aroclor 1221		ND	1.0	1	B8F0616	06/23/2018	06/24/18 17:25	U
Aroclor 1232		ND	0.50	1	B8F0616	06/23/2018	06/24/18 17:25	U
Aroclor 1242		ND	0.50	1	B8F0616	06/23/2018	06/24/18 17:25	U
Aroclor 1248		ND	0.50	1	B8F0616	06/23/2018	06/24/18 17:25	U
Aroclor 1254		ND	0.50	1	B8F0616	06/23/2018	06/24/18 17:25	U
Aroclor 1260		ND	0.50	1	B8F0616	06/23/2018	06/24/18 17:25	U
Aroclor 1262		ND	0.50	1	B8F0616	06/23/2018	06/24/18 17:25	U
Aroclor 1268		ND	0.50	1	B8F0616	06/23/2018	06/24/18 17:25	U
Surrogate: Decachlorobiphenyl	*79.3 %*		*1 - 110*		B8F0616	06/23/2018	*06/24/18 17:25*	
Surrogate: Tetrachloro-m-xylene	*88.1 %*		*19 - 117*		B8F0616	06/23/2018	*06/24/18 17:25*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID SW-061918
Lab ID: 1802258-21

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:31	U
Arsenic	ND	1.0	1	B8F0662	06/26/2018	06/26/18 16:31	U
Barium	ND	1.0	1	B8F0662	06/26/2018	06/26/18 16:31	U
Beryllium	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:31	U
Cadmium	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:31	U
Chromium	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:31	U
Cobalt	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:31	U
Copper	ND	1.0	1	B8F0662	06/26/2018	06/26/18 16:31	U
Lead	ND	1.0	1	B8F0662	06/26/2018	06/26/18 16:31	U
Molybdenum	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:31	U
Nickel	ND	1.0	1	B8F0662	06/26/2018	06/26/18 16:31	U
Selenium	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:31	U
Silver	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:31	U
Thallium	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:31	U
Vanadium	ND	1.0	1	B8F0662	06/26/2018	06/26/18 16:31	U
Zinc	ND	10	1	B8F0662	06/26/2018	06/26/18 16:31	U

Mercury by AA (Cold Vapor) EPA 7470A

Analyst: KEK

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.20	1	B8F0677	06/26/2018	06/27/18 11:31	U

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	0.20	1	B8F0489	06/21/2018	06/21/18 17:35	U
C7	ND	0.20	1	B8F0489	06/21/2018	06/21/18 17:35	U
C8	ND	0.20	1	B8F0489	06/21/2018	06/21/18 17:35	U
C9	ND	0.20	1	B8F0489	06/21/2018	06/21/18 17:35	U
C10	ND	0.20	1	B8F0489	06/21/2018	06/21/18 17:35	U
C11	ND	0.20	1	B8F0489	06/21/2018	06/21/18 17:35	U
C12	ND	0.20	1	B8F0489	06/21/2018	06/21/18 17:35	U
Surrogate: 4-Bromofluorobenzene	*101 %*	*70 - 130*		B8F0489	06/21/2018	*06/21/18 17:35*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID SW-061918
Lab ID: 1802258-21

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: CR**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C14	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C15	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C16	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C17	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C18	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C19	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C20	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C21	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C22	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C23	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C24	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C25	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C26	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C27	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C28	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C29	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C30	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C31	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C32	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C33	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C34	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C35	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C36	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C37	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C38	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C39	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
C40	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:32	U
Surrogate: p-Terphenyl	*82.7 %*	*32 - 169*		B8F0704	06/26/2018	*06/27/18 17:32*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID SW-061918

Lab ID: 1802258-21

Organochlorine Pesticides by EPA 8081 **Analyst: CO**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	0.05	1	B8F0616	06/23/2018	06/24/18 19:02	U
4,4´-DDE	ND	0.05	1	B8F0616	06/23/2018	06/24/18 19:02	U
4,4´-DDT	ND	0.05	1	B8F0616	06/23/2018	06/24/18 19:02	U
Aldrin	ND	0.02	1	B8F0616	06/23/2018	06/24/18 19:02	U
alpha-BHC	ND	0.02	1	B8F0616	06/23/2018	06/24/18 19:02	U
alpha-Chlordane	ND	0.02	1	B8F0616	06/23/2018	06/24/18 19:02	U
beta-BHC	ND	0.02	1	B8F0616	06/23/2018	06/24/18 19:02	U
Chlordane	ND	0.25	1	B8F0616	06/23/2018	06/24/18 19:02	U
delta-BHC	ND	0.02	1	B8F0616	06/23/2018	06/24/18 19:02	U
Dieldrin	ND	0.05	1	B8F0616	06/23/2018	06/24/18 19:02	U
Endosulfan I	ND	0.02	1	B8F0616	06/23/2018	06/24/18 19:02	U
Endosulfan II	ND	0.05	1	B8F0616	06/23/2018	06/24/18 19:02	U
Endosulfan sulfate	ND	0.05	1	B8F0616	06/23/2018	06/24/18 19:02	U
Endrin	ND	0.05	1	B8F0616	06/23/2018	06/24/18 19:02	U
Endrin aldehyde	ND	0.05	1	B8F0616	06/23/2018	06/24/18 19:02	U
Endrin ketone	ND	0.05	1	B8F0616	06/23/2018	06/24/18 19:02	U
gamma-BHC	ND	0.02	1	B8F0616	06/23/2018	06/24/18 19:02	U
gamma-Chlordane	ND	0.02	1	B8F0616	06/23/2018	06/24/18 19:02	U
Heptachlor	ND	0.02	1	B8F0616	06/23/2018	06/24/18 19:02	U
Heptachlor epoxide	ND	0.02	1	B8F0616	06/23/2018	06/24/18 19:02	U
Methoxychlor	ND	0.25	1	B8F0616	06/23/2018	06/24/18 19:02	U
Toxaphene	ND	2.5	1	B8F0616	06/23/2018	06/24/18 19:02	U
Surrogate: Decachlorobiphenyl	*84.7 %*	*1 - 110*		B8F0616	06/23/2018	*06/24/18 19:02*	
Surrogate: Tetrachloro-m-xylene	*85.8 %*	*19 - 117*		B8F0616	06/23/2018	*06/24/18 19:02*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID SW-061918

Lab ID: 1802258-21

Polychlorinated Biphenyls by EPA 8082 **Analyst: CO**

Analyte		Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016		ND	0.50	1	B8F0616	06/23/2018	06/24/18 17:44	U
Aroclor 1221		ND	1.0	1	B8F0616	06/23/2018	06/24/18 17:44	U
Aroclor 1232		ND	0.50	1	B8F0616	06/23/2018	06/24/18 17:44	U
Aroclor 1242		ND	0.50	1	B8F0616	06/23/2018	06/24/18 17:44	U
Aroclor 1248		ND	0.50	1	B8F0616	06/23/2018	06/24/18 17:44	U
Aroclor 1254		ND	0.50	1	B8F0616	06/23/2018	06/24/18 17:44	U
Aroclor 1260		ND	0.50	1	B8F0616	06/23/2018	06/24/18 17:44	U
Aroclor 1262		ND	0.50	1	B8F0616	06/23/2018	06/24/18 17:44	U
Aroclor 1268		ND	0.50	1	B8F0616	06/23/2018	06/24/18 17:44	U
Surrogate: Decachlorobiphenyl	*79.4 %*		*1 - 110*		B8F0616	06/23/2018	*06/24/18 17:44*	
Surrogate: Tetrachloro-m-xylene	*86.9 %*		*19 - 117*		B8F0616	06/23/2018	*06/24/18 17:44*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-16-0-0.5
Lab ID: 1802258-22

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:32	U, D1
Arsenic	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:32	D1, U
Barium	**14000**	1000	20	B8F0667	06/26/2018	06/28/18 14:32	D1
Beryllium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:32	D1, U
Cadmium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:32	D1, U
Chromium	ND	2000	20	B8F0667	06/26/2018	06/28/18 14:32	D1, U
Cobalt	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:32	D1, U
Copper	**2100**	1000	20	B8F0667	06/26/2018	06/28/18 14:32	D1
Lead	**7400**	1000	20	B8F0667	06/26/2018	06/28/18 14:32	D1
Molybdenum	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:32	D1, U
Nickel	**2900**	1000	20	B8F0667	06/26/2018	06/28/18 14:32	D1
Selenium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:32	D1, U
Silver	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:32	D1, U
Thallium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:32	D1, U
Vanadium	**5400**	2000	20	B8F0667	06/26/2018	06/28/18 14:32	D1
Zinc	**6100**	5000	20	B8F0667	06/26/2018	06/28/18 14:32	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0673	06/26/2018	06/27/18 14:47	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:40	U
C7	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:40	U
C8	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:40	U
C9	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:40	U
C10	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:40	U
C11	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:40	U
C12	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:40	U
Surrogate: 4-Bromofluorobenzene	*93.5 %*	*57 - 144*		B8F0528	06/21/2018	*06/21/18 21:40*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-16-0-0.5

Lab ID: 1802258-22

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C14	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C15	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C16	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C17	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C18	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C19	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C20	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C21	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C22	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C23	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C24	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C25	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C26	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C27	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C28	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C29	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C30	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C31	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C32	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C33	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C34	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C35	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C36	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C37	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C38	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C39	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
C40	ND	10	1	B8F0691	06/26/2018	06/27/18 11:10	U
Surrogate: p-Terphenyl	*112 %*	*58 - 172*		B8F0691	06/26/2018	*06/27/18 11:10*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-16-0-0.5
Lab ID: 1802258-22

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0617	06/23/2018	06/24/18 23:23	U
Aroclor 1221	ND	16	1	B8F0617	06/23/2018	06/24/18 23:23	U
Aroclor 1232	ND	16	1	B8F0617	06/23/2018	06/24/18 23:23	U
Aroclor 1242	ND	16	1	B8F0617	06/23/2018	06/24/18 23:23	U
Aroclor 1248	ND	16	1	B8F0617	06/23/2018	06/24/18 23:23	U
Aroclor 1254	ND	16	1	B8F0617	06/23/2018	06/24/18 23:23	U
Aroclor 1260	ND	16	1	B8F0617	06/23/2018	06/24/18 23:23	U
Aroclor 1262	ND	16	1	B8F0617	06/23/2018	06/24/18 23:23	U
Aroclor 1268	ND	16	1	B8F0617	06/23/2018	06/24/18 23:23	U
Surrogate: Decachlorobiphenyl	*77.1 %*	*14 - 109*		B8F0617	06/23/2018	*06/24/18 23:23*	
Surrogate: Tetrachloro-m-xylene	*92.8 %*	*18 - 114*		B8F0617	06/23/2018	*06/24/18 23:23*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
1,1-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
1,1-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
1,1-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0572	06/22/2018	06/22/18 12:15	U
1,2-Dibromoethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
1,2-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
1,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
1,3-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
2,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-16-0-0.5

Lab ID: 1802258-22

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
4-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
4-Isopropyltoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Benzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Bromobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Bromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Bromodichloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Bromoform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Bromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Carbon disulfide	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Carbon tetrachloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Chlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Chloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Chloroform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Chloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
cis-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Di-isopropyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Dibromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Dibromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Dichlorodifluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Ethyl Acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 12:15	U
Ethyl Ether	ND	50	1	B8F0572	06/22/2018	06/22/18 12:15	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Ethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Freon-113	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Hexachlorobutadiene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Isopropylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
m,p-Xylene	ND	10	1	B8F0572	06/22/2018	06/22/18 12:15	U
Methylene chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
MTBE	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
n-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
n-Propylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Naphthalene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
o-Xylene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
sec-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Styrene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-16-0-0.5
Lab ID: 1802258-22

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
tert-Butanol	ND	100	1	B8F0572	06/22/2018	06/22/18 12:15	U
tert-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Tetrachloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Toluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Trichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Trichlorofluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Vinyl acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 12:15	U
Vinyl chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:15	U
Surrogate: 1,2-Dichloroethane-d4	*98.1 %*	*58 - 144*		B8F0572	06/22/2018	*06/22/18 12:15*	
Surrogate: 4-Bromofluorobenzene	*88.0 %*	*60 - 137*		B8F0572	06/22/2018	*06/22/18 12:15*	
Surrogate: Dibromofluoromethane	*98.3 %*	*70 - 131*		B8F0572	06/22/2018	*06/22/18 12:15*	
Surrogate: Toluene-d8	*93.9 %*	*79 - 131*		B8F0572	06/22/2018	*06/22/18 12:15*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-16-0.5-3.5
Lab ID: 1802258-23

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:33	D1, U
Arsenic	**1800**	1000	20	B8F0667	06/26/2018	06/28/18 14:33	D1
Barium	**47000**	1000	20	B8F0667	06/26/2018	06/28/18 14:33	D1
Beryllium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:33	D1, U
Cadmium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:33	D1, U
Chromium	**5700**	2000	20	B8F0667	06/26/2018	06/28/18 14:33	D1
Cobalt	**2700**	1000	20	B8F0667	06/26/2018	06/28/18 14:33	D1
Copper	**4800**	1000	20	B8F0667	06/26/2018	06/28/18 14:33	D1
Lead	**2500**	1000	20	B8F0667	06/26/2018	06/28/18 14:33	D1
Molybdenum	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:33	D1, U
Nickel	**2300**	1000	20	B8F0667	06/26/2018	06/28/18 14:33	D1
Selenium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:33	D1, U
Silver	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:33	D1, U
Thallium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:33	D1, U
Vanadium	**31000**	2000	20	B8F0667	06/26/2018	06/28/18 14:33	D1
Zinc	**16000**	5000	20	B8F0667	06/26/2018	06/28/18 14:33	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0673	06/26/2018	06/27/18 14:49	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:58	U
C7	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:58	U
C8	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:58	U
C9	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:58	U
C10	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:58	U
C11	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:58	U
C12	ND	1.0	1	B8F0528	06/21/2018	06/21/18 21:58	U
Surrogate: 4-Bromofluorobenzene	*95.5 %*	*57 - 144*		B8F0528	06/21/2018	*06/21/18 21:58*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-16-0.5-3.5

Lab ID: 1802258-23

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C14	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C15	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C16	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C17	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C18	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C19	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C20	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C21	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C22	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C23	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C24	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C25	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C26	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C27	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C28	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C29	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C30	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C31	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C32	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C33	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C34	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C35	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C36	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C37	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C38	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C39	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
C40	ND	10	1	B8F0691	06/26/2018	06/27/18 09:38	U
Surrogate: p-Terphenyl	*127 %*	*58 - 172*		B8F0691	06/26/2018	*06/27/18 09:38*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-16-0.5-3.5
Lab ID: 1802258-23

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0705	06/26/2018	06/27/18 17:40	U
Aroclor 1221	ND	16	1	B8F0705	06/26/2018	06/27/18 17:40	U
Aroclor 1232	ND	16	1	B8F0705	06/26/2018	06/27/18 17:40	U
Aroclor 1242	ND	16	1	B8F0705	06/26/2018	06/27/18 17:40	U
Aroclor 1248	ND	16	1	B8F0705	06/26/2018	06/27/18 17:40	U
Aroclor 1254	ND	16	1	B8F0705	06/26/2018	06/27/18 17:40	U
Aroclor 1260	ND	16	1	B8F0705	06/26/2018	06/27/18 17:40	U
Aroclor 1262	ND	16	1	B8F0705	06/26/2018	06/27/18 17:40	U
Aroclor 1268	ND	16	1	B8F0705	06/26/2018	06/27/18 17:40	U
Surrogate: Decachlorobiphenyl	*77.0 %*	*14 - 109*		B8F0705	06/26/2018	*06/27/18 17:40*	
Surrogate: Tetrachloro-m-xylene	*97.9 %*	*18 - 114*		B8F0705	06/26/2018	*06/27/18 17:40*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
1,1-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
1,1-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
1,1-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0572	06/22/2018	06/22/18 12:33	U
1,2-Dibromoethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
1,2-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
1,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
1,3-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
2,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-16-0.5-3.5

Lab ID: 1802258-23

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
4-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
4-Isopropyltoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Benzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Bromobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Bromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Bromodichloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Bromoform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Bromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Carbon disulfide	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Carbon tetrachloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Chlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Chloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Chloroform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Chloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
cis-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Di-isopropyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Dibromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Dibromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Dichlorodifluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Ethyl Acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 12:33	U
Ethyl Ether	ND	50	1	B8F0572	06/22/2018	06/22/18 12:33	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Ethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Freon-113	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Hexachlorobutadiene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Isopropylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
m,p-Xylene	ND	10	1	B8F0572	06/22/2018	06/22/18 12:33	U
Methylene chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
MTBE	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
n-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
n-Propylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Naphthalene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
o-Xylene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
sec-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Styrene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-16-0.5-3.5

Lab ID: 1802258-23

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
tert-Butanol	ND	100	1	B8F0572	06/22/2018	06/22/18 12:33	U
tert-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Tetrachloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Toluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Trichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Trichlorofluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Vinyl acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 12:33	U
Vinyl chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:33	U
Surrogate: 1,2-Dichloroethane-d4	*97.2 %*	*58 - 144*		B8F0572	06/22/2018	*06/22/18 12:33*	
Surrogate: 4-Bromofluorobenzene	*88.3 %*	*60 - 137*		B8F0572	06/22/2018	*06/22/18 12:33*	
Surrogate: Dibromofluoromethane	*99.4 %*	*70 - 131*		B8F0572	06/22/2018	*06/22/18 12:33*	
Surrogate: Toluene-d8	*94.7 %*	*79 - 131*		B8F0572	06/22/2018	*06/22/18 12:33*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-16-3.5-5
Lab ID: 1802258-24

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:35	D1, U
Arsenic	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:35	D1, U
Barium	**71000**	1000	20	B8F0667	06/26/2018	06/28/18 14:35	D1
Beryllium	ND	2500	50	B8F0667	06/26/2018	06/28/18 16:05	D1, D5, U
Cadmium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:35	D1, U
Chromium	**12000**	2000	20	B8F0667	06/26/2018	06/28/18 14:35	D1
Cobalt	**4700**	1000	20	B8F0667	06/26/2018	06/28/18 14:35	D1
Copper	**11000**	1000	20	B8F0667	06/26/2018	06/28/18 14:35	D1
Lead	**4100**	1000	20	B8F0667	06/26/2018	06/28/18 14:35	D1
Molybdenum	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:35	D1, U
Nickel	**5600**	1000	20	B8F0667	06/26/2018	06/28/18 14:35	D1
Selenium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:35	D1, U
Silver	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:35	D1, U
Thallium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:35	D1, U
Vanadium	**52000**	2000	20	B8F0667	06/26/2018	06/28/18 14:35	D1
Zinc	**34000**	5000	20	B8F0667	06/26/2018	06/28/18 14:35	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0673	06/26/2018	06/27/18 14:50	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0528	06/21/2018	06/21/18 22:17	U
C7	ND	1.0	1	B8F0528	06/21/2018	06/21/18 22:17	U
C8	ND	1.0	1	B8F0528	06/21/2018	06/21/18 22:17	U
C9	ND	1.0	1	B8F0528	06/21/2018	06/21/18 22:17	U
C10	ND	1.0	1	B8F0528	06/21/2018	06/21/18 22:17	U
C11	ND	1.0	1	B8F0528	06/21/2018	06/21/18 22:17	U
C12	ND	1.0	1	B8F0528	06/21/2018	06/21/18 22:17	U
Surrogate: 4-Bromofluorobenzene	*105 %*	*57 - 144*		B8F0528	06/21/2018	*06/21/18 22:17*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-16-3.5-5

Lab ID: 1802258-24

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C14	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C15	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C16	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C17	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C18	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C19	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C20	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C21	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C22	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C23	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C24	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C25	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C26	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C27	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C28	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C29	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C30	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C31	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C32	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C33	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C34	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C35	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C36	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C37	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C38	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C39	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
C40	ND	10	1	B8F0691	06/26/2018	06/27/18 10:36	U
Surrogate: p-Terphenyl	*101 %*	*58 - 172*		B8F0691	06/26/2018	*06/27/18 10:36*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-16-3.5-5
Lab ID: 1802258-24

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0617	06/23/2018	06/24/18 23:42	U
Aroclor 1221	ND	16	1	B8F0617	06/23/2018	06/24/18 23:42	U
Aroclor 1232	ND	16	1	B8F0617	06/23/2018	06/24/18 23:42	U
Aroclor 1242	ND	16	1	B8F0617	06/23/2018	06/24/18 23:42	U
Aroclor 1248	ND	16	1	B8F0617	06/23/2018	06/24/18 23:42	U
Aroclor 1254	ND	16	1	B8F0617	06/23/2018	06/24/18 23:42	U
Aroclor 1260	ND	16	1	B8F0617	06/23/2018	06/24/18 23:42	U
Aroclor 1262	ND	16	1	B8F0617	06/23/2018	06/24/18 23:42	U
Aroclor 1268	ND	16	1	B8F0617	06/23/2018	06/24/18 23:42	U
Surrogate: Decachlorobiphenyl	*87.9 %*	*14 - 109*		B8F0617	06/23/2018	*06/24/18 23:42*	
Surrogate: Tetrachloro-m-xylene	*87.2 %*	*18 - 114*		B8F0617	06/23/2018	*06/24/18 23:42*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
1,1-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
1,1-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
1,1-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0572	06/22/2018	06/22/18 12:52	U
1,2-Dibromoethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
1,2-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
1,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
1,3-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
2,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-16-3.5-5

Lab ID: 1802258-24

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
4-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
4-Isopropyltoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Benzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Bromobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Bromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Bromodichloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Bromoform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Bromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Carbon disulfide	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Carbon tetrachloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Chlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Chloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Chloroform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Chloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
cis-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Di-isopropyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Dibromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Dibromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Dichlorodifluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Ethyl Acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 12:52	U
Ethyl Ether	ND	50	1	B8F0572	06/22/2018	06/22/18 12:52	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Ethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Freon-113	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Hexachlorobutadiene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Isopropylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
m,p-Xylene	ND	10	1	B8F0572	06/22/2018	06/22/18 12:52	U
Methylene chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
MTBE	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
n-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
n-Propylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Naphthalene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
o-Xylene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
sec-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Styrene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-16-3.5-5
Lab ID: 1802258-24

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
tert-Butanol	ND	100	1	B8F0572	06/22/2018	06/22/18 12:52	U
tert-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Tetrachloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Toluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Trichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Trichlorofluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Vinyl acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 12:52	U
Vinyl chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 12:52	U
Surrogate: 1,2-Dichloroethane-d4	*103 %*	*58 - 144*		B8F0572	06/22/2018	*06/22/18 12:52*	
Surrogate: 4-Bromofluorobenzene	*87.0 %*	*60 - 137*		B8F0572	06/22/2018	*06/22/18 12:52*	
Surrogate: Dibromofluoromethane	*101 %*	*70 - 131*		B8F0572	06/22/2018	*06/22/18 12:52*	
Surrogate: Toluene-d8	*94.5 %*	*79 - 131*		B8F0572	06/22/2018	*06/22/18 12:52*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-16-5-10
Lab ID: 1802258-25

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:37	D1, U
Arsenic	**1300**	1000	20	B8F0667	06/26/2018	06/28/18 14:37	D1
Barium	**100000**	1000	20	B8F0667	06/26/2018	06/28/18 14:37	D1
Beryllium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:37	D1, U
Cadmium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:37	D1, U
Chromium	**8100**	2000	20	B8F0667	06/26/2018	06/28/18 14:37	D1
Cobalt	**5800**	1000	20	B8F0667	06/26/2018	06/28/18 14:37	D1
Copper	**12000**	1000	20	B8F0667	06/26/2018	06/28/18 14:37	D1
Lead	**3200**	1000	20	B8F0667	06/26/2018	06/28/18 14:37	D1
Molybdenum	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:37	D1, U
Nickel	**4600**	1000	20	B8F0667	06/26/2018	06/28/18 14:37	D1
Selenium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:37	D1, U
Silver	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:37	D1, U
Thallium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:37	D1, U
Vanadium	**40000**	2000	20	B8F0667	06/26/2018	06/28/18 14:37	D1
Zinc	**29000**	5000	20	B8F0667	06/26/2018	06/28/18 14:37	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0673	06/26/2018	06/27/18 14:52	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-19-0-4
Lab ID: 1802258-26

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:39	D1, U
Arsenic	**1300**	1000	20	B8F0667	06/26/2018	06/28/18 14:39	D1
Barium	**29000**	1000	20	B8F0667	06/26/2018	06/28/18 14:39	D1
Beryllium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:39	D1, U
Cadmium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:39	D1, U
Chromium	**4600**	2000	20	B8F0667	06/26/2018	06/28/18 14:39	D1
Cobalt	**2100**	1000	20	B8F0667	06/26/2018	06/28/18 14:39	D1
Copper	**3700**	1000	20	B8F0667	06/26/2018	06/28/18 14:39	D1
Lead	**3100**	1000	20	B8F0667	06/26/2018	06/28/18 14:39	D1
Molybdenum	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:39	D1, U
Nickel	**1700**	1000	20	B8F0667	06/26/2018	06/28/18 14:39	D1
Selenium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:39	D1, U
Silver	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:39	D1, U
Thallium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:39	D1, U
Vanadium	**27000**	2000	20	B8F0667	06/26/2018	06/28/18 14:39	D1
Zinc	**12000**	5000	20	B8F0667	06/26/2018	06/28/18 14:39	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0673	06/26/2018	06/27/18 15:19	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0528	06/21/2018	06/21/18 22:54	U
C7	ND	1.0	1	B8F0528	06/21/2018	06/21/18 22:54	U
C8	ND	1.0	1	B8F0528	06/21/2018	06/21/18 22:54	U
C9	ND	1.0	1	B8F0528	06/21/2018	06/21/18 22:54	U
C10	ND	1.0	1	B8F0528	06/21/2018	06/21/18 22:54	U
C11	ND	1.0	1	B8F0528	06/21/2018	06/21/18 22:54	U
C12	ND	1.0	1	B8F0528	06/21/2018	06/21/18 22:54	U
Surrogate: 4-Bromofluorobenzene	*93.0 %*	*57 - 144*		B8F0528	06/21/2018	*06/21/18 22:54*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-19-0-4

Lab ID: 1802258-26

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C14	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C15	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C16	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C17	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C18	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C19	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C20	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C21	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C22	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C23	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C24	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C25	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C26	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C27	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C28	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C29	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C30	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C31	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C32	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C33	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C34	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C35	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C36	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C37	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C38	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C39	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
C40	ND	10	1	B8F0691	06/26/2018	06/27/18 06:13	U
Surrogate: p-Terphenyl	*125 %*	*58 - 172*		B8F0691	06/26/2018	*06/27/18 06:13*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-19-0-4
Lab ID: 1802258-26

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0617	06/23/2018	06/25/18 00:00	U
Aroclor 1221	ND	16	1	B8F0617	06/23/2018	06/25/18 00:00	U
Aroclor 1232	ND	16	1	B8F0617	06/23/2018	06/25/18 00:00	U
Aroclor 1242	ND	16	1	B8F0617	06/23/2018	06/25/18 00:00	U
Aroclor 1248	ND	16	1	B8F0617	06/23/2018	06/25/18 00:00	U
Aroclor 1254	ND	16	1	B8F0617	06/23/2018	06/25/18 00:00	U
Aroclor 1260	ND	16	1	B8F0617	06/23/2018	06/25/18 00:00	U
Aroclor 1262	ND	16	1	B8F0617	06/23/2018	06/25/18 00:00	U
Aroclor 1268	ND	16	1	B8F0617	06/23/2018	06/25/18 00:00	U
Surrogate: Decachlorobiphenyl	*77.8 %*	*14 - 109*		B8F0617	06/23/2018	*06/25/18 00:00*	
Surrogate: Tetrachloro-m-xylene	*90.6 %*	*18 - 114*		B8F0617	06/23/2018	*06/25/18 00:00*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
1,1-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
1,1-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
1,1-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0572	06/22/2018	06/22/18 13:11	U
1,2-Dibromoethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
1,2-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
1,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
1,3-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
2,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-19-0-4

Lab ID: 1802258-26

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
4-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
4-Isopropyltoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Benzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Bromobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Bromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Bromodichloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Bromoform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Bromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Carbon disulfide	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Carbon tetrachloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Chlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Chloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Chloroform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Chloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
cis-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Di-isopropyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Dibromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Dibromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Dichlorodifluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Ethyl Acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 13:11	U
Ethyl Ether	ND	50	1	B8F0572	06/22/2018	06/22/18 13:11	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Ethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Freon-113	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Hexachlorobutadiene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Isopropylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
m,p-Xylene	ND	10	1	B8F0572	06/22/2018	06/22/18 13:11	U
Methylene chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
MTBE	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
n-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
n-Propylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Naphthalene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
o-Xylene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
sec-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Styrene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-19-0-4
Lab ID: 1802258-26

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
tert-Butanol	ND	100	1	B8F0572	06/22/2018	06/22/18 13:11	U
tert-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Tetrachloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Toluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Trichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Trichlorofluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Vinyl acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 13:11	U
Vinyl chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:11	U
Surrogate: 1,2-Dichloroethane-d4	*98.5 %*	*58 - 144*		B8F0572	06/22/2018	*06/22/18 13:11*	
Surrogate: 4-Bromofluorobenzene	*90.7 %*	*60 - 137*		B8F0572	06/22/2018	*06/22/18 13:11*	
Surrogate: Dibromofluoromethane	*103 %*	*70 - 131*		B8F0572	06/22/2018	*06/22/18 13:11*	
Surrogate: Toluene-d8	*96.2 %*	*79 - 131*		B8F0572	06/22/2018	*06/22/18 13:11*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-19-4-8
Lab ID: 1802258-27

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:41	D1, U
Arsenic	**7000**	1000	20	B8F0667	06/26/2018	06/28/18 14:41	D1
Barium	**67000**	1000	20	B8F0667	06/26/2018	06/28/18 14:41	D1
Beryllium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:41	D1, U
Cadmium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:41	D1, U
Chromium	**11000**	2000	20	B8F0667	06/26/2018	06/28/18 14:41	D1
Cobalt	**8300**	1000	20	B8F0667	06/26/2018	06/28/18 14:41	D1
Copper	**14000**	1000	20	B8F0667	06/26/2018	06/28/18 14:41	D1
Lead	**3800**	1000	20	B8F0667	06/26/2018	06/28/18 14:41	D1
Molybdenum	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:41	D1, U
Nickel	**7100**	1000	20	B8F0667	06/26/2018	06/28/18 14:41	D1
Selenium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:41	D1, U
Silver	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:41	D1, U
Thallium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:41	D1, U
Vanadium	**51000**	2000	20	B8F0667	06/26/2018	06/28/18 14:41	D1
Zinc	**37000**	5000	20	B8F0667	06/26/2018	06/28/18 14:41	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0673	06/26/2018	06/27/18 15:21	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0528	06/21/2018	06/21/18 23:13	U
C7	ND	1.0	1	B8F0528	06/21/2018	06/21/18 23:13	U
C8	ND	1.0	1	B8F0528	06/21/2018	06/21/18 23:13	U
C9	ND	1.0	1	B8F0528	06/21/2018	06/21/18 23:13	U
C10	ND	1.0	1	B8F0528	06/21/2018	06/21/18 23:13	U
C11	ND	1.0	1	B8F0528	06/21/2018	06/21/18 23:13	U
C12	ND	1.0	1	B8F0528	06/21/2018	06/21/18 23:13	U
Surrogate: 4-Bromofluorobenzene	*100 %*	*57 - 144*		B8F0528	06/21/2018	*06/21/18 23:13*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-19-4-8

Lab ID: 1802258-27

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C14	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C15	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C16	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C17	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C18	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C19	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C20	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C21	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C22	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C23	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C24	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C25	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C26	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C27	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C28	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C29	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C30	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C31	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C32	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C33	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C34	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C35	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C36	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C37	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C38	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C39	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
C40	ND	10	1	B8F0691	06/26/2018	06/27/18 06:30	U
Surrogate: p-Terphenyl	*117 %*	*58 - 172*		B8F0691	06/26/2018	*06/27/18 06:30*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-19-4-8
Lab ID: 1802258-27

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0617	06/23/2018	06/25/18 00:19	U
Aroclor 1221	ND	16	1	B8F0617	06/23/2018	06/25/18 00:19	U
Aroclor 1232	ND	16	1	B8F0617	06/23/2018	06/25/18 00:19	U
Aroclor 1242	ND	16	1	B8F0617	06/23/2018	06/25/18 00:19	U
Aroclor 1248	ND	16	1	B8F0617	06/23/2018	06/25/18 00:19	U
Aroclor 1254	ND	16	1	B8F0617	06/23/2018	06/25/18 00:19	U
Aroclor 1260	ND	16	1	B8F0617	06/23/2018	06/25/18 00:19	U
Aroclor 1262	ND	16	1	B8F0617	06/23/2018	06/25/18 00:19	U
Aroclor 1268	ND	16	1	B8F0617	06/23/2018	06/25/18 00:19	U
Surrogate: Decachlorobiphenyl	*84.9 %*	*14 - 109*		B8F0617	06/23/2018	*06/25/18 00:19*	
Surrogate: Tetrachloro-m-xylene	*96.6 %*	*18 - 114*		B8F0617	06/23/2018	*06/25/18 00:19*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
1,1-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
1,1-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
1,1-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0572	06/22/2018	06/22/18 13:30	U
1,2-Dibromoethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
1,2-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
1,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
1,3-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
2,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-19-4-8
Lab ID: 1802258-27

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
4-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
4-Isopropyltoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Benzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Bromobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Bromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Bromodichloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Bromoform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Bromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Carbon disulfide	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Carbon tetrachloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Chlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Chloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Chloroform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Chloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
cis-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Di-isopropyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Dibromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Dibromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Dichlorodifluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Ethyl Acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 13:30	U
Ethyl Ether	ND	50	1	B8F0572	06/22/2018	06/22/18 13:30	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Ethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Freon-113	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Hexachlorobutadiene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Isopropylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
m,p-Xylene	ND	10	1	B8F0572	06/22/2018	06/22/18 13:30	U
Methylene chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
MTBE	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
n-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
n-Propylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Naphthalene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
o-Xylene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
sec-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Styrene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-19-4-8
Lab ID: 1802258-27

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
tert-Butanol	ND	100	1	B8F0572	06/22/2018	06/22/18 13:30	U
tert-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Tetrachloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Toluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Trichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Trichlorofluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Vinyl acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 13:30	U
Vinyl chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:30	U
Surrogate: 1,2-Dichloroethane-d4	*101 %*	*58 - 144*		B8F0572	06/22/2018	*06/22/18 13:30*	
Surrogate: 4-Bromofluorobenzene	*86.6 %*	*60 - 137*		B8F0572	06/22/2018	*06/22/18 13:30*	
Surrogate: Dibromofluoromethane	*102 %*	*70 - 131*		B8F0572	06/22/2018	*06/22/18 13:30*	
Surrogate: Toluene-d8	*96.1 %*	*79 - 131*		B8F0572	06/22/2018	*06/22/18 13:30*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-19-8-10
Lab ID: 1802258-28

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:43	U, D1
Arsenic	**2500**	1000	20	B8F0667	06/26/2018	06/28/18 14:43	D1
Barium	**45000**	1000	20	B8F0667	06/26/2018	06/28/18 14:43	D1
Beryllium	ND	2500	50	B8F0667	06/26/2018	06/28/18 16:07	D1, D5, U
Cadmium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:43	D1, U
Chromium	**20000**	2000	20	B8F0667	06/26/2018	06/28/18 14:43	D1
Cobalt	**8600**	1000	20	B8F0667	06/26/2018	06/28/18 14:43	D1
Copper	**19000**	1000	20	B8F0667	06/26/2018	06/28/18 14:43	D1
Lead	**4700**	1000	20	B8F0667	06/26/2018	06/28/18 14:43	D1
Molybdenum	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:43	D1, U
Nickel	**9000**	1000	20	B8F0667	06/26/2018	06/28/18 14:43	D1
Selenium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:43	D1, U
Silver	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:43	D1, U
Thallium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:43	D1, U
Vanadium	**51000**	2000	20	B8F0667	06/26/2018	06/28/18 14:43	D1
Zinc	**43000**	5000	20	B8F0667	06/26/2018	06/28/18 14:43	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0673	06/26/2018	06/27/18 15:23	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0528	06/21/2018	06/21/18 23:31	U
C7	ND	1.0	1	B8F0528	06/21/2018	06/21/18 23:31	U
C8	ND	1.0	1	B8F0528	06/21/2018	06/21/18 23:31	U
C9	ND	1.0	1	B8F0528	06/21/2018	06/21/18 23:31	U
C10	ND	1.0	1	B8F0528	06/21/2018	06/21/18 23:31	U
C11	ND	1.0	1	B8F0528	06/21/2018	06/21/18 23:31	U
C12	ND	1.0	1	B8F0528	06/21/2018	06/21/18 23:31	U
Surrogate: 4-Bromofluorobenzene	*101 %*	*57 - 144*		B8F0528	06/21/2018	*06/21/18 23:31*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-19-8-10

Lab ID: 1802258-28

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C14	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C15	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C16	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C17	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C18	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C19	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C20	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C21	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C22	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C23	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C24	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C25	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C26	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C27	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C28	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C29	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C30	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C31	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C32	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C33	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C34	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C35	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C36	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C37	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C38	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C39	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
C40	ND	10	1	B8F0691	06/26/2018	06/27/18 06:47	U
Surrogate: p-Terphenyl	*115 %*	*58 - 172*		B8F0691	06/26/2018	*06/27/18 06:47*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-19-8-10
Lab ID: 1802258-28

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0617	06/23/2018	06/25/18 00:38	U
Aroclor 1221	ND	16	1	B8F0617	06/23/2018	06/25/18 00:38	U
Aroclor 1232	ND	16	1	B8F0617	06/23/2018	06/25/18 00:38	U
Aroclor 1242	ND	16	1	B8F0617	06/23/2018	06/25/18 00:38	U
Aroclor 1248	ND	16	1	B8F0617	06/23/2018	06/25/18 00:38	U
Aroclor 1254	ND	16	1	B8F0617	06/23/2018	06/25/18 00:38	U
Aroclor 1260	ND	16	1	B8F0617	06/23/2018	06/25/18 00:38	U
Aroclor 1262	ND	16	1	B8F0617	06/23/2018	06/25/18 00:38	U
Aroclor 1268	ND	16	1	B8F0617	06/23/2018	06/25/18 00:38	U
Surrogate: Decachlorobiphenyl	*87.6 %*	*14 - 109*		B8F0617	06/23/2018	*06/25/18 00:38*	
Surrogate: Tetrachloro-m-xylene	*88.3 %*	*18 - 114*		B8F0617	06/23/2018	*06/25/18 00:38*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
1,1-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
1,1-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
1,1-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0572	06/22/2018	06/22/18 13:49	U
1,2-Dibromoethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
1,2-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
1,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
1,3-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
2,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-19-8-10
Lab ID: 1802258-28

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
4-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
4-Isopropyltoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Benzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Bromobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Bromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Bromodichloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Bromoform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Bromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Carbon disulfide	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Carbon tetrachloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Chlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Chloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Chloroform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Chloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
cis-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Di-isopropyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Dibromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Dibromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Dichlorodifluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Ethyl Acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 13:49	U
Ethyl Ether	ND	50	1	B8F0572	06/22/2018	06/22/18 13:49	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Ethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Freon-113	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Hexachlorobutadiene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Isopropylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
m,p-Xylene	ND	10	1	B8F0572	06/22/2018	06/22/18 13:49	U
Methylene chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
MTBE	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
n-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
n-Propylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Naphthalene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
o-Xylene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
sec-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Styrene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-19-8-10
Lab ID: 1802258-28

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
tert-Butanol	ND	100	1	B8F0572	06/22/2018	06/22/18 13:49	U
tert-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Tetrachloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Toluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Trichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Trichlorofluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Vinyl acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 13:49	U
Vinyl chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 13:49	U
Surrogate: 1,2-Dichloroethane-d4	*108 %*	*58 - 144*		B8F0572	06/22/2018	*06/22/18 13:49*	
Surrogate: 4-Bromofluorobenzene	*90.3 %*	*60 - 137*		B8F0572	06/22/2018	*06/22/18 13:49*	
Surrogate: Dibromofluoromethane	*106 %*	*70 - 131*		B8F0572	06/22/2018	*06/22/18 13:49*	
Surrogate: Toluene-d8	*97.2 %*	*79 - 131*		B8F0572	06/22/2018	*06/22/18 13:49*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-25-0-4
Lab ID: 1802258-29

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:45	D1, U
Arsenic	**1100**	1000	20	B8F0667	06/26/2018	06/28/18 14:45	D1
Barium	**31000**	1000	20	B8F0667	06/26/2018	06/28/18 14:45	D1
Beryllium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:45	D1, U
Cadmium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:45	D1, U
Chromium	**4200**	2000	20	B8F0667	06/26/2018	06/28/18 14:45	D1
Cobalt	**1900**	1000	20	B8F0667	06/26/2018	06/28/18 14:45	D1
Copper	**3200**	1000	20	B8F0667	06/26/2018	06/28/18 14:45	D1
Lead	**2300**	1000	20	B8F0667	06/26/2018	06/28/18 14:45	D1
Molybdenum	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:45	D1, U
Nickel	**1500**	1000	20	B8F0667	06/26/2018	06/28/18 14:45	D1
Selenium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:45	D1, U
Silver	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:45	D1, U
Thallium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:45	D1, U
Vanadium	**23000**	2000	20	B8F0667	06/26/2018	06/28/18 14:45	D1
Zinc	**12000**	5000	20	B8F0667	06/26/2018	06/28/18 14:45	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0673	06/26/2018	06/27/18 15:25	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0528	06/21/2018	06/21/18 23:50	U
C7	ND	1.0	1	B8F0528	06/21/2018	06/21/18 23:50	U
C8	ND	1.0	1	B8F0528	06/21/2018	06/21/18 23:50	U
C9	ND	1.0	1	B8F0528	06/21/2018	06/21/18 23:50	U
C10	ND	1.0	1	B8F0528	06/21/2018	06/21/18 23:50	U
C11	ND	1.0	1	B8F0528	06/21/2018	06/21/18 23:50	U
C12	ND	1.0	1	B8F0528	06/21/2018	06/21/18 23:50	U
Surrogate: 4-Bromofluorobenzene	*101 %*	*57 - 144*		B8F0528	06/21/2018	*06/21/18 23:50*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-25-0-4

Lab ID: 1802258-29

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C14	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C15	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C16	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C17	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C18	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C19	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C20	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C21	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C22	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C23	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C24	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C25	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C26	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C27	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C28	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C29	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C30	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C31	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C32	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C33	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C34	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C35	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C36	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C37	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C38	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C39	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
C40	ND	10	1	B8F0691	06/26/2018	06/27/18 07:04	U
Surrogate: p-Terphenyl	*119 %*	*58 - 172*		B8F0691	06/26/2018	*06/27/18 07:04*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-25-0-4
Lab ID: 1802258-29

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0705	06/26/2018	06/27/18 17:58	U
Aroclor 1221	ND	16	1	B8F0705	06/26/2018	06/27/18 17:58	U
Aroclor 1232	ND	16	1	B8F0705	06/26/2018	06/27/18 17:58	U
Aroclor 1242	ND	16	1	B8F0705	06/26/2018	06/27/18 17:58	U
Aroclor 1248	ND	16	1	B8F0705	06/26/2018	06/27/18 17:58	U
Aroclor 1254	ND	16	1	B8F0705	06/26/2018	06/27/18 17:58	U
Aroclor 1260	ND	16	1	B8F0705	06/26/2018	06/27/18 17:58	U
Aroclor 1262	ND	16	1	B8F0705	06/26/2018	06/27/18 17:58	U
Aroclor 1268	ND	16	1	B8F0705	06/26/2018	06/27/18 17:58	U
Surrogate: Decachlorobiphenyl	*84.8 %*	*14 - 109*		B8F0705	06/26/2018	*06/27/18 17:58*	
Surrogate: Tetrachloro-m-xylene	*97.7 %*	*18 - 114*		B8F0705	06/26/2018	*06/27/18 17:58*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
1,1-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
1,1-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
1,1-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0572	06/22/2018	06/22/18 14:07	U
1,2-Dibromoethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
1,2-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
1,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
1,3-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
2,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-25-0-4

Lab ID: 1802258-29

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
4-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
4-Isopropyltoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Benzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Bromobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Bromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Bromodichloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Bromoform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Bromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Carbon disulfide	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Carbon tetrachloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Chlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Chloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Chloroform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Chloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
cis-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Di-isopropyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Dibromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Dibromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Dichlorodifluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Ethyl Acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 14:07	U
Ethyl Ether	ND	50	1	B8F0572	06/22/2018	06/22/18 14:07	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Ethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Freon-113	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Hexachlorobutadiene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Isopropylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
m,p-Xylene	ND	10	1	B8F0572	06/22/2018	06/22/18 14:07	U
Methylene chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
MTBE	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
n-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
n-Propylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Naphthalene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
o-Xylene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
sec-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Styrene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-25-0-4
Lab ID: 1802258-29

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
tert-Butanol	ND	100	1	B8F0572	06/22/2018	06/22/18 14:07	U
tert-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Tetrachloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Toluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Trichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Trichlorofluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Vinyl acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 14:07	U
Vinyl chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:07	U
Surrogate: 1,2-Dichloroethane-d4	*95.8 %*	*58 - 144*		B8F0572	06/22/2018	*06/22/18 14:07*	
Surrogate: 4-Bromofluorobenzene	*87.9 %*	*60 - 137*		B8F0572	06/22/2018	*06/22/18 14:07*	
Surrogate: Dibromofluoromethane	*101 %*	*70 - 131*		B8F0572	06/22/2018	*06/22/18 14:07*	
Surrogate: Toluene-d8	*95.3 %*	*79 - 131*		B8F0572	06/22/2018	*06/22/18 14:07*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-25-4-6
Lab ID: 1802258-30

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:50	D1, U
Arsenic	**2400**	1000	20	B8F0667	06/26/2018	06/28/18 14:50	D1
Barium	**110000**	1000	20	B8F0667	06/26/2018	06/28/18 14:50	D1
Beryllium	ND	2500	50	B8F0667	06/26/2018	06/28/18 16:09	D1, D5, U
Cadmium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:50	D1, U
Chromium	**12000**	2000	20	B8F0667	06/26/2018	06/28/18 14:50	D1
Cobalt	**7400**	1000	20	B8F0667	06/26/2018	06/28/18 14:50	D1
Copper	**12000**	1000	20	B8F0667	06/26/2018	06/28/18 14:50	D1
Lead	**5500**	1000	20	B8F0667	06/26/2018	06/28/18 14:50	D1
Molybdenum	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:50	D1, U
Nickel	**7300**	1000	20	B8F0667	06/26/2018	06/28/18 14:50	D1
Selenium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:50	D1, U
Silver	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:50	D1, U
Thallium	ND	1000	20	B8F0667	06/26/2018	06/28/18 14:50	D1, U
Vanadium	**39000**	2000	20	B8F0667	06/26/2018	06/28/18 14:50	D1
Zinc	**37000**	5000	20	B8F0667	06/26/2018	06/28/18 14:50	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0674	06/26/2018	06/27/18 15:32	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0528	06/21/2018	06/22/18 00:08	U
C7	ND	1.0	1	B8F0528	06/21/2018	06/22/18 00:08	U
C8	ND	1.0	1	B8F0528	06/21/2018	06/22/18 00:08	U
C9	ND	1.0	1	B8F0528	06/21/2018	06/22/18 00:08	U
C10	ND	1.0	1	B8F0528	06/21/2018	06/22/18 00:08	U
C11	ND	1.0	1	B8F0528	06/21/2018	06/22/18 00:08	U
C12	ND	1.0	1	B8F0528	06/21/2018	06/22/18 00:08	U
Surrogate: 4-Bromofluorobenzene	*100 %*	*57 - 144*		B8F0528	06/21/2018	*06/22/18 00:08*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-25-4-6

Lab ID: 1802258-30

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C14	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C15	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C16	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C17	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C18	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C19	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C20	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C21	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C22	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C23	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C24	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C25	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C26	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C27	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C28	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C29	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C30	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C31	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C32	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C33	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C34	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C35	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C36	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C37	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C38	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C39	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
C40	ND	10	1	B8F0691	06/26/2018	06/27/18 07:21	U
Surrogate: p-Terphenyl	*110 %*	*58 - 172*		B8F0691	06/26/2018	*06/27/18 07:21*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-25-4-6
Lab ID: 1802258-30

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0705	06/26/2018	06/27/18 18:17	U
Aroclor 1221	ND	16	1	B8F0705	06/26/2018	06/27/18 18:17	U
Aroclor 1232	ND	16	1	B8F0705	06/26/2018	06/27/18 18:17	U
Aroclor 1242	ND	16	1	B8F0705	06/26/2018	06/27/18 18:17	U
Aroclor 1248	ND	16	1	B8F0705	06/26/2018	06/27/18 18:17	U
Aroclor 1254	ND	16	1	B8F0705	06/26/2018	06/27/18 18:17	U
Aroclor 1260	ND	16	1	B8F0705	06/26/2018	06/27/18 18:17	U
Aroclor 1262	ND	16	1	B8F0705	06/26/2018	06/27/18 18:17	U
Aroclor 1268	ND	16	1	B8F0705	06/26/2018	06/27/18 18:17	U
Surrogate: Decachlorobiphenyl	*86.4 %*	*14 - 109*		B8F0705	06/26/2018	*06/27/18 18:17*	
Surrogate: Tetrachloro-m-xylene	*99.9 %*	*18 - 114*		B8F0705	06/26/2018	*06/27/18 18:17*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
1,1-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
1,1-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
1,1-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0572	06/22/2018	06/22/18 14:26	U
1,2-Dibromoethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
1,2-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
1,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
1,3-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
2,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-25-4-6

Lab ID: 1802258-30

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
4-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
4-Isopropyltoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Benzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Bromobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Bromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Bromodichloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Bromoform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Bromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Carbon disulfide	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Carbon tetrachloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Chlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Chloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Chloroform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Chloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
cis-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Di-isopropyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Dibromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Dibromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Dichlorodifluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Ethyl Acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 14:26	U
Ethyl Ether	ND	50	1	B8F0572	06/22/2018	06/22/18 14:26	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Ethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Freon-113	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Hexachlorobutadiene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Isopropylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
m,p-Xylene	ND	10	1	B8F0572	06/22/2018	06/22/18 14:26	U
Methylene chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
MTBE	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
n-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
n-Propylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Naphthalene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
o-Xylene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
sec-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Styrene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-25-4-6
Lab ID: 1802258-30

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
tert-Butanol	ND	100	1	B8F0572	06/22/2018	06/22/18 14:26	U
tert-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Tetrachloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Toluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Trichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Trichlorofluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Vinyl acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 14:26	U
Vinyl chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:26	U
Surrogate: 1,2-Dichloroethane-d4	*98.2 %*	*58 - 144*		B8F0572	06/22/2018	*06/22/18 14:26*	
Surrogate: 4-Bromofluorobenzene	*88.6 %*	*60 - 137*		B8F0572	06/22/2018	*06/22/18 14:26*	
Surrogate: Dibromofluoromethane	*97.8 %*	*70 - 131*		B8F0572	06/22/2018	*06/22/18 14:26*	
Surrogate: Toluene-d8	*93.7 %*	*79 - 131*		B8F0572	06/22/2018	*06/22/18 14:26*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-3-0-0.5
Lab ID: 1802258-31

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0668	06/26/2018	06/28/18 14:56	U, D1
Arsenic	**8600**	1000	20	B8F0668	06/26/2018	06/28/18 14:56	D1
Barium	**63000**	1000	20	B8F0668	06/26/2018	06/28/18 14:56	D1
Beryllium	ND	2500	50	B8F0668	06/26/2018	06/28/18 16:10	D1, U
Cadmium	ND	1000	20	B8F0668	06/26/2018	06/28/18 14:56	D1, U
Chromium	**25000**	2000	20	B8F0668	06/26/2018	06/28/18 14:56	D1
Cobalt	**12000**	1000	20	B8F0668	06/26/2018	06/28/18 14:56	D1
Copper	**17000**	1000	20	B8F0668	06/26/2018	06/28/18 14:56	D1
Lead	**7800**	1000	20	B8F0668	06/26/2018	06/28/18 14:56	D1
Molybdenum	ND	1000	20	B8F0668	06/26/2018	06/28/18 14:56	D1, U
Nickel	**13000**	1000	20	B8F0668	06/26/2018	06/28/18 14:56	D1
Selenium	ND	1000	20	B8F0668	06/26/2018	06/28/18 14:56	D1, U
Silver	ND	1000	20	B8F0668	06/26/2018	06/28/18 14:56	D1, U
Thallium	ND	1000	20	B8F0668	06/26/2018	06/28/18 14:56	D1, U
Vanadium	**56000**	2000	20	B8F0668	06/26/2018	06/28/18 14:56	D1
Zinc	**64000**	5000	20	B8F0668	06/26/2018	06/28/18 14:56	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0674	06/26/2018	06/27/18 15:44	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0528	06/21/2018	06/22/18 00:27	U
C7	ND	1.0	1	B8F0528	06/21/2018	06/22/18 00:27	U
C8	ND	1.0	1	B8F0528	06/21/2018	06/22/18 00:27	U
C9	ND	1.0	1	B8F0528	06/21/2018	06/22/18 00:27	U
C10	ND	1.0	1	B8F0528	06/21/2018	06/22/18 00:27	U
C11	ND	1.0	1	B8F0528	06/21/2018	06/22/18 00:27	U
C12	ND	1.0	1	B8F0528	06/21/2018	06/22/18 00:27	U
Surrogate: 4-Bromofluorobenzene	*96.9 %*	*57 - 144*		B8F0528	06/21/2018	*06/22/18 00:27*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-3-0-0.5
Lab ID: 1802258-31

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C14	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C15	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C16	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C17	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C18	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C19	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C20	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C21	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C22	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C23	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C24	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C25	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C26	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C27	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C28	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C29	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C30	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C31	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C32	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C33	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C34	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C35	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C36	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C37	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C38	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C39	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
C40	ND	10	1	B8F0691	06/26/2018	06/27/18 15:05	U
Surrogate: p-Terphenyl	*105 %*	*58 - 172*		B8F0691	06/26/2018	*06/27/18 15:05*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-3-0-0.5

Lab ID: 1802258-31

Organochlorine Pesticides by EPA 8081 **Analyst: CO**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:23	U
4,4´-DDE	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:23	U
4,4´-DDT	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:23	U
Aldrin	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:23	U
alpha-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:23	U
alpha-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:23	U
beta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:23	U
Chlordane	ND	8.5	1	B8F0682	06/26/2018	06/28/18 16:23	U
delta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:23	U
Dieldrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:23	U
Endosulfan I	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:23	U
Endosulfan II	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:23	U
Endosulfan sulfate	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:23	U
Endrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:23	U
Endrin aldehyde	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:23	U
Endrin ketone	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:23	U
gamma-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:23	U
gamma-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:23	U
Heptachlor	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:23	U
Heptachlor epoxide	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:23	U
Methoxychlor	ND	5.0	1	B8F0682	06/26/2018	06/28/18 16:23	U
Toxaphene	ND	50	1	B8F0682	06/26/2018	06/28/18 16:23	U
Surrogate: Decachlorobiphenyl	*64.5 %*	*15 - 100*		B8F0682	06/26/2018	*06/28/18 16:23*	
Surrogate: Tetrachloro-m-xylene	*68.7 %*	*16 - 100*		B8F0682	06/26/2018	*06/28/18 16:23*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-3-0-0.5

Lab ID: 1802258-31

Polychlorinated Biphenyls by EPA 8082 **Analyst: CO**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0682	06/26/2018	06/26/18 15:35	U
Aroclor 1221	ND	16	1	B8F0682	06/26/2018	06/26/18 15:35	U
Aroclor 1232	ND	16	1	B8F0682	06/26/2018	06/26/18 15:35	U
Aroclor 1242	ND	16	1	B8F0682	06/26/2018	06/26/18 15:35	U
Aroclor 1248	ND	16	1	B8F0682	06/26/2018	06/26/18 15:35	U
Aroclor 1254	ND	16	1	B8F0682	06/26/2018	06/26/18 15:35	U
Aroclor 1260	ND	16	1	B8F0682	06/26/2018	06/26/18 15:35	U
Aroclor 1262	ND	16	1	B8F0682	06/26/2018	06/26/18 15:35	U
Aroclor 1268	ND	16	1	B8F0682	06/26/2018	06/26/18 15:35	U
Surrogate: Decachlorobiphenyl	*45.4 %*	*14 - 109*		B8F0682	06/26/2018	*06/26/18 15:35*	
Surrogate: Tetrachloro-m-xylene	*88.6 %*	*18 - 114*		B8F0682	06/26/2018	*06/26/18 15:35*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-3-2.0
Lab ID: 1802258-32

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:03	D1, U
Arsenic	**3100**	1000	20	B8F0668	06/26/2018	06/28/18 15:03	D1
Barium	**49000**	1000	20	B8F0668	06/26/2018	06/28/18 15:03	D1
Beryllium	ND	2500	50	B8F0668	06/26/2018	06/28/18 16:21	D1, U
Cadmium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:03	D1, U
Chromium	**23000**	2000	20	B8F0668	06/26/2018	06/28/18 15:03	D1
Cobalt	**7900**	1000	20	B8F0668	06/26/2018	06/28/18 15:03	D1
Copper	**15000**	1000	20	B8F0668	06/26/2018	06/28/18 15:03	D1
Lead	**4900**	1000	20	B8F0668	06/26/2018	06/28/18 15:03	D1
Molybdenum	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:03	D1, U
Nickel	**10000**	1000	20	B8F0668	06/26/2018	06/28/18 15:03	D1
Selenium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:03	D1, U
Silver	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:03	D1, U
Thallium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:03	D1, U
Vanadium	**49000**	2000	20	B8F0668	06/26/2018	06/28/18 15:03	D1
Zinc	**43000**	5000	20	B8F0668	06/26/2018	06/28/18 15:03	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0674	06/26/2018	06/27/18 15:46	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0528	06/21/2018	06/22/18 00:45	U
C7	ND	1.0	1	B8F0528	06/21/2018	06/22/18 00:45	U
C8	ND	1.0	1	B8F0528	06/21/2018	06/22/18 00:45	U
C9	ND	1.0	1	B8F0528	06/21/2018	06/22/18 00:45	U
C10	ND	1.0	1	B8F0528	06/21/2018	06/22/18 00:45	U
C11	ND	1.0	1	B8F0528	06/21/2018	06/22/18 00:45	U
C12	ND	1.0	1	B8F0528	06/21/2018	06/22/18 00:45	U
Surrogate: 4-Bromofluorobenzene	*102 %*	*57 - 144*		B8F0528	06/21/2018	*06/22/18 00:45*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-3-2.0

Lab ID: 1802258-32

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C14	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C15	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C16	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C17	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C18	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C19	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C20	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C21	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C22	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C23	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C24	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C25	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C26	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C27	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C28	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C29	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C30	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C31	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C32	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C33	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C34	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C35	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C36	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C37	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C38	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C39	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
C40	ND	10	1	B8F0691	06/26/2018	06/27/18 07:38	U
Surrogate: p-Terphenyl	*118 %*	*58 - 172*		B8F0691	06/26/2018	*06/27/18 07:38*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-3-2.0
Lab ID: 1802258-32

Organochlorine Pesticides by EPA 8081 **Analyst: CO**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:34	U
4,4´-DDE	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:34	U
4,4´-DDT	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:34	U
Aldrin	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:34	U
alpha-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:34	U
alpha-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:34	U
beta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:34	U
Chlordane	ND	8.5	1	B8F0682	06/26/2018	06/28/18 16:34	U
delta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:34	U
Dieldrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:34	U
Endosulfan I	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:34	U
Endosulfan II	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:34	U
Endosulfan sulfate	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:34	U
Endrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:34	U
Endrin aldehyde	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:34	U
Endrin ketone	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:34	U
gamma-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:34	U
gamma-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:34	U
Heptachlor	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:34	U
Heptachlor epoxide	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:34	U
Methoxychlor	ND	5.0	1	B8F0682	06/26/2018	06/28/18 16:34	U
Toxaphene	ND	50	1	B8F0682	06/26/2018	06/28/18 16:34	U
Surrogate: Decachlorobiphenyl	*88.5 %*	*15 - 100*		B8F0682	06/26/2018	*06/28/18 16:34*	
Surrogate: Tetrachloro-m-xylene	*65.5 %*	*16 - 100*		B8F0682	06/26/2018	*06/28/18 16:34*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-3-2.0
Lab ID: 1802258-32

Polychlorinated Biphenyls by EPA 8082 **Analyst: CO**

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016		ND	16	1	B8F0682	06/26/2018	06/26/18 15:53	U
Aroclor 1221		ND	16	1	B8F0682	06/26/2018	06/26/18 15:53	U
Aroclor 1232		ND	16	1	B8F0682	06/26/2018	06/26/18 15:53	U
Aroclor 1242		ND	16	1	B8F0682	06/26/2018	06/26/18 15:53	U
Aroclor 1248		ND	16	1	B8F0682	06/26/2018	06/26/18 15:53	U
Aroclor 1254		ND	16	1	B8F0682	06/26/2018	06/26/18 15:53	U
Aroclor 1260		ND	16	1	B8F0682	06/26/2018	06/26/18 15:53	U
Aroclor 1262		ND	16	1	B8F0682	06/26/2018	06/26/18 15:53	U
Aroclor 1268		ND	16	1	B8F0682	06/26/2018	06/26/18 15:53	U
Surrogate: Decachlorobiphenyl	*47.3 %*		*14 - 109*		B8F0682	06/26/2018	*06/26/18 15:53*	
Surrogate: Tetrachloro-m-xylene	*72.7 %*		*18 - 114*		B8F0682	06/26/2018	*06/26/18 15:53*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-4-0-0.5-Dup
Lab ID: 1802258-35

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:05	D1, U
Arsenic	**1500**	1000	20	B8F0668	06/26/2018	06/28/18 15:05	D1
Barium	**22000**	1000	20	B8F0668	06/26/2018	06/28/18 15:05	D1
Beryllium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:05	D1, U
Cadmium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:05	D1, U
Chromium	**5700**	2000	20	B8F0668	06/26/2018	06/28/18 15:05	D1
Cobalt	**2200**	1000	20	B8F0668	06/26/2018	06/28/18 15:05	D1
Copper	**14000**	1000	20	B8F0668	06/26/2018	06/28/18 15:05	D1
Lead	**19000**	1000	20	B8F0668	06/26/2018	06/28/18 15:05	D1
Molybdenum	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:05	D1, U
Nickel	**3700**	1000	20	B8F0668	06/26/2018	06/28/18 15:05	D1
Selenium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:05	D1, U
Silver	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:05	D1, U
Thallium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:05	D1, U
Vanadium	**17000**	2000	20	B8F0668	06/26/2018	06/28/18 15:05	D1
Zinc	**56000**	5000	20	B8F0668	06/26/2018	06/28/18 15:05	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0674	06/26/2018	06/27/18 15:48	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0528	06/21/2018	06/22/18 01:04	U
C7	ND	1.0	1	B8F0528	06/21/2018	06/22/18 01:04	U
C8	ND	1.0	1	B8F0528	06/21/2018	06/22/18 01:04	U
C9	ND	1.0	1	B8F0528	06/21/2018	06/22/18 01:04	U
C10	ND	1.0	1	B8F0528	06/21/2018	06/22/18 01:04	U
C11	ND	1.0	1	B8F0528	06/21/2018	06/22/18 01:04	U
C12	ND	1.0	1	B8F0528	06/21/2018	06/22/18 01:04	U
Surrogate: 4-Bromofluorobenzene	*103 %*	*57 - 144*		B8F0528	06/21/2018	*06/22/18 01:04*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-4-0-0.5-Dup
Lab ID: 1802258-35

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0691	06/26/2018	06/27/18 15:57	U
C14	ND	10	1	B8F0691	06/26/2018	06/27/18 15:57	U
C15	ND	10	1	B8F0691	06/26/2018	06/27/18 15:57	U
C16	ND	10	1	B8F0691	06/26/2018	06/27/18 15:57	U
C17	ND	10	1	B8F0691	06/26/2018	06/27/18 15:57	U
C18	ND	10	1	B8F0691	06/26/2018	06/27/18 15:57	U
C19	ND	10	1	B8F0691	06/26/2018	06/27/18 15:57	U
C20	ND	10	1	B8F0691	06/26/2018	06/27/18 15:57	U
C21	ND	10	1	B8F0691	06/26/2018	06/27/18 15:57	U
C22	ND	10	1	B8F0691	06/26/2018	06/27/18 15:57	U
C23	**13**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C24	**16**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C25	**22**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C26	**23**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C27	**39**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C28	**39**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C29	**47**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C30	**59**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C31	**64**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C32	**65**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C33	**86**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C34	**68**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C35	**100**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C36	**76**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C37	**120**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C38	**110**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C39	**110**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
C40	**75**	10	1	B8F0691	06/26/2018	06/27/18 15:57	
Surrogate: p-Terphenyl	*124 %*	*58 - 172*		B8F0691	06/26/2018	*06/27/18 15:57*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-4-0-0.5-Dup
Lab ID: 1802258-35

SPLP Hydrocarbon Chain Distribution by EPA 8015B (Modified)

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C23	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:21	U
C24	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:21	U
C25	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:21	U
C26	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:21	U
C27	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:21	U
C28	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:21	U
C29	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:21	U
C30	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:21	U
C31	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:21	U
C32	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:21	U
C33	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:21	U
C34	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:21	U
C35	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:21	U
C36	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:21	U
C40	ND	0.20	1	B8G0211	07/10/2018	07/10/18 23:21	U

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD [2C]	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:44	U
4,4´-DDE [2C]	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:44	U
4,4´-DDT	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:44	U
Aldrin	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:44	U
alpha-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:44	U
alpha-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:44	U
beta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:44	U
Chlordane	ND	8.5	1	B8F0682	06/26/2018	06/28/18 16:44	U
delta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:44	U
Dieldrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:44	U
Endosulfan I	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:44	U
Endosulfan II	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:44	U
Endosulfan sulfate	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:44	U
Endrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:44	U
Endrin aldehyde	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:44	U
Endrin ketone	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:44	U
gamma-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:44	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-4-0-0.5-Dup
Lab ID: 1802258-35

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
gamma-Chlordane		ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:44	U
Heptachlor		ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:44	U
Heptachlor epoxide		ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:44	U
Methoxychlor		ND	5.0	1	B8F0682	06/26/2018	06/28/18 16:44	U
Toxaphene		ND	50	1	B8F0682	06/26/2018	06/28/18 16:44	U
Surrogate: Decachlorobiphenyl	*48.7 %*		*15 - 100*		B8F0682	06/26/2018	*06/28/18 16:44*	
Surrogate: Tetrachloro-m-xylene	*50.0 %*		*16 - 100*		B8F0682	06/26/2018	*06/28/18 16:44*	

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016		ND	16	1	B8F0682	06/26/2018	06/26/18 16:12	U
Aroclor 1221		ND	16	1	B8F0682	06/26/2018	06/26/18 16:12	U
Aroclor 1232		ND	16	1	B8F0682	06/26/2018	06/26/18 16:12	U
Aroclor 1242		ND	16	1	B8F0682	06/26/2018	06/26/18 16:12	U
Aroclor 1248		ND	16	1	B8F0682	06/26/2018	06/26/18 16:12	U
Aroclor 1254		ND	16	1	B8F0682	06/26/2018	06/26/18 16:12	U
Aroclor 1260		ND	16	1	B8F0682	06/26/2018	06/26/18 16:12	U
Aroclor 1262		ND	16	1	B8F0682	06/26/2018	06/26/18 16:12	U
Aroclor 1268		ND	16	1	B8F0682	06/26/2018	06/26/18 16:12	U
Surrogate: Decachlorobiphenyl	*44.2 %*		*14 - 109*		B8F0682	06/26/2018	*06/26/18 16:12*	
Surrogate: Tetrachloro-m-xylene	*77.5 %*		*18 - 114*		B8F0682	06/26/2018	*06/26/18 16:12*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-4-0-0.5
Lab ID: 1802258-36

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:07	U, D1
Arsenic	**2900**	1000	20	B8F0668	06/26/2018	06/28/18 15:07	D1
Barium	**29000**	1000	20	B8F0668	06/26/2018	06/28/18 15:07	D1
Beryllium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:07	D1, U
Cadmium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:07	D1, U
Chromium	**6600**	2000	20	B8F0668	06/26/2018	06/28/18 15:07	D1
Cobalt	**2800**	1000	20	B8F0668	06/26/2018	06/28/18 15:07	D1
Copper	**15000**	1000	20	B8F0668	06/26/2018	06/28/18 15:07	D1
Lead	**14000**	1000	20	B8F0668	06/26/2018	06/28/18 15:07	D1
Molybdenum	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:07	D1, U
Nickel	**4600**	1000	20	B8F0668	06/26/2018	06/28/18 15:07	D1
Selenium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:07	D1, U
Silver	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:07	D1, U
Thallium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:07	D1, U
Vanadium	**20000**	2000	20	B8F0668	06/26/2018	06/28/18 15:07	D1
Zinc	**84000**	5000	20	B8F0668	06/26/2018	06/28/18 15:07	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0674	06/26/2018	06/27/18 15:49	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0528	06/21/2018	06/22/18 01:23	U
C7	ND	1.0	1	B8F0528	06/21/2018	06/22/18 01:23	U
C8	ND	1.0	1	B8F0528	06/21/2018	06/22/18 01:23	U
C9	ND	1.0	1	B8F0528	06/21/2018	06/22/18 01:23	U
C10	ND	1.0	1	B8F0528	06/21/2018	06/22/18 01:23	U
C11	ND	1.0	1	B8F0528	06/21/2018	06/22/18 01:23	U
C12	ND	1.0	1	B8F0528	06/21/2018	06/22/18 01:23	U
Surrogate: 4-Bromofluorobenzene	*99.7 %*	*57 - 144*		B8F0528	06/21/2018	*06/22/18 01:23*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-4-0-0.5
Lab ID: 1802258-36

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0691	06/26/2018	06/27/18 15:22	U
C14	ND	10	1	B8F0691	06/26/2018	06/27/18 15:22	U
C15	ND	10	1	B8F0691	06/26/2018	06/27/18 15:22	U
C16	ND	10	1	B8F0691	06/26/2018	06/27/18 15:22	U
C17	ND	10	1	B8F0691	06/26/2018	06/27/18 15:22	U
C18	ND	10	1	B8F0691	06/26/2018	06/27/18 15:22	U
C19	ND	10	1	B8F0691	06/26/2018	06/27/18 15:22	U
C20	ND	10	1	B8F0691	06/26/2018	06/27/18 15:22	U
C21	ND	10	1	B8F0691	06/26/2018	06/27/18 15:22	U
C22	ND	10	1	B8F0691	06/26/2018	06/27/18 15:22	U
C23	**10**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C24	**14**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C25	**20**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C26	**24**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C27	**32**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C28	**35**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C29	**45**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C30	**42**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C31	**49**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C32	**43**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C33	**60**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C34	**44**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C35	**63**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C36	**53**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C37	**62**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C38	**62**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C39	**62**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
C40	**43**	10	1	B8F0691	06/26/2018	06/27/18 15:22	
Surrogate: p-Terphenyl	*120 %*	*58 - 172*		B8F0691	06/26/2018	*06/27/18 15:22*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-4-0-0.5
Lab ID: 1802258-36

SPLP Hydrocarbon Chain Distribution by EPA 8015B (Modified)

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C23	ND	2.0	10	B8G0211	07/10/2018	07/10/18 23:55	U
C24	ND	2.0	10	B8G0211	07/10/2018	07/10/18 23:55	U
C25	ND	2.0	10	B8G0211	07/10/2018	07/10/18 23:55	U
C26	ND	2.0	10	B8G0211	07/10/2018	07/10/18 23:55	U
C27	ND	2.0	10	B8G0211	07/10/2018	07/10/18 23:55	U
C28	ND	2.0	10	B8G0211	07/10/2018	07/10/18 23:55	U
C29	ND	2.0	10	B8G0211	07/10/2018	07/10/18 23:55	U
C30	ND	2.0	10	B8G0211	07/10/2018	07/10/18 23:55	U
C31	ND	2.0	10	B8G0211	07/10/2018	07/10/18 23:55	U
C32	ND	2.0	10	B8G0211	07/10/2018	07/10/18 23:55	U
C33	ND	2.0	10	B8G0211	07/10/2018	07/10/18 23:55	U
C34	ND	2.0	10	B8G0211	07/10/2018	07/10/18 23:55	U
C35	ND	2.0	10	B8G0211	07/10/2018	07/10/18 23:55	U
C36	ND	2.0	10	B8G0211	07/10/2018	07/10/18 23:55	U
C40	ND	2.0	10	B8G0211	07/10/2018	07/10/18 23:55	U

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:55	U
4,4´-DDE [2C]	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:55	U
4,4´-DDT	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:55	U
Aldrin	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:55	U
alpha-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:55	U
alpha-Chlordane [2C]	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:55	U
beta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:55	U
Chlordane [2C]	ND	8.5	1	B8F0682	06/26/2018	06/28/18 16:55	U
delta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:55	U
Dieldrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:55	U
Endosulfan I	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:55	U
Endosulfan II	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:55	U
Endosulfan sulfate	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:55	U
Endrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:55	U
Endrin aldehyde	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:55	U
Endrin ketone	ND	2.0	1	B8F0682	06/26/2018	06/28/18 16:55	U
gamma-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:55	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-4-0-0.5
Lab ID: 1802258-36

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
gamma-Chlordane [2C]		ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:55	U
Heptachlor		ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:55	U
Heptachlor epoxide		ND	1.0	1	B8F0682	06/26/2018	06/28/18 16:55	U
Methoxychlor		ND	5.0	1	B8F0682	06/26/2018	06/28/18 16:55	U
Toxaphene		ND	50	1	B8F0682	06/26/2018	06/28/18 16:55	U
Surrogate: Decachlorobiphenyl	*36.9 %*		*15 - 100*		B8F0682	06/26/2018	*06/28/18 16:55*	
Surrogate: Tetrachloro-m-xylene	*39.0 %*		*16 - 100*		B8F0682	06/26/2018	*06/28/18 16:55*	

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016		ND	16	1	B8F0682	06/26/2018	06/26/18 16:30	U
Aroclor 1221		ND	16	1	B8F0682	06/26/2018	06/26/18 16:30	U
Aroclor 1232		ND	16	1	B8F0682	06/26/2018	06/26/18 16:30	U
Aroclor 1242		ND	16	1	B8F0682	06/26/2018	06/26/18 16:30	U
Aroclor 1248		ND	16	1	B8F0682	06/26/2018	06/26/18 16:30	U
Aroclor 1254		ND	16	1	B8F0682	06/26/2018	06/26/18 16:30	U
Aroclor 1260		ND	16	1	B8F0682	06/26/2018	06/26/18 16:30	U
Aroclor 1262		ND	16	1	B8F0682	06/26/2018	06/26/18 16:30	U
Aroclor 1268		ND	16	1	B8F0682	06/26/2018	06/26/18 16:30	U
Surrogate: Decachlorobiphenyl	*34.8 %*		*14 - 109*		B8F0682	06/26/2018	*06/26/18 16:30*	
Surrogate: Tetrachloro-m-xylene	*80.1 %*		*18 - 114*		B8F0682	06/26/2018	*06/26/18 16:30*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-4-2.0
Lab ID: 1802258-37

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:12	D1, U
Arsenic	**1300**	1000	20	B8F0668	06/26/2018	06/28/18 15:12	D1
Barium	**42000**	1000	20	B8F0668	06/26/2018	06/28/18 15:12	D1
Beryllium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:12	D1, U
Cadmium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:12	D1, U
Chromium	**9400**	2000	20	B8F0668	06/26/2018	06/28/18 15:12	D1
Cobalt	**3900**	1000	20	B8F0668	06/26/2018	06/28/18 15:12	D1
Copper	**11000**	1000	20	B8F0668	06/26/2018	06/28/18 15:12	D1
Lead	**29000**	1000	20	B8F0668	06/26/2018	06/28/18 15:12	D1
Molybdenum	**4500**	1000	20	B8F0668	06/26/2018	06/28/18 15:12	D1
Nickel	**6000**	1000	20	B8F0668	06/26/2018	06/28/18 15:12	D1
Selenium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:12	D1, U
Silver	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:12	D1, U
Thallium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:12	D1, U
Vanadium	**29000**	2000	20	B8F0668	06/26/2018	06/28/18 15:12	D1
Zinc	**32000**	5000	20	B8F0668	06/26/2018	06/28/18 15:12	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0674	06/26/2018	06/27/18 15:51	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0529	06/21/2018	06/22/18 05:42	U
C7	ND	1.0	1	B8F0529	06/21/2018	06/22/18 05:42	U
C8	ND	1.0	1	B8F0529	06/21/2018	06/22/18 05:42	U
C9	ND	1.0	1	B8F0529	06/21/2018	06/22/18 05:42	U
C10	ND	1.0	1	B8F0529	06/21/2018	06/22/18 05:42	U
C11	ND	1.0	1	B8F0529	06/21/2018	06/22/18 05:42	U
C12	ND	1.0	1	B8F0529	06/21/2018	06/22/18 05:42	U
Surrogate: 4-Bromofluorobenzene	*101 %*	*57 - 144*		B8F0529	06/21/2018	*06/22/18 05:42*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-4-2.0

Lab ID: 1802258-37

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C14	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C15	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C16	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C17	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C18	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C19	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C20	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C21	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C22	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C23	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C24	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C25	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C26	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C27	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C28	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C29	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C30	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C31	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C32	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C33	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C34	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C35	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C36	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C37	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C38	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C39	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
C40	ND	10	1	B8F0692	06/26/2018	06/27/18 03:29	U
Surrogate: p-Terphenyl	*127 %*	*58 - 172*		B8F0692	06/26/2018	*06/27/18 03:29*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-4-2.0
Lab ID: 1802258-37

Organochlorine Pesticides by EPA 8081 **Analyst: CO**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:05	U
4,4´-DDE	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:05	U
4,4´-DDT	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:05	U
Aldrin	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:05	U
alpha-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:05	U
alpha-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:05	U
beta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:05	U
Chlordane	ND	8.5	1	B8F0682	06/26/2018	06/28/18 17:05	U
delta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:05	U
Dieldrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:05	U
Endosulfan I	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:05	U
Endosulfan II	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:05	U
Endosulfan sulfate	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:05	U
Endrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:05	U
Endrin aldehyde	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:05	U
Endrin ketone	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:05	U
gamma-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:05	U
gamma-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:05	U
Heptachlor	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:05	U
Heptachlor epoxide	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:05	U
Methoxychlor	ND	5.0	1	B8F0682	06/26/2018	06/28/18 17:05	U
Toxaphene	ND	50	1	B8F0682	06/26/2018	06/28/18 17:05	U
Surrogate: Decachlorobiphenyl	*66.4 %*	*15 - 100*		B8F0682	06/26/2018	*06/28/18 17:05*	
Surrogate: Tetrachloro-m-xylene	*54.7 %*	*16 - 100*		B8F0682	06/26/2018	*06/28/18 17:05*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-4-2.0
Lab ID: 1802258-37

Polychlorinated Biphenyls by EPA 8082 **Analyst: CO**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0682	06/26/2018	06/26/18 16:49	U
Aroclor 1221	ND	16	1	B8F0682	06/26/2018	06/26/18 16:49	U
Aroclor 1232	ND	16	1	B8F0682	06/26/2018	06/26/18 16:49	U
Aroclor 1242	ND	16	1	B8F0682	06/26/2018	06/26/18 16:49	U
Aroclor 1248	ND	16	1	B8F0682	06/26/2018	06/26/18 16:49	U
Aroclor 1254	ND	16	1	B8F0682	06/26/2018	06/26/18 16:49	U
Aroclor 1260	ND	16	1	B8F0682	06/26/2018	06/26/18 16:49	U
Aroclor 1262	ND	16	1	B8F0682	06/26/2018	06/26/18 16:49	U
Aroclor 1268	ND	16	1	B8F0682	06/26/2018	06/26/18 16:49	U
Surrogate: Decachlorobiphenyl	*40.6 %*	*14 - 109*		B8F0682	06/26/2018	*06/26/18 16:49*	
Surrogate: Tetrachloro-m-xylene	*69.7 %*	*18 - 114*		B8F0682	06/26/2018	*06/26/18 16:49*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-1-0-0.5
Lab ID: 1802258-38

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:14	D1, U
Arsenic	**3800**	1000	20	B8F0668	06/26/2018	06/28/18 15:14	D1
Barium	**54000**	1000	20	B8F0668	06/26/2018	06/28/18 15:14	D1
Beryllium	ND	2500	50	B8F0668	06/26/2018	06/28/18 16:23	D1, U
Cadmium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:14	D1, U
Chromium	**18000**	2000	20	B8F0668	06/26/2018	06/28/18 15:14	D1
Cobalt	**6500**	1000	20	B8F0668	06/26/2018	06/28/18 15:14	D1
Copper	**15000**	1000	20	B8F0668	06/26/2018	06/28/18 15:14	D1
Lead	**11000**	1000	20	B8F0668	06/26/2018	06/28/18 15:14	D1
Molybdenum	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:14	D1, U
Nickel	**9500**	1000	20	B8F0668	06/26/2018	06/28/18 15:14	D1
Selenium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:14	D1, U
Silver	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:14	D1, U
Thallium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:14	D1, U
Vanadium	**44000**	2000	20	B8F0668	06/26/2018	06/28/18 15:14	D1
Zinc	**37000**	5000	20	B8F0668	06/26/2018	06/28/18 15:14	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0674	06/26/2018	06/27/18 15:53	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: AG

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8G0013	07/02/2018	07/02/18 18:33	U
C7	ND	1.0	1	B8G0013	07/02/2018	07/02/18 18:33	U
C8	ND	1.0	1	B8G0013	07/02/2018	07/02/18 18:33	U
C9	ND	1.0	1	B8G0013	07/02/2018	07/02/18 18:33	U
C10	ND	1.0	1	B8G0013	07/02/2018	07/02/18 18:33	U
C11	ND	1.0	1	B8G0013	07/02/2018	07/02/18 18:33	U
C12	ND	1.0	1	B8G0013	07/02/2018	07/02/18 18:33	U
Surrogate: 4-Bromofluorobenzene	*110 %*	*57 - 144*		B8G0013	07/02/2018	*07/02/18 18:33*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-1-0-0.5

Lab ID: 1802258-38

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C14	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C15	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C16	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C17	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C18	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C19	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C20	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C21	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C22	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C23	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C24	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C25	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C26	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C27	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C28	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C29	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C30	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C31	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C32	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C33	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C34	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C35	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C36	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C37	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C38	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C39	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
C40	ND	10	1	B8G0047	07/03/2018	07/03/18 19:24	U
Surrogate: p-Terphenyl	*109 %*	*58 - 172*		B8G0047	07/03/2018	*07/03/18 19:24*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-1-0-0.5
Lab ID: 1802258-38

Organochlorine Pesticides by EPA 8081 **Analyst: CO**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:16	U
4,4´-DDE	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:16	U
4,4´-DDT	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:16	U
Aldrin	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:16	U
alpha-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:16	U
alpha-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:16	U
beta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:16	U
Chlordane	ND	8.5	1	B8F0682	06/26/2018	06/28/18 17:16	U
delta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:16	U
Dieldrin [2C]	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:16	U
Endosulfan I	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:16	U
Endosulfan II	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:16	U
Endosulfan sulfate	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:16	U
Endrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:16	U
Endrin aldehyde	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:16	U
Endrin ketone	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:16	U
gamma-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:16	U
gamma-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:16	U
Heptachlor	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:16	U
Heptachlor epoxide	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:16	U
Methoxychlor	ND	5.0	1	B8F0682	06/26/2018	06/28/18 17:16	U
Toxaphene	ND	50	1	B8F0682	06/26/2018	06/28/18 17:16	U
Surrogate: Decachlorobiphenyl	*77.8 %*	*15 - 100*		B8F0682	06/26/2018	*06/28/18 17:16*	
Surrogate: Tetrachloro-m-xylene	*67.0 %*	*16 - 100*		B8F0682	06/26/2018	*06/28/18 17:16*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-1-0-0.5
Lab ID: 1802258-38

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016		ND	16	1	B8F0682	06/26/2018	06/26/18 17:07	U
Aroclor 1221		ND	16	1	B8F0682	06/26/2018	06/26/18 17:07	U
Aroclor 1232		ND	16	1	B8F0682	06/26/2018	06/26/18 17:07	U
Aroclor 1242		ND	16	1	B8F0682	06/26/2018	06/26/18 17:07	U
Aroclor 1248		ND	16	1	B8F0682	06/26/2018	06/26/18 17:07	U
Aroclor 1254		ND	16	1	B8F0682	06/26/2018	06/26/18 17:07	U
Aroclor 1260		ND	16	1	B8F0682	06/26/2018	06/26/18 17:07	U
Aroclor 1262		ND	16	1	B8F0682	06/26/2018	06/26/18 17:07	U
Aroclor 1268		ND	16	1	B8F0682	06/26/2018	06/26/18 17:07	U
Surrogate: Decachlorobiphenyl	*49.2 %*		*14 - 109*		B8F0682	06/26/2018	*06/26/18 17:07*	
Surrogate: Tetrachloro-m-xylene	*87.2 %*		*18 - 114*		B8F0682	06/26/2018	*06/26/18 17:07*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:07	U
Acenaphthene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:07	U
Acenaphthylene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:07	U
Anthracene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:07	U
Benzo(a)anthracene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:07	U
Benzo(a)pyrene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:07	U
Benzo(b)fluoranthene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:07	U
Benzo(g,h,i)perylene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:07	U
Benzo(k)fluoranthene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:07	U
Chrysene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:07	U
Dibenz(a,h)anthracene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:07	U
Fluoranthene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:07	U
Fluorene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:07	U
Indeno(1,2,3-cd)pyrene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:07	U
Naphthalene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:07	U
Phenanthrene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:07	U
Pyrene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:07	U
Surrogate: 1,2-Dichlorobenzene-d4	*75.8 %*		*25 - 99*		B8F0650	06/25/2018	*06/27/18 16:07*	
Surrogate: 2-Fluorobiphenyl	*77.7 %*		*27 - 118*		B8F0650	06/25/2018	*06/27/18 16:07*	
Surrogate: Nitrobenzene-d5	*54.6 %*		*14 - 127*		B8F0650	06/25/2018	*06/27/18 16:07*	
Surrogate: 4-Terphenyl-d14	*86.1 %*		*31 - 123*		B8F0650	06/25/2018	*06/27/18 16:07*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-1-0-0.5-Dup
Lab ID: 1802258-39

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:16	D1, U
Arsenic	**5100**	1000	20	B8F0668	06/26/2018	06/28/18 15:16	D1
Barium	**45000**	1000	20	B8F0668	06/26/2018	06/28/18 15:16	D1
Beryllium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:16	D1, U
Cadmium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:16	D1, U
Chromium	**15000**	2000	20	B8F0668	06/26/2018	06/28/18 15:16	D1
Cobalt	**5500**	1000	20	B8F0668	06/26/2018	06/28/18 15:16	D1
Copper	**12000**	1000	20	B8F0668	06/26/2018	06/28/18 15:16	D1
Lead	**5700**	1000	20	B8F0668	06/26/2018	06/28/18 15:16	D1
Molybdenum	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:16	D1, U
Nickel	**7700**	1000	20	B8F0668	06/26/2018	06/28/18 15:16	D1
Selenium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:16	D1, U
Silver	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:16	D1, U
Thallium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:16	D1, U
Vanadium	**38000**	2000	20	B8F0668	06/26/2018	06/28/18 15:16	D1
Zinc	**32000**	5000	20	B8F0668	06/26/2018	06/28/18 15:16	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0674	06/26/2018	06/27/18 15:55	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: AG

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8G0058	07/03/2018	07/03/18 17:45	U
C7	ND	1.0	1	B8G0058	07/03/2018	07/03/18 17:45	U
C8	ND	1.0	1	B8G0058	07/03/2018	07/03/18 17:45	U
C9	ND	1.0	1	B8G0058	07/03/2018	07/03/18 17:45	U
C10	ND	1.0	1	B8G0058	07/03/2018	07/03/18 17:45	U
C11	ND	1.0	1	B8G0058	07/03/2018	07/03/18 17:45	U
C12	ND	1.0	1	B8G0058	07/03/2018	07/03/18 17:45	U
Surrogate: 4-Bromofluorobenzene	*96.6 %*	*57 - 144*		B8G0058	07/03/2018	*07/03/18 17:45*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-1-0-0.5-Dup
Lab ID: 1802258-39

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C14	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C15	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C16	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C17	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C18	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C19	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C20	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C21	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C22	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C23	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C24	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C25	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C26	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C27	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C28	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C29	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C30	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C31	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C32	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C33	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C34	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C35	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C36	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C37	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C38	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C39	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
C40	ND	10	1	B8G0047	07/03/2018	07/03/18 20:15	U
Surrogate: p-Terphenyl	*111 %*	*58 - 172*		B8G0047	07/03/2018	*07/03/18 20:15*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-1-0-0.5-Dup
Lab ID: 1802258-39

Organochlorine Pesticides by EPA 8081 **Analyst: CO**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:26	U
4,4´-DDE	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:26	U
4,4´-DDT	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:26	U
Aldrin	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:26	U
alpha-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:26	U
alpha-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:26	U
beta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:26	U
Chlordane	ND	8.5	1	B8F0682	06/26/2018	06/28/18 17:26	U
delta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:26	U
Dieldrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:26	U
Endosulfan I	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:26	U
Endosulfan II	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:26	U
Endosulfan sulfate	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:26	U
Endrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:26	U
Endrin aldehyde	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:26	U
Endrin ketone	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:26	U
gamma-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:26	U
gamma-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:26	U
Heptachlor	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:26	U
Heptachlor epoxide	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:26	U
Methoxychlor	ND	5.0	1	B8F0682	06/26/2018	06/28/18 17:26	U
Toxaphene	ND	50	1	B8F0682	06/26/2018	06/28/18 17:26	U
Surrogate: Decachlorobiphenyl	*75.0 %*	*15 - 100*		B8F0682	06/26/2018	*06/28/18 17:26*	
Surrogate: Tetrachloro-m-xylene	*69.3 %*	*16 - 100*		B8F0682	06/26/2018	*06/28/18 17:26*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-1-0-0.5-Dup
Lab ID: 1802258-39

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016		ND	16	1	B8F0682	06/26/2018	06/26/18 17:26	U
Aroclor 1221		ND	16	1	B8F0682	06/26/2018	06/26/18 17:26	U
Aroclor 1232		ND	16	1	B8F0682	06/26/2018	06/26/18 17:26	U
Aroclor 1242		ND	16	1	B8F0682	06/26/2018	06/26/18 17:26	U
Aroclor 1248		ND	16	1	B8F0682	06/26/2018	06/26/18 17:26	U
Aroclor 1254		ND	16	1	B8F0682	06/26/2018	06/26/18 17:26	U
Aroclor 1260		ND	16	1	B8F0682	06/26/2018	06/26/18 17:26	U
Aroclor 1262		ND	16	1	B8F0682	06/26/2018	06/26/18 17:26	U
Aroclor 1268		ND	16	1	B8F0682	06/26/2018	06/26/18 17:26	U
Surrogate: Decachlorobiphenyl	*49.1 %*		*14 - 109*		B8F0682	06/26/2018	*06/26/18 17:26*	
Surrogate: Tetrachloro-m-xylene	*83.7 %*		*18 - 114*		B8F0682	06/26/2018	*06/26/18 17:26*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:39	U
Acenaphthene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:39	U
Acenaphthylene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:39	U
Anthracene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:39	U
Benzo(a)anthracene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:39	U
Benzo(a)pyrene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:39	U
Benzo(b)fluoranthene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:39	U
Benzo(g,h,i)perylene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:39	U
Benzo(k)fluoranthene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:39	U
Chrysene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:39	U
Dibenz(a,h)anthracene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:39	U
Fluoranthene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:39	U
Fluorene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:39	U
Indeno(1,2,3-cd)pyrene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:39	U
Naphthalene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:39	U
Phenanthrene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:39	U
Pyrene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 16:39	U
Surrogate: 1,2-Dichlorobenzene-d4	*78.0 %*		*25 - 99*		B8F0650	06/25/2018	*06/27/18 16:39*	
Surrogate: 2-Fluorobiphenyl	*78.6 %*		*27 - 118*		B8F0650	06/25/2018	*06/27/18 16:39*	
Surrogate: Nitrobenzene-d5	*56.6 %*		*14 - 127*		B8F0650	06/25/2018	*06/27/18 16:39*	
Surrogate: 4-Terphenyl-d14	*89.6 %*		*31 - 123*		B8F0650	06/25/2018	*06/27/18 16:39*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-1-1.0
Lab ID: 1802258-40

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:18	D1, U
Arsenic	**3000**	1000	20	B8F0668	06/26/2018	06/28/18 15:18	D1
Barium	**47000**	1000	20	B8F0668	06/26/2018	06/28/18 15:18	D1
Beryllium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:18	D1, U
Cadmium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:18	D1, U
Chromium	**15000**	2000	20	B8F0668	06/26/2018	06/28/18 15:18	D1
Cobalt	**6300**	1000	20	B8F0668	06/26/2018	06/28/18 15:18	D1
Copper	**14000**	1000	20	B8F0668	06/26/2018	06/28/18 15:18	D1
Lead	**14000**	1000	20	B8F0668	06/26/2018	06/28/18 15:18	D1
Molybdenum	**1400**	1000	20	B8F0668	06/26/2018	06/28/18 15:18	D1
Nickel	**9300**	1000	20	B8F0668	06/26/2018	06/28/18 15:18	D1
Selenium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:18	D1, U
Silver	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:18	D1, U
Thallium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:18	D1, U
Vanadium	**40000**	2000	20	B8F0668	06/26/2018	06/28/18 15:18	D1
Zinc	**41000**	5000	20	B8F0668	06/26/2018	06/28/18 15:18	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0674	06/26/2018	06/27/18 15:57	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: AG

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8G0013	07/02/2018	07/02/18 18:52	U
C7	ND	1.0	1	B8G0013	07/02/2018	07/02/18 18:52	U
C8	ND	1.0	1	B8G0013	07/02/2018	07/02/18 18:52	U
C9	ND	1.0	1	B8G0013	07/02/2018	07/02/18 18:52	U
C10	ND	1.0	1	B8G0013	07/02/2018	07/02/18 18:52	U
C11	ND	1.0	1	B8G0013	07/02/2018	07/02/18 18:52	U
C12	ND	1.0	1	B8G0013	07/02/2018	07/02/18 18:52	U
Surrogate: 4-Bromofluorobenzene	*107 %*	*57 - 144*		B8G0013	07/02/2018	*07/02/18 18:52*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-1-1.0

Lab ID: 1802258-40

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C14	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C15	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C16	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C17	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C18	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C19	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C20	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C21	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C22	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C23	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C24	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C25	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C26	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C27	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C28	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C29	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C30	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C31	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C32	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C33	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C34	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C35	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C36	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C37	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C38	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C39	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
C40	ND	10	1	B8G0047	07/03/2018	07/03/18 20:33	U
Surrogate: p-Terphenyl	*104 %*	*58 - 172*		B8G0047	07/03/2018	*07/03/18 20:33*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-1-1.0
Lab ID: 1802258-40

Organochlorine Pesticides by EPA 8081 **Analyst: CO**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:37	U
4,4´-DDE	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:37	U
4,4´-DDT	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:37	U
Aldrin	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:37	U
alpha-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:37	U
alpha-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:37	U
beta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:37	U
Chlordane	ND	8.5	1	B8F0682	06/26/2018	06/28/18 17:37	U
delta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:37	U
Dieldrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:37	U
Endosulfan I	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:37	U
Endosulfan II	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:37	U
Endosulfan sulfate	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:37	U
Endrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:37	U
Endrin aldehyde	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:37	U
Endrin ketone	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:37	U
gamma-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:37	U
gamma-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:37	U
Heptachlor	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:37	U
Heptachlor epoxide	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:37	U
Methoxychlor	ND	5.0	1	B8F0682	06/26/2018	06/28/18 17:37	U
Toxaphene	ND	50	1	B8F0682	06/26/2018	06/28/18 17:37	U
Surrogate: Decachlorobiphenyl	*74.3 %*	*15 - 100*		B8F0682	06/26/2018	*06/28/18 17:37*	
Surrogate: Tetrachloro-m-xylene	*79.0 %*	*16 - 100*		B8F0682	06/26/2018	*06/28/18 17:37*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-1-1.0
Lab ID: 1802258-40

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016		ND	16	1	B8F0682	06/26/2018	06/26/18 17:45	U
Aroclor 1221		ND	16	1	B8F0682	06/26/2018	06/26/18 17:45	U
Aroclor 1232		ND	16	1	B8F0682	06/26/2018	06/26/18 17:45	U
Aroclor 1242		ND	16	1	B8F0682	06/26/2018	06/26/18 17:45	U
Aroclor 1248		ND	16	1	B8F0682	06/26/2018	06/26/18 17:45	U
Aroclor 1254		ND	16	1	B8F0682	06/26/2018	06/26/18 17:45	U
Aroclor 1260		ND	16	1	B8F0682	06/26/2018	06/26/18 17:45	U
Aroclor 1262		ND	16	1	B8F0682	06/26/2018	06/26/18 17:45	U
Aroclor 1268		ND	16	1	B8F0682	06/26/2018	06/26/18 17:45	U
Surrogate: Decachlorobiphenyl	*51.2 %*		*14 - 109*		B8F0682	06/26/2018	*06/26/18 17:45*	
Surrogate: Tetrachloro-m-xylene	*86.9 %*		*18 - 114*		B8F0682	06/26/2018	*06/26/18 17:45*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:12	U
Acenaphthene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:12	U
Acenaphthylene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:12	U
Anthracene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:12	U
Benzo(a)anthracene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:12	U
Benzo(a)pyrene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:12	U
Benzo(b)fluoranthene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:12	U
Benzo(g,h,i)perylene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:12	U
Benzo(k)fluoranthene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:12	U
Chrysene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:12	U
Dibenz(a,h)anthracene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:12	U
Fluoranthene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:12	U
Fluorene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:12	U
Indeno(1,2,3-cd)pyrene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:12	U
Naphthalene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:12	U
Phenanthrene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:12	U
Pyrene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:12	U
Surrogate: 1,2-Dichlorobenzene-d4	*65.6 %*		*25 - 99*		B8F0650	06/25/2018	*06/27/18 17:12*	
Surrogate: 2-Fluorobiphenyl	*71.0 %*		*27 - 118*		B8F0650	06/25/2018	*06/27/18 17:12*	
Surrogate: Nitrobenzene-d5	*47.5 %*		*14 - 127*		B8F0650	06/25/2018	*06/27/18 17:12*	
Surrogate: 4-Terphenyl-d14	*88.3 %*		*31 - 123*		B8F0650	06/25/2018	*06/27/18 17:12*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-1-2.0
Lab ID: 1802258-41

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:20	D1, U
Arsenic	**2200**	1000	20	B8F0668	06/26/2018	06/28/18 15:20	D1
Barium	**37000**	1000	20	B8F0668	06/26/2018	06/28/18 15:20	D1
Beryllium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:20	D1, U
Cadmium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:20	D1, U
Chromium	**11000**	2000	20	B8F0668	06/26/2018	06/28/18 15:20	D1
Cobalt	**4300**	1000	20	B8F0668	06/26/2018	06/28/18 15:20	D1
Copper	**9400**	1000	20	B8F0668	06/26/2018	06/28/18 15:20	D1
Lead	**6200**	1000	20	B8F0668	06/26/2018	06/28/18 15:20	D1
Molybdenum	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:20	D1, U
Nickel	**6100**	1000	20	B8F0668	06/26/2018	06/28/18 15:20	D1
Selenium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:20	D1, U
Silver	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:20	D1, U
Thallium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:20	D1, U
Vanadium	**31000**	2000	20	B8F0668	06/26/2018	06/28/18 15:20	D1
Zinc	**26000**	5000	20	B8F0668	06/26/2018	06/28/18 15:20	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0674	06/26/2018	06/27/18 15:59	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: AG

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8G0013	07/02/2018	07/02/18 19:10	U
C7	ND	1.0	1	B8G0013	07/02/2018	07/02/18 19:10	U
C8	ND	1.0	1	B8G0013	07/02/2018	07/02/18 19:10	U
C9	ND	1.0	1	B8G0013	07/02/2018	07/02/18 19:10	U
C10	ND	1.0	1	B8G0013	07/02/2018	07/02/18 19:10	U
C11	ND	1.0	1	B8G0013	07/02/2018	07/02/18 19:10	U
C12	ND	1.0	1	B8G0013	07/02/2018	07/02/18 19:10	U
Surrogate: 4-Bromofluorobenzene	*108 %*	*57 - 144*		B8G0013	07/02/2018	*07/02/18 19:10*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-1-2.0

Lab ID: 1802258-41

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C14	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C15	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C16	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C17	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C18	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C19	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C20	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C21	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C22	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C23	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C24	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C25	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C26	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C27	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C28	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C29	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C30	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C31	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C32	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C33	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C34	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C35	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C36	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C37	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C38	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C39	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
C40	ND	10	1	B8G0047	07/03/2018	07/03/18 20:50	U
Surrogate: p-Terphenyl	*99.7 %*	*58 - 172*		B8G0047	07/03/2018	*07/03/18 20:50*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-1-2.0
Lab ID: 1802258-41

Organochlorine Pesticides by EPA 8081 **Analyst: CO**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:47	U
4,4´-DDE	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:47	U
4,4´-DDT	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:47	U
Aldrin	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:47	U
alpha-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:47	U
alpha-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:47	U
beta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:47	U
Chlordane	ND	8.5	1	B8F0682	06/26/2018	06/28/18 17:47	U
delta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:47	U
Dieldrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:47	U
Endosulfan I	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:47	U
Endosulfan II	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:47	U
Endosulfan sulfate	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:47	U
Endrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:47	U
Endrin aldehyde	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:47	U
Endrin ketone	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:47	U
gamma-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:47	U
gamma-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:47	U
Heptachlor	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:47	U
Heptachlor epoxide	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:47	U
Methoxychlor	ND	5.0	1	B8F0682	06/26/2018	06/28/18 17:47	U
Toxaphene	ND	50	1	B8F0682	06/26/2018	06/28/18 17:47	U
Surrogate: Decachlorobiphenyl	*72.3 %*	*15 - 100*		B8F0682	06/26/2018	*06/28/18 17:47*	
Surrogate: Tetrachloro-m-xylene	*81.0 %*	*16 - 100*		B8F0682	06/26/2018	*06/28/18 17:47*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-1-2.0
Lab ID: 1802258-41

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016		ND	16	1	B8F0682	06/26/2018	06/26/18 18:03	U
Aroclor 1221		ND	16	1	B8F0682	06/26/2018	06/26/18 18:03	U
Aroclor 1232		ND	16	1	B8F0682	06/26/2018	06/26/18 18:03	U
Aroclor 1242		ND	16	1	B8F0682	06/26/2018	06/26/18 18:03	U
Aroclor 1248		ND	16	1	B8F0682	06/26/2018	06/26/18 18:03	U
Aroclor 1254		ND	16	1	B8F0682	06/26/2018	06/26/18 18:03	U
Aroclor 1260		ND	16	1	B8F0682	06/26/2018	06/26/18 18:03	U
Aroclor 1262		ND	16	1	B8F0682	06/26/2018	06/26/18 18:03	U
Aroclor 1268		ND	16	1	B8F0682	06/26/2018	06/26/18 18:03	U
Surrogate: Decachlorobiphenyl	*51.6 %*		*14 - 109*		B8F0682	06/26/2018	*06/26/18 18:03*	
Surrogate: Tetrachloro-m-xylene	*95.0 %*		*18 - 114*		B8F0682	06/26/2018	*06/26/18 18:03*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:45	U
Acenaphthene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:45	U
Acenaphthylene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:45	U
Anthracene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:45	U
Benzo(a)anthracene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:45	U
Benzo(a)pyrene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:45	U
Benzo(b)fluoranthene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:45	U
Benzo(g,h,i)perylene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:45	U
Benzo(k)fluoranthene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:45	U
Chrysene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:45	U
Dibenz(a,h)anthracene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:45	U
Fluoranthene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:45	U
Fluorene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:45	U
Indeno(1,2,3-cd)pyrene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:45	U
Naphthalene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:45	U
Phenanthrene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:45	U
Pyrene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 17:45	U
Surrogate: 1,2-Dichlorobenzene-d4	*71.8 %*		*25 - 99*		B8F0650	06/25/2018	*06/27/18 17:45*	
Surrogate: 2-Fluorobiphenyl	*73.2 %*		*27 - 118*		B8F0650	06/25/2018	*06/27/18 17:45*	
Surrogate: Nitrobenzene-d5	*52.6 %*		*14 - 127*		B8F0650	06/25/2018	*06/27/18 17:45*	
Surrogate: 4-Terphenyl-d14	*89.0 %*		*31 - 123*		B8F0650	06/25/2018	*06/27/18 17:45*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-1-4.0
Lab ID: 1802258-42

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: AG

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8G0058	07/03/2018	07/03/18 18:04	U
C7	ND	1.0	1	B8G0058	07/03/2018	07/03/18 18:04	U
C8	ND	1.0	1	B8G0058	07/03/2018	07/03/18 18:04	U
C9	ND	1.0	1	B8G0058	07/03/2018	07/03/18 18:04	U
C10	ND	1.0	1	B8G0058	07/03/2018	07/03/18 18:04	U
C11	ND	1.0	1	B8G0058	07/03/2018	07/03/18 18:04	U
C12	ND	1.0	1	B8G0058	07/03/2018	07/03/18 18:04	U
Surrogate: 4-Bromofluorobenzene	*104 %*	*57 - 144*		B8G0058	07/03/2018	*07/03/18 18:04*	

Hydrocarbon Chain Distribution by EPA 8015B (Modified)

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
C14	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
C15	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
C16	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
C17	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
C18	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
C19	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
C20	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
C21	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
C22	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
C23	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
C24	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
C25	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
C26	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
C27	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
C28	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
C29	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
C30	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
C31	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
C32	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
C33	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
C34	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
C35	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
C36	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-1-4.0

Lab ID: 1802258-42

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C37	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
C38	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
C39	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
C40	ND	10	1	B8G0047	07/03/2018	07/03/18 21:07	U
Surrogate: p-Terphenyl	*108 %*	*58 - 172*		B8G0047	07/03/2018	*07/03/18 21:07*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-2-0-0.5
Lab ID: 1802258-43

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:22	D1, U
Arsenic	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:22	D1, U
Barium	**24000**	1000	20	B8F0668	06/26/2018	06/28/18 15:22	D1
Beryllium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:22	D1, U
Cadmium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:22	D1, U
Chromium	**3900**	2000	20	B8F0668	06/26/2018	06/28/18 15:22	D1
Cobalt	**2000**	1000	20	B8F0668	06/26/2018	06/28/18 15:22	D1
Copper	**6000**	1000	20	B8F0668	06/26/2018	06/28/18 15:22	D1
Lead	**9400**	1000	20	B8F0668	06/26/2018	06/28/18 15:22	D1
Molybdenum	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:22	D1, U
Nickel	**4600**	1000	20	B8F0668	06/26/2018	06/28/18 15:22	D1
Selenium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:22	D1, U
Silver	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:22	D1, U
Thallium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:22	D1, U
Vanadium	**13000**	2000	20	B8F0668	06/26/2018	06/28/18 15:22	D1
Zinc	**17000**	5000	20	B8F0668	06/26/2018	06/28/18 15:22	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0674	06/26/2018	06/27/18 16:04	

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:58	U
4,4´-DDE	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:58	U
4,4´-DDT	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:58	U
Aldrin	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:58	U
alpha-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:58	U
alpha-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:58	U
beta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:58	U
Chlordane	ND	8.5	1	B8F0682	06/26/2018	06/28/18 17:58	U
delta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:58	U
Dieldrin [2C]	ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:58	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-2-0-0.5
Lab ID: 1802258-43

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Endosulfan I		ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:58	U
Endosulfan II		ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:58	U
Endosulfan sulfate		ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:58	U
Endrin		ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:58	U
Endrin aldehyde		ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:58	U
Endrin ketone		ND	2.0	1	B8F0682	06/26/2018	06/28/18 17:58	U
gamma-BHC		ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:58	U
gamma-Chlordane		ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:58	U
Heptachlor		ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:58	U
Heptachlor epoxide		ND	1.0	1	B8F0682	06/26/2018	06/28/18 17:58	U
Methoxychlor		ND	5.0	1	B8F0682	06/26/2018	06/28/18 17:58	U
Toxaphene		ND	50	1	B8F0682	06/26/2018	06/28/18 17:58	U
Surrogate: Decachlorobiphenyl	*71.8 %*		*15 - 100*		B8F0682	06/26/2018	*06/28/18 17:58*	
Surrogate: Tetrachloro-m-xylene	*60.1 %*		*16 - 100*		B8F0682	06/26/2018	*06/28/18 17:58*	

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016		ND	16	1	B8F0682	06/26/2018	06/26/18 18:22	U
Aroclor 1221		ND	16	1	B8F0682	06/26/2018	06/26/18 18:22	U
Aroclor 1232		ND	16	1	B8F0682	06/26/2018	06/26/18 18:22	U
Aroclor 1242		ND	16	1	B8F0682	06/26/2018	06/26/18 18:22	U
Aroclor 1248		ND	16	1	B8F0682	06/26/2018	06/26/18 18:22	U
Aroclor 1254		ND	16	1	B8F0682	06/26/2018	06/26/18 18:22	U
Aroclor 1260		ND	16	1	B8F0682	06/26/2018	06/26/18 18:22	U
Aroclor 1262		ND	16	1	B8F0682	06/26/2018	06/26/18 18:22	U
Aroclor 1268		ND	16	1	B8F0682	06/26/2018	06/26/18 18:22	U
Surrogate: Decachlorobiphenyl	*41.0 %*		*14 - 109*		B8F0682	06/26/2018	*06/26/18 18:22*	
Surrogate: Tetrachloro-m-xylene	*61.0 %*		*18 - 114*		B8F0682	06/26/2018	*06/26/18 18:22*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-2-0-0.5
Lab ID: 1802258-43

SPLP Semivolatile Organic Compounds by EPA 8270C

Analyst: SP

Analyte		Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Pyrene		ND	0.01	1	B8G0168	07/09/2018	07/09/18 17:48	U
Surrogate: 1,2-Dichlorobenzene-d4	*43.0 %*		*32 - 88*		B8G0168	07/09/2018	*07/09/18 17:48*	
Surrogate: 2,4,6-Tribromophenol	*79.8 %*		*46 - 136*		B8G0168	07/09/2018	*07/09/18 17:48*	
Surrogate: 2-Chlorophenol-d4	*39.6 %*		*31 - 76*		B8G0168	07/09/2018	*07/09/18 17:48*	
Surrogate: 2-Fluorobiphenyl	*52.0 %*		*42 - 99*		B8G0168	07/09/2018	*07/09/18 17:48*	
Surrogate: 2-Fluorophenol	*20.5 %*		*15 - 47*		B8G0168	07/09/2018	*07/09/18 17:48*	
Surrogate: 4-Terphenyl-d14	*105 %*		*58 - 118*		B8G0168	07/09/2018	*07/09/18 17:48*	
Surrogate: Nitrobenzene-d5	*47.6 %*		*35 - 99*		B8G0168	07/09/2018	*07/09/18 17:48*	
Surrogate: Phenol-d6	*13.3 %*		*10 - 36*		B8G0168	07/09/2018	*07/09/18 17:48*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:18	U
Acenaphthene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:18	U
Acenaphthylene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:18	U
Anthracene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:18	U
Benzo(a)anthracene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:18	U
Benzo(a)pyrene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:18	U
Benzo(b)fluoranthene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:18	U
Benzo(g,h,i)perylene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:18	U
Benzo(k)fluoranthene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:18	U
Chrysene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:18	U
Dibenz(a,h)anthracene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:18	U
Fluoranthene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:18	U
Fluorene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:18	U
Indeno(1,2,3-cd)pyrene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:18	U
Naphthalene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:18	U
Phenanthrene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:18	U
Pyrene		**5.7**	5.0	1	B8F0650	06/25/2018	06/27/18 18:18	
Surrogate: 1,2-Dichlorobenzene-d4	*57.4 %*		*25 - 99*		B8F0650	06/25/2018	*06/27/18 18:18*	
Surrogate: 2-Fluorobiphenyl	*62.1 %*		*27 - 118*		B8F0650	06/25/2018	*06/27/18 18:18*	
Surrogate: Nitrobenzene-d5	*43.0 %*		*14 - 127*		B8F0650	06/25/2018	*06/27/18 18:18*	
Surrogate: 4-Terphenyl-d14	*73.5 %*		*31 - 123*		B8F0650	06/25/2018	*06/27/18 18:18*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-2-0-0.5-Dup
Lab ID: 1802258-44

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:24	D1, U
Arsenic	**1000**	1000	20	B8F0668	06/26/2018	06/28/18 15:24	D1
Barium	**28000**	1000	20	B8F0668	06/26/2018	06/28/18 15:24	D1
Beryllium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:24	D1, U
Cadmium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:24	D1, U
Chromium	**4800**	2000	20	B8F0668	06/26/2018	06/28/18 15:24	D1
Cobalt	**2500**	1000	20	B8F0668	06/26/2018	06/28/18 15:24	D1
Copper	**6800**	1000	20	B8F0668	06/26/2018	06/28/18 15:24	D1
Lead	**11000**	1000	20	B8F0668	06/26/2018	06/28/18 15:24	D1
Molybdenum	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:24	D1, U
Nickel	**5100**	1000	20	B8F0668	06/26/2018	06/28/18 15:24	D1
Selenium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:24	D1, U
Silver	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:24	D1, U
Thallium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:24	D1, U
Vanadium	**16000**	2000	20	B8F0668	06/26/2018	06/28/18 15:24	D1
Zinc	**21000**	5000	20	B8F0668	06/26/2018	06/28/18 15:24	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0674	06/26/2018	06/27/18 16:06	

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:08	U
4,4´-DDE	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:08	U
4,4´-DDT	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:08	U
Aldrin	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:08	U
alpha-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:08	U
alpha-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:08	U
beta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:08	U
Chlordane	ND	8.5	1	B8F0682	06/26/2018	06/28/18 18:08	U
delta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:08	U
Dieldrin [2C]	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:08	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-2-0-0.5-Dup
Lab ID: 1802258-44

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Endosulfan I	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:08	U
Endosulfan II	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:08	U
Endosulfan sulfate	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:08	U
Endrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:08	U
Endrin aldehyde	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:08	U
Endrin ketone	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:08	U
gamma-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:08	U
gamma-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:08	U
Heptachlor	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:08	U
Heptachlor epoxide	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:08	U
Methoxychlor	ND	5.0	1	B8F0682	06/26/2018	06/28/18 18:08	U
Toxaphene	ND	50	1	B8F0682	06/26/2018	06/28/18 18:08	U
Surrogate: Decachlorobiphenyl	*71.3 %*	*15 - 100*		B8F0682	06/26/2018	*06/28/18 18:08*	
Surrogate: Tetrachloro-m-xylene	*60.2 %*	*16 - 100*		B8F0682	06/26/2018	*06/28/18 18:08*	

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0682	06/26/2018	06/26/18 18:40	U
Aroclor 1221	ND	16	1	B8F0682	06/26/2018	06/26/18 18:40	U
Aroclor 1232	ND	16	1	B8F0682	06/26/2018	06/26/18 18:40	U
Aroclor 1242	ND	16	1	B8F0682	06/26/2018	06/26/18 18:40	U
Aroclor 1248	ND	16	1	B8F0682	06/26/2018	06/26/18 18:40	U
Aroclor 1254	ND	16	1	B8F0682	06/26/2018	06/26/18 18:40	U
Aroclor 1260	ND	16	1	B8F0682	06/26/2018	06/26/18 18:40	U
Aroclor 1262	ND	16	1	B8F0682	06/26/2018	06/26/18 18:40	U
Aroclor 1268	ND	16	1	B8F0682	06/26/2018	06/26/18 18:40	U
Surrogate: Decachlorobiphenyl	*47.1 %*	*14 - 109*		B8F0682	06/26/2018	*06/26/18 18:40*	
Surrogate: Tetrachloro-m-xylene	*73.7 %*	*18 - 114*		B8F0682	06/26/2018	*06/26/18 18:40*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-2-0-0.5-Dup
Lab ID: 1802258-44

SPLP Semivolatile Organic Compounds by EPA 8270C

Analyst: SP

Analyte		Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Fluoranthene		ND	0.01	1	B8G0168	07/09/2018	07/09/18 18:18	U
Pyrene		ND	0.01	1	B8G0168	07/09/2018	07/09/18 18:18	U
Surrogate: 1,2-Dichlorobenzene-d4	*57.4 %*		*32 - 88*		B8G0168	07/09/2018	*07/09/18 18:18*	
Surrogate: 2,4,6-Tribromophenol	*94.7 %*		*46 - 136*		B8G0168	07/09/2018	*07/09/18 18:18*	
Surrogate: 2-Chlorophenol-d4	*53.0 %*		*31 - 76*		B8G0168	07/09/2018	*07/09/18 18:18*	
Surrogate: 2-Fluorobiphenyl	*65.1 %*		*42 - 99*		B8G0168	07/09/2018	*07/09/18 18:18*	
Surrogate: 2-Fluorophenol	*28.6 %*		*15 - 47*		B8G0168	07/09/2018	*07/09/18 18:18*	
Surrogate: 4-Terphenyl-d14	*120 %*		*58 - 118*		B8G0168	07/09/2018	*07/09/18 18:18*	S1
Surrogate: Nitrobenzene-d5	*60.3 %*		*35 - 99*		B8G0168	07/09/2018	*07/09/18 18:18*	
Surrogate: Phenol-d6	*17.9 %*		*10 - 36*		B8G0168	07/09/2018	*07/09/18 18:18*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:51	U
Acenaphthene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:51	U
Acenaphthylene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:51	U
Anthracene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:51	U
Benzo(a)anthracene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:51	U
Benzo(a)pyrene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:51	U
Benzo(b)fluoranthene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:51	U
Benzo(g,h,i)perylene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:51	U
Benzo(k)fluoranthene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:51	U
Chrysene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:51	U
Dibenz(a,h)anthracene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:51	U
Fluoranthene		**7.5**	5.0	1	B8F0650	06/25/2018	06/27/18 18:51	
Fluorene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:51	U
Indeno(1,2,3-cd)pyrene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:51	U
Naphthalene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:51	U
Phenanthrene		ND	5.0	1	B8F0650	06/25/2018	06/27/18 18:51	U
Pyrene		**8.8**	5.0	1	B8F0650	06/25/2018	06/27/18 18:51	
Surrogate: 1,2-Dichlorobenzene-d4	*55.9 %*		*25 - 99*		B8F0650	06/25/2018	*06/27/18 18:51*	
Surrogate: 2-Fluorobiphenyl	*62.1 %*		*27 - 118*		B8F0650	06/25/2018	*06/27/18 18:51*	
Surrogate: Nitrobenzene-d5	*43.0 %*		*14 - 127*		B8F0650	06/25/2018	*06/27/18 18:51*	
Surrogate: 4-Terphenyl-d14	*73.5 %*		*31 - 123*		B8F0650	06/25/2018	*06/27/18 18:51*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-2-2.0
Lab ID: 1802258-45

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:25	D1, U
Arsenic	**3600**	1000	20	B8F0668	06/26/2018	06/28/18 15:25	D1
Barium	**52000**	1000	20	B8F0668	06/26/2018	06/28/18 15:25	D1
Beryllium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:25	D1, U
Cadmium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:25	D1, U
Chromium	**26000**	2000	20	B8F0668	06/26/2018	06/28/18 15:25	D1
Cobalt	**8700**	1000	20	B8F0668	06/26/2018	06/28/18 15:25	D1
Copper	**15000**	1000	20	B8F0668	06/26/2018	06/28/18 15:25	D1
Lead	**4600**	1000	20	B8F0668	06/26/2018	06/28/18 15:25	D1
Molybdenum	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:25	D1, U
Nickel	**11000**	1000	20	B8F0668	06/26/2018	06/28/18 15:25	D1
Selenium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:25	D1, U
Silver	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:25	D1, U
Thallium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:25	D1, U
Vanadium	**56000**	2000	20	B8F0668	06/26/2018	06/28/18 15:25	D1
Zinc	**47000**	5000	20	B8F0668	06/26/2018	06/28/18 15:25	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0674	06/26/2018	06/27/18 16:08	

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:19	U
4,4´-DDE	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:19	U
4,4´-DDT	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:19	U
Aldrin	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:19	U
alpha-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:19	U
alpha-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:19	U
beta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:19	U
Chlordane	ND	8.5	1	B8F0682	06/26/2018	06/28/18 18:19	U
delta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:19	U
Dieldrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:19	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-2-2.0
Lab ID: 1802258-45

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Endosulfan I		ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:19	U
Endosulfan II		ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:19	U
Endosulfan sulfate		ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:19	U
Endrin		ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:19	U
Endrin aldehyde		ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:19	U
Endrin ketone		ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:19	U
gamma-BHC		ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:19	U
gamma-Chlordane		ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:19	U
Heptachlor		ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:19	U
Heptachlor epoxide		ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:19	U
Methoxychlor		ND	5.0	1	B8F0682	06/26/2018	06/28/18 18:19	U
Toxaphene		ND	50	1	B8F0682	06/26/2018	06/28/18 18:19	U
Surrogate: Decachlorobiphenyl	*81.3 %*		*15 - 100*		B8F0682	06/26/2018	*06/28/18 18:19*	
Surrogate: Tetrachloro-m-xylene	*53.2 %*		*16 - 100*		B8F0682	06/26/2018	*06/28/18 18:19*	

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016		ND	16	1	B8F0682	06/26/2018	06/26/18 18:59	U
Aroclor 1221		ND	16	1	B8F0682	06/26/2018	06/26/18 18:59	U
Aroclor 1232		ND	16	1	B8F0682	06/26/2018	06/26/18 18:59	U
Aroclor 1242		ND	16	1	B8F0682	06/26/2018	06/26/18 18:59	U
Aroclor 1248		ND	16	1	B8F0682	06/26/2018	06/26/18 18:59	U
Aroclor 1254		ND	16	1	B8F0682	06/26/2018	06/26/18 18:59	U
Aroclor 1260		ND	16	1	B8F0682	06/26/2018	06/26/18 18:59	U
Aroclor 1262		ND	16	1	B8F0682	06/26/2018	06/26/18 18:59	U
Aroclor 1268		ND	16	1	B8F0682	06/26/2018	06/26/18 18:59	U
Surrogate: Decachlorobiphenyl	*52.1 %*		*14 - 109*		B8F0682	06/26/2018	*06/26/18 18:59*	
Surrogate: Tetrachloro-m-xylene	*57.8 %*		*18 - 114*		B8F0682	06/26/2018	*06/26/18 18:59*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID HA-2-2.0
Lab ID: 1802258-45

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	5.0	1	B8F0650	06/25/2018	06/27/18 19:24	U
Acenaphthene	ND	5.0	1	B8F0650	06/25/2018	06/27/18 19:24	U
Acenaphthylene	ND	5.0	1	B8F0650	06/25/2018	06/27/18 19:24	U
Anthracene	ND	5.0	1	B8F0650	06/25/2018	06/27/18 19:24	U
Benzo(a)anthracene	ND	5.0	1	B8F0650	06/25/2018	06/27/18 19:24	U
Benzo(a)pyrene	ND	5.0	1	B8F0650	06/25/2018	06/27/18 19:24	U
Benzo(b)fluoranthene	ND	5.0	1	B8F0650	06/25/2018	06/27/18 19:24	U
Benzo(g,h,i)perylene	ND	5.0	1	B8F0650	06/25/2018	06/27/18 19:24	U
Benzo(k)fluoranthene	ND	5.0	1	B8F0650	06/25/2018	06/27/18 19:24	U
Chrysene	ND	5.0	1	B8F0650	06/25/2018	06/27/18 19:24	U
Dibenz(a,h)anthracene	ND	5.0	1	B8F0650	06/25/2018	06/27/18 19:24	U
Fluoranthene	ND	5.0	1	B8F0650	06/25/2018	06/27/18 19:24	U
Fluorene	ND	5.0	1	B8F0650	06/25/2018	06/27/18 19:24	U
Indeno(1,2,3-cd)pyrene	ND	5.0	1	B8F0650	06/25/2018	06/27/18 19:24	U
Naphthalene	ND	5.0	1	B8F0650	06/25/2018	06/27/18 19:24	U
Phenanthrene	ND	5.0	1	B8F0650	06/25/2018	06/27/18 19:24	U
Pyrene	ND	5.0	1	B8F0650	06/25/2018	06/27/18 19:24	U
Surrogate: 1,2-Dichlorobenzene-d4	*75.2 %*	*25 - 99*		B8F0650	06/25/2018	*06/27/18 19:24*	
Surrogate: 2-Fluorobiphenyl	*77.5 %*	*27 - 118*		B8F0650	06/25/2018	*06/27/18 19:24*	
Surrogate: Nitrobenzene-d5	*58.7 %*	*14 - 127*		B8F0650	06/25/2018	*06/27/18 19:24*	
Surrogate: 4-Terphenyl-d14	*89.9 %*	*31 - 123*		B8F0650	06/25/2018	*06/27/18 19:24*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-3-0-0.25
Lab ID: 1802258-48

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:27	D1, U
Arsenic	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:27	D1, U
Barium	**10000**	1000	20	B8F0668	06/26/2018	06/28/18 15:27	D1
Beryllium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:27	D1, U
Cadmium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:27	D1, U
Chromium	ND	2000	20	B8F0668	06/26/2018	06/28/18 15:27	D1, U
Cobalt	**1100**	1000	20	B8F0668	06/26/2018	06/28/18 15:27	D1
Copper	**4100**	1000	20	B8F0668	06/26/2018	06/28/18 15:27	D1
Lead	**8000**	1000	20	B8F0668	06/26/2018	06/28/18 15:27	D1
Molybdenum	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:27	D1, U
Nickel	**3600**	1000	20	B8F0668	06/26/2018	06/28/18 15:27	D1
Selenium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:27	D1, U
Silver	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:27	D1, U
Thallium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:27	D1, U
Vanadium	**7800**	2000	20	B8F0668	06/26/2018	06/28/18 15:27	D1
Zinc	**16000**	5000	20	B8F0668	06/26/2018	06/28/18 15:27	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0674	06/26/2018	06/27/18 16:10	

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:29	U
4,4´-DDE	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:29	U
4,4´-DDT	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:29	U
Aldrin	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:29	U
alpha-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:29	U
alpha-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:29	U
beta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:29	U
Chlordane	ND	8.5	1	B8F0682	06/26/2018	06/28/18 18:29	U
delta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:29	U
Dieldrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:29	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-3-0-0.25
Lab ID: 1802258-48

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Endosulfan I	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:29	U
Endosulfan II	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:29	U
Endosulfan sulfate	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:29	U
Endrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:29	U
Endrin aldehyde	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:29	U
Endrin ketone	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:29	U
gamma-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:29	U
gamma-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:29	U
Heptachlor	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:29	U
Heptachlor epoxide	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:29	U
Methoxychlor	ND	5.0	1	B8F0682	06/26/2018	06/28/18 18:29	U
Toxaphene	ND	50	1	B8F0682	06/26/2018	06/28/18 18:29	U
Surrogate: Decachlorobiphenyl	*84.8 %*	*15 - 100*		B8F0682	06/26/2018	*06/28/18 18:29*	
Surrogate: Tetrachloro-m-xylene	*69.8 %*	*16 - 100*		B8F0682	06/26/2018	*06/28/18 18:29*	

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0682	06/26/2018	06/26/18 19:17	U
Aroclor 1221	ND	16	1	B8F0682	06/26/2018	06/26/18 19:17	U
Aroclor 1232	ND	16	1	B8F0682	06/26/2018	06/26/18 19:17	U
Aroclor 1242	ND	16	1	B8F0682	06/26/2018	06/26/18 19:17	U
Aroclor 1248	ND	16	1	B8F0682	06/26/2018	06/26/18 19:17	U
Aroclor 1254	ND	16	1	B8F0682	06/26/2018	06/26/18 19:17	U
Aroclor 1260	ND	16	1	B8F0682	06/26/2018	06/26/18 19:17	U
Aroclor 1262	ND	16	1	B8F0682	06/26/2018	06/26/18 19:17	U
Aroclor 1268	ND	16	1	B8F0682	06/26/2018	06/26/18 19:17	U
Surrogate: Decachlorobiphenyl	*48.1 %*	*14 - 109*		B8F0682	06/26/2018	*06/26/18 19:17*	
Surrogate: Tetrachloro-m-xylene	*62.1 %*	*18 - 114*		B8F0682	06/26/2018	*06/26/18 19:17*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-3-0.25-2
Lab ID: 1802258-49

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:29	D1, U
Arsenic	**1300**	1000	20	B8F0668	06/26/2018	06/28/18 15:29	D1
Barium	**47000**	1000	20	B8F0668	06/26/2018	06/28/18 15:29	D1
Beryllium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:29	D1, U
Cadmium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:29	D1, U
Chromium	**6600**	2000	20	B8F0668	06/26/2018	06/28/18 15:29	D1
Cobalt	**2600**	1000	20	B8F0668	06/26/2018	06/28/18 15:29	D1
Copper	**5700**	1000	20	B8F0668	06/26/2018	06/28/18 15:29	D1
Lead	**2400**	1000	20	B8F0668	06/26/2018	06/28/18 15:29	D1
Molybdenum	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:29	D1, U
Nickel	**2500**	1000	20	B8F0668	06/26/2018	06/28/18 15:29	D1
Selenium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:29	D1, U
Silver	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:29	D1, U
Thallium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:29	D1, U
Vanadium	**32000**	2000	20	B8F0668	06/26/2018	06/28/18 15:29	D1
Zinc	**16000**	5000	20	B8F0668	06/26/2018	06/28/18 15:29	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0674	06/26/2018	06/27/18 16:12	

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:39	U
4,4´-DDE	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:39	U
4,4´-DDT	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:39	U
Aldrin	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:39	U
alpha-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:39	U
alpha-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:39	U
beta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:39	U
Chlordane	ND	8.5	1	B8F0682	06/26/2018	06/28/18 18:39	U
delta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:39	U
Dieldrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:39	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-3-0.25-2
Lab ID: 1802258-49

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Endosulfan I	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:39	U
Endosulfan II	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:39	U
Endosulfan sulfate	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:39	U
Endrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:39	U
Endrin aldehyde	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:39	U
Endrin ketone	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:39	U
gamma-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:39	U
gamma-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:39	U
Heptachlor	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:39	U
Heptachlor epoxide	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:39	U
Methoxychlor	ND	5.0	1	B8F0682	06/26/2018	06/28/18 18:39	U
Toxaphene	ND	50	1	B8F0682	06/26/2018	06/28/18 18:39	U
Surrogate: Decachlorobiphenyl	*83.4 %*	*15 - 100*		B8F0682	06/26/2018	*06/28/18 18:39*	
Surrogate: Tetrachloro-m-xylene	*76.4 %*	*16 - 100*		B8F0682	06/26/2018	*06/28/18 18:39*	

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0682	06/26/2018	06/26/18 19:36	U
Aroclor 1221	ND	16	1	B8F0682	06/26/2018	06/26/18 19:36	U
Aroclor 1232	ND	16	1	B8F0682	06/26/2018	06/26/18 19:36	U
Aroclor 1242	ND	16	1	B8F0682	06/26/2018	06/26/18 19:36	U
Aroclor 1248	ND	16	1	B8F0682	06/26/2018	06/26/18 19:36	U
Aroclor 1254	ND	16	1	B8F0682	06/26/2018	06/26/18 19:36	U
Aroclor 1260	ND	16	1	B8F0682	06/26/2018	06/26/18 19:36	U
Aroclor 1262	ND	16	1	B8F0682	06/26/2018	06/26/18 19:36	U
Aroclor 1268	ND	16	1	B8F0682	06/26/2018	06/26/18 19:36	U
Surrogate: Decachlorobiphenyl	*56.1 %*	*14 - 109*		B8F0682	06/26/2018	*06/26/18 19:36*	
Surrogate: Tetrachloro-m-xylene	*95.0 %*	*18 - 114*		B8F0682	06/26/2018	*06/26/18 19:36*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-3-2-9
Lab ID: 1802258-50

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:35	D1, U
Arsenic	**5600**	1000	20	B8F0668	06/26/2018	06/28/18 15:35	D1
Barium	**56000**	1000	20	B8F0668	06/26/2018	06/28/18 15:35	D1
Beryllium	ND	2500	50	B8F0668	06/26/2018	06/28/18 16:25	D1, U
Cadmium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:35	D1, U
Chromium	**23000**	2000	20	B8F0668	06/26/2018	06/28/18 15:35	D1
Cobalt	**9200**	1000	20	B8F0668	06/26/2018	06/28/18 15:35	D1
Copper	**16000**	1000	20	B8F0668	06/26/2018	06/28/18 15:35	D1
Lead	**6800**	1000	20	B8F0668	06/26/2018	06/28/18 15:35	D1
Molybdenum	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:35	D1, U
Nickel	**10000**	1000	20	B8F0668	06/26/2018	06/28/18 15:35	D1
Selenium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:35	D1, U
Silver	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:35	D1, U
Thallium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:35	D1, U
Vanadium	**66000**	2000	20	B8F0668	06/26/2018	06/28/18 15:35	D1
Zinc	**52000**	5000	20	B8F0668	06/26/2018	06/28/18 15:35	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0674	06/26/2018	06/27/18 16:14	

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:50	U
4,4´-DDE	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:50	U
4,4´-DDT	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:50	U
Aldrin	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:50	U
alpha-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:50	U
alpha-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:50	U
beta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:50	U
Chlordane	ND	8.5	1	B8F0682	06/26/2018	06/28/18 18:50	U
delta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:50	U
Dieldrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:50	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-3-2-9
Lab ID: 1802258-50

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Endosulfan I		ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:50	U
Endosulfan II		ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:50	U
Endosulfan sulfate		ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:50	U
Endrin		ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:50	U
Endrin aldehyde		ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:50	U
Endrin ketone		ND	2.0	1	B8F0682	06/26/2018	06/28/18 18:50	U
gamma-BHC		ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:50	U
gamma-Chlordane		ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:50	U
Heptachlor		ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:50	U
Heptachlor epoxide		ND	1.0	1	B8F0682	06/26/2018	06/28/18 18:50	U
Methoxychlor		ND	5.0	1	B8F0682	06/26/2018	06/28/18 18:50	U
Toxaphene		ND	50	1	B8F0682	06/26/2018	06/28/18 18:50	U
Surrogate: Decachlorobiphenyl	*86.3 %*		*15 - 100*		B8F0682	06/26/2018	*06/28/18 18:50*	
Surrogate: Tetrachloro-m-xylene	*66.6 %*		*16 - 100*		B8F0682	06/26/2018	*06/28/18 18:50*	

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016		ND	16	1	B8F0682	06/26/2018	06/26/18 19:54	U
Aroclor 1221		ND	16	1	B8F0682	06/26/2018	06/26/18 19:54	U
Aroclor 1232		ND	16	1	B8F0682	06/26/2018	06/26/18 19:54	U
Aroclor 1242		ND	16	1	B8F0682	06/26/2018	06/26/18 19:54	U
Aroclor 1248		ND	16	1	B8F0682	06/26/2018	06/26/18 19:54	U
Aroclor 1254		ND	16	1	B8F0682	06/26/2018	06/26/18 19:54	U
Aroclor 1260		ND	16	1	B8F0682	06/26/2018	06/26/18 19:54	U
Aroclor 1262		ND	16	1	B8F0682	06/26/2018	06/26/18 19:54	U
Aroclor 1268		ND	16	1	B8F0682	06/26/2018	06/26/18 19:54	U
Surrogate: Decachlorobiphenyl	*61.9 %*		*14 - 109*		B8F0682	06/26/2018	*06/26/18 19:54*	
Surrogate: Tetrachloro-m-xylene	*96.3 %*		*18 - 114*		B8F0682	06/26/2018	*06/26/18 19:54*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-4-0-0.25
Lab ID: 1802258-51

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:37	D1, U
Arsenic	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:37	D1, U
Barium	**18000**	1000	20	B8F0668	06/26/2018	06/28/18 15:37	D1
Beryllium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:37	D1, U
Cadmium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:37	D1, U
Chromium	**4400**	2000	20	B8F0668	06/26/2018	06/28/18 15:37	D1
Cobalt	**2200**	1000	20	B8F0668	06/26/2018	06/28/18 15:37	D1
Copper	**9600**	1000	20	B8F0668	06/26/2018	06/28/18 15:37	D1
Lead	**17000**	1000	20	B8F0668	06/26/2018	06/28/18 15:37	D1
Molybdenum	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:37	D1, U
Nickel	**6900**	1000	20	B8F0668	06/26/2018	06/28/18 15:37	D1
Selenium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:37	D1, U
Silver	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:37	D1, U
Thallium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:37	D1, U
Vanadium	**15000**	2000	20	B8F0668	06/26/2018	06/28/18 15:37	D1
Zinc	**27000**	5000	20	B8F0668	06/26/2018	06/28/18 15:37	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0674	06/26/2018	06/27/18 16:16	

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B8F0682	06/26/2018	06/28/18 19:00	U
4,4´-DDE [2C]	ND	2.0	1	B8F0682	06/26/2018	06/28/18 19:00	U
4,4´-DDT	ND	2.0	1	B8F0682	06/26/2018	06/28/18 19:00	U
Aldrin	ND	1.0	1	B8F0682	06/26/2018	06/28/18 19:00	U
alpha-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 19:00	U
alpha-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 19:00	U
beta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 19:00	U
Chlordane	ND	8.5	1	B8F0682	06/26/2018	06/28/18 19:00	U
delta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 19:00	U
Dieldrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 19:00	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-4-0-0.25
Lab ID: 1802258-51

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Endosulfan I		ND	1.0	1	B8F0682	06/26/2018	06/28/18 19:00	U
Endosulfan II		ND	2.0	1	B8F0682	06/26/2018	06/28/18 19:00	U
Endosulfan sulfate		ND	2.0	1	B8F0682	06/26/2018	06/28/18 19:00	U
Endrin		ND	2.0	1	B8F0682	06/26/2018	06/28/18 19:00	U
Endrin aldehyde		ND	2.0	1	B8F0682	06/26/2018	06/28/18 19:00	U
Endrin ketone		ND	2.0	1	B8F0682	06/26/2018	06/28/18 19:00	U
gamma-BHC		ND	1.0	1	B8F0682	06/26/2018	06/28/18 19:00	U
gamma-Chlordane		ND	1.0	1	B8F0682	06/26/2018	06/28/18 19:00	U
Heptachlor		ND	1.0	1	B8F0682	06/26/2018	06/28/18 19:00	U
Heptachlor epoxide		ND	1.0	1	B8F0682	06/26/2018	06/28/18 19:00	U
Methoxychlor		ND	5.0	1	B8F0682	06/26/2018	06/28/18 19:00	U
Toxaphene		ND	50	1	B8F0682	06/26/2018	06/28/18 19:00	U
Surrogate: Decachlorobiphenyl	*90.3 %*		*15 - 100*		B8F0682	06/26/2018	*06/28/18 19:00*	
Surrogate: Tetrachloro-m-xylene	*83.6 %*		*16 - 100*		B8F0682	06/26/2018	*06/28/18 19:00*	

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016		ND	16	1	B8F0682	06/26/2018	06/26/18 20:13	U
Aroclor 1221		ND	16	1	B8F0682	06/26/2018	06/26/18 20:13	U
Aroclor 1232		ND	16	1	B8F0682	06/26/2018	06/26/18 20:13	U
Aroclor 1242		ND	16	1	B8F0682	06/26/2018	06/26/18 20:13	U
Aroclor 1248		ND	16	1	B8F0682	06/26/2018	06/26/18 20:13	U
Aroclor 1254		ND	16	1	B8F0682	06/26/2018	06/26/18 20:13	U
Aroclor 1260		ND	16	1	B8F0682	06/26/2018	06/26/18 20:13	U
Aroclor 1262		ND	16	1	B8F0682	06/26/2018	06/26/18 20:13	U
Aroclor 1268		ND	16	1	B8F0682	06/26/2018	06/26/18 20:13	U
Surrogate: Decachlorobiphenyl	*58.4 %*		*14 - 109*		B8F0682	06/26/2018	*06/26/18 20:13*	
Surrogate: Tetrachloro-m-xylene	*94.8 %*		*18 - 114*		B8F0682	06/26/2018	*06/26/18 20:13*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-4-0.25-6
Lab ID: 1802258-52

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:38	D1, U
Arsenic	**3500**	1000	20	B8F0668	06/26/2018	06/28/18 15:38	D1
Barium	**110000**	1000	20	B8F0668	06/26/2018	06/28/18 15:38	D1
Beryllium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:38	D1, U
Cadmium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:38	D1, U
Chromium	**13000**	2000	20	B8F0668	06/26/2018	06/28/18 15:38	D1
Cobalt	**9000**	1000	20	B8F0668	06/26/2018	06/28/18 15:38	D1
Copper	**21000**	1000	20	B8F0668	06/26/2018	06/28/18 15:38	D1
Lead	**4700**	1000	20	B8F0668	06/26/2018	06/28/18 15:38	D1
Molybdenum	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:38	D1, U
Nickel	**7700**	1000	20	B8F0668	06/26/2018	06/28/18 15:38	D1
Selenium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:38	D1, U
Silver	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:38	D1, U
Thallium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:38	D1, U
Vanadium	**49000**	2000	20	B8F0668	06/26/2018	06/28/18 15:38	D1
Zinc	**43000**	5000	20	B8F0668	06/26/2018	06/28/18 15:38	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0674	06/26/2018	06/27/18 16:18	

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B8F0682	06/26/2018	06/28/18 19:11	U
4,4´-DDE	ND	2.0	1	B8F0682	06/26/2018	06/28/18 19:11	U
4,4´-DDT	ND	2.0	1	B8F0682	06/26/2018	06/28/18 19:11	U
Aldrin	ND	1.0	1	B8F0682	06/26/2018	06/28/18 19:11	U
alpha-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 19:11	U
alpha-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 19:11	U
beta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 19:11	U
Chlordane	ND	8.5	1	B8F0682	06/26/2018	06/28/18 19:11	U
delta-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 19:11	U
Dieldrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 19:11	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-4-0.25-6
Lab ID: 1802258-52

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Endosulfan I	ND	1.0	1	B8F0682	06/26/2018	06/28/18 19:11	U
Endosulfan II	ND	2.0	1	B8F0682	06/26/2018	06/28/18 19:11	U
Endosulfan sulfate	ND	2.0	1	B8F0682	06/26/2018	06/28/18 19:11	U
Endrin	ND	2.0	1	B8F0682	06/26/2018	06/28/18 19:11	U
Endrin aldehyde	ND	2.0	1	B8F0682	06/26/2018	06/28/18 19:11	U
Endrin ketone	ND	2.0	1	B8F0682	06/26/2018	06/28/18 19:11	U
gamma-BHC	ND	1.0	1	B8F0682	06/26/2018	06/28/18 19:11	U
gamma-Chlordane	ND	1.0	1	B8F0682	06/26/2018	06/28/18 19:11	U
Heptachlor	ND	1.0	1	B8F0682	06/26/2018	06/28/18 19:11	U
Heptachlor epoxide	ND	1.0	1	B8F0682	06/26/2018	06/28/18 19:11	U
Methoxychlor	ND	5.0	1	B8F0682	06/26/2018	06/28/18 19:11	U
Toxaphene	ND	50	1	B8F0682	06/26/2018	06/28/18 19:11	U
Surrogate: Decachlorobiphenyl	*97.7 %*	*15 - 100*		B8F0682	06/26/2018	*06/28/18 19:11*	
Surrogate: Tetrachloro-m-xylene	*82.3 %*	*16 - 100*		B8F0682	06/26/2018	*06/28/18 19:11*	

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0682	06/26/2018	06/26/18 20:31	U
Aroclor 1221	ND	16	1	B8F0682	06/26/2018	06/26/18 20:31	U
Aroclor 1232	ND	16	1	B8F0682	06/26/2018	06/26/18 20:31	U
Aroclor 1242	ND	16	1	B8F0682	06/26/2018	06/26/18 20:31	U
Aroclor 1248	ND	16	1	B8F0682	06/26/2018	06/26/18 20:31	U
Aroclor 1254	ND	16	1	B8F0682	06/26/2018	06/26/18 20:31	U
Aroclor 1260	ND	16	1	B8F0682	06/26/2018	06/26/18 20:31	U
Aroclor 1262	ND	16	1	B8F0682	06/26/2018	06/26/18 20:31	U
Aroclor 1268	ND	16	1	B8F0682	06/26/2018	06/26/18 20:31	U
Surrogate: Decachlorobiphenyl	*61.3 %*	*14 - 109*		B8F0682	06/26/2018	*06/26/18 20:31*	
Surrogate: Tetrachloro-m-xylene	*88.6 %*	*18 - 114*		B8F0682	06/26/2018	*06/26/18 20:31*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-4-6-8
Lab ID: 1802258-53

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:40	D1, U
Arsenic	**3000**	1000	20	B8F0668	06/26/2018	06/28/18 15:40	D1
Barium	**38000**	1000	20	B8F0668	06/26/2018	06/28/18 15:40	D1
Beryllium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:40	D1, U
Cadmium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:40	D1, U
Chromium	**19000**	2000	20	B8F0668	06/26/2018	06/28/18 15:40	D1
Cobalt	**5400**	1000	20	B8F0668	06/26/2018	06/28/18 15:40	D1
Copper	**12000**	1000	20	B8F0668	06/26/2018	06/28/18 15:40	D1
Lead	**4100**	1000	20	B8F0668	06/26/2018	06/28/18 15:40	D1
Molybdenum	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:40	D1, U
Nickel	**7700**	1000	20	B8F0668	06/26/2018	06/28/18 15:40	D1
Selenium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:40	D1, U
Silver	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:40	D1, U
Thallium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:40	D1, U
Vanadium	**42000**	2000	20	B8F0668	06/26/2018	06/28/18 15:40	D1
Zinc	**37000**	5000	20	B8F0668	06/26/2018	06/28/18 15:40	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0674	06/26/2018	06/27/18 16:19	

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B8F0705	06/26/2018	06/27/18 15:57	U
4,4´-DDE	ND	2.0	1	B8F0705	06/26/2018	06/27/18 15:57	U
4,4´-DDT	ND	2.0	1	B8F0705	06/26/2018	06/27/18 15:57	U
Aldrin	ND	1.0	1	B8F0705	06/26/2018	06/27/18 15:57	U
alpha-BHC	ND	1.0	1	B8F0705	06/26/2018	06/27/18 15:57	U
alpha-Chlordane	ND	1.0	1	B8F0705	06/26/2018	06/27/18 15:57	U
beta-BHC	ND	1.0	1	B8F0705	06/26/2018	06/27/18 15:57	U
Chlordane	ND	8.5	1	B8F0705	06/26/2018	06/27/18 15:57	U
delta-BHC	ND	1.0	1	B8F0705	06/26/2018	06/27/18 15:57	U
Dieldrin	ND	2.0	1	B8F0705	06/26/2018	06/27/18 15:57	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-4-6-8
Lab ID: 1802258-53

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Endosulfan I		ND	1.0	1	B8F0705	06/26/2018	06/27/18 15:57	U
Endosulfan II		ND	2.0	1	B8F0705	06/26/2018	06/27/18 15:57	U
Endosulfan sulfate		ND	2.0	1	B8F0705	06/26/2018	06/27/18 15:57	U
Endrin		ND	2.0	1	B8F0705	06/26/2018	06/27/18 15:57	U
Endrin aldehyde		ND	2.0	1	B8F0705	06/26/2018	06/27/18 15:57	U
Endrin ketone		ND	2.0	1	B8F0705	06/26/2018	06/27/18 15:57	U
gamma-BHC		ND	1.0	1	B8F0705	06/26/2018	06/27/18 15:57	U
gamma-Chlordane		ND	1.0	1	B8F0705	06/26/2018	06/27/18 15:57	U
Heptachlor		ND	1.0	1	B8F0705	06/26/2018	06/27/18 15:57	U
Heptachlor epoxide		ND	1.0	1	B8F0705	06/26/2018	06/27/18 15:57	U
Methoxychlor		ND	5.0	1	B8F0705	06/26/2018	06/27/18 15:57	U
Toxaphene		ND	50	1	B8F0705	06/26/2018	06/27/18 15:57	U
Surrogate: Decachlorobiphenyl	*71.0 %*		*15 - 100*		B8F0705	06/26/2018	*06/27/18 15:57*	
Surrogate: Tetrachloro-m-xylene	*75.3 %*		*16 - 100*		B8F0705	06/26/2018	*06/27/18 15:57*	

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016		ND	16	1	B8F0705	06/26/2018	06/27/18 18:35	U
Aroclor 1221		ND	16	1	B8F0705	06/26/2018	06/27/18 18:35	U
Aroclor 1232		ND	16	1	B8F0705	06/26/2018	06/27/18 18:35	U
Aroclor 1242		ND	16	1	B8F0705	06/26/2018	06/27/18 18:35	U
Aroclor 1248		ND	16	1	B8F0705	06/26/2018	06/27/18 18:35	U
Aroclor 1254		ND	16	1	B8F0705	06/26/2018	06/27/18 18:35	U
Aroclor 1260		ND	16	1	B8F0705	06/26/2018	06/27/18 18:35	U
Aroclor 1262		ND	16	1	B8F0705	06/26/2018	06/27/18 18:35	U
Aroclor 1268		ND	16	1	B8F0705	06/26/2018	06/27/18 18:35	U
Surrogate: Decachlorobiphenyl	*86.2 %*		*14 - 109*		B8F0705	06/26/2018	*06/27/18 18:35*	
Surrogate: Tetrachloro-m-xylene	*97.0 %*		*18 - 114*		B8F0705	06/26/2018	*06/27/18 18:35*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-9-0-0.25
Lab ID: 1802258-54

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:42	D1, U
Arsenic	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:42	D1, U
Barium	**10000**	1000	20	B8F0668	06/26/2018	06/28/18 15:42	D1
Beryllium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:42	D1, U
Cadmium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:42	D1, U
Chromium	ND	2000	20	B8F0668	06/26/2018	06/28/18 15:42	D1, U
Cobalt	**1100**	1000	20	B8F0668	06/26/2018	06/28/18 15:42	D1
Copper	**4100**	1000	20	B8F0668	06/26/2018	06/28/18 15:42	D1
Lead	**9500**	1000	20	B8F0668	06/26/2018	06/28/18 15:42	D1
Molybdenum	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:42	D1, U
Nickel	**4000**	1000	20	B8F0668	06/26/2018	06/28/18 15:42	D1
Selenium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:42	D1, U
Silver	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:42	D1, U
Thallium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:42	D1, U
Vanadium	**7500**	2000	20	B8F0668	06/26/2018	06/28/18 15:42	D1
Zinc	**14000**	5000	20	B8F0668	06/26/2018	06/28/18 15:42	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0674	06/26/2018	06/27/18 16:21	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0529	06/21/2018	06/22/18 03:51	U
C7	ND	1.0	1	B8F0529	06/21/2018	06/22/18 03:51	U
C8	ND	1.0	1	B8F0529	06/21/2018	06/22/18 03:51	U
C9	ND	1.0	1	B8F0529	06/21/2018	06/22/18 03:51	U
C10	ND	1.0	1	B8F0529	06/21/2018	06/22/18 03:51	U
C11	ND	1.0	1	B8F0529	06/21/2018	06/22/18 03:51	U
C12	ND	1.0	1	B8F0529	06/21/2018	06/22/18 03:51	U
Surrogate: 4-Bromofluorobenzene	*84.4 %*	*57 - 144*		B8F0529	06/21/2018	*06/22/18 03:51*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
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San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-9-0-0.25

Lab ID: 1802258-54

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C14	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C15	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C16	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C17	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C18	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C19	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C20	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C21	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C22	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C23	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C24	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C25	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C26	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C27	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C28	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C29	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C30	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C31	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C32	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C33	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C34	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C35	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C36	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C37	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C38	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C39	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
C40	ND	10	1	B8F0692	06/26/2018	06/27/18 02:39	U
Surrogate: p-Terphenyl	*130 %*	*58 - 172*		B8F0692	06/26/2018	*06/27/18 02:39*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-9-0-0.25
Lab ID: 1802258-54

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0705	06/26/2018	06/27/18 18:53	U
Aroclor 1221	ND	16	1	B8F0705	06/26/2018	06/27/18 18:53	U
Aroclor 1232	ND	16	1	B8F0705	06/26/2018	06/27/18 18:53	U
Aroclor 1242	ND	16	1	B8F0705	06/26/2018	06/27/18 18:53	U
Aroclor 1248	ND	16	1	B8F0705	06/26/2018	06/27/18 18:53	U
Aroclor 1254	ND	16	1	B8F0705	06/26/2018	06/27/18 18:53	U
Aroclor 1260	ND	16	1	B8F0705	06/26/2018	06/27/18 18:53	U
Aroclor 1262	ND	16	1	B8F0705	06/26/2018	06/27/18 18:53	U
Aroclor 1268	ND	16	1	B8F0705	06/26/2018	06/27/18 18:53	U
Surrogate: Decachlorobiphenyl	*81.2 %*	*14 - 109*		B8F0705	06/26/2018	*06/27/18 18:53*	
Surrogate: Tetrachloro-m-xylene	*91.4 %*	*18 - 114*		B8F0705	06/26/2018	*06/27/18 18:53*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
1,1-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
1,1-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
1,1-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0572	06/22/2018	06/22/18 14:45	U
1,2-Dibromoethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
1,2-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
1,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
1,3-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
2,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-9-0-0.25
Lab ID: 1802258-54

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
4-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
4-Isopropyltoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Benzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Bromobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Bromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Bromodichloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Bromoform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Bromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Carbon disulfide	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Carbon tetrachloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Chlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Chloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Chloroform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Chloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
cis-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Di-isopropyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Dibromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Dibromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Dichlorodifluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Ethyl Acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 14:45	U
Ethyl Ether	ND	50	1	B8F0572	06/22/2018	06/22/18 14:45	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Ethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Freon-113	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Hexachlorobutadiene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Isopropylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
m,p-Xylene	ND	10	1	B8F0572	06/22/2018	06/22/18 14:45	U
Methylene chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
MTBE	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
n-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
n-Propylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Naphthalene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
o-Xylene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
sec-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Styrene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-9-0-0.25
Lab ID: 1802258-54

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
tert-Butanol	ND	100	1	B8F0572	06/22/2018	06/22/18 14:45	U
tert-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Tetrachloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Toluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Trichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Trichlorofluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Vinyl acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 14:45	U
Vinyl chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 14:45	U
Surrogate: 1,2-Dichloroethane-d4	*101 %*	*58 - 144*		B8F0572	06/22/2018	*06/22/18 14:45*	
Surrogate: 4-Bromofluorobenzene	*87.4 %*	*60 - 137*		B8F0572	06/22/2018	*06/22/18 14:45*	
Surrogate: Dibromofluoromethane	*102 %*	*70 - 131*		B8F0572	06/22/2018	*06/22/18 14:45*	
Surrogate: Toluene-d8	*94.3 %*	*79 - 131*		B8F0572	06/22/2018	*06/22/18 14:45*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-9-0.25-2.5
Lab ID: 1802258-55

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:44	D1, U
Arsenic	**2000**	1000	20	B8F0668	06/26/2018	06/28/18 15:44	D1
Barium	**54000**	1000	20	B8F0668	06/26/2018	06/28/18 15:44	D1
Beryllium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:44	D1, U
Cadmium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:44	D1, U
Chromium	**7600**	2000	20	B8F0668	06/26/2018	06/28/18 15:44	D1
Cobalt	**3600**	1000	20	B8F0668	06/26/2018	06/28/18 15:44	D1
Copper	**6700**	1000	20	B8F0668	06/26/2018	06/28/18 15:44	D1
Lead	**2800**	1000	20	B8F0668	06/26/2018	06/28/18 15:44	D1
Molybdenum	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:44	D1, U
Nickel	**3100**	1000	20	B8F0668	06/26/2018	06/28/18 15:44	D1
Selenium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:44	D1, U
Silver	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:44	D1, U
Thallium	ND	1000	20	B8F0668	06/26/2018	06/28/18 15:44	D1, U
Vanadium	**37000**	2000	20	B8F0668	06/26/2018	06/28/18 15:44	D1
Zinc	**19000**	5000	20	B8F0668	06/26/2018	06/28/18 15:44	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0675	06/26/2018	06/27/18 16:31	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0529	06/21/2018	06/22/18 03:32	U
C7	ND	1.0	1	B8F0529	06/21/2018	06/22/18 03:32	U
C8	ND	1.0	1	B8F0529	06/21/2018	06/22/18 03:32	U
C9	ND	1.0	1	B8F0529	06/21/2018	06/22/18 03:32	U
C10	ND	1.0	1	B8F0529	06/21/2018	06/22/18 03:32	U
C11	ND	1.0	1	B8F0529	06/21/2018	06/22/18 03:32	U
C12	ND	1.0	1	B8F0529	06/21/2018	06/22/18 03:32	U
Surrogate: 4-Bromofluorobenzene	*98.0 %*	*57 - 144*		B8F0529	06/21/2018	*06/22/18 03:32*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-9-0.25-2.5

Lab ID: 1802258-55

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C14	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C15	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C16	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C17	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C18	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C19	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C20	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C21	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C22	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C23	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C24	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C25	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C26	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C27	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C28	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C29	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C30	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C31	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C32	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C33	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C34	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C35	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C36	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C37	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C38	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C39	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
C40	ND	10	1	B8F0692	06/26/2018	06/27/18 00:24	U
Surrogate: p-Terphenyl	*113 %*	*58 - 172*		B8F0692	06/26/2018	*06/27/18 00:24*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-9-0.25-2.5
Lab ID: 1802258-55

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0705	06/26/2018	06/27/18 19:12	U
Aroclor 1221	ND	16	1	B8F0705	06/26/2018	06/27/18 19:12	U
Aroclor 1232	ND	16	1	B8F0705	06/26/2018	06/27/18 19:12	U
Aroclor 1242	ND	16	1	B8F0705	06/26/2018	06/27/18 19:12	U
Aroclor 1248	ND	16	1	B8F0705	06/26/2018	06/27/18 19:12	U
Aroclor 1254	ND	16	1	B8F0705	06/26/2018	06/27/18 19:12	U
Aroclor 1260	ND	16	1	B8F0705	06/26/2018	06/27/18 19:12	U
Aroclor 1262	ND	16	1	B8F0705	06/26/2018	06/27/18 19:12	U
Aroclor 1268	ND	16	1	B8F0705	06/26/2018	06/27/18 19:12	U
Surrogate: Decachlorobiphenyl	*91.6 %*	*14 - 109*		B8F0705	06/26/2018	*06/27/18 19:12*	
Surrogate: Tetrachloro-m-xylene	*91.3 %*	*18 - 114*		B8F0705	06/26/2018	*06/27/18 19:12*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
1,1-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
1,1-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
1,1-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0572	06/22/2018	06/22/18 15:22	U
1,2-Dibromoethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
1,2-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
1,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
1,3-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
2,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-9-0.25-2.5

Lab ID: 1802258-55

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
4-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
4-Isopropyltoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Benzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Bromobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Bromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Bromodichloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Bromoform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Bromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Carbon disulfide	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Carbon tetrachloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Chlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Chloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Chloroform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Chloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
cis-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Di-isopropyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Dibromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Dibromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Dichlorodifluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Ethyl Acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 15:22	U
Ethyl Ether	ND	50	1	B8F0572	06/22/2018	06/22/18 15:22	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Ethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Freon-113	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Hexachlorobutadiene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Isopropylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
m,p-Xylene	ND	10	1	B8F0572	06/22/2018	06/22/18 15:22	U
Methylene chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
MTBE	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
n-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
n-Propylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Naphthalene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
o-Xylene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
sec-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Styrene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-9-0.25-2.5

Lab ID: 1802258-55

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
tert-Butanol	ND	100	1	B8F0572	06/22/2018	06/22/18 15:22	U
tert-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Tetrachloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Toluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Trichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Trichlorofluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Vinyl acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 15:22	U
Vinyl chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:22	U
Surrogate: 1,2-Dichloroethane-d4	*100 %*	*58 - 144*		B8F0572	06/22/2018	*06/22/18 15:22*	
Surrogate: 4-Bromofluorobenzene	*88.9 %*	*60 - 137*		B8F0572	06/22/2018	*06/22/18 15:22*	
Surrogate: Dibromofluoromethane	*103 %*	*70 - 131*		B8F0572	06/22/2018	*06/22/18 15:22*	
Surrogate: Toluene-d8	*94.5 %*	*79 - 131*		B8F0572	06/22/2018	*06/22/18 15:22*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-9-2.5-7
Lab ID: 1802258-56

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:36	D1, U
Arsenic	**3700**	1000	20	B8F0666	06/26/2018	06/28/18 13:36	D1
Barium	**100000**	1000	20	B8F0666	06/26/2018	06/28/18 13:36	D1
Beryllium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:36	D1, U
Cadmium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:36	D1, U
Chromium	**9900**	2000	20	B8F0666	06/26/2018	06/28/18 13:36	D1
Cobalt	**4800**	1000	20	B8F0666	06/26/2018	06/28/18 13:36	D1
Copper	**9200**	1000	20	B8F0666	06/26/2018	06/28/18 13:36	D1
Lead	**3300**	1000	20	B8F0666	06/26/2018	06/28/18 13:36	D1
Molybdenum	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:36	D1, U
Nickel	**4800**	1000	20	B8F0666	06/26/2018	06/28/18 13:36	D1
Selenium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:36	D1, U
Silver	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:36	D1, U
Thallium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:36	D1, U
Vanadium	**39000**	2000	20	B8F0666	06/26/2018	06/28/18 13:36	D1
Zinc	**29000**	5000	20	B8F0666	06/26/2018	06/28/18 13:36	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0675	06/26/2018	06/27/18 16:38	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0529	06/21/2018	06/22/18 04:10	U
C7	ND	1.0	1	B8F0529	06/21/2018	06/22/18 04:10	U
C8	ND	1.0	1	B8F0529	06/21/2018	06/22/18 04:10	U
C9	ND	1.0	1	B8F0529	06/21/2018	06/22/18 04:10	U
C10	ND	1.0	1	B8F0529	06/21/2018	06/22/18 04:10	U
C11	ND	1.0	1	B8F0529	06/21/2018	06/22/18 04:10	U
C12	ND	1.0	1	B8F0529	06/21/2018	06/22/18 04:10	U
Surrogate: 4-Bromofluorobenzene	*99.8 %*	*57 - 144*		B8F0529	06/21/2018	*06/22/18 04:10*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-9-2.5-7

Lab ID: 1802258-56

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C14	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C15	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C16	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C17	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C18	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C19	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C20	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C21	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C22	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C23	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C24	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C25	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C26	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C27	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C28	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C29	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C30	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C31	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C32	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C33	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C34	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C35	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C36	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C37	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C38	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C39	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
C40	ND	10	1	B8F0692	06/26/2018	06/27/18 00:41	U
Surrogate: p-Terphenyl	*114 %*	*58 - 172*		B8F0692	06/26/2018	*06/27/18 00:41*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-9-2.5-7

Lab ID: 1802258-56

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0705	06/26/2018	06/27/18 19:30	U
Aroclor 1221	ND	16	1	B8F0705	06/26/2018	06/27/18 19:30	U
Aroclor 1232	ND	16	1	B8F0705	06/26/2018	06/27/18 19:30	U
Aroclor 1242	ND	16	1	B8F0705	06/26/2018	06/27/18 19:30	U
Aroclor 1248	ND	16	1	B8F0705	06/26/2018	06/27/18 19:30	U
Aroclor 1254	ND	16	1	B8F0705	06/26/2018	06/27/18 19:30	U
Aroclor 1260	ND	16	1	B8F0705	06/26/2018	06/27/18 19:30	U
Aroclor 1262	ND	16	1	B8F0705	06/26/2018	06/27/18 19:30	U
Aroclor 1268	ND	16	1	B8F0705	06/26/2018	06/27/18 19:30	U
Surrogate: Decachlorobiphenyl	*86.9 %*	*14 - 109*		B8F0705	06/26/2018	*06/27/18 19:30*	
Surrogate: Tetrachloro-m-xylene	*89.3 %*	*18 - 114*		B8F0705	06/26/2018	*06/27/18 19:30*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
1,1-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
1,1-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
1,1-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0572	06/22/2018	06/22/18 15:41	U
1,2-Dibromoethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
1,2-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
1,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
1,3-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
2,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-9-2.5-7

Lab ID: 1802258-56

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
4-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
4-Isopropyltoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Benzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Bromobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Bromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Bromodichloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Bromoform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Bromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Carbon disulfide	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Carbon tetrachloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Chlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Chloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Chloroform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Chloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
cis-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Di-isopropyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Dibromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Dibromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Dichlorodifluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Ethyl Acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 15:41	U
Ethyl Ether	ND	50	1	B8F0572	06/22/2018	06/22/18 15:41	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Ethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Freon-113	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Hexachlorobutadiene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Isopropylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
m,p-Xylene	ND	10	1	B8F0572	06/22/2018	06/22/18 15:41	U
Methylene chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
MTBE	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
n-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
n-Propylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Naphthalene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
o-Xylene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
sec-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Styrene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-9-2.5-7

Lab ID: 1802258-56

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
tert-Butanol	ND	100	1	B8F0572	06/22/2018	06/22/18 15:41	U
tert-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Tetrachloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Toluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Trichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Trichlorofluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Vinyl acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 15:41	U
Vinyl chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 15:41	U
Surrogate: 1,2-Dichloroethane-d4	*101 %*	*58 - 144*		B8F0572	06/22/2018	*06/22/18 15:41*	
Surrogate: 4-Bromofluorobenzene	*88.2 %*	*60 - 137*		B8F0572	06/22/2018	*06/22/18 15:41*	
Surrogate: Dibromofluoromethane	*104 %*	*70 - 131*		B8F0572	06/22/2018	*06/22/18 15:41*	
Surrogate: Toluene-d8	*96.6 %*	*79 - 131*		B8F0572	06/22/2018	*06/22/18 15:41*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-9-7-9
Lab ID: 1802258-57

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:38	D1, U
Arsenic	**3900**	1000	20	B8F0666	06/26/2018	06/28/18 13:38	D1
Barium	**50000**	1000	20	B8F0666	06/26/2018	06/28/18 13:38	D1
Beryllium	ND	2500	50	B8F0666	06/26/2018	06/28/18 15:57	D1, D5, U
Cadmium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:38	D1, U
Chromium	**19000**	2000	20	B8F0666	06/26/2018	06/28/18 13:38	D1
Cobalt	**8000**	1000	20	B8F0666	06/26/2018	06/28/18 13:38	D1
Copper	**14000**	1000	20	B8F0666	06/26/2018	06/28/18 13:38	D1
Lead	**5000**	1000	20	B8F0666	06/26/2018	06/28/18 13:38	D1
Molybdenum	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:38	D1, U
Nickel	**8800**	1000	20	B8F0666	06/26/2018	06/28/18 13:38	D1
Selenium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:38	D1, U
Silver	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:38	D1, U
Thallium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:38	D1, U
Vanadium	**48000**	2000	20	B8F0666	06/26/2018	06/28/18 13:38	D1
Zinc	**42000**	5000	20	B8F0666	06/26/2018	06/28/18 13:38	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0675	06/26/2018	06/27/18 16:40	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-17-1.5-2
Lab ID: 1802258-58

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0529	06/21/2018	06/22/18 04:47	U
C7	ND	1.0	1	B8F0529	06/21/2018	06/22/18 04:47	U
C8	ND	1.0	1	B8F0529	06/21/2018	06/22/18 04:47	U
C9	ND	1.0	1	B8F0529	06/21/2018	06/22/18 04:47	U
C10	ND	1.0	1	B8F0529	06/21/2018	06/22/18 04:47	U
C11	ND	1.0	1	B8F0529	06/21/2018	06/22/18 04:47	U
C12	ND	1.0	1	B8F0529	06/21/2018	06/22/18 04:47	U
Surrogate: 4-Bromofluorobenzene	*104 %*	*57 - 144*		B8F0529	06/21/2018	*06/22/18 04:47*	

Hydrocarbon Chain Distribution by EPA 8015B (Modified)

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
C14	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
C15	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
C16	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
C17	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
C18	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
C19	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
C20	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
C21	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
C22	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
C23	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
C24	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
C25	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
C26	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
C27	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
C28	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
C29	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
C30	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
C31	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
C32	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
C33	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
C34	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
C35	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
C36	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-17-1.5-2

Lab ID: 1802258-58

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C37	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
C38	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
C39	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
C40	ND	10	1	B8F0692	06/26/2018	06/27/18 00:57	U
Surrogate: p-Terphenyl	*110 %*	*58 - 172*		B8F0692	06/26/2018	*06/27/18 00:57*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-21-0-5
Lab ID: 1802258-59

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:43	D1, U
Arsenic	**1400**	1000	20	B8F0666	06/26/2018	06/28/18 13:43	D1
Barium	**40000**	1000	20	B8F0666	06/26/2018	06/28/18 13:43	D1
Beryllium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:43	D1, U
Cadmium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:43	D1, U
Chromium	**5000**	2000	20	B8F0666	06/26/2018	06/28/18 13:43	D1
Cobalt	**2200**	1000	20	B8F0666	06/26/2018	06/28/18 13:43	D1
Copper	**3700**	1000	20	B8F0666	06/26/2018	06/28/18 13:43	D1
Lead	**2200**	1000	20	B8F0666	06/26/2018	06/28/18 13:43	D1
Molybdenum	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:43	D1, U
Nickel	**2000**	1000	20	B8F0666	06/26/2018	06/28/18 13:43	D1
Selenium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:43	D1, U
Silver	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:43	D1, U
Thallium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:43	D1, U
Vanadium	**28000**	2000	20	B8F0666	06/26/2018	06/28/18 13:43	D1
Zinc	**14000**	5000	20	B8F0666	06/26/2018	06/28/18 13:43	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0675	06/26/2018	06/27/18 16:42	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0529	06/21/2018	06/22/18 05:05	U
C7	ND	1.0	1	B8F0529	06/21/2018	06/22/18 05:05	U
C8	ND	1.0	1	B8F0529	06/21/2018	06/22/18 05:05	U
C9	ND	1.0	1	B8F0529	06/21/2018	06/22/18 05:05	U
C10	ND	1.0	1	B8F0529	06/21/2018	06/22/18 05:05	U
C11	ND	1.0	1	B8F0529	06/21/2018	06/22/18 05:05	U
C12	ND	1.0	1	B8F0529	06/21/2018	06/22/18 05:05	U
Surrogate: 4-Bromofluorobenzene	*97.5 %*	*57 - 144*		B8F0529	06/21/2018	*06/22/18 05:05*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-21-0-5

Lab ID: 1802258-59

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C14	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C15	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C16	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C17	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C18	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C19	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C20	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C21	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C22	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C23	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C24	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C25	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C26	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C27	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C28	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C29	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C30	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C31	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C32	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C33	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C34	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C35	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C36	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C37	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C38	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C39	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
C40	ND	10	1	B8F0692	06/26/2018	06/27/18 01:14	U
Surrogate: p-Terphenyl	*124 %*	*58 - 172*		B8F0692	06/26/2018	*06/27/18 01:14*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-21-0-5
Lab ID: 1802258-59

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0705	06/26/2018	06/27/18 19:49	U
Aroclor 1221	ND	16	1	B8F0705	06/26/2018	06/27/18 19:49	U
Aroclor 1232	ND	16	1	B8F0705	06/26/2018	06/27/18 19:49	U
Aroclor 1242	ND	16	1	B8F0705	06/26/2018	06/27/18 19:49	U
Aroclor 1248	ND	16	1	B8F0705	06/26/2018	06/27/18 19:49	U
Aroclor 1254	ND	16	1	B8F0705	06/26/2018	06/27/18 19:49	U
Aroclor 1260	ND	16	1	B8F0705	06/26/2018	06/27/18 19:49	U
Aroclor 1262	ND	16	1	B8F0705	06/26/2018	06/27/18 19:49	U
Aroclor 1268	ND	16	1	B8F0705	06/26/2018	06/27/18 19:49	U
Surrogate: Decachlorobiphenyl	*82.7 %*	*14 - 109*		B8F0705	06/26/2018	*06/27/18 19:49*	
Surrogate: Tetrachloro-m-xylene	*96.5 %*	*18 - 114*		B8F0705	06/26/2018	*06/27/18 19:49*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
1,1-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
1,1-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
1,1-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0572	06/22/2018	06/22/18 16:00	U
1,2-Dibromoethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
1,2-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
1,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
1,3-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
2,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-21-0-5

Lab ID: 1802258-59

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
4-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
4-Isopropyltoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Benzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Bromobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Bromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Bromodichloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Bromoform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Bromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Carbon disulfide	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Carbon tetrachloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Chlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Chloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Chloroform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Chloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
cis-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Di-isopropyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Dibromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Dibromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Dichlorodifluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Ethyl Acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 16:00	U
Ethyl Ether	ND	50	1	B8F0572	06/22/2018	06/22/18 16:00	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Ethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Freon-113	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Hexachlorobutadiene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Isopropylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
m,p-Xylene	ND	10	1	B8F0572	06/22/2018	06/22/18 16:00	U
Methylene chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
MTBE	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
n-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
n-Propylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Naphthalene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
o-Xylene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
sec-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Styrene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-21-0-5
Lab ID: 1802258-59

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
tert-Butanol	ND	100	1	B8F0572	06/22/2018	06/22/18 16:00	U
tert-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Tetrachloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Toluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Trichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Trichlorofluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Vinyl acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 16:00	U
Vinyl chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:00	U
Surrogate: 1,2-Dichloroethane-d4	*95.0 %*	*58 - 144*		B8F0572	06/22/2018	*06/22/18 16:00*	
Surrogate: 4-Bromofluorobenzene	*86.4 %*	*60 - 137*		B8F0572	06/22/2018	*06/22/18 16:00*	
Surrogate: Dibromofluoromethane	*96.6 %*	*70 - 131*		B8F0572	06/22/2018	*06/22/18 16:00*	
Surrogate: Toluene-d8	*94.1 %*	*79 - 131*		B8F0572	06/22/2018	*06/22/18 16:00*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-21-5-9
Lab ID: 1802258-60

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:45	D1, U
Arsenic	**2700**	1000	20	B8F0666	06/26/2018	06/28/18 13:45	D1
Barium	**98000**	1000	20	B8F0666	06/26/2018	06/28/18 13:45	D1
Beryllium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:45	D1, U
Cadmium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:45	D1, U
Chromium	**10000**	2000	20	B8F0666	06/26/2018	06/28/18 13:45	D1
Cobalt	**6900**	1000	20	B8F0666	06/26/2018	06/28/18 13:45	D1
Copper	**12000**	1000	20	B8F0666	06/26/2018	06/28/18 13:45	D1
Lead	**4300**	1000	20	B8F0666	06/26/2018	06/28/18 13:45	D1
Molybdenum	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:45	D1, U
Nickel	**6200**	1000	20	B8F0666	06/26/2018	06/28/18 13:45	D1
Selenium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:45	D1, U
Silver	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:45	D1, U
Thallium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:45	D1, U
Vanadium	**41000**	2000	20	B8F0666	06/26/2018	06/28/18 13:45	D1
Zinc	**37000**	5000	20	B8F0666	06/26/2018	06/28/18 13:45	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0675	06/26/2018	06/27/18 16:44	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	1.0	1	B8F0529	06/21/2018	06/22/18 05:24	U
C7	ND	1.0	1	B8F0529	06/21/2018	06/22/18 05:24	U
C8	ND	1.0	1	B8F0529	06/21/2018	06/22/18 05:24	U
C9	ND	1.0	1	B8F0529	06/21/2018	06/22/18 05:24	U
C10	ND	1.0	1	B8F0529	06/21/2018	06/22/18 05:24	U
C11	ND	1.0	1	B8F0529	06/21/2018	06/22/18 05:24	U
C12	ND	1.0	1	B8F0529	06/21/2018	06/22/18 05:24	U
Surrogate: 4-Bromofluorobenzene	*98.6 %*	*57 - 144*		B8F0529	06/21/2018	*06/22/18 05:24*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-21-5-9

Lab ID: 1802258-60

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: TKT**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C14	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C15	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C16	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C17	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C18	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C19	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C20	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C21	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C22	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C23	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C24	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C25	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C26	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C27	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C28	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C29	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C30	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C31	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C32	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C33	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C34	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C35	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C36	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C37	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C38	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C39	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
C40	ND	10	1	B8F0692	06/26/2018	06/27/18 01:31	U
Surrogate: p-Terphenyl	*115 %*	*58 - 172*		B8F0692	06/26/2018	*06/27/18 01:31*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-21-5-9
Lab ID: 1802258-60

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0705	06/26/2018	06/27/18 20:08	U
Aroclor 1221	ND	16	1	B8F0705	06/26/2018	06/27/18 20:08	U
Aroclor 1232	ND	16	1	B8F0705	06/26/2018	06/27/18 20:08	U
Aroclor 1242	ND	16	1	B8F0705	06/26/2018	06/27/18 20:08	U
Aroclor 1248	ND	16	1	B8F0705	06/26/2018	06/27/18 20:08	U
Aroclor 1254	ND	16	1	B8F0705	06/26/2018	06/27/18 20:08	U
Aroclor 1260	ND	16	1	B8F0705	06/26/2018	06/27/18 20:08	U
Aroclor 1262	ND	16	1	B8F0705	06/26/2018	06/27/18 20:08	U
Aroclor 1268	ND	16	1	B8F0705	06/26/2018	06/27/18 20:08	U
Surrogate: Decachlorobiphenyl	*89.0 %*	*14 - 109*		B8F0705	06/26/2018	*06/27/18 20:08*	
Surrogate: Tetrachloro-m-xylene	*92.2 %*	*18 - 114*		B8F0705	06/26/2018	*06/27/18 20:08*	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
1,1-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
1,1-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
1,1-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
1,2-Dibromo-3-chloropropane	ND	10	1	B8F0572	06/22/2018	06/22/18 16:19	U
1,2-Dibromoethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
1,2-Dichloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
1,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
1,3-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
2,2-Dichloropropane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-21-5-9

Lab ID: 1802258-60

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
4-Chlorotoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
4-Isopropyltoluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Benzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Bromobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Bromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Bromodichloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Bromoform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Bromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Carbon disulfide	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Carbon tetrachloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Chlorobenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Chloroethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Chloroform	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Chloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
cis-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Di-isopropyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Dibromochloromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Dibromomethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Dichlorodifluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Ethyl Acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 16:19	U
Ethyl Ether	ND	50	1	B8F0572	06/22/2018	06/22/18 16:19	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Ethylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Freon-113	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Hexachlorobutadiene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Isopropylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
m,p-Xylene	ND	10	1	B8F0572	06/22/2018	06/22/18 16:19	U
Methylene chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
MTBE	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
n-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
n-Propylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Naphthalene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
o-Xylene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
sec-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Styrene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-21-5-9
Lab ID: 1802258-60

Volatile Organic Compounds by EPA 8260B **Analyst: AG**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
tert-Butanol	ND	100	1	B8F0572	06/22/2018	06/22/18 16:19	U
tert-Butylbenzene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Tetrachloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Toluene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Trichloroethene	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Trichlorofluoromethane	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Vinyl acetate	ND	50	1	B8F0572	06/22/2018	06/22/18 16:19	U
Vinyl chloride	ND	5.0	1	B8F0572	06/22/2018	06/22/18 16:19	U
Surrogate: 1,2-Dichloroethane-d4	*100 %*	*58 - 144*		B8F0572	06/22/2018	*06/22/18 16:19*	
Surrogate: 4-Bromofluorobenzene	*88.3 %*	*60 - 137*		B8F0572	06/22/2018	*06/22/18 16:19*	
Surrogate: Dibromofluoromethane	*103 %*	*70 - 131*		B8F0572	06/22/2018	*06/22/18 16:19*	
Surrogate: Toluene-d8	*95.9 %*	*79 - 131*		B8F0572	06/22/2018	*06/22/18 16:19*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-23-0-0.5
Lab ID: 1802258-61

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:47	D1, U
Arsenic	**2900**	1000	20	B8F0666	06/26/2018	06/28/18 13:47	D1
Barium	**45000**	1000	20	B8F0666	06/26/2018	06/28/18 13:47	D1
Beryllium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:47	D1, U
Cadmium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:47	D1, U
Chromium	**7700**	2000	20	B8F0666	06/26/2018	06/28/18 13:47	D1
Cobalt	**4300**	1000	20	B8F0666	06/26/2018	06/28/18 13:47	D1
Copper	**8700**	1000	20	B8F0666	06/26/2018	06/28/18 13:47	D1
Lead	**15000**	1000	20	B8F0666	06/26/2018	06/28/18 13:47	D1
Molybdenum	**1200**	1000	20	B8F0666	06/26/2018	06/28/18 13:47	D1
Nickel	**7200**	1000	20	B8F0666	06/26/2018	06/28/18 13:47	D1
Selenium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:47	D1, U
Silver	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:47	D1, U
Thallium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:47	D1, U
Vanadium	**29000**	2000	20	B8F0666	06/26/2018	06/28/18 13:47	D1
Zinc	**35000**	5000	20	B8F0666	06/26/2018	06/28/18 13:47	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0675	06/26/2018	06/28/18 11:15	

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:08	U
4,4´-DDE	ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:08	U
4,4´-DDT	ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:08	U
Aldrin	ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:08	U
alpha-BHC	ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:08	U
alpha-Chlordane	ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:08	U
beta-BHC	ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:08	U
Chlordane	ND	8.5	1	B8F0705	06/26/2018	06/27/18 16:08	U
delta-BHC	ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:08	U
Dieldrin	ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:08	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-23-0-0.5
Lab ID: 1802258-61

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Endosulfan I		ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:08	U
Endosulfan II		ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:08	U
Endosulfan sulfate		ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:08	U
Endrin		ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:08	U
Endrin aldehyde		ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:08	U
Endrin ketone		ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:08	U
gamma-BHC		ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:08	U
gamma-Chlordane		ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:08	U
Heptachlor		ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:08	U
Heptachlor epoxide		ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:08	U
Methoxychlor		ND	5.0	1	B8F0705	06/26/2018	06/27/18 16:08	U
Toxaphene		ND	50	1	B8F0705	06/26/2018	06/27/18 16:08	U
Surrogate: Decachlorobiphenyl	*78.7 %*		*15 - 100*		B8F0705	06/26/2018	*06/27/18 16:08*	
Surrogate: Tetrachloro-m-xylene	*85.7 %*		*16 - 100*		B8F0705	06/26/2018	*06/27/18 16:08*	

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte		Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016		ND	16	1	B8F0705	06/26/2018	06/27/18 20:26	U
Aroclor 1221		ND	16	1	B8F0705	06/26/2018	06/27/18 20:26	U
Aroclor 1232		ND	16	1	B8F0705	06/26/2018	06/27/18 20:26	U
Aroclor 1242		ND	16	1	B8F0705	06/26/2018	06/27/18 20:26	U
Aroclor 1248		ND	16	1	B8F0705	06/26/2018	06/27/18 20:26	U
Aroclor 1254		ND	16	1	B8F0705	06/26/2018	06/27/18 20:26	U
Aroclor 1260		ND	16	1	B8F0705	06/26/2018	06/27/18 20:26	U
Aroclor 1262		ND	16	1	B8F0705	06/26/2018	06/27/18 20:26	U
Aroclor 1268		ND	16	1	B8F0705	06/26/2018	06/27/18 20:26	U
Surrogate: Decachlorobiphenyl	*84.9 %*		*14 - 109*		B8F0705	06/26/2018	*06/27/18 20:26*	
Surrogate: Tetrachloro-m-xylene	*91.9 %*		*18 - 114*		B8F0705	06/26/2018	*06/27/18 20:26*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-23-0.5-5
Lab ID: 1802258-62

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:49	D1, U
Arsenic	**1300**	1000	20	B8F0666	06/26/2018	06/28/18 13:49	D1
Barium	**34000**	1000	20	B8F0666	06/26/2018	06/28/18 13:49	D1
Beryllium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:49	D1, U
Cadmium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:49	D1, U
Chromium	**5600**	2000	20	B8F0666	06/26/2018	06/28/18 13:49	D1
Cobalt	**2400**	1000	20	B8F0666	06/26/2018	06/28/18 13:49	D1
Copper	**4300**	1000	20	B8F0666	06/26/2018	06/28/18 13:49	D1
Lead	**3100**	1000	20	B8F0666	06/26/2018	06/28/18 13:49	D1
Molybdenum	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:49	D1, U
Nickel	**2500**	1000	20	B8F0666	06/26/2018	06/28/18 13:49	D1
Selenium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:49	D1, U
Silver	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:49	D1, U
Thallium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:49	D1, U
Vanadium	**26000**	2000	20	B8F0666	06/26/2018	06/28/18 13:49	D1
Zinc	**13000**	5000	20	B8F0666	06/26/2018	06/28/18 13:49	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0675	06/26/2018	06/28/18 11:17	

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:18	U
4,4´-DDE	ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:18	U
4,4´-DDT	ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:18	U
Aldrin	ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:18	U
alpha-BHC	ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:18	U
alpha-Chlordane	ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:18	U
beta-BHC	ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:18	U
Chlordane	ND	8.5	1	B8F0705	06/26/2018	06/27/18 16:18	U
delta-BHC	ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:18	U
Dieldrin	ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:18	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-23-0.5-5
Lab ID: 1802258-62

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Endosulfan I	ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:18	U
Endosulfan II	ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:18	U
Endosulfan sulfate	ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:18	U
Endrin	ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:18	U
Endrin aldehyde	ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:18	U
Endrin ketone	ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:18	U
gamma-BHC	ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:18	U
gamma-Chlordane	ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:18	U
Heptachlor	ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:18	U
Heptachlor epoxide	ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:18	U
Methoxychlor	ND	5.0	1	B8F0705	06/26/2018	06/27/18 16:18	U
Toxaphene	ND	50	1	B8F0705	06/26/2018	06/27/18 16:18	U
Surrogate: Decachlorobiphenyl	*80.1 %*	*15 - 100*		B8F0705	06/26/2018	*06/27/18 16:18*	
Surrogate: Tetrachloro-m-xylene	*75.6 %*	*16 - 100*		B8F0705	06/26/2018	*06/27/18 16:18*	

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0705	06/26/2018	06/27/18 20:45	U
Aroclor 1221	ND	16	1	B8F0705	06/26/2018	06/27/18 20:45	U
Aroclor 1232	ND	16	1	B8F0705	06/26/2018	06/27/18 20:45	U
Aroclor 1242	ND	16	1	B8F0705	06/26/2018	06/27/18 20:45	U
Aroclor 1248	ND	16	1	B8F0705	06/26/2018	06/27/18 20:45	U
Aroclor 1254	ND	16	1	B8F0705	06/26/2018	06/27/18 20:45	U
Aroclor 1260	ND	16	1	B8F0705	06/26/2018	06/27/18 20:45	U
Aroclor 1262	ND	16	1	B8F0705	06/26/2018	06/27/18 20:45	U
Aroclor 1268	ND	16	1	B8F0705	06/26/2018	06/27/18 20:45	U
Surrogate: Decachlorobiphenyl	*81.6 %*	*14 - 109*		B8F0705	06/26/2018	*06/27/18 20:45*	
Surrogate: Tetrachloro-m-xylene	*97.1 %*	*18 - 114*		B8F0705	06/26/2018	*06/27/18 20:45*	

Certificate of Analysis

Kleinfelder	Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200	Report To :	Jake Lippman
San Diego , CA 92101	Reported :	07/13/2018

Client Sample ID TP-23-5-8
Lab ID: 1802258-63

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:51	D1, U
Arsenic	**2700**	1000	20	B8F0666	06/26/2018	06/28/18 13:51	D1
Barium	**91000**	1000	20	B8F0666	06/26/2018	06/28/18 13:51	D1
Beryllium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:51	D1, U
Cadmium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:51	D1, U
Chromium	**9300**	2000	20	B8F0666	06/26/2018	06/28/18 13:51	D1
Cobalt	**5600**	1000	20	B8F0666	06/26/2018	06/28/18 13:51	D1
Copper	**44000**	1000	20	B8F0666	06/26/2018	06/28/18 13:51	D1
Lead	**4100**	1000	20	B8F0666	06/26/2018	06/28/18 13:51	D1
Molybdenum	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:51	D1, U
Nickel	**4800**	1000	20	B8F0666	06/26/2018	06/28/18 13:51	D1
Selenium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:51	D1, U
Silver	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:51	D1, U
Thallium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:51	D1, U
Vanadium	**41000**	2000	20	B8F0666	06/26/2018	06/28/18 13:51	D1
Zinc	**48000**	5000	20	B8F0666	06/26/2018	06/28/18 13:51	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0675	06/26/2018	06/28/18 11:18	

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:29	U
4,4´-DDE	ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:29	U
4,4´-DDT	ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:29	U
Aldrin	ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:29	U
alpha-BHC	ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:29	U
alpha-Chlordane	ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:29	U
beta-BHC	ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:29	U
Chlordane	ND	8.5	1	B8F0705	06/26/2018	06/27/18 16:29	U
delta-BHC	ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:29	U
Dieldrin	ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:29	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-23-5-8
Lab ID: 1802258-63

Organochlorine Pesticides by EPA 8081

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Endosulfan I	ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:29	U
Endosulfan II	ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:29	U
Endosulfan sulfate	ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:29	U
Endrin	ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:29	U
Endrin aldehyde	ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:29	U
Endrin ketone	ND	2.0	1	B8F0705	06/26/2018	06/27/18 16:29	U
gamma-BHC	ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:29	U
gamma-Chlordane	ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:29	U
Heptachlor	ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:29	U
Heptachlor epoxide	ND	1.0	1	B8F0705	06/26/2018	06/27/18 16:29	U
Methoxychlor	ND	5.0	1	B8F0705	06/26/2018	06/27/18 16:29	U
Toxaphene	ND	50	1	B8F0705	06/26/2018	06/27/18 16:29	U
Surrogate: Decachlorobiphenyl	*82.8 %*	*15 - 100*		B8F0705	06/26/2018	*06/27/18 16:29*	
Surrogate: Tetrachloro-m-xylene	*63.6 %*	*16 - 100*		B8F0705	06/26/2018	*06/27/18 16:29*	

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	16	1	B8F0705	06/26/2018	06/27/18 21:03	U
Aroclor 1221	ND	16	1	B8F0705	06/26/2018	06/27/18 21:03	U
Aroclor 1232	ND	16	1	B8F0705	06/26/2018	06/27/18 21:03	U
Aroclor 1242	ND	16	1	B8F0705	06/26/2018	06/27/18 21:03	U
Aroclor 1248	ND	16	1	B8F0705	06/26/2018	06/27/18 21:03	U
Aroclor 1254	ND	16	1	B8F0705	06/26/2018	06/27/18 21:03	U
Aroclor 1260	ND	16	1	B8F0705	06/26/2018	06/27/18 21:03	U
Aroclor 1262	ND	16	1	B8F0705	06/26/2018	06/27/18 21:03	U
Aroclor 1268	ND	16	1	B8F0705	06/26/2018	06/27/18 21:03	U
Surrogate: Decachlorobiphenyl	*88.7 %*	*14 - 109*		B8F0705	06/26/2018	*06/27/18 21:03*	
Surrogate: Tetrachloro-m-xylene	*77.9 %*	*18 - 114*		B8F0705	06/26/2018	*06/27/18 21:03*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Client Sample ID TP-23-8-10
Lab ID: 1802258-64

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:53	D1, U
Arsenic	**3500**	1000	20	B8F0666	06/26/2018	06/28/18 13:53	D1
Barium	**72000**	1000	20	B8F0666	06/26/2018	06/28/18 13:53	D1
Beryllium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:53	D1, U
Cadmium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:53	D1, U
Chromium	**13000**	2000	20	B8F0666	06/26/2018	06/28/18 13:53	D1
Cobalt	**6700**	1000	20	B8F0666	06/26/2018	06/28/18 13:53	D1
Copper	**12000**	1000	20	B8F0666	06/26/2018	06/28/18 13:53	D1
Lead	**4500**	1000	20	B8F0666	06/26/2018	06/28/18 13:53	D1
Molybdenum	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:53	D1, U
Nickel	**6600**	1000	20	B8F0666	06/26/2018	06/28/18 13:53	D1
Selenium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:53	D1, U
Silver	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:53	D1, U
Thallium	ND	1000	20	B8F0666	06/26/2018	06/28/18 13:53	D1, U
Vanadium	**42000**	2000	20	B8F0666	06/26/2018	06/28/18 13:53	D1
Zinc	**35000**	5000	20	B8F0666	06/26/2018	06/28/18 13:53	D1

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0675	06/26/2018	06/28/18 11:20	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

QUALITY CONTROL SECTION

Total Metals by ICP-MS EPA 6020 - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0662 - EPA 3010A MS_W										
Blank (B8F0662-BLK1)					Prepared: 6/26/2018 Analyzed: 6/26/2018					
Antimony	ND	0.50	0.06							U
Arsenic	ND	1.0	0.39							U
Barium	ND	1.0	0.14							U
Beryllium	ND	0.50	0.08							U
Cadmium	ND	0.50	0.14							U
Chromium	ND	0.50	0.09							U
Cobalt	ND	0.50	0.05							U
Copper	ND	1.0	0.10							U
Lead	ND	1.0	0.32							U
Molybdenum	ND	0.50	0.08							U
Nickel	ND	1.0	0.16							U
Selenium	ND	0.50	0.22							U
Silver	ND	0.50	0.08							U
Thallium	ND	0.50	0.14							U
Vanadium	ND	1.0	0.59							U
Zinc	ND	10	1.6							U
LCS (B8F0662-BS1)					Prepared: 6/26/2018 Analyzed: 6/26/2018					
Antimony	10.3938	0.50	0.06	10.0000		104	85 - 115			
Arsenic	9.77330	1.0	0.39	10.0000		97.7	85 - 115			
Barium	10.2504	1.0	0.14	10.0000		103	85 - 115			
Beryllium	9.82296	0.50	0.08	10.0000		98.2	85 - 115			
Cadmium	9.87712	0.50	0.14	10.0000		98.8	85 - 115			
Chromium	10.1319	0.50	0.09	10.0000		101	85 - 115			
Cobalt	9.79577	0.50	0.05	10.0000		98.0	85 - 115			
Copper	9.79152	1.0	0.10	10.0000		97.9	85 - 115			
Lead	9.98270	1.0	0.32	10.0000		99.8	85 - 115			
Molybdenum	9.74877	0.50	0.08	10.0000		97.5	85 - 115			
Nickel	9.73333	1.0	0.16	10.0000		97.3	85 - 115			
Selenium	9.96620	0.50	0.22	10.0000		99.7	85 - 115			
Silver	9.87298	0.50	0.08	10.0000		98.7	85 - 115			
Thallium	10.0743	0.50	0.14	10.0000		101	85 - 115			
Vanadium	10.5274	1.0	0.59	10.0000		105	85 - 115			
Zinc	97.4094	10	1.6	100.000		97.4	85 - 115			
Matrix Spike (B8F0662-MS1)			**Source: 1802292-01**		Prepared: 6/26/2018 Analyzed: 6/26/2018					
Antimony	10.1132	0.50	0.06	10.0000	ND	101	75 - 125			
Arsenic	9.15822	1.0	0.39	10.0000	ND	91.6	75 - 125			
Barium	10.3226	1.0	0.14	10.0000	1.04118	92.8	75 - 125			
Beryllium	9.14562	0.50	0.08	10.0000	ND	91.5	75 - 125			

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Total Metals by ICP-MS EPA 6020 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0662 - EPA 3010A MS_W (continued)										
Matrix Spike (B8F0662-MS1) - Continued			**Source: 1802292-01**		Prepared: 6/26/2018 Analyzed: 6/26/2018					
Cadmium	9.88144	0.50	0.14	10.0000	ND	98.8	75 - 125			
Chromium	10.4544	0.50	0.09	10.0000	ND	105	75 - 125			
Cobalt	10.7575	0.50	0.05	10.0000	ND	108	75 - 125			
Copper	11.9589	1.0	0.10	10.0000	0.938270	110	75 - 125			
Lead	10.1987	1.0	0.32	10.0000	ND	102	75 - 125			
Molybdenum	10.6540	0.50	0.08	10.0000	ND	107	75 - 125			
Nickel	10.9155	1.0	0.16	10.0000	0.268750	106	75 - 125			
Selenium	9.00981	0.50	0.22	10.0000	ND	90.1	75 - 125			
Silver	10.4730	0.50	0.08	10.0000	ND	105	75 - 125			
Thallium	10.0624	0.50	0.14	10.0000	ND	101	75 - 125			
Vanadium	10.6072	1.0	0.59	10.0000	ND	106	75 - 125			
Zinc	97.7254	10	1.6	100.000	2.46000	95.3	75 - 125			
Matrix Spike Dup (B8F0662-MSD1)			**Source: 1802292-01**		Prepared: 6/26/2018 Analyzed: 6/26/2018					
Antimony	10.4292	0.50	0.06	10.0000	ND	104	75 - 125	3.08	20	
Arsenic	9.48039	1.0	0.39	10.0000	ND	94.8	75 - 125	3.46	20	
Barium	10.8011	1.0	0.14	10.0000	1.04118	97.6	75 - 125	4.53	20	
Beryllium	9.09060	0.50	0.08	10.0000	ND	90.9	75 - 125	0.603	20	
Cadmium	9.85266	0.50	0.14	10.0000	ND	98.5	75 - 125	0.292	20	
Chromium	10.9270	0.50	0.09	10.0000	ND	109	75 - 125	4.42	20	
Cobalt	11.4394	0.50	0.05	10.0000	ND	114	75 - 125	6.14	20	
Copper	12.3005	1.0	0.10	10.0000	0.938270	114	75 - 125	2.82	20	
Lead	10.4841	1.0	0.32	10.0000	ND	105	75 - 125	2.76	20	
Molybdenum	10.9352	0.50	0.08	10.0000	ND	109	75 - 125	2.61	20	
Nickel	11.6599	1.0	0.16	10.0000	0.268750	114	75 - 125	6.59	20	
Selenium	9.24542	0.50	0.22	10.0000	ND	92.5	75 - 125	2.58	20	
Silver	10.6918	0.50	0.08	10.0000	ND	107	75 - 125	2.07	20	
Thallium	10.2745	0.50	0.14	10.0000	ND	103	75 - 125	2.09	20	
Vanadium	10.9896	1.0	0.59	10.0000	ND	110	75 - 125	3.54	20	
Zinc	96.2025	10	1.6	100.000	2.46000	93.7	75 - 125	1.57	20	
Post Spike (B8F0662-PS1)			**Source: 1802292-01**		Prepared: 6/26/2018 Analyzed: 6/26/2018					
Antimony	10.2188			10.0000	0.02342	102	75 - 125			
Arsenic	8.98115			10.0000	-0.198750	89.8	75 - 125			
Barium	10.8829			10.0000	1.04118	98.4	75 - 125			
Beryllium	8.89789			10.0000	0.01189	88.9	75 - 125			
Cadmium	9.69513			10.0000	0.00873	96.9	75 - 125			
Chromium	10.6440			10.0000	0.02635	106	75 - 125			
Cobalt	10.8081			10.0000	0.04849	108	75 - 125			
Copper	12.0468			10.0000	0.938270	111	75 - 125			
Lead	10.0193			10.0000	0.130250	98.9	75 - 125			
Molybdenum	10.5105			10.0000	0.04856	105	75 - 125			

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Total Metals by ICP-MS EPA 6020 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0662 - EPA 3010A MS_W (continued)									
Post Spike (B8F0662-PS1) - Continued			**Source: 1802292-01**		Prepared: 6/26/2018 Analyzed: 6/26/2018				
Nickel	11.0709		10.0000	0.268750	108	75 - 125			
Selenium	8.71079		10.0000	-0.00889	87.1	75 - 125			
Silver	10.4556		10.0000	0.00581	104	75 - 125			
Thallium	9.91830		10.0000	0.01073	99.1	75 - 125			
Vanadium	10.8197		10.0000	-0.100690	108	75 - 125			
Zinc	93.0454		100.000	2.46000	90.6	75 - 125			

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Total Metals by ICP-MS EPA 6020 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0666 - EPA 3050B MS_S										
Blank (B8F0666-BLK1)					Prepared: 6/26/2018 Analyzed: 6/28/2018					
Antimony	ND	250	71							U
Arsenic	ND	250	44							U
Barium	ND	250	37							U
Beryllium	ND	250	23							U
Cadmium	ND	250	17							U
Chromium	ND	500	110							U
Cobalt	ND	250	19							U
Copper	ND	250	25							U
Lead	ND	250	28							U
Molybdenum	ND	250	49							U
Nickel	ND	250	16							U
Selenium	ND	250	55							U
Silver	ND	250	10							U
Thallium	ND	250	16							U
Vanadium	ND	500	72							U
Zinc	ND	1200	720							U
LCS (B8F0666-BS1)					Prepared: 6/26/2018 Analyzed: 6/28/2018					
Antimony	4943.37	250	71	5000.00		98.9	70 - 130			
Arsenic	4981.19	250	44	5000.00		99.6	70 - 130			
Barium	5073.63	250	37	5000.00		101	70 - 130			
Beryllium	5001.64	250	23	5000.00		100	70 - 130			
Cadmium	4992.18	250	17	5000.00		99.8	70 - 130			
Chromium	4872.21	500	110	5000.00		97.4	70 - 130			
Cobalt	4771.22	250	19	5000.00		95.4	70 - 130			
Copper	4792.89	250	25	5000.00		95.9	70 - 130			
Lead	5010.72	250	28	5000.00		100	70 - 130			
Molybdenum	4845.29	250	49	5000.00		96.9	70 - 130			
Nickel	4814.24	250	16	5000.00		96.3	70 - 130			
Selenium	4869.62	250	55	5000.00		97.4	70 - 130			
Silver	4764.26	250	10	5000.00		95.3	70 - 130			
Thallium	5077.27	250	16	5000.00		102	70 - 130			
Vanadium	4936.34	500	72	5000.00		98.7	70 - 130			
Zinc	50304.7	1200	720	50000.0		101	70 - 130			
Matrix Spike (B8F0666-MS1)			**Source: 1802237-32**		Prepared: 6/26/2018 Analyzed: 6/28/2018					
Antimony	1308.93	1000	280	5000.00	ND	26.2	75 - 125			M1
Arsenic	5631.99	1000	180	5000.00	2786.80	56.9	75 - 125			M1
Barium	100436	1000	150	5000.00	72755.3	554	75 - 125			M1
Beryllium	3675.94	1000	93	5000.00	205.932	69.4	75 - 125			M1
Cadmium	4445.78	1000	69	5000.00	72.9900	87.5	75 - 125			
Chromium	15352.5	2000	450	5000.00	9174.14	124	75 - 125			

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Total Metals by ICP-MS EPA 6020 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0666 - EPA 3050B MS_S (continued)										
Matrix Spike (B8F0666-MS1) - Continued			**Source: 1802237-32**		Prepared: 6/26/2018 Analyzed: 6/28/2018					
Cobalt	10827.4	1000	75	5000.00	5511.40	106	75 - 125			
Copper	20522.7	1000	100	5000.00	12863.0	153	75 - 125			M1
Lead	7187.97	1000	110	5000.00	2621.42	91.3	75 - 125			
Molybdenum	4566.81	1000	200	5000.00	374.496	83.8	75 - 125			
Nickel	10466.5	1000	64	5000.00	4747.56	114	75 - 125			
Selenium	3135.47	1000	220	5000.00	ND	62.7	75 - 125			M1
Silver	4208.39	1000	41	5000.00	ND	84.2	75 - 125			
Thallium	4603.78	1000	62	5000.00	127.984	89.5	75 - 125			
Vanadium	52268.1	2000	290	5000.00	41194.5	221	75 - 125			M1
Zinc	67976.7	5000	2900	50000.0	25525.8	84.9	75 - 125			
Matrix Spike Dup (B8F0666-MSD1)			**Source: 1802237-32**		Prepared: 6/26/2018 Analyzed: 6/28/2018					
Antimony	1148.01	1000	280	5000.00	ND	23.0	75 - 125	13.1	20	M1
Arsenic	6953.45	1000	180	5000.00	2786.80	83.3	75 - 125	21.0	20	R
Barium	111684	1000	150	5000.00	72755.3	779	75 - 125	10.6	20	M1
Beryllium	3639.67	1000	93	5000.00	205.932	68.7	75 - 125	0.992	20	M1
Cadmium	4582.84	1000	69	5000.00	72.9900	90.2	75 - 125	3.04	20	
Chromium	15791.5	2000	450	5000.00	9174.14	132	75 - 125	2.82	20	M1
Cobalt	12175.9	1000	75	5000.00	5511.40	133	75 - 125	11.7	20	M1
Copper	20529.2	1000	100	5000.00	12863.0	153	75 - 125	0.0314	20	M1
Lead	7883.33	1000	110	5000.00	2621.42	105	75 - 125	9.23	20	
Molybdenum	4585.38	1000	200	5000.00	374.496	84.2	75 - 125	0.406	20	
Nickel	11061.8	1000	64	5000.00	4747.56	126	75 - 125	5.53	20	M1
Selenium	3787.84	1000	220	5000.00	ND	75.8	75 - 125	18.8	20	
Silver	4527.42	1000	41	5000.00	ND	90.5	75 - 125	7.30	20	
Thallium	4576.74	1000	62	5000.00	127.984	89.0	75 - 125	0.589	20	
Vanadium	52996.7	2000	290	5000.00	41194.5	236	75 - 125	1.38	20	M1
Zinc	70556.0	5000	2900	50000.0	25525.8	90.1	75 - 125	3.72	20	
Post Spike (B8F0666-PS1)			**Source: 1802237-32**		Prepared: 6/26/2018 Analyzed: 6/28/2018					
Antimony	5.03697			5.00000	0.024736	100	75 - 125			
Arsenic	5.61850			5.00000	0.557359	101	75 - 125			
Barium	44.7714			5.00000	14.5511	604	75 - 125			M1
Beryllium	3.80239			5.00000	0.041186	75.2	75 - 125			
Cadmium	4.74041			5.00000	0.014598	94.5	75 - 125			
Chromium	9.36731			5.00000	1.83483	151	75 - 125			M1
Cobalt	7.70950			5.00000	1.10228	132	75 - 125			M1
Copper	11.2838			5.00000	2.57260	174	75 - 125			M1
Lead	5.95372			5.00000	0.524283	109	75 - 125			
Molybdenum	5.47148			5.00000	0.074899	108	75 - 125			
Nickel	7.35663			5.00000	0.949511	128	75 - 125			M1
Selenium	4.01260			5.00000	-0.060954	80.3	75 - 125			

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550 W. C. Suite 1200		Report To :	Jake Lippman
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Total Metals by ICP-MS EPA 6020 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0666 - EPA 3050B MS_S (continued)									
Post Spike (B8F0666-PS1) - Continued			**Source: 1802237-32**	Prepared: 6/26/2018 Analyzed: 6/28/2018					
Silver	5.13567		5.00000	2.0936E-3	103	75 - 125			
Thallium	4.76712		5.00000	0.025597	94.8	75 - 125			
Vanadium	26.1690		5.00000	8.23891	359	75 - 125			M1
Zinc	54.5810		50.0000	5.10516	99.0	75 - 125			

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Total Metals by ICP-MS EPA 6020 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0667 - EPA 3050B MS_S										
Blank (B8F0667-BLK1)					Prepared: 6/26/2018 Analyzed: 6/28/2018					
Antimony	ND	250	71							U
Arsenic	ND	250	44							U
Barium	ND	250	37							U
Beryllium	ND	250	23							U
Cadmium	ND	250	17							U
Chromium	ND	500	110							U
Cobalt	ND	250	19							U
Copper	ND	250	25							U
Lead	ND	250	28							U
Molybdenum	ND	250	49							U
Nickel	ND	250	16							U
Selenium	ND	250	55							U
Silver	ND	250	10							U
Thallium	ND	250	16							U
Vanadium	ND	500	72							U
Zinc	ND	1200	720							U
LCS (B8F0667-BS1)					Prepared: 6/26/2018 Analyzed: 6/28/2018					
Antimony	4875.16	250	71	5000.00		97.5	70 - 130			
Arsenic	5102.74	250	44	5000.00		102	70 - 130			
Barium	4891.33	250	37	5000.00		97.8	70 - 130			
Beryllium	4843.92	250	23	5000.00		96.9	70 - 130			
Cadmium	4794.73	250	17	5000.00		95.9	70 - 130			
Chromium	5065.16	500	110	5000.00		101	70 - 130			
Cobalt	4896.53	250	19	5000.00		97.9	70 - 130			
Copper	4942.45	250	25	5000.00		98.8	70 - 130			
Lead	4803.84	250	28	5000.00		96.1	70 - 130			
Molybdenum	4799.89	250	49	5000.00		96.0	70 - 130			
Nickel	4905.76	250	16	5000.00		98.1	70 - 130			
Selenium	5066.18	250	55	5000.00		101	70 - 130			
Silver	4704.56	250	10	5000.00		94.1	70 - 130			
Thallium	4833.87	250	16	5000.00		96.7	70 - 130			
Vanadium	5047.52	500	72	5000.00		101	70 - 130			
Zinc	49232.9	1200	720	50000.0		98.5	70 - 130			
Matrix Spike (B8F0667-MS1)			**Source: 1802258-01**		Prepared: 6/26/2018 Analyzed: 6/28/2018					
Antimony	5179.95	1000	280	5000.00	1135.77	80.9	75 - 125			
Arsenic	6871.96	1000	180	5000.00	2290.58	91.6	75 - 125			
Barium	177644	1000	150	5000.00	147272	607	75 - 125			M1
Beryllium	3969.41	1000	93	5000.00	197.250	75.4	75 - 125			
Cadmium	5352.13	1000	69	5000.00	616.296	94.7	75 - 125			
Chromium	26976.3	2000	450	5000.00	50814.5	-477	75 - 125			M1

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Total Metals by ICP-MS EPA 6020 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0667 - EPA 3050B MS_S (continued)										
Matrix Spike (B8F0667-MS1) - Continued			**Source: 1802258-01**		Prepared: 6/26/2018 Analyzed: 6/28/2018					
Cobalt	11349.7	1000	75	5000.00	5214.11	123	75 - 125			
Copper	128272	1000	100	5000.00	98340.1	599	75 - 125			M1
Lead	107757	1000	110	5000.00	252667	-2900	75 - 125			M1
Molybdenum	7550.47	1000	200	5000.00	8681.80	-22.6	75 - 125			M1
Nickel	34894.3	1000	64	5000.00	22655.9	245	75 - 125			M1
Selenium	3751.20	1000	220	5000.00	ND	75.0	75 - 125			
Silver	5464.19	1000	41	5000.00	799.500	93.3	75 - 125			
Thallium	4816.74	1000	62	5000.00	101.904	94.3	75 - 125			
Vanadium	41854.1	2000	290	5000.00	29126.7	255	75 - 125			M1
Zinc	470250	5000	2900	50000.0	350181	240	75 - 125			M1
Matrix Spike Dup (B8F0667-MSD1)			**Source: 1802258-01**		Prepared: 6/26/2018 Analyzed: 6/28/2018					
Antimony	4761.65	1000	280	5000.00	1135.77	72.5	75 - 125	8.42	20	M1
Arsenic	6639.20	1000	180	5000.00	2290.58	87.0	75 - 125	3.45	20	
Barium	153256	1000	150	5000.00	147272	120	75 - 125	14.7	20	
Beryllium	3990.14	1000	93	5000.00	197.250	75.9	75 - 125	0.521	20	
Cadmium	5250.98	1000	69	5000.00	616.296	92.7	75 - 125	1.91	20	
Chromium	21244.7	2000	450	5000.00	50814.5	-591	75 - 125	23.8	20	M1, R
Cobalt	9680.31	1000	75	5000.00	5214.11	89.3	75 - 125	15.9	20	
Copper	98801.8	1000	100	5000.00	98340.1	9.24	75 - 125	26.0	20	M1, R
Lead	100615	1000	110	5000.00	252667	-3040	75 - 125	6.85	20	M1
Molybdenum	6744.65	1000	200	5000.00	8681.80	-38.7	75 - 125	11.3	20	M1
Nickel	26502.7	1000	64	5000.00	22655.9	76.9	75 - 125	27.3	20	R
Selenium	3821.95	1000	220	5000.00	ND	76.4	75 - 125	1.87	20	
Silver	4912.10	1000	41	5000.00	799.500	82.3	75 - 125	10.6	20	
Thallium	4706.58	1000	62	5000.00	101.904	92.1	75 - 125	2.31	20	
Vanadium	38209.3	2000	290	5000.00	29126.7	182	75 - 125	9.10	20	M1
Zinc	572021	5000	2900	50000.0	350181	444	75 - 125	19.5	20	M1
Post Spike (B8F0667-PS1)			**Source: 1802258-01**		Prepared: 6/26/2018 Analyzed: 6/28/2018					
Antimony	5.47239			5.00000	0.227154	105	75 - 125			
Arsenic	6.17379			5.00000	0.458116	114	75 - 125			
Barium	56.3662			5.00000	29.4544	538	75 - 125			M1
Beryllium	4.13682			5.00000	0.03945	81.9	75 - 125			
Cadmium	4.86036			5.00000	0.123259	94.7	75 - 125			
Chromium	11.1311			5.00000	10.1629	19.4	75 - 125			M1
Cobalt	7.35243			5.00000	1.04282	126	75 - 125			M1
Copper	41.0840			5.00000	19.6680	428	75 - 125			M1
Lead	47.6957			5.00000	50.5334	-56.8	75 - 125			M1
Molybdenum	6.00996			5.00000	1.73636	85.5	75 - 125			
Nickel	13.5726			5.00000	4.53117	181	75 - 125			M1
Selenium	3.95148			5.00000	-0.035440	79.0	75 - 125			

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Total Metals by ICP-MS EPA 6020 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0667 - EPA 3050B MS_S (continued)									
Post Spike (B8F0667-PS1) - Continued			**Source: 1802258-01**		Prepared: 6/26/2018 Analyzed: 6/28/2018				
Silver	5.65133		5.00000	0.159900	110	75 - 125			
Thallium	4.79936		5.00000	0.020381	95.6	75 - 125			
Vanadium	15.9013		5.00000	5.82534	202	75 - 125			M1
Zinc	160.910		50.0000	70.0361	182	75 - 125			

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Total Metals by ICP-MS EPA 6020 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0668 - EPA 3050B MS_S										
Blank (B8F0668-BLK1)					Prepared: 6/26/2018 Analyzed: 6/28/2018					
Antimony	ND	250	71							U
Arsenic	ND	250	44							U
Barium	ND	250	37							U
Beryllium	ND	250	23							U
Cadmium	ND	250	17							U
Chromium	ND	500	110							U
Cobalt	ND	250	19							U
Copper	ND	250	25							U
Lead	ND	250	28							U
Molybdenum	ND	250	49							U
Nickel	ND	250	16							U
Selenium	ND	250	55							U
Silver	ND	250	10							U
Thallium	ND	250	16							U
Vanadium	ND	500	72							U
Zinc	ND	1200	720							U
LCS (B8F0668-BS1)					Prepared: 6/26/2018 Analyzed: 6/28/2018					
Antimony	4890.50	250	71	5000.00		97.8	70 - 130			
Arsenic	5073.18	250	44	5000.00		101	70 - 130			
Barium	4945.16	250	37	5000.00		98.9	70 - 130			
Beryllium	4957.61	250	23	5000.00		99.2	70 - 130			
Cadmium	4989.62	250	17	5000.00		99.8	70 - 130			
Chromium	4983.61	500	110	5000.00		99.7	70 - 130			
Cobalt	4795.94	250	19	5000.00		95.9	70 - 130			
Copper	4858.25	250	25	5000.00		97.2	70 - 130			
Lead	4902.17	250	28	5000.00		98.0	70 - 130			
Molybdenum	4676.52	250	49	5000.00		93.5	70 - 130			
Nickel	4822.85	250	16	5000.00		96.5	70 - 130			
Selenium	5116.34	250	55	5000.00		102	70 - 130			
Silver	4678.07	250	10	5000.00		93.6	70 - 130			
Thallium	4922.56	250	16	5000.00		98.5	70 - 130			
Vanadium	5016.38	500	72	5000.00		100	70 - 130			
Zinc	50714.1	1200	720	50000.0		101	70 - 130			
Matrix Spike (B8F0668-MS1)			**Source: 1802258-31**		Prepared: 6/26/2018 Analyzed: 6/28/2018					
Antimony	2524.61	1000	280	5000.00	ND	50.5	75 - 125			M1
Arsenic	10444.5	1000	180	5000.00	8613.23	36.6	75 - 125			M1
Barium	63834.4	1000	150	5000.00	63462.7	7.43	75 - 125			M1
Beryllium	4002.14	2500	230	5000.00	565.895	68.7	75 - 125			M1
Cadmium	4408.05	1000	69	5000.00	173.090	84.7	75 - 125			
Chromium	30764.9	2000	450	5000.00	25416.4	107	75 - 125			

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Total Metals by ICP-MS EPA 6020 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0668 - EPA 3050B MS_S (continued)										
Matrix Spike (B8F0668-MS1) - Continued			**Source: 1802258-31**		Prepared: 6/26/2018 Analyzed: 6/28/2018					
Cobalt	18611.8	1000	75	5000.00	11925.8	134	75 - 125			M1
Copper	19288.3	1000	100	5000.00	17060.9	44.5	75 - 125			M1
Lead	13411.4	1000	110	5000.00	7822.33	112	75 - 125			
Molybdenum	4740.74	1000	200	5000.00	428.998	86.2	75 - 125			
Nickel	19678.4	1000	64	5000.00	12962.8	134	75 - 125			M1
Selenium	3266.36	1000	220	5000.00	ND	65.3	75 - 125			M1
Silver	4728.26	1000	41	5000.00	46.9940	93.6	75 - 125			
Thallium	4623.79	1000	62	5000.00	328.624	85.9	75 - 125			
Vanadium	53725.9	2000	290	5000.00	55920.3	-43.9	75 - 125			M1
Zinc	92478.9	5000	2900	50000.0	63730.4	57.5	75 - 125			M1
Matrix Spike Dup (B8F0668-MSD1)			**Source: 1802258-31**		Prepared: 6/26/2018 Analyzed: 6/28/2018					
Antimony	2392.36	1000	280	5000.00	ND	47.8	75 - 125	5.38	20	M1
Arsenic	10400.9	1000	180	5000.00	8613.23	35.8	75 - 125	0.418	20	M1
Barium	67603.8	1000	150	5000.00	63462.7	82.8	75 - 125	5.74	20	
Beryllium	4090.08	2500	230	5000.00	565.895	70.5	75 - 125	2.17	20	M1
Cadmium	4512.71	1000	69	5000.00	173.090	86.8	75 - 125	2.35	20	
Chromium	30973.8	2000	450	5000.00	25416.4	111	75 - 125	0.677	20	
Cobalt	19296.4	1000	75	5000.00	11925.8	147	75 - 125	3.61	20	M1
Copper	19926.7	1000	100	5000.00	17060.9	57.3	75 - 125	3.26	20	M1
Lead	10267.3	1000	110	5000.00	7822.33	48.9	75 - 125	26.6	20	M1, R
Molybdenum	4801.25	1000	200	5000.00	428.998	87.4	75 - 125	1.27	20	
Nickel	18666.7	1000	64	5000.00	12962.8	114	75 - 125	5.28	20	
Selenium	3533.39	1000	220	5000.00	ND	70.7	75 - 125	7.85	20	M1
Silver	4657.34	1000	41	5000.00	46.9940	92.2	75 - 125	1.51	20	
Thallium	4654.96	1000	62	5000.00	328.624	86.5	75 - 125	0.672	20	
Vanadium	59618.5	2000	290	5000.00	55920.3	74.0	75 - 125	10.4	20	M1
Zinc	93976.9	5000	2900	50000.0	63730.4	60.5	75 - 125	1.61	20	M1
Post Spike (B8F0668-PS1)			**Source: 1802258-31**		Prepared: 6/26/2018 Analyzed: 6/28/2018					
Antimony	4.95975			5.00000	0.033246	98.5	75 - 125			
Arsenic	11.0105			5.00000	1.72265	186	75 - 125			M1
Barium	35.3091			5.00000	12.6926	452	75 - 125			M1
Beryllium	3.64514			5.00000	0.113179	70.6	75 - 125			M1
Cadmium	4.58836			5.00000	0.034618	91.1	75 - 125			
Chromium	17.8563			5.00000	5.08327	255	75 - 125			M1
Cobalt	10.1861			5.00000	2.38517	156	75 - 125			M1
Copper	12.5348			5.00000	3.41217	182	75 - 125			M1
Lead	8.13291			5.00000	1.56447	131	75 - 125			M1
Molybdenum	5.58196			5.00000	0.085800	110	75 - 125			
Nickel	11.0110			5.00000	2.59255	168	75 - 125			M1
Selenium	3.94963			5.00000	-0.020560	79.0	75 - 125			

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Total Metals by ICP-MS EPA 6020 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0668 - EPA 3050B MS_S (continued)									
Post Spike (B8F0668-PS1) - Continued			**Source: 1802258-31**		Prepared: 6/26/2018 Analyzed: 6/28/2018				
Silver	4.98750		5.00000	9.3988E-3	99.6	75 - 125			
Thallium	4.71715		5.00000	0.065725	93.0	75 - 125			
Vanadium	32.5543		5.00000	11.1840	427	75 - 125			
Zinc	71.5287		50.0000	12.7461	118	75 - 125			

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Mercury by AA (Cold Vapor) EPA 7470A - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0677 - EPA 245.1/7470_W										
Blank (B8F0677-BLK1)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	ND	0.20	0.03							U
LCS (B8F0677-BS1)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	9.62451	0.20	0.03	10.0000		96.2	80 - 120			
Matrix Spike (B8F0677-MS1)			**Source: 1802237-22**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	9.58006	0.20	0.03	10.0000	ND	95.8	70 - 130			
Matrix Spike Dup (B8F0677-MSD1)			**Source: 1802237-22**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	9.47061	0.20	0.03	10.0000	ND	94.7	70 - 130	1.15	20	
Post Spike (B8F0677-PS1)			**Source: 1802237-22**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	4.85579			5.00000	0.000187	97.1	85 - 115			

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Mercury by AA (Cold Vapor) EPA 7471A - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0673 - EPA 7471_S										
Blank (B8F0673-BLK1)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	ND	0.10	0.006							
LCS (B8F0673-BS1)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	0.990112	0.10	0.006	0.833333		119	80 - 120			
Matrix Spike (B8F0673-MS1)			**Source: 1802258-01**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	1.03382	0.10	0.006	0.833333	0.095475	113	70 - 130			
Matrix Spike Dup (B8F0673-MSD1)			**Source: 1802258-01**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	1.02223	0.10	0.006	0.833333	0.095475	111	70 - 130	1.13	20	
Post Spike (B8F0673-PS1)			**Source: 1802258-01**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	7.5882E-3			5.00000E-3	1.1457E-3	129	85 - 115			M1

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Mercury by AA (Cold Vapor) EPA 7471A - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0674 - EPA 7471_S										
Blank (B8F0674-BLK1)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	ND	0.10	0.006							
LCS (B8F0674-BS1)					Prepared: 6/26/2018 Analyzed: 6/28/2018					
Mercury	0.948926	0.10	0.006	0.833333		114	80 - 120			
Matrix Spike (B8F0674-MS1)			**Source: 1802258-30**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	1.01810	0.10	0.006	0.833333	ND	122	70 - 130			
Matrix Spike Dup (B8F0674-MSD1)			**Source: 1802258-30**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	1.01734	0.10	0.006	0.847458	ND	120	70 - 130	0.0750	20	
Post Spike (B8F0674-PS1)			**Source: 1802258-30**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	0.006496			5.00000E-3	0.000063	129	85 - 115			M1

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Mercury by AA (Cold Vapor) EPA 7471A - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0675 - EPA 7471_S										
Blank (B8F0675-BLK1)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	ND	0.10	0.006							
LCS (B8F0675-BS1)					Prepared: 6/26/2018 Analyzed: 6/28/2018					
Mercury	0.892959	0.10	0.006	0.833333		107	80 - 120			
Matrix Spike (B8F0675-MS1)			**Source: 1802258-55**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	1.07653	0.10	0.006	0.847458	ND	127	70 - 130			
Matrix Spike Dup (B8F0675-MSD1)			**Source: 1802258-55**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	1.08143	0.10	0.006	0.847458	ND	128	70 - 130	0.455	20	
Post Spike (B8F0675-PS1)			**Source: 1802258-55**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	0.006812			5.00000E-3	5.600E-5	135	85 - 115			M1

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Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0489 - GCVOA_W										
Blank (B8F0489-BLK1)					Prepared: 6/21/2018 Analyzed: 6/21/2018					
C6	ND	0.20	0.05							U
C7	ND	0.20	0.05							U
C8	ND	0.20	0.05							U
C9	ND	0.20	0.05							U
C10	ND	0.20	0.05							U
C11	ND	0.20	0.05							U
C12	ND	0.20	0.05							U
Surrogate: 4-Bromofluorobenzene	*0.09832*			*0.100000*		*98.3*	*70 - 130*			
LCS (B8F0489-BS1)					Prepared: 6/21/2018 Analyzed: 6/21/2018					
Gasoline Range Organics	0.864000	0.20	0.05	1.00000		86.4	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.09920*			*0.100000*		*99.2*	*70 - 130*			
LCS Dup (B8F0489-BSD1)					Prepared: 6/21/2018 Analyzed: 6/21/2018					
Gasoline Range Organics	0.866000	0.20	0.05	1.00000		86.6	70 - 130	0.231	20	
Surrogate: 4-Bromofluorobenzene	*0.09718*			*0.100000*		*97.2*	*70 - 130*			
Matrix Spike (B8F0489-MS1)			**Source: 1802252-01**		Prepared: 6/21/2018 Analyzed: 6/21/2018					
Gasoline Range Organics	1.20900	0.20	0.05	1.00000	0.380000	82.9	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.1119*			*0.100000*		*112*	*70 - 130*			
Matrix Spike Dup (B8F0489-MSD1)			**Source: 1802252-01**		Prepared: 6/21/2018 Analyzed: 6/21/2018					
Gasoline Range Organics	1.21400	0.20	0.05	1.00000	0.380000	83.4	70 - 130	0.413	20	
Surrogate: 4-Bromofluorobenzene	*0.1119*			*0.100000*		*112*	*70 - 130*			

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Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0528 - GCVOA_S										
Blank (B8F0528-BLK1)					Prepared: 6/21/2018 Analyzed: 6/21/2018					
C6	ND	1.0	0.20							U
C7	ND	1.0	0.20							U
C8	ND	1.0	0.20							U
C9	ND	1.0	0.20							U
C10	ND	1.0	0.20							U
C11	ND	1.0	0.20							U
C12	ND	1.0	0.20							U
Surrogate: 4-Bromofluorobenzene	*0.1791*			*0.200000*		*89.5*	*57 - 144*			
LCS (B8F0528-BS1)					Prepared: 6/21/2018 Analyzed: 6/22/2018					
Gasoline Range Organics	4.20900	1.0	0.20	5.00000		84.2	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.1898*			*0.200000*		*94.9*	*57 - 144*			
Matrix Spike (B8F0528-MS1)			**Source: 1802258-01**		Prepared: 6/21/2018 Analyzed: 6/21/2018					
Gasoline Range Organics	0.630000	1.0	0.20	5.00000	ND	12.6	28 - 118			M2, U
Surrogate: 4-Bromofluorobenzene	*0.1450*			*0.200000*		*72.5*	*57 - 144*			
Matrix Spike Dup (B8F0528-MSD1)			**Source: 1802258-01**		Prepared: 6/21/2018 Analyzed: 6/21/2018					
Gasoline Range Organics	0.818000	1.0	0.20	5.00000	ND	16.4	28 - 118	26.0	20	M2, R, U
Surrogate: 4-Bromofluorobenzene	*0.1505*			*0.200000*		*75.3*	*57 - 144*			

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Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0529 - GCVOA_S										
Blank (B8F0529-BLK1)					Prepared: 6/21/2018 Analyzed: 6/22/2018					
C6	ND	1.0	0.20							U
C7	ND	1.0	0.20							U
C8	ND	1.0	0.20							U
C9	ND	1.0	0.20							U
C10	ND	1.0	0.20							U
C11	ND	1.0	0.20							U
C12	ND	1.0	0.20							U
Surrogate: 4-Bromofluorobenzene	*0.1862*			*0.200000*		*93.1*	*57 - 144*			
LCS (B8F0529-BS1)					Prepared: 6/21/2018 Analyzed: 6/22/2018					
Gasoline Range Organics	4.43300	1.0	0.20	5.00000		88.7	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.1834*			*0.200000*		*91.7*	*57 - 144*			
Matrix Spike (B8F0529-MS1)			**Source: 1802258-55**		Prepared: 6/21/2018 Analyzed: 6/22/2018					
Gasoline Range Organics	2.94900	1.0	0.20	5.00000	ND	59.0	28 - 118			
Surrogate: 4-Bromofluorobenzene	*0.2043*			*0.200000*		*102*	*57 - 144*			
Matrix Spike Dup (B8F0529-MSD1)			**Source: 1802258-55**		Prepared: 6/21/2018 Analyzed: 6/22/2018					
Gasoline Range Organics	3.20400	1.0	0.20	5.00000	ND	64.1	28 - 118	8.29	20	
Surrogate: 4-Bromofluorobenzene	*0.1902*			*0.200000*		*95.1*	*57 - 144*			

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Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8G0013 - GCVOA_S										
Blank (B8G0013-BLK1)					Prepared: 7/2/2018 Analyzed: 7/2/2018					
C6	ND	1.0	0.20							U
C7	ND	1.0	0.20							U
C8	ND	1.0	0.20							U
C9	ND	1.0	0.20							U
C10	ND	1.0	0.20							U
C11	ND	1.0	0.20							U
C12	ND	1.0	0.20							U
Surrogate: 4-Bromofluorobenzene	*0.1924*			*0.200000*		*96.2*	*57 - 144*			
LCS (B8G0013-BS1)					Prepared: 7/2/2018 Analyzed: 7/2/2018					
Gasoline Range Organics	4.14000	1.0	0.20	5.00000		82.8	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.1841*			*0.200000*		*92.1*	*57 - 144*			
Matrix Spike (B8G0013-MS1)			**Source: 1802259-02**		Prepared: 7/2/2018 Analyzed: 7/2/2018					
Gasoline Range Organics	3.43400	1.0	0.20	5.00000	ND	68.7	28 - 118			
Surrogate: 4-Bromofluorobenzene	*0.2073*			*0.200000*		*104*	*57 - 144*			
Matrix Spike Dup (B8G0013-MSD1)			**Source: 1802259-02**		Prepared: 7/2/2018 Analyzed: 7/2/2018					
Gasoline Range Organics	3.28200	1.0	0.20	5.00000	ND	65.6	28 - 118	4.53	20	
Surrogate: 4-Bromofluorobenzene	*0.2127*			*0.200000*		*106*	*57 - 144*			

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Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8G0058 - GCVOA_S										
Blank (B8G0058-BLK1)					Prepared: 7/3/2018 Analyzed: 7/3/2018					
C6	ND	1.0	0.20							U
C7	ND	1.0	0.20							U
C8	ND	1.0	0.20							U
C9	ND	1.0	0.20							U
C10	ND	1.0	0.20							U
C11	ND	1.0	0.20							U
C12	ND	1.0	0.20							U
Surrogate: 4-Bromofluorobenzene	*0.1870*			*0.200000*		*93.5*	*57 - 144*			
LCS (B8G0058-BS1)					Prepared: 7/3/2018 Analyzed: 7/3/2018					
Gasoline Range Organics	4.36400	1.0	0.20	5.00000		87.3	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.2100*			*0.200000*		*105*	*57 - 144*			
Matrix Spike (B8G0058-MS1)			**Source: 1802401-01**		Prepared: 7/3/2018 Analyzed: 7/3/2018					
Gasoline Range Organics	3.48100	1.0	0.20	5.00000	ND	69.6	28 - 118			
Surrogate: 4-Bromofluorobenzene	*0.2105*			*0.200000*		*105*	*57 - 144*			
Matrix Spike Dup (B8G0058-MSD1)			**Source: 1802401-01**		Prepared: 7/3/2018 Analyzed: 7/3/2018					
Gasoline Range Organics	3.47700	1.0	0.20	5.00000	ND	69.5	28 - 118	0.115	20	
Surrogate: 4-Bromofluorobenzene	*0.2014*			*0.200000*		*101*	*57 - 144*			

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Hydrocarbon Chain Distribution by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0691 - GCSEMI_DRO_S										
Blank (B8F0691-BLK1)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
C13	ND	10	10							U
C14	ND	10	10							U
C15	ND	10	10							U
C16	ND	10	10							U
C17	ND	10	10							U
C18	ND	10	10							U
C19	ND	10	10							U
C20	ND	10	10							U
C21	ND	10	10							U
C22	ND	10	10							U
C23	ND	10	10							U
C24	ND	10	10							U
C25	ND	10	10							U
C26	ND	10	10							U
C27	ND	10	10							U
C28	ND	10	10							U
C29	ND	10	10							U
C30	ND	10	10							U
C31	ND	10	10							U
C32	ND	10	10							U
C33	ND	10	10							U
C34	ND	10	10							U
C35	ND	10	10							U
C36	ND	10	10							U
C37	ND	10	10							U
C38	ND	10	10							U
C39	ND	10	10							U
C40	ND	10	10							U
Surrogate: p-Terphenyl	*104.1*			*80.0000*		*130*	*58 - 172*			
LCS (B8F0691-BS1)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
DRO	1382.35	10	10	1000.00		138	71 - 165			
Surrogate: p-Terphenyl	*111.6*			*80.0000*		*139*	*58 - 172*			
Matrix Spike (B8F0691-MS1)			**Source: 1802325-01**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
DRO	1340.77	10	10	1000.00	ND	134	61 - 171			
Surrogate: p-Terphenyl	*94.33*			*80.0000*		*118*	*58 - 172*			
Matrix Spike Dup (B8F0691-MSD1)			**Source: 1802325-01**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
DRO	1368.65	10	10	1000.00	ND	137	61 - 171	2.06	20	
Surrogate: p-Terphenyl	*97.10*			*80.0000*		*121*	*58 - 172*			

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Hydrocarbon Chain Distribution by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0692 - GCSEMI_DRO_S										
Blank (B8F0692-BLK1)					Prepared: 6/26/2018 Analyzed: 6/26/2018					
C13	ND	10	10							U
C14	ND	10	10							U
C15	ND	10	10							U
C16	ND	10	10							U
C17	ND	10	10							U
C18	ND	10	10							U
C19	ND	10	10							U
C20	ND	10	10							U
C21	ND	10	10							U
C22	ND	10	10							U
C23	ND	10	10							U
C24	ND	10	10							U
C25	ND	10	10							U
C26	ND	10	10							U
C27	ND	10	10							U
C28	ND	10	10							U
C29	ND	10	10							U
C30	ND	10	10							U
C31	ND	10	10							U
C32	ND	10	10							U
C33	ND	10	10							U
C34	ND	10	10							U
C35	ND	10	10							U
C36	ND	10	10							U
C37	ND	10	10							U
C38	ND	10	10							U
C39	ND	10	10							U
C40	ND	10	10							U
Surrogate: p-Terphenyl	*105.2*			*80.0000*		*131*	*58 - 172*			
LCS (B8F0692-BS1)					Prepared: 6/26/2018 Analyzed: 6/26/2018					
DRO	1422.41	10	10	1000.00		142	71 - 165			
Surrogate: p-Terphenyl	*109.3*			*80.0000*		*137*	*58 - 172*			
Matrix Spike (B8F0692-MS1)			**Source: 1802281-01**		Prepared: 6/26/2018 Analyzed: 6/26/2018					
DRO	1375.96	10	10	1000.00	ND	138	61 - 171			
Surrogate: p-Terphenyl	*89.76*			*80.0000*		*112*	*58 - 172*			
Matrix Spike Dup (B8F0692-MSD1)			**Source: 1802281-01**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
DRO	1357.79	10	10	1000.00	ND	136	61 - 171	1.33	20	
Surrogate: p-Terphenyl	*96.53*			*80.0000*		*121*	*58 - 172*			

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Hydrocarbon Chain Distribution by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0704 - GCSEMI_DRO_W										
Blank (B8F0704-BLK1)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
C13	ND	0.20	0.20							U
C14	ND	0.20	0.20							U
C15	ND	0.20	0.20							U
C16	ND	0.20	0.20							U
C17	ND	0.20	0.20							U
C18	ND	0.20	0.20							U
C19	ND	0.20	0.20							U
C20	ND	0.20	0.20							U
C21	ND	0.20	0.20							U
C22	ND	0.20	0.20							U
C23	ND	0.20	0.20							U
C24	ND	0.20	0.20							U
C25	ND	0.20	0.20							U
C26	ND	0.20	0.20							U
C27	ND	0.20	0.20							U
C28	ND	0.20	0.20							U
C29	ND	0.20	0.20							U
C30	ND	0.20	0.20							U
C31	ND	0.20	0.20							U
C32	ND	0.20	0.20							U
C33	ND	0.20	0.20							U
C34	ND	0.20	0.20							U
C35	ND	0.20	0.20							U
C36	ND	0.20	0.20							U
C37	ND	0.20	0.20							U
C38	ND	0.20	0.20							U
C39	ND	0.20	0.20							U
C40	ND	0.20	0.20							U
Surrogate: p-Terphenyl	*0.06599*			*8.00000E-2*		*82.5*	*32 - 169*			
LCS (B8F0704-BS1)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
DRO	1.01774	0.20	0.20	1.00000		102	45 - 161			
Surrogate: p-Terphenyl	*0.06982*			*8.00000E-2*		*87.3*	*32 - 169*			
LCS Dup (B8F0704-BSD1)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
DRO	1.03336	0.20	0.20	1.00000		103	45 - 161	1.52	20	
Surrogate: p-Terphenyl	*0.08539*			*8.00000E-2*		*107*	*32 - 169*			

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Hydrocarbon Chain Distribution by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8G0047 - GCSEMI_DRO_S										
Blank (B8G0047-BLK1)					Prepared: 7/3/2018 Analyzed: 7/3/2018					
C13	ND	10	10							U
C14	ND	10	10							U
C15	ND	10	10							U
C16	ND	10	10							U
C17	ND	10	10							U
C18	ND	10	10							U
C19	ND	10	10							U
C20	ND	10	10							U
C21	ND	10	10							U
C22	ND	10	10							U
C23	ND	10	10							U
C24	ND	10	10							U
C25	ND	10	10							U
C26	ND	10	10							U
C27	ND	10	10							U
C28	ND	10	10							U
C29	ND	10	10							U
C30	ND	10	10							U
C31	ND	10	10							U
C32	ND	10	10							U
C33	ND	10	10							U
C34	ND	10	10							U
C35	ND	10	10							U
C36	ND	10	10							U
C37	ND	10	10							U
C38	ND	10	10							U
C39	ND	10	10							U
C40	ND	10	10							U
Surrogate: p-Terphenyl	*87.78*			*80.0000*		*110*	*58 - 172*			
LCS (B8G0047-BS1)					Prepared: 7/3/2018 Analyzed: 7/3/2018					
DRO	1261.97	10	10	1000.00		126	71 - 165			
Surrogate: p-Terphenyl	*89.92*			*80.0000*		*112*	*58 - 172*			
Matrix Spike (B8G0047-MS1)			**Source: 1802258-38**		Prepared: 7/3/2018 Analyzed: 7/3/2018					
DRO	1299.50	10	10	1000.00	ND	130	61 - 171			
Surrogate: p-Terphenyl	*84.41*			*80.0000*		*106*	*58 - 172*			
Matrix Spike Dup (B8G0047-MSD1)			**Source: 1802258-38**		Prepared: 7/3/2018 Analyzed: 7/3/2018					
DRO	1284.05	10	10	1000.00	ND	128	61 - 171	1.20	20	
Surrogate: p-Terphenyl	*87.22*			*80.0000*		*109*	*58 - 172*			

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

SPLP Hydrocarbon Chain Distribution by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8G0211 - GCSEMI_DSL_LEACHEATE_W										
Blank (B8G0211-BLK1)					Prepared: 7/10/2018 Analyzed: 7/10/2018					
DRO	ND	0.20	0.20							U
C8-C10	ND	0.20	0.20							U
C10-C18	ND	0.20	0.20							U
C18-C28	ND	0.20	0.20							U
C28-C36	ND	0.20	0.20							U
C36-C40	ND	0.20	0.20							U
C8-C40 Total	ND	0.20	0.20							U
C13	ND	0.20	0.20							U
C14	ND	0.20	0.20							U
C15	ND	0.20	0.20							U
C16	ND	0.20	0.20							U
C17	ND	0.20	0.20							U
C18	ND	0.20	0.20							U
C19	ND	0.20	0.20							U
C20	ND	0.20	0.20							U
C21	ND	0.20	0.20							U
C22	ND	0.20	0.20							U
C23	ND	0.20	0.20							U
C24	ND	0.20	0.20							U
C25	ND	0.20	0.20							U
C26	ND	0.20	0.20							U
C27	ND	0.20	0.20							U
C28	ND	0.20	0.20							U
C29	ND	0.20	0.20							U
C30	ND	0.20	0.20							U
C31	ND	0.20	0.20							U
C32	ND	0.20	0.20							U
C33	ND	0.20	0.20							U
C34	ND	0.20	0.20							U
C35	ND	0.20	0.20							U
C36	ND	0.20	0.20							U
C40	ND	0.20	0.20							U
Surrogate: p-Terphenyl	*0.08022*			*8.00000E-2*		*100*	*32 - 169*			
LCS (B8G0211-BS1)					Prepared: 7/10/2018 Analyzed: 7/10/2018					
DRO	1.07619	0.20	0.20	1.00000		108	45 - 161			
Surrogate: p-Terphenyl	*0.08316*			*8.00000E-2*		*104*	*32 - 169*			

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Organochlorine Pesticides by EPA 8081 - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0616 - GCSEMI_PCB/PEST_W										
Blank (B8F0616-BLK1)					Prepared: 6/23/2018 Analyzed: 6/24/2018					
4,4´-DDD	ND	0.05	0.006							U
4,4´-DDD [2C]	ND	0.05	0.006							U
4,4´-DDE	ND	0.05	0.005							U
4,4´-DDE [2C]	ND	0.05	0.005							U
4,4´-DDT	ND	0.05	0.01							U
4,4´-DDT [2C]	ND	0.05	0.01							U
Aldrin	ND	0.02	0.002							U
Aldrin [2C]	ND	0.02	0.002							U
alpha-BHC	ND	0.02	0.002							U
alpha-BHC [2C]	ND	0.02	0.002							U
alpha-Chlordane	ND	0.02	0.003							U
alpha-Chlordane [2C]	ND	0.02	0.003							U
beta-BHC	ND	0.02	0.002							U
beta-BHC [2C]	ND	0.02	0.002							U
Chlordane	ND	0.25	0.03							U
Chlordane [2C]	ND	0.25	0.03							U
delta-BHC	ND	0.02	0.002							U
delta-BHC [2C]	ND	0.02	0.002							U
Dieldrin	ND	0.05	0.002							U
Dieldrin [2C]	ND	0.05	0.002							U
Endosulfan I	ND	0.02	0.005							U
Endosulfan I [2C]	ND	0.02	0.005							U
Endosulfan II	ND	0.05	0.009							U
Endosulfan II [2C]	ND	0.05	0.009							U
Endosulfan sulfate	ND	0.05	0.01							U
Endosulfan Sulfate [2C]	ND	0.05	0.01							U
Endrin	ND	0.05	0.005							U
Endrin [2C]	ND	0.05	0.005							U
Endrin aldehyde	ND	0.05	0.003							U
Endrin aldehyde [2C]	ND	0.05	0.003							U
Endrin ketone	ND	0.05	0.003							U
Endrin ketone [2C]	ND	0.05	0.003							U
gamma-BHC	ND	0.02	0.002							U
gamma-BHC [2C]	ND	0.02	0.002							U
gamma-Chlordane	ND	0.02	0.002							U
gamma-Chlordane [2C]	ND	0.02	0.002							U
Heptachlor	ND	0.02	0.002							U
Heptachlor [2C]	ND	0.02	0.002							U
Heptachlor epoxide	ND	0.02	0.002							U
Heptachlor epoxide [2C]	ND	0.02	0.002							U
Methoxychlor	ND	0.25	0.008							U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0616 - GCSEMI_PCB/PEST_W (continued)										
Blank (B8F0616-BLK1) - Continued					Prepared: 6/23/2018 Analyzed: 6/24/2018					
Methoxychlor [2C]	ND	0.25	0.008							U
Toxaphene	ND	2.5	0.23							U
Toxaphene [2C]	ND	2.5	0.23							U
Surrogate: Decachlorobiphenyl	*0.3976*			*0.500000*		*79.5*	*1 - 110*			
Surrogate: Decachlorobiphenyl [	*0.3325*			*0.500000*		*66.5*	*1 - 110*			
Surrogate: Tetrachloro-m-xylene	*0.4055*			*0.500000*		*81.1*	*19 - 117*			
Surrogate: Tetrachloro-m-xylene	*0.3808*			*0.500000*		*76.2*	*19 - 117*			
LCS (B8F0616-BS1)					Prepared: 6/23/2018 Analyzed: 6/24/2018					
4,4´-DDD	0.521215	0.05	0.006	0.500000		104	51 - 125			
4,4´-DDD [2C]	0.508690	0.05	0.006	0.500000		102	51 - 125			
4,4´-DDE	0.470755	0.05	0.005	0.500000		94.2	41 - 121			
4,4´-DDE [2C]	0.443940	0.05	0.005	0.500000		88.8	41 - 121			
4,4´-DDT	0.289665	0.05	0.01	0.500000		57.9	11 - 131			
4,4´-DDT [2C]	0.297685	0.05	0.01	0.500000		59.5	11 - 131			
Aldrin	0.467130	0.02	0.002	0.500000		93.4	43 - 116			
Aldrin [2C]	0.461705	0.02	0.002	0.500000		92.3	43 - 116			
alpha-BHC	0.469220	0.02	0.002	0.500000		93.8	53 - 114			
alpha-BHC [2C]	0.466135	0.02	0.002	0.500000		93.2	53 - 114			
alpha-Chlordane	0.469575	0.02	0.003	0.500000		93.9	44 - 117			
alpha-Chlordane [2C]	0.440500	0.02	0.003	0.500000		88.1	44 - 117			
beta-BHC	0.453460	0.02	0.002	0.500000		90.7	49 - 111			
beta-BHC [2C]	0.450870	0.02	0.002	0.500000		90.2	49 - 111			
delta-BHC	0.505800	0.02	0.002	0.500000		101	38 - 108			
delta-BHC [2C]	0.486355	0.02	0.002	0.500000		97.3	38 - 108			
Dieldrin	0.441860	0.05	0.002	0.500000		88.4	43 - 112			
Dieldrin [2C]	0.424070	0.05	0.002	0.500000		84.8	43 - 112			
Endosulfan I	0.449705	0.02	0.005	0.500000		89.9	37 - 111			
Endosulfan I [2C]	0.435015	0.02	0.005	0.500000		87.0	37 - 111			
Endosulfan II	0.510800	0.05	0.009	0.500000		102	46 - 121			
Endosulfan II [2C]	0.460415	0.05	0.009	0.500000		92.1	46 - 121			
Endosulfan sulfate	0.475240	0.05	0.01	0.500000		95.0	41 - 123			
Endosulfan Sulfate [2C]	0.439280	0.05	0.01	0.500000		87.9	41 - 123			
Endrin	0.441830	0.05	0.005	0.500000		88.4	46 - 125			
Endrin [2C]	0.428125	0.05	0.005	0.500000		85.6	46 - 125			
Endrin aldehyde	0.525350	0.05	0.003	0.500000		105	41 - 129			
Endrin aldehyde [2C]	0.495890	0.05	0.003	0.500000		99.2	41 - 129			
Endrin ketone	0.464650	0.05	0.003	0.500000		92.9	35 - 134			
Endrin ketone [2C]	0.454450	0.05	0.003	0.500000		90.9	35 - 134			
gamma-BHC	0.451375	0.02	0.002	0.500000		90.3	51 - 112			
gamma-BHC [2C]	0.453210	0.02	0.002	0.500000		90.6	51 - 112			

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0616 - GCSEMI_PCB/PEST_W (continued)										
LCS (B8F0616-BS1) - Continued					Prepared: 6/23/2018 Analyzed: 6/24/2018					
gamma-Chlordane	0.456915	0.02	0.002	0.500000		91.4	41 - 116			
gamma-Chlordane [2C]	0.447145	0.02	0.002	0.500000		89.4	41 - 116			
Heptachlor	0.427140	0.02	0.002	0.500000		85.4	49 - 120			
Heptachlor [2C]	0.446595	0.02	0.002	0.500000		89.3	49 - 120			
Heptachlor epoxide	0.439705	0.02	0.002	0.500000		87.9	46 - 110			
Heptachlor epoxide [2C]	0.435985	0.02	0.002	0.500000		87.2	46 - 110			
Methoxychlor	0.340695	0.25	0.008	0.500000		68.1	25 - 155			
Methoxychlor [2C]	0.337950	0.25	0.008	0.500000		67.6	25 - 155			
Surrogate: Decachlorobiphenyl	*0.4302*			*0.500000*		*86.0*	*1 - 110*			
Surrogate: Decachlorobiphenyl [	*0.3730*			*0.500000*		*74.6*	*1 - 110*			
Surrogate: Tetrachloro-m-xylene	*0.4298*			*0.500000*		*86.0*	*19 - 117*			
Surrogate: Tetrachloro-m-xylene	*0.4211*			*0.500000*		*84.2*	*19 - 117*			
LCS Dup (B8F0616-BSD1)					Prepared: 6/23/2018 Analyzed: 6/24/2018					
4,4´-DDD	0.544255	0.05	0.006	0.500000		109	51 - 125	4.32	20	
4,4´-DDD [2C]	0.506780	0.05	0.006	0.500000		101	51 - 125	0.376	20	
4,4´-DDE	0.488525	0.05	0.005	0.500000		97.7	41 - 121	3.70	20	
4,4´-DDE [2C]	0.439435	0.05	0.005	0.500000		87.9	41 - 121	1.02	20	
4,4´-DDT	0.274090	0.05	0.01	0.500000		54.8	11 - 131	5.53	20	
4,4´-DDT [2C]	0.277880	0.05	0.01	0.500000		55.6	11 - 131	6.88	20	
Aldrin	0.480690	0.02	0.002	0.500000		96.1	43 - 116	2.86	20	
Aldrin [2C]	0.455625	0.02	0.002	0.500000		91.1	43 - 116	1.33	20	
alpha-BHC	0.480745	0.02	0.002	0.500000		96.1	53 - 114	2.43	20	
alpha-BHC [2C]	0.458345	0.02	0.002	0.500000		91.7	53 - 114	1.69	20	
alpha-Chlordane	0.485730	0.02	0.003	0.500000		97.1	44 - 117	3.38	20	
alpha-Chlordane [2C]	0.434485	0.02	0.003	0.500000		86.9	44 - 117	1.37	20	
beta-BHC	0.464045	0.02	0.002	0.500000		92.8	49 - 111	2.31	20	
beta-BHC [2C]	0.442875	0.02	0.002	0.500000		88.6	49 - 111	1.79	20	
delta-BHC	0.517690	0.02	0.002	0.500000		104	38 - 108	2.32	20	
delta-BHC [2C]	0.476445	0.02	0.002	0.500000		95.3	38 - 108	2.06	20	
Dieldrin	0.456885	0.05	0.002	0.500000		91.4	43 - 112	3.34	20	
Dieldrin [2C]	0.418995	0.05	0.002	0.500000		83.8	43 - 112	1.20	20	
Endosulfan I	0.465680	0.02	0.005	0.500000		93.1	37 - 111	3.49	20	
Endosulfan I [2C]	0.431145	0.02	0.005	0.500000		86.2	37 - 111	0.894	20	
Endosulfan II	0.526925	0.05	0.009	0.500000		105	46 - 121	3.11	20	
Endosulfan II [2C]	0.456015	0.05	0.009	0.500000		91.2	46 - 121	0.960	20	
Endosulfan sulfate	0.498860	0.05	0.01	0.500000		99.8	41 - 123	4.85	20	
Endosulfan Sulfate [2C]	0.431845	0.05	0.01	0.500000		86.4	41 - 123	1.71	20	
Endrin	0.442715	0.05	0.005	0.500000		88.5	46 - 125	0.200	20	
Endrin [2C]	0.409615	0.05	0.005	0.500000		81.9	46 - 125	4.42	20	
Endrin aldehyde	0.547925	0.05	0.003	0.500000		110	41 - 129	4.21	20	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0616 - GCSEMI_PCB/PEST_W (continued)										
LCS Dup (B8F0616-BSD1) - Continued					Prepared: 6/23/2018 Analyzed: 6/24/2018					
Endrin aldehyde [2C]	0.497465	0.05	0.003	0.500000		99.5	41 - 129	0.317	20	
Endrin ketone	0.487105	0.05	0.003	0.500000		97.4	35 - 134	4.72	20	
Endrin ketone [2C]	0.444590	0.05	0.003	0.500000		88.9	35 - 134	2.19	20	
gamma-BHC	0.464270	0.02	0.002	0.500000		92.9	51 - 112	2.82	20	
gamma-BHC [2C]	0.445485	0.02	0.002	0.500000		89.1	51 - 112	1.72	20	
gamma-Chlordane	0.471380	0.02	0.002	0.500000		94.3	41 - 116	3.12	20	
gamma-Chlordane [2C]	0.438900	0.02	0.002	0.500000		87.8	41 - 116	1.86	20	
Heptachlor	0.432450	0.02	0.002	0.500000		86.5	49 - 120	1.24	20	
Heptachlor [2C]	0.432215	0.02	0.002	0.500000		86.4	49 - 120	3.27	20	
Heptachlor epoxide	0.452965	0.02	0.002	0.500000		90.6	46 - 110	2.97	20	
Heptachlor epoxide [2C]	0.426120	0.02	0.002	0.500000		85.2	46 - 110	2.29	20	
Methoxychlor	0.330845	0.25	0.008	0.500000		66.2	25 - 155	2.93	20	
Methoxychlor [2C]	0.312390	0.25	0.008	0.500000		62.5	25 - 155	7.86	20	
Surrogate: Decachlorobiphenyl	*0.4554*			*0.500000*		*91.1*	*1 - 110*			
Surrogate: Decachlorobiphenyl [	*0.3536*			*0.500000*		*70.7*	*1 - 110*			
Surrogate: Tetrachloro-m-xylene	*0.4368*			*0.500000*		*87.4*	*19 - 117*			
Surrogate: Tetrachloro-m-xylene	*0.4069*			*0.500000*		*81.4*	*19 - 117*			

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Organochlorine Pesticides by EPA 8081 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0682 - GCSEMI_PCB/PEST_S										
Blank (B8F0682-BLK1)					Prepared: 6/26/2018 Analyzed: 6/28/2018					
4,4´-DDD	ND	2.0	0.10							U
4,4´-DDD [2C]	ND	2.0	0.10							U
4,4´-DDE	ND	2.0	0.07							U
4,4´-DDE [2C]	ND	2.0	0.07							U
4,4´-DDT	ND	2.0	0.14							U
4,4´-DDT [2C]	ND	2.0	0.14							U
Aldrin	ND	1.0	0.08							U
Aldrin [2C]	ND	1.0	0.08							U
alpha-BHC	ND	1.0	0.04							U
alpha-BHC [2C]	ND	1.0	0.04							U
alpha-Chlordane	ND	1.0	0.04							U
alpha-Chlordane [2C]	ND	1.0	0.04							U
beta-BHC	ND	1.0	0.04							U
beta-BHC [2C]	ND	1.0	0.04							U
Chlordane	ND	8.5	0.90							U
Chlordane [2C]	ND	8.5	0.90							U
delta-BHC	ND	1.0	0.04							U
delta-BHC [2C]	ND	1.0	0.04							U
Dieldrin	ND	2.0	0.05							U
Dieldrin [2C]	ND	2.0	0.05							U
Endosulfan I	ND	1.0	0.04							U
Endosulfan I [2C]	ND	1.0	0.04							U
Endosulfan II	ND	2.0	0.10							U
Endosulfan II [2C]	ND	2.0	0.10							U
Endosulfan sulfate	ND	2.0	0.06							U
Endosulfan Sulfate [2C]	ND	2.0	0.06							U
Endrin	ND	2.0	0.08							U
Endrin [2C]	ND	2.0	0.08							U
Endrin aldehyde	ND	2.0	0.09							U
Endrin aldehyde [2C]	ND	2.0	0.09							U
Endrin ketone	ND	2.0	0.07							U
Endrin ketone [2C]	ND	2.0	0.07							U
gamma-BHC	ND	1.0	0.05							U
gamma-BHC [2C]	ND	1.0	0.05							U
gamma-Chlordane	ND	1.0	0.04							U
gamma-Chlordane [2C]	ND	1.0	0.04							U
Heptachlor	ND	1.0	0.07							U
Heptachlor [2C]	ND	1.0	0.07							U
Heptachlor epoxide	ND	1.0	0.04							U
Heptachlor epoxide [2C]	ND	1.0	0.04							U
Methoxychlor	ND	5.0	0.10							U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0682 - GCSEMI_PCB/PEST_S (continued)										
Blank (B8F0682-BLK1) - Continued					Prepared: 6/26/2018 Analyzed: 6/28/2018					
Methoxychlor [2C]	ND	5.0	0.10							U
Toxaphene	ND	50	8.2							U
Toxaphene [2C]	ND	50	8.2							U
Surrogate: Decachlorobiphenyl	*14.70*			*16.6667*		*88.2*	*15 - 100*			
Surrogate: Decachlorobiphenyl [	*9.971*			*16.6667*		*59.8*	*15 - 100*			
Surrogate: Tetrachloro-m-xylene	*14.03*			*16.6667*		*84.2*	*16 - 100*			
Surrogate: Tetrachloro-m-xylene	*10.65*			*16.6667*		*63.9*	*16 - 100*			
LCS (B8F0682-BS1)					Prepared: 6/26/2018 Analyzed: 6/28/2018					
4,4´-DDD	20.2797	2.0	0.10	16.6667		122	62 - 129			
4,4´-DDD [2C]	19.5802	2.0	0.10	16.6667		117	62 - 129			
4,4´-DDE	17.1288	2.0	0.07	16.6667		103	65 - 117			
4,4´-DDE [2C]	15.7903	2.0	0.07	16.6667		94.7	65 - 117			
4,4´-DDT	13.1338	2.0	0.14	16.6667		78.8	35 - 136			
4,4´-DDT [2C]	13.4240	2.0	0.14	16.6667		80.5	35 - 136			
Aldrin	16.0920	1.0	0.08	16.6667		96.6	67 - 110			
Aldrin [2C]	15.7495	1.0	0.08	16.6667		94.5	67 - 110			
alpha-BHC	15.4190	1.0	0.04	16.6667		92.5	69 - 110			
alpha-BHC [2C]	15.2905	1.0	0.04	16.6667		91.7	69 - 110			
alpha-Chlordane	16.8325	1.0	0.04	16.6667		101	65 - 114			
alpha-Chlordane [2C]	15.5242	1.0	0.04	16.6667		93.1	65 - 114			
beta-BHC	15.4647	1.0	0.04	16.6667		92.8	64 - 108			
beta-BHC [2C]	15.1652	1.0	0.04	16.6667		91.0	64 - 108			
delta-BHC	17.2598	1.0	0.04	16.6667		104	44 - 110			
delta-BHC [2C]	16.3665	1.0	0.04	16.6667		98.2	44 - 110			
Dieldrin	16.1807	2.0	0.05	16.6667		97.1	63 - 107			
Dieldrin [2C]	15.4478	2.0	0.05	16.6667		92.7	63 - 107			
Endosulfan I	16.1460	1.0	0.04	16.6667		96.9	63 - 103			
Endosulfan I [2C]	15.5938	1.0	0.04	16.6667		93.6	63 - 103			
Endosulfan II	19.0402	2.0	0.10	16.6667		114	62 - 122			
Endosulfan II [2C]	17.3300	2.0	0.10	16.6667		104	62 - 122			
Endosulfan sulfate	18.4582	2.0	0.06	16.6667		111	53 - 127			
Endosulfan Sulfate [2C]	16.7498	2.0	0.06	16.6667		100	53 - 127			
Endrin	17.6953	2.0	0.08	16.6667		106	66 - 120			
Endrin [2C]	16.9307	2.0	0.08	16.6667		102	66 - 120			
Endrin aldehyde	20.0157	2.0	0.09	16.6667		120	67 - 121			
Endrin aldehyde [2C]	19.0805	2.0	0.09	16.6667		114	67 - 121			
Endrin ketone	17.4112	2.0	0.07	16.6667		104	41 - 146			
Endrin ketone [2C]	16.4285	2.0	0.07	16.6667		98.6	41 - 146			
gamma-BHC	15.1633	1.0	0.05	16.6667		91.0	67 - 109			
gamma-BHC [2C]	15.1128	1.0	0.05	16.6667		90.7	67 - 109			

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Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0682 - GCSEMI_PCB/PEST_S (continued)										
LCS (B8F0682-BS1) - Continued						Prepared: 6/26/2018 Analyzed: 6/28/2018				
gamma-Chlordane	16.3387	1.0	0.04	16.6667		98.0	63 - 110			
gamma-Chlordane [2C]	15.5673	1.0	0.04	16.6667		93.4	63 - 110			
Heptachlor	15.4677	1.0	0.07	16.6667		92.8	67 - 120			
Heptachlor [2C]	15.9168	1.0	0.07	16.6667		95.5	67 - 120			
Heptachlor epoxide	15.5362	1.0	0.04	16.6667		93.2	62 - 108			
Heptachlor epoxide [2C]	15.1552	1.0	0.04	16.6667		90.9	62 - 108			
Methoxychlor	16.1165	5.0	0.10	16.6667		96.7	47 - 152			
Methoxychlor [2C]	15.7707	5.0	0.10	16.6667		94.6	47 - 152			
Surrogate: Decachlorobiphenyl	*15.33*			*16.6667*		*92.0*	*15 - 100*			
Surrogate: Decachlorobiphenyl [	*13.44*			*16.6667*		*80.7*	*15 - 100*			
Surrogate: Tetrachloro-m-xylene	*13.63*			*16.6667*		*81.8*	*16 - 100*			
Surrogate: Tetrachloro-m-xylene	*12.76*			*16.6667*		*76.6*	*16 - 100*			
Matrix Spike (B8F0682-MS1)			**Source: 1802258-44**			Prepared: 6/26/2018 Analyzed: 6/28/2018				
4,4´-DDD	15.1960	2.0	0.10	16.6667	ND	91.2	0 - 127			
4,4´-DDD [2C]	14.7728	2.0	0.10	16.6667	ND	88.6	0 - 127			
4,4´-DDE	13.3455	2.0	0.07	16.6667	0.417333	77.6	0 - 125			
4,4´-DDE [2C]	11.1678	2.0	0.07	16.6667	0.226667	65.6	0 - 125			
4,4´-DDT	13.1155	2.0	0.14	16.6667	ND	78.7	0 - 103			
4,4´-DDT [2C]	12.2040	2.0	0.14	16.6667	ND	73.2	0 - 103			
Aldrin	11.9115	1.0	0.08	16.6667	ND	71.5	6 - 104			
Aldrin [2C]	12.3782	1.0	0.08	16.6667	ND	74.3	6 - 104			
alpha-BHC	12.2502	1.0	0.04	16.6667	ND	73.5	0 - 114			
alpha-BHC [2C]	12.7693	1.0	0.04	16.6667	ND	76.6	0 - 114			
alpha-Chlordane	13.1555	1.0	0.04	16.6667	ND	78.9	0 - 110			
alpha-Chlordane [2C]	12.4043	1.0	0.04	16.6667	ND	74.4	0 - 110			
beta-BHC	13.2123	1.0	0.04	16.6667	ND	79.3	0 - 129			
beta-BHC [2C]	13.2582	1.0	0.04	16.6667	ND	79.5	0 - 129			
delta-BHC	10.7953	1.0	0.04	16.6667	ND	64.8	18 - 99			
delta-BHC [2C]	13.5462	1.0	0.04	16.6667	ND	81.3	18 - 99			
Dieldrin	13.7612	2.0	0.05	16.6667	0.695833	78.4	0 - 124			
Dieldrin [2C]	13.4140	2.0	0.05	16.6667	0.974167	74.6	0 - 124			
Endosulfan I	10.4987	1.0	0.04	16.6667	ND	63.0	0 - 106			
Endosulfan I [2C]	12.1335	1.0	0.04	16.6667	ND	72.8	0 - 106			
Endosulfan II	15.2743	2.0	0.10	16.6667	ND	91.6	20 - 130			
Endosulfan II [2C]	13.5160	2.0	0.10	16.6667	ND	81.1	20 - 130			
Endosulfan sulfate	14.7758	2.0	0.06	16.6667	ND	88.7	24 - 119			
Endosulfan Sulfate [2C]	13.2485	2.0	0.06	16.6667	ND	79.5	24 - 119			
Endrin	13.8140	2.0	0.08	16.6667	ND	82.9	0 - 135			
Endrin [2C]	14.1658	2.0	0.08	16.6667	ND	85.0	0 - 135			
Endrin aldehyde	15.0970	2.0	0.09	16.6667	ND	90.6	19 - 132			

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Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0682 - GCSEMI_PCB/PEST_S (continued)										
Matrix Spike (B8F0682-MS1) - Continued			**Source: 1802258-44**		Prepared: 6/26/2018 Analyzed: 6/28/2018					
Endrin aldehyde [2C]	10.8303	2.0	0.09	16.6667	ND	65.0	19 - 132			
Endrin ketone	14.2993	2.0	0.07	16.6667	ND	85.8	7 - 141			
Endrin ketone [2C]	13.9700	2.0	0.07	16.6667	ND	83.8	7 - 141			
gamma-BHC	12.1977	1.0	0.05	16.6667	ND	73.2	0 - 117			
gamma-BHC [2C]	12.7137	1.0	0.05	16.6667	ND	76.3	0 - 117			
gamma-Chlordane	32.3513	1.0	0.04	16.6667	ND	194	0 - 156			M2
gamma-Chlordane [2C]	11.5770	1.0	0.04	16.6667	ND	69.5	0 - 156			
Heptachlor	12.0568	1.0	0.07	16.6667	ND	72.3	3 - 112			
Heptachlor [2C]	12.3867	1.0	0.07	16.6667	ND	74.3	3 - 112			
Heptachlor epoxide	12.0188	1.0	0.04	16.6667	ND	72.1	0 - 118			
Heptachlor epoxide [2C]	11.7573	1.0	0.04	16.6667	ND	70.5	0 - 118			
Methoxychlor	14.4405	5.0	0.10	16.6667	ND	86.6	0 - 161			
Methoxychlor [2C]	13.7918	5.0	0.10	16.6667	ND	82.8	0 - 161			
Surrogate: Decachlorobiphenyl	*13.91*			*16.6667*		*83.5*	*15 - 100*			
Surrogate: Decachlorobiphenyl [	*13.69*			*16.6667*		*82.2*	*15 - 100*			
Surrogate: Tetrachloro-m-xylene	*11.80*			*16.6667*		*70.8*	*16 - 100*			
Surrogate: Tetrachloro-m-xylene	*13.84*			*16.6667*		*83.1*	*16 - 100*			
Matrix Spike Dup (B8F0682-MSD1)			**Source: 1802258-44**		Prepared: 6/26/2018 Analyzed: 6/28/2018					
4,4´-DDD	15.6412	2.0	0.10	16.6667	ND	93.8	0 - 127	2.89	20	
4,4´-DDD [2C]	14.5270	2.0	0.10	16.6667	ND	87.2	0 - 127	1.68	20	
4,4´-DDE	13.0045	2.0	0.07	16.6667	0.417333	75.5	0 - 125	2.59	20	
4,4´-DDE [2C]	10.3727	2.0	0.07	16.6667	0.226667	60.9	0 - 125	7.38	20	
4,4´-DDT	9.92733	2.0	0.14	16.6667	ND	59.6	0 - 103	27.7	20	R3
4,4´-DDT [2C]	8.88417	2.0	0.14	16.6667	ND	53.3	0 - 103	31.5	20	R3
Aldrin	12.0890	1.0	0.08	16.6667	ND	72.5	6 - 104	1.48	20	
Aldrin [2C]	11.4485	1.0	0.08	16.6667	ND	68.7	6 - 104	7.80	20	
alpha-BHC	12.1690	1.0	0.04	16.6667	ND	73.0	0 - 114	0.665	20	
alpha-BHC [2C]	11.9568	1.0	0.04	16.6667	ND	71.7	0 - 114	6.57	20	
alpha-Chlordane	12.8203	1.0	0.04	16.6667	ND	76.9	0 - 110	2.58	20	
alpha-Chlordane [2C]	11.3582	1.0	0.04	16.6667	ND	68.1	0 - 110	8.81	20	
beta-BHC	13.9512	1.0	0.04	16.6667	ND	83.7	0 - 129	5.44	20	
beta-BHC [2C]	12.4040	1.0	0.04	16.6667	ND	74.4	0 - 129	6.66	20	
delta-BHC	11.0217	1.0	0.04	16.6667	ND	66.1	18 - 99	2.07	20	
delta-BHC [2C]	12.6825	1.0	0.04	16.6667	ND	76.1	18 - 99	6.59	20	
Dieldrin	13.4353	2.0	0.05	16.6667	0.695833	76.4	0 - 124	2.40	20	
Dieldrin [2C]	12.2722	2.0	0.05	16.6667	0.974167	67.8	0 - 124	8.89	20	
Endosulfan I	10.4165	1.0	0.04	16.6667	ND	62.5	0 - 106	0.786	20	
Endosulfan I [2C]	11.0898	1.0	0.04	16.6667	ND	66.5	0 - 106	8.99	20	
Endosulfan II	14.8172	2.0	0.10	16.6667	ND	88.9	20 - 130	3.04	20	
Endosulfan II [2C]	12.2063	2.0	0.10	16.6667	ND	73.2	20 - 130	10.2	20	

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Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0682 - GCSEMI_PCB/PEST_S (continued)										
Matrix Spike Dup (B8F0682-MSD1) - Continued			**Source: 1802258-44**		Prepared: 6/26/2018 Analyzed: 6/28/2018					
Endosulfan sulfate	13.7088	2.0	0.06	16.6667	ND	82.3	24 - 119	7.49	20	
Endosulfan Sulfate [2C]	12.0403	2.0	0.06	16.6667	ND	72.2	24 - 119	9.55	20	
Endrin	13.3055	2.0	0.08	16.6667	ND	79.8	0 - 135	3.75	20	
Endrin [2C]	12.9568	2.0	0.08	16.6667	ND	77.7	0 - 135	8.92	20	
Endrin aldehyde	14.4170	2.0	0.09	16.6667	ND	86.5	19 - 132	4.61	20	
Endrin aldehyde [2C]	10.1572	2.0	0.09	16.6667	ND	60.9	19 - 132	6.41	20	
Endrin ketone	12.7583	2.0	0.07	16.6667	ND	76.5	7 - 141	11.4	20	
Endrin ketone [2C]	12.5633	2.0	0.07	16.6667	ND	75.4	7 - 141	10.6	20	
gamma-BHC	12.0853	1.0	0.05	16.6667	ND	72.5	0 - 117	0.925	20	
gamma-BHC [2C]	11.8330	1.0	0.05	16.6667	ND	71.0	0 - 117	7.18	20	
gamma-Chlordane	33.8527	1.0	0.04	16.6667	ND	203	0 - 156	4.54	20	M2
gamma-Chlordane [2C]	10.6940	1.0	0.04	16.6667	ND	64.2	0 - 156	7.93	20	
Heptachlor	11.7905	1.0	0.07	16.6667	ND	70.7	3 - 112	2.23	20	
Heptachlor [2C]	11.3055	1.0	0.07	16.6667	ND	67.8	3 - 112	9.13	20	
Heptachlor epoxide	11.9247	1.0	0.04	16.6667	ND	71.5	0 - 118	0.787	20	
Heptachlor epoxide [2C]	10.8207	1.0	0.04	16.6667	ND	64.9	0 - 118	8.30	20	
Methoxychlor	10.4225	5.0	0.10	16.6667	ND	62.5	0 - 161	32.3	20	R3
Methoxychlor [2C]	10.5117	5.0	0.10	16.6667	ND	63.1	0 - 161	27.0	20	R3
Surrogate: Decachlorobiphenyl	*14.60*			*16.6667*		*87.6*	*15 - 100*			
Surrogate: Decachlorobiphenyl [	*12.76*			*16.6667*		*76.6*	*15 - 100*			
Surrogate: Tetrachloro-m-xylene	*11.78*			*16.6667*		*70.7*	*16 - 100*			
Surrogate: Tetrachloro-m-xylene	*13.00*			*16.6667*		*78.0*	*16 - 100*			

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Organochlorine Pesticides by EPA 8081 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0705 - GCSEMI_PCB/PEST_S										
Blank (B8F0705-BLK1)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
4,4´-DDD	ND	2.0	0.10							U
4,4´-DDD [2C]	ND	2.0	0.10							U
4,4´-DDE	ND	2.0	0.07							U
4,4´-DDE [2C]	ND	2.0	0.07							U
4,4´-DDT	ND	2.0	0.14							U
4,4´-DDT [2C]	ND	2.0	0.14							U
Aldrin	ND	1.0	0.08							U
Aldrin [2C]	ND	1.0	0.08							U
alpha-BHC	ND	1.0	0.04							U
alpha-BHC [2C]	ND	1.0	0.04							U
alpha-Chlordane	ND	1.0	0.04							U
alpha-Chlordane [2C]	ND	1.0	0.04							U
beta-BHC	ND	1.0	0.04							U
beta-BHC [2C]	ND	1.0	0.04							U
Chlordane	ND	8.5	0.90							U
Chlordane [2C]	ND	8.5	0.90							U
delta-BHC	ND	1.0	0.04							U
delta-BHC [2C]	ND	1.0	0.04							U
Dieldrin	ND	2.0	0.05							U
Dieldrin [2C]	ND	2.0	0.05							U
Endosulfan I	ND	1.0	0.04							U
Endosulfan I [2C]	ND	1.0	0.04							U
Endosulfan II	ND	2.0	0.10							U
Endosulfan II [2C]	ND	2.0	0.10							U
Endosulfan sulfate	ND	2.0	0.06							U
Endosulfan Sulfate [2C]	ND	2.0	0.06							U
Endrin	ND	2.0	0.08							U
Endrin [2C]	ND	2.0	0.08							U
Endrin aldehyde	ND	2.0	0.09							U
Endrin aldehyde [2C]	ND	2.0	0.09							U
Endrin ketone	ND	2.0	0.07							U
Endrin ketone [2C]	ND	2.0	0.07							U
gamma-BHC	ND	1.0	0.05							U
gamma-BHC [2C]	ND	1.0	0.05							U
gamma-Chlordane	ND	1.0	0.04							U
gamma-Chlordane [2C]	ND	1.0	0.04							U
Heptachlor	ND	1.0	0.07							U
Heptachlor [2C]	ND	1.0	0.07							U
Heptachlor epoxide	ND	1.0	0.04							U
Heptachlor epoxide [2C]	ND	1.0	0.04							U
Methoxychlor	ND	5.0	0.10							U

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Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0705 - GCSEMI_PCB/PEST_S (continued)										
Blank (B8F0705-BLK1) - Continued					Prepared: 6/26/2018 Analyzed: 6/27/2018					
Methoxychlor [2C]	ND	5.0	0.10							U
Toxaphene	ND	50	8.2							U
Toxaphene [2C]	ND	50	8.2							U
Surrogate: Decachlorobiphenyl	*15.34*			*16.6667*		*92.0*	*15 - 100*			
Surrogate: Decachlorobiphenyl [	*15.11*			*16.6667*		*90.7*	*15 - 100*			
Surrogate: Tetrachloro-m-xylene	*12.96*			*16.6667*		*77.8*	*16 - 100*			
Surrogate: Tetrachloro-m-xylene	*16.11*			*16.6667*		*96.7*	*16 - 100*			
LCS (B8F0705-BS1)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
4,4´-DDD	15.2950	2.0	0.10	16.6667		91.8	62 - 129			
4,4´-DDD [2C]	13.5015	2.0	0.10	16.6667		81.0	62 - 129			
4,4´-DDE	15.0463	2.0	0.07	16.6667		90.3	65 - 117			
4,4´-DDE [2C]	11.6060	2.0	0.07	16.6667		69.6	65 - 117			
4,4´-DDT	13.3947	2.0	0.14	16.6667		80.4	35 - 136			
4,4´-DDT [2C]	13.2305	2.0	0.14	16.6667		79.4	35 - 136			
Aldrin	14.5728	1.0	0.08	16.6667		87.4	67 - 110			
Aldrin [2C]	13.7355	1.0	0.08	16.6667		82.4	67 - 110			
alpha-BHC	14.4365	1.0	0.04	16.6667		86.6	69 - 110			
alpha-BHC [2C]	13.7735	1.0	0.04	16.6667		82.6	69 - 110			
alpha-Chlordane	14.9017	1.0	0.04	16.6667		89.4	65 - 114			
alpha-Chlordane [2C]	13.4202	1.0	0.04	16.6667		80.5	65 - 114			
beta-BHC	13.6960	1.0	0.04	16.6667		82.2	64 - 108			
beta-BHC [2C]	13.2832	1.0	0.04	16.6667		79.7	64 - 108			
delta-BHC	12.0297	1.0	0.04	16.6667		72.2	44 - 110			
delta-BHC [2C]	14.2615	1.0	0.04	16.6667		85.6	44 - 110			
Dieldrin	14.2103	2.0	0.05	16.6667		85.3	63 - 107			
Dieldrin [2C]	12.9382	2.0	0.05	16.6667		77.6	63 - 107			
Endosulfan I	11.5760	1.0	0.04	16.6667		69.5	63 - 103			
Endosulfan I [2C]	13.3333	1.0	0.04	16.6667		80.0	63 - 103			
Endosulfan II	16.0647	2.0	0.10	16.6667		96.4	62 - 122			
Endosulfan II [2C]	13.8993	2.0	0.10	16.6667		83.4	62 - 122			
Endosulfan sulfate	14.5833	2.0	0.06	16.6667		87.5	53 - 127			
Endosulfan Sulfate [2C]	12.6145	2.0	0.06	16.6667		75.7	53 - 127			
Endrin	14.9607	2.0	0.08	16.6667		89.8	66 - 120			
Endrin [2C]	13.9227	2.0	0.08	16.6667		83.5	66 - 120			
Endrin aldehyde	13.9948	2.0	0.09	16.6667		84.0	67 - 121			
Endrin aldehyde [2C]	14.6302	2.0	0.09	16.6667		87.8	67 - 121			
Endrin ketone	14.1515	2.0	0.07	16.6667		84.9	41 - 146			
Endrin ketone [2C]	12.8698	2.0	0.07	16.6667		77.2	41 - 146			
gamma-BHC	14.0640	1.0	0.05	16.6667		84.4	67 - 109			
gamma-BHC [2C]	13.5810	1.0	0.05	16.6667		81.5	67 - 109			

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550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0705 - GCSEMI_PCB/PEST_S (continued)										
LCS (B8F0705-BS1) - Continued						Prepared: 6/26/2018 Analyzed: 6/27/2018				
gamma-Chlordane	14.3755	1.0	0.04	16.6667		86.3	63 - 110			
gamma-Chlordane [2C]	13.2072	1.0	0.04	16.6667		79.2	63 - 110			
Heptachlor	14.2863	1.0	0.07	16.6667		85.7	67 - 120			
Heptachlor [2C]	13.4742	1.0	0.07	16.6667		80.8	67 - 120			
Heptachlor epoxide	13.8442	1.0	0.04	16.6667		83.1	62 - 108			
Heptachlor epoxide [2C]	13.1023	1.0	0.04	16.6667		78.6	62 - 108			
Methoxychlor	13.6927	5.0	0.10	16.6667		82.2	47 - 152			
Methoxychlor [2C]	14.1165	5.0	0.10	16.6667		84.7	47 - 152			
Surrogate: Decachlorobiphenyl	*14.46*			*16.6667*		*86.7*	*15 - 100*			
Surrogate: Decachlorobiphenyl [	*12.81*			*16.6667*		*76.9*	*15 - 100*			
Surrogate: Tetrachloro-m-xylene	*14.27*			*16.6667*		*85.6*	*16 - 100*			
Surrogate: Tetrachloro-m-xylene	*14.41*			*16.6667*		*86.5*	*16 - 100*			
Matrix Spike (B8F0705-MS1)			**Source: 1802237-29**			Prepared: 6/26/2018 Analyzed: 6/27/2018				
4,4´-DDD	15.3592	2.0	0.10	16.6667	ND	92.2	0 - 127			
4,4´-DDD [2C]	14.6473	2.0	0.10	16.6667	ND	87.9	0 - 127			
4,4´-DDE	14.6520	2.0	0.07	16.6667	ND	87.9	0 - 125			
4,4´-DDE [2C]	12.0638	2.0	0.07	16.6667	ND	72.4	0 - 125			
4,4´-DDT	15.5715	2.0	0.14	16.6667	ND	93.4	0 - 103			
4,4´-DDT [2C]	14.9377	2.0	0.14	16.6667	ND	89.6	0 - 103			
Aldrin	13.5302	1.0	0.08	16.6667	ND	81.2	6 - 104			
Aldrin [2C]	13.8737	1.0	0.08	16.6667	ND	83.2	6 - 104			
alpha-BHC	13.4827	1.0	0.04	16.6667	ND	80.9	0 - 114			
alpha-BHC [2C]	14.0620	1.0	0.04	16.6667	ND	84.4	0 - 114			
alpha-Chlordane	14.1845	1.0	0.04	16.6667	ND	85.1	0 - 110			
alpha-Chlordane [2C]	13.7665	1.0	0.04	16.6667	ND	82.6	0 - 110			
beta-BHC	13.1785	1.0	0.04	16.6667	ND	79.1	0 - 129			
beta-BHC [2C]	14.2005	1.0	0.04	16.6667	ND	85.2	0 - 129			
delta-BHC	11.3575	1.0	0.04	16.6667	ND	68.1	18 - 99			
delta-BHC [2C]	14.6595	1.0	0.04	16.6667	ND	88.0	18 - 99			
Dieldrin	13.9002	2.0	0.05	16.6667	ND	83.4	0 - 124			
Dieldrin [2C]	13.5697	2.0	0.05	16.6667	ND	81.4	0 - 124			
Endosulfan I	10.9293	1.0	0.04	16.6667	ND	65.6	0 - 106			
Endosulfan I [2C]	13.4232	1.0	0.04	16.6667	ND	80.5	0 - 106			
Endosulfan II	16.1278	2.0	0.10	16.6667	ND	96.8	20 - 130			
Endosulfan II [2C]	14.9165	2.0	0.10	16.6667	ND	89.5	20 - 130			
Endosulfan sulfate	14.6323	2.0	0.06	16.6667	ND	87.8	24 - 119			
Endosulfan Sulfate [2C]	14.1303	2.0	0.06	16.6667	ND	84.8	24 - 119			
Endrin	14.8410	2.0	0.08	16.6667	ND	89.0	0 - 135			
Endrin [2C]	14.7897	2.0	0.08	16.6667	ND	88.7	0 - 135			
Endrin aldehyde	15.2912	2.0	0.09	16.6667	ND	91.7	19 - 132			

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Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0705 - GCSEMI_PCB/PEST_S (continued)										
Matrix Spike (B8F0705-MS1) - Continued			**Source: 1802237-29**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Endrin aldehyde [2C]	12.3138	2.0	0.09	16.6667	ND	73.9	19 - 132			
Endrin ketone	14.1213	2.0	0.07	16.6667	ND	84.7	7 - 141			
Endrin ketone [2C]	14.7967	2.0	0.07	16.6667	ND	88.8	7 - 141			
gamma-BHC	13.2802	1.0	0.05	16.6667	ND	79.7	0 - 117			
gamma-BHC [2C]	14.0890	1.0	0.05	16.6667	ND	84.5	0 - 117			
gamma-Chlordane	59.2992	1.0	0.04	16.6667	ND	356	0 - 156			M2
gamma-Chlordane [2C]	12.5203	1.0	0.04	16.6667	ND	75.1	0 - 156			
Heptachlor	13.4132	1.0	0.07	16.6667	ND	80.5	3 - 112			
Heptachlor [2C]	13.6185	1.0	0.07	16.6667	ND	81.7	3 - 112			
Heptachlor epoxide	13.0188	1.0	0.04	16.6667	ND	78.1	0 - 118			
Heptachlor epoxide [2C]	13.0100	1.0	0.04	16.6667	ND	78.1	0 - 118			
Methoxychlor	14.5257	5.0	0.10	16.6667	ND	87.2	0 - 161			
Methoxychlor [2C]	16.8103	5.0	0.10	16.6667	ND	101	0 - 161			
Surrogate: Decachlorobiphenyl	*14.97*			*16.6667*		*89.8*	*15 - 100*			
Surrogate: Decachlorobiphenyl [	*15.33*			*16.6667*		*92.0*	*15 - 100*			
Surrogate: Tetrachloro-m-xylene	*12.43*			*16.6667*		*74.6*	*16 - 100*			
Surrogate: Tetrachloro-m-xylene	*15.88*			*16.6667*		*95.3*	*16 - 100*			
Matrix Spike Dup (B8F0705-MSD1)			**Source: 1802237-29**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
4,4´-DDD	14.8755	2.0	0.10	16.6667	ND	89.3	0 - 127	3.20	20	
4,4´-DDD [2C]	13.5278	2.0	0.10	16.6667	ND	81.2	0 - 127	7.95	20	
4,4´-DDE	14.1192	2.0	0.07	16.6667	ND	84.7	0 - 125	3.70	20	
4,4´-DDE [2C]	11.1043	2.0	0.07	16.6667	ND	66.6	0 - 125	8.28	20	
4,4´-DDT	15.1758	2.0	0.14	16.6667	ND	91.1	0 - 103	2.57	20	
4,4´-DDT [2C]	13.7613	2.0	0.14	16.6667	ND	82.6	0 - 103	8.20	20	
Aldrin	13.0750	1.0	0.08	16.6667	ND	78.4	6 - 104	3.42	20	
Aldrin [2C]	12.8113	1.0	0.08	16.6667	ND	76.9	6 - 104	7.96	20	
alpha-BHC	13.0830	1.0	0.04	16.6667	ND	78.5	0 - 114	3.01	20	
alpha-BHC [2C]	13.0438	1.0	0.04	16.6667	ND	78.3	0 - 114	7.51	20	
alpha-Chlordane	13.7148	1.0	0.04	16.6667	ND	82.3	0 - 110	3.37	20	
alpha-Chlordane [2C]	12.6547	1.0	0.04	16.6667	ND	75.9	0 - 110	8.42	20	
beta-BHC	12.8487	1.0	0.04	16.6667	ND	77.1	0 - 129	2.53	20	
beta-BHC [2C]	13.2192	1.0	0.04	16.6667	ND	79.3	0 - 129	7.16	20	
delta-BHC	11.1560	1.0	0.04	16.6667	ND	66.9	18 - 99	1.79	20	
delta-BHC [2C]	13.5810	1.0	0.04	16.6667	ND	81.5	18 - 99	7.64	20	
Dieldrin	13.4763	2.0	0.05	16.6667	ND	80.9	0 - 124	3.10	20	
Dieldrin [2C]	12.4848	2.0	0.05	16.6667	ND	74.9	0 - 124	8.33	20	
Endosulfan I	10.7162	1.0	0.04	16.6667	ND	64.3	0 - 106	1.97	20	
Endosulfan I [2C]	12.4753	1.0	0.04	16.6667	ND	74.9	0 - 106	7.32	20	
Endosulfan II	15.7123	2.0	0.10	16.6667	ND	94.3	20 - 130	2.61	20	
Endosulfan II [2C]	13.8065	2.0	0.10	16.6667	ND	82.8	20 - 130	7.73	20	

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Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0705 - GCSEMI_PCB/PEST_S (continued)										
Matrix Spike Dup (B8F0705-MSD1) - Continued			**Source: 1802237-29**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Endosulfan sulfate	14.4547	2.0	0.06	16.6667	ND	86.7	24 - 119	1.22	20	
Endosulfan Sulfate [2C]	13.2672	2.0	0.06	16.6667	ND	79.6	24 - 119	6.30	20	
Endrin	14.3822	2.0	0.08	16.6667	ND	86.3	0 - 135	3.14	20	
Endrin [2C]	13.6202	2.0	0.08	16.6667	ND	81.7	0 - 135	8.23	20	
Endrin aldehyde	15.2503	2.0	0.09	16.6667	ND	91.5	19 - 132	0.267	20	
Endrin aldehyde [2C]	11.3868	2.0	0.09	16.6667	ND	68.3	19 - 132	7.82	20	
Endrin ketone	13.7885	2.0	0.07	16.6667	ND	82.7	7 - 141	2.39	20	
Endrin ketone [2C]	13.9962	2.0	0.07	16.6667	ND	84.0	7 - 141	5.56	20	
gamma-BHC	12.8745	1.0	0.05	16.6667	ND	77.2	0 - 117	3.10	20	
gamma-BHC [2C]	13.0708	1.0	0.05	16.6667	ND	78.4	0 - 117	7.50	20	
gamma-Chlordane	59.2312	1.0	0.04	16.6667	ND	355	0 - 156	0.115	20	M2
gamma-Chlordane [2C]	11.6273	1.0	0.04	16.6667	ND	69.8	0 - 156	7.40	20	
Heptachlor	12.9877	1.0	0.07	16.6667	ND	77.9	3 - 112	3.22	20	
Heptachlor [2C]	12.6572	1.0	0.07	16.6667	ND	75.9	3 - 112	7.32	20	
Heptachlor epoxide	12.5907	1.0	0.04	16.6667	ND	75.5	0 - 118	3.34	20	
Heptachlor epoxide [2C]	12.0255	1.0	0.04	16.6667	ND	72.2	0 - 118	7.86	20	
Methoxychlor	13.8345	5.0	0.10	16.6667	ND	83.0	0 - 161	4.87	20	
Methoxychlor [2C]	15.3340	5.0	0.10	16.6667	ND	92.0	0 - 161	9.19	20	
Surrogate: Decachlorobiphenyl	*15.21*			*16.6667*		*91.3*	*15 - 100*			
Surrogate: Decachlorobiphenyl [	*14.03*			*16.6667*		*84.2*	*15 - 100*			
Surrogate: Tetrachloro-m-xylene	*12.14*			*16.6667*		*72.8*	*16 - 100*			
Surrogate: Tetrachloro-m-xylene	*14.72*			*16.6667*		*88.3*	*16 - 100*			

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SPLP Organochlorine Pesticides by EPA 8081 - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8G0214 - GCSEMI_PCB/PEST_LEACHEATE_W										
Blank (B8G0214-BLK1)					Prepared: 7/10/2018 Analyzed: 7/11/2018					
4,4´-DDD	ND	0.05	0.006							U
4,4´-DDD [2C]	ND	0.05	0.006							U
4,4´-DDE	ND	0.05	0.005							U
4,4´-DDE [2C]	ND	0.05	0.005							U
4,4´-DDT	ND	0.05	0.01							U
4,4´-DDT [2C]	ND	0.05	0.01							U
alpha-Chlordane	ND	0.02	0.003							U
alpha-Chlordane [2C]	ND	0.02	0.003							U
Chlordane	ND	0.25	0.03							U
Chlordane [2C]	ND	0.25	0.03							U
gamma-Chlordane	ND	0.02	0.002							U
gamma-Chlordane [2C]	ND	0.02	0.002							U
Surrogate: Decachlorobiphenyl	*0.3234*			*0.500000*		*64.7*	*1 - 110*			
Surrogate: Decachlorobiphenyl [	*0.2444*			*0.500000*		*48.9*	*1 - 110*			
Surrogate: Tetrachloro-m-xylene	*0.3634*			*0.500000*		*72.7*	*19 - 117*			
Surrogate: Tetrachloro-m-xylene	*0.3283*			*0.500000*		*65.7*	*19 - 117*			
LCS (B8G0214-BS1)					Prepared: 7/10/2018 Analyzed: 7/11/2018					
4,4´-DDD	0.539135	0.05	0.006	0.500000		108	51 - 125			
4,4´-DDD [2C]	0.445540	0.05	0.006	0.500000		89.1	51 - 125			
4,4´-DDE	0.447375	0.05	0.005	0.500000		89.5	41 - 121			
4,4´-DDE [2C]	0.373830	0.05	0.005	0.500000		74.8	41 - 121			
4,4´-DDT	0.397525	0.05	0.01	0.500000		79.5	11 - 131			
4,4´-DDT [2C]	0.339655	0.05	0.01	0.500000		67.9	11 - 131			
alpha-Chlordane	0.447980	0.02	0.003	0.500000		89.6	44 - 117			
alpha-Chlordane [2C]	0.373230	0.02	0.003	0.500000		74.6	44 - 117			
gamma-Chlordane	0.434825	0.02	0.002	0.500000		87.0	41 - 116			
gamma-Chlordane [2C]	0.348045	0.02	0.002	0.500000		69.6	41 - 116			
Surrogate: Decachlorobiphenyl	*0.4915*			*0.500000*		*98.3*	*1 - 110*			
Surrogate: Decachlorobiphenyl [	*0.3085*			*0.500000*		*61.7*	*1 - 110*			
Surrogate: Tetrachloro-m-xylene	*0.3765*			*0.500000*		*75.3*	*19 - 117*			
Surrogate: Tetrachloro-m-xylene	*0.3395*			*0.500000*		*67.9*	*19 - 117*			
LCS Dup (B8G0214-BSD1)					Prepared: 7/10/2018 Analyzed: 7/11/2018					
4,4´-DDD	0.532030	0.05	0.006	0.500000		106	51 - 125	1.33	20	
4,4´-DDD [2C]	0.445770	0.05	0.006	0.500000		89.2	51 - 125	0.0516	20	
4,4´-DDE	0.445710	0.05	0.005	0.500000		89.1	41 - 121	0.373	20	
4,4´-DDE [2C]	0.368375	0.05	0.005	0.500000		73.7	41 - 121	1.47	20	
4,4´-DDT	0.394930	0.05	0.01	0.500000		79.0	11 - 131	0.655	20	
4,4´-DDT [2C]	0.343070	0.05	0.01	0.500000		68.6	11 - 131	1.00	20	
alpha-Chlordane	0.442770	0.02	0.003	0.500000		88.6	44 - 117	1.17	20	

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SPLP Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8G0214 - GCSEMI_PCB/PEST_LEACHEATE_W (continued)										
LCS Dup (B8G0214-BSD1) - Continued					Prepared: 7/10/2018 Analyzed: 7/11/2018					
alpha-Chlordane [2C]	0.368705	0.02	0.003	0.500000		73.7	44 - 117	1.22	20	
gamma-Chlordane	0.429960	0.02	0.002	0.500000		86.0	41 - 116	1.13	20	
gamma-Chlordane [2C]	0.344805	0.02	0.002	0.500000		69.0	41 - 116	0.935	20	
Surrogate: Decachlorobiphenyl	*0.4260*			*0.500000*		*85.2*	*1 - 110*			
Surrogate: Decachlorobiphenyl [	*0.2996*			*0.500000*		*59.9*	*1 - 110*			
Surrogate: Tetrachloro-m-xylene	*0.3705*			*0.500000*		*74.1*	*19 - 117*			
Surrogate: Tetrachloro-m-xylene	*0.3335*			*0.500000*		*66.7*	*19 - 117*			

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San Diego , CA 92101	Reported :	07/13/2018

Polychlorinated Biphenyls by EPA 8082 - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0616 - GCSEMI_PCB/PEST_W										
Blank (B8F0616-BLK2)					Prepared: 6/23/2018 Analyzed: 6/24/2018					
Aroclor 1016	ND	0.50	0.04							U
Aroclor 1221	ND	1.0	0.04							U
Aroclor 1232	ND	0.50	0.04							U
Aroclor 1242	ND	0.50	0.04							U
Aroclor 1248	ND	0.50	0.04							U
Aroclor 1254	ND	0.50	0.04							U
Aroclor 1260	ND	0.50	0.04							U
Aroclor 1262	ND	0.50	0.04							U
Aroclor 1268	ND	0.50	0.04							U
Surrogate: Decachlorobiphenyl	*0.3984*			*0.500000*		*79.7*	*1 - 110*			
Surrogate: Tetrachloro-m-xylene	*0.4306*			*0.500000*		*86.1*	*19 - 117*			
LCS (B8F0616-BS2)					Prepared: 6/23/2018 Analyzed: 6/24/2018					
Aroclor 1016	4.35058	0.50	0.04	5.00000		87.0	60 - 110			
Aroclor 1260	4.73685	0.50	0.04	5.00000		94.7	44 - 119			
Surrogate: Decachlorobiphenyl	*0.4121*			*0.500000*		*82.4*	*1 - 110*			
Surrogate: Tetrachloro-m-xylene	*0.4461*			*0.500000*		*89.2*	*19 - 117*			
LCS Dup (B8F0616-BSD2)					Prepared: 6/23/2018 Analyzed: 6/24/2018					
Aroclor 1016	4.29838	0.50	0.04	5.00000		86.0	60 - 110	1.21	20	
Aroclor 1260	4.67278	0.50	0.04	5.00000		93.5	44 - 119	1.36	20	
Surrogate: Decachlorobiphenyl	*0.4053*			*0.500000*		*81.1*	*1 - 110*			
Surrogate: Tetrachloro-m-xylene	*0.4424*			*0.500000*		*88.5*	*19 - 117*			

Certificate of Analysis

Kleinfelder	Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200	Report To :	Jake Lippman
San Diego , CA 92101	Reported :	07/13/2018

Polychlorinated Biphenyls by EPA 8082 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0617 - GCSEMI_PCB/PEST_S										
Blank (B8F0617-BLK1)					Prepared: 6/23/2018 Analyzed: 6/24/2018					
Aroclor 1016	ND	16	4.6							U
Aroclor 1221	ND	16	4.6							U
Aroclor 1232	ND	16	4.6							U
Aroclor 1242	ND	16	4.6							U
Aroclor 1248	ND	16	4.6							U
Aroclor 1254	ND	16	4.6							U
Aroclor 1260	ND	16	4.6							U
Aroclor 1262	ND	16	4.6							U
Aroclor 1268	ND	16	4.6							U
Surrogate: Decachlorobiphenyl	*13.91*			*16.6667*		*83.5*	*14 - 109*			
Surrogate: Tetrachloro-m-xylene	*14.84*			*16.6667*		*89.0*	*18 - 114*			
LCS (B8F0617-BS1)					Prepared: 6/23/2018 Analyzed: 6/24/2018					
Aroclor 1016	144.326	16	4.6	166.667		86.6	67 - 120			
Aroclor 1260	159.485	16	4.6	166.667		95.7	75 - 125			
Surrogate: Decachlorobiphenyl	*14.13*			*16.6667*		*84.8*	*14 - 109*			
Surrogate: Tetrachloro-m-xylene	*14.97*			*16.6667*		*89.8*	*18 - 114*			
Matrix Spike (B8F0617-MS1)			**Source: 1802237-06**		Prepared: 6/23/2018 Analyzed: 6/24/2018					
Aroclor 1016	140.943	16	4.6	166.667	ND	84.6	18 - 133			
Aroclor 1260	165.941	16	4.6	166.667	ND	99.6	15 - 145			
Surrogate: Decachlorobiphenyl	*14.10*			*16.6667*		*84.6*	*14 - 109*			
Surrogate: Tetrachloro-m-xylene	*13.62*			*16.6667*		*81.7*	*18 - 114*			
Matrix Spike Dup (B8F0617-MSD1)			**Source: 1802237-06**		Prepared: 6/23/2018 Analyzed: 6/24/2018					
Aroclor 1016	138.767	16	4.6	166.667	ND	83.3	18 - 133	1.56	20	
Aroclor 1260	159.830	16	4.6	166.667	ND	95.9	15 - 145	3.75	20	
Surrogate: Decachlorobiphenyl	*13.73*			*16.6667*		*82.4*	*14 - 109*			
Surrogate: Tetrachloro-m-xylene	*13.23*			*16.6667*		*79.4*	*18 - 114*			

Certificate of Analysis

Kleinfelder	Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200	Report To :	Jake Lippman
San Diego , CA 92101	Reported :	07/13/2018

Polychlorinated Biphenyls by EPA 8082 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0682 - GCSEMI_PCB/PEST_S										
Blank (B8F0682-BLK2)					Prepared: 6/26/2018 Analyzed: 6/26/2018					
Aroclor 1016	ND	16	4.6							U
Aroclor 1221	ND	16	4.6							U
Aroclor 1232	ND	16	4.6							U
Aroclor 1242	ND	16	4.6							U
Aroclor 1248	ND	16	4.6							U
Aroclor 1254	ND	16	4.6							U
Aroclor 1260	ND	16	4.6							U
Aroclor 1262	ND	16	4.6							U
Aroclor 1268	ND	16	4.6							U
Surrogate: Decachlorobiphenyl	*8.767*			*16.6667*		*52.6*	*14 - 109*			
Surrogate: Tetrachloro-m-xylene	*14.44*			*16.6667*		*86.7*	*18 - 114*			
LCS (B8F0682-BS2)					Prepared: 6/26/2018 Analyzed: 6/26/2018					
Aroclor 1016	138.440	16	4.6	166.667		83.1	67 - 120			
Aroclor 1260	150.809	16	4.6	166.667		90.5	75 - 125			
Surrogate: Decachlorobiphenyl	*8.944*			*16.6667*		*53.7*	*14 - 109*			
Surrogate: Tetrachloro-m-xylene	*13.97*			*16.6667*		*83.8*	*18 - 114*			
Matrix Spike (B8F0682-MS2)			**Source: 1802258-45**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Aroclor 1016	122.383	16	4.6	166.667	ND	73.4	18 - 133			
Aroclor 1260	152.116	16	4.6	166.667	ND	91.3	15 - 145			
Surrogate: Decachlorobiphenyl	*13.95*			*16.6667*		*83.7*	*14 - 109*			
Surrogate: Tetrachloro-m-xylene	*10.31*			*16.6667*		*61.9*	*18 - 114*			
Matrix Spike Dup (B8F0682-MSD2)			**Source: 1802258-45**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Aroclor 1016	119.094	16	4.6	166.667	ND	71.5	18 - 133	2.72	20	
Aroclor 1260	149.156	16	4.6	166.667	ND	89.5	15 - 145	1.97	20	
Surrogate: Decachlorobiphenyl	*13.60*			*16.6667*		*81.6*	*14 - 109*			
Surrogate: Tetrachloro-m-xylene	*11.71*			*16.6667*		*70.3*	*18 - 114*			

Certificate of Analysis

Kleinfelder	Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200	Report To :	Jake Lippman
San Diego , CA 92101	Reported :	07/13/2018

Polychlorinated Biphenyls by EPA 8082 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0705 - GCSEMI_PCB/PEST_S										
Blank (B8F0705-BLK2)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
Aroclor 1016	ND	16	4.6							U
Aroclor 1221	ND	16	4.6							U
Aroclor 1232	ND	16	4.6							U
Aroclor 1242	ND	16	4.6							U
Aroclor 1248	ND	16	4.6							U
Aroclor 1254	ND	16	4.6							U
Aroclor 1260	ND	16	4.6							U
Aroclor 1262	ND	16	4.6							U
Aroclor 1268	ND	16	4.6							U
Surrogate: Decachlorobiphenyl	*13.41*			*16.6667*		*80.5*	*14 - 109*			
Surrogate: Tetrachloro-m-xylene	*18.72*			*16.6667*		*112*	*18 - 114*			
LCS (B8F0705-BS2)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
Aroclor 1016	153.204	16	4.6	166.667		91.9	67 - 120			
Aroclor 1260	151.188	16	4.6	166.667		90.7	75 - 125			
Surrogate: Decachlorobiphenyl	*13.94*			*16.6667*		*83.7*	*14 - 109*			
Surrogate: Tetrachloro-m-xylene	*18.51*			*16.6667*		*111*	*18 - 114*			
Matrix Spike (B8F0705-MS2)			**Source: 1802237-30**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Aroclor 1016	107.859	16	4.6	166.667	ND	64.7	18 - 133			
Aroclor 1260	129.681	16	4.6	166.667	ND	77.8	15 - 145			
Surrogate: Decachlorobiphenyl	*13.68*			*16.6667*		*82.1*	*14 - 109*			
Surrogate: Tetrachloro-m-xylene	*12.97*			*16.6667*		*77.8*	*18 - 114*			
Matrix Spike Dup (B8F0705-MSD2)			**Source: 1802237-30**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Aroclor 1016	102.787	16	4.6	166.667	ND	61.7	18 - 133	4.82	20	
Aroclor 1260	128.766	16	4.6	166.667	ND	77.3	15 - 145	0.708	20	
Surrogate: Decachlorobiphenyl	*13.22*			*16.6667*		*79.3*	*14 - 109*			
Surrogate: Tetrachloro-m-xylene	*12.52*			*16.6667*		*75.1*	*18 - 114*			

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0572 - MSVOA_S										
Blank (B8F0572-BLK1)					Prepared: 6/22/2018 Analyzed: 6/22/2018					
1,1,1,2-Tetrachloroethane	ND	5.0	0.96							U
1,1,1-Trichloroethane	ND	5.0	1.1							U
1,1,2,2-Tetrachloroethane	ND	5.0	0.62							U
1,1,2-Trichloroethane	ND	5.0	1.6							U
1,1-Dichloroethane	ND	5.0	0.81							U
1,1-Dichloroethene	ND	5.0	2.6							U
1,1-Dichloropropene	ND	5.0	2.3							U
1,2,3-Trichloropropane	ND	5.0	0.54							U
1,2,3-Trichlorobenzene	ND	5.0	1.2							U
1,2,4-Trichlorobenzene	ND	5.0	1.1							U
1,2,4-Trimethylbenzene	ND	5.0	1.5							U
1,2-Dibromo-3-chloropropane	ND	10	1.6							U
1,2-Dibromoethane	ND	5.0	3.2							U
1,2-Dichlorobenzene	ND	5.0	1.1							U
1,2-Dichloroethane	ND	5.0	1.2							U
1,2-Dichloropropane	ND	5.0	1.8							U
1,3,5-Trimethylbenzene	ND	5.0	1.7							U
1,3-Dichlorobenzene	ND	5.0	1.3							U
1,3-Dichloropropane	ND	5.0	1.1							U
1,4-Dichlorobenzene	ND	5.0	1.2							U
2,2-Dichloropropane	ND	5.0	1.2							U
2-Chlorotoluene	ND	5.0	1.6							U
4-Chlorotoluene	ND	5.0	1.5							U
4-Isopropyltoluene	ND	5.0	2.3							U
Benzene	ND	5.0	0.64							U
Bromobenzene	ND	5.0	1.1							U
Bromochloromethane	ND	5.0	0.64							U
Bromodichloromethane	ND	5.0	1.2							U
Bromoform	ND	5.0	0.80							U
Bromomethane	ND	5.0	2.5							U
Carbon disulfide	ND	5.0	3.5							U
Carbon tetrachloride	ND	5.0	1.2							U
Chlorobenzene	ND	5.0	1.0							U
Chloroethane	ND	5.0	1.1							U
Chloroform	ND	5.0	0.82							U
Chloromethane	ND	5.0	1.4							U
cis-1,2-Dichloroethene	ND	5.0	0.67							U
cis-1,3-Dichloropropene	ND	5.0	1.9							U
Di-isopropyl ether	ND	5.0	0.55							U
Dibromochloromethane	ND	5.0	1.0							U
Dibromomethane	ND	5.0	1.6							U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0572 - MSVOA_S (continued)										
Blank (B8F0572-BLK1) - Continued					Prepared: 6/22/2018 Analyzed: 6/22/2018					
Dichlorodifluoromethane	ND	5.0	2.2							U
Ethyl Acetate	ND	50	8.1							U
Ethyl Ether	ND	50	6.1							U
Ethyl tert-butyl ether	ND	5.0	0.67							U
Ethylbenzene	ND	5.0	0.91							U
Freon-113	ND	5.0	2.8							U
Hexachlorobutadiene	ND	5.0	2.5							U
Isopropylbenzene	ND	5.0	1.8							U
m,p-Xylene	ND	10	1.5							U
Methylene chloride	ND	5.0	2.3							U
MTBE	ND	5.0	0.63							U
n-Butylbenzene	ND	5.0	2.4							U
n-Propylbenzene	ND	5.0	2.2							U
Naphthalene	ND	5.0	0.97							U
o-Xylene	ND	5.0	0.87							U
sec-Butylbenzene	ND	5.0	2.3							U
Styrene	ND	5.0	1.5							U
tert-Amyl methyl ether	ND	5.0	0.59							U
tert-Butanol	ND	100	19							U
tert-Butylbenzene	ND	5.0	2.0							U
Tetrachloroethene	ND	5.0	1.6							U
Toluene	ND	5.0	0.94							U
trans-1,2-Dichloroethene	ND	5.0	0.59							U
trans-1,3-Dichloropropene	ND	5.0	2.1							U
Trichloroethene	ND	5.0	3.1							U
Trichlorofluoromethane	ND	5.0	1.4							U
Vinyl acetate	ND	50	9.8							U
Vinyl chloride	ND	5.0	1.7							U
Surrogate: 1,2-Dichloroethane-d4	*43.36*			*50.0000*		*86.7*	*58 - 144*			
Surrogate: 4-Bromofluorobenzene	*45.48*			*50.0000*		*91.0*	*60 - 137*			
Surrogate: Dibromofluoromethan	*47.22*			*50.0000*		*94.4*	*70 - 131*			
Surrogate: Toluene-d8	*48.06*			*50.0000*		*96.1*	*79 - 131*			
LCS (B8F0572-BS1)					Prepared: 6/22/2018 Analyzed: 6/22/2018					
1,1,1,2-Tetrachloroethane	50.6800	5.0	0.96	50.0000		101	82 - 113			
1,1,1-Trichloroethane	43.2600	5.0	1.1	50.0000		86.5	75 - 123			
1,1,2,2-Tetrachloroethane	43.7900	5.0	0.62	50.0000		87.6	70 - 115			
1,1,2-Trichloroethane	45.5200	5.0	1.6	50.0000		91.0	84 - 113			
1,1-Dichloroethane	43.3100	5.0	0.81	50.0000		86.6	75 - 119			
1,1-Dichloroethene	43.3200	5.0	2.6	50.0000		86.6	65 - 116			
1,1-Dichloropropene	52.7200	5.0	2.3	50.0000		105	80 - 117			

Certificate of Analysis

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550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0572 - MSVOA_S (continued)										
LCS (B8F0572-BS1) - Continued					Prepared: 6/22/2018 Analyzed: 6/22/2018					
1,2,3-Trichloropropane	42.5900	5.0	0.54	50.0000		85.2	75 - 113			
1,2,3-Trichlorobenzene	56.6000	5.0	1.2	50.0000		113	80 - 119			
1,2,4-Trichlorobenzene	58.1800	5.0	1.1	50.0000		116	83 - 124			
1,2,4-Trimethylbenzene	49.1500	5.0	1.5	50.0000		98.3	87 - 114			
1,2-Dibromo-3-chloropropane	48.7600	10	1.6	50.0000		97.5	70 - 130			
1,2-Dibromoethane	47.4300	5.0	3.2	50.0000		94.9	81 - 117			
1,2-Dichlorobenzene	49.6500	5.0	1.1	50.0000		99.3	84 - 113			
1,2-Dichloroethane	41.5200	5.0	1.2	50.0000		83.0	77 - 126			
1,2-Dichloropropane	45.5800	5.0	1.8	50.0000		91.2	81 - 115			
1,3,5-Trimethylbenzene	49.4200	5.0	1.7	50.0000		98.8	85 - 115			
1,3-Dichlorobenzene	48.8100	5.0	1.3	50.0000		97.6	84 - 112			
1,3-Dichloropropane	48.5000	5.0	1.1	50.0000		97.0	84 - 110			
1,4-Dichlorobenzene	48.4500	5.0	1.2	50.0000		96.9	86 - 112			
2,2-Dichloropropane	50.0600	5.0	1.2	50.0000		100	59 - 139			
2-Chlorotoluene	46.3600	5.0	1.6	50.0000		92.7	82 - 111			
4-Chlorotoluene	46.3800	5.0	1.5	50.0000		92.8	81 - 113			
4-Isopropyltoluene	50.2900	5.0	2.3	50.0000		101	88 - 118			
Benzene	91.0800	5.0	0.64	100.000		91.1	83 - 112			
Bromobenzene	48.6600	5.0	1.1	50.0000		97.3	80 - 108			
Bromochloromethane	47.8200	5.0	0.64	50.0000		95.6	74 - 117			
Bromodichloromethane	45.4700	5.0	1.2	50.0000		90.9	83 - 112			
Bromoform	51.8000	5.0	0.80	50.0000		104	74 - 116			
Bromomethane	43.2800	5.0	2.5	50.0000		86.6	55 - 149			
Carbon disulfide	43.6500	5.0	3.5	50.0000		87.3	65 - 131			
Carbon tetrachloride	47.8200	5.0	1.2	50.0000		95.6	72 - 128			
Chlorobenzene	50.2800	5.0	1.0	50.0000		101	85 - 109			
Chloroethane	35.0500	5.0	1.1	50.0000		70.1	53 - 143			
Chloroform	44.3400	5.0	0.82	50.0000		88.7	79 - 117			
Chloromethane	33.7400	5.0	1.4	50.0000		67.5	50 - 134			
cis-1,2-Dichloroethene	46.5900	5.0	0.67	50.0000		93.2	75 - 116			
cis-1,3-Dichloropropene	46.9900	5.0	1.9	50.0000		94.0	80 - 118			
Di-isopropyl ether	40.8000	5.0	0.55	50.0000		81.6	72 - 123			
Dibromochloromethane	51.4000	5.0	1.0	50.0000		103	79 - 110			
Dibromomethane	44.9100	5.0	1.6	50.0000		89.8	82 - 114			
Dichlorodifluoromethane	33.8900	5.0	2.2	50.0000		67.8	42 - 144			
Ethyl Acetate	377.220	50	8.1	500.000		75.4	70 - 134			
Ethyl Ether	358.690	50	6.1	500.000		71.7	63 - 119			
Ethyl tert-butyl ether	43.7100	5.0	0.67	50.0000		87.4	61 - 136			
Ethylbenzene	99.6700	5.0	0.91	100.000		99.7	84 - 119			
Freon-113	41.5700	5.0	2.8	50.0000		83.1	71 - 126			
Hexachlorobutadiene	55.6200	5.0	2.5	50.0000		111	78 - 133			
Isopropylbenzene	49.0400	5.0	1.8	50.0000		98.1	73 - 123			

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0572 - MSVOA_S (continued)										
LCS (B8F0572-BS1) - Continued						Prepared: 6/22/2018 Analyzed: 6/22/2018				
m,p-Xylene	103.340	10	1.5	100.000		103	86 - 121			
Methylene chloride	44.2600	5.0	2.3	50.0000		88.5	47 - 137			
MTBE	43.7100	5.0	0.63	50.0000		87.4	67 - 124			
n-Butylbenzene	49.2200	5.0	2.4	50.0000		98.4	89 - 125			
n-Propylbenzene	47.7500	5.0	2.2	50.0000		95.5	81 - 116			
Naphthalene	53.3600	5.0	0.97	50.0000		107	70 - 130			
o-Xylene	100.920	5.0	0.87	100.000		101	84 - 114			
sec-Butylbenzene	49.6000	5.0	2.3	50.0000		99.2	84 - 118			
Styrene	51.5700	5.0	1.5	50.0000		103	82 - 117			
tert-Amyl methyl ether	44.5100	5.0	0.59	50.0000		89.0	60 - 129			
tert-Butanol	195.380	100	19	250.000		78.2	22 - 150			
tert-Butylbenzene	49.2000	5.0	2.0	50.0000		98.4	83 - 112			
Tetrachloroethene	57.9700	5.0	1.6	50.0000		116	75 - 117			
Toluene	93.3400	5.0	0.94	100.000		93.3	85 - 122			
trans-1,2-Dichloroethene	45.4700	5.0	0.59	50.0000		90.9	70 - 116			
trans-1,3-Dichloropropene	44.2200	5.0	2.1	50.0000		88.4	76 - 127			
Trichloroethene	52.3700	5.0	3.1	50.0000		105	79 - 116			
Trichlorofluoromethane	41.6200	5.0	1.4	50.0000		83.2	63 - 135			
Vinyl acetate	355.650	50	9.8	500.000		71.1	69 - 136			
Vinyl chloride	35.0400	5.0	1.7	50.0000		70.1	53 - 136			
Surrogate: 1,2-Dichloroethane-d4	*39.13*			*50.0000*		*78.3*	*58 - 144*			
Surrogate: 4-Bromofluorobenzene	*48.77*			*50.0000*		*97.5*	*60 - 137*			
Surrogate: Dibromofluoromethan	*43.27*			*50.0000*		*86.5*	*70 - 131*			
Surrogate: Toluene-d8	*46.15*			*50.0000*		*92.3*	*79 - 131*			
Matrix Spike (B8F0572-MS1)			**Source: 1802258-01**			Prepared: 6/22/2018 Analyzed: 6/22/2018				
1,1,1,2-Tetrachloroethane	24.8900	5.0	0.96	50.0000	ND	49.8	41 - 125			
1,1,1-Trichloroethane	26.8200	5.0	1.1	50.0000	ND	53.6	49 - 131			
1,1,2,2-Tetrachloroethane	27.6400	5.0	0.62	50.0000	ND	55.3	28 - 134			
1,1,2-Trichloroethane	28.0900	5.0	1.6	50.0000	ND	56.2	44 - 127			
1,1-Dichloroethane	31.7400	5.0	0.81	50.0000	ND	63.5	54 - 119			
1,1-Dichloroethene	30.8800	5.0	2.6	50.0000	ND	61.8	48 - 123			
1,1-Dichloropropene	27.8700	5.0	2.3	50.0000	ND	55.7	47 - 131			
1,2,3-Trichloropropane	29.5900	5.0	0.54	50.0000	ND	59.2	42 - 124			
1,2,3-Trichlorobenzene	11.1700	5.0	1.2	50.0000	ND	22.3	0 - 131			
1,2,4-Trichlorobenzene	11.3500	5.0	1.1	50.0000	ND	22.7	7 - 131			
1,2,4-Trimethylbenzene	17.9100	5.0	1.5	50.0000	ND	35.8	26 - 135			
1,2-Dibromo-3-chloropropane	27.0200	10	1.6	50.0000	ND	54.0	31 - 139			
1,2-Dibromoethane	28.3700	5.0	3.2	50.0000	ND	56.7	41 - 128			
1,2-Dichlorobenzene	16.6000	5.0	1.1	50.0000	ND	33.2	21 - 129			
1,2-Dichloroethane	30.1500	5.0	1.2	50.0000	ND	60.3	46 - 128			

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0572 - MSVOA_S (continued)										
Matrix Spike (B8F0572-MS1) - Continued			**Source: 1802258-01**		Prepared: 6/22/2018 Analyzed: 6/22/2018					
1,2-Dichloropropane	28.3000	5.0	1.8	50.0000	ND	56.6	52 - 118			
1,3,5-Trimethylbenzene	18.0800	5.0	1.7	50.0000	ND	36.2	26 - 136			
1,3-Dichlorobenzene	16.9200	5.0	1.3	50.0000	ND	33.8	22 - 129			
1,3-Dichloropropane	29.8900	5.0	1.1	50.0000	ND	59.8	47 - 120			
1,4-Dichlorobenzene	16.7300	5.0	1.2	50.0000	ND	33.5	22 - 130			
2,2-Dichloropropane	34.3400	5.0	1.2	50.0000	ND	68.7	38 - 139			
2-Chlorotoluene	17.4700	5.0	1.6	50.0000	ND	34.9	29 - 130			
4-Chlorotoluene	17.2600	5.0	1.5	50.0000	ND	34.5	28 - 130			
4-Isopropyltoluene	15.0000	5.0	2.3	50.0000	ND	30.0	23 - 141			
Benzene	57.1200	5.0	0.64	100.000	ND	57.1	52 - 119			
Bromobenzene	21.1200	5.0	1.1	50.0000	ND	42.2	33 - 122			
Bromochloromethane	33.6700	5.0	0.64	50.0000	ND	67.3	51 - 116			
Bromodichloromethane	27.9600	5.0	1.2	50.0000	ND	55.9	47 - 120			
Bromoform	26.3700	5.0	0.80	50.0000	ND	52.7	35 - 127			
Bromomethane	31.8300	5.0	2.5	50.0000	ND	63.7	34 - 143			
Carbon disulfide	29.8100	5.0	3.5	50.0000	ND	59.6	42 - 137			
Carbon tetrachloride	25.8100	5.0	1.2	50.0000	ND	51.6	44 - 138			
Chlorobenzene	21.6500	5.0	1.0	50.0000	ND	43.3	38 - 124			
Chloroethane	26.6800	5.0	1.1	50.0000	ND	53.4	37 - 140			
Chloroform	29.8300	5.0	0.82	50.0000	ND	59.7	54 - 118			
Chloromethane	27.7600	5.0	1.4	50.0000	ND	55.5	32 - 139			
cis-1,2-Dichloroethene	31.6800	5.0	0.67	50.0000	ND	63.4	51 - 116			
cis-1,3-Dichloropropene	26.0900	5.0	1.9	50.0000	ND	52.2	41 - 126			
Di-isopropyl ether	31.8000	5.0	0.55	50.0000	ND	63.6	50 - 122			
Dibromochloromethane	28.3700	5.0	1.0	50.0000	ND	56.7	42 - 118			
Dibromomethane	29.6000	5.0	1.6	50.0000	ND	59.2	46 - 122			
Dichlorodifluoromethane	25.6700	5.0	2.2	50.0000	ND	51.3	31 - 146			
Ethyl Acetate	215.650	50	8.1	500.000	ND	43.1	17 - 148			
Ethyl Ether	304.250	50	6.1	500.000	ND	60.8	42 - 120			
Ethyl tert-butyl ether	34.5200	5.0	0.67	50.0000	ND	69.0	41 - 133			
Ethylbenzene	40.9000	5.0	0.91	100.000	ND	40.9	38 - 136			
Freon-113	19.4300	5.0	2.8	50.0000	ND	38.9	43 - 139			M1
Hexachlorobutadiene	12.2300	5.0	2.5	50.0000	ND	24.5	2 - 135			
Isopropylbenzene	19.0600	5.0	1.8	50.0000	ND	38.1	31 - 136			
m,p-Xylene	40.6000	10	1.5	100.000	ND	40.6	36 - 137			
Methylene chloride	30.3900	5.0	2.3	50.0000	ND	60.8	28 - 137			
MTBE	37.0200	5.0	0.63	50.0000	ND	74.0	44 - 126			
n-Butylbenzene	13.5000	5.0	2.4	50.0000	ND	27.0	8 - 154			
n-Propylbenzene	17.0500	5.0	2.2	50.0000	ND	34.1	28 - 135			
Naphthalene	9.83000	5.0	0.97	50.0000	ND	19.7	7 - 136			
o-Xylene	39.5900	5.0	0.87	100.000	ND	39.6	35 - 129			
sec-Butylbenzene	15.2700	5.0	2.3	50.0000	ND	30.5	25 - 138			

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Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0572 - MSVOA_S (continued)										
Matrix Spike (B8F0572-MS1) - Continued			**Source: 1802258-01**		Prepared: 6/22/2018 Analyzed: 6/22/2018					
Styrene	19.4400	5.0	1.5	50.0000	ND	38.9	33 - 128			
tert-Amyl methyl ether	33.6200	5.0	0.59	50.0000	ND	67.2	41 - 124			
tert-Butanol	312.910	100	19	250.000	ND	125	8 - 157			
tert-Butylbenzene	16.1100	5.0	2.0	50.0000	ND	32.2	26 - 134			
Tetrachloroethene	23.0900	5.0	1.6	50.0000	ND	46.2	36 - 130			
Toluene	47.8500	5.0	0.94	100.000	ND	47.8	44 - 136			
trans-1,2-Dichloroethene	31.4800	5.0	0.59	50.0000	ND	63.0	49 - 119			
trans-1,3-Dichloropropene	24.9900	5.0	2.1	50.0000	ND	50.0	33 - 136			
Trichloroethene	27.7400	5.0	3.1	50.0000	ND	55.5	32 - 147			
Trichlorofluoromethane	25.9400	5.0	1.4	50.0000	ND	51.9	41 - 144			
Vinyl acetate	115.810	50	9.8	500.000	ND	23.2	0 - 146			
Vinyl chloride	29.0100	5.0	1.7	50.0000	ND	58.0	39 - 142			
Surrogate: 1,2-Dichloroethane-d4	*45.32*			*50.0000*		*90.6*	*58 - 144*			
Surrogate: 4-Bromofluorobenzene	*45.79*			*50.0000*		*91.6*	*60 - 137*			
Surrogate: Dibromofluoromethan	*44.58*			*50.0000*		*89.2*	*70 - 131*			
Surrogate: Toluene-d8	*46.53*			*50.0000*		*93.1*	*79 - 131*			
Matrix Spike Dup (B8F0572-MSD1)			**Source: 1802258-01**		Prepared: 6/22/2018 Analyzed: 6/22/2018					
1,1,1,2-Tetrachloroethane	19.8100	5.0	0.96	50.0000	ND	39.6	41 - 125	22.7	20	M1, R
1,1,1-Trichloroethane	21.9600	5.0	1.1	50.0000	ND	43.9	49 - 131	19.9	20	M1
1,1,2,2-Tetrachloroethane	21.7800	5.0	0.62	50.0000	ND	43.6	28 - 134	23.7	20	R
1,1,2-Trichloroethane	24.5300	5.0	1.6	50.0000	ND	49.1	44 - 127	13.5	20	
1,1-Dichloroethane	26.4000	5.0	0.81	50.0000	ND	52.8	54 - 119	18.4	20	M1
1,1-Dichloroethene	20.3100	5.0	2.6	50.0000	ND	40.6	48 - 123	41.3	20	M1, R
1,1-Dichloropropene	23.6800	5.0	2.3	50.0000	ND	47.4	47 - 131	16.3	20	
1,2,3-Trichloropropane	23.8600	5.0	0.54	50.0000	ND	47.7	42 - 124	21.4	20	R
1,2,3-Trichlorobenzene	7.19000	5.0	1.2	50.0000	ND	14.4	0 - 131	43.4	20	R
1,2,4-Trichlorobenzene	7.06000	5.0	1.1	50.0000	ND	14.1	7 - 131	46.6	20	R
1,2,4-Trimethylbenzene	12.9700	5.0	1.5	50.0000	ND	25.9	26 - 135	32.0	20	R, M1
1,2-Dibromo-3-chloropropane	18.6300	10	1.6	50.0000	ND	37.3	31 - 139	36.8	20	R
1,2-Dibromoethane	24.7000	5.0	3.2	50.0000	ND	49.4	41 - 128	13.8	20	
1,2-Dichlorobenzene	12.0500	5.0	1.1	50.0000	ND	24.1	21 - 129	31.8	20	R
1,2-Dichloroethane	27.3700	5.0	1.2	50.0000	ND	54.7	46 - 128	9.67	20	
1,2-Dichloropropane	24.9300	5.0	1.8	50.0000	ND	49.9	52 - 118	12.7	20	M1
1,3,5-Trimethylbenzene	13.3700	5.0	1.7	50.0000	ND	26.7	26 - 136	30.0	20	R
1,3-Dichlorobenzene	12.4400	5.0	1.3	50.0000	ND	24.9	22 - 129	30.5	20	R
1,3-Dichloropropane	25.6200	5.0	1.1	50.0000	ND	51.2	47 - 120	15.4	20	
1,4-Dichlorobenzene	12.3200	5.0	1.2	50.0000	ND	24.6	22 - 130	30.4	20	R
2,2-Dichloropropane	27.7800	5.0	1.2	50.0000	ND	55.6	38 - 139	21.1	20	R
2-Chlorotoluene	13.0800	5.0	1.6	50.0000	ND	26.2	29 - 130	28.7	20	M1, R
4-Chlorotoluene	12.7700	5.0	1.5	50.0000	ND	25.5	28 - 130	29.9	20	M1, R

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San Diego , CA 92101		Reported :	07/13/2018

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0572 - MSVOA_S (continued)										
Matrix Spike Dup (B8F0572-MSD1) - Continued			**Source: 1802258-01**		Prepared: 6/22/2018 Analyzed: 6/22/2018					
4-Isopropyltoluene	10.4600	5.0	2.3	50.0000	ND	20.9	23 - 141	35.7	20	M1, R
Benzene	47.8400	5.0	0.64	100.000	ND	47.8	52 - 119	17.7	20	M1
Bromobenzene	15.7800	5.0	1.1	50.0000	ND	31.6	33 - 122	28.9	20	M1, R
Bromochloromethane	29.3800	5.0	0.64	50.0000	ND	58.8	51 - 116	13.6	20	
Bromodichloromethane	24.0300	5.0	1.2	50.0000	ND	48.1	47 - 120	15.1	20	
Bromoform	21.7800	5.0	0.80	50.0000	ND	43.6	35 - 127	19.1	20	
Bromomethane	22.4600	5.0	2.5	50.0000	ND	44.9	34 - 143	34.5	20	R
Carbon disulfide	18.2500	5.0	3.5	50.0000	ND	36.5	42 - 137	48.1	20	M1, R
Carbon tetrachloride	22.1700	5.0	1.2	50.0000	ND	44.3	44 - 138	15.2	20	
Chlorobenzene	17.9000	5.0	1.0	50.0000	ND	35.8	38 - 124	19.0	20	M1
Chloroethane	23.1900	5.0	1.1	50.0000	ND	46.4	37 - 140	14.0	20	
Chloroform	24.6800	5.0	0.82	50.0000	ND	49.4	54 - 118	18.9	20	M1
Chloromethane	22.7000	5.0	1.4	50.0000	ND	45.4	32 - 139	20.1	20	R
cis-1,2-Dichloroethene	25.9300	5.0	0.67	50.0000	ND	51.9	51 - 116	20.0	20	
cis-1,3-Dichloropropene	20.8800	5.0	1.9	50.0000	ND	41.8	41 - 126	22.2	20	R
Di-isopropyl ether	28.2000	5.0	0.55	50.0000	ND	56.4	50 - 122	12.0	20	
Dibromochloromethane	23.8900	5.0	1.0	50.0000	ND	47.8	42 - 118	17.1	20	
Dibromomethane	27.5600	5.0	1.6	50.0000	ND	55.1	46 - 122	7.14	20	
Dichlorodifluoromethane	20.7800	5.0	2.2	50.0000	ND	41.6	31 - 146	21.1	20	R
Ethyl Acetate	67.3300	50	8.1	500.000	ND	13.5	17 - 148	105	20	M1, R
Ethyl Ether	253.540	50	6.1	500.000	ND	50.7	42 - 120	18.2	20	
Ethyl tert-butyl ether	30.8800	5.0	0.67	50.0000	ND	61.8	41 - 133	11.1	20	
Ethylbenzene	33.2600	5.0	0.91	100.000	ND	33.3	38 - 136	20.6	20	M1, R
Freon-113	12.4500	5.0	2.8	50.0000	ND	24.9	43 - 139	43.8	20	M1, R
Hexachlorobutadiene	7.89000	5.0	2.5	50.0000	ND	15.8	2 - 135	43.1	20	R
Isopropylbenzene	14.2400	5.0	1.8	50.0000	ND	28.5	31 - 136	28.9	20	M1, R
m,p-Xylene	32.6900	10	1.5	100.000	ND	32.7	36 - 137	21.6	20	M1, R
Methylene chloride	25.4900	5.0	2.3	50.0000	ND	51.0	28 - 137	17.5	20	
MTBE	34.1800	5.0	0.63	50.0000	ND	68.4	44 - 126	7.98	20	
n-Butylbenzene	9.24000	5.0	2.4	50.0000	ND	18.5	8 - 154	37.5	20	R
n-Propylbenzene	12.9900	5.0	2.2	50.0000	ND	26.0	28 - 135	27.0	20	M1, R
Naphthalene	5.38000	5.0	0.97	50.0000	ND	10.8	7 - 136	58.5	20	R
o-Xylene	31.7800	5.0	0.87	100.000	ND	31.8	35 - 129	21.9	20	M1, R
sec-Butylbenzene	11.0800	5.0	2.3	50.0000	ND	22.2	25 - 138	31.8	20	M1, R
Styrene	15.5200	5.0	1.5	50.0000	ND	31.0	33 - 128	22.4	20	M1, R
tert-Amyl methyl ether	30.8200	5.0	0.59	50.0000	ND	61.6	41 - 124	8.69	20	
tert-Butanol	277.800	100	19	250.000	ND	111	8 - 157	11.9	20	
tert-Butylbenzene	11.8800	5.0	2.0	50.0000	ND	23.8	26 - 134	30.2	20	M1, R
Tetrachloroethene	18.9200	5.0	1.6	50.0000	ND	37.8	36 - 130	19.9	20	
Toluene	39.4800	5.0	0.94	100.000	ND	39.5	44 - 136	19.2	20	M1
trans-1,2-Dichloroethene	25.7000	5.0	0.59	50.0000	ND	51.4	49 - 119	20.2	20	R
trans-1,3-Dichloropropene	21.1800	5.0	2.1	50.0000	ND	42.4	33 - 136	16.5	20	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0572 - MSVOA_S (continued)										
Matrix Spike Dup (B8F0572-MSD1) - Continued			**Source: 1802258-01**		Prepared: 6/22/2018 Analyzed: 6/22/2018					
Trichloroethene	22.7900	5.0	3.1	50.0000	ND	45.6	32 - 147	19.6	20	
Trichlorofluoromethane	21.6800	5.0	1.4	50.0000	ND	43.4	41 - 144	17.9	20	
Vinyl acetate	18.7800	50	9.8	500.000	ND	3.76	0 - 146	144	20	R, U
Vinyl chloride	23.7200	5.0	1.7	50.0000	ND	47.4	39 - 142	20.1	20	R
Surrogate: 1,2-Dichloroethane-d4	*45.85*			*50.0000*		*91.7*	*58 - 144*			
Surrogate: 4-Bromofluorobenzene	*46.57*			*50.0000*		*93.1*	*60 - 137*			
Surrogate: Dibromofluoromethan	*45.22*			*50.0000*		*90.4*	*70 - 131*			
Surrogate: Toluene-d8	*47.50*			*50.0000*		*95.0*	*79 - 131*			

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Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

SPLP Semivolatile Organic Compounds by EPA 8270C - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8G0168 - MSSEMI_LEACHEATE_W										
Blank (B8G0168-BLK1)					Prepared: 7/9/2018 Analyzed: 7/9/2018					
Fluoranthene	ND	0.01	0.003							U
Pyrene	ND	0.01	0.003							U
Surrogate: 1,2-Dichlorobenzene-d	*0.04931*			*0.100000*		*49.3*	*32 - 88*			
Surrogate: 2,4,6-Tribromophenol	*0.08979*			*9.75000E-2*		*92.1*	*46 - 136*			
Surrogate: 2-Chlorophenol-d4	*0.04644*			*9.75000E-2*		*47.6*	*31 - 76*			
Surrogate: 2-Fluorobiphenyl	*0.05865*			*0.100000*		*58.6*	*42 - 99*			
Surrogate: 2-Fluorophenol	*0.02825*			*9.75000E-2*		*29.0*	*15 - 47*			
Surrogate: 4-Terphenyl-d14	*0.1150*			*0.100000*		*115*	*58 - 118*			
Surrogate: Nitrobenzene-d5	*0.05785*			*0.100000*		*57.8*	*35 - 99*			
Surrogate: Phenol-d6	*0.01787*			*9.75000E-2*		*18.3*	*10 - 36*			
LCS (B8G0168-BS1)					Prepared: 7/9/2018 Analyzed: 7/9/2018					
Fluoranthene	0.09692	0.01	0.003	0.100000		96.9	65 - 115			
Pyrene	0.09646	0.01	0.003	0.100000		96.5	64 - 116			
Surrogate: 1,2-Dichlorobenzene-d	*0.06267*			*0.100000*		*62.7*	*32 - 88*			
Surrogate: 2,4,6-Tribromophenol	*0.09588*			*9.75000E-2*		*98.3*	*46 - 136*			
Surrogate: 2-Chlorophenol-d4	*0.06123*			*9.75000E-2*		*62.8*	*31 - 76*			
Surrogate: 2-Fluorobiphenyl	*0.08392*			*0.100000*		*83.9*	*42 - 99*			
Surrogate: 2-Fluorophenol	*0.03329*			*9.75000E-2*		*34.1*	*15 - 47*			
Surrogate: 4-Terphenyl-d14	*0.1087*			*0.100000*		*109*	*58 - 118*			
Surrogate: Nitrobenzene-d5	*0.07234*			*0.100000*		*72.3*	*35 - 99*			
Surrogate: Phenol-d6	*0.02632*			*9.75000E-2*		*27.0*	*10 - 36*			

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San Diego , CA 92101		Reported :	07/13/2018

Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0650 - MSSEMI_S										
Blank (B8F0650-BLK1)					Prepared: 6/25/2018 Analyzed: 6/25/2018					
2-Methylnaphthalene	ND	5.0	0.60							U
Acenaphthene	ND	5.0	0.41							U
Acenaphthylene	ND	5.0	0.41							U
Anthracene	ND	5.0	0.56							U
Benzo(a)anthracene	ND	5.0	0.56							U
Benzo(a)pyrene	ND	5.0	0.69							U
Benzo(b)fluoranthene	ND	5.0	2.2							U
Benzo(g,h,i)perylene	ND	5.0	0.80							U
Benzo(k)fluoranthene	ND	5.0	0.70							U
Chrysene	ND	5.0	0.61							U
Dibenz(a,h)anthracene	ND	5.0	0.88							U
Fluoranthene	ND	5.0	0.45							U
Fluorene	ND	5.0	0.35							U
Indeno(1,2,3-cd)pyrene	ND	5.0	0.82							U
Naphthalene	ND	5.0	0.56							U
Phenanthrene	ND	5.0	0.34							U
Pyrene	ND	5.0	0.51							U
Surrogate: 1,2-Dichlorobenzene-d	*29.46*			*33.3333*		*88.4*	*25 - 99*			
Surrogate: 2-Fluorobiphenyl	*32.79*			*33.3333*		*98.4*	*27 - 118*			
Surrogate: Nitrobenzene-d5	*23.88*			*33.3333*		*71.6*	*14 - 127*			
Surrogate: 4-Terphenyl-d14	*32.68*			*33.3333*		*98.0*	*31 - 123*			
LCS (B8F0650-BS1)					Prepared: 6/25/2018 Analyzed: 6/25/2018					
2-Methylnaphthalene	16.8500	5.0	0.60	33.3333		50.6	15 - 111			
Acenaphthene	21.9973	5.0	0.41	33.3333		66.0	35 - 94			
Acenaphthylene	22.1560	5.0	0.41	33.3333		66.5	36 - 95			
Anthracene	25.8720	5.0	0.56	33.3333		77.6	44 - 95			
Benzo(a)anthracene	27.0190	5.0	0.56	33.3333		81.1	53 - 106			
Benzo(a)pyrene	23.3993	5.0	0.69	33.3333		70.2	47 - 101			
Benzo(b)fluoranthene	24.2490	5.0	2.2	33.3333		72.7	60 - 106			
Benzo(g,h,i)perylene	24.4357	5.0	0.80	33.3333		73.3	55 - 109			
Benzo(k)fluoranthene	29.6377	5.0	0.70	33.3333		88.9	47 - 128			
Chrysene	27.3333	5.0	0.61	33.3333		82.0	47 - 109			
Dibenz(a,h)anthracene	25.6803	5.0	0.88	33.3333		77.0	55 - 112			
Fluoranthene	29.8633	5.0	0.45	33.3333		89.6	51 - 105			
Fluorene	24.1417	5.0	0.35	33.3333		72.4	43 - 96			
Indeno(1,2,3-cd)pyrene	32.3907	5.0	0.82	33.3333		97.2	57 - 105			
Naphthalene	20.0170	5.0	0.56	33.3333		60.1	38 - 104			
Phenanthrene	26.8670	5.0	0.34	33.3333		80.6	45 - 101			
Pyrene	29.9843	5.0	0.51	33.3333		90.0	48 - 107			
Surrogate: 1,2-Dichlorobenzene-d	*22.78*			*33.3333*		*68.3*	*25 - 99*			

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)		Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0650 - MSSEMI_S (continued)										
LCS (B8F0650-BS1) - Continued					Prepared: 6/25/2018 Analyzed: 6/25/2018					
Surrogate: 2-Fluorobiphenyl	*25.35*			*33.3333*		*76.1*	*27 - 118*			
Surrogate: Nitrobenzene-d5	*18.48*			*33.3333*		*55.4*	*14 - 127*			
Surrogate: 4-Terphenyl-d14	*28.52*			*33.3333*		*85.6*	*31 - 123*			
Matrix Spike (B8F0650-MS1)			**Source: 1802260-12**		Prepared: 6/25/2018 Analyzed: 6/25/2018					
2-Methylnaphthalene	209.793	100	12	33.3333	244.720	-105	21 - 101			M2
Acenaphthene	31.5467	100	8.1	33.3333	9.93333	64.8	14 - 117			U
Acenaphthylene	31.1933	100	8.2	33.3333	13.1867	54.0	29 - 100			U
Anthracene	64.7800	100	11	33.3333	53.5333	33.7	13 - 118			U
Benzo(a)anthracene	58.6467	100	11	33.3333	40.7067	53.8	6 - 127			U
Benzo(a)pyrene	36.3800	100	14	33.3333	18.3000	54.2	0 - 126			U
Benzo(b)fluoranthene	ND	100	43	33.3333	ND	NR	8 - 127			M2, U
Benzo(g,h,i)perylene	40.3667	100	16	33.3333	28.5800	35.4	0 - 136			U
Benzo(k)fluoranthene	ND	100	14	33.3333	26.0667	-78.2	4 - 134			M2, U
Chrysene	118.847	100	12	33.3333	95.5000	70.0	0 - 153			
Dibenz(a,h)anthracene	26.5000	100	18	33.3333	ND	79.5	15 - 130			U
Fluoranthene	115.020	100	9.0	33.3333	123.713	-26.1	0 - 137			M2
Fluorene	51.2067	100	7.0	33.3333	31.8067	58.2	22 - 112			U
Indeno(1,2,3-cd)pyrene	40.9933	100	16	33.3333	18.0667	68.8	7 - 130			U
Naphthalene	26.2067	100	11	33.3333	ND	78.6	28 - 111			U
Phenanthrene	170.147	100	6.8	33.3333	158.487	35.0	12 - 122			
Pyrene	235.460	100	10	33.3333	270.113	-104	5 - 125			M2
Surrogate: 1,2-Dichlorobenzene-d	*0.000*			*33.3333*		*NR*	*25 - 99*			S4, U
Surrogate: 2-Fluorobiphenyl	*0.000*			*33.3333*		*NR*	*27 - 118*			S4, U
Surrogate: Nitrobenzene-d5	*0.000*			*33.3333*		*NR*	*14 - 127*			S4, U
Surrogate: 4-Terphenyl-d14	*0.000*			*33.3333*		*NR*	*31 - 123*			S4, U
Matrix Spike Dup (B8F0650-MSD1)			**Source: 1802260-12**		Prepared: 6/25/2018 Analyzed: 6/25/2018					
2-Methylnaphthalene	142.020	100	12	33.3333	244.720	-308	21 - 101	38.5	20	M2, R
Acenaphthene	28.2400	100	8.1	33.3333	9.93333	54.9	14 - 117	11.1	20	U
Acenaphthylene	28.3800	100	8.2	33.3333	13.1867	45.6	29 - 100	9.44	20	U
Anthracene	60.7800	100	11	33.3333	53.5333	21.7	13 - 118	6.37	20	U
Benzo(a)anthracene	59.4600	100	11	33.3333	40.7067	56.3	6 - 127	1.38	20	U
Benzo(a)pyrene	29.2133	100	14	33.3333	18.3000	32.7	0 - 126	21.9	20	R, U
Benzo(b)fluoranthene	ND	100	43	33.3333	ND	NR	8 - 127	NR	20	M2, U
Benzo(g,h,i)perylene	37.2333	100	16	33.3333	28.5800	26.0	0 - 136	8.08	20	U
Benzo(k)fluoranthene	ND	100	14	33.3333	26.0667	-78.2	4 - 134	NR	20	M2, U
Chrysene	103.720	100	12	33.3333	95.5000	24.7	0 - 153	13.6	20	
Dibenz(a,h)anthracene	23.5067	100	18	33.3333	ND	70.5	15 - 130	12.0	20	U
Fluoranthene	108.013	100	9.0	33.3333	123.713	-47.1	0 - 137	6.28	20	M2
Fluorene	46.1000	100	7.0	33.3333	31.8067	42.9	22 - 112	10.5	20	U
Indeno(1,2,3-cd)pyrene	32.2267	100	16	33.3333	18.0667	42.5	7 - 130	23.9	20	R, U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0650 - MSSEMI_S (continued)										
Matrix Spike Dup (B8F0650-MSD1) - Continued			**Source: 1802260-12**		Prepared: 6/25/2018 Analyzed: 6/25/2018					
Naphthalene	19.7867	100	11	33.3333	ND	59.4	28 - 111	27.9	20	R, U
Phenanthrene	151.500	100	6.8	33.3333	158.487	-21.0	12 - 122	11.6	20	M2
Pyrene	226.767	100	10	33.3333	270.113	-130	5 - 125	3.76	20	M2
Surrogate: 1,2-Dichlorobenzene-d	*0.000*			*33.3333*		*NR*	*25 - 99*			S4, U
Surrogate: 2-Fluorobiphenyl	*0.000*			*33.3333*		*NR*	*27 - 118*			S4, U
Surrogate: Nitrobenzene-d5	*0.000*			*33.3333*		*NR*	*14 - 127*			S4, U
Surrogate: 4-Terphenyl-d14	*0.000*			*33.3333*		*NR*	*31 - 123*			S4, U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/13/2018

Notes and Definitions

U	Analyte included in the analysis, but not detected
S4	Surrogate was diluted out.
S1	Surrogate recovery was above laboratory acceptance limit. No target analyte was detected in the sample.
R3	RPD value outside acceptance criteria. Calculation is based on raw values. The analytical batch was validated by the Laboratory Control Sample (LCS).
R	RPD value outside acceptance criteria. Calculation is based on raw values.
M2	Matrix spike recovery outside of acceptance limit due to possible matrix interference. The analytical batch was validated by the laboratory control sample.
M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
D6	Sample required dilution due to high concentration of target analyte.
D5	Sample diluted due to failing internal standard in the original run.
D1	Sample required dilution due to possible matrix interference.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

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WORK ORDER NUMBER: 18-06-1646

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Advanced Technology Laboratories

Client Project Name: 1802258

Attention: Rachelle Arada
3275 Walnut Street
Signal Hill, CA 90755-5225

Approved for release on 07/09/2018 by:
Lori Thompson
Project Manager

ResultLink

Email your PM

Eurofins Calscience (Calscience) certifies that the test results provided in this report meet all NELAC Institute requirements for parameters for which accreditation is required or available. Any exceptions to NELAC Institute requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

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Work Order Number: 18-06-1646

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Work Order Narrative

Work Order: 18-06-1646 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 06/22/18. They were assigned to Work Order 18-06-1646.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.

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Sample Summary

Client:	Advanced Technology Laboratories 3275 Walnut Street Signal Hill, CA 90755-5225	Work Order:	18-06-1646
		Project Name:	1802258
		PO Number:	SC12897
		Date/Time Received:	06/22/18 10:35
		Number of Containers:	15
Attn:	Rachelle Arada		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
1802258-20 / EB-061918	18-06-1646-1	06/19/18 13:00	1	Aqueous
1802258-21 / SW-061918	18-06-1646-2	06/19/18 13:00	1	Aqueous
1802258-22 / TP-16-0-0.5	18-06-1646-3	06/19/18 13:50	1	Solid
1802258-23 / TP-16-0.5-3.5	18-06-1646-4	06/19/18 13:55	1	Solid
1802258-24 / TP-16-3.5-5	18-06-1646-5	06/19/18 13:58	1	Solid
1802258-26 / TP-19-0-4	18-06-1646-6	06/19/18 08:40	1	Solid
1802258-27 / TP-19-4-8	18-06-1646-7	06/19/18 08:45	1	Solid
1802258-28 / TP-19-8-10	18-06-1646-8	06/19/18 08:50	1	Solid
1802258-29 / TP-25-0-4	18-06-1646-9	06/19/18 10:40	1	Solid
1802258-30 / TP-25-4-6	18-06-1646-10	06/19/18 10:45	1	Solid
1802258-54 / TP-9-0-0.25	18-06-1646-11	06/20/18 12:30	1	Solid
1802258-55 / TP-9-0.25-2.5	18-06-1646-12	06/20/18 12:35	1	Solid
1802258-56 / TP-9-2.5-7	18-06-1646-13	06/20/18 12:40	1	Solid
1802258-59 / TP-21-0-5	18-06-1646-14	06/20/18 13:15	1	Solid
1802258-60 / TP-21-5-9	18-06-1646-15	06/20/18 13:20	1	Solid

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 1 of 42

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-22 / TP-16-0-0.5	**18-06-1646-3-A**	**06/19/18 13:50**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 15:57**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 2 of 42

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	62	32-143	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 3 of 42

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	59	14-146	
2-Fluorophenol	43	15-138	
Nitrobenzene-d5	33	18-162	
Phenol-d6	56	17-141	
p-Terphenyl-d14	68	34-148	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 4 of 42

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-23 / TP-16-0.5-3.5	**18-06-1646-4-A**	**06/19/18 13:55**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 16:15**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0099	1.00	
1,2-Dichlorobenzene	ND	0.0099	1.00	
1,3-Dichlorobenzene	ND	0.0099	1.00	
1,4-Dichlorobenzene	ND	0.0099	1.00	
1-Methylnaphthalene	ND	0.0099	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.0099	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.0099	1.00	
2-Chloronaphthalene	ND	0.0099	1.00	
2-Chlorophenol	ND	0.0099	1.00	
2-Methylnaphthalene	ND	0.0099	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.099	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0099	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0099	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0099	1.00	
Acenaphthylene	ND	0.0099	1.00	
Aniline	ND	0.0099	1.00	
Anthracene	ND	0.0099	1.00	
Azobenzene	ND	0.0099	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 5 of 42

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0099	1.00	
Benzo (a) Pyrene	ND	0.0099	1.00	
Benzo (b) Fluoranthene	ND	0.0099	1.00	
Benzo (g,h,i) Perylene	ND	0.0099	1.00	
Benzo (k) Fluoranthene	ND	0.0099	1.00	
Benzyl Alcohol	ND	0.0099	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0099	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0099	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0099	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.0099	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.0099	1.00	
Dibenzofuran	ND	0.0099	1.00	
Diethyl Phthalate	ND	0.0099	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.0099	1.00	
Fluorene	ND	0.0099	1.00	
Hexachloro-1,3-Butadiene	ND	0.0099	1.00	
Hexachlorobenzene	ND	0.0099	1.00	
Hexachlorocyclopentadiene	ND	0.0099	1.00	
Hexachloroethane	ND	0.0099	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0099	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0099	1.00	
N-Nitrosodimethylamine	ND	0.0099	1.00	
N-Nitrosodiphenylamine	ND	0.0099	1.00	
Naphthalene	ND	0.0099	1.00	
Nitrobenzene	ND	0.0099	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.0099	1.00	
Phenol	ND	0.0099	1.00	
Pyrene	ND	0.0099	1.00	
Pyridine	ND	0.0099	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	44	32-143	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 6 of 42

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	43	14-146	
2-Fluorophenol	44	15-138	
Nitrobenzene-d5	30	18-162	
Phenol-d6	57	17-141	
p-Terphenyl-d14	59	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 7 of 42

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-24 / TP-16-3.5-5	**18-06-1646-5-A**	**06/19/18 13:58**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 16:33**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0098	1.00	
1,2-Dichlorobenzene	ND	0.0098	1.00	
1,3-Dichlorobenzene	ND	0.0098	1.00	
1,4-Dichlorobenzene	ND	0.0098	1.00	
1-Methylnaphthalene	ND	0.0098	1.00	
2,4,5-Trichlorophenol	ND	0.24	1.00	
2,4,6-Trichlorophenol	ND	0.24	1.00	
2,4-Dichlorophenol	ND	0.24	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.24	1.00	
2,4-Dinitrotoluene	ND	0.0098	1.00	
2,6-Dichlorophenol	ND	0.24	1.00	
2,6-Dinitrotoluene	ND	0.0098	1.00	
2-Chloronaphthalene	ND	0.0098	1.00	
2-Chlorophenol	ND	0.0098	1.00	
2-Methylnaphthalene	ND	0.0098	1.00	
2-Methylphenol	ND	0.24	1.00	
2-Nitroaniline	ND	0.24	1.00	
2-Nitrophenol	ND	0.24	1.00	
3,3'-Dichlorobenzidine	ND	0.24	1.00	
3-Nitroaniline	ND	0.24	1.00	
3/4-Methylphenol	ND	0.098	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0098	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.24	1.00	
4-Chloro-3-Methylphenol	ND	0.24	1.00	
4-Chloroaniline	ND	0.24	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0098	1.00	
4-Nitroaniline	ND	0.24	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0098	1.00	
Acenaphthylene	ND	0.0098	1.00	
Aniline	ND	0.0098	1.00	
Anthracene	ND	0.0098	1.00	
Azobenzene	ND	0.0098	1.00	
Benzidine	ND	0.24	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 8 of 42

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0098	1.00	
Benzo (a) Pyrene	ND	0.0098	1.00	
Benzo (b) Fluoranthene	ND	0.0098	1.00	
Benzo (g,h,i) Perylene	ND	0.0098	1.00	
Benzo (k) Fluoranthene	ND	0.0098	1.00	
Benzyl Alcohol	ND	0.0098	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0098	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0098	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0098	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.24	1.00	
Butyl Benzyl Phthalate	ND	0.24	1.00	
Chrysene	ND	0.0098	1.00	
Di-n-Butyl Phthalate	ND	0.24	1.00	
Di-n-Octyl Phthalate	ND	0.24	1.00	
Dibenz (a,h) Anthracene	ND	0.0098	1.00	
Dibenzofuran	ND	0.0098	1.00	
Diethyl Phthalate	ND	0.0098	1.00	
Dimethyl Phthalate	0.26	0.24	1.00	
Fluoranthene	ND	0.0098	1.00	
Fluorene	ND	0.0098	1.00	
Hexachloro-1,3-Butadiene	ND	0.0098	1.00	
Hexachlorobenzene	ND	0.0098	1.00	
Hexachlorocyclopentadiene	ND	0.0098	1.00	
Hexachloroethane	ND	0.0098	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0098	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0098	1.00	
N-Nitrosodimethylamine	ND	0.0098	1.00	
N-Nitrosodiphenylamine	ND	0.0098	1.00	
Naphthalene	ND	0.0098	1.00	
Nitrobenzene	ND	0.0098	1.00	
Pentachlorophenol	ND	0.24	1.00	
Phenanthrene	ND	0.0098	1.00	
Phenol	ND	0.0098	1.00	
Pyrene	ND	0.0098	1.00	
Pyridine	ND	0.0098	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	39	32-143	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 9 of 42

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	46	14-146	
2-Fluorophenol	44	15-138	
Nitrobenzene-d5	30	18-162	
Phenol-d6	60	17-141	
p-Terphenyl-d14	63	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 10 of 42

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-26 / TP-19-0-4	**18-06-1646-6-A**	**06/19/18 08:40**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 16:51**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0098	1.00	
1,2-Dichlorobenzene	ND	0.0098	1.00	
1,3-Dichlorobenzene	ND	0.0098	1.00	
1,4-Dichlorobenzene	ND	0.0098	1.00	
1-Methylnaphthalene	ND	0.0098	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.0098	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.0098	1.00	
2-Chloronaphthalene	ND	0.0098	1.00	
2-Chlorophenol	ND	0.0098	1.00	
2-Methylnaphthalene	ND	0.0098	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.098	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0098	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0098	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0098	1.00	
Acenaphthylene	ND	0.0098	1.00	
Aniline	ND	0.0098	1.00	
Anthracene	ND	0.0098	1.00	
Azobenzene	ND	0.0098	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 11 of 42

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0098	1.00	
Benzo (a) Pyrene	ND	0.0098	1.00	
Benzo (b) Fluoranthene	ND	0.0098	1.00	
Benzo (g,h,i) Perylene	ND	0.0098	1.00	
Benzo (k) Fluoranthene	ND	0.0098	1.00	
Benzyl Alcohol	ND	0.0098	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0098	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0098	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0098	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.0098	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.0098	1.00	
Dibenzofuran	ND	0.0098	1.00	
Diethyl Phthalate	ND	0.0098	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.0098	1.00	
Fluorene	ND	0.0098	1.00	
Hexachloro-1,3-Butadiene	ND	0.0098	1.00	
Hexachlorobenzene	ND	0.0098	1.00	
Hexachlorocyclopentadiene	ND	0.0098	1.00	
Hexachloroethane	ND	0.0098	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0098	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0098	1.00	
N-Nitrosodimethylamine	ND	0.0098	1.00	
N-Nitrosodiphenylamine	ND	0.0098	1.00	
Naphthalene	ND	0.0098	1.00	
Nitrobenzene	ND	0.0098	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.0098	1.00	
Phenol	ND	0.0098	1.00	
Pyrene	ND	0.0098	1.00	
Pyridine	ND	0.0098	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	40	32-143	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 12 of 42

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	45	14-146	
2-Fluorophenol	43	15-138	
Nitrobenzene-d5	29	18-162	
Phenol-d6	57	17-141	
p-Terphenyl-d14	62	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 13 of 42

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-27 / TP-19-4-8	**18-06-1646-7-A**	**06/19/18 08:45**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 17:09**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0098	1.00	
1,2-Dichlorobenzene	ND	0.0098	1.00	
1,3-Dichlorobenzene	ND	0.0098	1.00	
1,4-Dichlorobenzene	ND	0.0098	1.00	
1-Methylnaphthalene	ND	0.0098	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.0098	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.0098	1.00	
2-Chloronaphthalene	ND	0.0098	1.00	
2-Chlorophenol	ND	0.0098	1.00	
2-Methylnaphthalene	ND	0.0098	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.098	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0098	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0098	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0098	1.00	
Acenaphthylene	ND	0.0098	1.00	
Aniline	ND	0.0098	1.00	
Anthracene	ND	0.0098	1.00	
Azobenzene	ND	0.0098	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 14 of 42

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0098	1.00	
Benzo (a) Pyrene	ND	0.0098	1.00	
Benzo (b) Fluoranthene	ND	0.0098	1.00	
Benzo (g,h,i) Perylene	ND	0.0098	1.00	
Benzo (k) Fluoranthene	ND	0.0098	1.00	
Benzyl Alcohol	ND	0.0098	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0098	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0098	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0098	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.0098	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.0098	1.00	
Dibenzofuran	ND	0.0098	1.00	
Diethyl Phthalate	ND	0.0098	1.00	
Dimethyl Phthalate	0.29	0.25	1.00	
Fluoranthene	ND	0.0098	1.00	
Fluorene	ND	0.0098	1.00	
Hexachloro-1,3-Butadiene	ND	0.0098	1.00	
Hexachlorobenzene	ND	0.0098	1.00	
Hexachlorocyclopentadiene	ND	0.0098	1.00	
Hexachloroethane	ND	0.0098	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0098	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0098	1.00	
N-Nitrosodimethylamine	ND	0.0098	1.00	
N-Nitrosodiphenylamine	ND	0.0098	1.00	
Naphthalene	ND	0.0098	1.00	
Nitrobenzene	ND	0.0098	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.0098	1.00	
Phenol	ND	0.0098	1.00	
Pyrene	ND	0.0098	1.00	
Pyridine	ND	0.0098	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	51	32-143	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 15 of 42

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	47	14-146	
2-Fluorophenol	54	15-138	
Nitrobenzene-d5	40	18-162	
Phenol-d6	69	17-141	
p-Terphenyl-d14	63	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 16 of 42

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-28 / TP-19-8-10	**18-06-1646-8-A**	**06/19/18 08:50**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 17:28**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0098	1.00	
1,2-Dichlorobenzene	ND	0.0098	1.00	
1,3-Dichlorobenzene	ND	0.0098	1.00	
1,4-Dichlorobenzene	ND	0.0098	1.00	
1-Methylnaphthalene	ND	0.0098	1.00	
2,4,5-Trichlorophenol	ND	0.24	1.00	
2,4,6-Trichlorophenol	ND	0.24	1.00	
2,4-Dichlorophenol	ND	0.24	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.24	1.00	
2,4-Dinitrotoluene	ND	0.0098	1.00	
2,6-Dichlorophenol	ND	0.24	1.00	
2,6-Dinitrotoluene	ND	0.0098	1.00	
2-Chloronaphthalene	ND	0.0098	1.00	
2-Chlorophenol	ND	0.0098	1.00	
2-Methylnaphthalene	ND	0.0098	1.00	
2-Methylphenol	ND	0.24	1.00	
2-Nitroaniline	ND	0.24	1.00	
2-Nitrophenol	ND	0.24	1.00	
3,3'-Dichlorobenzidine	ND	0.24	1.00	
3-Nitroaniline	ND	0.24	1.00	
3/4-Methylphenol	ND	0.098	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0098	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.24	1.00	
4-Chloro-3-Methylphenol	ND	0.24	1.00	
4-Chloroaniline	ND	0.24	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0098	1.00	
4-Nitroaniline	ND	0.24	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0098	1.00	
Acenaphthylene	ND	0.0098	1.00	
Aniline	ND	0.0098	1.00	
Anthracene	ND	0.0098	1.00	
Azobenzene	ND	0.0098	1.00	
Benzidine	ND	0.24	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 17 of 42

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0098	1.00	
Benzo (a) Pyrene	ND	0.0098	1.00	
Benzo (b) Fluoranthene	ND	0.0098	1.00	
Benzo (g,h,i) Perylene	ND	0.0098	1.00	
Benzo (k) Fluoranthene	ND	0.0098	1.00	
Benzyl Alcohol	ND	0.0098	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0098	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0098	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0098	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.24	1.00	
Butyl Benzyl Phthalate	ND	0.24	1.00	
Chrysene	ND	0.0098	1.00	
Di-n-Butyl Phthalate	ND	0.24	1.00	
Di-n-Octyl Phthalate	ND	0.24	1.00	
Dibenz (a,h) Anthracene	ND	0.0098	1.00	
Dibenzofuran	ND	0.0098	1.00	
Diethyl Phthalate	ND	0.0098	1.00	
Dimethyl Phthalate	0.26	0.24	1.00	
Fluoranthene	ND	0.0098	1.00	
Fluorene	ND	0.0098	1.00	
Hexachloro-1,3-Butadiene	ND	0.0098	1.00	
Hexachlorobenzene	ND	0.0098	1.00	
Hexachlorocyclopentadiene	ND	0.0098	1.00	
Hexachloroethane	ND	0.0098	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0098	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0098	1.00	
N-Nitrosodimethylamine	ND	0.0098	1.00	
N-Nitrosodiphenylamine	ND	0.0098	1.00	
Naphthalene	ND	0.0098	1.00	
Nitrobenzene	ND	0.0098	1.00	
Pentachlorophenol	ND	0.24	1.00	
Phenanthrene	ND	0.0098	1.00	
Phenol	ND	0.0098	1.00	
Pyrene	ND	0.0098	1.00	
Pyridine	ND	0.0098	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	32	32-143	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 18 of 42

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	41	14-146	
2-Fluorophenol	38	15-138	
Nitrobenzene-d5	23	18-162	
Phenol-d6	53	17-141	
p-Terphenyl-d14	62	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 19 of 42

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-29 / TP-25-0-4	**18-06-1646-9-A**	**06/19/18 10:40**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 17:46**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 20 of 42

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	32	32-143	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 21 of 42

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	49	14-146	
2-Fluorophenol	42	15-138	
Nitrobenzene-d5	29	18-162	
Phenol-d6	58	17-141	
p-Terphenyl-d14	64	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 22 of 42

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-30 / TP-25-4-6	**18-06-1646-10-A**	**06/19/18 10:45**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 13:28**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 23 of 42

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	42	32-143	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 24 of 42

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	33	14-146	
2-Fluorophenol	16	15-138	
Nitrobenzene-d5	29	18-162	
Phenol-d6	43	17-141	
p-Terphenyl-d14	66	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 25 of 42

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-54 / TP-9-0-0.25	**18-06-1646-11-A**	**06/20/18 12:30**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 18:22**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 26 of 42

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	59	32-143	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 27 of 42

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	57	14-146	
2-Fluorophenol	44	15-138	
Nitrobenzene-d5	35	18-162	
Phenol-d6	57	17-141	
p-Terphenyl-d14	70	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 28 of 42

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-55 / TP-9-0.25-2.5	**18-06-1646-12-A**	**06/20/18 12:35**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 18:40**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0098	1.00	
1,2-Dichlorobenzene	ND	0.0098	1.00	
1,3-Dichlorobenzene	ND	0.0098	1.00	
1,4-Dichlorobenzene	ND	0.0098	1.00	
1-Methylnaphthalene	ND	0.0098	1.00	
2,4,5-Trichlorophenol	ND	0.24	1.00	
2,4,6-Trichlorophenol	ND	0.24	1.00	
2,4-Dichlorophenol	ND	0.24	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.24	1.00	
2,4-Dinitrotoluene	ND	0.0098	1.00	
2,6-Dichlorophenol	ND	0.24	1.00	
2,6-Dinitrotoluene	ND	0.0098	1.00	
2-Chloronaphthalene	ND	0.0098	1.00	
2-Chlorophenol	ND	0.0098	1.00	
2-Methylnaphthalene	ND	0.0098	1.00	
2-Methylphenol	ND	0.24	1.00	
2-Nitroaniline	ND	0.24	1.00	
2-Nitrophenol	ND	0.24	1.00	
3,3'-Dichlorobenzidine	ND	0.24	1.00	
3-Nitroaniline	ND	0.24	1.00	
3/4-Methylphenol	ND	0.098	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0098	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.24	1.00	
4-Chloro-3-Methylphenol	ND	0.24	1.00	
4-Chloroaniline	ND	0.24	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0098	1.00	
4-Nitroaniline	ND	0.24	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0098	1.00	
Acenaphthylene	ND	0.0098	1.00	
Aniline	ND	0.0098	1.00	
Anthracene	ND	0.0098	1.00	
Azobenzene	ND	0.0098	1.00	
Benzidine	ND	0.24	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 29 of 42

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0098	1.00	
Benzo (a) Pyrene	ND	0.0098	1.00	
Benzo (b) Fluoranthene	ND	0.0098	1.00	
Benzo (g,h,i) Perylene	ND	0.0098	1.00	
Benzo (k) Fluoranthene	ND	0.0098	1.00	
Benzyl Alcohol	ND	0.0098	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0098	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0098	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0098	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.24	1.00	
Butyl Benzyl Phthalate	ND	0.24	1.00	
Chrysene	ND	0.0098	1.00	
Di-n-Butyl Phthalate	ND	0.24	1.00	
Di-n-Octyl Phthalate	ND	0.24	1.00	
Dibenz (a,h) Anthracene	ND	0.0098	1.00	
Dibenzofuran	ND	0.0098	1.00	
Diethyl Phthalate	ND	0.0098	1.00	
Dimethyl Phthalate	ND	0.24	1.00	
Fluoranthene	ND	0.0098	1.00	
Fluorene	ND	0.0098	1.00	
Hexachloro-1,3-Butadiene	ND	0.0098	1.00	
Hexachlorobenzene	ND	0.0098	1.00	
Hexachlorocyclopentadiene	ND	0.0098	1.00	
Hexachloroethane	ND	0.0098	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0098	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0098	1.00	
N-Nitrosodimethylamine	ND	0.0098	1.00	
N-Nitrosodiphenylamine	ND	0.0098	1.00	
Naphthalene	ND	0.0098	1.00	
Nitrobenzene	ND	0.0098	1.00	
Pentachlorophenol	ND	0.24	1.00	
Phenanthrene	ND	0.0098	1.00	
Phenol	ND	0.0098	1.00	
Pyrene	ND	0.0098	1.00	
Pyridine	ND	0.0098	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	53	32-143	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 30 of 42

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	40	14-146	
2-Fluorophenol	42	15-138	
Nitrobenzene-d5	31	18-162	
Phenol-d6	62	17-141	
p-Terphenyl-d14	66	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 31 of 42

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-56 / TP-9-2.5-7	**18-06-1646-13-A**	**06/20/18 12:40**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 18:58**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0099	1.00	
1,2-Dichlorobenzene	ND	0.0099	1.00	
1,3-Dichlorobenzene	ND	0.0099	1.00	
1,4-Dichlorobenzene	ND	0.0099	1.00	
1-Methylnaphthalene	ND	0.0099	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.0099	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.0099	1.00	
2-Chloronaphthalene	ND	0.0099	1.00	
2-Chlorophenol	ND	0.0099	1.00	
2-Methylnaphthalene	ND	0.0099	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.099	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0099	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0099	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0099	1.00	
Acenaphthylene	ND	0.0099	1.00	
Aniline	ND	0.0099	1.00	
Anthracene	ND	0.0099	1.00	
Azobenzene	ND	0.0099	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 32 of 42

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0099	1.00	
Benzo (a) Pyrene	ND	0.0099	1.00	
Benzo (b) Fluoranthene	ND	0.0099	1.00	
Benzo (g,h,i) Perylene	ND	0.0099	1.00	
Benzo (k) Fluoranthene	ND	0.0099	1.00	
Benzyl Alcohol	ND	0.0099	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0099	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0099	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0099	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.0099	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.0099	1.00	
Dibenzofuran	ND	0.0099	1.00	
Diethyl Phthalate	ND	0.0099	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.0099	1.00	
Fluorene	ND	0.0099	1.00	
Hexachloro-1,3-Butadiene	ND	0.0099	1.00	
Hexachlorobenzene	ND	0.0099	1.00	
Hexachlorocyclopentadiene	ND	0.0099	1.00	
Hexachloroethane	ND	0.0099	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0099	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0099	1.00	
N-Nitrosodimethylamine	ND	0.0099	1.00	
N-Nitrosodiphenylamine	ND	0.0099	1.00	
Naphthalene	ND	0.0099	1.00	
Nitrobenzene	ND	0.0099	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.0099	1.00	
Phenol	ND	0.0099	1.00	
Pyrene	ND	0.0099	1.00	
Pyridine	ND	0.0099	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	49	32-143	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 33 of 42

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	41	14-146	
2-Fluorophenol	47	15-138	
Nitrobenzene-d5	29	18-162	
Phenol-d6	66	17-141	
p-Terphenyl-d14	65	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 34 of 42

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-59 / TP-21-0-5	**18-06-1646-14-A**	**06/20/18 13:15**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 19:16**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0098	1.00	
1,2-Dichlorobenzene	ND	0.0098	1.00	
1,3-Dichlorobenzene	ND	0.0098	1.00	
1,4-Dichlorobenzene	ND	0.0098	1.00	
1-Methylnaphthalene	ND	0.0098	1.00	
2,4,5-Trichlorophenol	ND	0.24	1.00	
2,4,6-Trichlorophenol	ND	0.24	1.00	
2,4-Dichlorophenol	ND	0.24	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.24	1.00	
2,4-Dinitrotoluene	ND	0.0098	1.00	
2,6-Dichlorophenol	ND	0.24	1.00	
2,6-Dinitrotoluene	ND	0.0098	1.00	
2-Chloronaphthalene	ND	0.0098	1.00	
2-Chlorophenol	ND	0.0098	1.00	
2-Methylnaphthalene	ND	0.0098	1.00	
2-Methylphenol	ND	0.24	1.00	
2-Nitroaniline	ND	0.24	1.00	
2-Nitrophenol	ND	0.24	1.00	
3,3'-Dichlorobenzidine	ND	0.24	1.00	
3-Nitroaniline	ND	0.24	1.00	
3/4-Methylphenol	ND	0.098	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0098	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.24	1.00	
4-Chloro-3-Methylphenol	ND	0.24	1.00	
4-Chloroaniline	ND	0.24	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0098	1.00	
4-Nitroaniline	ND	0.24	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0098	1.00	
Acenaphthylene	ND	0.0098	1.00	
Aniline	ND	0.0098	1.00	
Anthracene	ND	0.0098	1.00	
Azobenzene	ND	0.0098	1.00	
Benzidine	ND	0.24	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 35 of 42

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0098	1.00	
Benzo (a) Pyrene	ND	0.0098	1.00	
Benzo (b) Fluoranthene	ND	0.0098	1.00	
Benzo (g,h,i) Perylene	ND	0.0098	1.00	
Benzo (k) Fluoranthene	ND	0.0098	1.00	
Benzyl Alcohol	ND	0.0098	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0098	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0098	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0098	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.24	1.00	
Butyl Benzyl Phthalate	ND	0.24	1.00	
Chrysene	ND	0.0098	1.00	
Di-n-Butyl Phthalate	ND	0.24	1.00	
Di-n-Octyl Phthalate	ND	0.24	1.00	
Dibenz (a,h) Anthracene	ND	0.0098	1.00	
Dibenzofuran	ND	0.0098	1.00	
Diethyl Phthalate	ND	0.0098	1.00	
Dimethyl Phthalate	0.40	0.24	1.00	
Fluoranthene	ND	0.0098	1.00	
Fluorene	ND	0.0098	1.00	
Hexachloro-1,3-Butadiene	ND	0.0098	1.00	
Hexachlorobenzene	ND	0.0098	1.00	
Hexachlorocyclopentadiene	ND	0.0098	1.00	
Hexachloroethane	ND	0.0098	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0098	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0098	1.00	
N-Nitrosodimethylamine	ND	0.0098	1.00	
N-Nitrosodiphenylamine	ND	0.0098	1.00	
Naphthalene	ND	0.0098	1.00	
Nitrobenzene	ND	0.0098	1.00	
Pentachlorophenol	ND	0.24	1.00	
Phenanthrene	ND	0.0098	1.00	
Phenol	ND	0.0098	1.00	
Pyrene	ND	0.0098	1.00	
Pyridine	ND	0.0098	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	53	32-143	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 36 of 42

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	51	14-146	
2-Fluorophenol	45	15-138	
Nitrobenzene-d5	30	18-162	
Phenol-d6	72	17-141	
p-Terphenyl-d14	72	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 37 of 42

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-60 / TP-21-5-9	**18-06-1646-15-A**	**06/20/18 13:20**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 19:34**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 38 of 42

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	0.25	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	51	32-143	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 39 of 42

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	41	14-146	
2-Fluorophenol	50	15-138	
Nitrobenzene-d5	36	18-162	
Phenol-d6	66	17-141	
p-Terphenyl-d14	67	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 40 of 42

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-16-921-22**	**N/A**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 12:38**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 41 of 42

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	65	32-143	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 42 of 42

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	82	14-146	
2-Fluorophenol	71	15-138	
Nitrobenzene-d5	77	18-162	
Phenol-d6	79	17-141	
p-Terphenyl-d14	76	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM
		Units:	ug/L
Project: 1802258			Page 1 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-20 / EB-061918	**18-06-1646-1-A**	**06/19/18 13:00**	**Aqueous**	**GC/MS JJJ**	**06/26/18**	**06/29/18 13:14**	**180626L01A**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.21	1.00	
1,2-Dichlorobenzene	ND	0.21	1.00	
1,3-Dichlorobenzene	ND	0.21	1.00	
1,4-Dichlorobenzene	ND	0.21	1.00	
1-Methylnaphthalene	ND	0.21	1.00	
2,4,5-Trichlorophenol	ND	5.2	1.00	
2,4,6-Trichlorophenol	ND	5.2	1.00	
2,4-Dichlorophenol	ND	5.2	1.00	
2,4-Dimethylphenol	ND	0.21	1.00	
2,4-Dinitrophenol	ND	5.2	1.00	
2,4-Dinitrotoluene	ND	0.21	1.00	
2,6-Dichlorophenol	ND	5.2	1.00	
2,6-Dinitrotoluene	ND	0.21	1.00	
2-Chloronaphthalene	ND	0.21	1.00	
2-Chlorophenol	ND	0.21	1.00	
2-Methylnaphthalene	ND	0.21	1.00	
2-Methylphenol	ND	5.2	1.00	
2-Nitroaniline	ND	5.2	1.00	
2-Nitrophenol	ND	5.2	1.00	
3,3'-Dichlorobenzidine	ND	5.2	1.00	
3-Nitroaniline	ND	5.2	1.00	
3/4-Methylphenol	ND	2.1	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.21	1.00	
4,6-Dinitro-2-Methylphenol	ND	5.2	1.00	
4-Chloro-3-Methylphenol	ND	5.2	1.00	
4-Chloroaniline	ND	5.2	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.21	1.00	
4-Nitroaniline	ND	5.2	1.00	
4-Nitrophenol	ND	5.2	1.00	
Acenaphthene	ND	0.21	1.00	
Acenaphthylene	ND	0.21	1.00	
Aniline	ND	0.21	1.00	
Anthracene	ND	0.21	1.00	
Azobenzene	ND	0.21	1.00	
Benzidine	ND	5.2	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM
		Units:	ug/L
Project: 1802258			Page 2 of 9

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.21	1.00	
Benzo (a) Pyrene	ND	0.21	1.00	
Benzo (b) Fluoranthene	ND	0.21	1.00	
Benzo (g,h,i) Perylene	ND	0.21	1.00	
Benzo (k) Fluoranthene	ND	0.21	1.00	
Benzoic Acid	ND	5.2	1.00	
Benzyl Alcohol	ND	0.21	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.21	1.00	
Bis(2-Chloroethyl) Ether	ND	0.21	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.21	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	5.2	1.00	
Butyl Benzyl Phthalate	ND	5.2	1.00	
Chrysene	ND	0.21	1.00	
Di-n-Butyl Phthalate	ND	5.2	1.00	
Di-n-Octyl Phthalate	ND	5.2	1.00	
Dibenz (a,h) Anthracene	ND	0.21	1.00	
Dibenzofuran	ND	0.21	1.00	
Diethyl Phthalate	ND	5.2	1.00	
Dimethyl Phthalate	ND	5.2	1.00	
Fluoranthene	ND	0.21	1.00	
Fluorene	ND	0.21	1.00	
Hexachloro-1,3-Butadiene	ND	0.21	1.00	
Hexachlorobenzene	ND	0.21	1.00	
Hexachlorocyclopentadiene	ND	0.21	1.00	
Hexachloroethane	ND	0.21	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.21	1.00	
Isophorone	ND	2.1	1.00	
N-Nitroso-di-n-propylamine	ND	0.21	1.00	
N-Nitrosodimethylamine	ND	0.21	1.00	
N-Nitrosodiphenylamine	ND	0.21	1.00	
Naphthalene	ND	0.21	1.00	
Nitrobenzene	ND	0.21	1.00	
Pentachlorophenol	ND	5.2	1.00	
Phenanthrene	ND	0.21	1.00	
Phenol	ND	0.21	1.00	
Pyrene	ND	0.21	1.00	
Pyridine	ND	0.21	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3510C
	Method:	EPA 8270C SIM
	Units:	ug/L
Project: 1802258		Page 3 of 9

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	65	25-137	
2-Fluorobiphenyl	66	42-138	
2-Fluorophenol	54	7-121	
Nitrobenzene-d5	91	10-146	
Phenol-d6	36	1-127	
p-Terphenyl-d14	76	47-173	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM
		Units:	ug/L
Project: 1802258			Page 4 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-21 / SW-061918	**18-06-1646-2-A**	**06/19/18 13:00**	**Aqueous**	**GC/MS JJJ**	**06/26/18**	**06/29/18 13:32**	**180626L01A**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.20	1.00	
1,2-Dichlorobenzene	ND	0.20	1.00	
1,3-Dichlorobenzene	ND	0.20	1.00	
1,4-Dichlorobenzene	ND	0.20	1.00	
1-Methylnaphthalene	ND	0.20	1.00	
2,4,5-Trichlorophenol	ND	5.1	1.00	
2,4,6-Trichlorophenol	ND	5.1	1.00	
2,4-Dichlorophenol	ND	5.1	1.00	
2,4-Dimethylphenol	ND	0.20	1.00	
2,4-Dinitrophenol	ND	5.1	1.00	
2,4-Dinitrotoluene	ND	0.20	1.00	
2,6-Dichlorophenol	ND	5.1	1.00	
2,6-Dinitrotoluene	ND	0.20	1.00	
2-Chloronaphthalene	ND	0.20	1.00	
2-Chlorophenol	ND	0.20	1.00	
2-Methylnaphthalene	ND	0.20	1.00	
2-Methylphenol	ND	5.1	1.00	
2-Nitroaniline	ND	5.1	1.00	
2-Nitrophenol	ND	5.1	1.00	
3,3'-Dichlorobenzidine	ND	5.1	1.00	
3-Nitroaniline	ND	5.1	1.00	
3/4-Methylphenol	ND	2.0	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.20	1.00	
4,6-Dinitro-2-Methylphenol	ND	5.1	1.00	
4-Chloro-3-Methylphenol	ND	5.1	1.00	
4-Chloroaniline	ND	5.1	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.20	1.00	
4-Nitroaniline	ND	5.1	1.00	
4-Nitrophenol	ND	5.1	1.00	
Acenaphthene	ND	0.20	1.00	
Acenaphthylene	ND	0.20	1.00	
Aniline	ND	0.20	1.00	
Anthracene	ND	0.20	1.00	
Azobenzene	ND	0.20	1.00	
Benzidine	ND	5.1	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM
		Units:	ug/L
Project: 1802258			Page 5 of 9

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.20	1.00	
Benzo (a) Pyrene	ND	0.20	1.00	
Benzo (b) Fluoranthene	ND	0.20	1.00	
Benzo (g,h,i) Perylene	ND	0.20	1.00	
Benzo (k) Fluoranthene	ND	0.20	1.00	
Benzoic Acid	ND	5.1	1.00	
Benzyl Alcohol	ND	0.20	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.20	1.00	
Bis(2-Chloroethyl) Ether	ND	0.20	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.20	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	5.1	1.00	
Butyl Benzyl Phthalate	ND	5.1	1.00	
Chrysene	ND	0.20	1.00	
Di-n-Butyl Phthalate	ND	5.1	1.00	
Di-n-Octyl Phthalate	ND	5.1	1.00	
Dibenz (a,h) Anthracene	ND	0.20	1.00	
Dibenzofuran	ND	0.20	1.00	
Diethyl Phthalate	ND	5.1	1.00	
Dimethyl Phthalate	ND	5.1	1.00	
Fluoranthene	ND	0.20	1.00	
Fluorene	ND	0.20	1.00	
Hexachloro-1,3-Butadiene	ND	0.20	1.00	
Hexachlorobenzene	ND	0.20	1.00	
Hexachlorocyclopentadiene	ND	0.20	1.00	
Hexachloroethane	ND	0.20	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.20	1.00	
Isophorone	ND	2.0	1.00	
N-Nitroso-di-n-propylamine	ND	0.20	1.00	
N-Nitrosodimethylamine	ND	0.20	1.00	
N-Nitrosodiphenylamine	ND	0.20	1.00	
Naphthalene	ND	0.20	1.00	
Nitrobenzene	ND	0.20	1.00	
Pentachlorophenol	ND	5.1	1.00	
Phenanthrene	ND	0.20	1.00	
Phenol	ND	0.20	1.00	
Pyrene	ND	0.20	1.00	
Pyridine	ND	0.20	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3510C
	Method:	EPA 8270C SIM
	Units:	ug/L
Project: 1802258		Page 6 of 9

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	60	25-137	
2-Fluorobiphenyl	55	42-138	
2-Fluorophenol	45	7-121	
Nitrobenzene-d5	80	10-146	
Phenol-d6	28	1-127	
p-Terphenyl-d14	72	47-173	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM
		Units:	ug/L
Project: 1802258			Page 7 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-16-941-31**	**N/A**	**Aqueous**	**GC/MS JJJ**	**06/26/18**	**06/29/18 10:29**	**180626L01A**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.20	1.00	
1,2-Dichlorobenzene	ND	0.20	1.00	
1,3-Dichlorobenzene	ND	0.20	1.00	
1,4-Dichlorobenzene	ND	0.20	1.00	
1-Methylnaphthalene	ND	0.20	1.00	
2,4,5-Trichlorophenol	ND	5.0	1.00	
2,4,6-Trichlorophenol	ND	5.0	1.00	
2,4-Dichlorophenol	ND	5.0	1.00	
2,4-Dimethylphenol	ND	0.20	1.00	
2,4-Dinitrophenol	ND	5.0	1.00	
2,4-Dinitrotoluene	ND	0.20	1.00	
2,6-Dichlorophenol	ND	5.0	1.00	
2,6-Dinitrotoluene	ND	0.20	1.00	
2-Chloronaphthalene	ND	0.20	1.00	
2-Chlorophenol	ND	0.20	1.00	
2-Methylnaphthalene	ND	0.20	1.00	
2-Methylphenol	ND	5.0	1.00	
2-Nitroaniline	ND	5.0	1.00	
2-Nitrophenol	ND	5.0	1.00	
3,3'-Dichlorobenzidine	ND	5.0	1.00	
3-Nitroaniline	ND	5.0	1.00	
3/4-Methylphenol	ND	2.0	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.20	1.00	
4,6-Dinitro-2-Methylphenol	ND	5.0	1.00	
4-Chloro-3-Methylphenol	ND	5.0	1.00	
4-Chloroaniline	ND	5.0	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.20	1.00	
4-Nitroaniline	ND	5.0	1.00	
4-Nitrophenol	ND	5.0	1.00	
Acenaphthene	ND	0.20	1.00	
Acenaphthylene	ND	0.20	1.00	
Aniline	ND	0.20	1.00	
Anthracene	ND	0.20	1.00	
Azobenzene	ND	0.20	1.00	
Benzidine	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM
		Units:	ug/L
Project: 1802258			Page 8 of 9

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.20	1.00	
Benzo (a) Pyrene	ND	0.20	1.00	
Benzo (b) Fluoranthene	ND	0.20	1.00	
Benzo (g,h,i) Perylene	ND	0.20	1.00	
Benzo (k) Fluoranthene	ND	0.20	1.00	
Benzoic Acid	ND	5.0	1.00	
Benzyl Alcohol	ND	0.20	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.20	1.00	
Bis(2-Chloroethyl) Ether	ND	0.20	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.20	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	5.0	1.00	
Butyl Benzyl Phthalate	ND	5.0	1.00	
Chrysene	ND	0.20	1.00	
Di-n-Butyl Phthalate	ND	5.0	1.00	
Di-n-Octyl Phthalate	ND	5.0	1.00	
Dibenz (a,h) Anthracene	ND	0.20	1.00	
Dibenzofuran	ND	0.20	1.00	
Diethyl Phthalate	ND	5.0	1.00	
Dimethyl Phthalate	ND	5.0	1.00	
Fluoranthene	ND	0.20	1.00	
Fluorene	ND	0.20	1.00	
Hexachloro-1,3-Butadiene	ND	0.20	1.00	
Hexachlorobenzene	ND	0.20	1.00	
Hexachlorocyclopentadiene	ND	0.20	1.00	
Hexachloroethane	ND	0.20	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.20	1.00	
Isophorone	ND	2.0	1.00	
N-Nitroso-di-n-propylamine	ND	0.20	1.00	
N-Nitrosodimethylamine	ND	0.20	1.00	
N-Nitrosodiphenylamine	ND	0.20	1.00	
Naphthalene	ND	0.20	1.00	
Nitrobenzene	ND	0.20	1.00	
Pentachlorophenol	ND	5.0	1.00	
Phenanthrene	ND	0.20	1.00	
Phenol	ND	0.20	1.00	
Pyrene	ND	0.20	1.00	
Pyridine	ND	0.20	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3510C
	Method:	EPA 8270C SIM
	Units:	ug/L
Project: 1802258		Page 9 of 9

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	61	25-137	
2-Fluorobiphenyl	70	42-138	
2-Fluorophenol	48	7-121	
Nitrobenzene-d5	87	10-146	
Phenol-d6	31	1-127	
p-Terphenyl-d14	76	47-173	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - Spike/Spike Duplicate

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
Project: 1802258			Page 1 of 1

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
1802258-27 / TP-19-4-8	**Sample**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 17:09**	**180626S09**
1802258-27 / TP-19-4-8	**Matrix Spike**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 19:52**	**180626S09**
1802258-27 / TP-19-4-8	**Matrix Spike Duplicate**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 20:11**	**180626S09**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
2,4,6-Trichlorophenol	ND	1.000	0.6448	64	0.6963	70	40-160	8	0-20	
2,4-Dichlorophenol	ND	1.000	0.7098	71	0.7503	75	40-160	6	0-20	
2-Methylphenol	ND	1.000	0.7087	71	0.7689	77	50-130	8	0-20	
2-Nitrophenol	ND	1.000	0.7761	78	0.8147	81	40-160	5	0-20	
4-Chloro-3-Methylphenol	ND	1.000	0.6939	69	0.7510	75	40-160	8	0-20	
Acenaphthene	ND	1.000	0.7318	73	0.7604	76	40-160	4	0-20	
Benzo (a) Pyrene	ND	1.000	0.7763	78	0.8131	81	17-163	5	0-20	
Chrysene	ND	1.000	0.7623	76	0.8062	81	17-168	6	0-20	
Di-n-Butyl Phthalate	ND	1.000	0.7123	71	0.7507	75	40-160	5	0-20	
Dimethyl Phthalate	0.2871	1.000	0.9744	69	1.031	74	40-160	6	0-20	
Fluoranthene	ND	1.000	0.7757	78	0.8122	81	26-137	5	0-20	
Fluorene	ND	1.000	0.6879	69	0.7241	72	59-121	5	0-20	
Naphthalene	ND	1.000	0.7355	74	0.7531	75	21-133	2	0-20	
Phenanthrene	ND	1.000	0.7451	75	0.7889	79	54-120	6	0-20	
Phenol	ND	1.000	0.7027	70	0.7511	75	40-160	7	0-20	
Pyrene	ND	1.000	0.7679	77	0.8119	81	6-156	6	0-46	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
Project: 1802258			Page 1 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-16-921-22	**LCS**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 12:16**	**180626L09**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
2,4,6-Trichlorophenol	1.000	0.6797	68	40-160	20-180	
2,4-Dichlorophenol	1.000	0.7632	76	40-160	20-180	
2-Methylphenol	1.000	0.7746	77	40-160	20-180	
2-Nitrophenol	1.000	0.8332	83	40-160	20-180	
4-Chloro-3-Methylphenol	1.000	0.7573	76	40-160	20-180	
Acenaphthene	1.000	0.7891	79	40-160	20-180	
Benzo (a) Pyrene	1.000	0.8341	83	17-163	0-187	
Chrysene	1.000	0.8330	83	17-168	0-193	
Di-n-Butyl Phthalate	1.000	0.7297	73	40-160	20-180	
Dimethyl Phthalate	1.000	0.7716	77	40-160	20-180	
Fluoranthene	1.000	0.8354	84	26-137	8-156	
Fluorene	1.000	0.7386	74	59-121	49-131	
Naphthalene	1.000	0.8151	82	21-133	2-152	
Phenanthrene	1.000	0.8252	83	54-120	43-131	
Phenol	1.000	0.7714	77	40-160	20-180	
Pyrene	1.000	0.8448	84	28-106	15-119	

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM
Project: 1802258			Page 2 of 2

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-16-941-31	**LCS**	**Aqueous**	**GC/MS JJJ**	**06/26/18**	**06/29/18 10:47**	**180626L01A**
099-16-941-31	**LCSD**	**Aqueous**	**GC/MS JJJ**	**06/26/18**	**06/29/18 11:33**	**180626L01A**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
2,4,6-Trichlorophenol	20.00	14.15	71	13.00	65	37-144	19-162	8	0-20	
2,4-Dichlorophenol	20.00	14.67	73	14.09	70	39-135	23-151	4	0-20	
2-Methylphenol	20.00	13.40	67	12.33	62	50-130	37-143	8	0-20	
2-Nitrophenol	20.00	15.94	80	15.35	77	29-182	4-208	4	0-20	
4-Chloro-3-Methylphenol	20.00	14.94	75	14.08	70	55-121	44-132	6	0-18	
Acenaphthene	20.00	15.73	79	14.77	74	55-139	41-153	6	0-17	
Benzo (a) Pyrene	20.00	16.39	82	15.37	77	17-163	0-187	6	0-20	
Chrysene	20.00	16.52	83	15.73	79	17-168	0-193	5	0-20	
Di-n-Butyl Phthalate	20.00	14.26	71	13.66	68	1-118	0-138	4	0-20	
Dimethyl Phthalate	20.00	15.87	79	14.76	74	0-112	0-131	7	0-20	
Fluoranthene	20.00	16.76	84	15.76	79	26-137	8-156	6	0-20	
Fluorene	20.00	15.23	76	13.89	69	59-121	49-131	9	0-20	
Naphthalene	20.00	13.81	69	13.08	65	21-133	2-152	5	0-20	
Phenanthrene	20.00	16.79	84	15.77	79	54-120	43-131	6	0-20	
Phenol	20.00	6.240	31	5.893	29	4-142	0-165	6	0-24	
Pyrene	20.00	16.88	84	16.03	80	38-170	16-192	5	0-27	

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 18-06-1646

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8270C SIM	EPA 3545	923	GC/MS JJJ	1
EPA 8270C SIM	EPA 3510C	923	GC/MS JJJ	1

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Glossary of Terms and Qualifiers

Work Order: 18-06-1646 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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ADVANCED TECHNOLOGY
LABORATORIES

SUBCONTRACT ORDER

Work Order: 1802258

18-06-1646

SENDING LABORATORY:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone: 562.989.4045
Fax: 562.989.6348
Project Manager: Rachelle Arada (Rachelle@atlglobal.com)
Sampler: Jake Lippman

RECEIVING LABORATORY:

Eurofins Calscience, Inc.
7440 Lincoln Way
Garden Grove, CA 92841-1427
Phone :(714) 895-5494
Fax: (714) 894-7501
PO#: SC12897-STANDARD TAT

IMPORTANT : Please include Work Order # and PO # in your invoice.

Special Instructions: Need EQUIS EDD.

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1802258-20 / EB-061918	1	**Water**	**06/19/18 13:00**	**Return samples when analysis is done. Call ATL for pick up.**
8270_SIM [Semivolatile Organic Compounds] Amber Unpres - 1000mL	**07/09/18 17:00**	06/26/18 13:00		
ATL Lab#: 1802258-21 / SW-061918	2	**Water**	**06/19/18 13:00**	
8270_SIM [Semivolatile Organic Compounds] Amber Unpres - 1000mL	**07/09/18 17:00**	06/26/18 13:00		
ATL Lab#: 1802258-22 / TP-16-0-0.5	3	**Soil**	**06/19/18 13:50**	
8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	**07/09/18 17:00**	07/03/18 13:50		
ATL Lab#: 1802258-23 / TP-16-0.5-3.5	4	**Soil**	**06/19/18 13:55**	
8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	**07/09/18 17:00**	07/03/18 13:55		

Released By	Date	Received By	Date
[signature]	6/22/18 1035	[signature]	6/22/18 1035

ADVANCED TECHNOLOGY
LABORATORIES

SUBCONTRACT ORDER

Work Order: 1802258

164L

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1802258-24 / TP-16-3.5-5 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	5 **07/09/18 17:00**	**Soil** 07/03/18 13:58	**06/19/18 13:58**	
ATL Lab#: 1802258-26 / TP-19-0-4 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	6 **07/09/18 17:00**	**Soil** 07/03/18 08:40	**06/19/18 08:40**	
ATL Lab#: 1802258-27 / TP-19-4-8 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	7 **07/09/18 17:00**	**Soil** 07/03/18 08:45	**06/19/18 08:45**	
ATL Lab#: 1802258-28 / TP-19-8-10 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	8 **07/09/18 17:00**	**Soil** 07/03/18 08:50	**06/19/18 08:50**	
ATL Lab#: 1802258-29 / TP-25-0-4 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	9 **07/09/18 17:00**	**Soil** 07/03/18 10:40	**06/19/18 10:40**	
ATL Lab#: 1802258-30 / TP-25-4-6 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	10 **07/09/18 17:00**	**Soil** 07/03/18 10:45	**06/19/18 10:45**	

Released By	Date	Received By	Date
[signature]	6/22/18 1035	[signature]	6/22/18 1035

ADVANCED TECHNOLOGY
LABORATORIES

SUBCONTRACT ORDER

Work Order: 1802258

1646

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1802258-54 / TP-9-0-0.25 8270_SIM [Semivolatile Organic Compounds]	11 **07/09/18 17:00**	**Soil** 07/04/18 12:30	**06/20/18 12:30**	
ATL Lab#: 1802258-55 / TP-9-0.25-2.5 8270_SIM [Semivolatile Organic Compounds]	12 **07/09/18 17:00**	**Soil** 07/04/18 12:35	**06/20/18 12:35**	
ATL Lab#: 1802258-56 / TP-9-2.5-7 8270_SIM [Semivolatile Organic Compounds]	13 **07/09/18 17:00**	**Soil** 07/04/18 12:40	**06/20/18 12:40**	
ATL Lab#: 1802258-59 / TP-21-0-5 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	14 **07/09/18 17:00**	**Soil** 07/04/18 13:15	**06/20/18 13:15**	
ATL Lab#: 1802258-60 / TP-21-5-9 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	15 **07/09/18 17:00**	**Soil** 07/04/18 13:20	**06/20/18 13:20**	

Released By	Date	Received By	Date
[signature]	6/22/18 1035	[signature]	6/22/18 1035

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WORK ORDER NUMBER: 18-06-1646

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: ATL

DATE: 06/22/2018

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC6 (CF: +0.1°C); Temperature (w/o CF): 2-8 °C (w/ CF): 2-9 °C; ☐ Blank ☑ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: SMG

CUSTODY SEAL:

Cooler	☐ Present and Intact	☐ Present but Not Intact	☑ Not Present	☐ N/A	Checked by: SMG
Sample(s)	☐ Present and Intact	☐ Present but Not Intact	☑ Not Present	☐ N/A	Checked by: 778

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☐	☐	☑
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☑	☐	☐
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Acid/base preserved samples - pH within acceptable range	☐	☐	☑
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOA**h** ☐ VOA**na₂** ☐ 100PJ ☐ 100PJ**na₂** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB ☐ 125PB**znna** (pH__9)

☐ 250AGB ☐ 250CGB ☐ 250CGB**s** (pH__2) ☐ 250PB ☐ 250PB**n** (pH__2) ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s** (pH__2) ☐ 500PB

☑ 1AGB ☐ 1AGB**na₂** ☐ 1AGB**s** (pH__2) ☐ 1AGB**s** (O&G) ☐ 1PB ☐ 1PB**na** (pH__12) ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☑ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (___) ☐ EnCores® (___) ☐ TerraCores® (___) ☐ _____ ☐ _____ ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na₂** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: 778

Reviewed by: SMG

American Environmental Testing Laboratory Inc.
2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

Ordered By

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225

Telephone: (562)989-4045
Attention: Rachelle Arada

Number of Pages 14
Date Received 06/22/2018
Date Reported 07/03/2018

Job Number	Order Date	Client
93067	06/22/2018	ATL

Project ID: 1802258
Project Name: PO# SC12893

Enclosed please find results of analyses of 23 soil and 2 water samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.
2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

Ordered By

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225

Project ID: 1802258
Date Received 06/22/2018
Date Reported 07/03/2018

Telephone: (562)989-4045
Attention: Rachelle Arada

Job Number	Order Date	Client
93067	06/22/2018	ATL

CERTIFICATE OF ANALYSIS
CASE NARRATIVE

AETL received 26 samples with the following specification on 06/22/2018.

Lab ID	Sample ID	Sample Date	Matrix	Quantity Of Containers
93067.03	1802258-20	06/19/2018	Aqueous	1
93067.04	1802258-21	06/19/2018	Aqueous	1

Method ^ Submethod	Req Date	Priority	TAT	Units
8270C-SIM ^ ATL-P&P	06/29/2018	2	Normal	ug/L

Lab ID	Sample ID	Sample Date	Matrix	Quantity Of Containers
93067.01	1802258-01	06/19/2018	Soil	1
93067.02	1802258-02	06/19/2018	Soil	1
93067.05	1802258-31	06/20/2018	Soil	1
93067.06	1802258-32	06/20/2018	Soil	1
93067.07	1802258-35	06/20/2018	Soil	1
93067.08	1802258-36	06/20/2018	Soil	1
93067.09	1802258-37	06/20/2018	Soil	1
93067.10	1802258-38	06/20/2018	Soil	1
93067.11	1802258-39	06/20/2018	Soil	1
93067.12	1802258-40	06/20/2018	Soil	1
93067.13	1802258-41	06/20/2018	Soil	1
93067.14	1802258-43	06/20/2018	Soil	1
93067.15	1802258-44	06/20/2018	Soil	1
93067.16	1802258-45	06/20/2018	Soil	1
93067.17	1802258-48	06/20/2018	Soil	1
93067.18	1802258-49	06/20/2018	Soil	1
93067.19	1802258-50	06/20/2018	Soil	1
93067.20	1802258-51	06/20/2018	Soil	1
93067.21	1802258-52	06/20/2018	Soil	1
93067.22	1802258-53	06/20/2018	Soil	1

Continued

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Telephone: (562)989-4045
Attention: Rachelle Arada

Project ID: 1802258
Date Received 06/22/2018
Date Reported 07/03/2018

Job Number	Order Date	Client
93067	06/22/2018	ATL

CERTIFICATE OF ANALYSIS

CASE NARRATIVE

93067.23	1802258-61	06/20/2018	Soil	1
93067.24	1802258-62	06/20/2018	Soil	1
93067.25	1802258-63	06/20/2018	Soil	1

Method ^ Submethod	Req Date	Priority	TAT	Units
(8270C-SIM) ^ ATL-P&P	06/29/2018	2	Normal	ug/Kg

93067.26	1802258-64	06/20/2018	Soil	1

Method ^ Submethod	Req Date	Priority	TAT	Units
ARCHIVE	06/29/2018	2	Normal	--

The samples were analyzed as specified on the enclosed chain of custody. Analytical non-conformances have been noted on the report.

Unless otherwise noted, all results of soil and solid samples are based on wet weight.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Direc

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Project ID: 1802258
Project Name: PO# SC12893

AETL Job Number	Submitted	Client
93067	06/22/2018	ATL

Method: (8270C-SIM), Phenols and Phthalates by GC/MS SIM (Modified 8270C)

QC Batch No: 062618JB1

Our Lab I.D.			Method Blank				
Client Sample I.D.							
Date Sampled							
Date Prepared			06/26/2018				
Preparation Method			3550B				
Date Analyzed			06/28/2018				
Matrix			Soil				
Units			ug/Kg				
Dilution Factor			1				
Analytes	**MDL**	**PQL**	**Results**				
Bis(2-ethylhexyl) phthalate	5.00	20.00	ND				
Butyl benzyl phthalate	5.00	20.00	ND				
Di-n-butyl phthalate	5.00	20.00	ND				
Di-n-octyl phthalate	5.00	20.00	ND				
Diethyl phthalate	5.00	20.00	ND				
Dimethyl phthalate	5.00	20.00	ND				
2-Nitrophenol	5.00	20.00	ND				
Bisphenol A (BPA)	10.0	50.0	ND				
4-Chloro-3-Methylphenol	5.00	20.00	ND				
3,4-Dimethylphenol	5.00	20.00	ND				
4,6-Dinitro-2-methylphenol	10.0	50.0	ND				
2-Methylphenol (2-Cresol)	5.00	20.00	ND				
Total Target Phenols	5.00	20.00	ND				
Our Lab I.D.			Method Blank				
Surrogates	**%Rec.Limit**		**% Rec.**				
2-Fluorophenol	40-140		76.5				
2-Fluorobiphenyl	40-140		90.0				
p-Terphenyl-D14	50-110		106				
Phenol-d6	40-140		75.3				

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Project ID: 1802258
Project Name: PO# SC12893

AETL Job Number	Submitted	Client
93067	06/22/2018	ATL

Method: (8270C-SIM), Phenols and Phthalates by GC/MS SIM (Modified 8270C)

QC Batch No: 062618JB1

Our Lab I.D.			**93067.01**				
Client Sample I.D.			1802258-01				
Date Sampled			06/19/2018				
Date Prepared			06/26/2018				
Preparation Method			3550B				
Date Analyzed			06/30/2018				
Matrix			Soil				
Units			ug/Kg				
Dilution Factor			10				
Analytes	**MDL**	**PQL**	**Results**				
Bis(2-ethylhexyl) phthalate	50	200	2,190				
Butyl benzyl phthalate	50	200	914				
Di-n-butyl phthalate	50	200	534				
Di-n-octyl phthalate	50	200	192J				
Diethyl phthalate	50	200	ND				
Dimethyl phthalate	50	200	ND				
2-Nitrophenol	50	200	ND				
Bisphenol A (BPA)	100	500	ND				
4-Chloro-3-Methylphenol	50	200	ND				
3,4-Dimethylphenol	50	200	ND				
4,6-Dinitro-2-methylphenol	100	500	ND				
2-Methylphenol (2-Cresol)	50	200	ND				
Total Target Phenols	50	200	ND				
Our Lab I.D.			**93067.01**				
Surrogates	**%Rec.Limit**		**% Rec.**				
2-Fluorophenol	40-140		41.8				
2-Fluorobiphenyl	40-140		75.5				
p-Terphenyl-D14	50-110		75.5				
Phenol-d6	40-140		23.5 S6				

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Project ID: 1802258
Project Name: PO# SC12893

AETL Job Number	Submitted	Client
93067	06/22/2018	ATL

Method: (8270C-SIM), Phenols and Phthalates by GC/MS SIM (Modified 8270C)

QC Batch No: 062618JB1

Our Lab I.D.			**93067.02**	**93067.05**	**93067.06**		
Client Sample I.D.			1802258-02	1802258-31	1802258-32		
Date Sampled			06/19/2018	06/20/2018	06/20/2018		
Date Prepared			06/26/2018	06/26/2018	06/26/2018		
Preparation Method			3550B	3550B	3550B		
Date Analyzed			06/30/2018	06/30/2018	06/29/2018		
Matrix			Soil	Soil	Soil		
Units			ug/Kg	ug/Kg	ug/Kg		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Bis(2-ethylhexyl) phthalate	5.00	20.00	12.4J	14.0J	ND		
Butyl benzyl phthalate	5.00	20.00	8.80J	ND	ND		
Di-n-butyl phthalate	5.00	20.00	5.40J	ND	ND		
Di-n-octyl phthalate	5.00	20.00	ND	ND	ND		
Diethyl phthalate	5.00	20.00	ND	ND	ND		
Dimethyl phthalate	5.00	20.00	ND	ND	ND		
2-Nitrophenol	5.00	20.00	ND	ND	ND		
Bisphenol A (BPA)	10.0	50.0	27.6J	ND	ND		
4-Chloro-3-Methylphenol	5.00	20.00	ND	ND	ND		
3,4-Dimethylphenol	5.00	20.00	ND	ND	ND		
4,6-Dinitro-2-methylphenol	10.0	50.0	ND	ND	ND		
2-Methylphenol (2-Cresol)	5.00	20.00	ND	ND	ND		
Total Target Phenols	5.00	20.00	ND	ND	ND		
Our Lab I.D.			**93067.02**	**93067.05**	**93067.06**		
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**	**% Rec.**		
2-Fluorophenol	40-140		52.5	55.5	52.5		
2-Fluorobiphenyl	40-140		75.5	74.5	74.5		
p-Terphenyl-D14	50-110		72.5	81.5	86.5		
Phenol-d6	40-140		55.3	54.5	52.3		

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Project ID: 1802258
Project Name: PO# SC12893

AETL Job Number	Submitted	Client
93067	06/22/2018	ATL

Method: (8270C-SIM), Phenols and Phthalates by GC/MS SIM (Modified 8270C)

QC Batch No: 062618JB1

Our Lab I.D.			**93067.07**	**93067.08**			
Client Sample I.D.			1802258-35	1802258-36			
Date Sampled			06/20/2018	06/20/2018			
Date Prepared			06/26/2018	06/26/2018			
Preparation Method			3550B	3550B			
Date Analyzed			06/30/2018	06/30/2018			
Matrix			Soil	Soil			
Units			ug/Kg	ug/Kg			
Dilution Factor			10	10			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Bis(2-ethylhexyl) phthalate	50	200	382	236			
Butyl benzyl phthalate	50	200	ND	ND			
Di-n-butyl phthalate	50	200	ND	ND			
Di-n-octyl phthalate	50	200	ND	ND			
Diethyl phthalate	50	200	ND	ND			
Dimethyl phthalate	50	200	ND	ND			
2-Nitrophenol	50	200	ND	ND			
Bisphenol A (BPA)	100	500	ND	132J			
4-Chloro-3-Methylphenol	50	200	ND	ND			
3,4-Dimethylphenol	50	200	ND	ND			
4,6-Dinitro-2-methylphenol	100	500	ND	ND			
2-Methylphenol (2-Cresol)	50	200	ND	ND			
Total Target Phenols	50	200	ND	ND			
Our Lab I.D.			**93067.07**	**93067.08**			
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**			
2-Fluorophenol	40-140		55.0	49.5			
2-Fluorobiphenyl	40-140		71.0	77.5			
p-Terphenyl-D14	50-110		68.5	93.0			
Phenol-d6	40-140		55.3	41.5			

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Project ID: 1802258
Project Name: PO# SC12893

AETL Job Number	Submitted	Client
93067	06/22/2018	ATL

Method: (8270C-SIM), Phenols and Phthalates by GC/MS SIM (Modified 8270C)

QC Batch No: 062618JB1

Our Lab I.D.			93067.09	93067.10	93067.11	93067.12	93067.13
Client Sample I.D.			1802258-37	1802258-38	1802258-39	1802258-40	1802258-41
Date Sampled			06/20/2018	06/20/2018	06/20/2018	06/20/2018	06/20/2018
Date Prepared			06/26/2018	06/26/2018	06/26/2018	06/26/2018	06/26/2018
Preparation Method			3550B	3550B	3550B	3550B	3550B
Date Analyzed			06/30/2018	06/29/2018	06/29/2018	06/29/2018	06/29/2018
Matrix			Soil	Soil	Soil	Soil	Soil
Units			ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Dilution Factor			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
Bis(2-ethylhexyl) phthalate	5.00	20.00	7.80J	ND	ND	ND	ND
Butyl benzyl phthalate	5.00	20.00	ND	ND	ND	ND	ND
Di-n-butyl phthalate	5.00	20.00	ND	ND	ND	ND	ND
Di-n-octyl phthalate	5.00	20.00	ND	ND	ND	ND	ND
Diethyl phthalate	5.00	20.00	ND	ND	ND	ND	ND
Dimethyl phthalate	5.00	20.00	ND	ND	7.80J	ND	ND
2-Nitrophenol	5.00	20.00	ND	ND	ND	ND	ND
Bisphenol A (BPA)	10.0	50.0	14.6J	ND	ND	ND	ND
4-Chloro-3-Methylphenol	5.00	20.00	ND	ND	ND	ND	ND
3,4-Dimethylphenol	5.00	20.00	ND	ND	ND	ND	ND
4,6-Dinitro-2-methylphenol	10.0	50.0	ND	ND	ND	ND	ND
2-Methylphenol (2-Cresol)	5.00	20.00	ND	ND	ND	ND	ND
Total Target Phenols	5.00	20.00	ND	ND	ND	ND	ND
Our Lab I.D.			**93067.09**	**93067.10**	**93067.11**	**93067.12**	**93067.13**
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**	**% Rec.**	**% Rec.**	**% Rec.**
2-Fluorophenol	40-140		76.0	64.3	60.0	52.8	56.0
2-Fluorobiphenyl	40-140		92.5	82.0	76.5	69.5	72.0
p-Terphenyl-D14	50-110		107	106	102	80.5	101
Phenol-d6	40-140		76.8	60.3	59.3	52.5	54.8

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Project ID: 1802258
Project Name: PO# SC12893

AETL Job Number	Submitted	Client
93067	06/22/2018	ATL

Method: (8270C-SIM), Phenols and Phthalates by GC/MS SIM (Modified 8270C)

QC Batch No: 062618JB1

Our Lab I.D.			**93067.14**				
Client Sample I.D.			1802258-43				
Date Sampled			06/20/2018				
Date Prepared			06/26/2018				
Preparation Method			3550B				
Date Analyzed			06/30/2018				
Matrix			Soil				
Units			ug/Kg				
Dilution Factor			1				
Analytes	**MDL**	**PQL**	**Results**				
Bis(2-ethylhexyl) phthalate	5.00	20.00	31.6				
Butyl benzyl phthalate	5.00	20.00	ND				
Di-n-butyl phthalate	5.00	20.00	ND				
Di-n-octyl phthalate	5.00	20.00	ND				
Diethyl phthalate	5.00	20.00	ND				
Dimethyl phthalate	5.00	20.00	6.40J				
2-Nitrophenol	5.00	20.00	ND				
Bisphenol A (BPA)	10.0	50.0	75.4				
4-Chloro-3-Methylphenol	5.00	20.00	ND				
3,4-Dimethylphenol	5.00	20.00	ND				
4,6-Dinitro-2-methylphenol	10.0	50.0	ND				
2-Methylphenol (2-Cresol)	5.00	20.00	ND				
Total Target Phenols	5.00	20.00	ND				
Our Lab I.D.			**93067.14**				
Surrogates	**%Rec.Limit**		**% Rec.**				
2-Fluorophenol	40-140		44.0				
2-Fluorobiphenyl	40-140		57.5				
p-Terphenyl-D14	50-110		72.5				
Phenol-d6	40-140		45.3				

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Project ID: 1802258
Project Name: PO# SC12893

AETL Job Number	Submitted	Client
93067	06/22/2018	ATL

Method: (8270C-SIM), Phenols and Phthalates by GC/MS SIM (Modified 8270C)

QC Batch No: 062718JB1

Our Lab I.D.			Method Blank	**93067.15**	**93067.16**	**93067.17**	**93067.18**
Client Sample I.D.				1802258-44	1802258-45	1802258-48	1802258-49
Date Sampled				06/20/2018	06/20/2018	06/20/2018	06/20/2018
Date Prepared			06/27/2018	06/27/2018	06/27/2018	06/27/2018	06/27/2018
Preparation Method			3550B	3550B	3550B	3550B	3550B
Date Analyzed			06/29/2018	06/30/2018	06/29/2018	06/29/2018	06/29/2018
Matrix			Soil	Soil	Soil	Soil	Soil
Units			ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Dilution Factor			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
Bis(2-ethylhexyl) phthalate	5.00	20.00	ND	24.8	ND	8.20J	6.20J
Butyl benzyl phthalate	5.00	20.00	ND	ND	ND	ND	ND
Di-n-butyl phthalate	5.00	20.00	ND	ND	ND	ND	ND
Di-n-octyl phthalate	5.00	20.00	ND	ND	ND	ND	ND
Diethyl phthalate	5.00	20.00	ND	ND	ND	ND	ND
Dimethyl phthalate	5.00	20.00	ND	5.40J	ND	ND	ND
2-Nitrophenol	5.00	20.00	ND	ND	ND	ND	ND
Bisphenol A (BPA)	10.0	50.0	ND	88.6	ND	ND	ND
4-Chloro-3-Methylphenol	5.00	20.00	ND	ND	ND	ND	ND
3,4-Dimethylphenol	5.00	20.00	ND	ND	ND	ND	ND
4,6-Dinitro-2-methylphenol	10.0	50.0	ND	ND	ND	ND	ND
2-Methylphenol (2-Cresol)	5.00	20.00	ND	ND	ND	ND	ND
Total Target Phenols	5.00	20.00	ND	ND	ND	ND	ND
Our Lab I.D.			Method Blank	**93067.15**	**93067.16**	**93067.17**	**93067.18**
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**	**% Rec.**	**% Rec.**	**% Rec.**
2-Fluorophenol	40-140		77.0	46.3	69.5	41.8	47.5
2-Fluorobiphenyl	40-140		88.5	61.5	79.5	50.5	61.5
p-Terphenyl-D14	50-110		87.5	77.5	78.5	51.5	86.5
Phenol-d6	40-140		81.8	46.8	70.3	42.8	45.0

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Project ID: 1802258
Project Name: PO# SC12893

AETL Job Number	Submitted	Client
93067	06/22/2018	ATL

Method: (8270C-SIM), Phenols and Phthalates by GC/MS SIM (Modified 8270C)

QC Batch No: 062718JB1

Our Lab I.D.			93067.19	93067.20	93067.21	93067.22	93067.23
Client Sample I.D.			1802258-50	1802258-51	1802258-52	1802258-53	1802258-61
Date Sampled			06/20/2018	06/20/2018	06/20/2018	06/20/2018	06/20/2018
Date Prepared			06/27/2018	06/27/2018	06/27/2018	06/27/2018	06/27/2018
Preparation Method			3550B	3550B	3550B	3550B	3550B
Date Analyzed			06/29/2018	06/29/2018	06/29/2018	06/29/2018	06/29/2018
Matrix			Soil	Soil	Soil	Soil	Soil
Units			ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Dilution Factor			1	1	1	1	1
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**	**Results**	**Results**
Bis(2-ethylhexyl) phthalate	5.00	20.00	ND	11.2J	ND	6.80J	6.80J
Butyl benzyl phthalate	5.00	20.00	ND	ND	ND	ND	ND
Di-n-butyl phthalate	5.00	20.00	ND	ND	ND	ND	ND
Di-n-octyl phthalate	5.00	20.00	ND	ND	ND	ND	ND
Diethyl phthalate	5.00	20.00	ND	ND	ND	ND	ND
Dimethyl phthalate	5.00	20.00	ND	ND	ND	ND	ND
2-Nitrophenol	5.00	20.00	ND	ND	ND	ND	ND
Bisphenol A (BPA)	10.0	50.0	ND	ND	ND	ND	ND
4-Chloro-3-Methylphenol	5.00	20.00	ND	ND	ND	ND	ND
3,4-Dimethylphenol	5.00	20.00	ND	ND	ND	ND	ND
4,6-Dinitro-2-methylphenol	10.0	50.0	ND	ND	ND	ND	ND
2-Methylphenol (2-Cresol)	5.00	20.00	ND	ND	ND	ND	ND
Total Target Phenols	5.00	20.00	ND	ND	ND	ND	ND
Our Lab I.D.			**93067.19**	**93067.20**	**93067.21**	**93067.22**	**93067.23**
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**	**% Rec.**	**% Rec.**	**% Rec.**
2-Fluorophenol	40-140		64.8	50.5	63.5	64.0	50.0
2-Fluorobiphenyl	40-140		79.0	65.0	76.5	78.5	64.0
p-Terphenyl-D14	50-110		86.0	77.5	95.5	89.5	78.0
Phenol-d6	40-140		66.5	52.0	66.0	64.0	47.5

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ANALYTICAL RESULTS

Ordered By

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225

Telephone: (562)989-4045
Attn: Rachelle Arada
Page: 10

Project ID: 1802258
Project Name: PO# SC12893

AETL Job Number	Submitted	Client
93067	06/22/2018	ATL

Method: (8270C-SIM), Phenols and Phthalates by GC/MS SIM (Modified 8270C)

QC Batch No: 062718JB1

Our Lab I.D.			**93067.24**	**93067.25**			
Client Sample I.D.			1802258-62	1802258-63			
Date Sampled			06/20/2018	06/20/2018			
Date Prepared			06/27/2018	06/27/2018			
Preparation Method			3550B	3550B			
Date Analyzed			06/29/2018	06/29/2018			
Matrix			Soil	Soil			
Units			ug/Kg	ug/Kg			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Bis(2-ethylhexyl) phthalate	5.00	20.00	ND	ND			
Butyl benzyl phthalate	5.00	20.00	ND	ND			
Di-n-butyl phthalate	5.00	20.00	ND	ND			
Di-n-octyl phthalate	5.00	20.00	ND	ND			
Diethyl phthalate	5.00	20.00	ND	ND			
Dimethyl phthalate	5.00	20.00	ND	ND			
2-Nitrophenol	5.00	20.00	ND	ND			
Bisphenol A (BPA)	10.0	50.0	ND	ND			
4-Chloro-3-Methylphenol	5.00	20.00	ND	ND			
3,4-Dimethylphenol	5.00	20.00	ND	ND			
4,6-Dinitro-2-methylphenol	10.0	50.0	ND	ND			
2-Methylphenol (2-Cresol)	5.00	20.00	ND	ND			
Total Target Phenols	5.00	20.00	ND	ND			
Our Lab I.D.			**93067.24**	**93067.25**			
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**			
2-Fluorophenol	40-140		50.0	62.0			
2-Fluorobiphenyl	40-140		59.0	77.5			
p-Terphenyl-D14	50-110		70.0	82.5			
Phenol-d6	40-140		50.8	64.8			

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Project ID: 1802258
Project Name: PO# SC12893

AETL Job Number	Submitted	Client
93067	06/22/2018	ATL

Method: 8270C-SIM, Phenols and Phthalates by GC/MS SIM (Modified 8270C)

QC Batch No: 062518JB1

Our Lab I.D.			Method Blank	**93067.03**	**93067.04**		
Client Sample I.D.				1802258-20	1802258-21		
Date Sampled				06/19/2018	06/19/2018		
Date Prepared			06/25/2018	06/25/2018	06/25/2018		
Preparation Method			3510C	3510C	3510C		
Date Analyzed			06/29/2018	06/29/2018	06/29/2018		
Matrix			Aqueous	Aqueous	Aqueous		
Units			ug/L	ug/L	ug/L		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Bis(2-ethylhexyl) phthalate	0.50	1.00	ND	ND	ND		
Butyl benzyl phthalate	0.50	1.00	ND	ND	ND		
Di-n-butyl phthalate	0.50	1.00	ND	ND	ND		
Di-n-octyl phthalate	0.50	1.00	ND	ND	ND		
Diethyl phthalate	0.50	1.00	ND	ND	ND		
Dimethyl phthalate	0.50	1.00	ND	ND	ND		
2-Nitrophenol	0.50	1.00	ND	ND	ND		
Bisphenol A (BPA)	1.00	2.00	ND	ND	ND		
4-Chloro-3-Methylphenol	0.50	1.00	ND	ND	ND		
3,4-Dimethylphenol	0.50	1.00	ND	ND	ND		
4,6-Dinitro-2-methylphenol	0.50	1.00	ND	ND	ND		
2-Methylphenol (2-Cresol)	0.50	1.00	ND	ND	ND		
Total Target Phenols	0.50	1.00	ND	ND	ND		
Our Lab I.D.			Method Blank	**93067.03**	**93067.04**		
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**	**% Rec.**		
2-Fluorophenol	40-130		60.0	57.5	58.5		
2-Fluorobiphenyl	40-130		79.3	84.2	87.1		
p-Terphenyl-D14	40-130		107	113	116		
Phenol-d6	40-130		41.6	42.6	40.4		

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QUALITY CONTROL RESULTS

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Project ID: 1802258
Project Name: PO# SC12893

AETL Job Number	Submitted	Client
93067	06/22/2018	ATL

Method: 8270C-SIM, Phenols and Phthalates by GC/MS SIM (Modified 8270C)

QC Batch No: 062518JB1; LCS: Clean Water; LCS Prepared: 06/25/2018; LCS Analyzed: 06/29/2018; Units: ug/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
4-Chloro-3-Methylphenol	20.0	14.2	71.0	20.0	13.9	69.5	2.1	20-130	<30	
2-Chlorophenol	20.0	14.2	71.0	20.0	13.5	67.5	5.1	20-130	<30	
4-Nitrophenol	20.0	5.20	26.0	20.0	4.60	23.0	12.2	20-130	<30	
Surrogates										
2-Fluorophenol	20.0	10.0	50.0	20.0	9.68	48.4	3.3	40-130	<30	
2-Fluorobiphenyl	10.0	8.52	85.2	10.0	8.25	82.5	3.2	40-130	<30	
p-Terphenyl-D14	10.0	12.3	123	10.0	11.3	113	8.5	40-130	<30	
Phenol-d6	20.0	8.10	40.5	20.0	8.48	42.4	4.6	40-130	<30	

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Project ID: 1802258
Project Name: PO# SC12893

AETL Job Number	Submitted	Client
93067	06/22/2018	ATL

Method: (8270C-SIM), Phenols and Phthalates by GC/MS SIM (Modified 8270C)

QC Batch No: 062618JB1; Dup or Spiked Sample: 93026.02; LCS: Clean Sand; QC Prepared: 06/26/2018; QC Analyzed: 06/28/2018; Units: ug/Kg

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
4-Chloro-3-Methylphenol	0.00	400	259	64.8	400	248	62.0	4.4	40-140	<30
2-Chlorophenol	0.00	400	248	62.0	400	230	57.5	7.5	40-140	<30
4-Nitrophenol	0.00	400	166	41.5	400	161	40.3	2.9	40-140	<30
Surrogates										
2-Fluorophenol	0.00	400	247	61.8	400	245	61.3	<1	40-140	<30
2-Fluorobiphenyl	0.00	200	149	74.5	200	144	72.0	3.4	40-140	<30
p-Terphenyl-D14	0.00	200	178	89.0	200	178	89.0	<1	50-110	<30
Phenol-d6	0.00	400	247	61.8	400	240	60.0	3.0	40-140	<30

QC Batch No: 062618JB1; Dup or Spiked Sample: 93026.02; LCS: Clean Sand; QC Prepared: 06/26/2018; QC Analyzed: 06/28/2018; Units: ug/Kg

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
4-Chloro-3-Methylphenol	400	307	76.8	400	287	71.8	6.7	40-140	<30	
2-Chlorophenol	400	302	75.5	400	287	71.8	5.0	40-140	<30	
4-Nitrophenol	400	224	56.0	400	191	47.8	15.8	40-140	<30	
Surrogates										
2-Fluorophenol	400	302	75.5	400	287	71.8	5.0	40-140	<30	
2-Fluorobiphenyl	200	179	89.5	200	174	87.0	2.8	40-140	<30	
p-Terphenyl-D14	200	206	103	200	218	109	5.7	50-110	<30	
Phenol-d6	400	304	76.0	400	282	70.5	7.5	40-140	<30	

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Project ID: 1802258
Project Name: PO# SC12893

AETL Job Number	Submitted	Client
93067	06/22/2018	ATL

Method: (8270C-SIM), Phenols and Phthalates by GC/MS SIM (Modified 8270C)

QC Batch No: 062718JB1; Dup or Spiked Sample: 93067.18; LCS: Clean Sand; QC Prepared: 06/27/2018; QC Analyzed: 06/29/2018; Units: ug/Kg

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
4-Chloro-3-Methylphenol	0.00	400	206	51.5	400	223	55.8	8.0	40-140	<30
2-Chlorophenol	0.00	400	210	52.5	400	217	54.3	3.4	40-140	<30
4-Nitrophenol	0.00	400	165	41.3	400	169	42.3	2.4	40-140	<30
Surrogates										
2-Fluorophenol	0.00	400	235	58.8	400	233	58.3	<1	40-140	<30
2-Fluorobiphenyl	0.00	200	147	73.5	200	138	69.0	6.3	40-140	<30
p-Terphenyl-D14	0.00	200	184	92.0	200	189	94.5	2.7	50-110	<30
Phenol-d6	0.00	400	211	52.8	400	215	53.8	1.9	40-140	<30

QC Batch No: 062718JB1; Dup or Spiked Sample: 93067.18; LCS: Clean Sand; QC Prepared: 06/27/2018; QC Analyzed: 06/29/2018; Units: ug/Kg

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS/LCSD % Limit						
4-Chloro-3-Methylphenol	400	291	72.8	40-140						
2-Chlorophenol	400	273	68.3	40-140						
4-Nitrophenol	400	169	42.3	40-140						
Surrogates										
2-Fluorophenol	400	266	66.5	40-140						
2-Fluorobiphenyl	200	162	81.0	40-140						
p-Terphenyl-D14	200	216	108	50-110						
Phenol-d6	400	262	65.5	40-140						

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Data Qualifiers and Descriptors

Data Qualifier:

#:	Recovery is not within acceptable control limits.
*:	In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied.
B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
H:	Analysis was performed over the allowed holding time due to circumstances which were beyond laboratory control.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).
M:	Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable.
MCL:	Maximum Contaminant Level
NS:	No Standard Available
S6:	Surrogate recovery is outside control limits due to matrix interference.
S8:	The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria.
X:	Results represent LCS and LCSD data.

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.

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Data Qualifiers and Descriptors

MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

ADVANCED TECHNOLOGY LABORATORIES

93067

SUBCONTRACT ORDER

Work Order: 1802258

SENDING LABORATORY:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone: 562.989.4045
Fax: 562.989.6348
Project Manager: Rachelle Arada (Rachelle@atlglobal.com)
Sampler: Jake Lippman

RECEIVING LABORATORY:

AETL
2834 North Naomi Street
Burbank, CA 91504
Phone :(818) 845-8200
Fax: (818) 845-8840
PO#: SC12893-STANDARD TAT

IMPORTANT : Please include Work Order # and PO # in your invoice.

Special Instructions: Need EQUIS EDD.

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1802258-01 / HA-5-0-0.5 93067-01		**Soil**	**06/19/18 09:40**	**Phenols/Phthalates 8270C SIM. See attached list. Archive remaining sample. Contact ATL prior to disposal**
8270_SIM_SUB [Semivolatile Organic Compounds] Glass Jar - 8 oz	**06/29/18 17:00**	07/03/18 09:40		
ATL Lab#: 1802258-02 / HA-5-2.0 93067-02		**Soil**	**06/19/18 09:40**	
8270_SIM_SUB [Semivolatile Organic Compounds] Glass Jar - 8 oz	**06/29/18 17:00**	07/03/18 09:40		
ATL Lab#: 1802258-20 / EB-061918 93067-03		**Water**	**06/19/18 13:00**	
8270_SIM_SUB [Semivolatile Organic Compounds] Amber Unpres - 1000mL	**06/29/18 17:00**	06/26/18 13:00		
ATL Lab#: 1802258-21 / SW-061918 93067-04		**Water**	**06/19/18 13:00**	
8270_SIM_SUB [Semivolatile Organic Compounds] Amber Unpres - 1000mL	**06/29/18 17:00**	06/26/18 13:00		

Released By	Date	Received By	Date
	6/22/18		6/22/18 0750
Released By	Date	Received By	Date
	6/22/18 1343		06/22/18 1343

ADVANCED TECHNOLOGY LABORATORIES

SUBCONTRACT ORDER

Work Order: 1802258

93067

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1802258-31 / HA-3-0-0.5 8270_SIM_SUB [Semivolatile Organic Compounds] Glass Jar - 8 oz	**06/29/18 17:00**	**Soil** 07/04/18 12:00	**06/20/18 12:00**	93067.05
ATL Lab#: 1802258-32 / HA-3-2.0 8270_SIM_SUB [Semivolatile Organic Compounds] Glass Jar - 8 oz	**06/29/18 17:00**	**Soil** 07/04/18 12:00	**06/20/18 12:00**	93067.06
ATL Lab#: 1802258-35 / HA-4-0-0.5-Dup 8270_SIM_SUB [Semivolatile Organic Compounds] Glass Jar - 8 oz	**06/29/18 17:00**	**Soil** 07/04/18 11:10	**06/20/18 11:10**	93067.07
ATL Lab#: 1802258-36 / HA-4-0-0.5 8270_SIM_SUB [Semivolatile Organic Compounds] Glass Jar - 8 oz	**06/29/18 17:00**	**Soil** 07/04/18 11:10	**06/20/18 11:10**	93067.08
ATL Lab#: 1802258-37 / HA-4-2.0 8270_SIM_SUB [Semivolatile Organic Compounds] Glass Jar - 8 oz	**06/29/18 17:00**	**Soil** 07/04/18 11:10	**06/20/18 11:10**	93067.09
ATL Lab#: 1802258-38 / HA-1-0-0.5 8270_SIM_SUB [Semivolatile Organic Compounds] Glass Jar - 8 oz	**06/29/18 17:00**	**Soil** 07/04/18 09:20	**06/20/18 09:20**	93067.10

Released By	Date	Received By	Date
mm	6/22/18	[signature]	6/22/18 0750
[signature]	6/22/18	Agisht H	06/22/18
Agisht H	1343	Jean Claude	1343

ADVANCED TECHNOLOGY LABORATORIES

SUBCONTRACT ORDER

Work Order: 1802258

93067

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1802258-39 / HA-1-0-0.5-Dup 8270_SIM_SUB [Semivolatile Organic Compounds] Glass Jar - 8 oz	**06/29/18 17:00**	**Soil** 07/04/18 09:20	**06/20/18 09:20**	93067.11
ATL Lab#: 1802258-40 / HA-1-1.0 8270_SIM_SUB [Semivolatile Organic Compounds] Glass Jar - 8 oz	**06/29/18 17:00**	**Soil** 07/04/18 09:20	**06/20/18 09:20**	93067.12
ATL Lab#: 1802258-41 / HA-1-2.0 8270_SIM_SUB [Semivolatile Organic Compounds] Glass Jar - 8 oz	**06/29/18 17:00**	**Soil** 07/04/18 09:20	**06/20/18 09:20**	93067.13
ATL Lab#: 1802258-43 / HA-2-0-0.5 8270_SIM_SUB [Semivolatile Organic Compounds] Glass Jar - 8 oz	**06/29/18 17:00**	**Soil** 07/04/18 07:55	**06/20/18 07:55**	93067.14
ATL Lab#: 1802258-44 / HA-2-0-0.5-Dup 8270_SIM_SUB [Semivolatile Organic Compounds] Glass Jar - 8 oz	**06/29/18 17:00**	**Soil** 07/04/18 07:55	**06/20/18 07:55**	93067.15
ATL Lab#: 1802258-45 / HA-2-2.0 8270_SIM_SUB [Semivolatile Organic Compounds] Glass Jar - 8 oz	**06/29/18 17:00**	**Soil** 07/04/18 07:55	**06/20/18 07:55**	93067.16

Released By	Date	Received By	Date
	6/22/18		6/22/18 0750
	6/22/18 1343		06/22/18 1343

ADVANCED TECHNOLOGY LABORATORIES

SUBCONTRACT ORDER

93067

Work Order: 1802258

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1802258-48 / TP-3-0-0.25 8270_SIM_SUB [Semivolatile Organic Compounds] Glass Jar - 8 oz	**06/29/18 17:00**	**Soil** 07/04/18 11:15	**06/20/18 11:15**	93067.17
ATL Lab#: 1802258-49 / TP-3-0.25-2 8270_SIM_SUB [Semivolatile Organic Compounds] Glass Jar - 8 oz	**06/29/18 17:00**	**Soil** 07/04/18 11:20	**06/20/18 11:20**	93067.18
ATL Lab#: 1802258-50 / TP-3-2-9 8270_SIM_SUB [Semivolatile Organic Compounds] Glass Jar - 8 oz	**06/29/18 17:00**	**Soil** 07/04/18 11:25	**06/20/18 11:25**	93067.19
ATL Lab#: 1802258-51 / TP-4-0-0.25 8270_SIM_SUB [Semivolatile Organic Compounds] Glass Jar - 8 oz	**06/29/18 17:00**	**Soil** 07/04/18 11:55	**06/20/18 11:55**	93067.20
ATL Lab#: 1802258-52 / TP-4-0.25-6 8270_SIM_SUB [Semivolatile Organic Compounds] Glass Jar - 8 oz	**06/29/18 17:00**	**Soil** 07/04/18 11:57	**06/20/18 11:57**	93067.21
ATL Lab#: 1802258-53 / TP-4-6-8 8270_SIM_SUB [Semivolatile Organic Compounds] Glass Jar - 8 oz	**06/29/18 17:00**	**Soil** 07/04/18 12:00	**06/20/18 12:00**	93067.22

Released By	Date	Received By	Date
	6/22/18		6/22/18 0750
	6/22/18 1343		06/22/18 1343

ADVANCED TECHNOLOGY LABORATORIES

SUBCONTRACT ORDER

Work Order: 1802258

93067

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1802258-61 / TP-23-0-0.5 8270_SIM_SUB [Semivolatile Organic Compounds] Glass Jar - 8 oz	**06/29/18 17:00**	**Soil** 07/04/18 08:45	**06/20/18 08:45**	93067.23
ATL Lab#: 1802258-62 / TP-23-0.5-5 8270_SIM_SUB [Semivolatile Organic Compounds] Glass Jar - 8 oz	**06/29/18 17:00**	**Soil** 07/04/18 08:50	**06/20/18 08:50**	93067.24
ATL Lab#: 1802258-63 / TP-23-5-8 8270_SIM_SUB [Semivolatile Organic Compounds] Glass Jar - 8 oz	**06/29/18 17:00**	**Soil** 07/04/18 08:55	**06/20/18 08:55**	93067.25
ATL LAB# 1802258-64/TP-23-8-10	6/20/18	HOLD		93067.26

Released By	Date	Received By	Date
	6/22/18		6/22/18 0750
	6/22/18 1343		06/22/18 1343

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COOLER RECEIPT FORM

Client Name: ATC
Project Name:
AETL Job Number: 93065, 93066 & 93067
Date Received: 08/22/14 Received by: Jean Claude
Carrier: ☒ AETL Courier ☐ Client ☐ GSO ☐ FedEx ☐ UPS
☐ Others:

Samples were received in: ☒ Cooler (1) ☐ Other (Specify):
Inside temperature of shipping container No 1: 3.1 °C, No 2: _____, No 3: _____
Type of sample containers: ☐ VOA, ☒ Glass bottles, ☒ Wide mouth jars, ☐ HDPE bottles, ☐ Metal sleeves, ☐ Others (Specify):
How are samples preserved: ☐ None, ☐ Ice, ☒ Blue Ice, ☐ Dry Ice
☒ None, _ HNO_3, _ NaOH, _ ZnOAc, _ HCl, _ $Na_2S_2O_3$, _ MeOH
_ Other (Specify):

	Yes	No, explain below	Name, if client was notified.
1. Are the COCs Correct?	X		
2. Are the Sample labels legible?	X		
3. Do samples match the COC?	X		
4. Are the required analyses clear?	X		
5. Is there enough samples for required analysis?	X		
6. Are samples sealed with evidence tape?	NA		
7. Are sample containers in good condition?	X		
8. Are samples preserved?	X		
9. Are samples preserved properly for the intended analysis?	X		
10. Are the VOAs free of headspace?	NA		
11. Are the jars free of headspace?	NA		

Explain all "No" answers for above questions:

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755 Temp blank (°C): 5.8, 4.9, 5.6, 6.0, 5.9, 6.0
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 1 of 2

Instruction: Complete all shaded areas.

For Laboratory Use Only			ATLCOC Ver:20180321
Method of Transport	Sample Conditions Condition	Y	N
☐ Client ☐ ATL	1. CHILLED	☑	☐
☐ FedEx ☐ OnTrac	2. HEADSPACE (VOA)	☐	☐
☐ GSO	3. CONTAINER INTACT	☑	☐
☐ Other:	4. SEALED	☐	☑

Sample Conditions Upon Receipt

Condition	Y	N
5. # OF SAMPLES MATCH COC	☑	☐
6. PRESERVED	☐	☐
7. COOLER TEMP, deg C: 5.5, 5.3, 5.4, 5.5		

CUSTOMER

Company: Kleinfelder, Inc.
Address: 550 West C Street, Suite 1200
City: San Diego State: CA Zip: 92101
Tel: 6198314677 5.7, 5.8
Fax:

SEND REPORT TO:
Attn: Jake Lippman
Email: jlippman@kleinfelder.com
Company: Kleinfelder Inc
Address: 550 West C Street Suite 1200
City: San Diego State: CA Zip: 92101

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn:
Email: accountspayableus@kleinfelder.com
Company: Same
Address:
City: State: Zip:

EDD: ○ Excel ○ EDF ◉ Equis ○ _____

QA/QC: ☑ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV ☐ _____

PROJECT SAMPLES

Project Name: Salt Pond 20
Project No.: 20164596.018A
Sampler: Jake Lippman
Quote #:
PO #: 20164596.018A
Special Instructions/Comments: Archive remaining samples

ITEM	Laboratory ID (For Lab Use Only)	Sample ID / Location	Date	Time	8081 (Organochlorine Pesticides)	8082 (PCBs)	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	PAHs (8270C SIM)	Phenols/Phthalates (8270C SIM)	TPH C6-40 (8015B)	SVOCs (8270C SIM)	Title 22 Metals (6020/7471A)	VOC 8260					Soil	Select Solid Matrix	Select Water Matrix	Wastewater	Select Non-aqueous Matrix	Enter Custom Matrix	Turnaround Time (TAT)	Quantity	Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister	Material: 1=Glass; 2=Plastic; 3=Metal	Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn/Ac12; 6=NaOH; 7=NA2S2O3	Remarks
1	1802258-01	HA-5-0-0.5	6-19-18	0940	X	X								X	X		X	X					X						5	2	5	1	1	
2	-02	HA-5-2.0			X	X								X	X		X	X																
3	-03	HA-5-4.0																																HOLD
4	-04	HA-5-6.0																																HOLD
5	-05	HA-6-0-0.5		0855											X		X	X																
6	-06	HA-6-0-0.5-DUP													X		X	X																
7	-07	HA-6-2.0													X		X	X																
8	-08	HA-6-4.0																																HOLD
9	-09	HA-6-6.0																																HOLD
10	-10	HA-12-0-0.5		1035											X		X																	

TERMS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples submitted AFTER 3:00 PM are considered received the following business day at 8:00 AM.
3. The following turnaround time conditions apply:
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   - TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   - TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   - TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   - TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   - TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work --- ask for quote.
5. Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20 sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reformatted report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction procedure.
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12. The laboratory will randomly select from all QC samples received the sample to spike for Matrix Spike/ Matrix Spike Duplicate (MS/MSD) at no cost. However, if you want the laboratory to additionally perform MS/MSD on your sample, a charge will be assessed for the specific sample used.

CUSTODY

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Jake Lippman	6/19/18	15:55		6/20/18	1558
	6/20/18	1922		6/20/18	1922

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Printed Name _____ Signature _____

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 2 of 8

Instruction: Complete all shaded areas.

For Laboratory Use Only				ATLCOC Ver:20180321
Method of Transport	Sample Conditions Condition	Y	N	Receipt Condition	Y	N
☐ Client ☐ ATL ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other:	1. CHILLED	☐	☐	5. # OF SAMPLES MATCH COC	☐	☐
	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☐
	3. CONTAINER INTACT	☐	☐	7. COOLER TEMP, deg C:		
	4. SEALED	☐	☐			

CLIENT

Company: Kleinfelder, Inc.
Address: 550 West C Street, Suite 1200
City: San Diego
State: CA
Zip: 92101
Tel: 6198314677
Fax:

SEND REPORT TO:
Attn: Jake Lippman
Email: jlippman@kleinfelder.com
Company: Kleinfelder Inc
Address: 550 W. C Street Suite 1200
City: San Diego
State: CA
Zip: 92101

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn:
Email: accountspayableus@kleinfelder.com
Company: Same
Address:
City:
State:
Zip:

EDD: ○ Excel ○ EDF ◉ Equis ○ ____

QA/QC: ☑ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV ☐ ____

PROJECT SAMPLES

Project Name: Salt Pond 20
Project No.: 20164596.018A
Sampler: Jake Lippman
Quote #:
PO #: 20164596.018A
Special Instructions/Comments: Archive remaining samples

Requested Analysis: 8081 (Organochlorine Pesticides); 8082 (PCBs); Select Analysis; Select Analysis; Select Analysis; Select Analysis; Select Analysis; Select Analysis; PAHs (8270C SIM); Phenols/Phthalates (8270C SIM); TPH C6-40 (8015B); SVOCs (8270C SIM); Title 22 Metals (6020/7471A)

Sample Matrix: Soil; Select Solid Matrix; Select Water Matrix; Wastewater; Select Non-aqueous Matrix; Enter Custom Matrix

Container: Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister; Material: 1=Glass; 2=Plastic; 3=Metal; Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn(Ac)2; 6=NaOH; 7=NA2S2O3

ITEM	Laboratory ID (For Lab Use Only)	Sample ID / Location	Date	Time	8081	8082	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	PAHs (8270C SIM)	Phenols/Phthalates (8270C SIM)	TPH C6-40 (8015B)	SVOCs (8270C SIM)	Title 22 Metals (6020/7471A)	Soil	Select Solid Matrix	Select Water Matrix	Wastewater	Select Non-aqueous Matrix	Enter Custom Matrix	Turnaround Time (TAT)	Quantity	Type	Material	Preservative	Remarks
1	1602257-11	HA-12-2.0	6-19-18	1035											X		X	X						5	2	5	1	1	
2	-12	HA-12-4.0		↓																									HOLD
3	-13	HA-12-6.0																											HOLD
4	-14	HA-13-0-0.5		0750													X												
5	-15	HA-13-0-0.5 DUP															X												
6	-16	HA-13-2.0															X												
7	-17	HA-13-2.0-DUP															X												
8	-18	HA-13-4.0																											HOLD
9	-19	HA-13-6.0																											HOLD
10	~~-20~~																												

6-19-18

TERMS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
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   - TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   - TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   - TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
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SIGNATURES

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Jake Lippman	6/19/18	1530		6/20/18	1658
	6/20/18	1922		6/20/18	1922

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Printed Name _____ Signature _____

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 3 of 8

Instruction: Complete all shaded areas.

For Laboratory Use Only			ATLCOC Ver:20180321
Method of Transport	Sample Condition: Condition	Y	N
☐ Client ☐ ATL ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other:	1. CHILLED	☐	☐
	2. HEADSPACE (VOA)	☐	☐
	3. CONTAINER INTACT	☐	☐
	4. SEALED	☐	☐
	Receipt Condition	Y	N
	5. # OF SAMPLES MATCH COC	☐	☐
	6. PRESERVED	☐	☐
	7. COOLER TEMP, deg C:		

CUSTOMER

Company: Kleinfelder, Inc.
Address: 550 West C Street, Suite 1200
City: San Diego State: CA Zip: 92101
Tel: 6198314677
Fax:

SEND REPORT TO:
Attn: Jake Lippman
Email: jlippman@kleinfelder.com
Company: Kleinfelder Inc
Address: 550 West C Street Suite 1200
City: San Diego State: CA Zip: 92101

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn:
Email: accountspayableus@kleinfelder.com
Company: Same
Address:
City: State: Zip:

EDD: ○ Excel ○ EDF ◉ Equis ○ ____
QA/QC: ☑ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV ☐ ____

PROJECT SAMPLES

Project Name: Salt Pond 20
Project No.: 20164596.018A
Sampler: Jake Lippman
Quote #:
PO #: 20164596.018A
Special Instructions/Comments: Archive remaining samples

ITEM	Laboratory ID (For Lab Use Only)	Sample ID / Location	Date	Time	8081 (Organochlorine Pesticides)	8082 (PCBs)	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	PAHs (8270C SIM)	Phenols/Phthalates (8270C SIM)	TPH C6-40 (8015B)	SVOCs (8270C SIM)	Title 22 Metals (6020/7471A)	Soil	Select Solid Matrix	Select Water Matrix	Wastewater	Select Non-aqueous Matrix	Enter Custom Matrix	Turnaround Time (TAT)	Quantity	Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Bottle; 7=Canister	Material: 1=Glass; 2=Plastic; 3=Metal	Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=ZnAc2; 6=NaOH; 7=NaOSO3	Remarks
1	1802258-20	EB-061918	6.19.18	1300	X	X							X	X	X	X	X			X				5	11	1	1	1	
2	↓-22 21	SW-061918	↓	1300	X	X							X	X	X	X	X			X				5	11	1	1	1	
3																													
4																													
5																													
6		SB 6.19.18																											
7																													
8																													
9																													
10																													

TERMS

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2. Samples submitted AFTER 3:00 PM are considered received the following business day at 8:00 AM.
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Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Jake Lippman	6/19/18	15:30		6/20/18	1558
	6/20/18	1922		6/20/18	1922

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Printed Name _____ Signature _____

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 4 of 8

Instruction: Complete all shaded areas.

For Laboratory Use Only				ATLCOC Ver:20180321		
Method of Transport	Sample Condition Upon Receipt					
	Condition	Y	N	Condition	Y	N
☐ Client ☐ ATL ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other:	1. CHILLED	☐	☐	5. # OF SAMPLES MATCH COC	☐	☐
	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☐
	3. CONTAINER INTACT	☐	☐	7. COOLER TEMP, deg C:		
	4. SEALED	☐	☐			

CUSTOMER

Company: Kleinfelder, Inc.
Address: 550 West C Street, Suite 1200
City: San Diego State: CA Zip: 92101
Tel: 6198314677
Fax:

SEND REPORT TO:
Attn: Jake Lippman
Email: jlippman@kleinfelder.com
Company: ~~550 W~~ Kleinfelder
Address: 550 W C, St, St. 1200
City: ~~Calif~~ San Diego State: CA Zip: 92101

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn:
Email: accountspayableus@kleinfelder.com
Company: Same
Address:
City: State: Zip:

EDD: ○ Excel ○ EDF ◉ Equis ○ _____

QA/QC: ☑ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV ☐ _____

PROJECT SAMPLES

Project Name: Salt Pond 20
Project No.: 20164596.018A
Sampler: Jake Lippman
Quote #:
PO #: 20164596.018A
Special Instructions/Comments: Archive remaining samples

ITEM	Laboratory ID (For Lab Use Only)	Sample ID / Location	Date	Time	8081 (Organochlorine Pesticides)	8082 (PCBs)	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	PAHs (8270C SIM)	Phenols/Phthalates (8270C SIM)	TPH C6-40 (8015B)	SVOCs (8270C SIM)	Title 22 Metals (6020/7471A)	VOCs 8260B				Soil	Select Solid Matrix	Select Water Matrix	Wastewater	Select Non-aqueous Matrix	Enter Custom Matrix	Turnaround Time (TAT)	Quantity	Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister	Material: 1=Glass; 2=Plastic; 3=Metal	Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=ZnAc2; 6=NaOH; 7=NA2S2O3	Remarks
1	1802258-232	TP-16-0-0.5	6/19/18	13:50		X									X	X	X	X				X						5	2	5	1	—	
2	-233	TP-16-0.5-3.5		13:55		X									X	X	X	X															
3	-234	TP-16-3.5-5		13:58		X									X	X	X	X															
4	-235	TP-16-5-10		14:00		X									X	X	X	X															
5	-236	TP-19-0-4		08:40		X									X	X	X	X															
6	-237	TP-19-4-8		08:45		X									X	X	X	X															
7	-238	TP-19-8-10		08:50		X									X	X	X	X															
8	-239	TP-25-0-4		10:40		X									X	X	X	X															
9	-240	TP-25-4-6		10:45		X									X	X	X	X															
10	-241 6/20/18		6/19/18																														

TERMS

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Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Jake Lippman	6/19/18	~~15:50~~ 15:55		6/20/18	1555
	6/20/18	1922		6/20/18	1922

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Printed Name _____ Signature _____

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 5 of 8

Instruction: Complete all shaded areas.

For Laboratory Use Only			ATLCOC Ver:20180321
Method of Transport	Sample Condition: Condition	Y / N	Receipt Condition	Y / N
☐ Client ☐ ATL ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other:	1. CHILLED	☐ ☐	5. # OF SAMPLES MATCH COC	☐ ☐
	2. HEADSPACE (VOA)	☐ ☐	6. PRESERVED	☐ ☐
	3. CONTAINER INTACT	☐ ☐	7. COOLER TEMP, deg C:	
	4. SEALED	☐ ☐		

CUSTOMER

Company: Kleinfelder, Inc.
Address: 550 West C Street, Suite 1200
City: San Diego State: CA Zip: 92101
Tel: 6198314677
Fax:

SEND REPORT TO:
Attn: Jake Lippman
Email: jlippman@kleinfelder.com
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City: San Diego State: CA Zip: 92101

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn:
Email: accountspayableus@kleinfelder.com
Company: Same
Address:
City: State: Zip:

EDD: ○ Excel ○ EDF ◉ Equis ○ ____

QA/QC: ☑ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV ☐ ____

PROJECT SAMPLES

Project Name: Salt Pond 20
Project No.: 20164596.018A
Sampler: Jake Lippman
Quote #:
PO #: 20164596.018A
Special Instructions/Comments: Archive remaining samples

ITEM	Laboratory ID (For Lab Use Only)	Sample ID / Location	Date	Time	8081 (Organochlorine Pesticides)	8082 (PCBs)	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	PAHs (8270C SIM)	Phenols/Phthalates (8270C SIM)	TPH C6-40 (8015B)	SVOCs (8270C SIM)	Title 22 Metals (6020/7471A)	Soil	Select Solid Matrix	Select Water Matrix	Wastewater	Select Non-aqueous Matrix	Enter Custom Matrix	Turnaround Time (TAT)	Quantity	Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister	Material: 1=Glass; 2=Plastic; 3=Metal	Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn(Ac)2; 6=NaOH; 7=NA2S2O3	Remarks
1	1802258-32 (31)	HA-3-0-0.5	6.20.18	1260	X	X								X	X		X	X						5	2	5	1	—	
2	-3832	HA-3-2.0			X	X								X	X		X												
3	-3933	HA-3-4.0																											Hold
4	-3534	HA-3-5.0																											Hold
5	-3635	HA-4-0-0.5-Dup		1110	X	X								X	X		X												
6	-3736	HA-4-0-0.5			X	X								X	X		X												
7	-3837	HA-4-2.0			X	X								X	X		X												
8	6/20/18																												
9		SB 6.20.18																											
10																													

TERMS

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   - TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   - TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   - TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   - TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   - TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
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7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20 sample/week if extended storage is requested.
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Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Jake Lippman	6/20/18	1555		6/20/18	1558
	6/20/18	1922		6/20/18	1922

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Printed Name _____ Signature _____

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 6 of 8

Instruction: Complete all shaded areas.

For Laboratory Use Only			ATLCOC Ver:20180321
Method of Transport	Sample Condition: Condition	Y	N	Sample Condition: Condition	Y	N
☐ Client ☐ ATL ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other:	1. CHILLED	☐	☐	5. # OF SAMPLES MATCH COC	☐	☐
	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☐
	3. CONTAINER INTACT	☐	☐	7. COOLER TEMP, deg C:		
	4. SEALED	☐	☐			

CUSTOMER

Company: Kleinfelder, Inc.
Address: 550 West C Street, Suite 1200
City: San Diego State: CA Zip: 92101
Tel: 6198314677
Fax:

SEND REPORT TO:
Attn: Jake Lippman
Email: jlippman@kleinfelder.com
Company: Kleinfelder Inc
Address: 550 West C Street Suite 1200
City: San Diego State: CA Zip: 92101

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn:
Email: accountspayableus@kleinfelder.com
Company: Same
Address:
City: State: Zip:

EDD: ○ Excel ○ EDF ◉ Equis ○ _____

QA/QC: ☑ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV ☐ _____

PROJECT SAMPLES

Project Name: Salt Pond 20
Project No.: 20164596.018A
Sampler: Jake Lippman
Quote #:
PO #: 20164596.018A
Special Instructions/Comments: Archive remaining samples

Requested Analysis / Sample Matrix / Container

ITEM	Laboratory ID (For Lab Use Only)	Sample ID / Location	Date	Time	8081 (Organochlorine Pesticides)	8082 (PCBs)	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	PAHs (8270C SIM)	Phenols/Phthalates (8270C SIM)	TPH C6-40 (8015B)	SVOCs (8270C SIM)	Title 22 Metals (6020/7471A)	Soil	Select Solid Matrix	Select Water Matrix	Wastewater	Select Non-aqueous Matrix	Enter Custom Matrix	Turnaround Time (TAT)	Quantity	Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister	Material: 1=Glass; 2=Plastic; 3=Metal	Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn(Ac)2; 6=NaOH; 7=NA2S2O3	Remarks
1	1802258-3938	HA-1-0-0.5	6.20.18	0920	X	X							X	X			X	X						5	2	5	1	1	
2	-4039	HA-1-0-0.5-Dup			X	X							X	X			X												
3	-4140	HA-1-1.0			X	X							X	X			X												
4	-4241	HA-1-2.0			X	X							X	X			X												
5	-4342	HA-1-4.0																											HOLD
6	-4443	HA-2-0-0.5		0755	X	X							X	X			X												
7	-4544	HA-2-0-0.5-Dup			X	X							X	X			X												
8	-4645	HA-2-2.0			X	X							X	X			X												
9	-4746	HA-2-4.0																											HOLD
10	-4847	HA-2-6.0																											HOLD

TERMS

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   - TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   - TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   - TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
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CHAIN OF CUSTODY

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Jake Lippman	6/20/19	1930		6/20/18	1950
	6/20/19	1922		6/20/18	1922

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Printed Name _____ Signature _____

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 7 of 8

Instruction: Complete all shaded areas.

For Laboratory Use Only				ATLCOC Ver:20180321		
Method of Transport	Sample Condition: Condition	Y	N	Sample Condition: Receipt Condition	Y	N
☐ Client ☐ ATL ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other:	1. CHILLED	☐	☐	5. # OF SAMPLES MATCH COC	☐	☐
	2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☐
	3. CONTAINER INTACT	☐	☐	7. COOLER TEMP, deg C:		
	4. SEALED	☐	☐			

CUSTOMER

Company: Kleinfelder, Inc.
Address: 550 West C Street, Suite 1200
City: San Diego State: CA Zip: 92101
Tel: 6198314677
Fax:

SEND REPORT TO:
Attn: Jake Lippman
Email: jlippman@kleinfelder.com
Company: Kleinfelder, Inc.
Address: 550 W C St. Ste 1200
City: San Diego State: CA Zip: 92101

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn:
Email: accountspayableus@kleinfelder.com
Company: Same
Address:
City: State: Zip:

EDD: ○ Excel ○ EDF ◉ Equis ○ _____

QA/QC: ☑ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV ☐ _____

PROJECT SAMPLES

Project Name: Salt Pond 20
Project No.: 20164596.018A
Sampler: Jake Lippman
Quote #:
PO #: 20164596.018A
Special Instructions/Comments: Archive remaining samples

ITEM	Laboratory ID (For Lab Use Only)	Sample ID / Location	Date	Time	8081 (Organochlorine Pesticides)	8082 (PCBs)	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	PAHs (8270C SIM)	Phenols/Phthalates (8270C SIM)	TPH C6-40 (8015B)	SVOCs (8270C SIM)	Title 22 Metals (6020/7471A)	VOCs 8260B					Soil	Select Solid Matrix	Select Water Matrix	Wastewater	Select Non-aqueous Matrix	Enter Custom Matrix	Turnaround Time (TAT)	Quantity	Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Cedar; 7=Canister	Material: 1=Glass; 2=Plastic; 3=Metal	Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=ZnAc2; 6=NaOH; 7=NA2S2O3	Remarks
	MA 6/20/18																																	
1	1802258-4948	TP-3-0-0.25	6/20/18	11:15	X	X								X			X												5	2	5	1	1	
2	-5049	TP-3-0.25-2		11:20	X	X								X			X																	
3	-5050	TP-3-2-9		11:25	X	X								X			X																	
4	-5251	TP-4-0-0.25		11:55	X	X								X			X																	
5	-5352	TP-4-0.25-6		11:57	X	X								X			X																	
6	-5453	TP-4-6-8		12:00	X	X								X			X																	
7	-5554	TP-9-0-0.25		12:30		X									X	X	X	X																
8	-5655	TP-9-0.25-2.5		12:35		X									X	X	X	X																
9	-5756	TP-9-2.5-7		12:40		X									X	X	X	X																
10	-5857	TP-9-7-9		12:45		X									X	X	X	X																

TERMS

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Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Jake Lippman	6/20/18	1558		6/20/18	1558
	6/20/18	1922		6/20/18	1922

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Printed Name _____ Signature _____

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 8 of 8

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver:20180321

Method of Transport: ☐ Client ☐ ATL ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other: _____

Sample Conditions Condition	Y	N	Receipt Condition	Y	N
1. CHILLED	☐	☐	5. # OF SAMPLES MATCH COC	☐	☐
2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☐
3. CONTAINER INTACT	☐	☐	7. COOLER TEMP, deg C:		
4. SEALED	☐	☐			

CUSTOMER

Company: Kleinfelder, Inc.
Address: 550 West C Street, Suite 1200
City: San Diego State: CA Zip: 92101
Tel: 6198314677
Fax:

SEND REPORT TO:
Attn: Jake Lippman
Email: jlippman@kleinfelder.com
Company:
Address:
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn:
Email: accountspayableus@kleinfelder.com
Company: Same
Address:
City: State: Zip:

EDD: ○ Excel ○ EDF ◉ Equis ○ _____

QA/QC: ☑ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV ☐ _____

PROJECT SAMPLES

Project Name: Salt Pond 20
Project No.: 20164596.018A
Sampler: Jake Lippman
Quote #:
PO #: 20164596.018A
Special Instructions/Comments: Archive remaining samples

ITEM	Laboratory ID (For Lab Use Only)	Sample ID / Location	Date	Time	8081 (Organochlorine Pesticides)	8082 (PCBs)	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	PAHs (8270C SIM)	Phenols/Phthalates (8270C SIM)	TPH C6-40 (8015B)	SVOCs (8270C SIM)	Title 22 Metals (6020/7471A)	VOCs 8260B	Soil	Select Solid Matrix	Select Water Matrix	Wastewater	Select Non-aqueous Matrix	Enter Custom Matrix	Turnaround Time (TAT)	Quantity	Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister	Material: 1=Glass; 2=Plastic; 3=Metal	Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn(Ac)2; 6=NaOH; 7=NA2S2O3	Remarks
1	1802258-59 (6558)	TP-17-1.5-2	6/20/18	09:20											X										5	2	5	1	1	
2	-60 (6559)	TP-21-0-5		13:15		X									X	X	X	X												
3	-61 (6560)	TP-21-5-9		13:20		X									X	X	X	X												
4	-62 (6561)	TP-23-0-0.5		08:45	X	X								X			X													
5	-63 (6562)	TP-23-0.5-5		08:50	X	X								X			X													
6	-64 (6563)	TP-23-5-8		08:55	X	X								X			X													
7	-65 (6564)	TP-23-8-10		09:00	X	X								X			X													
8																														
9																														
10																														

6/20/18

TERMS

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CUSTODY

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Jake Lippman	6/20/18	15:35		6/20/18	1558
	6/20/18	1920		6/20/18	1921

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Printed Name _____ Signature _____

Rachelle Arada

From: Jake Lippman <JLippman@kleinfelder.com>
Sent: Thursday, June 21, 2018 5:08 PM
To: Carmen Aguila
Cc: customer.relations@atlglobal.com; Marnellie Ramos
Subject: RE: Analysès

Carmen,

As discussed, please let me know if it's too late to hold all analyses on the following samples:

TP-16-5-10
TP-9-7-9
TP-23-8-10

Thank you

Jake Lippman, PG, CHg
Project Manager

550 West C Street, Suite 1200
San Diego, CA 92101
d| 619.831.4677
o| 619.831.4600
m| 619.348.8415

KLEINFELDER
Bright People. Right Solutions.

This email may contain confidential information. If you have received this email—including any attachments—in error, please notify the sender promptly and delete the email and any attachments from all of your systems.

Rachelle Arada

From: Jake Lippman <JLippman@kleinfelder.com>
Sent: Friday, June 22, 2018 1:53 PM
To: Carmen Aguila
Cc: customer.relations@atlglobal.com; Marnellie Ramos
Subject: Re: Analyses

Carmen, please run Title 22 metals 6020/7471A on these:

TP-16-5-10

TP-9-7-9

TP-23-8-10

Thank you

Jake Lippman, PG, CHg
Project Manager

550 West C Street, Suite 1200
San Diego, CA 92101
d| 619.831.4677
o| 619.831.4600
m| 619.348.8415

This email may contain confidential information. If you have received this email—including any attachments—in error, please notify the sender promptly and delete the email and any attachments from all of your systems.

Rachelle Arada

From: Jake Lippman <JLippman@kleinfelder.com>
Sent: Monday, July 2, 2018 2:11 PM
To: Dominic Mata; Rachelle Arada
Cc: customer.relations@atlglobal.com
Subject: RE: Partial Results - Salt Pond 20, 20164596.018A (ATL# 1802258)

Please add TPH C6-40 8015B to HA-1-0-0.5, HA-1-1, and HA-1-2.

Thank you

Jake Lippman, PG, CHg
Project Manager

550 West C Street, Suite 1200
San Diego, CA 92101
d| 619.831.4677
o| 619.831.4600
m| 619.348.8415

KLEINFELDER
Bright People. Right Solutions.

This email may contain confidential information. If you have received this email—including any attachments—in error, please notify the sender promptly and delete the email and any attachments from all of your systems.

From: Dominic Mata <dominic@atlglobal.com>
Sent: Thursday, June 28, 2018 7:11 PM
To: Jake Lippman <JLippman@kleinfelder.com>
Cc: customer.relations@atlglobal.com
Subject: Partial Results - Salt Pond 20, 20164596.018A (ATL# 1802258)

External Email.

Good afternoon Jake,

Please find partial results for the above project attached. Final report is pending our in-house 6020 and 8081 results as well as subcontracted analyses results. If I can further assist, please let me know.

Thanks,

Dominic Mata | Project Coordinator
ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Avenue, Signal Hill CA 90755
O: 562.989.4045 ext. 238 | http://www.atlglobal.com

Rachelle Arada

From: Jake Lippman <JLippman@kleinfelder.com>
Sent: Tuesday, July 3, 2018 12:54 PM
To: Rachelle Arada
Subject: 20164596 SPLP

Rachelle,

Please run the following using SPLP:

HA-2-0-0.5: Pyrene
HA-2-0-0.5-DUP: Pyrene and Fluoranthene
HA-4-0-0.5: C23-C40
HA-4-0-0.5-DUP: C23-C40
HA-5-0-0.5: C13-C40, DDE, DDT, alpha-chlordane, chlordane, gamma-chlordane
HA-9-0-0.5: C13 and C31

Let me know if not possible on 8270.

Thank you

Jake Lippman, PG, CHg
Project Manager

550 West C Street, Suite 1200
San Diego, CA 92101
d| 619.831.4677
o| 619.831.4600
m| 619.348.8415

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This email may contain confidential information. If you have received this email—including any attachments—in error, please notify the sender promptly and delete the email and any attachments from all of your systems.

Rachelle Arada

From: Jake Lippman <JLippman@kleinfelder.com>
Sent: Tuesday, July 3, 2018 3:28 PM
To: Rachelle Arada
Cc: customer.relations@atlglobal.com
Subject: RE: 20164596.018A HA-1 SPLP

Yes, thank you.

Jake Lippman, PG, CHg
Project Manager

550 West C Street, Suite 1200
San Diego, CA 92101
d| 619.831.4677
o| 619.831.4600
m| 619.348.8415

KLEINFELDER
Bright People. Right Solutions.

This email may contain confidential information. If you have received this email—including any attachments—in error, please notify the sender promptly and delete the email and any attachments from all of your systems.

From: Rachelle Arada <Rachelle@atlglobal.com>
Sent: Tuesday, July 3, 2018 3:27 PM
To: Jake Lippman <JLippman@kleinfelder.com>
Cc: customer.relations@atlglobal.com
Subject: RE: 20164596.018A HA-1 SPLP

External Email.

Thanks for the email Jake. I also added HA-1-0-0.5-Dup and HA-1-4 for 8015 C6-40 as well as the SPLP DRO/ORO extraction.

From: Jake Lippman [mailto:JLippman@kleinfelder.com]
Sent: Tuesday, July 3, 2018 3:23 PM
To: Rachelle Arada
Subject: 20164596.018A HA-1 SPLP

Rachelle,

Per our conversation, to meet holding times, please extract the following for total and SPLP DRO and ORO:

HA-1-0-0.5
HA-1-1
HA-1-2
HA-1-4

Thank you

Jake Lippman, PG, CHg
Project Manager

550 West C Street, Suite 1200
San Diego, CA 92101
d| 619.831.4677
o| 619.831.4600
m| 619.348.8415

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ADVANCED TECHNOLOGY LABORATORIES

Sample Receipt Acknowledgement

Work Order # 1802258

Client:	**Kleinfelder - SD**	**Project Manager:**	**Rachelle Arada**
Project:	**Salt Pond 20, 20164596.018A**	**Project Number:**	**Salt Pond 20, 20164596.018A**

Report To:	**Invoice To:**
Kleinfelder	Kleinfelder
Jake Lippman	Accounts Payable
550 W. C. Suite 1200	550 W. C. Suite 1200
San Diego, CA 92101	San Diego, CA 92101
Phone: (619) 831-4600	Phone :(619) 831-4600
Fax:	Fax:

Date Due:	06/28/18 17:00 (5 day TAT)	Date Received:	06/20/18 15:58
Received By:	Joel Arceo	Date Logged In:	06/20/18 16:27
Logged In By:	Marnellie Ramos	Shipped by:	ATL

All samples that require thermal preservation are considered acceptable if the arrival temperature is within 2 °C of the required temperature or method-specified range. For samples with a specified temperature of 4 °C, samples received with a temperature ranging from just above freezing temperature of water to 6 °C shall be acceptable. Samples that are hand-delivered immediately following collection may not meet these criteria; however, they will be deemed acceptable according to NELAC standards if there is evidence that the chilling process has begun, such as arrival on ice, etc.

The laboratory documents the condition of the sample/s as received per requirement of laboratory certification. If the sample received is unpreserved or under-preserved, the laboratory will adjust the preservatives to bring the sample to preservation criteria.

Any sample compliance issues will be communicated to the client. If the client does not respond within 24 hours of sample receipt, all tests will be performed as requested regardless. For short holding time samples (< 24 hours), analysis will proceed regardless.

If you have any questions or further instructions, please contact your Project Manager at (562) 989-4045.

Sample(s) received on ice?	Yes	☑	No	☐
Sample(s) received on blue ice?	Yes	☐	No	☑
Cooler temperature within acceptance limit?	Yes	☑	No	☐
Shipping container received in good condition?	Not Applicable			
Chain of Custody (COC) present?	Yes	☑	No	☐
Sampler name present in COC?	Yes	☑	No	☐
COC signed when relinquished and received?	Yes	☑	No	☐
COC agrees with sample labels?	Yes	☑	No	☐
Samples in proper container/bottle?	Yes	☑	No	☐
Sample containers intact?	Yes	☑	No	☐
Sufficient sample amount for indicated tests?	Yes	☑	No	☐
All samples received within holding time?	Yes	☑	No	☐
Water samples submitted?	Yes	☑	No	☐
Water samples meet preservation criteria?	Yes	☑	No	☐
Water for VOC -- Were VOA vials submitted?	Yes	☑	No	☐
VOA vials for VOC meet headspace criteria?	Yes	☑	No	☐

Cooler #1
Cooler #2
Cooler #3

Sample Receipt Comments:

Temp Blank (C): 5.8, 4.9, 5.6, 6.0, 5.9, 6.0.
All samples on page 2 collected 6/19/18 per bottle label. See e-mail for analysis info

Printed: 6/26/2018 12:18:09PM

Form Version: 12 Issued: 12/06/2016 12:55 PM

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Supplemental Report 2

The original report has been revised/corrected.

WORK ORDER NUMBER: 18-06-1646

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Advanced Technology Laboratories

Client Project Name: 1802258

Attention: Rachelle Arada
3275 Walnut Street
Signal Hill, CA 90755-5225

Approved for release on 12/17/2018 by:
Lori Thompson
Project Manager

ResultLink

Email your PM

Eurofins Calscience (Calscience) certifies that the test results provided in this report meet all NELAC Institute requirements for parameters for which accreditation is required or available. Any exceptions to NELAC Institute requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

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Work Order Number: 18-06-1646

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Work Order Narrative

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 06/22/18. They were assigned to Work Order 18-06-1646.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.

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Sample Summary

Client:	Advanced Technology Laboratories 3275 Walnut Street Signal Hill, CA 90755-5225	Work Order:	18-06-1646
		Project Name:	1802258
		PO Number:	SC12897
		Date/Time Received:	06/22/18 10:35
		Number of Containers:	15
Attn:	Rachelle Arada		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
1802258-20 / EB-061918	18-06-1646-1	06/19/18 13:00	1	Aqueous
1802258-21 / SW-061918	18-06-1646-2	06/19/18 13:00	1	Aqueous
1802258-22 / TP-16-0-0.5	18-06-1646-3	06/19/18 13:50	1	Solid
1802258-23 / TP-16-0.5-3.5	18-06-1646-4	06/19/18 13:55	1	Solid
1802258-24 / TP-16-3.5-5	18-06-1646-5	06/19/18 13:58	1	Solid
1802258-26 / TP-19-0-4	18-06-1646-6	06/19/18 08:40	1	Solid
1802258-27 / TP-19-4-8	18-06-1646-7	06/19/18 08:45	1	Solid
1802258-28 / TP-19-8-10	18-06-1646-8	06/19/18 08:50	1	Solid
1802258-29 / TP-25-0-4	18-06-1646-9	06/19/18 10:40	1	Solid
1802258-30 / TP-25-4-6	18-06-1646-10	06/19/18 10:45	1	Solid
1802258-54 / TP-9-0-0.25	18-06-1646-11	06/20/18 12:30	1	Solid
1802258-55 / TP-9-0.25-2.5	18-06-1646-12	06/20/18 12:35	1	Solid
1802258-56 / TP-9-2.5-7	18-06-1646-13	06/20/18 12:40	1	Solid
1802258-59 / TP-21-0-5	18-06-1646-14	06/20/18 13:15	1	Solid
1802258-60 / TP-21-5-9	18-06-1646-15	06/20/18 13:20	1	Solid

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 1 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-22 / TP-16-0-0.5	**18-06-1646-3-A**	**06/19/18 13:50**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 15:57**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 2 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 3 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	62	32-143	
2-Fluorobiphenyl	59	14-146	
2-Fluorophenol	43	15-138	
Nitrobenzene-d5	33	18-162	
Phenol-d6	56	17-141	
p-Terphenyl-d14	68	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 4 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-23 / TP-16-0.5-3.5	**18-06-1646-4-A**	**06/19/18 13:55**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 16:15**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0099	1.00	
1,2-Dichlorobenzene	ND	0.0099	1.00	
1,3-Dichlorobenzene	ND	0.0099	1.00	
1,4-Dichlorobenzene	ND	0.0099	1.00	
1-Methylnaphthalene	ND	0.0099	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.0099	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.0099	1.00	
2-Chloronaphthalene	ND	0.0099	1.00	
2-Chlorophenol	ND	0.0099	1.00	
2-Methylnaphthalene	ND	0.0099	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.099	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0099	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0099	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0099	1.00	
Acenaphthylene	ND	0.0099	1.00	
Aniline	ND	0.0099	1.00	
Anthracene	ND	0.0099	1.00	
Azobenzene	ND	0.0099	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 5 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0099	1.00	
Benzo (a) Pyrene	ND	0.0099	1.00	
Benzo (b) Fluoranthene	ND	0.0099	1.00	
Benzo (g,h,i) Perylene	ND	0.0099	1.00	
Benzo (k) Fluoranthene	ND	0.0099	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.0099	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0099	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0099	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0099	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.0099	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.0099	1.00	
Dibenzofuran	ND	0.0099	1.00	
Diethyl Phthalate	ND	0.0099	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.0099	1.00	
Fluorene	ND	0.0099	1.00	
Hexachloro-1,3-Butadiene	ND	0.0099	1.00	
Hexachlorobenzene	ND	0.0099	1.00	
Hexachlorocyclopentadiene	ND	0.0099	1.00	
Hexachloroethane	ND	0.0099	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0099	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0099	1.00	
N-Nitrosodimethylamine	ND	0.0099	1.00	
N-Nitrosodiphenylamine	ND	0.0099	1.00	
Naphthalene	ND	0.0099	1.00	
Nitrobenzene	ND	0.0099	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.0099	1.00	
Phenol	ND	0.0099	1.00	
Pyrene	ND	0.0099	1.00	
Pyridine	ND	0.0099	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 6 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	44	32-143	
2-Fluorobiphenyl	43	14-146	
2-Fluorophenol	44	15-138	
Nitrobenzene-d5	30	18-162	
Phenol-d6	57	17-141	
p-Terphenyl-d14	59	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 7 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-24 / TP-16-3.5-5	**18-06-1646-5-A**	**06/19/18 13:58**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 16:33**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0098	1.00	
1,2-Dichlorobenzene	ND	0.0098	1.00	
1,3-Dichlorobenzene	ND	0.0098	1.00	
1,4-Dichlorobenzene	ND	0.0098	1.00	
1-Methylnaphthalene	ND	0.0098	1.00	
2,4,5-Trichlorophenol	ND	0.24	1.00	
2,4,6-Trichlorophenol	ND	0.24	1.00	
2,4-Dichlorophenol	ND	0.24	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.24	1.00	
2,4-Dinitrotoluene	ND	0.0098	1.00	
2,6-Dichlorophenol	ND	0.24	1.00	
2,6-Dinitrotoluene	ND	0.0098	1.00	
2-Chloronaphthalene	ND	0.0098	1.00	
2-Chlorophenol	ND	0.0098	1.00	
2-Methylnaphthalene	ND	0.0098	1.00	
2-Methylphenol	ND	0.24	1.00	
2-Nitroaniline	ND	0.24	1.00	
2-Nitrophenol	ND	0.24	1.00	
3,3'-Dichlorobenzidine	ND	0.24	1.00	
3-Nitroaniline	ND	0.24	1.00	
3/4-Methylphenol	ND	0.098	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0098	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.24	1.00	
4-Chloro-3-Methylphenol	ND	0.24	1.00	
4-Chloroaniline	ND	0.24	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0098	1.00	
4-Nitroaniline	ND	0.24	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0098	1.00	
Acenaphthylene	ND	0.0098	1.00	
Aniline	ND	0.0098	1.00	
Anthracene	ND	0.0098	1.00	
Azobenzene	ND	0.0098	1.00	
Benzidine	ND	0.24	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 8 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0098	1.00	
Benzo (a) Pyrene	ND	0.0098	1.00	
Benzo (b) Fluoranthene	ND	0.0098	1.00	
Benzo (g,h,i) Perylene	ND	0.0098	1.00	
Benzo (k) Fluoranthene	ND	0.0098	1.00	
Benzoic Acid	ND	0.24	1.00	
Benzyl Alcohol	ND	0.0098	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0098	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0098	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0098	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.24	1.00	
Butyl Benzyl Phthalate	ND	0.24	1.00	
Chrysene	ND	0.0098	1.00	
Di-n-Butyl Phthalate	ND	0.24	1.00	
Di-n-Octyl Phthalate	ND	0.24	1.00	
Dibenz (a,h) Anthracene	ND	0.0098	1.00	
Dibenzofuran	ND	0.0098	1.00	
Diethyl Phthalate	ND	0.0098	1.00	
Dimethyl Phthalate	0.26	0.24	1.00	
Fluoranthene	ND	0.0098	1.00	
Fluorene	ND	0.0098	1.00	
Hexachloro-1,3-Butadiene	ND	0.0098	1.00	
Hexachlorobenzene	ND	0.0098	1.00	
Hexachlorocyclopentadiene	ND	0.0098	1.00	
Hexachloroethane	ND	0.0098	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0098	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0098	1.00	
N-Nitrosodimethylamine	ND	0.0098	1.00	
N-Nitrosodiphenylamine	ND	0.0098	1.00	
Naphthalene	ND	0.0098	1.00	
Nitrobenzene	ND	0.0098	1.00	
Pentachlorophenol	ND	0.24	1.00	
Phenanthrene	ND	0.0098	1.00	
Phenol	ND	0.0098	1.00	
Pyrene	ND	0.0098	1.00	
Pyridine	ND	0.0098	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 9 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	39	32-143	
2-Fluorobiphenyl	46	14-146	
2-Fluorophenol	44	15-138	
Nitrobenzene-d5	30	18-162	
Phenol-d6	60	17-141	
p-Terphenyl-d14	63	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 10 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-26 / TP-19-0-4	**18-06-1646-6-A**	**06/19/18 08:40**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 16:51**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0098	1.00	
1,2-Dichlorobenzene	ND	0.0098	1.00	
1,3-Dichlorobenzene	ND	0.0098	1.00	
1,4-Dichlorobenzene	ND	0.0098	1.00	
1-Methylnaphthalene	ND	0.0098	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.0098	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.0098	1.00	
2-Chloronaphthalene	ND	0.0098	1.00	
2-Chlorophenol	ND	0.0098	1.00	
2-Methylnaphthalene	ND	0.0098	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.098	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0098	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0098	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0098	1.00	
Acenaphthylene	ND	0.0098	1.00	
Aniline	ND	0.0098	1.00	
Anthracene	ND	0.0098	1.00	
Azobenzene	ND	0.0098	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 11 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0098	1.00	
Benzo (a) Pyrene	ND	0.0098	1.00	
Benzo (b) Fluoranthene	ND	0.0098	1.00	
Benzo (g,h,i) Perylene	ND	0.0098	1.00	
Benzo (k) Fluoranthene	ND	0.0098	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.0098	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0098	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0098	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0098	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.0098	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.0098	1.00	
Dibenzofuran	ND	0.0098	1.00	
Diethyl Phthalate	ND	0.0098	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.0098	1.00	
Fluorene	ND	0.0098	1.00	
Hexachloro-1,3-Butadiene	ND	0.0098	1.00	
Hexachlorobenzene	ND	0.0098	1.00	
Hexachlorocyclopentadiene	ND	0.0098	1.00	
Hexachloroethane	ND	0.0098	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0098	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0098	1.00	
N-Nitrosodimethylamine	ND	0.0098	1.00	
N-Nitrosodiphenylamine	ND	0.0098	1.00	
Naphthalene	ND	0.0098	1.00	
Nitrobenzene	ND	0.0098	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.0098	1.00	
Phenol	ND	0.0098	1.00	
Pyrene	ND	0.0098	1.00	
Pyridine	ND	0.0098	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 12 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	40	32-143	
2-Fluorobiphenyl	45	14-146	
2-Fluorophenol	43	15-138	
Nitrobenzene-d5	29	18-162	
Phenol-d6	57	17-141	
p-Terphenyl-d14	62	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 13 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-27 / TP-19-4-8	**18-06-1646-7-A**	**06/19/18 08:45**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 17:09**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0098	1.00	
1,2-Dichlorobenzene	ND	0.0098	1.00	
1,3-Dichlorobenzene	ND	0.0098	1.00	
1,4-Dichlorobenzene	ND	0.0098	1.00	
1-Methylnaphthalene	ND	0.0098	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.0098	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.0098	1.00	
2-Chloronaphthalene	ND	0.0098	1.00	
2-Chlorophenol	ND	0.0098	1.00	
2-Methylnaphthalene	ND	0.0098	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.098	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0098	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0098	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0098	1.00	
Acenaphthylene	ND	0.0098	1.00	
Aniline	ND	0.0098	1.00	
Anthracene	ND	0.0098	1.00	
Azobenzene	ND	0.0098	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 14 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0098	1.00	
Benzo (a) Pyrene	ND	0.0098	1.00	
Benzo (b) Fluoranthene	ND	0.0098	1.00	
Benzo (g,h,i) Perylene	ND	0.0098	1.00	
Benzo (k) Fluoranthene	ND	0.0098	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.0098	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0098	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0098	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0098	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.0098	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.0098	1.00	
Dibenzofuran	ND	0.0098	1.00	
Diethyl Phthalate	ND	0.0098	1.00	
Dimethyl Phthalate	0.29	0.25	1.00	
Fluoranthene	ND	0.0098	1.00	
Fluorene	ND	0.0098	1.00	
Hexachloro-1,3-Butadiene	ND	0.0098	1.00	
Hexachlorobenzene	ND	0.0098	1.00	
Hexachlorocyclopentadiene	ND	0.0098	1.00	
Hexachloroethane	ND	0.0098	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0098	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0098	1.00	
N-Nitrosodimethylamine	ND	0.0098	1.00	
N-Nitrosodiphenylamine	ND	0.0098	1.00	
Naphthalene	ND	0.0098	1.00	
Nitrobenzene	ND	0.0098	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.0098	1.00	
Phenol	ND	0.0098	1.00	
Pyrene	ND	0.0098	1.00	
Pyridine	ND	0.0098	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 15 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	51	32-143	
2-Fluorobiphenyl	47	14-146	
2-Fluorophenol	54	15-138	
Nitrobenzene-d5	40	18-162	
Phenol-d6	69	17-141	
p-Terphenyl-d14	63	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 16 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-28 / TP-19-8-10	**18-06-1646-8-A**	**06/19/18 08:50**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 17:28**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0098	1.00	
1,2-Dichlorobenzene	ND	0.0098	1.00	
1,3-Dichlorobenzene	ND	0.0098	1.00	
1,4-Dichlorobenzene	ND	0.0098	1.00	
1-Methylnaphthalene	ND	0.0098	1.00	
2,4,5-Trichlorophenol	ND	0.24	1.00	
2,4,6-Trichlorophenol	ND	0.24	1.00	
2,4-Dichlorophenol	ND	0.24	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.24	1.00	
2,4-Dinitrotoluene	ND	0.0098	1.00	
2,6-Dichlorophenol	ND	0.24	1.00	
2,6-Dinitrotoluene	ND	0.0098	1.00	
2-Chloronaphthalene	ND	0.0098	1.00	
2-Chlorophenol	ND	0.0098	1.00	
2-Methylnaphthalene	ND	0.0098	1.00	
2-Methylphenol	ND	0.24	1.00	
2-Nitroaniline	ND	0.24	1.00	
2-Nitrophenol	ND	0.24	1.00	
3,3'-Dichlorobenzidine	ND	0.24	1.00	
3-Nitroaniline	ND	0.24	1.00	
3/4-Methylphenol	ND	0.098	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0098	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.24	1.00	
4-Chloro-3-Methylphenol	ND	0.24	1.00	
4-Chloroaniline	ND	0.24	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0098	1.00	
4-Nitroaniline	ND	0.24	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0098	1.00	
Acenaphthylene	ND	0.0098	1.00	
Aniline	ND	0.0098	1.00	
Anthracene	ND	0.0098	1.00	
Azobenzene	ND	0.0098	1.00	
Benzidine	ND	0.24	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 17 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0098	1.00	
Benzo (a) Pyrene	ND	0.0098	1.00	
Benzo (b) Fluoranthene	ND	0.0098	1.00	
Benzo (g,h,i) Perylene	ND	0.0098	1.00	
Benzo (k) Fluoranthene	ND	0.0098	1.00	
Benzoic Acid	ND	0.24	1.00	
Benzyl Alcohol	ND	0.0098	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0098	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0098	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0098	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.24	1.00	
Butyl Benzyl Phthalate	ND	0.24	1.00	
Chrysene	ND	0.0098	1.00	
Di-n-Butyl Phthalate	ND	0.24	1.00	
Di-n-Octyl Phthalate	ND	0.24	1.00	
Dibenz (a,h) Anthracene	ND	0.0098	1.00	
Dibenzofuran	ND	0.0098	1.00	
Diethyl Phthalate	ND	0.0098	1.00	
Dimethyl Phthalate	0.26	0.24	1.00	
Fluoranthene	ND	0.0098	1.00	
Fluorene	ND	0.0098	1.00	
Hexachloro-1,3-Butadiene	ND	0.0098	1.00	
Hexachlorobenzene	ND	0.0098	1.00	
Hexachlorocyclopentadiene	ND	0.0098	1.00	
Hexachloroethane	ND	0.0098	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0098	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0098	1.00	
N-Nitrosodimethylamine	ND	0.0098	1.00	
N-Nitrosodiphenylamine	ND	0.0098	1.00	
Naphthalene	ND	0.0098	1.00	
Nitrobenzene	ND	0.0098	1.00	
Pentachlorophenol	ND	0.24	1.00	
Phenanthrene	ND	0.0098	1.00	
Phenol	ND	0.0098	1.00	
Pyrene	ND	0.0098	1.00	
Pyridine	ND	0.0098	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 18 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	32	32-143	
2-Fluorobiphenyl	41	14-146	
2-Fluorophenol	38	15-138	
Nitrobenzene-d5	23	18-162	
Phenol-d6	53	17-141	
p-Terphenyl-d14	62	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 19 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-29 / TP-25-0-4	**18-06-1646-9-A**	**06/19/18 10:40**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 17:46**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 20 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 21 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	32	32-143	
2-Fluorobiphenyl	49	14-146	
2-Fluorophenol	42	15-138	
Nitrobenzene-d5	29	18-162	
Phenol-d6	58	17-141	
p-Terphenyl-d14	64	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 22 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-30 / TP-25-4-6	**18-06-1646-10-A**	**06/19/18 10:45**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 13:28**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 23 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 24 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	42	32-143	
2-Fluorobiphenyl	33	14-146	
2-Fluorophenol	16	15-138	
Nitrobenzene-d5	29	18-162	
Phenol-d6	43	17-141	
p-Terphenyl-d14	66	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 25 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-54 / TP-9-0-0.25	**18-06-1646-11-A**	**06/20/18 12:30**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 18:22**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 26 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 27 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	59	32-143	
2-Fluorobiphenyl	57	14-146	
2-Fluorophenol	44	15-138	
Nitrobenzene-d5	35	18-162	
Phenol-d6	57	17-141	
p-Terphenyl-d14	70	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 28 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-55 / TP-9-0.25-2.5	**18-06-1646-12-A**	**06/20/18 12:35**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 18:40**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0098	1.00	
1,2-Dichlorobenzene	ND	0.0098	1.00	
1,3-Dichlorobenzene	ND	0.0098	1.00	
1,4-Dichlorobenzene	ND	0.0098	1.00	
1-Methylnaphthalene	ND	0.0098	1.00	
2,4,5-Trichlorophenol	ND	0.24	1.00	
2,4,6-Trichlorophenol	ND	0.24	1.00	
2,4-Dichlorophenol	ND	0.24	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.24	1.00	
2,4-Dinitrotoluene	ND	0.0098	1.00	
2,6-Dichlorophenol	ND	0.24	1.00	
2,6-Dinitrotoluene	ND	0.0098	1.00	
2-Chloronaphthalene	ND	0.0098	1.00	
2-Chlorophenol	ND	0.0098	1.00	
2-Methylnaphthalene	ND	0.0098	1.00	
2-Methylphenol	ND	0.24	1.00	
2-Nitroaniline	ND	0.24	1.00	
2-Nitrophenol	ND	0.24	1.00	
3,3'-Dichlorobenzidine	ND	0.24	1.00	
3-Nitroaniline	ND	0.24	1.00	
3/4-Methylphenol	ND	0.098	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0098	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.24	1.00	
4-Chloro-3-Methylphenol	ND	0.24	1.00	
4-Chloroaniline	ND	0.24	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0098	1.00	
4-Nitroaniline	ND	0.24	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0098	1.00	
Acenaphthylene	ND	0.0098	1.00	
Aniline	ND	0.0098	1.00	
Anthracene	ND	0.0098	1.00	
Azobenzene	ND	0.0098	1.00	
Benzidine	ND	0.24	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 29 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0098	1.00	
Benzo (a) Pyrene	ND	0.0098	1.00	
Benzo (b) Fluoranthene	ND	0.0098	1.00	
Benzo (g,h,i) Perylene	ND	0.0098	1.00	
Benzo (k) Fluoranthene	ND	0.0098	1.00	
Benzoic Acid	ND	0.24	1.00	
Benzyl Alcohol	ND	0.0098	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0098	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0098	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0098	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.24	1.00	
Butyl Benzyl Phthalate	ND	0.24	1.00	
Chrysene	ND	0.0098	1.00	
Di-n-Butyl Phthalate	ND	0.24	1.00	
Di-n-Octyl Phthalate	ND	0.24	1.00	
Dibenz (a,h) Anthracene	ND	0.0098	1.00	
Dibenzofuran	ND	0.0098	1.00	
Diethyl Phthalate	ND	0.0098	1.00	
Dimethyl Phthalate	ND	0.24	1.00	
Fluoranthene	ND	0.0098	1.00	
Fluorene	ND	0.0098	1.00	
Hexachloro-1,3-Butadiene	ND	0.0098	1.00	
Hexachlorobenzene	ND	0.0098	1.00	
Hexachlorocyclopentadiene	ND	0.0098	1.00	
Hexachloroethane	ND	0.0098	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0098	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0098	1.00	
N-Nitrosodimethylamine	ND	0.0098	1.00	
N-Nitrosodiphenylamine	ND	0.0098	1.00	
Naphthalene	ND	0.0098	1.00	
Nitrobenzene	ND	0.0098	1.00	
Pentachlorophenol	ND	0.24	1.00	
Phenanthrene	ND	0.0098	1.00	
Phenol	ND	0.0098	1.00	
Pyrene	ND	0.0098	1.00	
Pyridine	ND	0.0098	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 30 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	53	32-143	
2-Fluorobiphenyl	40	14-146	
2-Fluorophenol	42	15-138	
Nitrobenzene-d5	31	18-162	
Phenol-d6	62	17-141	
p-Terphenyl-d14	66	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 31 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-56 / TP-9-2.5-7	**18-06-1646-13-A**	**06/20/18 12:40**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 18:58**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0099	1.00	
1,2-Dichlorobenzene	ND	0.0099	1.00	
1,3-Dichlorobenzene	ND	0.0099	1.00	
1,4-Dichlorobenzene	ND	0.0099	1.00	
1-Methylnaphthalene	ND	0.0099	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.0099	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.0099	1.00	
2-Chloronaphthalene	ND	0.0099	1.00	
2-Chlorophenol	ND	0.0099	1.00	
2-Methylnaphthalene	ND	0.0099	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.099	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0099	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0099	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0099	1.00	
Acenaphthylene	ND	0.0099	1.00	
Aniline	ND	0.0099	1.00	
Anthracene	ND	0.0099	1.00	
Azobenzene	ND	0.0099	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 32 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0099	1.00	
Benzo (a) Pyrene	ND	0.0099	1.00	
Benzo (b) Fluoranthene	ND	0.0099	1.00	
Benzo (g,h,i) Perylene	ND	0.0099	1.00	
Benzo (k) Fluoranthene	ND	0.0099	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.0099	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0099	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0099	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0099	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.0099	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.0099	1.00	
Dibenzofuran	ND	0.0099	1.00	
Diethyl Phthalate	ND	0.0099	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.0099	1.00	
Fluorene	ND	0.0099	1.00	
Hexachloro-1,3-Butadiene	ND	0.0099	1.00	
Hexachlorobenzene	ND	0.0099	1.00	
Hexachlorocyclopentadiene	ND	0.0099	1.00	
Hexachloroethane	ND	0.0099	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0099	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0099	1.00	
N-Nitrosodimethylamine	ND	0.0099	1.00	
N-Nitrosodiphenylamine	ND	0.0099	1.00	
Naphthalene	ND	0.0099	1.00	
Nitrobenzene	ND	0.0099	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.0099	1.00	
Phenol	ND	0.0099	1.00	
Pyrene	ND	0.0099	1.00	
Pyridine	ND	0.0099	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 33 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	49	32-143	
2-Fluorobiphenyl	41	14-146	
2-Fluorophenol	47	15-138	
Nitrobenzene-d5	29	18-162	
Phenol-d6	66	17-141	
p-Terphenyl-d14	65	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 34 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-59 / TP-21-0-5	**18-06-1646-14-A**	**06/20/18 13:15**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 19:16**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0098	1.00	
1,2-Dichlorobenzene	ND	0.0098	1.00	
1,3-Dichlorobenzene	ND	0.0098	1.00	
1,4-Dichlorobenzene	ND	0.0098	1.00	
1-Methylnaphthalene	ND	0.0098	1.00	
2,4,5-Trichlorophenol	ND	0.24	1.00	
2,4,6-Trichlorophenol	ND	0.24	1.00	
2,4-Dichlorophenol	ND	0.24	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.24	1.00	
2,4-Dinitrotoluene	ND	0.0098	1.00	
2,6-Dichlorophenol	ND	0.24	1.00	
2,6-Dinitrotoluene	ND	0.0098	1.00	
2-Chloronaphthalene	ND	0.0098	1.00	
2-Chlorophenol	ND	0.0098	1.00	
2-Methylnaphthalene	ND	0.0098	1.00	
2-Methylphenol	ND	0.24	1.00	
2-Nitroaniline	ND	0.24	1.00	
2-Nitrophenol	ND	0.24	1.00	
3,3'-Dichlorobenzidine	ND	0.24	1.00	
3-Nitroaniline	ND	0.24	1.00	
3/4-Methylphenol	ND	0.098	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0098	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.24	1.00	
4-Chloro-3-Methylphenol	ND	0.24	1.00	
4-Chloroaniline	ND	0.24	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0098	1.00	
4-Nitroaniline	ND	0.24	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0098	1.00	
Acenaphthylene	ND	0.0098	1.00	
Aniline	ND	0.0098	1.00	
Anthracene	ND	0.0098	1.00	
Azobenzene	ND	0.0098	1.00	
Benzidine	ND	0.24	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 35 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0098	1.00	
Benzo (a) Pyrene	ND	0.0098	1.00	
Benzo (b) Fluoranthene	ND	0.0098	1.00	
Benzo (g,h,i) Perylene	ND	0.0098	1.00	
Benzo (k) Fluoranthene	ND	0.0098	1.00	
Benzoic Acid	ND	0.24	1.00	
Benzyl Alcohol	ND	0.0098	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0098	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0098	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0098	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.24	1.00	
Butyl Benzyl Phthalate	ND	0.24	1.00	
Chrysene	ND	0.0098	1.00	
Di-n-Butyl Phthalate	ND	0.24	1.00	
Di-n-Octyl Phthalate	ND	0.24	1.00	
Dibenz (a,h) Anthracene	ND	0.0098	1.00	
Dibenzofuran	ND	0.0098	1.00	
Diethyl Phthalate	ND	0.0098	1.00	
Dimethyl Phthalate	0.40	0.24	1.00	
Fluoranthene	ND	0.0098	1.00	
Fluorene	ND	0.0098	1.00	
Hexachloro-1,3-Butadiene	ND	0.0098	1.00	
Hexachlorobenzene	ND	0.0098	1.00	
Hexachlorocyclopentadiene	ND	0.0098	1.00	
Hexachloroethane	ND	0.0098	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0098	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0098	1.00	
N-Nitrosodimethylamine	ND	0.0098	1.00	
N-Nitrosodiphenylamine	ND	0.0098	1.00	
Naphthalene	ND	0.0098	1.00	
Nitrobenzene	ND	0.0098	1.00	
Pentachlorophenol	ND	0.24	1.00	
Phenanthrene	ND	0.0098	1.00	
Phenol	ND	0.0098	1.00	
Pyrene	ND	0.0098	1.00	
Pyridine	ND	0.0098	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 36 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	53	32-143	
2-Fluorobiphenyl	51	14-146	
2-Fluorophenol	45	15-138	
Nitrobenzene-d5	30	18-162	
Phenol-d6	72	17-141	
p-Terphenyl-d14	72	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 37 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-59 / TP-21-0-5	**18-06-1646-14-A**	**06/20/18 13:15**	**Solid**	**GC/MS JJJ**	**07/11/18**	**07/13/18 12:56**	**180711L11**

Comment(s): - Sample extracted outside recommended holding time.

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0099	1.00	ET
1,2-Dichlorobenzene	ND	0.0099	1.00	ET
1,3-Dichlorobenzene	ND	0.0099	1.00	ET
1,4-Dichlorobenzene	ND	0.0099	1.00	ET
1-Methylnaphthalene	ND	0.0099	1.00	ET
2,4,5-Trichlorophenol	ND	0.25	1.00	ET
2,4,6-Trichlorophenol	ND	0.25	1.00	ET
2,4-Dichlorophenol	ND	0.25	1.00	ET
2,4-Dimethylphenol	ND	0.49	1.00	ET
2,4-Dinitrophenol	ND	0.25	1.00	ET
2,4-Dinitrotoluene	ND	0.0099	1.00	ET
2,6-Dichlorophenol	ND	0.25	1.00	ET
2,6-Dinitrotoluene	ND	0.0099	1.00	ET
2-Chloronaphthalene	ND	0.0099	1.00	ET
2-Chlorophenol	ND	0.0099	1.00	ET
2-Methylnaphthalene	ND	0.0099	1.00	ET
2-Methylphenol	ND	0.25	1.00	ET
2-Nitroaniline	ND	0.25	1.00	ET
2-Nitrophenol	ND	0.25	1.00	ET
3,3'-Dichlorobenzidine	ND	0.25	1.00	ET
3-Nitroaniline	ND	0.25	1.00	ET
3/4-Methylphenol	ND	0.099	1.00	ET
4-Bromophenyl-Phenyl Ether	ND	0.0099	1.00	ET
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	ET
4-Chloro-3-Methylphenol	ND	0.25	1.00	ET
4-Chloroaniline	ND	0.25	1.00	ET
4-Chlorophenyl-Phenyl Ether	ND	0.0099	1.00	ET
4-Nitroaniline	ND	0.25	1.00	ET
4-Nitrophenol	ND	0.49	1.00	ET
Acenaphthene	ND	0.0099	1.00	ET
Acenaphthylene	ND	0.0099	1.00	ET
Aniline	ND	0.0099	1.00	ET
Anthracene	ND	0.0099	1.00	ET
Azobenzene	ND	0.0099	1.00	ET

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 38 of 48

Parameter	Result	RL	DF	Qualifiers
Benzidine	ND	0.25	1.00	ET
Benzo (a) Anthracene	ND	0.0099	1.00	ET
Benzo (a) Pyrene	ND	0.0099	1.00	ET
Benzo (b) Fluoranthene	ND	0.0099	1.00	ET
Benzo (g,h,i) Perylene	ND	0.0099	1.00	ET
Benzo (k) Fluoranthene	ND	0.0099	1.00	ET
Benzoic Acid	ND	0.25	1.00	ET
Benzyl Alcohol	ND	0.0099	1.00	ET
Bis(2-Chloroethoxy) Methane	ND	0.0099	1.00	ET
Bis(2-Chloroethyl) Ether	ND	0.0099	1.00	ET
Bis(2-Chloroisopropyl) Ether	ND	0.0099	1.00	ET
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	ET
Butyl Benzyl Phthalate	ND	0.25	1.00	ET
Chrysene	ND	0.0099	1.00	ET
Di-n-Butyl Phthalate	ND	0.25	1.00	ET
Di-n-Octyl Phthalate	ND	0.25	1.00	ET
Dibenz (a,h) Anthracene	ND	0.0099	1.00	ET
Dibenzofuran	ND	0.0099	1.00	ET
Diethyl Phthalate	ND	0.0099	1.00	ET
Dimethyl Phthalate	ND	0.25	1.00	ET
Fluoranthene	ND	0.0099	1.00	ET
Fluorene	ND	0.0099	1.00	ET
Hexachloro-1,3-Butadiene	ND	0.0099	1.00	ET
Hexachlorobenzene	ND	0.0099	1.00	ET
Hexachlorocyclopentadiene	ND	0.0099	1.00	ET
Hexachloroethane	ND	0.0099	1.00	ET
Indeno (1,2,3-c,d) Pyrene	ND	0.0099	1.00	ET
Isophorone	ND	0.49	1.00	ET
N-Nitroso-di-n-propylamine	ND	0.0099	1.00	ET
N-Nitrosodimethylamine	ND	0.0099	1.00	ET
N-Nitrosodiphenylamine	ND	0.0099	1.00	ET
Naphthalene	ND	0.0099	1.00	ET
Nitrobenzene	ND	0.0099	1.00	ET
Pentachlorophenol	ND	0.25	1.00	ET
Phenanthrene	ND	0.0099	1.00	ET
Phenol	ND	0.0099	1.00	ET
Pyrene	ND	0.0099	1.00	ET
Pyridine	ND	0.0099	1.00	ET

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 39 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	64	32-143	
2-Fluorobiphenyl	62	14-146	
2-Fluorophenol	66	15-138	
Nitrobenzene-d5	70	18-162	
Phenol-d6	67	17-141	
p-Terphenyl-d14	38	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 40 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-60 / TP-21-5-9	**18-06-1646-15-A**	**06/20/18 13:20**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 19:34**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 41 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	0.25	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 42 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	51	32-143	
2-Fluorobiphenyl	41	14-146	
2-Fluorophenol	50	15-138	
Nitrobenzene-d5	36	18-162	
Phenol-d6	66	17-141	
p-Terphenyl-d14	67	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 43 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-16-921-22**	**N/A**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 12:38**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 44 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 45 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	65	32-143	
2-Fluorobiphenyl	82	14-146	
2-Fluorophenol	71	15-138	
Nitrobenzene-d5	77	18-162	
Phenol-d6	79	17-141	
p-Terphenyl-d14	76	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 46 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-16-921-23**	**N/A**	**Solid**	**GC/MS JJJ**	**07/11/18**	**07/13/18 12:00**	**180711L11**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 47 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 48 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	73	32-143	
2-Fluorobiphenyl	82	14-146	
2-Fluorophenol	73	15-138	
Nitrobenzene-d5	82	18-162	
Phenol-d6	78	17-141	
p-Terphenyl-d14	75	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM
		Units:	ug/L
Project: 1802258			Page 1 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-20 / EB-061918	**18-06-1646-1-A**	**06/19/18 13:00**	**Aqueous**	**GC/MS JJJ**	**06/26/18**	**06/29/18 13:14**	**180626L01A**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.21	1.00	
1,2-Dichlorobenzene	ND	0.21	1.00	
1,3-Dichlorobenzene	ND	0.21	1.00	
1,4-Dichlorobenzene	ND	0.21	1.00	
1-Methylnaphthalene	ND	0.21	1.00	
2,4,5-Trichlorophenol	ND	5.2	1.00	
2,4,6-Trichlorophenol	ND	5.2	1.00	
2,4-Dichlorophenol	ND	5.2	1.00	
2,4-Dimethylphenol	ND	0.21	1.00	
2,4-Dinitrophenol	ND	5.2	1.00	
2,4-Dinitrotoluene	ND	0.21	1.00	
2,6-Dichlorophenol	ND	5.2	1.00	
2,6-Dinitrotoluene	ND	0.21	1.00	
2-Chloronaphthalene	ND	0.21	1.00	
2-Chlorophenol	ND	0.21	1.00	
2-Methylnaphthalene	ND	0.21	1.00	
2-Methylphenol	ND	5.2	1.00	
2-Nitroaniline	ND	5.2	1.00	
2-Nitrophenol	ND	5.2	1.00	
3,3'-Dichlorobenzidine	ND	5.2	1.00	
3-Nitroaniline	ND	5.2	1.00	
3/4-Methylphenol	ND	2.1	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.21	1.00	
4,6-Dinitro-2-Methylphenol	ND	5.2	1.00	
4-Chloro-3-Methylphenol	ND	5.2	1.00	
4-Chloroaniline	ND	5.2	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.21	1.00	
4-Nitroaniline	ND	5.2	1.00	
4-Nitrophenol	ND	5.2	1.00	
Acenaphthene	ND	0.21	1.00	
Acenaphthylene	ND	0.21	1.00	
Aniline	ND	0.21	1.00	
Anthracene	ND	0.21	1.00	
Azobenzene	ND	0.21	1.00	
Benzidine	ND	5.2	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM
		Units:	ug/L
Project: 1802258			Page 2 of 9

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.21	1.00	
Benzo (a) Pyrene	ND	0.21	1.00	
Benzo (b) Fluoranthene	ND	0.21	1.00	
Benzo (g,h,i) Perylene	ND	0.21	1.00	
Benzo (k) Fluoranthene	ND	0.21	1.00	
Benzoic Acid	ND	5.2	1.00	
Benzyl Alcohol	ND	0.21	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.21	1.00	
Bis(2-Chloroethyl) Ether	ND	0.21	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.21	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	5.2	1.00	
Butyl Benzyl Phthalate	ND	5.2	1.00	
Chrysene	ND	0.21	1.00	
Di-n-Butyl Phthalate	ND	5.2	1.00	
Di-n-Octyl Phthalate	ND	5.2	1.00	
Dibenz (a,h) Anthracene	ND	0.21	1.00	
Dibenzofuran	ND	0.21	1.00	
Diethyl Phthalate	ND	5.2	1.00	
Dimethyl Phthalate	ND	5.2	1.00	
Fluoranthene	ND	0.21	1.00	
Fluorene	ND	0.21	1.00	
Hexachloro-1,3-Butadiene	ND	0.21	1.00	
Hexachlorobenzene	ND	0.21	1.00	
Hexachlorocyclopentadiene	ND	0.21	1.00	
Hexachloroethane	ND	0.21	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.21	1.00	
Isophorone	ND	2.1	1.00	
N-Nitroso-di-n-propylamine	ND	0.21	1.00	
N-Nitrosodimethylamine	ND	0.21	1.00	
N-Nitrosodiphenylamine	ND	0.21	1.00	
Naphthalene	ND	0.21	1.00	
Nitrobenzene	ND	0.21	1.00	
Pentachlorophenol	ND	5.2	1.00	
Phenanthrene	ND	0.21	1.00	
Phenol	ND	0.21	1.00	
Pyrene	ND	0.21	1.00	
Pyridine	ND	0.21	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3510C
	Method:	EPA 8270C SIM
	Units:	ug/L
Project: 1802258		Page 3 of 9

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	65	25-137	
2-Fluorobiphenyl	66	42-138	
2-Fluorophenol	54	7-121	
Nitrobenzene-d5	91	10-146	
Phenol-d6	36	1-127	
p-Terphenyl-d14	76	47-173	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM
		Units:	ug/L
Project: 1802258			Page 4 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-21 / SW-061918	**18-06-1646-2-A**	**06/19/18 13:00**	**Aqueous**	**GC/MS JJJ**	**06/26/18**	**06/29/18 13:32**	**180626L01A**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.20	1.00	
1,2-Dichlorobenzene	ND	0.20	1.00	
1,3-Dichlorobenzene	ND	0.20	1.00	
1,4-Dichlorobenzene	ND	0.20	1.00	
1-Methylnaphthalene	ND	0.20	1.00	
2,4,5-Trichlorophenol	ND	5.1	1.00	
2,4,6-Trichlorophenol	ND	5.1	1.00	
2,4-Dichlorophenol	ND	5.1	1.00	
2,4-Dimethylphenol	ND	0.20	1.00	
2,4-Dinitrophenol	ND	5.1	1.00	
2,4-Dinitrotoluene	ND	0.20	1.00	
2,6-Dichlorophenol	ND	5.1	1.00	
2,6-Dinitrotoluene	ND	0.20	1.00	
2-Chloronaphthalene	ND	0.20	1.00	
2-Chlorophenol	ND	0.20	1.00	
2-Methylnaphthalene	ND	0.20	1.00	
2-Methylphenol	ND	5.1	1.00	
2-Nitroaniline	ND	5.1	1.00	
2-Nitrophenol	ND	5.1	1.00	
3,3'-Dichlorobenzidine	ND	5.1	1.00	
3-Nitroaniline	ND	5.1	1.00	
3/4-Methylphenol	ND	2.0	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.20	1.00	
4,6-Dinitro-2-Methylphenol	ND	5.1	1.00	
4-Chloro-3-Methylphenol	ND	5.1	1.00	
4-Chloroaniline	ND	5.1	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.20	1.00	
4-Nitroaniline	ND	5.1	1.00	
4-Nitrophenol	ND	5.1	1.00	
Acenaphthene	ND	0.20	1.00	
Acenaphthylene	ND	0.20	1.00	
Aniline	ND	0.20	1.00	
Anthracene	ND	0.20	1.00	
Azobenzene	ND	0.20	1.00	
Benzidine	ND	5.1	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM
		Units:	ug/L
Project: 1802258			Page 5 of 9

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.20	1.00	
Benzo (a) Pyrene	ND	0.20	1.00	
Benzo (b) Fluoranthene	ND	0.20	1.00	
Benzo (g,h,i) Perylene	ND	0.20	1.00	
Benzo (k) Fluoranthene	ND	0.20	1.00	
Benzoic Acid	ND	5.1	1.00	
Benzyl Alcohol	ND	0.20	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.20	1.00	
Bis(2-Chloroethyl) Ether	ND	0.20	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.20	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	5.1	1.00	
Butyl Benzyl Phthalate	ND	5.1	1.00	
Chrysene	ND	0.20	1.00	
Di-n-Butyl Phthalate	ND	5.1	1.00	
Di-n-Octyl Phthalate	ND	5.1	1.00	
Dibenz (a,h) Anthracene	ND	0.20	1.00	
Dibenzofuran	ND	0.20	1.00	
Diethyl Phthalate	ND	5.1	1.00	
Dimethyl Phthalate	ND	5.1	1.00	
Fluoranthene	ND	0.20	1.00	
Fluorene	ND	0.20	1.00	
Hexachloro-1,3-Butadiene	ND	0.20	1.00	
Hexachlorobenzene	ND	0.20	1.00	
Hexachlorocyclopentadiene	ND	0.20	1.00	
Hexachloroethane	ND	0.20	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.20	1.00	
Isophorone	ND	2.0	1.00	
N-Nitroso-di-n-propylamine	ND	0.20	1.00	
N-Nitrosodimethylamine	ND	0.20	1.00	
N-Nitrosodiphenylamine	ND	0.20	1.00	
Naphthalene	ND	0.20	1.00	
Nitrobenzene	ND	0.20	1.00	
Pentachlorophenol	ND	5.1	1.00	
Phenanthrene	ND	0.20	1.00	
Phenol	ND	0.20	1.00	
Pyrene	ND	0.20	1.00	
Pyridine	ND	0.20	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3510C
	Method:	EPA 8270C SIM
	Units:	ug/L
Project: 1802258		Page 6 of 9

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	60	25-137	
2-Fluorobiphenyl	55	42-138	
2-Fluorophenol	45	7-121	
Nitrobenzene-d5	80	10-146	
Phenol-d6	28	1-127	
p-Terphenyl-d14	72	47-173	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM
		Units:	ug/L
Project: 1802258			Page 7 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-16-941-31**	**N/A**	**Aqueous**	**GC/MS JJJ**	**06/26/18**	**06/29/18 10:29**	**180626L01A**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.20	1.00	
1,2-Dichlorobenzene	ND	0.20	1.00	
1,3-Dichlorobenzene	ND	0.20	1.00	
1,4-Dichlorobenzene	ND	0.20	1.00	
1-Methylnaphthalene	ND	0.20	1.00	
2,4,5-Trichlorophenol	ND	5.0	1.00	
2,4,6-Trichlorophenol	ND	5.0	1.00	
2,4-Dichlorophenol	ND	5.0	1.00	
2,4-Dimethylphenol	ND	0.20	1.00	
2,4-Dinitrophenol	ND	5.0	1.00	
2,4-Dinitrotoluene	ND	0.20	1.00	
2,6-Dichlorophenol	ND	5.0	1.00	
2,6-Dinitrotoluene	ND	0.20	1.00	
2-Chloronaphthalene	ND	0.20	1.00	
2-Chlorophenol	ND	0.20	1.00	
2-Methylnaphthalene	ND	0.20	1.00	
2-Methylphenol	ND	5.0	1.00	
2-Nitroaniline	ND	5.0	1.00	
2-Nitrophenol	ND	5.0	1.00	
3,3'-Dichlorobenzidine	ND	5.0	1.00	
3-Nitroaniline	ND	5.0	1.00	
3/4-Methylphenol	ND	2.0	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.20	1.00	
4,6-Dinitro-2-Methylphenol	ND	5.0	1.00	
4-Chloro-3-Methylphenol	ND	5.0	1.00	
4-Chloroaniline	ND	5.0	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.20	1.00	
4-Nitroaniline	ND	5.0	1.00	
4-Nitrophenol	ND	5.0	1.00	
Acenaphthene	ND	0.20	1.00	
Acenaphthylene	ND	0.20	1.00	
Aniline	ND	0.20	1.00	
Anthracene	ND	0.20	1.00	
Azobenzene	ND	0.20	1.00	
Benzidine	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM
		Units:	ug/L
Project: 1802258			Page 8 of 9

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.20	1.00	
Benzo (a) Pyrene	ND	0.20	1.00	
Benzo (b) Fluoranthene	ND	0.20	1.00	
Benzo (g,h,i) Perylene	ND	0.20	1.00	
Benzo (k) Fluoranthene	ND	0.20	1.00	
Benzoic Acid	ND	5.0	1.00	
Benzyl Alcohol	ND	0.20	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.20	1.00	
Bis(2-Chloroethyl) Ether	ND	0.20	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.20	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	5.0	1.00	
Butyl Benzyl Phthalate	ND	5.0	1.00	
Chrysene	ND	0.20	1.00	
Di-n-Butyl Phthalate	ND	5.0	1.00	
Di-n-Octyl Phthalate	ND	5.0	1.00	
Dibenz (a,h) Anthracene	ND	0.20	1.00	
Dibenzofuran	ND	0.20	1.00	
Diethyl Phthalate	ND	5.0	1.00	
Dimethyl Phthalate	ND	5.0	1.00	
Fluoranthene	ND	0.20	1.00	
Fluorene	ND	0.20	1.00	
Hexachloro-1,3-Butadiene	ND	0.20	1.00	
Hexachlorobenzene	ND	0.20	1.00	
Hexachlorocyclopentadiene	ND	0.20	1.00	
Hexachloroethane	ND	0.20	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.20	1.00	
Isophorone	ND	2.0	1.00	
N-Nitroso-di-n-propylamine	ND	0.20	1.00	
N-Nitrosodimethylamine	ND	0.20	1.00	
N-Nitrosodiphenylamine	ND	0.20	1.00	
Naphthalene	ND	0.20	1.00	
Nitrobenzene	ND	0.20	1.00	
Pentachlorophenol	ND	5.0	1.00	
Phenanthrene	ND	0.20	1.00	
Phenol	ND	0.20	1.00	
Pyrene	ND	0.20	1.00	
Pyridine	ND	0.20	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3510C
	Method:	EPA 8270C SIM
	Units:	ug/L
Project: 1802258		Page 9 of 9

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	61	25-137	
2-Fluorobiphenyl	70	42-138	
2-Fluorophenol	48	7-121	
Nitrobenzene-d5	87	10-146	
Phenol-d6	31	1-127	
p-Terphenyl-d14	76	47-173	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: **18-06-1646**
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-06-29 16:33
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180629\JJJ29JUN022.D\JJJ29JUN022.rr

 # 5 **CLIENT SAMPLE NUMBER: 1802258-24 / TP-16-3.5-5**

LCS/MB BATCH: 180626L09
MS/MSD BATCH: 180626S09
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.50 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.98

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
1,2,4-Trichlorobenzene	0.000	1.00	ND	0.0098	
1,2-Dichlorobenzene	0.000	1.00	ND	0.0098	
1,3-Dichlorobenzene	0.000	1.00	ND	0.0098	
1,4-Dichlorobenzene	0.000	1.00	ND	0.0098	
1-Methylnaphthalene	0.000	1.00	ND	0.0098	
2,4,5-Trichlorophenol	0.000	1.00	ND	0.24	
2,4,6-Trichlorophenol	0.000	1.00	ND	0.24	
2,4-Dichlorophenol	0.000	1.00	ND	0.24	
2,4-Dimethylphenol	0.000	1.00	ND	0.49	
2,4-Dinitrophenol	0.000	1.00	ND	0.24	]
2,4-Dinitrotoluene	0.000	1.00	ND	0.0098	
2,6-Dichlorophenol	0.000	1.00	ND	0.24	
2,6-Dinitrotoluene	0.000	1.00	ND	0.0098	
2-Chloronaphthalene	0.000	1.00	ND	0.0098	
2-Chlorophenol	0.000	1.00	ND	0.0098	
2-Methylnaphthalene	0.000	1.00	ND	0.0098	
2-Methylphenol	0.000	1.00	ND	0.24	
2-Nitroaniline	0.000	1.00	ND	0.24	
2-Nitrophenol	0.000	1.00	ND	0.24	
3,3'-Dichlorobenzidine	0.000	1.00	ND	0.24	
3-Nitroaniline	0.000	1.00	ND	0.24	
3/4-Methylphenol	0.000	1.00	ND	0.098	
4-Bromophenyl-Phenyl Ether	0.000	1.00	ND	0.0098	
4,6-Dinitro-2-Methylphenol	0.000	1.00	ND	0.24	
4-Chloro-3-Methylphenol	0.000	1.00	ND	0.24	
4-Chloroaniline	0.000	1.00	ND	0.24	
4-Chlorophenyl-Phenyl Ether	0.000	1.00	ND	0.0098	
4-Nitroaniline	0.000	1.00	ND	0.24	[
4-Nitrophenol	0.000	1.00	ND	0.49	
Acenaphthene	0.000	1.00	ND	0.0098	
Acenaphthylene	0.000	1.00	ND	0.0098	
Aniline	0.000	1.00	ND	0.0098	
Anthracene	0.000	1.00	ND	0.0098	
Azobenzene	0.000	1.00	ND	0.0098	
Benzidine	0.000	1.00	ND	0.24	]
Benzo (a) Anthracene	0.000	1.00	ND	0.0098	
Benzo (a) Pyrene	0.000	1.00	ND	0.0098	
Benzo (b) Fluoranthene	0.000	1.00	ND	0.0098	
Benzo (g,h,i) Perylene	0.000	1.00	ND	0.0098	
Benzo (k) Fluoranthene	0.000	1.00	ND	0.0098	

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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: 18-06-1646
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-06-29 16:33
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180629\JJJ29JUN022.D\JJJ29JUN022.rr

 # 5 **CLIENT SAMPLE NUMBER: 1802258-24 / TP-16-3.5-5**

LCS/MB BATCH: 180626L09
MS/MSD BATCH: 180626S09
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.50 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.98

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
Benzyl Alcohol	0.000	1.00	ND	0.0098	
Bis(2-Chloroethoxy) Methane	0.000	1.00	ND	0.0098	
Bis(2-Chloroethyl) Ether	0.000	1.00	ND	0.0098	
Bis(2-Chloroisopropyl) Ether	0.000	1.00	ND	0.0098	
Bis(2-Ethylhexyl) Phthalate	0.000	1.00	ND	0.24	
Butyl Benzyl Phthalate	0.000	1.00	ND	0.24	
Chrysene	0.000	1.00	ND	0.0098	
Di-n-Butyl Phthalate	0.0710	1.00	ND	0.24	
Di-n-Octyl Phthalate	0.000	1.00	ND	0.24	
Dibenz (a,h) Anthracene	0.000	1.00	ND	0.0098	
Dibenzofuran	0.000	1.00	ND	0.0098	
Diethyl Phthalate	0.000	1.00	ND	0.0098	
Dimethyl Phthalate	2.67	1.00	0.261	0.24	
Fluoranthene	0.0232	1.00	ND	0.0098	
Fluorene	0.000	1.00	ND	0.0098	
Hexachloro-1,3-Butadiene	0.000	1.00	ND	0.0098	
Hexachlorobenzene	0.000	1.00	ND	0.0098	
Hexachlorocyclopentadiene	0.000	1.00	ND	0.0098	
Hexachloroethane	0.000	1.00	ND	0.0098	
Indeno (1,2,3-c,d) Pyrene	0.000	1.00	ND	0.0098	
Isophorone	0.000	1.00	ND	0.49	
N-Nitroso-di-n-propylamine	0.000	1.00	ND	0.0098	
N-Nitrosodimethylamine	0.000	1.00	ND	0.0098	
N-Nitrosodiphenylamine	0.000	1.00	ND	0.0098	
Naphthalene	0.0251	1.00	ND	0.0098	
Nitrobenzene	0.000	1.00	ND	0.0098	
Pentachlorophenol	0.000	1.00	ND	0.24	
Phenanthrene	0.000	1.00	ND	0.0098	
Phenol	0.000	1.00	ND	0.0098	
Pyrene	0.0241	1.00	ND	0.0098	
Pyridine	0.000	1.00	ND	0.0098	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN022.D Vial: 22
Acq On : 29 Jun 2018 4:33 pm Operator: N8CZ
Sample : 18-06-1646-5 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 16:53:36 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	3.402	152	231757	5.00 mg/l	0.00
19) Naphthalene-d8	4.655	136	837601	5.00 mg/l	0.00
36) Acenaphthene-d10	6.427	164	321820	5.00 mg/l	0.00
56) Phenanthrene-d10	7.875	188	1141848	5.00 mg/l	0.00
69) Chrysene-d12	10.567	240	1329346	5.00 mg/l	-0.01
81) Perylene-d12	12.397	264	1322275	5.00 mg/l	0.00
System Monitoring Compounds					
4) 2-Fluorophenol	2.365	112	229273	4.38 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 43.80%		
6) Phenol-d6	3.068	99	399554	6.00 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 60.00%		
20) Nitrobenzene-d5	3.957	82	182540	2.97 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 29.70%		
41) 2-Fluorobiphenyl	5.760	172	559628	4.59 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 45.90%		
60) 2,4,6-Tribromophenol	7.213	330	106357	3.89 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 38.90%		
71) p-Terphenyl-d14	9.457	244	1707830	6.26 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 62.60%		
Target Compounds					Qvalue
2) Pyridine	0.000		0	N.D.	
3) N-Nitrosodimethylamine	0.000		0	N.D.	
5) Aniline	3.142	93	498	N.D.	
7) Phenol	0.000		0	N.D. d	
8) Bis(2-Chloroethyl) Ether	3.173	93	718	N.D.	
9) 2-Chlorophenol	3.247	128	474	N.D.	
10) 1,3-Dichlorobenzene	3.377	146	793	N.D.	
11) 1,4-Dichlorobenzene	3.420	146	538	N.D.	
12) Benzyl Alcohol	0.000		0	N.D. d	
13) 1,2-Dichlorobenzene	3.599	146	590	N.D.	
14) 2-Methylphenol	3.649	108	356	N.D.	
15) Bis(2-Chloroisopropyl)...	3.692	45	1332	N.D.	
16) 3/4-Methylphenol	3.803	107	1060	N.D.	
17) N-Nitroso-di-n-propyla...	3.828	70	474	N.D.	
18) Hexachloroethane	0.000		0	N.D. d	
21) Nitrobenzene	0.000		0	N.D. d	
22) Isophorone	4.204	82	1384	N.D.	
23) 2-Nitrophenol	4.297	139	324	N.D.	
24) 2,4-Dimethylphenol	4.328	107	748	N.D.	
25) Benzoic Acid	0.000		0	N.D. d	
26) Bis(2-Chloroethoxy) Me...	4.389	93	391	N.D.	
27) 2,4-Dichlorophenol	4.537	162	373	N.D.	
28) 1,2,4-Trichlorobenzene	4.618	180	472	N.D.	
29) Naphthalene	4.679	128	4375	0.03 mg/l	71
30) 2,6-Dichlorophenol	4.766	162	501	N.D.	
31) 4-Chloroaniline	4.753	127	449	N.D.	
32) Hexachloro-1,3-Butadiene	4.871	225	731	N.D.	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN022.D Vial: 22
Acq On : 29 Jun 2018 4:33 pm Operator: N8CZ
Sample : 18-06-1646-5 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 16:53:36 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
33) 4-Chloro-3-Methylphenol	5.254	107	653	N.D.	
34) 2-Methylnaphthalene	5.371	142	1626	N.D.	
35) 1-Methylnaphthalene	5.482	142	1371	N.D.	
37) Hexachlorocyclopentadiene	5.599	237	321	N.D.	
38) 2,4,6-Trichlorophenol	5.686	196	358	N.D.	
39) 2,4,5-Trichlorophenol	5.729	196	789	N.D.	
40) 2-Chloronaphthalene	5.859	162	824	N.D.	
42) 2-Nitroaniline	0.000		0	N.D. d	
43) Dimethyl Phthalate	6.205	163	336443	2.67 mg/l	100
44) Acenaphthylene	6.279	152	1731	N.D.	
45) 3-Nitroaniline	6.440	138	305	N.D.	
46) Acenaphthene	6.458	154	693	N.D.	
47) 2,4-Dinitrophenol	0.000		0	N.D. d	
48) 4-Nitrophenol	6.569	65	305	N.D.	
49) Dibenzofuran	6.619	168	1519	N.D.	
50) 2,4-Dinitrotoluene	0.000		0	N.D. d	
51) 2,6-Dinitrotoluene	0.000		0	N.D. d	
52) Diethyl Phthalate	6.903	149	2454	N.D.	
53) 4-Chlorophenyl-Phenyl ...	6.965	204	657	N.D.	
54) Fluorene	6.958	166	1033	N.D.	
55) 4-Nitroaniline	7.027	138	225	N.D.	
57) 4,6-Dinitro-2-Methylph...	0.000		0	N.D. d	
58) N-Nitrosodiphenylamine	7.082	169	705	N.D.	
59) Azobenzene	0.000		0	N.D.	
61) 4-Bromophenyl-Phenyl E...	7.442	248	371	N.D.	
62) Hexachlorobenzene	7.582	284	552	N.D.	
63) Pentachlorophenol	0.000		0	N.D. d	
64) Phenanthrene	7.896	178	4302	N.D.	
65) Anthracene	7.943	178	2635	N.D.	
66) Di-n-Butyl Phthalate	8.507	149	20240	0.07 mg/l	91
67) Fluoranthene	9.071	202	7503	0.02 mg/l	97
68) Benzidine	9.241	184	115	N.D.	
70) Pyrene	9.292	202	8183	0.02 mg/l	96
72) Butyl Benzyl Phthalate	9.923	149	739	N.D.	
73) 3,3'-Dichlorobenzidine	10.525	252	695	N.D.	
74) Benzo (a) Anthracene	10.571	228	5992	N.D.	
75) Bis(2-Ethylhexyl) Phth...	10.669	149	3553	N.D.	
76) Chrysene	10.597	228	3197	N.D.	
77) Di-n-Octyl Phthalate	11.435	149	1380	N.D.	
78) Benzo (b) Fluoranthene	11.893	252	1857	N.D.	
79) Benzo (k) Fluoranthene	11.991	252	696	N.D.	
80) Benzo (a) Pyrene	12.355	252	710	N.D.	
82) Indeno (1,2,3-c,d) Pyrene	13.838	276	2950	N.D.	
83) Dibenz (a,h) Anthracene	13.859	278	1669	N.D.	
84) Benzo (g,h,i) Perylene	14.206	276	2382	Below Cal	75

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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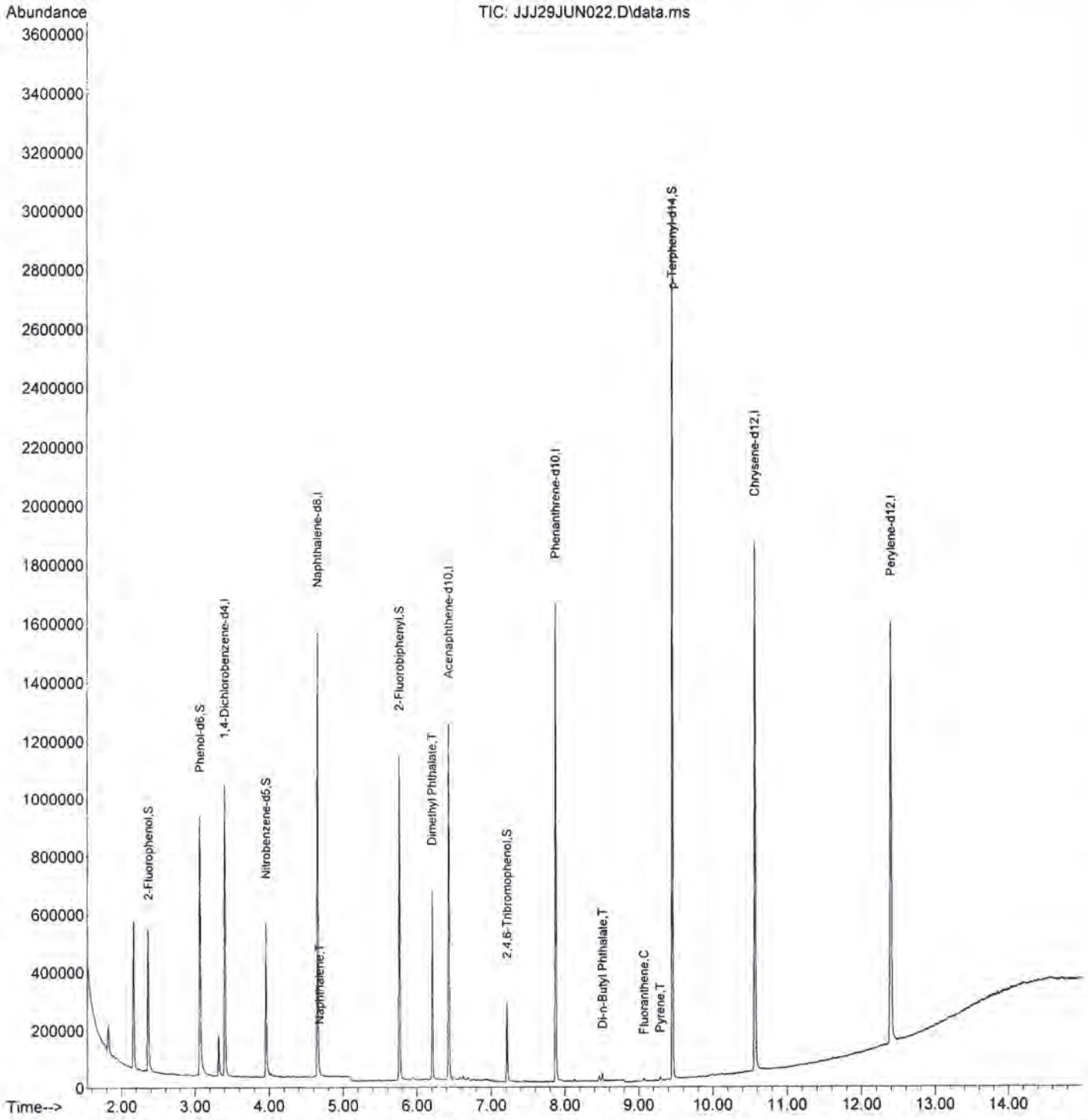
Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN022.D Vial: 22
Acq On : 29 Jun 2018 4:33 pm Operator: N8CZ
Sample : 18-06-1646-5 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 16:53:36 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M



RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: **18-06-1646**
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-06-29 17:09
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180629\JJJ29JUN024.D\JJJ29JUN024.rr

 # 7 **CLIENT SAMPLE NUMBER:** **1802258-27 / TP-19-4-8**

LCS/MB BATCH: 180626L09
MS/MSD BATCH: 180626S09
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.40 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.98

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
1,2,4-Trichlorobenzene	0.000	1.00	ND	0.0098	
1,2-Dichlorobenzene	0.000	1.00	ND	0.0098	
1,3-Dichlorobenzene	0.000	1.00	ND	0.0098	
1,4-Dichlorobenzene	0.000	1.00	ND	0.0098	
1-Methylnaphthalene	0.000	1.00	ND	0.0098	
2,4,5-Trichlorophenol	0.000	1.00	ND	0.25	
2,4,6-Trichlorophenol	0.000	1.00	ND	0.25	
2,4-Dichlorophenol	0.000	1.00	ND	0.25	
2,4-Dimethylphenol	0.000	1.00	ND	0.49	
2,4-Dinitrophenol	0.000	1.00	ND	0.25	]
2,4-Dinitrotoluene	0.000	1.00	ND	0.0098	
2,6-Dichlorophenol	0.000	1.00	ND	0.25	
2,6-Dinitrotoluene	0.000	1.00	ND	0.0098	
2-Chloronaphthalene	0.000	1.00	ND	0.0098	
2-Chlorophenol	0.000	1.00	ND	0.0098	
2-Methylnaphthalene	0.000	1.00	ND	0.0098	
2-Methylphenol	0.000	1.00	ND	0.25	
2-Nitroaniline	0.000	1.00	ND	0.25	
2-Nitrophenol	0.000	1.00	ND	0.25	
3,3'-Dichlorobenzidine	0.000	1.00	ND	0.25	
3-Nitroaniline	0.000	1.00	ND	0.25	
3/4-Methylphenol	0.000	1.00	ND	0.098	
4-Bromophenyl-Phenyl Ether	0.000	1.00	ND	0.0098	
4,6-Dinitro-2-Methylphenol	0.000	1.00	ND	0.25	
4-Chloro-3-Methylphenol	0.000	1.00	ND	0.25	
4-Chloroaniline	0.000	1.00	ND	0.25	
4-Chlorophenyl-Phenyl Ether	0.000	1.00	ND	0.0098	
4-Nitroaniline	0.000	1.00	ND	0.25	[
4-Nitrophenol	0.000	1.00	ND	0.49	
Acenaphthene	0.000	1.00	ND	0.0098	
Acenaphthylene	0.000	1.00	ND	0.0098	
Aniline	0.000	1.00	ND	0.0098	
Anthracene	0.000	1.00	ND	0.0098	
Azobenzene	0.000	1.00	ND	0.0098	
Benzidine	0.000	1.00	ND	0.25	]
Benzo (a) Anthracene	0.000	1.00	ND	0.0098	
Benzo (a) Pyrene	0.000	1.00	ND	0.0098	
Benzo (b) Fluoranthene	0.000	1.00	ND	0.0098	
Benzo (g,h,i) Perylene	0.000	1.00	ND	0.0098	
Benzo (k) Fluoranthene	0.000	1.00	ND	0.0098	

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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: **18-06-1646**
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-06-29 17:09
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180629\JJJ29JUN024.D\JJJ29JUN024.rr

 # 7 **CLIENT SAMPLE NUMBER: 1802258-27 / TP-19-4-8**

LCS/MB BATCH: 180626L09
MS/MSD BATCH: 180626S09
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.40 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.98

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
Benzyl Alcohol	0.000	1.00	ND	0.0098	
Bis(2-Chloroethoxy) Methane	0.000	1.00	ND	0.0098	
Bis(2-Chloroethyl) Ether	0.000	1.00	ND	0.0098	
Bis(2-Chloroisopropyl) Ether	0.000	1.00	ND	0.0098	
Bis(2-Ethylhexyl) Phthalate	0.000	1.00	ND	0.25	
Butyl Benzyl Phthalate	0.000	1.00	ND	0.25	
Chrysene	0.000	1.00	ND	0.0098	
Di-n-Butyl Phthalate	0.0761	1.00	ND	0.25	
Di-n-Octyl Phthalate	0.000	1.00	ND	0.25	
Dibenz (a,h) Anthracene	0.000	1.00	ND	0.0098	
Dibenzofuran	0.000	1.00	ND	0.0098	
Diethyl Phthalate	0.000	1.00	ND	0.0098	
Dimethyl Phthalate	2.93	1.00	0.287	0.25	
Fluoranthene	0.0343	1.00	ND	0.0098	
Fluorene	0.000	1.00	ND	0.0098	
Hexachloro-1,3-Butadiene	0.000	1.00	ND	0.0098	
Hexachlorobenzene	0.000	1.00	ND	0.0098	
Hexachlorocyclopentadiene	0.000	1.00	ND	0.0098	
Hexachloroethane	0.000	1.00	ND	0.0098	
Indeno (1,2,3-c,d) Pyrene	0.000	1.00	ND	0.0098	
Isophorone	0.000	1.00	ND	0.49	
N-Nitroso-di-n-propylamine	0.000	1.00	ND	0.0098	
N-Nitrosodimethylamine	0.000	1.00	ND	0.0098	
N-Nitrosodiphenylamine	0.000	1.00	ND	0.0098	
Naphthalene	0.000	1.00	ND	0.0098	
Nitrobenzene	0.000	1.00	ND	0.0098	
Pentachlorophenol	0.000	1.00	ND	0.25	
Phenanthrene	0.0318	1.00	ND	0.0098	
Phenol	0.000	1.00	ND	0.0098	
Pyrene	0.0367	1.00	ND	0.0098	
Pyridine	0.000	1.00	ND	0.0098	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN024.D Vial: 24
Acq On : 29 Jun 2018 5:09 pm Operator: N8CZ
Sample : 18-06-1646-7 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 17:27:04 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	3.402	152	281225	5.00 mg/l	# 0.00
19) Naphthalene-d8	4.655	136	1011250	5.00 mg/l	0.00
36) Acenaphthene-d10	6.427	164	387795	5.00 mg/l	0.00
56) Phenanthrene-d10	7.875	188	1371720	5.00 mg/l	0.00
69) Chrysene-d12	10.567	240	1626575	5.00 mg/l	-0.01
81) Perylene-d12	12.393	264	1638520	5.00 mg/l	-0.01
System Monitoring Compounds					
4) 2-Fluorophenol	2.365	112	341989	5.38 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 53.80%	
6) Phenol-d6	3.069	99	555644	6.88 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 68.80%	
20) Nitrobenzene-d5	3.957	82	299287	4.03 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 40.30%	
41) 2-Fluorobiphenyl	5.760	172	685654	4.67 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 46.70%	
60) 2,4,6-Tribromophenol	7.214	330	168066	5.12 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 51.20%	
71) p-Terphenyl-d14	9.457	244	2094220	6.27 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 62.70%	
Target Compounds					Qvalue
2) Pyridine	0.000		0	N.D. d	
3) N-Nitrosodimethylamine	0.000		0	N.D.	
5) Aniline	3.136	93	1539	N.D.	
7) Phenol	0.000		0	N.D. d	
8) Bis(2-Chloroethyl) Ether	0.000		0	N.D. d	
9) 2-Chlorophenol	3.254	128	704	N.D.	
10) 1,3-Dichlorobenzene	3.371	146	461	N.D.	
11) 1,4-Dichlorobenzene	3.420	146	531	N.D.	
12) Benzyl Alcohol	3.519	79	449	N.D.	
13) 1,2-Dichlorobenzene	3.599	146	261	N.D.	
14) 2-Methylphenol	3.649	108	609	N.D.	
15) Bis(2-Chloroisopropyl)...	3.686	45	1009	N.D.	
16) 3/4-Methylphenol	0.000		0	N.D. d	
17) N-Nitroso-di-n-propyla...	3.822	70	822	N.D.	
18) Hexachloroethane	3.890	117	193	N.D.	
21) Nitrobenzene	0.000		0	N.D. d	
22) Isophorone	0.000		0	N.D. d	
23) 2-Nitrophenol	4.315	139	105	N.D.	
24) 2,4-Dimethylphenol	4.303	107	145	N.D.	
25) Benzoic Acid	0.000		0	N.D. d	
26) Bis(2-Chloroethoxy) Me...	4.427	93	447	N.D.	
27) 2,4-Dichlorophenol	4.531	162	342	N.D.	
28) 1,2,4-Trichlorobenzene	4.618	180	811	N.D.	
29) Naphthalene	4.673	128	2615	N.D.	
30) 2,6-Dichlorophenol	4.723	162	188	N.D.	
31) 4-Chloroaniline	4.717	127	130	N.D.	
32) Hexachloro-1,3-Butadiene	4.865	225	403	N.D.	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN024.D Vial: 24
Acq On : 29 Jun 2018 5:09 pm Operator: N8CZ
Sample : 18-06-1646-7 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 17:27:04 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
33) 4-Chloro-3-Methylphenol	5.248	107	158	N.D.	
34) 2-Methylnaphthalene	5.371	142	1315	N.D.	
35) 1-Methylnaphthalene	5.482	142	1453	N.D.	
37) Hexachlorocyclopentadiene	5.612	237	253	N.D.	
38) 2,4,6-Trichlorophenol	5.686	196	225	N.D.	
39) 2,4,5-Trichlorophenol	5.717	196	89	N.D.	
40) 2-Chloronaphthalene	5.859	162	655	N.D.	
42) 2-Nitroaniline	0.000		0	N.D. d	
43) Dimethyl Phthalate	6.205	163	444154	2.93 mg/l	100
44) Acenaphthylene	6.279	152	3339	N.D.	
45) 3-Nitroaniline	6.421	138	258	N.D.	
46) Acenaphthene	6.458	154	761	N.D.	
47) 2,4-Dinitrophenol	0.000		0	N.D. d	
48) 4-Nitrophenol	0.000		0	N.D. d	
49) Dibenzofuran	6.619	168	1340	N.D.	
50) 2,4-Dinitrotoluene	0.000		0	N.D. d	
51) 2,6-Dinitrotoluene	0.000		0	N.D. d	
52) Diethyl Phthalate	6.903	149	2942	N.D.	
53) 4-Chlorophenyl-Phenyl ...	6.965	204	392	N.D.	
54) Fluorene	6.959	166	2015	N.D.	
55) 4-Nitroaniline	6.983	138	450	N.D.	
57) 4,6-Dinitro-2-Methylph...	0.000		0	N.D. d	
58) N-Nitrosodiphenylamine	7.086	169	1033	N.D.	
59) Azobenzene	7.112	77	1309	N.D.	
61) 4-Bromophenyl-Phenyl E...	7.438	248	300	N.D.	
62) Hexachlorobenzene	7.583	284	627	N.D.	
63) Pentachlorophenol	0.000		0	N.D. d	
64) Phenanthrene	7.897	178	9663	0.03 mg/l	97
65) Anthracene	7.943	178	4468	N.D.	
66) Di-n-Butyl Phthalate	8.503	149	26061	0.08 mg/l	95
67) Fluoranthene	9.071	202	13328	0.03 mg/l	99
68) Benzidine	9.190	184	151	N.D.	
70) Pyrene	9.288	202	15222	0.04 mg/l	92
72) Butyl Benzyl Phthalate	0.000		0	N.D. d	
73) 3,3'-Dichlorobenzidine	10.546	252	214	N.D.	
74) Benzo (a) Anthracene	0.000		0	N.D. d	
75) Bis(2-Ethylhexyl) Phth...	0.000		0	N.D. d	
76) Chrysene	10.597	228	6749	N.D.	
77) Di-n-Octyl Phthalate	11.410	149	1349	N.D.	
78) Benzo (b) Fluoranthene	11.898	252	6143	N.D.	
79) Benzo (k) Fluoranthene	12.037	252	1901	N.D.	
80) Benzo (a) Pyrene	12.321	252	5378	N.D.	
82) Indeno (1,2,3-c,d) Pyrene	13.834	276	4751	N.D.	
83) Dibenz (a,h) Anthracene	13.863	278	2680	N.D.	
84) Benzo (g,h,i) Perylene	14.202	276	5848	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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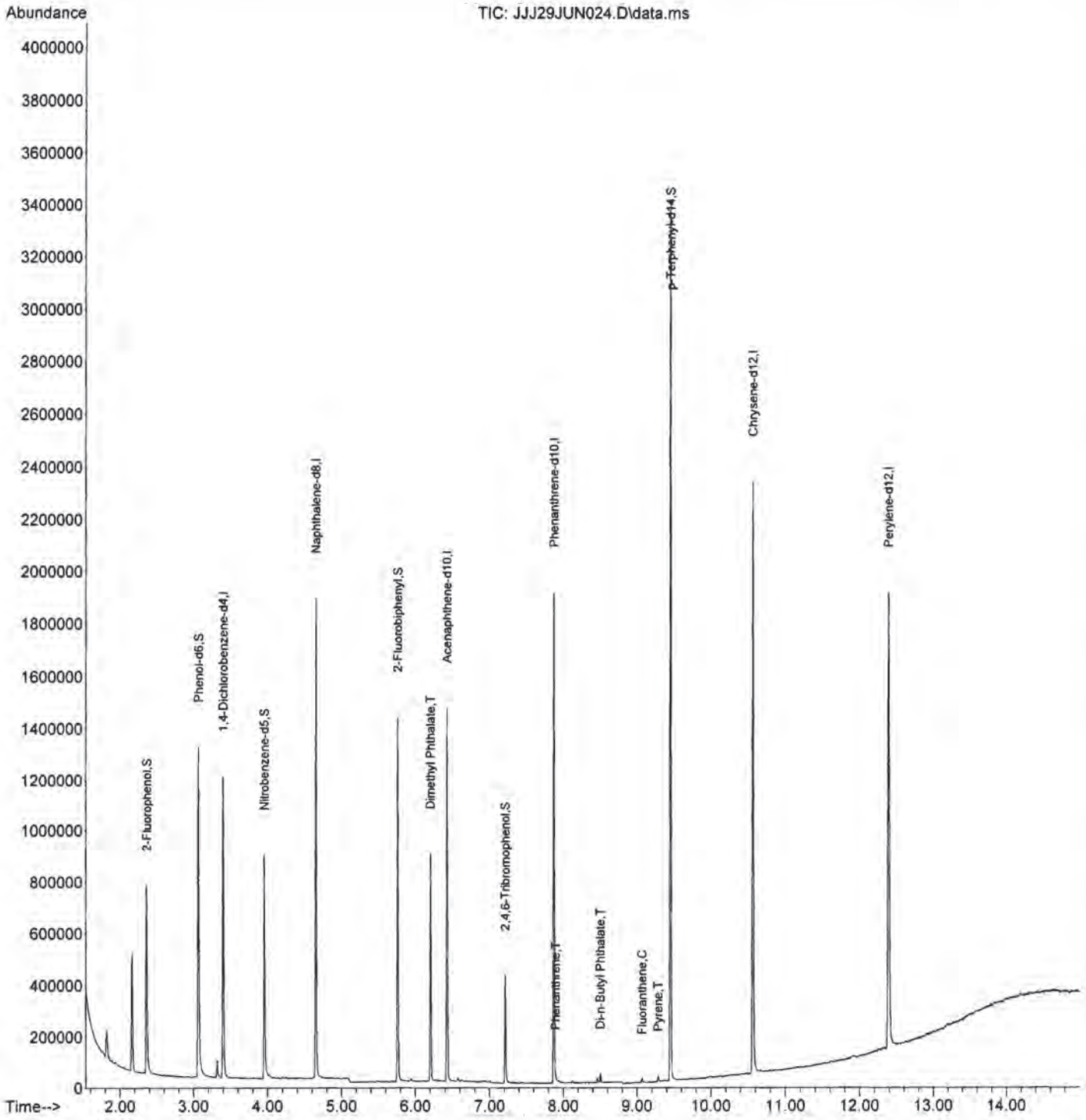
Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN024.D Vial: 24
Acq On : 29 Jun 2018 5:09 pm Operator: N8CZ
Sample : 18-06-1646-7 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 17:27:04 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M



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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: 18-06-1646
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-06-29 17:28
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180629\JJJ29JUN025.D\JJJ29JUN025.rr

 # 8 **CLIENT SAMPLE NUMBER: 1802258-28 / TP-19-8-10**

LCS/MB BATCH: 180626L09
MS/MSD BATCH: 180626S09
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.50 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.98

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
1,2,4-Trichlorobenzene	0.000	1.00	ND	0.0098	
1,2-Dichlorobenzene	0.000	1.00	ND	0.0098	
1,3-Dichlorobenzene	0.000	1.00	ND	0.0098	
1,4-Dichlorobenzene	0.000	1.00	ND	0.0098	
1-Methylnaphthalene	0.000	1.00	ND	0.0098	
2,4,5-Trichlorophenol	0.000	1.00	ND	0.24	
2,4,6-Trichlorophenol	0.000	1.00	ND	0.24	
2,4-Dichlorophenol	0.000	1.00	ND	0.24	
2,4-Dimethylphenol	0.000	1.00	ND	0.49	
2,4-Dinitrophenol	0.000	1.00	ND	0.24	]
2,4-Dinitrotoluene	0.000	1.00	ND	0.0098	
2,6-Dichlorophenol	0.000	1.00	ND	0.24	
2,6-Dinitrotoluene	0.000	1.00	ND	0.0098	
2-Chloronaphthalene	0.000	1.00	ND	0.0098	
2-Chlorophenol	0.000	1.00	ND	0.0098	
2-Methylnaphthalene	0.000	1.00	ND	0.0098	
2-Methylphenol	0.000	1.00	ND	0.24	
2-Nitroaniline	0.000	1.00	ND	0.24	
2-Nitrophenol	0.000	1.00	ND	0.24	
3,3'-Dichlorobenzidine	0.000	1.00	ND	0.24	
3-Nitroaniline	0.000	1.00	ND	0.24	
3/4-Methylphenol	0.000	1.00	ND	0.098	
4-Bromophenyl-Phenyl Ether	0.000	1.00	ND	0.0098	
4,6-Dinitro-2-Methylphenol	0.000	1.00	ND	0.24	
4-Chloro-3-Methylphenol	0.000	1.00	ND	0.24	
4-Chloroaniline	0.000	1.00	ND	0.24	
4-Chlorophenyl-Phenyl Ether	0.000	1.00	ND	0.0098	
4-Nitroaniline	0.000	1.00	ND	0.24	[
4-Nitrophenol	0.000	1.00	ND	0.49	
Acenaphthene	0.000	1.00	ND	0.0098	
Acenaphthylene	0.000	1.00	ND	0.0098	
Aniline	0.000	1.00	ND	0.0098	
Anthracene	0.000	1.00	ND	0.0098	
Azobenzene	0.000	1.00	ND	0.0098	
Benzidine	0.000	1.00	ND	0.24	]
Benzo (a) Anthracene	0.000	1.00	ND	0.0098	
Benzo (a) Pyrene	0.000	1.00	ND	0.0098	
Benzo (b) Fluoranthene	0.000	1.00	ND	0.0098	
Benzo (g,h,i) Perylene	0.000	1.00	ND	0.0098	
Benzo (k) Fluoranthene	0.000	1.00	ND	0.0098	

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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: **18-06-1646**
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-06-29 17:28
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180629\JJJ29JUN025.D\JJJ29JUN025.rr

 # 8 **CLIENT SAMPLE NUMBER:** **1802258-28 / TP-19-8-10**

LCS/MB BATCH: 180626L09
MS/MSD BATCH: 180626S09
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.50 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.98

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
Benzyl Alcohol	0.000	1.00	ND	0.0098	
Bis(2-Chloroethoxy) Methane	0.000	1.00	ND	0.0098	
Bis(2-Chloroethyl) Ether	0.000	1.00	ND	0.0098	
Bis(2-Chloroisopropyl) Ether	0.000	1.00	ND	0.0098	
Bis(2-Ethylhexyl) Phthalate	0.000	1.00	ND	0.24	
Butyl Benzyl Phthalate	0.000	1.00	ND	0.24	
Chrysene	0.000	1.00	ND	0.0098	
Di-n-Butyl Phthalate	0.0564	1.00	ND	0.24	
Di-n-Octyl Phthalate	0.000	1.00	ND	0.24	
Dibenz (a,h) Anthracene	0.000	1.00	ND	0.0098	
Dibenzofuran	0.000	1.00	ND	0.0098	
Diethyl Phthalate	0.000	1.00	ND	0.0098	
Dimethyl Phthalate	2.67	1.00	0.260	0.24	
Fluoranthene	0.000	1.00	ND	0.0098	
Fluorene	0.000	1.00	ND	0.0098	
Hexachloro-1,3-Butadiene	0.000	1.00	ND	0.0098	
Hexachlorobenzene	0.000	1.00	ND	0.0098	
Hexachlorocyclopentadiene	0.000	1.00	ND	0.0098	
Hexachloroethane	0.000	1.00	ND	0.0098	
Indeno (1,2,3-c,d) Pyrene	0.000	1.00	ND	0.0098	
Isophorone	0.000	1.00	ND	0.49	
N-Nitroso-di-n-propylamine	0.000	1.00	ND	0.0098	
N-Nitrosodimethylamine	0.000	1.00	ND	0.0098	
N-Nitrosodiphenylamine	0.000	1.00	ND	0.0098	
Naphthalene	0.000	1.00	ND	0.0098	
Nitrobenzene	0.000	1.00	ND	0.0098	
Pentachlorophenol	0.000	1.00	ND	0.24	
Phenanthrene	0.000	1.00	ND	0.0098	
Phenol	0.000	1.00	ND	0.0098	
Pyrene	0.000	1.00	ND	0.0098	
Pyridine	0.000	1.00	ND	0.0098	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN025.D Vial: 25
Acq On : 29 Jun 2018 5:28 pm Operator: N8CZ
Sample : 18-06-1646-8 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 17:28:23 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	3.408	152	169913	5.00 mg/l	0.00
19) Naphthalene-d8	4.655	136	611026	5.00 mg/l	0.00
36) Acenaphthene-d10	6.427	164	234637	5.00 mg/l	0.00
56) Phenanthrene-d10	7.875	188	820050	5.00 mg/l	0.00
69) Chrysene-d12	10.567	240	933636	5.00 mg/l	-0.01
81) Perylene-d12	12.393	264	892437	5.00 mg/l	-0.01
System Monitoring Compounds					
4) 2-Fluorophenol	2.365	112	146394	3.81 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 38.10%	
6) Phenol-d6	3.068	99	261094	5.35 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 53.50%	
20) Nitrobenzene-d5	3.957	82	102362	2.28 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 22.80%	
41) 2-Fluorobiphenyl	5.760	172	359826	4.05 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 40.50%	
60) 2,4,6-Tribromophenol	7.213	330	63728	3.25 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 32.50%	
71) p-Terphenyl-d14	9.457	244	1187631	6.19 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 61.90%	
Target Compounds					Qvalue
2) Pyridine	0.000		0	N.D.	
3) N-Nitrosodimethylamine	0.000		0	N.D.	
5) Aniline	3.142	93	532	N.D.	
7) Phenol	0.000		0	N.D. d	
8) Bis(2-Chloroethyl) Ether	3.142	93	532	N.D.	
9) 2-Chlorophenol	3.247	128	419	N.D.	
10) 1,3-Dichlorobenzene	3.377	146	164	N.D.	
11) 1,4-Dichlorobenzene	3.420	146	260	N.D.	
12) Benzyl Alcohol	3.519	79	702	N.D.	
13) 1,2-Dichlorobenzene	3.599	146	134	N.D.	
14) 2-Methylphenol	3.630	108	86	N.D.	
15) Bis(2-Chloroisopropyl)...	3.686	45	662	N.D.	
16) 3/4-Methylphenol	3.803	107	713	N.D.	
17) N-Nitroso-di-n-propyla...	3.778	70	187	N.D.	
18) Hexachloroethane	0.000		0	N.D. d	
21) Nitrobenzene	0.000		0	N.D. d	
22) Isophorone	4.210	82	797	N.D.	
23) 2-Nitrophenol	4.315	139	88	N.D.	
24) 2,4-Dimethylphenol	4.321	107	215	N.D.	
25) Benzoic Acid	0.000		0	N.D. d	
26) Bis(2-Chloroethoxy) Me...	4.457	93	213	N.D.	
27) 2,4-Dichlorophenol	4.543	162	291	N.D.	
28) 1,2,4-Trichlorobenzene	4.611	180	542	N.D.	
29) Naphthalene	4.673	128	1230	N.D.	
30) 2,6-Dichlorophenol	4.766	162	233	N.D.	
31) 4-Chloroaniline	4.790	127	84	N.D.	
32) Hexachloro-1,3-Butadiene	4.871	225	251	N.D.	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN025.D Vial: 25
Acq On : 29 Jun 2018 5:28 pm Operator: N8CZ
Sample : 18-06-1646-8 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 17:28:23 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
33) 4-Chloro-3-Methylphenol	0.000		0	N.D. d	
34) 2-Methylnaphthalene	5.371	142	517	N.D.	
35) 1-Methylnaphthalene	5.482	142	230	N.D.	
37) Hexachlorocyclopentadiene	5.606	237	297	N.D.	
38) 2,4,6-Trichlorophenol	5.636	196	542	N.D.	
39) 2,4,5-Trichlorophenol	5.760	196	540	N.D.	
40) 2-Chloronaphthalene	5.865	162	201	N.D.	
42) 2-Nitroaniline	0.000		0	N.D. d	
43) Dimethyl Phthalate	6.205	163	244803	2.67 mg/l	100
44) Acenaphthylene	6.279	152	965	N.D.	
45) 3-Nitroaniline	6.421	138	298	N.D.	
46) Acenaphthene	0.000		0	N.D. d	
47) 2,4-Dinitrophenol	0.000		0	N.D. d	
48) 4-Nitrophenol	0.000		0	N.D. d	
49) Dibenzofuran	6.619	168	479	N.D.	
50) 2,4-Dinitrotoluene	0.000		0	N.D. d	
51) 2,6-Dinitrotoluene	0.000		0	N.D. d	
52) Diethyl Phthalate	0.000		0	N.D. d	
53) 4-Chlorophenyl-Phenyl ...	6.964	204	250	N.D.	
54) Fluorene	6.958	166	536	N.D.	
55) 4-Nitroaniline	7.008	138	122	N.D.	
57) 4,6-Dinitro-2-Methylph...	0.000		0	N.D. d	
58) N-Nitrosodiphenylamine	7.082	169	483	N.D.	
59) Azobenzene	7.116	77	455	N.D.	
61) 4-Bromophenyl-Phenyl E...	7.438	248	161	N.D.	
62) Hexachlorobenzene	7.578	284	482	N.D.	
63) Pentachlorophenol	0.000		0	N.D. d	
64) Phenanthrene	7.901	178	1028	N.D.	
65) Anthracene	7.943	178	1053	N.D.	
66) Di-n-Butyl Phthalate	8.507	149	11555	0.06 mg/l	93
67) Fluoranthene	9.071	202	2501	N.D.	
68) Benzidine	9.219	184	274	N.D.	
70) Pyrene	9.287	202	2878	N.D.	
72) Butyl Benzyl Phthalate	0.000		0	N.D. d	
73) 3,3'-Dichlorobenzidine	10.546	252	393	N.D.	
74) Benzo (a) Anthracene	10.567	228	3802	N.D.	
75) Bis(2-Ethylhexyl) Phth...	0.000		0	N.D. d	
76) Chrysene	10.601	228	1859	N.D.	
77) Di-n-Octyl Phthalate	11.427	149	740	N.D.	
78) Benzo (b) Fluoranthene	11.893	252	2073	N.D.	
79) Benzo (k) Fluoranthene	11.931	252	1229	N.D.	
80) Benzo (a) Pyrene	12.321	252	1454	N.D.	
82) Indeno (1,2,3-c,d) Pyrene	13.829	276	1487	N.D.	
83) Dibenz (a,h) Anthracene	13.825	278	390	N.D.	
84) Benzo (g,h,i) Perylene	14.206	276	2111	Below Cal #	75

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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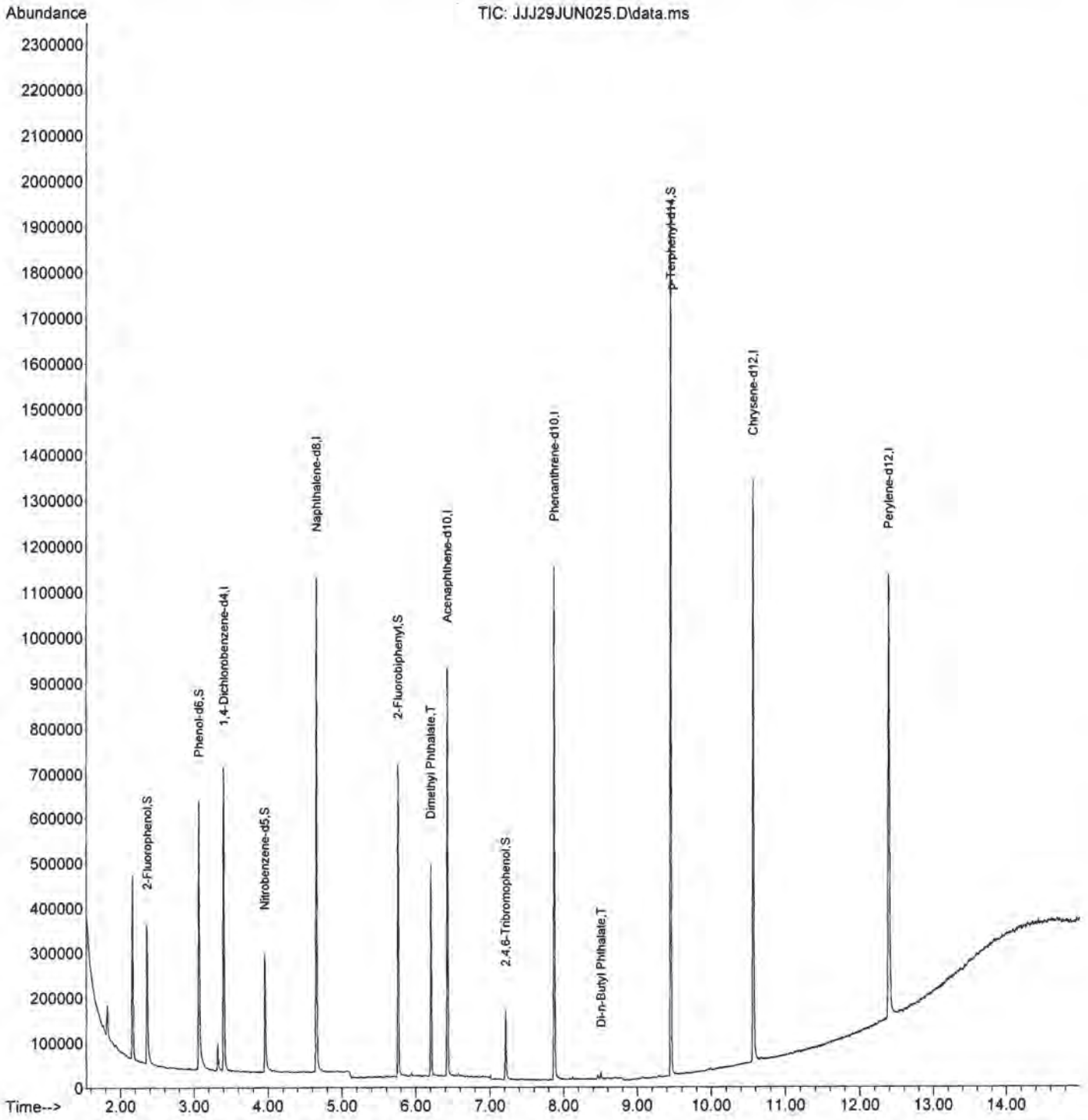
Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN025.D Vial: 25
Acq On : 29 Jun 2018 5:28 pm Operator: N8CZ
Sample : 18-06-1646-8 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 17:28:23 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M



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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: 18-06-1646
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-07-11 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-07-13 12:56
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180713\JJJ13JUL006.D\JJJ13JUL006.rr

 # 14 **CLIENT SAMPLE NUMBER: 1802258-59 / TP-21-0-5**

LCS/MB BATCH: 180711L11
MS/MSD BATCH:
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.30 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.99

COMMENT: Sample extracted outside recommended holding time.

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
1,2,4-Trichlorobenzene	0.000	1.00	ND	0.0099	w
1,2-Dichlorobenzene	0.000	1.00	ND	0.0099	w
1,3-Dichlorobenzene	0.000	1.00	ND	0.0099	w
1,4-Dichlorobenzene	0.000	1.00	ND	0.0099	w
1-Methylnaphthalene	0.000	1.00	ND	0.0099	w
2,4,5-Trichlorophenol	0.000	1.00	ND	0.25	w
2,4,6-Trichlorophenol	0.000	1.00	ND	0.25	w
2,4-Dichlorophenol	0.000	1.00	ND	0.25	w
2,4-Dimethylphenol	0.000	1.00	ND	0.49	w
2,4-Dinitrophenol	0.000	1.00	ND	0.25	w
2,4-Dinitrotoluene	0.000	1.00	ND	0.0099	w
2,6-Dichlorophenol	0.000	1.00	ND	0.25	w
2,6-Dinitrotoluene	0.000	1.00	ND	0.0099	w
2-Chloronaphthalene	0.000	1.00	ND	0.0099	w
2-Chlorophenol	0.000	1.00	ND	0.0099	w
2-Methylnaphthalene	0.000	1.00	ND	0.0099	w
2-Methylphenol	0.000	1.00	ND	0.25	w
2-Nitroaniline	0.000	1.00	ND	0.25	w
2-Nitrophenol	0.000	1.00	ND	0.25	w
3,3'-Dichlorobenzidine	0.000	1.00	ND	0.25	w
3-Nitroaniline	0.000	1.00	ND	0.25	w
3/4-Methylphenol	0.000	1.00	ND	0.099	w
4-Bromophenyl-Phenyl Ether	0.000	1.00	ND	0.0099	w
4,6-Dinitro-2-Methylphenol	0.000	1.00	ND	0.25	[w
4-Chloro-3-Methylphenol	0.000	1.00	ND	0.25	w
4-Chloroaniline	0.000	1.00	ND	0.25	w
4-Chlorophenyl-Phenyl Ether	0.000	1.00	ND	0.0099	w
4-Nitroaniline	0.000	1.00	ND	0.25	[w
4-Nitrophenol	0.000	1.00	ND	0.49	w
Acenaphthene	0.000	1.00	ND	0.0099	w
Acenaphthylene	0.000	1.00	ND	0.0099	w
Aniline	0.000	1.00	ND	0.0099	w
Anthracene	0.000	1.00	ND	0.0099	w
Azobenzene	0.000	1.00	ND	0.0099	w
Benzidine	0.000	1.00	ND	0.25	w
Benzo (a) Anthracene	0.000	1.00	ND	0.0099	w
Benzo (a) Pyrene	0.000	1.00	ND	0.0099	w
Benzo (b) Fluoranthene	0.000	1.00	ND	0.0099	w
Benzo (g,h,i) Perylene	0.000	1.00	ND	0.0099	w
Benzo (k) Fluoranthene	0.000	1.00	ND	0.0099	w

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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: **18-06-1646**
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-07-11 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-07-13 12:56
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180713\JJJ13JUL006.D\JJJ13JUL006.rr

 # 14 **CLIENT SAMPLE NUMBER: 1802258-59 / TP-21-0-5**

LCS/MB BATCH: 180711L11
MS/MSD BATCH:
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.30 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.99

COMMENT: Sample extracted outside recommended holding time.

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
Benzyl Alcohol	0.000	1.00	ND	0.0099	w
Bis(2-Chloroethoxy) Methane	0.000	1.00	ND	0.0099	w
Bis(2-Chloroethyl) Ether	0.000	1.00	ND	0.0099	w
Bis(2-Chloroisopropyl) Ether	0.000	1.00	ND	0.0099	w
Bis(2-Ethylhexyl) Phthalate	0.000	1.00	ND	0.25	w
Butyl Benzyl Phthalate	0.000	1.00	ND	0.25	w
Chrysene	0.000	1.00	ND	0.0099	w
Di-n-Butyl Phthalate	0.0721	1.00	ND	0.25	w
Di-n-Octyl Phthalate	0.000	1.00	ND	0.25	w
Dibenz (a,h) Anthracene	0.000	1.00	ND	0.0099	w
Dibenzofuran	0.000	1.00	ND	0.0099	w
Diethyl Phthalate	0.000	1.00	ND	0.0099	w
Dimethyl Phthalate	1.70	1.00	ND	0.25	w
Fluoranthene	0.000	1.00	ND	0.0099	w
Fluorene	0.000	1.00	ND	0.0099	w
Hexachloro-1,3-Butadiene	0.000	1.00	ND	0.0099	w
Hexachlorobenzene	0.000	1.00	ND	0.0099	w
Hexachlorocyclopentadiene	0.000	1.00	ND	0.0099	w
Hexachloroethane	0.000	1.00	ND	0.0099	w
Indeno (1,2,3-c,d) Pyrene	0.000	1.00	ND	0.0099	w
Isophorone	0.000	1.00	ND	0.49	w
N-Nitroso-di-n-propylamine	0.000	1.00	ND	0.0099	w
N-Nitrosodimethylamine	0.000	1.00	ND	0.0099	w
N-Nitrosodiphenylamine	0.000	1.00	ND	0.0099	w
Naphthalene	0.0564	1.00	ND	0.0099	w
Nitrobenzene	0.000	1.00	ND	0.0099	w
Pentachlorophenol	0.000	1.00	ND	0.25	w
Phenanthrene	0.000	1.00	ND	0.0099	w
Phenol	0.000	1.00	ND	0.0099	w
Pyrene	0.000	1.00	ND	0.0099	w
Pyridine	0.000	1.00	ND	0.0099	w

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN031.D Vial: 31
Acq On : 29 Jun 2018 7:16 pm Operator: N8CZ
Sample : 18-06-1646-14 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 17:35:13 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	3.408	152	230623	5.00 mg/l	# 0.00
19) Naphthalene-d8	4.655	136	831806	5.00 mg/l	0.00
36) Acenaphthene-d10	6.427	164	324262	5.00 mg/l	0.00
56) Phenanthrene-d10	7.875	188	1144263	5.00 mg/l	0.00
69) Chrysene-d12	10.567	240	1360905	5.00 mg/l	-0.01
81) Perylene-d12	12.398	264	1323006	5.00 mg/l	0.00
System Monitoring Compounds					
4) 2-Fluorophenol	2.365	112	237116	4.55 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 45.50%		
6) Phenol-d6	3.069	99	474478	7.16 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 71.60%		
20) Nitrobenzene-d5	3.957	82	181880	2.98 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 29.80%		
41) 2-Fluorobiphenyl	5.760	172	623344	5.08 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 50.80%		
60) 2,4,6-Tribromophenol	7.214	330	145519	5.31 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 53.10%		
71) p-Terphenyl-d14	9.457	244	2025465	7.25 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 72.50%		
Target Compounds					Qvalue
2) Pyridine	0.000		0	N.D. d	
3) N-Nitrosodimethylamine	0.000		0	N.D.	
5) Aniline	3.136	93	648	N.D.	
7) Phenol	0.000		0	N.D. d	
8) Bis(2-Chloroethyl) Ether	3.136	93	648	N.D.	
9) 2-Chlorophenol	0.000		0	N.D. d	
10) 1,3-Dichlorobenzene	3.377	146	863	N.D.	
11) 1,4-Dichlorobenzene	3.420	146	812	N.D.	
12) Benzyl Alcohol	0.000		0	N.D. d	
13) 1,2-Dichlorobenzene	3.599	146	790	N.D.	
14) 2-Methylphenol	3.655	108	690	N.D.	
15) Bis(2-Chloroisopropyl)...	3.692	45	1053	N.D.	
16) 3/4-Methylphenol	0.000		0	N.D. d	
17) N-Nitroso-di-n-propyla...	3.822	70	548	N.D.	
18) Hexachloroethane	0.000		0	N.D. d	
21) Nitrobenzene	0.000		0	N.D. d	
22) Isophorone	4.204	82	1196	N.D.	
23) 2-Nitrophenol	4.272	139	117	N.D.	
24) 2,4-Dimethylphenol	4.346	107	982	N.D.	
25) Benzoic Acid	0.000		0	N.D. d	
26) Bis(2-Chloroethoxy) Me...	4.433	93	798	N.D.	
27) 2,4-Dichlorophenol	4.538	162	509	N.D.	
28) 1,2,4-Trichlorobenzene	4.624	180	504	N.D.	
29) Naphthalene	4.680	128	2454	N.D.	
30) 2,6-Dichlorophenol	4.766	162	314	N.D.	
31) 4-Chloroaniline	4.772	127	292	N.D.	
32) Hexachloro-1,3-Butadiene	4.865	225	594	N.D.	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN031.D Vial: 31
Acq On : 29 Jun 2018 7:16 pm Operator: N8CZ
Sample : 18-06-1646-14 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 17:35:13 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
33) 4-Chloro-3-Methylphenol	5.204	107	256	N.D.	
34) 2-Methylnaphthalene	5.371	142	806	N.D.	
35) 1-Methylnaphthalene	5.482	142	803	N.D.	
37) Hexachlorocyclopentadiene	5.569	237	190	N.D.	
38) 2,4,6-Trichlorophenol	5.699	196	297	N.D.	
39) 2,4,5-Trichlorophenol	5.748	196	165	N.D.	
40) 2-Chloronaphthalene	5.859	162	535	N.D.	
42) 2-Nitroaniline	0.000		0	N.D. d	
43) Dimethyl Phthalate	6.205	163	514055	4.05 mg/l	99
44) Acenaphthylene	6.279	152	1660	N.D.	
45) 3-Nitroaniline	6.396	138	116	N.D.	
46) Acenaphthene	0.000		0	N.D. d	
47) 2,4-Dinitrophenol	0.000		0	N.D. d	
48) 4-Nitrophenol	6.656	65	296	N.D.	
49) Dibenzofuran	6.619	168	1185	N.D.	
50) 2,4-Dinitrotoluene	0.000		0	N.D. d	
51) 2,6-Dinitrotoluene	0.000		0	N.D. d	
52) Diethyl Phthalate	0.000		0	N.D. d	
53) 4-Chlorophenyl-Phenyl ...	6.965	204	722	N.D.	
54) Fluorene	6.952	166	1117	N.D.	
55) 4-Nitroaniline	7.014	138	187	N.D.	
57) 4,6-Dinitro-2-Methylph...	0.000		0	N.D. d	
58) N-Nitrosodiphenylamine	7.082	169	920	N.D.	
59) Azobenzene	7.112	77	1811	N.D.	
61) 4-Bromophenyl-Phenyl E...	7.438	248	371	N.D.	
62) Hexachlorobenzene	7.578	284	533	N.D.	
63) Pentachlorophenol	0.000		0	N.D. d	
64) Phenanthrene	0.000		0	N.D. d	
65) Anthracene	7.943	178	2059	N.D.	
66) Di-n-Butyl Phthalate	8.508	149	24673	0.09 mg/l	97
67) Fluoranthene	9.071	202	9162	0.03 mg/l	95
68) Benzidine	9.182	184	125	N.D.	
70) Pyrene	9.288	202	11339	0.03 mg/l	100
72) Butyl Benzyl Phthalate	0.000		0	N.D. d	
73) 3,3'-Dichlorobenzidine	10.546	252	568	N.D.	
74) Benzo (a) Anthracene	10.567	228	6696	N.D.	
75) Bis(2-Ethylhexyl) Phth...	0.000		0	N.D. d	
76) Chrysene	10.597	228	5799	N.D.	
77) Di-n-Octyl Phthalate	11.440	149	1710	N.D.	
78) Benzo (b) Fluoranthene	11.898	252	4839	N.D.	
79) Benzo (k) Fluoranthene	11.982	252	623	N.D.	
80) Benzo (a) Pyrene	12.325	252	4672	N.D.	
82) Indeno (1,2,3-c,d) Pyrene	13.838	276	3931	N.D.	
83) Dibenz (a,h) Anthracene	13.855	278	1425	N.D.	
84) Benzo (g,h,i) Perylene	14.211	276	4757	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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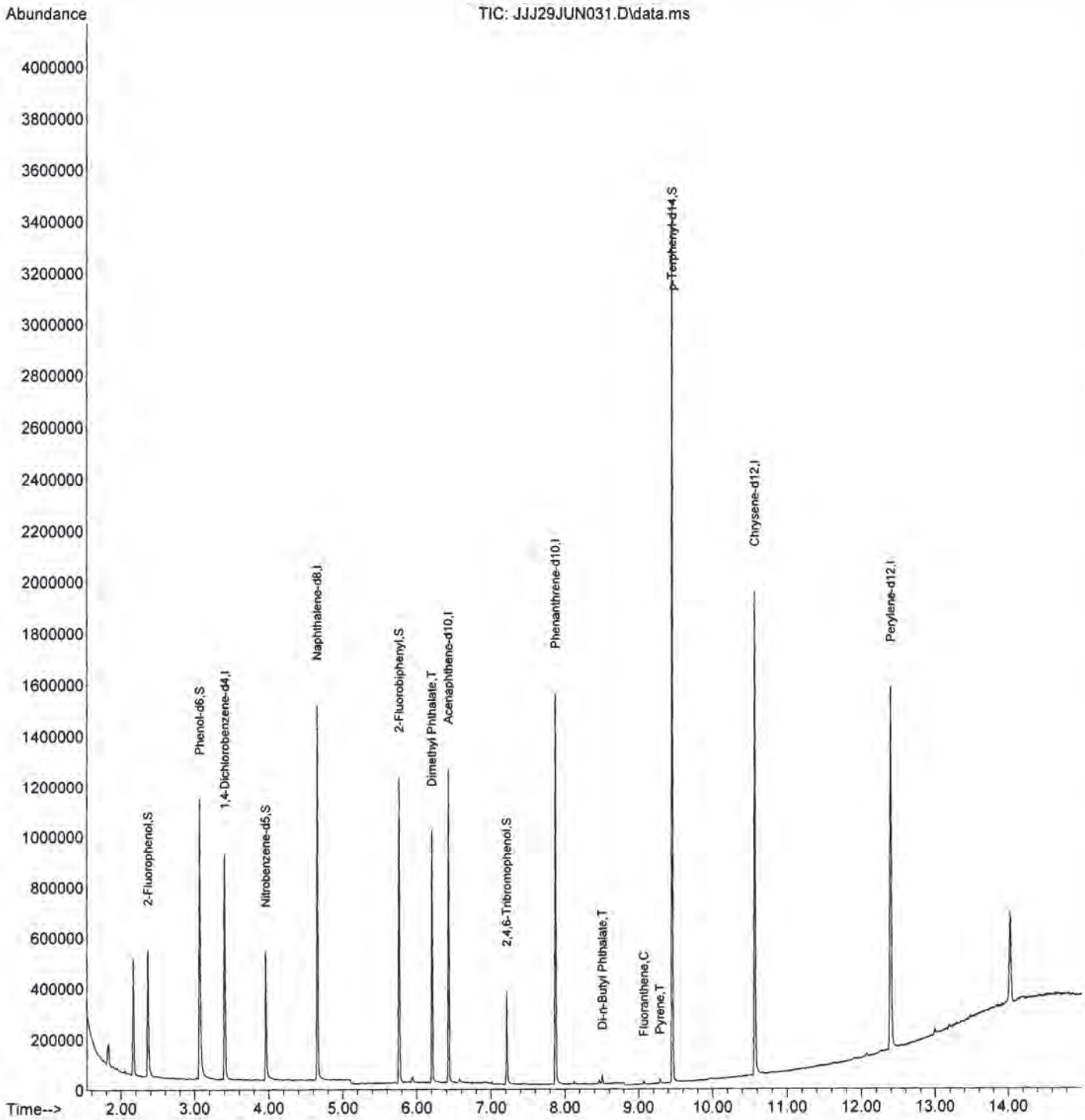
Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN031.D Vial: 31
Acq On : 29 Jun 2018 7:16 pm Operator: N8CZ
Sample : 18-06-1646-14 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 17:35:13 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M



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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: 18-06-1646
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-06-29 19:16
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180629\JJJ29JUN031.D\JJJ29JUN031.rr

 # 14 **CLIENT SAMPLE NUMBER: 1802258-59 / TP-21-0-5**

LCS/MB BATCH: 180626L09
MS/MSD BATCH: 180626S09
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.50 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.98

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
1,2,4-Trichlorobenzene	0.000	1.00	ND	0.0098	
1,2-Dichlorobenzene	0.000	1.00	ND	0.0098	
1,3-Dichlorobenzene	0.000	1.00	ND	0.0098	
1,4-Dichlorobenzene	0.000	1.00	ND	0.0098	
1-Methylnaphthalene	0.000	1.00	ND	0.0098	
2,4,5-Trichlorophenol	0.000	1.00	ND	0.24	
2,4,6-Trichlorophenol	0.000	1.00	ND	0.24	
2,4-Dichlorophenol	0.000	1.00	ND	0.24	
2,4-Dimethylphenol	0.000	1.00	ND	0.49	
2,4-Dinitrophenol	0.000	1.00	ND	0.24	]
2,4-Dinitrotoluene	0.000	1.00	ND	0.0098	
2,6-Dichlorophenol	0.000	1.00	ND	0.24	
2,6-Dinitrotoluene	0.000	1.00	ND	0.0098	
2-Chloronaphthalene	0.000	1.00	ND	0.0098	
2-Chlorophenol	0.000	1.00	ND	0.0098	
2-Methylnaphthalene	0.000	1.00	ND	0.0098	
2-Methylphenol	0.000	1.00	ND	0.24	
2-Nitroaniline	0.000	1.00	ND	0.24	
2-Nitrophenol	0.000	1.00	ND	0.24	
3,3'-Dichlorobenzidine	0.000	1.00	ND	0.24	
3-Nitroaniline	0.000	1.00	ND	0.24	
3/4-Methylphenol	0.000	1.00	ND	0.098	
4-Bromophenyl-Phenyl Ether	0.000	1.00	ND	0.0098	
4,6-Dinitro-2-Methylphenol	0.000	1.00	ND	0.24	
4-Chloro-3-Methylphenol	0.000	1.00	ND	0.24	
4-Chloroaniline	0.000	1.00	ND	0.24	
4-Chlorophenyl-Phenyl Ether	0.000	1.00	ND	0.0098	
4-Nitroaniline	0.000	1.00	ND	0.24	[
4-Nitrophenol	0.000	1.00	ND	0.49	
Acenaphthene	0.000	1.00	ND	0.0098	
Acenaphthylene	0.000	1.00	ND	0.0098	
Aniline	0.000	1.00	ND	0.0098	
Anthracene	0.000	1.00	ND	0.0098	
Azobenzene	0.000	1.00	ND	0.0098	
Benzidine	0.000	1.00	ND	0.24	]
Benzo (a) Anthracene	0.000	1.00	ND	0.0098	
Benzo (a) Pyrene	0.000	1.00	ND	0.0098	
Benzo (b) Fluoranthene	0.000	1.00	ND	0.0098	
Benzo (g,h,i) Perylene	0.000	1.00	ND	0.0098	
Benzo (k) Fluoranthene	0.000	1.00	ND	0.0098	

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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: **18-06-1646**
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-06-29 19:16
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180629\JJJ29JUN031.D\JJJ29JUN031.rr

 # 14 **CLIENT SAMPLE NUMBER: 1802258-59 / TP-21-0-5**

LCS/MB BATCH: 180626L09
MS/MSD BATCH: 180626S09
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.50 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.98

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
Benzyl Alcohol	0.000	1.00	ND	0.0098	
Bis(2-Chloroethoxy) Methane	0.000	1.00	ND	0.0098	
Bis(2-Chloroethyl) Ether	0.000	1.00	ND	0.0098	
Bis(2-Chloroisopropyl) Ether	0.000	1.00	ND	0.0098	
Bis(2-Ethylhexyl) Phthalate	0.000	1.00	ND	0.24	
Butyl Benzyl Phthalate	0.000	1.00	ND	0.24	
Chrysene	0.000	1.00	ND	0.0098	
Di-n-Butyl Phthalate	0.0864	1.00	ND	0.24	
Di-n-Octyl Phthalate	0.000	1.00	ND	0.24	
Dibenz (a,h) Anthracene	0.000	1.00	ND	0.0098	
Dibenzofuran	0.000	1.00	ND	0.0098	
Diethyl Phthalate	0.000	1.00	ND	0.0098	
Dimethyl Phthalate	4.05	1.00	0.395	0.24	
Fluoranthene	0.0283	1.00	ND	0.0098	
Fluorene	0.000	1.00	ND	0.0098	
Hexachloro-1,3-Butadiene	0.000	1.00	ND	0.0098	
Hexachlorobenzene	0.000	1.00	ND	0.0098	
Hexachlorocyclopentadiene	0.000	1.00	ND	0.0098	
Hexachloroethane	0.000	1.00	ND	0.0098	
Indeno (1,2,3-c,d) Pyrene	0.000	1.00	ND	0.0098	
Isophorone	0.000	1.00	ND	0.49	
N-Nitroso-di-n-propylamine	0.000	1.00	ND	0.0098	
N-Nitrosodimethylamine	0.000	1.00	ND	0.0098	
N-Nitrosodiphenylamine	0.000	1.00	ND	0.0098	
Naphthalene	0.000	1.00	ND	0.0098	
Nitrobenzene	0.000	1.00	ND	0.0098	
Pentachlorophenol	0.000	1.00	ND	0.24	
Phenanthrene	0.000	1.00	ND	0.0098	
Phenol	0.000	1.00	ND	0.0098	
Pyrene	0.0326	1.00	ND	0.0098	
Pyridine	0.000	1.00	ND	0.0098	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180713\JJJ13JUL006.D Vial: 6
Acq On : 13 Jul 2018 12:56 pm Operator: N8CZ
Sample : 18-06-1646-14 RX Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 13 14:48:14 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jul 13 11:56:03 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.408	152	233145	5.00	mg/l	0.00
19) Naphthalene-d8	4.655	136	859203	5.00	mg/l	0.00
36) Acenaphthene-d10	6.427	164	329998	5.00	mg/l	0.00
56) Phenanthrene-d10	7.875	188	1129948	5.00	mg/l	0.00
69) Chrysene-d12	10.567	240	1360155	5.00	mg/l	0.00
81) Perylene-d12	12.393	264	1383020	5.00	mg/l	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	2.359	112	3452656	65.52	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 655.20%#			
6) Phenol-d6	3.062	99	4481547	66.91	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 669.10%#			
20) Nitrobenzene-d5	3.957	82	4415666	70.06	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 700.60%#			
41) 2-Fluorobiphenyl	5.766	172	7703862	61.66	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 616.60%#			
60) 2,4,6-Tribromophenol	7.213	330	1733309	64.11	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 641.10%#			
71) p-Terphenyl-d14	9.453	244	10556502	37.79	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 377.90%#			
Target Compounds						Qvalue
2) Pyridine	0.000		0	N.D.	d	
3) N-Nitrosodimethylamine	0.000		0	N.D.	d	
5) Aniline	0.000		0	N.D.	d	
7) Phenol	0.000		0	N.D.	d	
8) Bis(2-Chloroethyl) Ether	0.000		0	N.D.	d	
9) 2-Chlorophenol	0.000		0	N.D.	d	
10) 1,3-Dichlorobenzene	0.000		0	N.D.	d	
11) 1,4-Dichlorobenzene	0.000		0	N.D.	d	
12) Benzyl Alcohol	3.544	79	427	N.D.		
13) 1,2-Dichlorobenzene	0.000		0	N.D.	d	
14) 2-Methylphenol	0.000		0	N.D.	d	
15) Bis(2-Chloroisopropyl)...	0.000		0	N.D.	d	
16) 3/4-Methylphenol	0.000		0	N.D.	d	
17) N-Nitroso-di-n-propyla...	0.000		0	N.D.	d	
18) Hexachloroethane	0.000		0	N.D.	d	
21) Nitrobenzene	0.000		0	N.D.	d	
22) Isophorone	0.000		0	N.D.	d	
23) 2-Nitrophenol	0.000		0	N.D.	d	
24) 2,4-Dimethylphenol	4.334	107	1191	N.D.		
25) Benzoic Acid	0.000		0	N.D.	d	
26) Bis(2-Chloroethoxy) Me...	0.000		0	N.D.	d	
27) 2,4-Dichlorophenol	4.531	162	1117	N.D.		
28) 1,2,4-Trichlorobenzene	0.000		0	N.D.	d	
29) Naphthalene	4.679	128	10104	0.06	mg/l	84
30) 2,6-Dichlorophenol	4.883	162	403	N.D.		
31) 4-Chloroaniline	4.760	127	1265	N.D.		
32) Hexachloro-1,3-Butadiene	0.000		0	N.D.	d	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180713\JJJ13JUL006.D Vial: 6
Acq On : 13 Jul 2018 12:56 pm Operator: N8CZ
Sample : 18-06-1646-14 RX Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 13 14:48:14 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jul 13 11:56:03 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
33) 4-Chloro-3-Methylphenol	5.260	107	643	N.D.	
34) 2-Methylnaphthalene	0.000		0	N.D. d	
35) 1-Methylnaphthalene	0.000		0	N.D. d	
37) Hexachlorocyclopentadiene	5.606	237	556	N.D.	
38) 2,4,6-Trichlorophenol	5.692	196	317	N.D.	
39) 2,4,5-Trichlorophenol	5.816	196	21	N.D.	
40) 2-Chloronaphthalene	5.859	162	1917	N.D.	
42) 2-Nitroaniline	0.000		0	N.D. d	
43) Dimethyl Phthalate	6.205	163	220039	1.70 mg/l	100
44) Acenaphthylene	6.279	152	2280	N.D.	
45) 3-Nitroaniline	6.396	138	66	N.D.	
46) Acenaphthene	6.458	154	1632	N.D.	
47) 2,4-Dinitrophenol	0.000		0	N.D. d	
48) 4-Nitrophenol	0.000		0	N.D. d	
49) Dibenzofuran	6.619	168	2130	N.D.	
50) 2,4-Dinitrotoluene	0.000		0	N.D. d	
51) 2,6-Dinitrotoluene	0.000		0	N.D. d	
52) Diethyl Phthalate	0.000		0	N.D. d	
53) 4-Chlorophenyl-Phenyl ...	6.965	204	671	N.D.	
54) Fluorene	6.958	166	1544	N.D.	
55) 4-Nitroaniline	7.008	138	163	N.D.	
57) 4,6-Dinitro-2-Methylph...	0.000		0	N.D. d	
58) N-Nitrosodiphenylamine	7.086	169	991	N.D.	
59) Azobenzene	7.116	77	2114	N.D.	
61) 4-Bromophenyl-Phenyl E...	7.438	248	513	N.D.	
62) Hexachlorobenzene	7.582	284	479	N.D.	
63) Pentachlorophenol	0.000		0	N.D. d	
64) Phenanthrene	7.901	178	2654	N.D.	
65) Anthracene	7.943	178	1419	N.D.	
66) Di-n-Butyl Phthalate	8.507	149	20354	0.07 mg/l	96
67) Fluoranthene	9.071	202	1792	N.D.	
68) Benzidine	9.211	184	1462	N.D.	
70) Pyrene	9.287	202	2238	N.D.	
72) Butyl Benzyl Phthalate	9.986	149	2482	N.D.	
73) 3,3'-Dichlorobenzidine	10.508	252	114	N.D.	
74) Benzo (a) Anthracene	10.567	228	4151	N.D.	
75) Bis(2-Ethylhexyl) Phth...	10.669	149	2761	N.D.	
76) Chrysene	10.631	228	275	N.D.	
77) Di-n-Octyl Phthalate	11.389	149	851	N.D.	
78) Benzo (b) Fluoranthene	11.796	252	163	N.D.	
79) Benzo (k) Fluoranthene	12.008	252	625	N.D.	
80) Benzo (a) Pyrene	12.253	252	2347	N.D.	
82) Indeno (1,2,3-c,d) Pyrene	13.834	276	4115	N.D.	
83) Dibenz (a,h) Anthracene	13.838	278	3956	N.D.	
84) Benzo (g,h,i) Perylene	14.185	276	3576	Below Cal	89

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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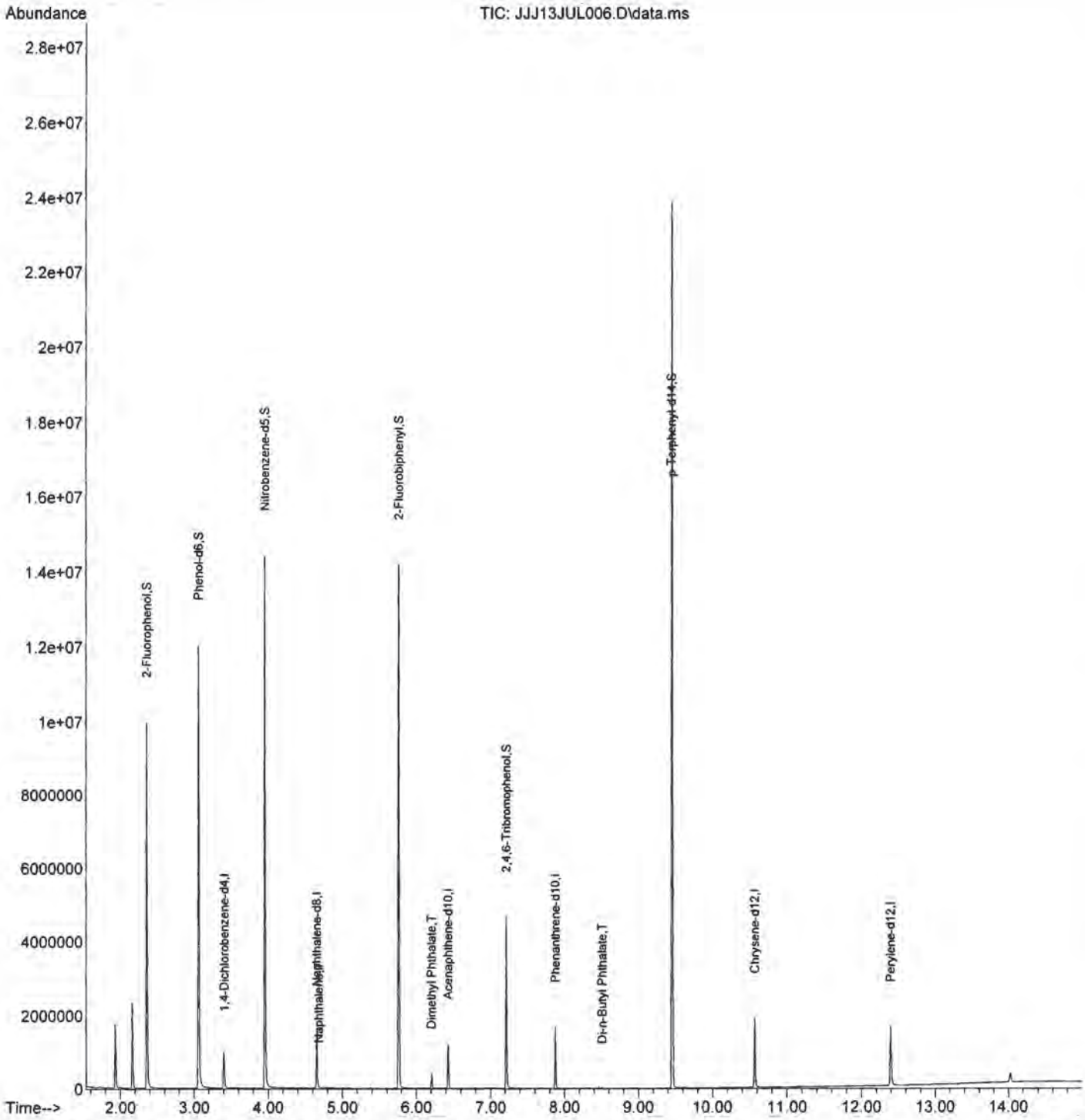
Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180713\JJJ13JUL006.D Vial: 6
Acq On : 13 Jul 2018 12:56 pm Operator: N8CZ
Sample : 18-06-1646-14 RX Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 13 14:48:14 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jul 13 11:56:03 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M



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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: 18-06-1646
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-06-29 19:34
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180629\JJJ29JUN032.D\JJJ29JUN032.rr

 # 15 **CLIENT SAMPLE NUMBER: 1802258-60 / TP-21-5-9**

LCS/MB BATCH: 180626L09
MS/MSD BATCH: 180626S09
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.10 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 1.00

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
1,2,4-Trichlorobenzene	0.000	1.00	ND	0.010	
1,2-Dichlorobenzene	0.000	1.00	ND	0.010	
1,3-Dichlorobenzene	0.000	1.00	ND	0.010	
1,4-Dichlorobenzene	0.000	1.00	ND	0.010	
1-Methylnaphthalene	0.000	1.00	ND	0.010	
2,4,5-Trichlorophenol	0.000	1.00	ND	0.25	
2,4,6-Trichlorophenol	0.000	1.00	ND	0.25	
2,4-Dichlorophenol	0.000	1.00	ND	0.25	
2,4-Dimethylphenol	0.000	1.00	ND	0.50	
2,4-Dinitrophenol	0.000	1.00	ND	0.25	]
2,4-Dinitrotoluene	0.000	1.00	ND	0.010	
2,6-Dichlorophenol	0.000	1.00	ND	0.25	
2,6-Dinitrotoluene	0.000	1.00	ND	0.010	
2-Chloronaphthalene	0.000	1.00	ND	0.010	
2-Chlorophenol	0.000	1.00	ND	0.010	
2-Methylnaphthalene	0.000	1.00	ND	0.010	
2-Methylphenol	0.000	1.00	ND	0.25	
2-Nitroaniline	0.000	1.00	ND	0.25	
2-Nitrophenol	0.000	1.00	ND	0.25	
3,3'-Dichlorobenzidine	0.000	1.00	ND	0.25	
3-Nitroaniline	0.000	1.00	ND	0.25	
3/4-Methylphenol	0.000	1.00	ND	0.10	
4-Bromophenyl-Phenyl Ether	0.000	1.00	ND	0.010	
4,6-Dinitro-2-Methylphenol	0.000	1.00	ND	0.25	
4-Chloro-3-Methylphenol	0.000	1.00	ND	0.25	
4-Chloroaniline	0.000	1.00	ND	0.25	
4-Chlorophenyl-Phenyl Ether	0.000	1.00	ND	0.010	
4-Nitroaniline	0.000	1.00	ND	0.25	[
4-Nitrophenol	0.000	1.00	ND	0.50	
Acenaphthene	0.000	1.00	ND	0.010	
Acenaphthylene	0.000	1.00	ND	0.010	
Aniline	0.000	1.00	ND	0.010	
Anthracene	0.000	1.00	ND	0.010	
Azobenzene	0.000	1.00	ND	0.010	
Benzidine	0.000	1.00	ND	0.25	]
Benzo (a) Anthracene	0.000	1.00	ND	0.010	
Benzo (a) Pyrene	0.000	1.00	ND	0.010	
Benzo (b) Fluoranthene	0.000	1.00	ND	0.010	
Benzo (g,h,i) Perylene	0.000	1.00	ND	0.010	
Benzo (k) Fluoranthene	0.000	1.00	ND	0.010	

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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: **18-06-1646**
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-06-29 19:34
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180629\JJJ29JUN032.D\JJJ29JUN032.rr

 # 15 **CLIENT SAMPLE NUMBER:** **1802258-60 / TP-21-5-9**

LCS/MB BATCH: 180626L09
MS/MSD BATCH: 180626S09
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.10 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 1.00

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
Benzyl Alcohol	0.000	1.00	ND	0.010	
Bis(2-Chloroethoxy) Methane	0.000	1.00	ND	0.010	
Bis(2-Chloroethyl) Ether	0.000	1.00	ND	0.010	
Bis(2-Chloroisopropyl) Ether	0.000	1.00	ND	0.010	
Bis(2-Ethylhexyl) Phthalate	0.000	1.00	ND	0.25	
Butyl Benzyl Phthalate	0.000	1.00	ND	0.25	
Chrysene	0.000	1.00	ND	0.010	
Di-n-Butyl Phthalate	0.0777	1.00	ND	0.25	
Di-n-Octyl Phthalate	0.000	1.00	ND	0.25	
Dibenz (a,h) Anthracene	0.000	1.00	ND	0.010	
Dibenzofuran	0.000	1.00	ND	0.010	
Diethyl Phthalate	0.000	1.00	ND	0.010	
Dimethyl Phthalate	2.52	1.00	0.250	0.25	
Fluoranthene	0.000	1.00	ND	0.010	
Fluorene	0.000	1.00	ND	0.010	
Hexachloro-1,3-Butadiene	0.000	1.00	ND	0.010	
Hexachlorobenzene	0.000	1.00	ND	0.010	
Hexachlorocyclopentadiene	0.000	1.00	ND	0.010	
Hexachloroethane	0.000	1.00	ND	0.010	
Indeno (1,2,3-c,d) Pyrene	0.000	1.00	ND	0.010	
Isophorone	0.000	1.00	ND	0.50	
N-Nitroso-di-n-propylamine	0.000	1.00	ND	0.010	
N-Nitrosodimethylamine	0.000	1.00	ND	0.010	
N-Nitrosodiphenylamine	0.000	1.00	ND	0.010	
Naphthalene	0.000	1.00	ND	0.010	
Nitrobenzene	0.000	1.00	ND	0.010	
Pentachlorophenol	0.000	1.00	ND	0.25	
Phenanthrene	0.000	1.00	ND	0.010	
Phenol	0.000	1.00	ND	0.010	
Pyrene	0.000	1.00	ND	0.010	
Pyridine	0.000	1.00	ND	0.010	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN032.D Vial: 32
Acq On : 29 Jun 2018 7:34 pm Operator: N8CZ
Sample : 18-06-1646-15 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 17:36:07 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	3.402	152	215591	5.00 mg/l	# 0.00
19) Naphthalene-d8	4.655	136	779490	5.00 mg/l	0.00
36) Acenaphthene-d10	6.427	164	306334	5.00 mg/l	0.00
56) Phenanthrene-d10	7.875	188	1080210	5.00 mg/l	0.00
69) Chrysene-d12	10.567	240	1226518	5.00 mg/l	-0.01
81) Perylene-d12	12.397	264	1184287	5.00 mg/l	0.00
System Monitoring Compounds					
4) 2-Fluorophenol	2.359	112	242621	4.98 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 49.80%		
6) Phenol-d6	3.062	99	409436	6.61 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 66.10%		
20) Nitrobenzene-d5	3.957	82	203415	3.56 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 35.60%		
41) 2-Fluorobiphenyl	5.760	172	474698	4.09 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 40.90%		
60) 2,4,6-Tribromophenol	7.213	330	130578	5.05 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 50.50%		
71) p-Terphenyl-d14	9.453	244	1678967	6.67 mg/l	-0.01
Spiked Amount 10.000	Range 0 - 200		Recovery = 66.70%		
Target Compounds					Qvalue
2) Pyridine	1.729	52	1004	N.D.	
3) N-Nitrosodimethylamine	0.000		0	N.D.	
5) Aniline	3.068	93	362	N.D.	
7) Phenol	0.000		0	N.D. d	
8) Bis(2-Chloroethyl) Ether	3.149	93	350	N.D.	
9) 2-Chlorophenol	3.241	128	811	N.D.	
10) 1,3-Dichlorobenzene	3.371	146	613	N.D.	
11) 1,4-Dichlorobenzene	3.420	146	1142	N.D.	
12) Benzyl Alcohol	3.593	79	623	N.D.	
13) 1,2-Dichlorobenzene	3.599	146	605	N.D.	
14) 2-Methylphenol	0.000		0	N.D. d	
15) Bis(2-Chloroisopropyl)...	0.000		0	N.D. d	
16) 3/4-Methylphenol	3.809	107	558	N.D.	
17) N-Nitroso-di-n-propyla...	3.828	70	576	N.D.	
18) Hexachloroethane	0.000		0	N.D. d	
21) Nitrobenzene	4.013	77	865	N.D.	
22) Isophorone	4.204	82	1253	N.D.	
23) 2-Nitrophenol	0.000		0	N.D.	
24) 2,4-Dimethylphenol	4.340	107	972	N.D.	
25) Benzoic Acid	0.000		0	N.D. d	
26) Bis(2-Chloroethoxy) Me...	4.433	93	817	N.D.	
27) 2,4-Dichlorophenol	4.550	162	587	N.D.	
28) 1,2,4-Trichlorobenzene	4.618	180	622	N.D.	
29) Naphthalene	4.673	128	2367	N.D.	
30) 2,6-Dichlorophenol	4.766	162	500	N.D.	
31) 4-Chloroaniline	4.735	127	96	N.D.	
32) Hexachloro-1,3-Butadiene	4.871	225	650	N.D.	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN032.D Vial: 32
Acq On : 29 Jun 2018 7:34 pm Operator: N8CZ
Sample : 18-06-1646-15 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 17:36:07 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
33) 4-Chloro-3-Methylphenol	5.260	107	711	N.D.	
34) 2-Methylnaphthalene	5.371	142	810	N.D.	
35) 1-Methylnaphthalene	5.482	142	876	N.D.	
37) Hexachlorocyclopentadiene	5.593	237	227	N.D.	
38) 2,4,6-Trichlorophenol	5.686	196	361	N.D.	
39) 2,4,5-Trichlorophenol	5.723	196	208	N.D.	
40) 2-Chloronaphthalene	5.859	162	873	N.D.	
42) 2-Nitroaniline	0.000		0	N.D. d	
43) Dimethyl Phthalate	6.205	163	301322	2.52 mg/l	100
44) Acenaphthylene	6.273	152	1959	N.D.	
45) 3-Nitroaniline	6.421	138	284	N.D.	
46) Acenaphthene	6.458	154	912	N.D.	
47) 2,4-Dinitrophenol	0.000		0	N.D. d	
48) 4-Nitrophenol	6.576	65	480	N.D.	
49) Dibenzofuran	6.619	168	1170	N.D.	
50) 2,4-Dinitrotoluene	0.000		0	N.D. d	
51) 2,6-Dinitrotoluene	0.000		0	N.D. d	
52) Diethyl Phthalate	0.000		0	N.D. d	
53) 4-Chlorophenyl-Phenyl ...	6.965	204	554	N.D.	
54) Fluorene	6.958	166	975	N.D.	
55) 4-Nitroaniline	7.027	138	102	N.D.	
57) 4,6-Dinitro-2-Methylph...	0.000		0	N.D. d	
58) N-Nitrosodiphenylamine	7.086	169	635	N.D.	
59) Azobenzene	7.112	77	790	N.D.	
61) 4-Bromophenyl-Phenyl E...	7.443	248	348	N.D.	
62) Hexachlorobenzene	7.578	284	389	N.D.	
63) Pentachlorophenol	0.000		0	N.D. d	
64) Phenanthrene	0.000		0	N.D. d	
65) Anthracene	7.943	178	1460	N.D.	
66) Di-n-Butyl Phthalate	8.503	149	20959	0.08 mg/l	95
67) Fluoranthene	9.071	202	4809	N.D.	
68) Benzidine	9.215	184	116	N.D.	
70) Pyrene	9.287	202	5923	N.D.	
72) Butyl Benzyl Phthalate	0.000		0	N.D. d	
73) 3,3'-Dichlorobenzidine	10.537	252	743	N.D.	
74) Benzo (a) Anthracene	10.563	228	5568	N.D.	
75) Bis(2-Ethylhexyl) Phth...	0.000		0	N.D. d	
76) Chrysene	10.597	228	3517	N.D.	
77) Di-n-Octyl Phthalate	11.444	149	2412	N.D.	
78) Benzo (b) Fluoranthene	11.902	252	2758	N.D.	
79) Benzo (k) Fluoranthene	11.965	252	203	N.D.	
80) Benzo (a) Pyrene	12.325	252	3043	N.D.	
82) Indeno (1,2,3-c,d) Pyrene	13.834	276	3995	N.D.	
83) Dibenz (a,h) Anthracene	13.863	278	1415	N.D.	
84) Benzo (g,h,i) Perylene	14.207	276	4300	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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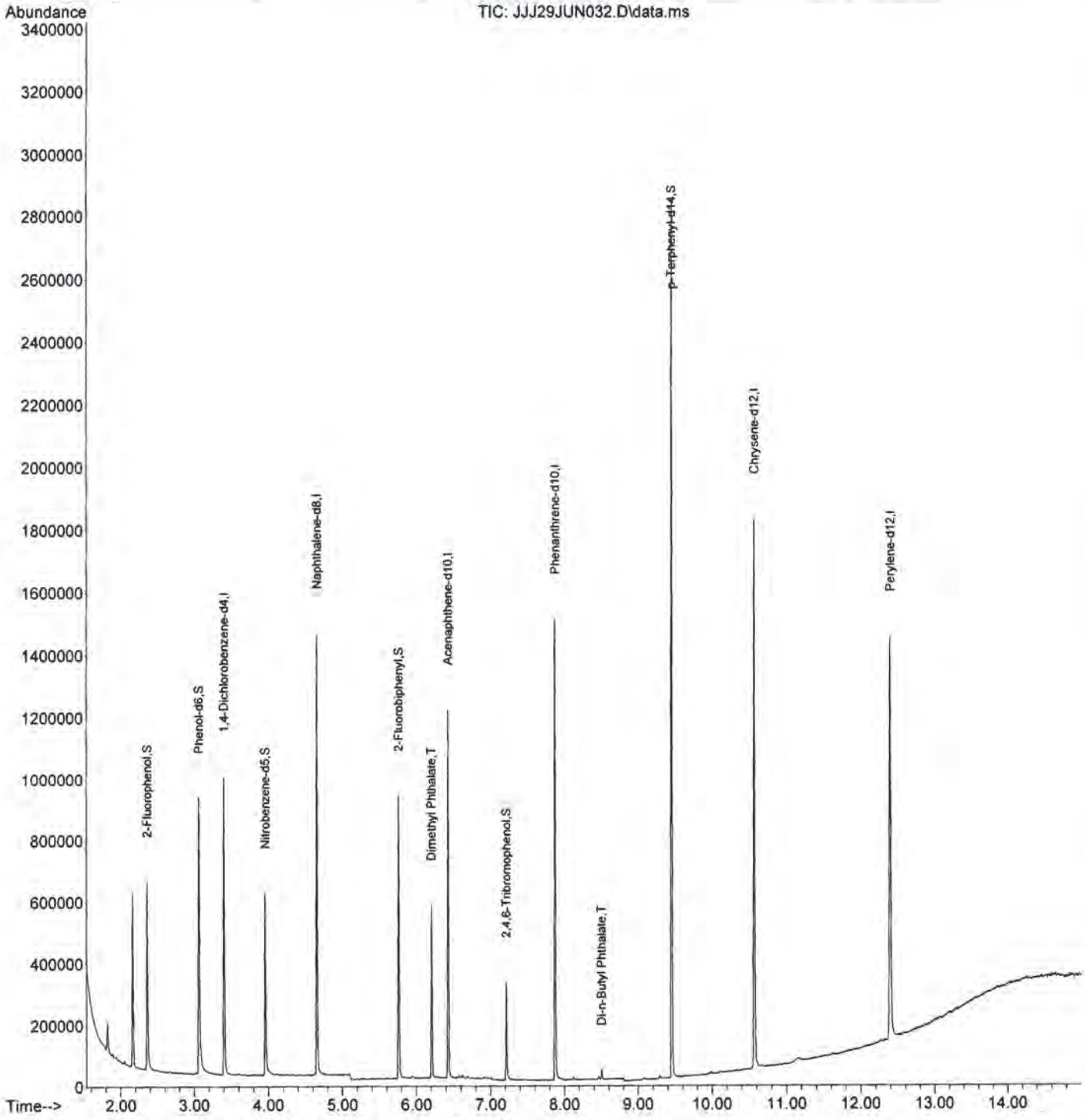
Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN032.D Vial: 32
Acq On : 29 Jun 2018 7:34 pm Operator: N8CZ
Sample : 18-06-1646-15 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 17:36:07 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M



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Quality Control - Spike/Spike Duplicate

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
Project: 1802258			Page 1 of 1

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
1802258-27 / TP-19-4-8	**Sample**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 17:09**	**180626S09**
1802258-27 / TP-19-4-8	**Matrix Spike**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 19:52**	**180626S09**
1802258-27 / TP-19-4-8	**Matrix Spike Duplicate**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 20:11**	**180626S09**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
2,4,6-Trichlorophenol	ND	1.000	0.6448	64	0.6963	70	40-160	8	0-20	
2,4-Dichlorophenol	ND	1.000	0.7098	71	0.7503	75	40-160	6	0-20	
2-Methylphenol	ND	1.000	0.7087	71	0.7689	77	50-130	8	0-20	
2-Nitrophenol	ND	1.000	0.7761	78	0.8147	81	40-160	5	0-20	
4-Chloro-3-Methylphenol	ND	1.000	0.6939	69	0.7510	75	40-160	8	0-20	
Acenaphthene	ND	1.000	0.7318	73	0.7604	76	40-160	4	0-20	
Benzo (a) Pyrene	ND	1.000	0.7763	78	0.8131	81	17-163	5	0-20	
Chrysene	ND	1.000	0.7623	76	0.8062	81	17-168	6	0-20	
Di-n-Butyl Phthalate	ND	1.000	0.7123	71	0.7507	75	40-160	5	0-20	
Dimethyl Phthalate	0.2871	1.000	0.9744	69	1.031	74	40-160	6	0-20	
Fluoranthene	ND	1.000	0.7757	78	0.8122	81	26-137	5	0-20	
Fluorene	ND	1.000	0.6879	69	0.7241	72	59-121	5	0-20	
Naphthalene	ND	1.000	0.7355	74	0.7531	75	21-133	2	0-20	
Phenanthrene	ND	1.000	0.7451	75	0.7889	79	54-120	6	0-20	
Phenol	ND	1.000	0.7027	70	0.7511	75	40-160	7	0-20	
Pyrene	ND	1.000	0.7679	77	0.8119	81	6-156	6	0-46	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
Project: 1802258			Page 1 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-16-921-22	**LCS**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 12:16**	**180626L09**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
2,4,6-Trichlorophenol	1.000	0.6797	68	40-160	20-180	
2,4-Dichlorophenol	1.000	0.7632	76	40-160	20-180	
2-Methylphenol	1.000	0.7746	77	40-160	20-180	
2-Nitrophenol	1.000	0.8332	83	40-160	20-180	
4-Chloro-3-Methylphenol	1.000	0.7573	76	40-160	20-180	
Acenaphthene	1.000	0.7891	79	40-160	20-180	
Benzo (a) Pyrene	1.000	0.8341	83	17-163	0-187	
Chrysene	1.000	0.8330	83	17-168	0-193	
Di-n-Butyl Phthalate	1.000	0.7297	73	40-160	20-180	
Dimethyl Phthalate	1.000	0.7716	77	40-160	20-180	
Fluoranthene	1.000	0.8354	84	26-137	8-156	
Fluorene	1.000	0.7386	74	59-121	49-131	
Naphthalene	1.000	0.8151	82	21-133	2-152	
Phenanthrene	1.000	0.8252	83	54-120	43-131	
Phenol	1.000	0.7714	77	40-160	20-180	
Pyrene	1.000	0.8448	84	28-106	15-119	

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
Project: 1802258			Page 2 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-16-921-23	**LCS**	**Solid**	**GC/MS JJJ**	**07/11/18**	**07/13/18 12:18**	**180711L11**
099-16-921-23	**LCSD**	**Solid**	**GC/MS JJJ**	**07/11/18**	**07/13/18 12:36**	**180711L11**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
2,4,6-Trichlorophenol	1.000	0.6991	70	0.7416	74	40-160	20-180	6	0-20	
2,4-Dichlorophenol	1.000	0.7340	73	0.7926	79	40-160	20-180	8	0-20	
2-Methylphenol	1.000	0.7486	75	0.8064	81	40-160	20-180	7	0-20	
2-Nitrophenol	1.000	0.8033	80	0.8704	87	40-160	20-180	8	0-20	
4-Chloro-3-Methylphenol	1.000	0.7317	73	0.7844	78	40-160	20-180	7	0-20	
Acenaphthene	1.000	0.7499	75	0.7935	79	40-160	20-180	6	0-11	
Benzo (a) Pyrene	1.000	0.7871	79	0.8460	85	17-163	0-187	7	0-20	
Chrysene	1.000	0.7547	75	0.8084	81	17-168	0-193	7	0-20	
Di-n-Butyl Phthalate	1.000	0.7572	76	0.8082	81	40-160	20-180	7	0-20	
Dimethyl Phthalate	1.000	0.7649	76	0.8036	80	40-160	20-180	5	0-20	
Fluoranthene	1.000	0.7870	79	0.8675	87	26-137	8-156	10	0-20	
Fluorene	1.000	0.7338	73	0.7787	78	59-121	49-131	6	0-20	
Naphthalene	1.000	0.7532	75	0.8040	80	21-133	2-152	7	0-20	
Phenanthrene	1.000	0.7752	78	0.8330	83	54-120	43-131	7	0-20	
Phenol	1.000	0.7440	74	0.8071	81	40-160	20-180	8	0-20	
Pyrene	1.000	0.7711	77	0.8129	81	28-106	15-119	5	0-16	

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM
Project: 1802258			Page 3 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-16-941-31	**LCS**	**Aqueous**	**GC/MS JJJ**	**06/26/18**	**06/29/18 10:47**	**180626L01A**
099-16-941-31	**LCSD**	**Aqueous**	**GC/MS JJJ**	**06/26/18**	**06/29/18 11:33**	**180626L01A**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
2,4,6-Trichlorophenol	20.00	14.15	71	13.00	65	37-144	19-162	8	0-20	
2,4-Dichlorophenol	20.00	14.67	73	14.09	70	39-135	23-151	4	0-20	
2-Methylphenol	20.00	13.40	67	12.33	62	50-130	37-143	8	0-20	
2-Nitrophenol	20.00	15.94	80	15.35	77	29-182	4-208	4	0-20	
4-Chloro-3-Methylphenol	20.00	14.94	75	14.08	70	55-121	44-132	6	0-18	
Acenaphthene	20.00	15.73	79	14.77	74	55-139	41-153	6	0-17	
Benzo (a) Pyrene	20.00	16.39	82	15.37	77	17-163	0-187	6	0-20	
Chrysene	20.00	16.52	83	15.73	79	17-168	0-193	5	0-20	
Di-n-Butyl Phthalate	20.00	14.26	71	13.66	68	1-118	0-138	4	0-20	
Dimethyl Phthalate	20.00	15.87	79	14.76	74	0-112	0-131	7	0-20	
Fluoranthene	20.00	16.76	84	15.76	79	26-137	8-156	6	0-20	
Fluorene	20.00	15.23	76	13.89	69	59-121	49-131	9	0-20	
Naphthalene	20.00	13.81	69	13.08	65	21-133	2-152	5	0-20	
Phenanthrene	20.00	16.79	84	15.77	79	54-120	43-131	6	0-20	
Phenol	20.00	6.240	31	5.893	29	4-142	0-165	6	0-24	
Pyrene	20.00	16.88	84	16.03	80	38-170	16-192	5	0-27	

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 18-06-1646

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8270C SIM	EPA 3545	923	GC/MS JJJ	1
EPA 8270C SIM	EPA 3510C	923	GC/MS JJJ	1

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Glossary of Terms and Qualifiers

Work Order: 18-06-1646 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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ADVANCED TECHNOLOGY
LABORATORIES

SUBCONTRACT ORDER

Work Order: 1802258

18-06-1646

SENDING LABORATORY:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone: 562.989.4045
Fax: 562.989.6348
Project Manager: Rachelle Arada (Rachelle@atlglobal.com)
Sampler: Jake Lippman

RECEIVING LABORATORY:

Eurofins Calscience, Inc.
7440 Lincoln Way
Garden Grove, CA 92841-1427
Phone :(714) 895-5494
Fax: (714) 894-7501
PO#: SC12897-STANDARD TAT

IMPORTANT : Please include Work Order # and PO # in your invoice.

Special Instructions: Need EQUIS EDD.

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1802258-20 / EB-061918	1	**Water**	**06/19/18 13:00**	**Return samples when analysis is done. Call ATL for pick up.**
8270_SIM	**07/09/18 17:00**	06/26/18 13:00		
[Semivolatile Organic Compounds]				
Amber Unpres - 1000mL				
ATL Lab#: 1802258-21 / SW-061918	2	**Water**	**06/19/18 13:00**	
8270_SIM	**07/09/18 17:00**	06/26/18 13:00		
[Semivolatile Organic Compounds]				
Amber Unpres - 1000mL				
ATL Lab#: 1802258-22 / TP-16-0-0.5	3	**Soil**	**06/19/18 13:50**	
8270_SIM	**07/09/18 17:00**	07/03/18 13:50		
[Semivolatile Organic Compounds]				
Glass Jar - 8 oz				
ATL Lab#: 1802258-23 / TP-16-0.5-3.5	4	**Soil**	**06/19/18 13:55**	
8270_SIM	**07/09/18 17:00**	07/03/18 13:55		
[Semivolatile Organic Compounds]				
Glass Jar - 8 oz				

Released By	Date	Received By	Date
[signature]	6/22/18 1035	[signature]	6/22/18 1035

ADVANCED TECHNOLOGY LABORATORIES

SUBCONTRACT ORDER

Work Order: 1802258

164L

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1802258-24 / TP-16-3.5-5 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	5 **07/09/18 17:00**	**Soil** 07/03/18 13:58	**06/19/18 13:58**	
ATL Lab#: 1802258-26 / TP-19-0-4 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	6 **07/09/18 17:00**	**Soil** 07/03/18 08:40	**06/19/18 08:40**	
ATL Lab#: 1802258-27 / TP-19-4-8 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	7 **07/09/18 17:00**	**Soil** 07/03/18 08:45	**06/19/18 08:45**	
ATL Lab#: 1802258-28 / TP-19-8-10 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	8 **07/09/18 17:00**	**Soil** 07/03/18 08:50	**06/19/18 08:50**	
ATL Lab#: 1802258-29 / TP-25-0-4 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	9 **07/09/18 17:00**	**Soil** 07/03/18 10:40	**06/19/18 10:40**	
ATL Lab#: 1802258-30 / TP-25-4-6 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	10 **07/09/18 17:00**	**Soil** 07/03/18 10:45	**06/19/18 10:45**	

Released By	Date	Received By	Date
[signature]	6/22/18 1035	[signature]	6/22/18 1035

ADVANCED TECHNOLOGY LABORATORIES

SUBCONTRACT ORDER

Work Order: 1802258

1646

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1802258-54 / TP-9-0-0.25 8270_SIM [Semivolatile Organic Compounds]	11 **07/09/18 17:00**	**Soil** 07/04/18 12:30	**06/20/18 12:30**	
ATL Lab#: 1802258-55 / TP-9-0.25-2.5 8270_SIM [Semivolatile Organic Compounds]	12 **07/09/18 17:00**	**Soil** 07/04/18 12:35	**06/20/18 12:35**	
ATL Lab#: 1802258-56 / TP-9-2.5-7 8270_SIM [Semivolatile Organic Compounds]	13 **07/09/18 17:00**	**Soil** 07/04/18 12:40	**06/20/18 12:40**	
ATL Lab#: 1802258-59 / TP-21-0-5 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	14 **07/09/18 17:00**	**Soil** 07/04/18 13:15	**06/20/18 13:15**	
ATL Lab#: 1802258-60 / TP-21-5-9 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	15 **07/09/18 17:00**	**Soil** 07/04/18 13:20	**06/20/18 13:20**	

Released By	Date	Received By	Date
[signature]	6/22/18 1035	[signature]	6/22/18 1035

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WORK ORDER NUMBER: 18-06-1646

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: ATL

DATE: 06/22/2018

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC6 (CF: +0.1°C); Temperature (w/o CF): 2-8 °C (w/ CF): 2-9 °C; ☐ Blank ☑ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: SMG

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: SMG

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: TTB

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☐	☐	☑
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☑	☐	☐
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Acid/base preserved samples - pH within acceptable range	☐	☐	☑
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOA**h** ☐ VOA**na₂** ☐ 100PJ ☐ 100PJ**na₂** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB ☐ 125PB**znna** (pH__9)

☐ 250AGB ☐ 250CGB ☐ 250CGB**s** (pH__2) ☐ 250PB ☐ 250PB**n** (pH__2) ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s** (pH__2) ☐ 500PB

☑ 1AGB ☐ 1AGB**na₂** ☐ 1AGB**s** (pH__2) ☐ 1AGB**s** (O&G) ☐ 1PB ☐ 1PB**na** (pH__12) ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☑ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (___) ☐ EnCores® (___) ☐ TerraCores® (___) ☐ _____ ☐ _____ ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na₂** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: TTB

Reviewed by: SMG

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Supplemental Report 3

The original report has been revised/corrected.

WORK ORDER NUMBER: 18-06-1646

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Advanced Technology Laboratories

Client Project Name: 1802258

Attention: Rachelle Arada
3275 Walnut Street
Signal Hill, CA 90755-5225

Approved for release on 01/04/2019 by:
Lori Thompson
Project Manager

ResultLink

Email your PM

Eurofins Calscience (Calscience) certifies that the test results provided in this report meet all NELAC Institute requirements for parameters for which accreditation is required or available. Any exceptions to NELAC Institute requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

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Work Order Number: 18-06-1646

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Work Order Narrative

Work Order: 18-06-1646 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 06/22/18. They were assigned to Work Order 18-06-1646.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.

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Sample Summary

Client:	Advanced Technology Laboratories 3275 Walnut Street Signal Hill, CA 90755-5225	Work Order:	18-06-1646
		Project Name:	1802258
		PO Number:	SC12897
		Date/Time Received:	06/22/18 10:35
		Number of Containers:	15
Attn:	Rachelle Arada		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
1802258-20 / EB-061918	18-06-1646-1	06/19/18 13:00	1	Aqueous
1802258-21 / SW-061918	18-06-1646-2	06/19/18 13:00	1	Aqueous
1802258-22 / TP-16-0-0.5	18-06-1646-3	06/19/18 13:50	1	Solid
1802258-23 / TP-16-0.5-3.5	18-06-1646-4	06/19/18 13:55	1	Solid
1802258-24 / TP-16-3.5-5	18-06-1646-5	06/19/18 13:58	1	Solid
1802258-26 / TP-19-0-4	18-06-1646-6	06/19/18 08:40	1	Solid
1802258-27 / TP-19-4-8	18-06-1646-7	06/19/18 08:45	1	Solid
1802258-28 / TP-19-8-10	18-06-1646-8	06/19/18 08:50	1	Solid
1802258-29 / TP-25-0-4	18-06-1646-9	06/19/18 10:40	1	Solid
1802258-30 / TP-25-4-6	18-06-1646-10	06/19/18 10:45	1	Solid
1802258-54 / TP-9-0-0.25	18-06-1646-11	06/20/18 12:30	1	Solid
1802258-55 / TP-9-0.25-2.5	18-06-1646-12	06/20/18 12:35	1	Solid
1802258-56 / TP-9-2.5-7	18-06-1646-13	06/20/18 12:40	1	Solid
1802258-59 / TP-21-0-5	18-06-1646-14	06/20/18 13:15	1	Solid
1802258-60 / TP-21-5-9	18-06-1646-15	06/20/18 13:20	1	Solid

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 1 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-22 / TP-16-0-0.5	**18-06-1646-3-A**	**06/19/18 13:50**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 15:57**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 2 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 3 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	62	32-143	
2-Fluorobiphenyl	59	14-146	
2-Fluorophenol	43	15-138	
Nitrobenzene-d5	33	18-162	
Phenol-d6	56	17-141	
p-Terphenyl-d14	68	34-148	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 4 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-23 / TP-16-0.5-3.5	**18-06-1646-4-A**	**06/19/18 13:55**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 16:15**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0099	1.00	
1,2-Dichlorobenzene	ND	0.0099	1.00	
1,3-Dichlorobenzene	ND	0.0099	1.00	
1,4-Dichlorobenzene	ND	0.0099	1.00	
1-Methylnaphthalene	ND	0.0099	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.0099	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.0099	1.00	
2-Chloronaphthalene	ND	0.0099	1.00	
2-Chlorophenol	ND	0.0099	1.00	
2-Methylnaphthalene	ND	0.0099	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.099	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0099	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0099	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0099	1.00	
Acenaphthylene	ND	0.0099	1.00	
Aniline	ND	0.0099	1.00	
Anthracene	ND	0.0099	1.00	
Azobenzene	ND	0.0099	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 5 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0099	1.00	
Benzo (a) Pyrene	ND	0.0099	1.00	
Benzo (b) Fluoranthene	ND	0.0099	1.00	
Benzo (g,h,i) Perylene	ND	0.0099	1.00	
Benzo (k) Fluoranthene	ND	0.0099	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.0099	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0099	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0099	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0099	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.0099	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.0099	1.00	
Dibenzofuran	ND	0.0099	1.00	
Diethyl Phthalate	ND	0.0099	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.0099	1.00	
Fluorene	ND	0.0099	1.00	
Hexachloro-1,3-Butadiene	ND	0.0099	1.00	
Hexachlorobenzene	ND	0.0099	1.00	
Hexachlorocyclopentadiene	ND	0.0099	1.00	
Hexachloroethane	ND	0.0099	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0099	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0099	1.00	
N-Nitrosodimethylamine	ND	0.0099	1.00	
N-Nitrosodiphenylamine	ND	0.0099	1.00	
Naphthalene	ND	0.0099	1.00	
Nitrobenzene	ND	0.0099	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.0099	1.00	
Phenol	ND	0.0099	1.00	
Pyrene	ND	0.0099	1.00	
Pyridine	ND	0.0099	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 6 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	44	32-143	
2-Fluorobiphenyl	43	14-146	
2-Fluorophenol	44	15-138	
Nitrobenzene-d5	30	18-162	
Phenol-d6	57	17-141	
p-Terphenyl-d14	59	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 7 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-24 / TP-16-3.5-5	**18-06-1646-5-A**	**06/19/18 13:58**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 16:33**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0098	1.00	
1,2-Dichlorobenzene	ND	0.0098	1.00	
1,3-Dichlorobenzene	ND	0.0098	1.00	
1,4-Dichlorobenzene	ND	0.0098	1.00	
1-Methylnaphthalene	ND	0.0098	1.00	
2,4,5-Trichlorophenol	ND	0.24	1.00	
2,4,6-Trichlorophenol	ND	0.24	1.00	
2,4-Dichlorophenol	ND	0.24	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.24	1.00	
2,4-Dinitrotoluene	ND	0.0098	1.00	
2,6-Dichlorophenol	ND	0.24	1.00	
2,6-Dinitrotoluene	ND	0.0098	1.00	
2-Chloronaphthalene	ND	0.0098	1.00	
2-Chlorophenol	ND	0.0098	1.00	
2-Methylnaphthalene	ND	0.0098	1.00	
2-Methylphenol	ND	0.24	1.00	
2-Nitroaniline	ND	0.24	1.00	
2-Nitrophenol	ND	0.24	1.00	
3,3'-Dichlorobenzidine	ND	0.24	1.00	
3-Nitroaniline	ND	0.24	1.00	
3/4-Methylphenol	ND	0.098	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0098	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.24	1.00	
4-Chloro-3-Methylphenol	ND	0.24	1.00	
4-Chloroaniline	ND	0.24	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0098	1.00	
4-Nitroaniline	ND	0.24	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0098	1.00	
Acenaphthylene	ND	0.0098	1.00	
Aniline	ND	0.0098	1.00	
Anthracene	ND	0.0098	1.00	
Azobenzene	ND	0.0098	1.00	
Benzidine	ND	0.24	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 8 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0098	1.00	
Benzo (a) Pyrene	ND	0.0098	1.00	
Benzo (b) Fluoranthene	ND	0.0098	1.00	
Benzo (g,h,i) Perylene	ND	0.0098	1.00	
Benzo (k) Fluoranthene	ND	0.0098	1.00	
Benzoic Acid	ND	0.24	1.00	
Benzyl Alcohol	ND	0.0098	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0098	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0098	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0098	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.24	1.00	
Butyl Benzyl Phthalate	ND	0.24	1.00	
Chrysene	ND	0.0098	1.00	
Di-n-Butyl Phthalate	ND	0.24	1.00	
Di-n-Octyl Phthalate	ND	0.24	1.00	
Dibenz (a,h) Anthracene	ND	0.0098	1.00	
Dibenzofuran	ND	0.0098	1.00	
Diethyl Phthalate	ND	0.0098	1.00	
Dimethyl Phthalate	0.26	0.24	1.00	
Fluoranthene	ND	0.0098	1.00	
Fluorene	ND	0.0098	1.00	
Hexachloro-1,3-Butadiene	ND	0.0098	1.00	
Hexachlorobenzene	ND	0.0098	1.00	
Hexachlorocyclopentadiene	ND	0.0098	1.00	
Hexachloroethane	ND	0.0098	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0098	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0098	1.00	
N-Nitrosodimethylamine	ND	0.0098	1.00	
N-Nitrosodiphenylamine	ND	0.0098	1.00	
Naphthalene	ND	0.0098	1.00	
Nitrobenzene	ND	0.0098	1.00	
Pentachlorophenol	ND	0.24	1.00	
Phenanthrene	ND	0.0098	1.00	
Phenol	ND	0.0098	1.00	
Pyrene	ND	0.0098	1.00	
Pyridine	ND	0.0098	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 9 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	39	32-143	
2-Fluorobiphenyl	46	14-146	
2-Fluorophenol	44	15-138	
Nitrobenzene-d5	30	18-162	
Phenol-d6	60	17-141	
p-Terphenyl-d14	63	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 10 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-26 / TP-19-0-4	**18-06-1646-6-A**	**06/19/18 08:40**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 16:51**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0098	1.00	
1,2-Dichlorobenzene	ND	0.0098	1.00	
1,3-Dichlorobenzene	ND	0.0098	1.00	
1,4-Dichlorobenzene	ND	0.0098	1.00	
1-Methylnaphthalene	ND	0.0098	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.0098	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.0098	1.00	
2-Chloronaphthalene	ND	0.0098	1.00	
2-Chlorophenol	ND	0.0098	1.00	
2-Methylnaphthalene	ND	0.0098	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.098	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0098	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0098	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0098	1.00	
Acenaphthylene	ND	0.0098	1.00	
Aniline	ND	0.0098	1.00	
Anthracene	ND	0.0098	1.00	
Azobenzene	ND	0.0098	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 11 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0098	1.00	
Benzo (a) Pyrene	ND	0.0098	1.00	
Benzo (b) Fluoranthene	ND	0.0098	1.00	
Benzo (g,h,i) Perylene	ND	0.0098	1.00	
Benzo (k) Fluoranthene	ND	0.0098	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.0098	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0098	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0098	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0098	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.0098	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.0098	1.00	
Dibenzofuran	ND	0.0098	1.00	
Diethyl Phthalate	ND	0.0098	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.0098	1.00	
Fluorene	ND	0.0098	1.00	
Hexachloro-1,3-Butadiene	ND	0.0098	1.00	
Hexachlorobenzene	ND	0.0098	1.00	
Hexachlorocyclopentadiene	ND	0.0098	1.00	
Hexachloroethane	ND	0.0098	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0098	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0098	1.00	
N-Nitrosodimethylamine	ND	0.0098	1.00	
N-Nitrosodiphenylamine	ND	0.0098	1.00	
Naphthalene	ND	0.0098	1.00	
Nitrobenzene	ND	0.0098	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.0098	1.00	
Phenol	ND	0.0098	1.00	
Pyrene	ND	0.0098	1.00	
Pyridine	ND	0.0098	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 12 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	40	32-143	
2-Fluorobiphenyl	45	14-146	
2-Fluorophenol	43	15-138	
Nitrobenzene-d5	29	18-162	
Phenol-d6	57	17-141	
p-Terphenyl-d14	62	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 13 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-27 / TP-19-4-8	**18-06-1646-7-A**	**06/19/18 08:45**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 17:09**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0098	1.00	
1,2-Dichlorobenzene	ND	0.0098	1.00	
1,3-Dichlorobenzene	ND	0.0098	1.00	
1,4-Dichlorobenzene	ND	0.0098	1.00	
1-Methylnaphthalene	ND	0.0098	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.0098	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.0098	1.00	
2-Chloronaphthalene	ND	0.0098	1.00	
2-Chlorophenol	ND	0.0098	1.00	
2-Methylnaphthalene	ND	0.0098	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.098	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0098	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0098	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0098	1.00	
Acenaphthylene	ND	0.0098	1.00	
Aniline	ND	0.0098	1.00	
Anthracene	ND	0.0098	1.00	
Azobenzene	ND	0.0098	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 14 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0098	1.00	
Benzo (a) Pyrene	ND	0.0098	1.00	
Benzo (b) Fluoranthene	ND	0.0098	1.00	
Benzo (g,h,i) Perylene	ND	0.0098	1.00	
Benzo (k) Fluoranthene	ND	0.0098	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.0098	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0098	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0098	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0098	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.0098	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.0098	1.00	
Dibenzofuran	ND	0.0098	1.00	
Diethyl Phthalate	ND	0.0098	1.00	
Dimethyl Phthalate	0.29	0.25	1.00	
Fluoranthene	ND	0.0098	1.00	
Fluorene	ND	0.0098	1.00	
Hexachloro-1,3-Butadiene	ND	0.0098	1.00	
Hexachlorobenzene	ND	0.0098	1.00	
Hexachlorocyclopentadiene	ND	0.0098	1.00	
Hexachloroethane	ND	0.0098	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0098	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0098	1.00	
N-Nitrosodimethylamine	ND	0.0098	1.00	
N-Nitrosodiphenylamine	ND	0.0098	1.00	
Naphthalene	ND	0.0098	1.00	
Nitrobenzene	ND	0.0098	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.0098	1.00	
Phenol	ND	0.0098	1.00	
Pyrene	ND	0.0098	1.00	
Pyridine	ND	0.0098	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 15 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	51	32-143	
2-Fluorobiphenyl	47	14-146	
2-Fluorophenol	54	15-138	
Nitrobenzene-d5	40	18-162	
Phenol-d6	69	17-141	
p-Terphenyl-d14	63	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 16 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-28 / TP-19-8-10	**18-06-1646-8-A**	**06/19/18 08:50**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 17:28**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0098	1.00	
1,2-Dichlorobenzene	ND	0.0098	1.00	
1,3-Dichlorobenzene	ND	0.0098	1.00	
1,4-Dichlorobenzene	ND	0.0098	1.00	
1-Methylnaphthalene	ND	0.0098	1.00	
2,4,5-Trichlorophenol	ND	0.24	1.00	
2,4,6-Trichlorophenol	ND	0.24	1.00	
2,4-Dichlorophenol	ND	0.24	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.24	1.00	
2,4-Dinitrotoluene	ND	0.0098	1.00	
2,6-Dichlorophenol	ND	0.24	1.00	
2,6-Dinitrotoluene	ND	0.0098	1.00	
2-Chloronaphthalene	ND	0.0098	1.00	
2-Chlorophenol	ND	0.0098	1.00	
2-Methylnaphthalene	ND	0.0098	1.00	
2-Methylphenol	ND	0.24	1.00	
2-Nitroaniline	ND	0.24	1.00	
2-Nitrophenol	ND	0.24	1.00	
3,3'-Dichlorobenzidine	ND	0.24	1.00	
3-Nitroaniline	ND	0.24	1.00	
3/4-Methylphenol	ND	0.098	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0098	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.24	1.00	
4-Chloro-3-Methylphenol	ND	0.24	1.00	
4-Chloroaniline	ND	0.24	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0098	1.00	
4-Nitroaniline	ND	0.24	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0098	1.00	
Acenaphthylene	ND	0.0098	1.00	
Aniline	ND	0.0098	1.00	
Anthracene	ND	0.0098	1.00	
Azobenzene	ND	0.0098	1.00	
Benzidine	ND	0.24	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 17 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0098	1.00	
Benzo (a) Pyrene	ND	0.0098	1.00	
Benzo (b) Fluoranthene	ND	0.0098	1.00	
Benzo (g,h,i) Perylene	ND	0.0098	1.00	
Benzo (k) Fluoranthene	ND	0.0098	1.00	
Benzoic Acid	ND	0.24	1.00	
Benzyl Alcohol	ND	0.0098	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0098	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0098	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0098	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.24	1.00	
Butyl Benzyl Phthalate	ND	0.24	1.00	
Chrysene	ND	0.0098	1.00	
Di-n-Butyl Phthalate	ND	0.24	1.00	
Di-n-Octyl Phthalate	ND	0.24	1.00	
Dibenz (a,h) Anthracene	ND	0.0098	1.00	
Dibenzofuran	ND	0.0098	1.00	
Diethyl Phthalate	ND	0.0098	1.00	
Dimethyl Phthalate	0.26	0.24	1.00	
Fluoranthene	ND	0.0098	1.00	
Fluorene	ND	0.0098	1.00	
Hexachloro-1,3-Butadiene	ND	0.0098	1.00	
Hexachlorobenzene	ND	0.0098	1.00	
Hexachlorocyclopentadiene	ND	0.0098	1.00	
Hexachloroethane	ND	0.0098	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0098	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0098	1.00	
N-Nitrosodimethylamine	ND	0.0098	1.00	
N-Nitrosodiphenylamine	ND	0.0098	1.00	
Naphthalene	ND	0.0098	1.00	
Nitrobenzene	ND	0.0098	1.00	
Pentachlorophenol	ND	0.24	1.00	
Phenanthrene	ND	0.0098	1.00	
Phenol	ND	0.0098	1.00	
Pyrene	ND	0.0098	1.00	
Pyridine	ND	0.0098	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 18 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	32	32-143	
2-Fluorobiphenyl	41	14-146	
2-Fluorophenol	38	15-138	
Nitrobenzene-d5	23	18-162	
Phenol-d6	53	17-141	
p-Terphenyl-d14	62	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 19 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-29 / TP-25-0-4	**18-06-1646-9-A**	**06/19/18 10:40**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 17:46**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 20 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 21 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	32	32-143	
2-Fluorobiphenyl	49	14-146	
2-Fluorophenol	42	15-138	
Nitrobenzene-d5	29	18-162	
Phenol-d6	58	17-141	
p-Terphenyl-d14	64	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 22 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-30 / TP-25-4-6	**18-06-1646-10-A**	**06/19/18 10:45**	**Solid**	**GC/MS JJJ**	**06/26/18**	**07/02/18 13:28**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 23 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 24 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	42	32-143	
2-Fluorobiphenyl	33	14-146	
2-Fluorophenol	16	15-138	
Nitrobenzene-d5	29	18-162	
Phenol-d6	43	17-141	
p-Terphenyl-d14	66	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 25 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-54 / TP-9-0-0.25	**18-06-1646-11-A**	**06/20/18 12:30**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 18:22**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 26 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 27 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	59	32-143	
2-Fluorobiphenyl	57	14-146	
2-Fluorophenol	44	15-138	
Nitrobenzene-d5	35	18-162	
Phenol-d6	57	17-141	
p-Terphenyl-d14	70	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 28 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-55 / TP-9-0.25-2.5	**18-06-1646-12-A**	**06/20/18 12:35**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 18:40**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0098	1.00	
1,2-Dichlorobenzene	ND	0.0098	1.00	
1,3-Dichlorobenzene	ND	0.0098	1.00	
1,4-Dichlorobenzene	ND	0.0098	1.00	
1-Methylnaphthalene	ND	0.0098	1.00	
2,4,5-Trichlorophenol	ND	0.24	1.00	
2,4,6-Trichlorophenol	ND	0.24	1.00	
2,4-Dichlorophenol	ND	0.24	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.24	1.00	
2,4-Dinitrotoluene	ND	0.0098	1.00	
2,6-Dichlorophenol	ND	0.24	1.00	
2,6-Dinitrotoluene	ND	0.0098	1.00	
2-Chloronaphthalene	ND	0.0098	1.00	
2-Chlorophenol	ND	0.0098	1.00	
2-Methylnaphthalene	ND	0.0098	1.00	
2-Methylphenol	ND	0.24	1.00	
2-Nitroaniline	ND	0.24	1.00	
2-Nitrophenol	ND	0.24	1.00	
3,3'-Dichlorobenzidine	ND	0.24	1.00	
3-Nitroaniline	ND	0.24	1.00	
3/4-Methylphenol	ND	0.098	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0098	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.24	1.00	
4-Chloro-3-Methylphenol	ND	0.24	1.00	
4-Chloroaniline	ND	0.24	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0098	1.00	
4-Nitroaniline	ND	0.24	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0098	1.00	
Acenaphthylene	ND	0.0098	1.00	
Aniline	ND	0.0098	1.00	
Anthracene	ND	0.0098	1.00	
Azobenzene	ND	0.0098	1.00	
Benzidine	ND	0.24	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 29 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0098	1.00	
Benzo (a) Pyrene	ND	0.0098	1.00	
Benzo (b) Fluoranthene	ND	0.0098	1.00	
Benzo (g,h,i) Perylene	ND	0.0098	1.00	
Benzo (k) Fluoranthene	ND	0.0098	1.00	
Benzoic Acid	ND	0.24	1.00	
Benzyl Alcohol	ND	0.0098	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0098	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0098	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0098	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.24	1.00	
Butyl Benzyl Phthalate	ND	0.24	1.00	
Chrysene	ND	0.0098	1.00	
Di-n-Butyl Phthalate	ND	0.24	1.00	
Di-n-Octyl Phthalate	ND	0.24	1.00	
Dibenz (a,h) Anthracene	ND	0.0098	1.00	
Dibenzofuran	ND	0.0098	1.00	
Diethyl Phthalate	ND	0.0098	1.00	
Dimethyl Phthalate	ND	0.24	1.00	
Fluoranthene	ND	0.0098	1.00	
Fluorene	ND	0.0098	1.00	
Hexachloro-1,3-Butadiene	ND	0.0098	1.00	
Hexachlorobenzene	ND	0.0098	1.00	
Hexachlorocyclopentadiene	ND	0.0098	1.00	
Hexachloroethane	ND	0.0098	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0098	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0098	1.00	
N-Nitrosodimethylamine	ND	0.0098	1.00	
N-Nitrosodiphenylamine	ND	0.0098	1.00	
Naphthalene	ND	0.0098	1.00	
Nitrobenzene	ND	0.0098	1.00	
Pentachlorophenol	ND	0.24	1.00	
Phenanthrene	ND	0.0098	1.00	
Phenol	ND	0.0098	1.00	
Pyrene	ND	0.0098	1.00	
Pyridine	ND	0.0098	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 30 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	53	32-143	
2-Fluorobiphenyl	40	14-146	
2-Fluorophenol	42	15-138	
Nitrobenzene-d5	31	18-162	
Phenol-d6	62	17-141	
p-Terphenyl-d14	66	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 31 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-56 / TP-9-2.5-7	**18-06-1646-13-A**	**06/20/18 12:40**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 18:58**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0099	1.00	
1,2-Dichlorobenzene	ND	0.0099	1.00	
1,3-Dichlorobenzene	ND	0.0099	1.00	
1,4-Dichlorobenzene	ND	0.0099	1.00	
1-Methylnaphthalene	ND	0.0099	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.0099	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.0099	1.00	
2-Chloronaphthalene	ND	0.0099	1.00	
2-Chlorophenol	ND	0.0099	1.00	
2-Methylnaphthalene	ND	0.0099	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.099	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0099	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0099	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0099	1.00	
Acenaphthylene	ND	0.0099	1.00	
Aniline	ND	0.0099	1.00	
Anthracene	ND	0.0099	1.00	
Azobenzene	ND	0.0099	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 32 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0099	1.00	
Benzo (a) Pyrene	ND	0.0099	1.00	
Benzo (b) Fluoranthene	ND	0.0099	1.00	
Benzo (g,h,i) Perylene	ND	0.0099	1.00	
Benzo (k) Fluoranthene	ND	0.0099	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.0099	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0099	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0099	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0099	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.0099	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.0099	1.00	
Dibenzofuran	ND	0.0099	1.00	
Diethyl Phthalate	ND	0.0099	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.0099	1.00	
Fluorene	ND	0.0099	1.00	
Hexachloro-1,3-Butadiene	ND	0.0099	1.00	
Hexachlorobenzene	ND	0.0099	1.00	
Hexachlorocyclopentadiene	ND	0.0099	1.00	
Hexachloroethane	ND	0.0099	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0099	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0099	1.00	
N-Nitrosodimethylamine	ND	0.0099	1.00	
N-Nitrosodiphenylamine	ND	0.0099	1.00	
Naphthalene	ND	0.0099	1.00	
Nitrobenzene	ND	0.0099	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.0099	1.00	
Phenol	ND	0.0099	1.00	
Pyrene	ND	0.0099	1.00	
Pyridine	ND	0.0099	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 33 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	49	32-143	
2-Fluorobiphenyl	41	14-146	
2-Fluorophenol	47	15-138	
Nitrobenzene-d5	29	18-162	
Phenol-d6	66	17-141	
p-Terphenyl-d14	65	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 34 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-59 / TP-21-0-5	**18-06-1646-14-A**	**06/20/18 13:15**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 19:16**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0098	1.00	
1,2-Dichlorobenzene	ND	0.0098	1.00	
1,3-Dichlorobenzene	ND	0.0098	1.00	
1,4-Dichlorobenzene	ND	0.0098	1.00	
1-Methylnaphthalene	ND	0.0098	1.00	
2,4,5-Trichlorophenol	ND	0.24	1.00	
2,4,6-Trichlorophenol	ND	0.24	1.00	
2,4-Dichlorophenol	ND	0.24	1.00	
2,4-Dimethylphenol	ND	0.49	1.00	
2,4-Dinitrophenol	ND	0.24	1.00	
2,4-Dinitrotoluene	ND	0.0098	1.00	
2,6-Dichlorophenol	ND	0.24	1.00	
2,6-Dinitrotoluene	ND	0.0098	1.00	
2-Chloronaphthalene	ND	0.0098	1.00	
2-Chlorophenol	ND	0.0098	1.00	
2-Methylnaphthalene	ND	0.0098	1.00	
2-Methylphenol	ND	0.24	1.00	
2-Nitroaniline	ND	0.24	1.00	
2-Nitrophenol	ND	0.24	1.00	
3,3'-Dichlorobenzidine	ND	0.24	1.00	
3-Nitroaniline	ND	0.24	1.00	
3/4-Methylphenol	ND	0.098	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.0098	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.24	1.00	
4-Chloro-3-Methylphenol	ND	0.24	1.00	
4-Chloroaniline	ND	0.24	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.0098	1.00	
4-Nitroaniline	ND	0.24	1.00	
4-Nitrophenol	ND	0.49	1.00	
Acenaphthene	ND	0.0098	1.00	
Acenaphthylene	ND	0.0098	1.00	
Aniline	ND	0.0098	1.00	
Anthracene	ND	0.0098	1.00	
Azobenzene	ND	0.0098	1.00	
Benzidine	ND	0.24	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 35 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.0098	1.00	
Benzo (a) Pyrene	ND	0.0098	1.00	
Benzo (b) Fluoranthene	ND	0.0098	1.00	
Benzo (g,h,i) Perylene	ND	0.0098	1.00	
Benzo (k) Fluoranthene	ND	0.0098	1.00	
Benzoic Acid	ND	0.24	1.00	
Benzyl Alcohol	ND	0.0098	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.0098	1.00	
Bis(2-Chloroethyl) Ether	ND	0.0098	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.0098	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.24	1.00	
Butyl Benzyl Phthalate	ND	0.24	1.00	
Chrysene	ND	0.0098	1.00	
Di-n-Butyl Phthalate	ND	0.24	1.00	
Di-n-Octyl Phthalate	ND	0.24	1.00	
Dibenz (a,h) Anthracene	ND	0.0098	1.00	
Dibenzofuran	ND	0.0098	1.00	
Diethyl Phthalate	ND	0.0098	1.00	
Dimethyl Phthalate	0.40	0.24	1.00	
Fluoranthene	ND	0.0098	1.00	
Fluorene	ND	0.0098	1.00	
Hexachloro-1,3-Butadiene	ND	0.0098	1.00	
Hexachlorobenzene	ND	0.0098	1.00	
Hexachlorocyclopentadiene	ND	0.0098	1.00	
Hexachloroethane	ND	0.0098	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.0098	1.00	
Isophorone	ND	0.49	1.00	
N-Nitroso-di-n-propylamine	ND	0.0098	1.00	
N-Nitrosodimethylamine	ND	0.0098	1.00	
N-Nitrosodiphenylamine	ND	0.0098	1.00	
Naphthalene	ND	0.0098	1.00	
Nitrobenzene	ND	0.0098	1.00	
Pentachlorophenol	ND	0.24	1.00	
Phenanthrene	ND	0.0098	1.00	
Phenol	ND	0.0098	1.00	
Pyrene	ND	0.0098	1.00	
Pyridine	ND	0.0098	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 36 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	53	32-143	
2-Fluorobiphenyl	51	14-146	
2-Fluorophenol	45	15-138	
Nitrobenzene-d5	30	18-162	
Phenol-d6	72	17-141	
p-Terphenyl-d14	72	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 37 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-59 / TP-21-0-5	**18-06-1646-14-A**	**06/20/18 13:15**	**Solid**	**GC/MS JJJ**	**07/11/18**	**07/13/18 12:56**	**180711L11**

Comment(s): - Sample extracted outside recommended holding time.

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0099	1.00	ET
1,2-Dichlorobenzene	ND	0.0099	1.00	ET
1,3-Dichlorobenzene	ND	0.0099	1.00	ET
1,4-Dichlorobenzene	ND	0.0099	1.00	ET
1-Methylnaphthalene	ND	0.0099	1.00	ET
2,4,5-Trichlorophenol	ND	0.25	1.00	ET
2,4,6-Trichlorophenol	ND	0.25	1.00	ET
2,4-Dichlorophenol	ND	0.25	1.00	ET
2,4-Dimethylphenol	ND	0.49	1.00	ET
2,4-Dinitrophenol	ND	0.25	1.00	ET
2,4-Dinitrotoluene	ND	0.0099	1.00	ET
2,6-Dichlorophenol	ND	0.25	1.00	ET
2,6-Dinitrotoluene	ND	0.0099	1.00	ET
2-Chloronaphthalene	ND	0.0099	1.00	ET
2-Chlorophenol	ND	0.0099	1.00	ET
2-Methylnaphthalene	ND	0.0099	1.00	ET
2-Methylphenol	ND	0.25	1.00	ET
2-Nitroaniline	ND	0.25	1.00	ET
2-Nitrophenol	ND	0.25	1.00	ET
3,3'-Dichlorobenzidine	ND	0.25	1.00	ET
3-Nitroaniline	ND	0.25	1.00	ET
3/4-Methylphenol	ND	0.099	1.00	ET
4-Bromophenyl-Phenyl Ether	ND	0.0099	1.00	ET
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	ET
4-Chloro-3-Methylphenol	ND	0.25	1.00	ET
4-Chloroaniline	ND	0.25	1.00	ET
4-Chlorophenyl-Phenyl Ether	ND	0.0099	1.00	ET
4-Nitroaniline	ND	0.25	1.00	ET
4-Nitrophenol	ND	0.49	1.00	ET
Acenaphthene	ND	0.0099	1.00	ET
Acenaphthylene	ND	0.0099	1.00	ET
Aniline	ND	0.0099	1.00	ET
Anthracene	ND	0.0099	1.00	ET
Azobenzene	ND	0.0099	1.00	ET

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 38 of 48

Parameter	Result	RL	DF	Qualifiers
Benzidine	ND	0.25	1.00	ET
Benzo (a) Anthracene	ND	0.0099	1.00	ET
Benzo (a) Pyrene	ND	0.0099	1.00	ET
Benzo (b) Fluoranthene	ND	0.0099	1.00	ET
Benzo (g,h,i) Perylene	ND	0.0099	1.00	ET
Benzo (k) Fluoranthene	ND	0.0099	1.00	ET
Benzoic Acid	ND	0.25	1.00	ET
Benzyl Alcohol	ND	0.0099	1.00	ET
Bis(2-Chloroethoxy) Methane	ND	0.0099	1.00	ET
Bis(2-Chloroethyl) Ether	ND	0.0099	1.00	ET
Bis(2-Chloroisopropyl) Ether	ND	0.0099	1.00	ET
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	ET
Butyl Benzyl Phthalate	ND	0.25	1.00	ET
Chrysene	ND	0.0099	1.00	ET
Di-n-Butyl Phthalate	ND	0.25	1.00	ET
Di-n-Octyl Phthalate	ND	0.25	1.00	ET
Dibenz (a,h) Anthracene	ND	0.0099	1.00	ET
Dibenzofuran	ND	0.0099	1.00	ET
Diethyl Phthalate	ND	0.0099	1.00	ET
Dimethyl Phthalate	ND	0.25	1.00	ET
Fluoranthene	ND	0.0099	1.00	ET
Fluorene	ND	0.0099	1.00	ET
Hexachloro-1,3-Butadiene	ND	0.0099	1.00	ET
Hexachlorobenzene	ND	0.0099	1.00	ET
Hexachlorocyclopentadiene	ND	0.0099	1.00	ET
Hexachloroethane	ND	0.0099	1.00	ET
Indeno (1,2,3-c,d) Pyrene	ND	0.0099	1.00	ET
Isophorone	ND	0.49	1.00	ET
N-Nitroso-di-n-propylamine	ND	0.0099	1.00	ET
N-Nitrosodimethylamine	ND	0.0099	1.00	ET
N-Nitrosodiphenylamine	ND	0.0099	1.00	ET
Naphthalene	ND	0.0099	1.00	ET
Nitrobenzene	ND	0.0099	1.00	ET
Pentachlorophenol	ND	0.25	1.00	ET
Phenanthrene	ND	0.0099	1.00	ET
Phenol	ND	0.0099	1.00	ET
Pyrene	ND	0.0099	1.00	ET
Pyridine	ND	0.0099	1.00	ET

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 39 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	64	32-143	
2-Fluorobiphenyl	62	14-146	
2-Fluorophenol	66	15-138	
Nitrobenzene-d5	70	18-162	
Phenol-d6	67	17-141	
p-Terphenyl-d14	38	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 40 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-60 / TP-21-5-9	**18-06-1646-15-A**	**06/20/18 13:20**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 19:34**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 41 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	0.25	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 42 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	51	32-143	
2-Fluorobiphenyl	41	14-146	
2-Fluorophenol	50	15-138	
Nitrobenzene-d5	36	18-162	
Phenol-d6	66	17-141	
p-Terphenyl-d14	67	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 43 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-16-921-22**	**N/A**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 12:38**	**180626L09**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 44 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 45 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	65	32-143	
2-Fluorobiphenyl	82	14-146	
2-Fluorophenol	71	15-138	
Nitrobenzene-d5	77	18-162	
Phenol-d6	79	17-141	
p-Terphenyl-d14	76	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 46 of 48

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-16-921-23**	**N/A**	**Solid**	**GC/MS JJJ**	**07/11/18**	**07/13/18 12:00**	**180711L11**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 47 of 48

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzoic Acid	ND	0.25	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 48 of 48

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	73	32-143	
2-Fluorobiphenyl	82	14-146	
2-Fluorophenol	73	15-138	
Nitrobenzene-d5	82	18-162	
Phenol-d6	78	17-141	
p-Terphenyl-d14	75	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM
		Units:	ug/L
Project: 1802258			Page 1 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-20 / EB-061918	**18-06-1646-1-A**	**06/19/18 13:00**	**Aqueous**	**GC/MS JJJ**	**06/26/18**	**06/29/18 13:14**	**180626L01A**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.21	1.00	
1,2-Dichlorobenzene	ND	0.21	1.00	
1,3-Dichlorobenzene	ND	0.21	1.00	
1,4-Dichlorobenzene	ND	0.21	1.00	
1-Methylnaphthalene	ND	0.21	1.00	
2,4,5-Trichlorophenol	ND	5.2	1.00	
2,4,6-Trichlorophenol	ND	5.2	1.00	
2,4-Dichlorophenol	ND	5.2	1.00	
2,4-Dimethylphenol	ND	0.21	1.00	
2,4-Dinitrophenol	ND	5.2	1.00	
2,4-Dinitrotoluene	ND	0.21	1.00	
2,6-Dichlorophenol	ND	5.2	1.00	
2,6-Dinitrotoluene	ND	0.21	1.00	
2-Chloronaphthalene	ND	0.21	1.00	
2-Chlorophenol	ND	0.21	1.00	
2-Methylnaphthalene	ND	0.21	1.00	
2-Methylphenol	ND	5.2	1.00	
2-Nitroaniline	ND	5.2	1.00	
2-Nitrophenol	ND	5.2	1.00	
3,3'-Dichlorobenzidine	ND	5.2	1.00	
3-Nitroaniline	ND	5.2	1.00	
3/4-Methylphenol	ND	2.1	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.21	1.00	
4,6-Dinitro-2-Methylphenol	ND	5.2	1.00	
4-Chloro-3-Methylphenol	ND	5.2	1.00	
4-Chloroaniline	ND	5.2	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.21	1.00	
4-Nitroaniline	ND	5.2	1.00	
4-Nitrophenol	ND	5.2	1.00	
Acenaphthene	ND	0.21	1.00	
Acenaphthylene	ND	0.21	1.00	
Aniline	ND	0.21	1.00	
Anthracene	ND	0.21	1.00	
Azobenzene	ND	0.21	1.00	
Benzidine	ND	5.2	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM
		Units:	ug/L
Project: 1802258			Page 2 of 9

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.21	1.00	
Benzo (a) Pyrene	ND	0.21	1.00	
Benzo (b) Fluoranthene	ND	0.21	1.00	
Benzo (g,h,i) Perylene	ND	0.21	1.00	
Benzo (k) Fluoranthene	ND	0.21	1.00	
Benzoic Acid	ND	5.2	1.00	
Benzyl Alcohol	ND	0.21	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.21	1.00	
Bis(2-Chloroethyl) Ether	ND	0.21	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.21	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	5.2	1.00	
Butyl Benzyl Phthalate	ND	5.2	1.00	
Chrysene	ND	0.21	1.00	
Di-n-Butyl Phthalate	ND	5.2	1.00	
Di-n-Octyl Phthalate	ND	5.2	1.00	
Dibenz (a,h) Anthracene	ND	0.21	1.00	
Dibenzofuran	ND	0.21	1.00	
Diethyl Phthalate	ND	5.2	1.00	
Dimethyl Phthalate	ND	5.2	1.00	
Fluoranthene	ND	0.21	1.00	
Fluorene	ND	0.21	1.00	
Hexachloro-1,3-Butadiene	ND	0.21	1.00	
Hexachlorobenzene	ND	0.21	1.00	
Hexachlorocyclopentadiene	ND	0.21	1.00	
Hexachloroethane	ND	0.21	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.21	1.00	
Isophorone	ND	2.1	1.00	
N-Nitroso-di-n-propylamine	ND	0.21	1.00	
N-Nitrosodimethylamine	ND	0.21	1.00	
N-Nitrosodiphenylamine	ND	0.21	1.00	
Naphthalene	ND	0.21	1.00	
Nitrobenzene	ND	0.21	1.00	
Pentachlorophenol	ND	5.2	1.00	
Phenanthrene	ND	0.21	1.00	
Phenol	ND	0.21	1.00	
Pyrene	ND	0.21	1.00	
Pyridine	ND	0.21	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3510C
	Method:	EPA 8270C SIM
	Units:	ug/L
Project: 1802258		Page 3 of 9

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	65	25-137	
2-Fluorobiphenyl	66	42-138	
2-Fluorophenol	54	7-121	
Nitrobenzene-d5	91	10-146	
Phenol-d6	36	1-127	
p-Terphenyl-d14	76	47-173	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM
		Units:	ug/L
Project: 1802258			Page 4 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-21 / SW-061918	**18-06-1646-2-A**	**06/19/18 13:00**	**Aqueous**	**GC/MS JJJ**	**06/26/18**	**06/29/18 13:32**	**180626L01A**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.20	1.00	
1,2-Dichlorobenzene	ND	0.20	1.00	
1,3-Dichlorobenzene	ND	0.20	1.00	
1,4-Dichlorobenzene	ND	0.20	1.00	
1-Methylnaphthalene	ND	0.20	1.00	
2,4,5-Trichlorophenol	ND	5.1	1.00	
2,4,6-Trichlorophenol	ND	5.1	1.00	
2,4-Dichlorophenol	ND	5.1	1.00	
2,4-Dimethylphenol	ND	0.20	1.00	
2,4-Dinitrophenol	ND	5.1	1.00	
2,4-Dinitrotoluene	ND	0.20	1.00	
2,6-Dichlorophenol	ND	5.1	1.00	
2,6-Dinitrotoluene	ND	0.20	1.00	
2-Chloronaphthalene	ND	0.20	1.00	
2-Chlorophenol	ND	0.20	1.00	
2-Methylnaphthalene	ND	0.20	1.00	
2-Methylphenol	ND	5.1	1.00	
2-Nitroaniline	ND	5.1	1.00	
2-Nitrophenol	ND	5.1	1.00	
3,3'-Dichlorobenzidine	ND	5.1	1.00	
3-Nitroaniline	ND	5.1	1.00	
3/4-Methylphenol	ND	2.0	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.20	1.00	
4,6-Dinitro-2-Methylphenol	ND	5.1	1.00	
4-Chloro-3-Methylphenol	ND	5.1	1.00	
4-Chloroaniline	ND	5.1	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.20	1.00	
4-Nitroaniline	ND	5.1	1.00	
4-Nitrophenol	ND	5.1	1.00	
Acenaphthene	ND	0.20	1.00	
Acenaphthylene	ND	0.20	1.00	
Aniline	ND	0.20	1.00	
Anthracene	ND	0.20	1.00	
Azobenzene	ND	0.20	1.00	
Benzidine	ND	5.1	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM
		Units:	ug/L
Project: 1802258			Page 5 of 9

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.20	1.00	
Benzo (a) Pyrene	ND	0.20	1.00	
Benzo (b) Fluoranthene	ND	0.20	1.00	
Benzo (g,h,i) Perylene	ND	0.20	1.00	
Benzo (k) Fluoranthene	ND	0.20	1.00	
Benzoic Acid	ND	5.1	1.00	
Benzyl Alcohol	ND	0.20	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.20	1.00	
Bis(2-Chloroethyl) Ether	ND	0.20	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.20	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	5.1	1.00	
Butyl Benzyl Phthalate	ND	5.1	1.00	
Chrysene	ND	0.20	1.00	
Di-n-Butyl Phthalate	ND	5.1	1.00	
Di-n-Octyl Phthalate	ND	5.1	1.00	
Dibenz (a,h) Anthracene	ND	0.20	1.00	
Dibenzofuran	ND	0.20	1.00	
Diethyl Phthalate	ND	5.1	1.00	
Dimethyl Phthalate	ND	5.1	1.00	
Fluoranthene	ND	0.20	1.00	
Fluorene	ND	0.20	1.00	
Hexachloro-1,3-Butadiene	ND	0.20	1.00	
Hexachlorobenzene	ND	0.20	1.00	
Hexachlorocyclopentadiene	ND	0.20	1.00	
Hexachloroethane	ND	0.20	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.20	1.00	
Isophorone	ND	2.0	1.00	
N-Nitroso-di-n-propylamine	ND	0.20	1.00	
N-Nitrosodimethylamine	ND	0.20	1.00	
N-Nitrosodiphenylamine	ND	0.20	1.00	
Naphthalene	ND	0.20	1.00	
Nitrobenzene	ND	0.20	1.00	
Pentachlorophenol	ND	5.1	1.00	
Phenanthrene	ND	0.20	1.00	
Phenol	ND	0.20	1.00	
Pyrene	ND	0.20	1.00	
Pyridine	ND	0.20	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3510C
	Method:	EPA 8270C SIM
	Units:	ug/L
Project: 1802258		Page 6 of 9

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	60	25-137	
2-Fluorobiphenyl	55	42-138	
2-Fluorophenol	45	7-121	
Nitrobenzene-d5	80	10-146	
Phenol-d6	28	1-127	
p-Terphenyl-d14	72	47-173	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM
		Units:	ug/L
Project: 1802258			Page 7 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-16-941-31**	**N/A**	**Aqueous**	**GC/MS JJJ**	**06/26/18**	**06/29/18 10:29**	**180626L01A**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.20	1.00	
1,2-Dichlorobenzene	ND	0.20	1.00	
1,3-Dichlorobenzene	ND	0.20	1.00	
1,4-Dichlorobenzene	ND	0.20	1.00	
1-Methylnaphthalene	ND	0.20	1.00	
2,4,5-Trichlorophenol	ND	5.0	1.00	
2,4,6-Trichlorophenol	ND	5.0	1.00	
2,4-Dichlorophenol	ND	5.0	1.00	
2,4-Dimethylphenol	ND	0.20	1.00	
2,4-Dinitrophenol	ND	5.0	1.00	
2,4-Dinitrotoluene	ND	0.20	1.00	
2,6-Dichlorophenol	ND	5.0	1.00	
2,6-Dinitrotoluene	ND	0.20	1.00	
2-Chloronaphthalene	ND	0.20	1.00	
2-Chlorophenol	ND	0.20	1.00	
2-Methylnaphthalene	ND	0.20	1.00	
2-Methylphenol	ND	5.0	1.00	
2-Nitroaniline	ND	5.0	1.00	
2-Nitrophenol	ND	5.0	1.00	
3,3'-Dichlorobenzidine	ND	5.0	1.00	
3-Nitroaniline	ND	5.0	1.00	
3/4-Methylphenol	ND	2.0	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.20	1.00	
4,6-Dinitro-2-Methylphenol	ND	5.0	1.00	
4-Chloro-3-Methylphenol	ND	5.0	1.00	
4-Chloroaniline	ND	5.0	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.20	1.00	
4-Nitroaniline	ND	5.0	1.00	
4-Nitrophenol	ND	5.0	1.00	
Acenaphthene	ND	0.20	1.00	
Acenaphthylene	ND	0.20	1.00	
Aniline	ND	0.20	1.00	
Anthracene	ND	0.20	1.00	
Azobenzene	ND	0.20	1.00	
Benzidine	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM
		Units:	ug/L
Project: 1802258			Page 8 of 9

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.20	1.00	
Benzo (a) Pyrene	ND	0.20	1.00	
Benzo (b) Fluoranthene	ND	0.20	1.00	
Benzo (g,h,i) Perylene	ND	0.20	1.00	
Benzo (k) Fluoranthene	ND	0.20	1.00	
Benzoic Acid	ND	5.0	1.00	
Benzyl Alcohol	ND	0.20	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.20	1.00	
Bis(2-Chloroethyl) Ether	ND	0.20	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.20	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	5.0	1.00	
Butyl Benzyl Phthalate	ND	5.0	1.00	
Chrysene	ND	0.20	1.00	
Di-n-Butyl Phthalate	ND	5.0	1.00	
Di-n-Octyl Phthalate	ND	5.0	1.00	
Dibenz (a,h) Anthracene	ND	0.20	1.00	
Dibenzofuran	ND	0.20	1.00	
Diethyl Phthalate	ND	5.0	1.00	
Dimethyl Phthalate	ND	5.0	1.00	
Fluoranthene	ND	0.20	1.00	
Fluorene	ND	0.20	1.00	
Hexachloro-1,3-Butadiene	ND	0.20	1.00	
Hexachlorobenzene	ND	0.20	1.00	
Hexachlorocyclopentadiene	ND	0.20	1.00	
Hexachloroethane	ND	0.20	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.20	1.00	
Isophorone	ND	2.0	1.00	
N-Nitroso-di-n-propylamine	ND	0.20	1.00	
N-Nitrosodimethylamine	ND	0.20	1.00	
N-Nitrosodiphenylamine	ND	0.20	1.00	
Naphthalene	ND	0.20	1.00	
Nitrobenzene	ND	0.20	1.00	
Pentachlorophenol	ND	5.0	1.00	
Phenanthrene	ND	0.20	1.00	
Phenol	ND	0.20	1.00	
Pyrene	ND	0.20	1.00	
Pyridine	ND	0.20	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3510C
	Method:	EPA 8270C SIM
	Units:	ug/L
Project: 1802258		Page 9 of 9

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	61	25-137	
2-Fluorobiphenyl	70	42-138	
2-Fluorophenol	48	7-121	
Nitrobenzene-d5	87	10-146	
Phenol-d6	31	1-127	
p-Terphenyl-d14	76	47-173	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: **18-06-1646**
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-06-29 16:33
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180629\JJJ29JUN022.D\JJJ29JUN022.rr

 # 5 **CLIENT SAMPLE NUMBER: 1802258-24 / TP-16-3.5-5**

LCS/MB BATCH: 180626L09
MS/MSD BATCH: 180626S09
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.50 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.98

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
1,2,4-Trichlorobenzene	0.000	1.00	ND	0.0098	
1,2-Dichlorobenzene	0.000	1.00	ND	0.0098	
1,3-Dichlorobenzene	0.000	1.00	ND	0.0098	
1,4-Dichlorobenzene	0.000	1.00	ND	0.0098	
1-Methylnaphthalene	0.000	1.00	ND	0.0098	
2,4,5-Trichlorophenol	0.000	1.00	ND	0.24	
2,4,6-Trichlorophenol	0.000	1.00	ND	0.24	
2,4-Dichlorophenol	0.000	1.00	ND	0.24	
2,4-Dimethylphenol	0.000	1.00	ND	0.49	
2,4-Dinitrophenol	0.000	1.00	ND	0.24	]
2,4-Dinitrotoluene	0.000	1.00	ND	0.0098	
2,6-Dichlorophenol	0.000	1.00	ND	0.24	
2,6-Dinitrotoluene	0.000	1.00	ND	0.0098	
2-Chloronaphthalene	0.000	1.00	ND	0.0098	
2-Chlorophenol	0.000	1.00	ND	0.0098	
2-Methylnaphthalene	0.000	1.00	ND	0.0098	
2-Methylphenol	0.000	1.00	ND	0.24	
2-Nitroaniline	0.000	1.00	ND	0.24	
2-Nitrophenol	0.000	1.00	ND	0.24	
3,3'-Dichlorobenzidine	0.000	1.00	ND	0.24	
3-Nitroaniline	0.000	1.00	ND	0.24	
3/4-Methylphenol	0.000	1.00	ND	0.098	
4-Bromophenyl-Phenyl Ether	0.000	1.00	ND	0.0098	
4,6-Dinitro-2-Methylphenol	0.000	1.00	ND	0.24	
4-Chloro-3-Methylphenol	0.000	1.00	ND	0.24	
4-Chloroaniline	0.000	1.00	ND	0.24	
4-Chlorophenyl-Phenyl Ether	0.000	1.00	ND	0.0098	
4-Nitroaniline	0.000	1.00	ND	0.24	[
4-Nitrophenol	0.000	1.00	ND	0.49	
Acenaphthene	0.000	1.00	ND	0.0098	
Acenaphthylene	0.000	1.00	ND	0.0098	
Aniline	0.000	1.00	ND	0.0098	
Anthracene	0.000	1.00	ND	0.0098	
Azobenzene	0.000	1.00	ND	0.0098	
Benzidine	0.000	1.00	ND	0.24	]
Benzo (a) Anthracene	0.000	1.00	ND	0.0098	
Benzo (a) Pyrene	0.000	1.00	ND	0.0098	
Benzo (b) Fluoranthene	0.000	1.00	ND	0.0098	
Benzo (g,h,i) Perylene	0.000	1.00	ND	0.0098	
Benzo (k) Fluoranthene	0.000	1.00	ND	0.0098	

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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: 18-06-1646
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-06-29 16:33
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180629\JJJ29JUN022.D\JJJ29JUN022.rr

 # 5 **CLIENT SAMPLE NUMBER: 1802258-24 / TP-16-3.5-5**

LCS/MB BATCH: 180626L09
MS/MSD BATCH: 180626S09
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.50 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.98

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
Benzyl Alcohol	0.000	1.00	ND	0.0098	
Bis(2-Chloroethoxy) Methane	0.000	1.00	ND	0.0098	
Bis(2-Chloroethyl) Ether	0.000	1.00	ND	0.0098	
Bis(2-Chloroisopropyl) Ether	0.000	1.00	ND	0.0098	
Bis(2-Ethylhexyl) Phthalate	0.000	1.00	ND	0.24	
Butyl Benzyl Phthalate	0.000	1.00	ND	0.24	
Chrysene	0.000	1.00	ND	0.0098	
Di-n-Butyl Phthalate	0.0710	1.00	ND	0.24	
Di-n-Octyl Phthalate	0.000	1.00	ND	0.24	
Dibenz (a,h) Anthracene	0.000	1.00	ND	0.0098	
Dibenzofuran	0.000	1.00	ND	0.0098	
Diethyl Phthalate	0.000	1.00	ND	0.0098	
Dimethyl Phthalate	2.67	1.00	0.261	0.24	
Fluoranthene	0.0232	1.00	ND	0.0098	
Fluorene	0.000	1.00	ND	0.0098	
Hexachloro-1,3-Butadiene	0.000	1.00	ND	0.0098	
Hexachlorobenzene	0.000	1.00	ND	0.0098	
Hexachlorocyclopentadiene	0.000	1.00	ND	0.0098	
Hexachloroethane	0.000	1.00	ND	0.0098	
Indeno (1,2,3-c,d) Pyrene	0.000	1.00	ND	0.0098	
Isophorone	0.000	1.00	ND	0.49	
N-Nitroso-di-n-propylamine	0.000	1.00	ND	0.0098	
N-Nitrosodimethylamine	0.000	1.00	ND	0.0098	
N-Nitrosodiphenylamine	0.000	1.00	ND	0.0098	
Naphthalene	0.0251	1.00	ND	0.0098	
Nitrobenzene	0.000	1.00	ND	0.0098	
Pentachlorophenol	0.000	1.00	ND	0.24	
Phenanthrene	0.000	1.00	ND	0.0098	
Phenol	0.000	1.00	ND	0.0098	
Pyrene	0.0241	1.00	ND	0.0098	
Pyridine	0.000	1.00	ND	0.0098	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN022.D Vial: 22
Acq On : 29 Jun 2018 4:33 pm Operator: N8CZ
Sample : 18-06-1646-5 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 16:53:36 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	3.402	152	231757	5.00 mg/l	0.00
19) Naphthalene-d8	4.655	136	837601	5.00 mg/l	0.00
36) Acenaphthene-d10	6.427	164	321820	5.00 mg/l	0.00
56) Phenanthrene-d10	7.875	188	1141848	5.00 mg/l	0.00
69) Chrysene-d12	10.567	240	1329346	5.00 mg/l	-0.01
81) Perylene-d12	12.397	264	1322275	5.00 mg/l	0.00
System Monitoring Compounds					
4) 2-Fluorophenol	2.365	112	229273	4.38 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 43.80%		
6) Phenol-d6	3.068	99	399554	6.00 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 60.00%		
20) Nitrobenzene-d5	3.957	82	182540	2.97 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 29.70%		
41) 2-Fluorobiphenyl	5.760	172	559628	4.59 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 45.90%		
60) 2,4,6-Tribromophenol	7.213	330	106357	3.89 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 38.90%		
71) p-Terphenyl-d14	9.457	244	1707830	6.26 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 62.60%		
Target Compounds					Qvalue
2) Pyridine	0.000		0	N.D.	
3) N-Nitrosodimethylamine	0.000		0	N.D.	
5) Aniline	3.142	93	498	N.D.	
7) Phenol	0.000		0	N.D. d	
8) Bis(2-Chloroethyl) Ether	3.173	93	718	N.D.	
9) 2-Chlorophenol	3.247	128	474	N.D.	
10) 1,3-Dichlorobenzene	3.377	146	793	N.D.	
11) 1,4-Dichlorobenzene	3.420	146	538	N.D.	
12) Benzyl Alcohol	0.000		0	N.D. d	
13) 1,2-Dichlorobenzene	3.599	146	590	N.D.	
14) 2-Methylphenol	3.649	108	356	N.D.	
15) Bis(2-Chloroisopropyl)...	3.692	45	1332	N.D.	
16) 3/4-Methylphenol	3.803	107	1060	N.D.	
17) N-Nitroso-di-n-propyla...	3.828	70	474	N.D.	
18) Hexachloroethane	0.000		0	N.D. d	
21) Nitrobenzene	0.000		0	N.D. d	
22) Isophorone	4.204	82	1384	N.D.	
23) 2-Nitrophenol	4.297	139	324	N.D.	
24) 2,4-Dimethylphenol	4.328	107	748	N.D.	
25) Benzoic Acid	0.000		0	N.D. d	
26) Bis(2-Chloroethoxy) Me...	4.389	93	391	N.D.	
27) 2,4-Dichlorophenol	4.537	162	373	N.D.	
28) 1,2,4-Trichlorobenzene	4.618	180	472	N.D.	
29) Naphthalene	4.679	128	4375	0.03 mg/l	71
30) 2,6-Dichlorophenol	4.766	162	501	N.D.	
31) 4-Chloroaniline	4.753	127	449	N.D.	
32) Hexachloro-1,3-Butadiene	4.871	225	731	N.D.	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN022.D Vial: 22
Acq On : 29 Jun 2018 4:33 pm Operator: N8CZ
Sample : 18-06-1646-5 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 16:53:36 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
33) 4-Chloro-3-Methylphenol	5.254	107	653	N.D.	
34) 2-Methylnaphthalene	5.371	142	1626	N.D.	
35) 1-Methylnaphthalene	5.482	142	1371	N.D.	
37) Hexachlorocyclopentadiene	5.599	237	321	N.D.	
38) 2,4,6-Trichlorophenol	5.686	196	358	N.D.	
39) 2,4,5-Trichlorophenol	5.729	196	789	N.D.	
40) 2-Chloronaphthalene	5.859	162	824	N.D.	
42) 2-Nitroaniline	0.000		0	N.D. d	
43) Dimethyl Phthalate	6.205	163	336443	2.67 mg/l	100
44) Acenaphthylene	6.279	152	1731	N.D.	
45) 3-Nitroaniline	6.440	138	305	N.D.	
46) Acenaphthene	6.458	154	693	N.D.	
47) 2,4-Dinitrophenol	0.000		0	N.D. d	
48) 4-Nitrophenol	6.569	65	305	N.D.	
49) Dibenzofuran	6.619	168	1519	N.D.	
50) 2,4-Dinitrotoluene	0.000		0	N.D. d	
51) 2,6-Dinitrotoluene	0.000		0	N.D. d	
52) Diethyl Phthalate	6.903	149	2454	N.D.	
53) 4-Chlorophenyl-Phenyl ...	6.965	204	657	N.D.	
54) Fluorene	6.958	166	1033	N.D.	
55) 4-Nitroaniline	7.027	138	225	N.D.	
57) 4,6-Dinitro-2-Methylph...	0.000		0	N.D. d	
58) N-Nitrosodiphenylamine	7.082	169	705	N.D.	
59) Azobenzene	0.000		0	N.D.	
61) 4-Bromophenyl-Phenyl E...	7.442	248	371	N.D.	
62) Hexachlorobenzene	7.582	284	552	N.D.	
63) Pentachlorophenol	0.000		0	N.D. d	
64) Phenanthrene	7.896	178	4302	N.D.	
65) Anthracene	7.943	178	2635	N.D.	
66) Di-n-Butyl Phthalate	8.507	149	20240	0.07 mg/l	91
67) Fluoranthene	9.071	202	7503	0.02 mg/l	97
68) Benzidine	9.241	184	115	N.D.	
70) Pyrene	9.292	202	8183	0.02 mg/l	96
72) Butyl Benzyl Phthalate	9.923	149	739	N.D.	
73) 3,3'-Dichlorobenzidine	10.525	252	695	N.D.	
74) Benzo (a) Anthracene	10.571	228	5992	N.D.	
75) Bis(2-Ethylhexyl) Phth...	10.669	149	3553	N.D.	
76) Chrysene	10.597	228	3197	N.D.	
77) Di-n-Octyl Phthalate	11.435	149	1380	N.D.	
78) Benzo (b) Fluoranthene	11.893	252	1857	N.D.	
79) Benzo (k) Fluoranthene	11.991	252	696	N.D.	
80) Benzo (a) Pyrene	12.355	252	710	N.D.	
82) Indeno (1,2,3-c,d) Pyrene	13.838	276	2950	N.D.	
83) Dibenz (a,h) Anthracene	13.859	278	1669	N.D.	
84) Benzo (g,h,i) Perylene	14.206	276	2382	Below Cal	75

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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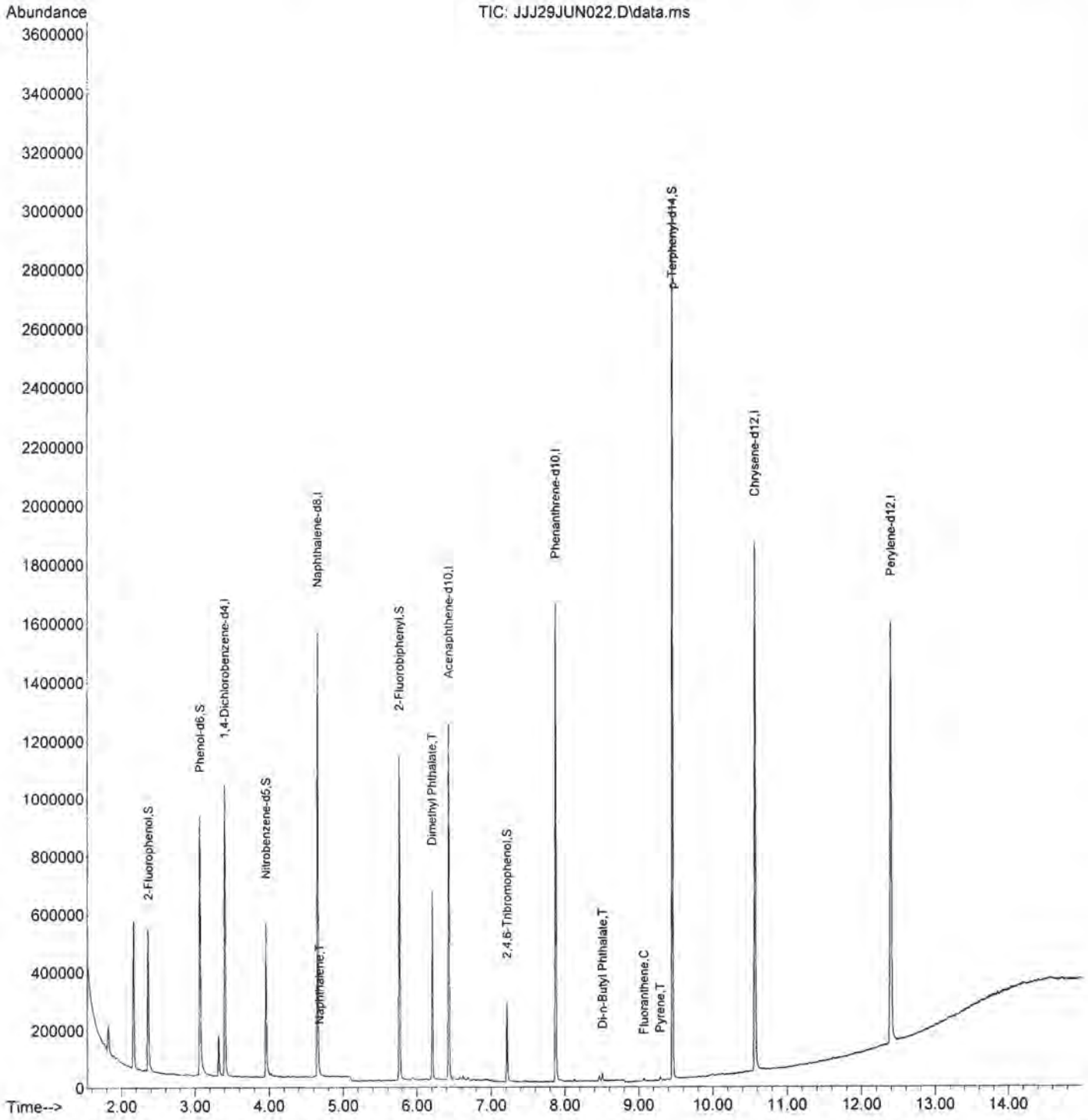
Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN022.D Vial: 22
Acq On : 29 Jun 2018 4:33 pm Operator: N8CZ
Sample : 18-06-1646-5 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 16:53:36 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M



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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: **18-06-1646**
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-06-29 17:09
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180629\JJJ29JUN024.D\JJJ29JUN024.rr

 # 7 **CLIENT SAMPLE NUMBER:** **1802258-27 / TP-19-4-8**

LCS/MB BATCH: 180626L09
MS/MSD BATCH: 180626S09
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.40 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.98

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
1,2,4-Trichlorobenzene	0.000	1.00	ND	0.0098	
1,2-Dichlorobenzene	0.000	1.00	ND	0.0098	
1,3-Dichlorobenzene	0.000	1.00	ND	0.0098	
1,4-Dichlorobenzene	0.000	1.00	ND	0.0098	
1-Methylnaphthalene	0.000	1.00	ND	0.0098	
2,4,5-Trichlorophenol	0.000	1.00	ND	0.25	
2,4,6-Trichlorophenol	0.000	1.00	ND	0.25	
2,4-Dichlorophenol	0.000	1.00	ND	0.25	
2,4-Dimethylphenol	0.000	1.00	ND	0.49	
2,4-Dinitrophenol	0.000	1.00	ND	0.25	]
2,4-Dinitrotoluene	0.000	1.00	ND	0.0098	
2,6-Dichlorophenol	0.000	1.00	ND	0.25	
2,6-Dinitrotoluene	0.000	1.00	ND	0.0098	
2-Chloronaphthalene	0.000	1.00	ND	0.0098	
2-Chlorophenol	0.000	1.00	ND	0.0098	
2-Methylnaphthalene	0.000	1.00	ND	0.0098	
2-Methylphenol	0.000	1.00	ND	0.25	
2-Nitroaniline	0.000	1.00	ND	0.25	
2-Nitrophenol	0.000	1.00	ND	0.25	
3,3'-Dichlorobenzidine	0.000	1.00	ND	0.25	
3-Nitroaniline	0.000	1.00	ND	0.25	
3/4-Methylphenol	0.000	1.00	ND	0.098	
4-Bromophenyl-Phenyl Ether	0.000	1.00	ND	0.0098	
4,6-Dinitro-2-Methylphenol	0.000	1.00	ND	0.25	
4-Chloro-3-Methylphenol	0.000	1.00	ND	0.25	
4-Chloroaniline	0.000	1.00	ND	0.25	
4-Chlorophenyl-Phenyl Ether	0.000	1.00	ND	0.0098	
4-Nitroaniline	0.000	1.00	ND	0.25	[
4-Nitrophenol	0.000	1.00	ND	0.49	
Acenaphthene	0.000	1.00	ND	0.0098	
Acenaphthylene	0.000	1.00	ND	0.0098	
Aniline	0.000	1.00	ND	0.0098	
Anthracene	0.000	1.00	ND	0.0098	
Azobenzene	0.000	1.00	ND	0.0098	
Benzidine	0.000	1.00	ND	0.25	]
Benzo (a) Anthracene	0.000	1.00	ND	0.0098	
Benzo (a) Pyrene	0.000	1.00	ND	0.0098	
Benzo (b) Fluoranthene	0.000	1.00	ND	0.0098	
Benzo (g,h,i) Perylene	0.000	1.00	ND	0.0098	
Benzo (k) Fluoranthene	0.000	1.00	ND	0.0098	

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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: **18-06-1646**
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-06-29 17:09
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180629\JJJ29JUN024.D\JJJ29JUN024.rr

 # 7 **CLIENT SAMPLE NUMBER: 1802258-27 / TP-19-4-8**

LCS/MB BATCH: 180626L09
MS/MSD BATCH: 180626S09
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.40 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.98

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
Benzyl Alcohol	0.000	1.00	ND	0.0098	
Bis(2-Chloroethoxy) Methane	0.000	1.00	ND	0.0098	
Bis(2-Chloroethyl) Ether	0.000	1.00	ND	0.0098	
Bis(2-Chloroisopropyl) Ether	0.000	1.00	ND	0.0098	
Bis(2-Ethylhexyl) Phthalate	0.000	1.00	ND	0.25	
Butyl Benzyl Phthalate	0.000	1.00	ND	0.25	
Chrysene	0.000	1.00	ND	0.0098	
Di-n-Butyl Phthalate	0.0761	1.00	ND	0.25	
Di-n-Octyl Phthalate	0.000	1.00	ND	0.25	
Dibenz (a,h) Anthracene	0.000	1.00	ND	0.0098	
Dibenzofuran	0.000	1.00	ND	0.0098	
Diethyl Phthalate	0.000	1.00	ND	0.0098	
Dimethyl Phthalate	2.93	1.00	0.287	0.25	
Fluoranthene	0.0343	1.00	ND	0.0098	
Fluorene	0.000	1.00	ND	0.0098	
Hexachloro-1,3-Butadiene	0.000	1.00	ND	0.0098	
Hexachlorobenzene	0.000	1.00	ND	0.0098	
Hexachlorocyclopentadiene	0.000	1.00	ND	0.0098	
Hexachloroethane	0.000	1.00	ND	0.0098	
Indeno (1,2,3-c,d) Pyrene	0.000	1.00	ND	0.0098	
Isophorone	0.000	1.00	ND	0.49	
N-Nitroso-di-n-propylamine	0.000	1.00	ND	0.0098	
N-Nitrosodimethylamine	0.000	1.00	ND	0.0098	
N-Nitrosodiphenylamine	0.000	1.00	ND	0.0098	
Naphthalene	0.000	1.00	ND	0.0098	
Nitrobenzene	0.000	1.00	ND	0.0098	
Pentachlorophenol	0.000	1.00	ND	0.25	
Phenanthrene	0.0318	1.00	ND	0.0098	
Phenol	0.000	1.00	ND	0.0098	
Pyrene	0.0367	1.00	ND	0.0098	
Pyridine	0.000	1.00	ND	0.0098	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN024.D Vial: 24
Acq On : 29 Jun 2018 5:09 pm Operator: N8CZ
Sample : 18-06-1646-7 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 17:27:04 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.402	152	281225	5.00	mg/l	# 0.00
19) Naphthalene-d8	4.655	136	1011250	5.00	mg/l	0.00
36) Acenaphthene-d10	6.427	164	387795	5.00	mg/l	0.00
56) Phenanthrene-d10	7.875	188	1371720	5.00	mg/l	0.00
69) Chrysene-d12	10.567	240	1626575	5.00	mg/l	-0.01
81) Perylene-d12	12.393	264	1638520	5.00	mg/l	-0.01
System Monitoring Compounds						
4) 2-Fluorophenol	2.365	112	341989	5.38	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 53.80%			
6) Phenol-d6	3.069	99	555644	6.88	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 68.80%			
20) Nitrobenzene-d5	3.957	82	299287	4.03	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 40.30%			
41) 2-Fluorobiphenyl	5.760	172	685654	4.67	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 46.70%			
60) 2,4,6-Tribromophenol	7.214	330	168066	5.12	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 51.20%			
71) p-Terphenyl-d14	9.457	244	2094220	6.27	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 62.70%			

Target Compounds					Qvalue
2) Pyridine	0.000		0	N.D. d	
3) N-Nitrosodimethylamine	0.000		0	N.D.	
5) Aniline	3.136	93	1539	N.D.	
7) Phenol	0.000		0	N.D. d	
8) Bis(2-Chloroethyl) Ether	0.000		0	N.D. d	
9) 2-Chlorophenol	3.254	128	704	N.D.	
10) 1,3-Dichlorobenzene	3.371	146	461	N.D.	
11) 1,4-Dichlorobenzene	3.420	146	531	N.D.	
12) Benzyl Alcohol	3.519	79	449	N.D.	
13) 1,2-Dichlorobenzene	3.599	146	261	N.D.	
14) 2-Methylphenol	3.649	108	609	N.D.	
15) Bis(2-Chloroisopropyl)...	3.686	45	1009	N.D.	
16) 3/4-Methylphenol	0.000		0	N.D. d	
17) N-Nitroso-di-n-propyla...	3.822	70	822	N.D.	
18) Hexachloroethane	3.890	117	193	N.D.	
21) Nitrobenzene	0.000		0	N.D. d	
22) Isophorone	0.000		0	N.D. d	
23) 2-Nitrophenol	4.315	139	105	N.D.	
24) 2,4-Dimethylphenol	4.303	107	145	N.D.	
25) Benzoic Acid	0.000		0	N.D. d	
26) Bis(2-Chloroethoxy) Me...	4.427	93	447	N.D.	
27) 2,4-Dichlorophenol	4.531	162	342	N.D.	
28) 1,2,4-Trichlorobenzene	4.618	180	811	N.D.	
29) Naphthalene	4.673	128	2615	N.D.	
30) 2,6-Dichlorophenol	4.723	162	188	N.D.	
31) 4-Chloroaniline	4.717	127	130	N.D.	
32) Hexachloro-1,3-Butadiene	4.865	225	403	N.D.	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN024.D Vial: 24
Acq On : 29 Jun 2018 5:09 pm Operator: N8CZ
Sample : 18-06-1646-7 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 17:27:04 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
33) 4-Chloro-3-Methylphenol	5.248	107	158	N.D.	
34) 2-Methylnaphthalene	5.371	142	1315	N.D.	
35) 1-Methylnaphthalene	5.482	142	1453	N.D.	
37) Hexachlorocyclopentadiene	5.612	237	253	N.D.	
38) 2,4,6-Trichlorophenol	5.686	196	225	N.D.	
39) 2,4,5-Trichlorophenol	5.717	196	89	N.D.	
40) 2-Chloronaphthalene	5.859	162	655	N.D.	
42) 2-Nitroaniline	0.000		0	N.D. d	
43) Dimethyl Phthalate	6.205	163	444154	2.93 mg/l	100
44) Acenaphthylene	6.279	152	3339	N.D.	
45) 3-Nitroaniline	6.421	138	258	N.D.	
46) Acenaphthene	6.458	154	761	N.D.	
47) 2,4-Dinitrophenol	0.000		0	N.D. d	
48) 4-Nitrophenol	0.000		0	N.D. d	
49) Dibenzofuran	6.619	168	1340	N.D.	
50) 2,4-Dinitrotoluene	0.000		0	N.D. d	
51) 2,6-Dinitrotoluene	0.000		0	N.D. d	
52) Diethyl Phthalate	6.903	149	2942	N.D.	
53) 4-Chlorophenyl-Phenyl ...	6.965	204	392	N.D.	
54) Fluorene	6.959	166	2015	N.D.	
55) 4-Nitroaniline	6.983	138	450	N.D.	
57) 4,6-Dinitro-2-Methylph...	0.000		0	N.D. d	
58) N-Nitrosodiphenylamine	7.086	169	1033	N.D.	
59) Azobenzene	7.112	77	1309	N.D.	
61) 4-Bromophenyl-Phenyl E...	7.438	248	300	N.D.	
62) Hexachlorobenzene	7.583	284	627	N.D.	
63) Pentachlorophenol	0.000		0	N.D. d	
64) Phenanthrene	7.897	178	9663	0.03 mg/l	97
65) Anthracene	7.943	178	4468	N.D.	
66) Di-n-Butyl Phthalate	8.503	149	26061	0.08 mg/l	95
67) Fluoranthene	9.071	202	13328	0.03 mg/l	99
68) Benzidine	9.190	184	151	N.D.	
70) Pyrene	9.288	202	15222	0.04 mg/l	92
72) Butyl Benzyl Phthalate	0.000		0	N.D. d	
73) 3,3'-Dichlorobenzidine	10.546	252	214	N.D.	
74) Benzo (a) Anthracene	0.000		0	N.D. d	
75) Bis(2-Ethylhexyl) Phth...	0.000		0	N.D. d	
76) Chrysene	10.597	228	6749	N.D.	
77) Di-n-Octyl Phthalate	11.410	149	1349	N.D.	
78) Benzo (b) Fluoranthene	11.898	252	6143	N.D.	
79) Benzo (k) Fluoranthene	12.037	252	1901	N.D.	
80) Benzo (a) Pyrene	12.321	252	5378	N.D.	
82) Indeno (1,2,3-c,d) Pyrene	13.834	276	4751	N.D.	
83) Dibenz (a,h) Anthracene	13.863	278	2680	N.D.	
84) Benzo (g,h,i) Perylene	14.202	276	5848	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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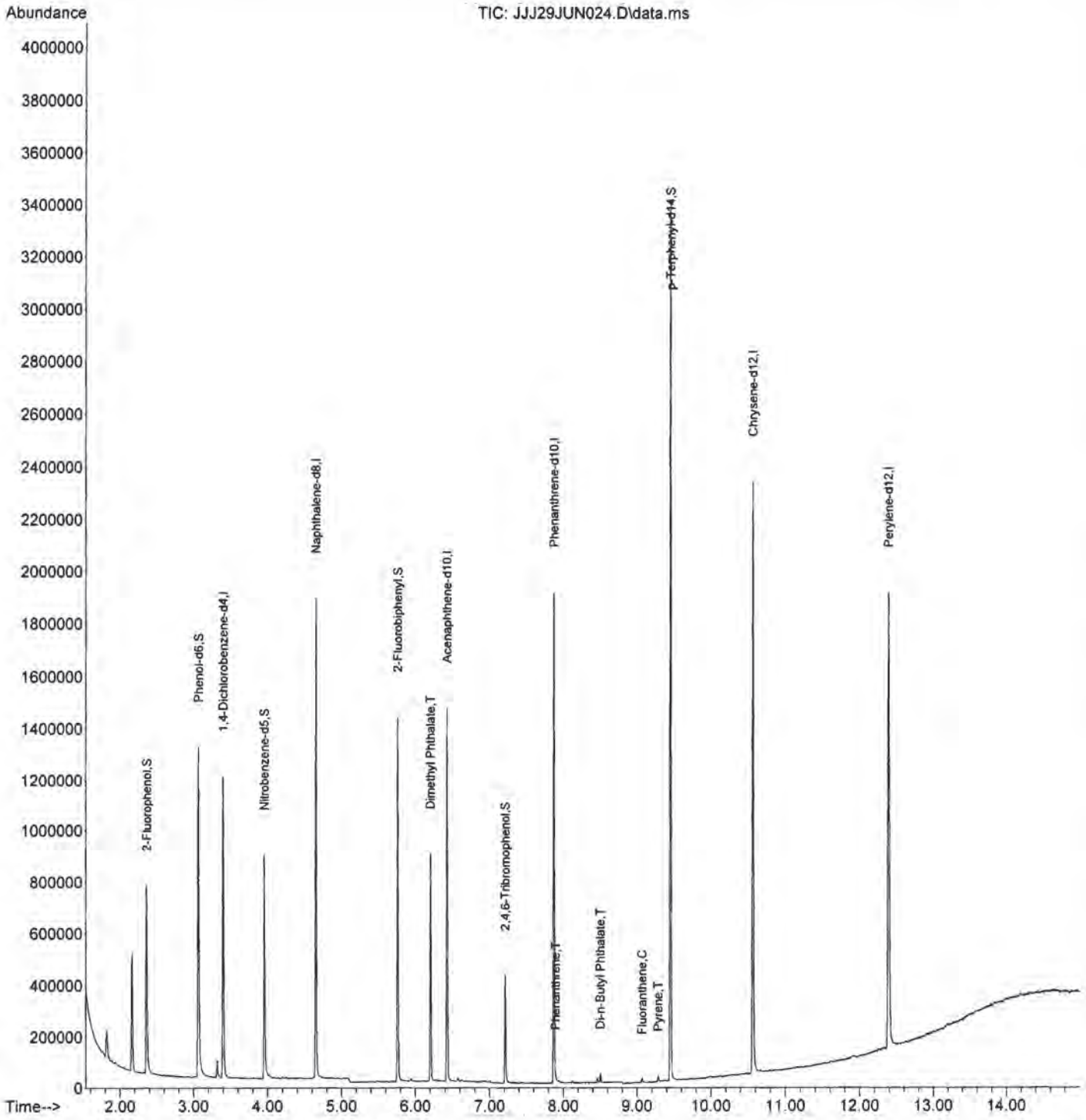
Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN024.D Vial: 24
Acq On : 29 Jun 2018 5:09 pm Operator: N8CZ
Sample : 18-06-1646-7 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 17:27:04 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M



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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: 18-06-1646
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-06-29 17:28
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180629\JJJ29JUN025.D\JJJ29JUN025.rr

 # 8 **CLIENT SAMPLE NUMBER: 1802258-28 / TP-19-8-10**

LCS/MB BATCH: 180626L09
MS/MSD BATCH: 180626S09
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.50 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.98

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
1,2,4-Trichlorobenzene	0.000	1.00	ND	0.0098	
1,2-Dichlorobenzene	0.000	1.00	ND	0.0098	
1,3-Dichlorobenzene	0.000	1.00	ND	0.0098	
1,4-Dichlorobenzene	0.000	1.00	ND	0.0098	
1-Methylnaphthalene	0.000	1.00	ND	0.0098	
2,4,5-Trichlorophenol	0.000	1.00	ND	0.24	
2,4,6-Trichlorophenol	0.000	1.00	ND	0.24	
2,4-Dichlorophenol	0.000	1.00	ND	0.24	
2,4-Dimethylphenol	0.000	1.00	ND	0.49	
2,4-Dinitrophenol	0.000	1.00	ND	0.24	]
2,4-Dinitrotoluene	0.000	1.00	ND	0.0098	
2,6-Dichlorophenol	0.000	1.00	ND	0.24	
2,6-Dinitrotoluene	0.000	1.00	ND	0.0098	
2-Chloronaphthalene	0.000	1.00	ND	0.0098	
2-Chlorophenol	0.000	1.00	ND	0.0098	
2-Methylnaphthalene	0.000	1.00	ND	0.0098	
2-Methylphenol	0.000	1.00	ND	0.24	
2-Nitroaniline	0.000	1.00	ND	0.24	
2-Nitrophenol	0.000	1.00	ND	0.24	
3,3'-Dichlorobenzidine	0.000	1.00	ND	0.24	
3-Nitroaniline	0.000	1.00	ND	0.24	
3/4-Methylphenol	0.000	1.00	ND	0.098	
4-Bromophenyl-Phenyl Ether	0.000	1.00	ND	0.0098	
4,6-Dinitro-2-Methylphenol	0.000	1.00	ND	0.24	
4-Chloro-3-Methylphenol	0.000	1.00	ND	0.24	
4-Chloroaniline	0.000	1.00	ND	0.24	
4-Chlorophenyl-Phenyl Ether	0.000	1.00	ND	0.0098	
4-Nitroaniline	0.000	1.00	ND	0.24	[
4-Nitrophenol	0.000	1.00	ND	0.49	
Acenaphthene	0.000	1.00	ND	0.0098	
Acenaphthylene	0.000	1.00	ND	0.0098	
Aniline	0.000	1.00	ND	0.0098	
Anthracene	0.000	1.00	ND	0.0098	
Azobenzene	0.000	1.00	ND	0.0098	
Benzidine	0.000	1.00	ND	0.24	]
Benzo (a) Anthracene	0.000	1.00	ND	0.0098	
Benzo (a) Pyrene	0.000	1.00	ND	0.0098	
Benzo (b) Fluoranthene	0.000	1.00	ND	0.0098	
Benzo (g,h,i) Perylene	0.000	1.00	ND	0.0098	
Benzo (k) Fluoranthene	0.000	1.00	ND	0.0098	

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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: **18-06-1646**
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-06-29 17:28
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180629\JJJ29JUN025.D\JJJ29JUN025.rr

 # 8 **CLIENT SAMPLE NUMBER:** **1802258-28 / TP-19-8-10**

LCS/MB BATCH: 180626L09
MS/MSD BATCH: 180626S09
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.50 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.98

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
Benzyl Alcohol	0.000	1.00	ND	0.0098	
Bis(2-Chloroethoxy) Methane	0.000	1.00	ND	0.0098	
Bis(2-Chloroethyl) Ether	0.000	1.00	ND	0.0098	
Bis(2-Chloroisopropyl) Ether	0.000	1.00	ND	0.0098	
Bis(2-Ethylhexyl) Phthalate	0.000	1.00	ND	0.24	
Butyl Benzyl Phthalate	0.000	1.00	ND	0.24	
Chrysene	0.000	1.00	ND	0.0098	
Di-n-Butyl Phthalate	0.0564	1.00	ND	0.24	
Di-n-Octyl Phthalate	0.000	1.00	ND	0.24	
Dibenz (a,h) Anthracene	0.000	1.00	ND	0.0098	
Dibenzofuran	0.000	1.00	ND	0.0098	
Diethyl Phthalate	0.000	1.00	ND	0.0098	
Dimethyl Phthalate	2.67	1.00	0.260	0.24	
Fluoranthene	0.000	1.00	ND	0.0098	
Fluorene	0.000	1.00	ND	0.0098	
Hexachloro-1,3-Butadiene	0.000	1.00	ND	0.0098	
Hexachlorobenzene	0.000	1.00	ND	0.0098	
Hexachlorocyclopentadiene	0.000	1.00	ND	0.0098	
Hexachloroethane	0.000	1.00	ND	0.0098	
Indeno (1,2,3-c,d) Pyrene	0.000	1.00	ND	0.0098	
Isophorone	0.000	1.00	ND	0.49	
N-Nitroso-di-n-propylamine	0.000	1.00	ND	0.0098	
N-Nitrosodimethylamine	0.000	1.00	ND	0.0098	
N-Nitrosodiphenylamine	0.000	1.00	ND	0.0098	
Naphthalene	0.000	1.00	ND	0.0098	
Nitrobenzene	0.000	1.00	ND	0.0098	
Pentachlorophenol	0.000	1.00	ND	0.24	
Phenanthrene	0.000	1.00	ND	0.0098	
Phenol	0.000	1.00	ND	0.0098	
Pyrene	0.000	1.00	ND	0.0098	
Pyridine	0.000	1.00	ND	0.0098	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN025.D Vial: 25
Acq On : 29 Jun 2018 5:28 pm Operator: N8CZ
Sample : 18-06-1646-8 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 17:28:23 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	3.408	152	169913	5.00 mg/l	0.00
19) Naphthalene-d8	4.655	136	611026	5.00 mg/l	0.00
36) Acenaphthene-d10	6.427	164	234637	5.00 mg/l	0.00
56) Phenanthrene-d10	7.875	188	820050	5.00 mg/l	0.00
69) Chrysene-d12	10.567	240	933636	5.00 mg/l	-0.01
81) Perylene-d12	12.393	264	892437	5.00 mg/l	-0.01
System Monitoring Compounds					
4) 2-Fluorophenol	2.365	112	146394	3.81 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 38.10%	
6) Phenol-d6	3.068	99	261094	5.35 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 53.50%	
20) Nitrobenzene-d5	3.957	82	102362	2.28 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 22.80%	
41) 2-Fluorobiphenyl	5.760	172	359826	4.05 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 40.50%	
60) 2,4,6-Tribromophenol	7.213	330	63728	3.25 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 32.50%	
71) p-Terphenyl-d14	9.457	244	1187631	6.19 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 61.90%	
Target Compounds					Qvalue
2) Pyridine	0.000		0	N.D.	
3) N-Nitrosodimethylamine	0.000		0	N.D.	
5) Aniline	3.142	93	532	N.D.	
7) Phenol	0.000		0	N.D. d	
8) Bis(2-Chloroethyl) Ether	3.142	93	532	N.D.	
9) 2-Chlorophenol	3.247	128	419	N.D.	
10) 1,3-Dichlorobenzene	3.377	146	164	N.D.	
11) 1,4-Dichlorobenzene	3.420	146	260	N.D.	
12) Benzyl Alcohol	3.519	79	702	N.D.	
13) 1,2-Dichlorobenzene	3.599	146	134	N.D.	
14) 2-Methylphenol	3.630	108	86	N.D.	
15) Bis(2-Chloroisopropyl)...	3.686	45	662	N.D.	
16) 3/4-Methylphenol	3.803	107	713	N.D.	
17) N-Nitroso-di-n-propyla...	3.778	70	187	N.D.	
18) Hexachloroethane	0.000		0	N.D. d	
21) Nitrobenzene	0.000		0	N.D. d	
22) Isophorone	4.210	82	797	N.D.	
23) 2-Nitrophenol	4.315	139	88	N.D.	
24) 2,4-Dimethylphenol	4.321	107	215	N.D.	
25) Benzoic Acid	0.000		0	N.D. d	
26) Bis(2-Chloroethoxy) Me...	4.457	93	213	N.D.	
27) 2,4-Dichlorophenol	4.543	162	291	N.D.	
28) 1,2,4-Trichlorobenzene	4.611	180	542	N.D.	
29) Naphthalene	4.673	128	1230	N.D.	
30) 2,6-Dichlorophenol	4.766	162	233	N.D.	
31) 4-Chloroaniline	4.790	127	84	N.D.	
32) Hexachloro-1,3-Butadiene	4.871	225	251	N.D.	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN025.D Vial: 25
Acq On : 29 Jun 2018 5:28 pm Operator: N8CZ
Sample : 18-06-1646-8 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 17:28:23 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
33) 4-Chloro-3-Methylphenol	0.000		0	N.D. d	
34) 2-Methylnaphthalene	5.371	142	517	N.D.	
35) 1-Methylnaphthalene	5.482	142	230	N.D.	
37) Hexachlorocyclopentadiene	5.606	237	297	N.D.	
38) 2,4,6-Trichlorophenol	5.636	196	542	N.D.	
39) 2,4,5-Trichlorophenol	5.760	196	540	N.D.	
40) 2-Chloronaphthalene	5.865	162	201	N.D.	
42) 2-Nitroaniline	0.000		0	N.D. d	
43) Dimethyl Phthalate	6.205	163	244803	2.67 mg/l	100
44) Acenaphthylene	6.279	152	965	N.D.	
45) 3-Nitroaniline	6.421	138	298	N.D.	
46) Acenaphthene	0.000		0	N.D. d	
47) 2,4-Dinitrophenol	0.000		0	N.D. d	
48) 4-Nitrophenol	0.000		0	N.D. d	
49) Dibenzofuran	6.619	168	479	N.D.	
50) 2,4-Dinitrotoluene	0.000		0	N.D. d	
51) 2,6-Dinitrotoluene	0.000		0	N.D. d	
52) Diethyl Phthalate	0.000		0	N.D. d	
53) 4-Chlorophenyl-Phenyl ...	6.964	204	250	N.D.	
54) Fluorene	6.958	166	536	N.D.	
55) 4-Nitroaniline	7.008	138	122	N.D.	
57) 4,6-Dinitro-2-Methylph...	0.000		0	N.D. d	
58) N-Nitrosodiphenylamine	7.082	169	483	N.D.	
59) Azobenzene	7.116	77	455	N.D.	
61) 4-Bromophenyl-Phenyl E...	7.438	248	161	N.D.	
62) Hexachlorobenzene	7.578	284	482	N.D.	
63) Pentachlorophenol	0.000		0	N.D. d	
64) Phenanthrene	7.901	178	1028	N.D.	
65) Anthracene	7.943	178	1053	N.D.	
66) Di-n-Butyl Phthalate	8.507	149	11555	0.06 mg/l	93
67) Fluoranthene	9.071	202	2501	N.D.	
68) Benzidine	9.219	184	274	N.D.	
70) Pyrene	9.287	202	2878	N.D.	
72) Butyl Benzyl Phthalate	0.000		0	N.D. d	
73) 3,3'-Dichlorobenzidine	10.546	252	393	N.D.	
74) Benzo (a) Anthracene	10.567	228	3802	N.D.	
75) Bis(2-Ethylhexyl) Phth...	0.000		0	N.D. d	
76) Chrysene	10.601	228	1859	N.D.	
77) Di-n-Octyl Phthalate	11.427	149	740	N.D.	
78) Benzo (b) Fluoranthene	11.893	252	2073	N.D.	
79) Benzo (k) Fluoranthene	11.931	252	1229	N.D.	
80) Benzo (a) Pyrene	12.321	252	1454	N.D.	
82) Indeno (1,2,3-c,d) Pyrene	13.829	276	1487	N.D.	
83) Dibenz (a,h) Anthracene	13.825	278	390	N.D.	
84) Benzo (g,h,i) Perylene	14.206	276	2111	Below Cal #	75

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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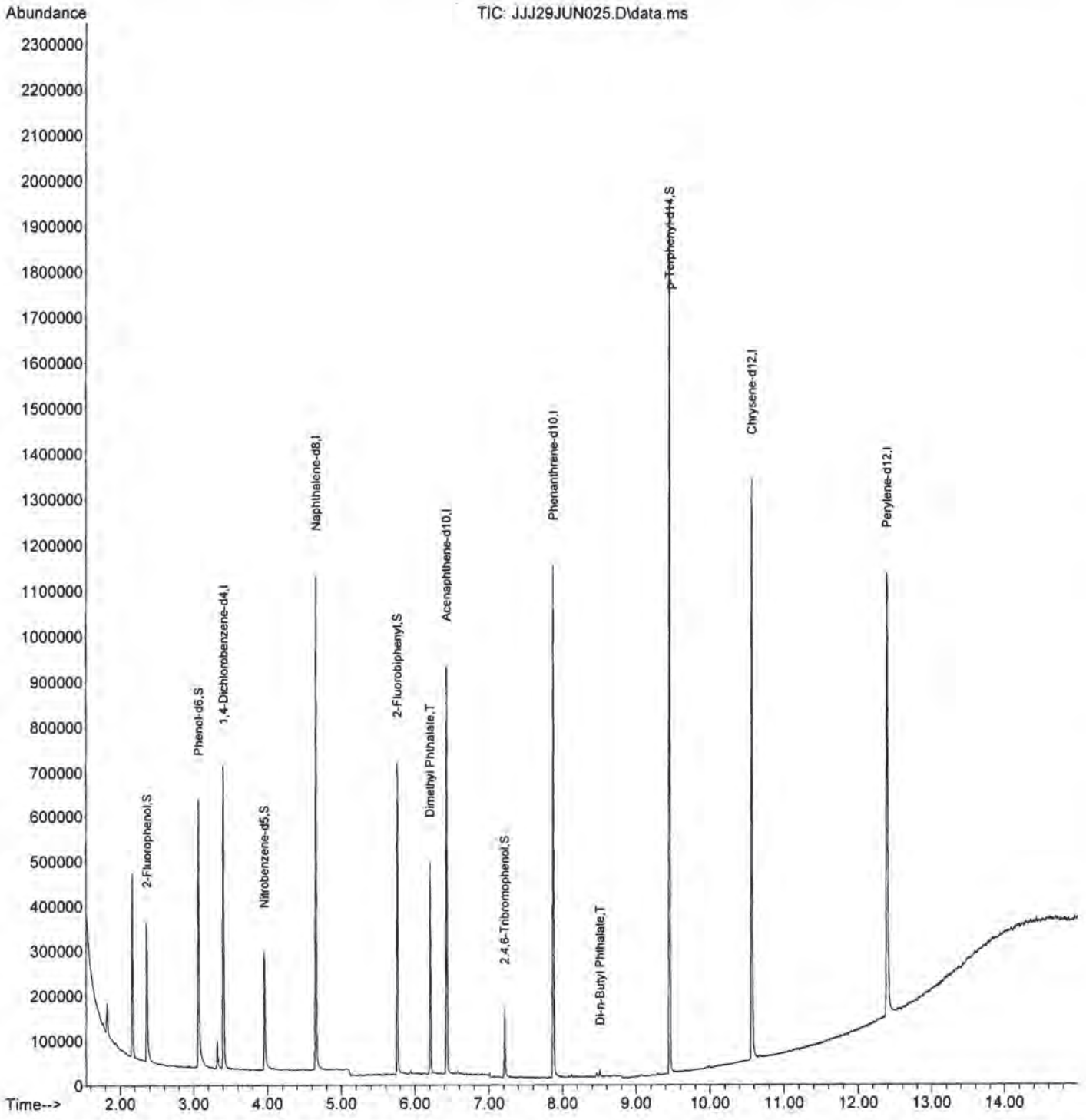
Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN025.D Vial: 25
Acq On : 29 Jun 2018 5:28 pm Operator: N8CZ
Sample : 18-06-1646-8 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 17:28:23 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M



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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: 18-06-1646
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-07-11 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-07-13 12:56
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180713\JJJ13JUL006.D\JJJ13JUL006.rr

 # 14 **CLIENT SAMPLE NUMBER: 1802258-59 / TP-21-0-5**

LCS/MB BATCH: 180711L11
MS/MSD BATCH:
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.30 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.99

COMMENT: Sample extracted outside recommended holding time.

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
1,2,4-Trichlorobenzene	0.000	1.00	ND	0.0099	w
1,2-Dichlorobenzene	0.000	1.00	ND	0.0099	w
1,3-Dichlorobenzene	0.000	1.00	ND	0.0099	w
1,4-Dichlorobenzene	0.000	1.00	ND	0.0099	w
1-Methylnaphthalene	0.000	1.00	ND	0.0099	w
2,4,5-Trichlorophenol	0.000	1.00	ND	0.25	w
2,4,6-Trichlorophenol	0.000	1.00	ND	0.25	w
2,4-Dichlorophenol	0.000	1.00	ND	0.25	w
2,4-Dimethylphenol	0.000	1.00	ND	0.49	w
2,4-Dinitrophenol	0.000	1.00	ND	0.25	w
2,4-Dinitrotoluene	0.000	1.00	ND	0.0099	w
2,6-Dichlorophenol	0.000	1.00	ND	0.25	w
2,6-Dinitrotoluene	0.000	1.00	ND	0.0099	w
2-Chloronaphthalene	0.000	1.00	ND	0.0099	w
2-Chlorophenol	0.000	1.00	ND	0.0099	w
2-Methylnaphthalene	0.000	1.00	ND	0.0099	w
2-Methylphenol	0.000	1.00	ND	0.25	w
2-Nitroaniline	0.000	1.00	ND	0.25	w
2-Nitrophenol	0.000	1.00	ND	0.25	w
3,3'-Dichlorobenzidine	0.000	1.00	ND	0.25	w
3-Nitroaniline	0.000	1.00	ND	0.25	w
3/4-Methylphenol	0.000	1.00	ND	0.099	w
4-Bromophenyl-Phenyl Ether	0.000	1.00	ND	0.0099	w
4,6-Dinitro-2-Methylphenol	0.000	1.00	ND	0.25	[w
4-Chloro-3-Methylphenol	0.000	1.00	ND	0.25	w
4-Chloroaniline	0.000	1.00	ND	0.25	w
4-Chlorophenyl-Phenyl Ether	0.000	1.00	ND	0.0099	w
4-Nitroaniline	0.000	1.00	ND	0.25	[w
4-Nitrophenol	0.000	1.00	ND	0.49	w
Acenaphthene	0.000	1.00	ND	0.0099	w
Acenaphthylene	0.000	1.00	ND	0.0099	w
Aniline	0.000	1.00	ND	0.0099	w
Anthracene	0.000	1.00	ND	0.0099	w
Azobenzene	0.000	1.00	ND	0.0099	w
Benzidine	0.000	1.00	ND	0.25	w
Benzo (a) Anthracene	0.000	1.00	ND	0.0099	w
Benzo (a) Pyrene	0.000	1.00	ND	0.0099	w
Benzo (b) Fluoranthene	0.000	1.00	ND	0.0099	w
Benzo (g,h,i) Perylene	0.000	1.00	ND	0.0099	w
Benzo (k) Fluoranthene	0.000	1.00	ND	0.0099	w

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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: **18-06-1646**
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-07-11 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-07-13 12:56
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180713\JJJ13JUL006.D\JJJ13JUL006.rr

 # 14 **CLIENT SAMPLE NUMBER: 1802258-59 / TP-21-0-5**

LCS/MB BATCH: 180711L11
MS/MSD BATCH:
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.30 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.99

COMMENT: Sample extracted outside recommended holding time.

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
Benzyl Alcohol	0.000	1.00	ND	0.0099	w
Bis(2-Chloroethoxy) Methane	0.000	1.00	ND	0.0099	w
Bis(2-Chloroethyl) Ether	0.000	1.00	ND	0.0099	w
Bis(2-Chloroisopropyl) Ether	0.000	1.00	ND	0.0099	w
Bis(2-Ethylhexyl) Phthalate	0.000	1.00	ND	0.25	w
Butyl Benzyl Phthalate	0.000	1.00	ND	0.25	w
Chrysene	0.000	1.00	ND	0.0099	w
Di-n-Butyl Phthalate	0.0721	1.00	ND	0.25	w
Di-n-Octyl Phthalate	0.000	1.00	ND	0.25	w
Dibenz (a,h) Anthracene	0.000	1.00	ND	0.0099	w
Dibenzofuran	0.000	1.00	ND	0.0099	w
Diethyl Phthalate	0.000	1.00	ND	0.0099	w
Dimethyl Phthalate	1.70	1.00	ND	0.25	w
Fluoranthene	0.000	1.00	ND	0.0099	w
Fluorene	0.000	1.00	ND	0.0099	w
Hexachloro-1,3-Butadiene	0.000	1.00	ND	0.0099	w
Hexachlorobenzene	0.000	1.00	ND	0.0099	w
Hexachlorocyclopentadiene	0.000	1.00	ND	0.0099	w
Hexachloroethane	0.000	1.00	ND	0.0099	w
Indeno (1,2,3-c,d) Pyrene	0.000	1.00	ND	0.0099	w
Isophorone	0.000	1.00	ND	0.49	w
N-Nitroso-di-n-propylamine	0.000	1.00	ND	0.0099	w
N-Nitrosodimethylamine	0.000	1.00	ND	0.0099	w
N-Nitrosodiphenylamine	0.000	1.00	ND	0.0099	w
Naphthalene	0.0564	1.00	ND	0.0099	w
Nitrobenzene	0.000	1.00	ND	0.0099	w
Pentachlorophenol	0.000	1.00	ND	0.25	w
Phenanthrene	0.000	1.00	ND	0.0099	w
Phenol	0.000	1.00	ND	0.0099	w
Pyrene	0.000	1.00	ND	0.0099	w
Pyridine	0.000	1.00	ND	0.0099	w

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN031.D Vial: 31
Acq On : 29 Jun 2018 7:16 pm Operator: N8CZ
Sample : 18-06-1646-14 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 17:35:13 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	3.408	152	230623	5.00 mg/l	# 0.00
19) Naphthalene-d8	4.655	136	831806	5.00 mg/l	0.00
36) Acenaphthene-d10	6.427	164	324262	5.00 mg/l	0.00
56) Phenanthrene-d10	7.875	188	1144263	5.00 mg/l	0.00
69) Chrysene-d12	10.567	240	1360905	5.00 mg/l	-0.01
81) Perylene-d12	12.398	264	1323006	5.00 mg/l	0.00
System Monitoring Compounds					
4) 2-Fluorophenol	2.365	112	237116	4.55 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 45.50%		
6) Phenol-d6	3.069	99	474478	7.16 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 71.60%		
20) Nitrobenzene-d5	3.957	82	181880	2.98 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 29.80%		
41) 2-Fluorobiphenyl	5.760	172	623344	5.08 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 50.80%		
60) 2,4,6-Tribromophenol	7.214	330	145519	5.31 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 53.10%		
71) p-Terphenyl-d14	9.457	244	2025465	7.25 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 72.50%		
Target Compounds					Qvalue
2) Pyridine	0.000		0	N.D. d	
3) N-Nitrosodimethylamine	0.000		0	N.D.	
5) Aniline	3.136	93	648	N.D.	
7) Phenol	0.000		0	N.D. d	
8) Bis(2-Chloroethyl) Ether	3.136	93	648	N.D.	
9) 2-Chlorophenol	0.000		0	N.D. d	
10) 1,3-Dichlorobenzene	3.377	146	863	N.D.	
11) 1,4-Dichlorobenzene	3.420	146	812	N.D.	
12) Benzyl Alcohol	0.000		0	N.D. d	
13) 1,2-Dichlorobenzene	3.599	146	790	N.D.	
14) 2-Methylphenol	3.655	108	690	N.D.	
15) Bis(2-Chloroisopropyl)...	3.692	45	1053	N.D.	
16) 3/4-Methylphenol	0.000		0	N.D. d	
17) N-Nitroso-di-n-propyla...	3.822	70	548	N.D.	
18) Hexachloroethane	0.000		0	N.D. d	
21) Nitrobenzene	0.000		0	N.D. d	
22) Isophorone	4.204	82	1196	N.D.	
23) 2-Nitrophenol	4.272	139	117	N.D.	
24) 2,4-Dimethylphenol	4.346	107	982	N.D.	
25) Benzoic Acid	0.000		0	N.D. d	
26) Bis(2-Chloroethoxy) Me...	4.433	93	798	N.D.	
27) 2,4-Dichlorophenol	4.538	162	509	N.D.	
28) 1,2,4-Trichlorobenzene	4.624	180	504	N.D.	
29) Naphthalene	4.680	128	2454	N.D.	
30) 2,6-Dichlorophenol	4.766	162	314	N.D.	
31) 4-Chloroaniline	4.772	127	292	N.D.	
32) Hexachloro-1,3-Butadiene	4.865	225	594	N.D.	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN031.D Vial: 31
Acq On : 29 Jun 2018 7:16 pm Operator: N8CZ
Sample : 18-06-1646-14 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 17:35:13 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
33) 4-Chloro-3-Methylphenol	5.204	107	256	N.D.	
34) 2-Methylnaphthalene	5.371	142	806	N.D.	
35) 1-Methylnaphthalene	5.482	142	803	N.D.	
37) Hexachlorocyclopentadiene	5.569	237	190	N.D.	
38) 2,4,6-Trichlorophenol	5.699	196	297	N.D.	
39) 2,4,5-Trichlorophenol	5.748	196	165	N.D.	
40) 2-Chloronaphthalene	5.859	162	535	N.D.	
42) 2-Nitroaniline	0.000		0	N.D. d	
43) Dimethyl Phthalate	6.205	163	514055	4.05 mg/l	99
44) Acenaphthylene	6.279	152	1660	N.D.	
45) 3-Nitroaniline	6.396	138	116	N.D.	
46) Acenaphthene	0.000		0	N.D. d	
47) 2,4-Dinitrophenol	0.000		0	N.D. d	
48) 4-Nitrophenol	6.656	65	296	N.D.	
49) Dibenzofuran	6.619	168	1185	N.D.	
50) 2,4-Dinitrotoluene	0.000		0	N.D. d	
51) 2,6-Dinitrotoluene	0.000		0	N.D. d	
52) Diethyl Phthalate	0.000		0	N.D. d	
53) 4-Chlorophenyl-Phenyl ...	6.965	204	722	N.D.	
54) Fluorene	6.952	166	1117	N.D.	
55) 4-Nitroaniline	7.014	138	187	N.D.	
57) 4,6-Dinitro-2-Methylph...	0.000		0	N.D. d	
58) N-Nitrosodiphenylamine	7.082	169	920	N.D.	
59) Azobenzene	7.112	77	1811	N.D.	
61) 4-Bromophenyl-Phenyl E...	7.438	248	371	N.D.	
62) Hexachlorobenzene	7.578	284	533	N.D.	
63) Pentachlorophenol	0.000		0	N.D. d	
64) Phenanthrene	0.000		0	N.D. d	
65) Anthracene	7.943	178	2059	N.D.	
66) Di-n-Butyl Phthalate	8.508	149	24673	0.09 mg/l	97
67) Fluoranthene	9.071	202	9162	0.03 mg/l	95
68) Benzidine	9.182	184	125	N.D.	
70) Pyrene	9.288	202	11339	0.03 mg/l	100
72) Butyl Benzyl Phthalate	0.000		0	N.D. d	
73) 3,3'-Dichlorobenzidine	10.546	252	568	N.D.	
74) Benzo (a) Anthracene	10.567	228	6696	N.D.	
75) Bis(2-Ethylhexyl) Phth...	0.000		0	N.D. d	
76) Chrysene	10.597	228	5799	N.D.	
77) Di-n-Octyl Phthalate	11.440	149	1710	N.D.	
78) Benzo (b) Fluoranthene	11.898	252	4839	N.D.	
79) Benzo (k) Fluoranthene	11.982	252	623	N.D.	
80) Benzo (a) Pyrene	12.325	252	4672	N.D.	
82) Indeno (1,2,3-c,d) Pyrene	13.838	276	3931	N.D.	
83) Dibenz (a,h) Anthracene	13.855	278	1425	N.D.	
84) Benzo (g,h,i) Perylene	14.211	276	4757	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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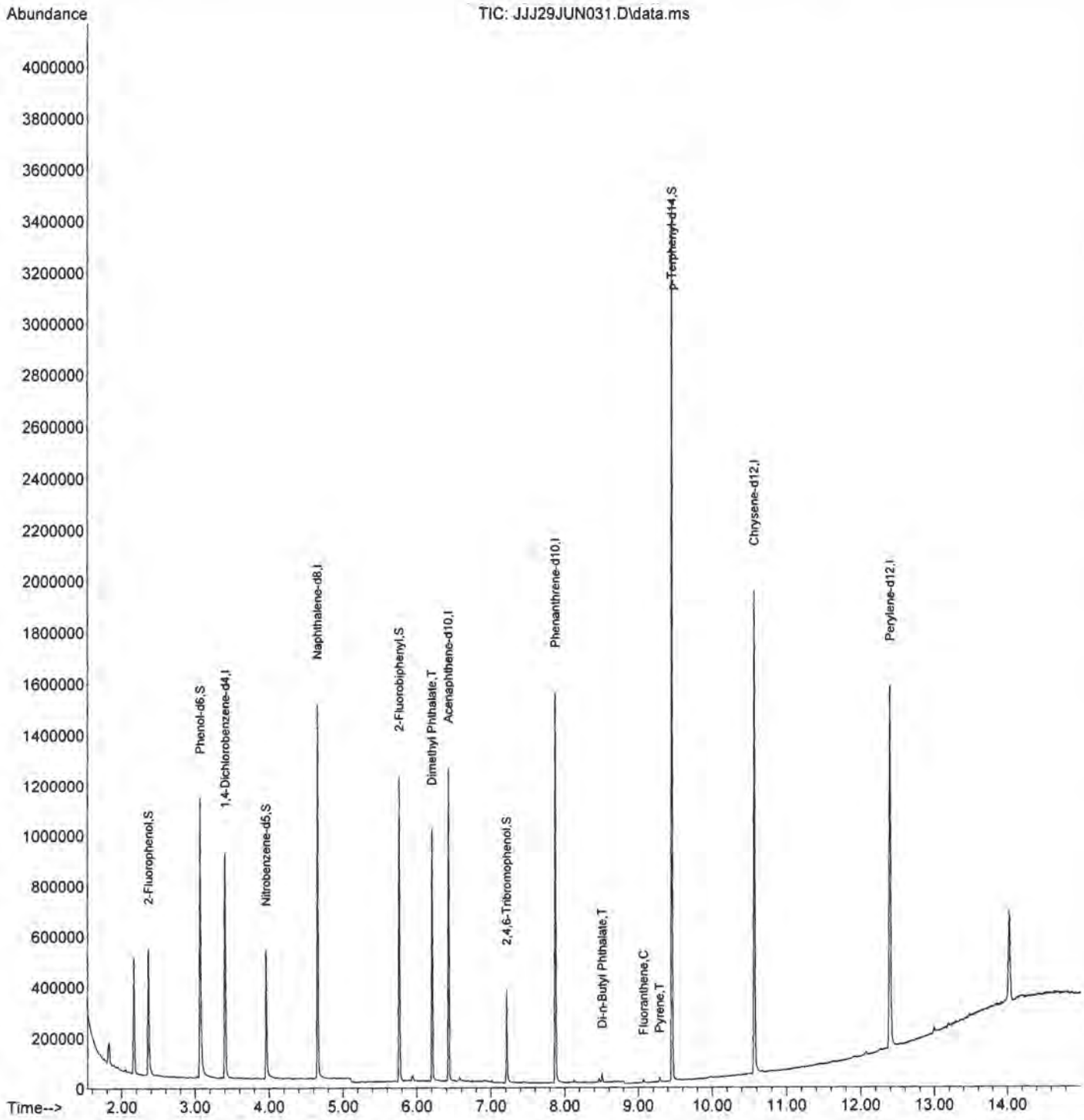
Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN031.D Vial: 31
Acq On : 29 Jun 2018 7:16 pm Operator: N8CZ
Sample : 18-06-1646-14 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 17:35:13 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M



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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: 18-06-1646
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-06-29 19:16
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180629\JJJ29JUN031.D\JJJ29JUN031.rr

 # 14 **CLIENT SAMPLE NUMBER: 1802258-59 / TP-21-0-5**

LCS/MB BATCH: 180626L09
MS/MSD BATCH: 180626S09
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.50 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.98

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
1,2,4-Trichlorobenzene	0.000	1.00	ND	0.0098	
1,2-Dichlorobenzene	0.000	1.00	ND	0.0098	
1,3-Dichlorobenzene	0.000	1.00	ND	0.0098	
1,4-Dichlorobenzene	0.000	1.00	ND	0.0098	
1-Methylnaphthalene	0.000	1.00	ND	0.0098	
2,4,5-Trichlorophenol	0.000	1.00	ND	0.24	
2,4,6-Trichlorophenol	0.000	1.00	ND	0.24	
2,4-Dichlorophenol	0.000	1.00	ND	0.24	
2,4-Dimethylphenol	0.000	1.00	ND	0.49	
2,4-Dinitrophenol	0.000	1.00	ND	0.24	]
2,4-Dinitrotoluene	0.000	1.00	ND	0.0098	
2,6-Dichlorophenol	0.000	1.00	ND	0.24	
2,6-Dinitrotoluene	0.000	1.00	ND	0.0098	
2-Chloronaphthalene	0.000	1.00	ND	0.0098	
2-Chlorophenol	0.000	1.00	ND	0.0098	
2-Methylnaphthalene	0.000	1.00	ND	0.0098	
2-Methylphenol	0.000	1.00	ND	0.24	
2-Nitroaniline	0.000	1.00	ND	0.24	
2-Nitrophenol	0.000	1.00	ND	0.24	
3,3'-Dichlorobenzidine	0.000	1.00	ND	0.24	
3-Nitroaniline	0.000	1.00	ND	0.24	
3/4-Methylphenol	0.000	1.00	ND	0.098	
4-Bromophenyl-Phenyl Ether	0.000	1.00	ND	0.0098	
4,6-Dinitro-2-Methylphenol	0.000	1.00	ND	0.24	
4-Chloro-3-Methylphenol	0.000	1.00	ND	0.24	
4-Chloroaniline	0.000	1.00	ND	0.24	
4-Chlorophenyl-Phenyl Ether	0.000	1.00	ND	0.0098	
4-Nitroaniline	0.000	1.00	ND	0.24	[
4-Nitrophenol	0.000	1.00	ND	0.49	
Acenaphthene	0.000	1.00	ND	0.0098	
Acenaphthylene	0.000	1.00	ND	0.0098	
Aniline	0.000	1.00	ND	0.0098	
Anthracene	0.000	1.00	ND	0.0098	
Azobenzene	0.000	1.00	ND	0.0098	
Benzidine	0.000	1.00	ND	0.24	]
Benzo (a) Anthracene	0.000	1.00	ND	0.0098	
Benzo (a) Pyrene	0.000	1.00	ND	0.0098	
Benzo (b) Fluoranthene	0.000	1.00	ND	0.0098	
Benzo (g,h,i) Perylene	0.000	1.00	ND	0.0098	
Benzo (k) Fluoranthene	0.000	1.00	ND	0.0098	

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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: **18-06-1646**
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-06-29 19:16
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180629\JJJ29JUN031.D\JJJ29JUN031.rr

 # 14 **CLIENT SAMPLE NUMBER: 1802258-59 / TP-21-0-5**

LCS/MB BATCH: 180626L09
MS/MSD BATCH: 180626S09
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.50 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 0.98

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
Benzyl Alcohol	0.000	1.00	ND	0.0098	
Bis(2-Chloroethoxy) Methane	0.000	1.00	ND	0.0098	
Bis(2-Chloroethyl) Ether	0.000	1.00	ND	0.0098	
Bis(2-Chloroisopropyl) Ether	0.000	1.00	ND	0.0098	
Bis(2-Ethylhexyl) Phthalate	0.000	1.00	ND	0.24	
Butyl Benzyl Phthalate	0.000	1.00	ND	0.24	
Chrysene	0.000	1.00	ND	0.0098	
Di-n-Butyl Phthalate	0.0864	1.00	ND	0.24	
Di-n-Octyl Phthalate	0.000	1.00	ND	0.24	
Dibenz (a,h) Anthracene	0.000	1.00	ND	0.0098	
Dibenzofuran	0.000	1.00	ND	0.0098	
Diethyl Phthalate	0.000	1.00	ND	0.0098	
Dimethyl Phthalate	4.05	1.00	0.395	0.24	
Fluoranthene	0.0283	1.00	ND	0.0098	
Fluorene	0.000	1.00	ND	0.0098	
Hexachloro-1,3-Butadiene	0.000	1.00	ND	0.0098	
Hexachlorobenzene	0.000	1.00	ND	0.0098	
Hexachlorocyclopentadiene	0.000	1.00	ND	0.0098	
Hexachloroethane	0.000	1.00	ND	0.0098	
Indeno (1,2,3-c,d) Pyrene	0.000	1.00	ND	0.0098	
Isophorone	0.000	1.00	ND	0.49	
N-Nitroso-di-n-propylamine	0.000	1.00	ND	0.0098	
N-Nitrosodimethylamine	0.000	1.00	ND	0.0098	
N-Nitrosodiphenylamine	0.000	1.00	ND	0.0098	
Naphthalene	0.000	1.00	ND	0.0098	
Nitrobenzene	0.000	1.00	ND	0.0098	
Pentachlorophenol	0.000	1.00	ND	0.24	
Phenanthrene	0.000	1.00	ND	0.0098	
Phenol	0.000	1.00	ND	0.0098	
Pyrene	0.0326	1.00	ND	0.0098	
Pyridine	0.000	1.00	ND	0.0098	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180713\JJJ13JUL006.D Vial: 6
Acq On : 13 Jul 2018 12:56 pm Operator: N8CZ
Sample : 18-06-1646-14 RX Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 13 14:48:14 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jul 13 11:56:03 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.408	152	233145	5.00	mg/l	0.00
19) Naphthalene-d8	4.655	136	859203	5.00	mg/l	0.00
36) Acenaphthene-d10	6.427	164	329998	5.00	mg/l	0.00
56) Phenanthrene-d10	7.875	188	1129948	5.00	mg/l	0.00
69) Chrysene-d12	10.567	240	1360155	5.00	mg/l	0.00
81) Perylene-d12	12.393	264	1383020	5.00	mg/l	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	2.359	112	3452656	65.52	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 655.20%#			
6) Phenol-d6	3.062	99	4481547	66.91	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 669.10%#			
20) Nitrobenzene-d5	3.957	82	4415666	70.06	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 700.60%#			
41) 2-Fluorobiphenyl	5.766	172	7703862	61.66	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 616.60%#			
60) 2,4,6-Tribromophenol	7.213	330	1733309	64.11	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 641.10%#			
71) p-Terphenyl-d14	9.453	244	10556502	37.79	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 377.90%#			
Target Compounds						Qvalue
2) Pyridine	0.000		0	N.D.	d	
3) N-Nitrosodimethylamine	0.000		0	N.D.	d	
5) Aniline	0.000		0	N.D.	d	
7) Phenol	0.000		0	N.D.	d	
8) Bis(2-Chloroethyl) Ether	0.000		0	N.D.	d	
9) 2-Chlorophenol	0.000		0	N.D.	d	
10) 1,3-Dichlorobenzene	0.000		0	N.D.	d	
11) 1,4-Dichlorobenzene	0.000		0	N.D.	d	
12) Benzyl Alcohol	3.544	79	427	N.D.		
13) 1,2-Dichlorobenzene	0.000		0	N.D.	d	
14) 2-Methylphenol	0.000		0	N.D.	d	
15) Bis(2-Chloroisopropyl)...	0.000		0	N.D.	d	
16) 3/4-Methylphenol	0.000		0	N.D.	d	
17) N-Nitroso-di-n-propyla...	0.000		0	N.D.	d	
18) Hexachloroethane	0.000		0	N.D.	d	
21) Nitrobenzene	0.000		0	N.D.	d	
22) Isophorone	0.000		0	N.D.	d	
23) 2-Nitrophenol	0.000		0	N.D.	d	
24) 2,4-Dimethylphenol	4.334	107	1191	N.D.		
25) Benzoic Acid	0.000		0	N.D.	d	
26) Bis(2-Chloroethoxy) Me...	0.000		0	N.D.	d	
27) 2,4-Dichlorophenol	4.531	162	1117	N.D.		
28) 1,2,4-Trichlorobenzene	0.000		0	N.D.	d	
29) Naphthalene	4.679	128	10104	0.06	mg/l	84
30) 2,6-Dichlorophenol	4.883	162	403	N.D.		
31) 4-Chloroaniline	4.760	127	1265	N.D.		
32) Hexachloro-1,3-Butadiene	0.000		0	N.D.	d	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180713\JJJ13JUL006.D Vial: 6
Acq On : 13 Jul 2018 12:56 pm Operator: N8CZ
Sample : 18-06-1646-14 RX Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 13 14:48:14 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jul 13 11:56:03 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
33) 4-Chloro-3-Methylphenol	5.260	107	643	N.D.	
34) 2-Methylnaphthalene	0.000		0	N.D. d	
35) 1-Methylnaphthalene	0.000		0	N.D. d	
37) Hexachlorocyclopentadiene	5.606	237	556	N.D.	
38) 2,4,6-Trichlorophenol	5.692	196	317	N.D.	
39) 2,4,5-Trichlorophenol	5.816	196	21	N.D.	
40) 2-Chloronaphthalene	5.859	162	1917	N.D.	
42) 2-Nitroaniline	0.000		0	N.D. d	
43) Dimethyl Phthalate	6.205	163	220039	1.70 mg/l	100
44) Acenaphthylene	6.279	152	2280	N.D.	
45) 3-Nitroaniline	6.396	138	66	N.D.	
46) Acenaphthene	6.458	154	1632	N.D.	
47) 2,4-Dinitrophenol	0.000		0	N.D. d	
48) 4-Nitrophenol	0.000		0	N.D. d	
49) Dibenzofuran	6.619	168	2130	N.D.	
50) 2,4-Dinitrotoluene	0.000		0	N.D. d	
51) 2,6-Dinitrotoluene	0.000		0	N.D. d	
52) Diethyl Phthalate	0.000		0	N.D. d	
53) 4-Chlorophenyl-Phenyl ...	6.965	204	671	N.D.	
54) Fluorene	6.958	166	1544	N.D.	
55) 4-Nitroaniline	7.008	138	163	N.D.	
57) 4,6-Dinitro-2-Methylph...	0.000		0	N.D. d	
58) N-Nitrosodiphenylamine	7.086	169	991	N.D.	
59) Azobenzene	7.116	77	2114	N.D.	
61) 4-Bromophenyl-Phenyl E...	7.438	248	513	N.D.	
62) Hexachlorobenzene	7.582	284	479	N.D.	
63) Pentachlorophenol	0.000		0	N.D. d	
64) Phenanthrene	7.901	178	2654	N.D.	
65) Anthracene	7.943	178	1419	N.D.	
66) Di-n-Butyl Phthalate	8.507	149	20354	0.07 mg/l	96
67) Fluoranthene	9.071	202	1792	N.D.	
68) Benzidine	9.211	184	1462	N.D.	
70) Pyrene	9.287	202	2238	N.D.	
72) Butyl Benzyl Phthalate	9.986	149	2482	N.D.	
73) 3,3'-Dichlorobenzidine	10.508	252	114	N.D.	
74) Benzo (a) Anthracene	10.567	228	4151	N.D.	
75) Bis(2-Ethylhexyl) Phth...	10.669	149	2761	N.D.	
76) Chrysene	10.631	228	275	N.D.	
77) Di-n-Octyl Phthalate	11.389	149	851	N.D.	
78) Benzo (b) Fluoranthene	11.796	252	163	N.D.	
79) Benzo (k) Fluoranthene	12.008	252	625	N.D.	
80) Benzo (a) Pyrene	12.253	252	2347	N.D.	
82) Indeno (1,2,3-c,d) Pyrene	13.834	276	4115	N.D.	
83) Dibenz (a,h) Anthracene	13.838	278	3956	N.D.	
84) Benzo (g,h,i) Perylene	14.185	276	3576	Below Cal	89

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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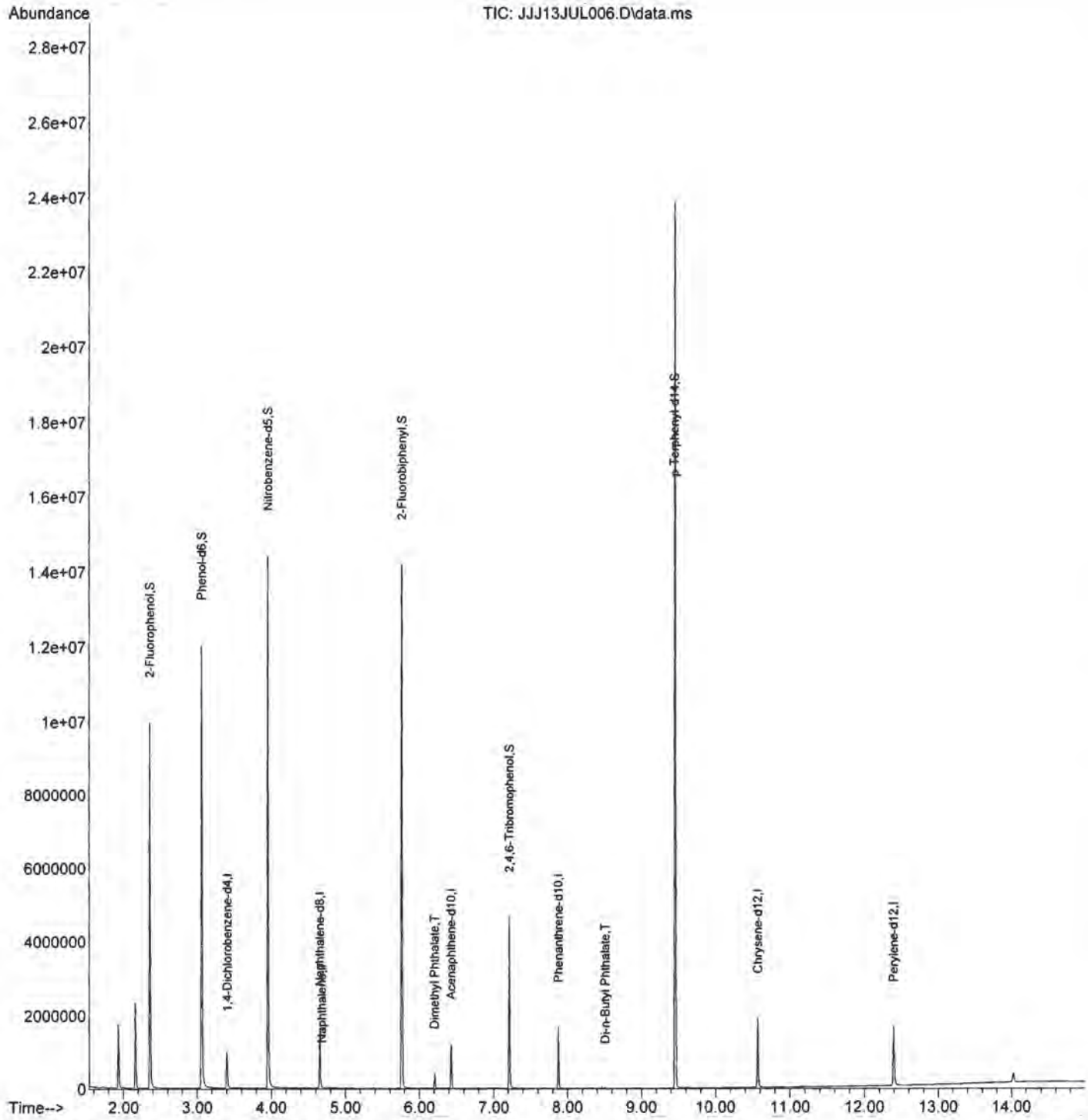
Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180713\JJJ13JUL006.D Vial: 6
Acq On : 13 Jul 2018 12:56 pm Operator: N8CZ
Sample : 18-06-1646-14 RX Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 13 14:48:14 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jul 13 11:56:03 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M



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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: 18-06-1646
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-06-29 19:34
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180629\JJJ29JUN032.D\JJJ29JUN032.rr

 # 15 **CLIENT SAMPLE NUMBER: 1802258-60 / TP-21-5-9**

LCS/MB BATCH: 180626L09
MS/MSD BATCH: 180626S09
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.10 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 1.00

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
1,2,4-Trichlorobenzene	0.000	1.00	ND	0.010	
1,2-Dichlorobenzene	0.000	1.00	ND	0.010	
1,3-Dichlorobenzene	0.000	1.00	ND	0.010	
1,4-Dichlorobenzene	0.000	1.00	ND	0.010	
1-Methylnaphthalene	0.000	1.00	ND	0.010	
2,4,5-Trichlorophenol	0.000	1.00	ND	0.25	
2,4,6-Trichlorophenol	0.000	1.00	ND	0.25	
2,4-Dichlorophenol	0.000	1.00	ND	0.25	
2,4-Dimethylphenol	0.000	1.00	ND	0.50	
2,4-Dinitrophenol	0.000	1.00	ND	0.25	]
2,4-Dinitrotoluene	0.000	1.00	ND	0.010	
2,6-Dichlorophenol	0.000	1.00	ND	0.25	
2,6-Dinitrotoluene	0.000	1.00	ND	0.010	
2-Chloronaphthalene	0.000	1.00	ND	0.010	
2-Chlorophenol	0.000	1.00	ND	0.010	
2-Methylnaphthalene	0.000	1.00	ND	0.010	
2-Methylphenol	0.000	1.00	ND	0.25	
2-Nitroaniline	0.000	1.00	ND	0.25	
2-Nitrophenol	0.000	1.00	ND	0.25	
3,3'-Dichlorobenzidine	0.000	1.00	ND	0.25	
3-Nitroaniline	0.000	1.00	ND	0.25	
3/4-Methylphenol	0.000	1.00	ND	0.10	
4-Bromophenyl-Phenyl Ether	0.000	1.00	ND	0.010	
4,6-Dinitro-2-Methylphenol	0.000	1.00	ND	0.25	
4-Chloro-3-Methylphenol	0.000	1.00	ND	0.25	
4-Chloroaniline	0.000	1.00	ND	0.25	
4-Chlorophenyl-Phenyl Ether	0.000	1.00	ND	0.010	
4-Nitroaniline	0.000	1.00	ND	0.25	[
4-Nitrophenol	0.000	1.00	ND	0.50	
Acenaphthene	0.000	1.00	ND	0.010	
Acenaphthylene	0.000	1.00	ND	0.010	
Aniline	0.000	1.00	ND	0.010	
Anthracene	0.000	1.00	ND	0.010	
Azobenzene	0.000	1.00	ND	0.010	
Benzidine	0.000	1.00	ND	0.25	]
Benzo (a) Anthracene	0.000	1.00	ND	0.010	
Benzo (a) Pyrene	0.000	1.00	ND	0.010	
Benzo (b) Fluoranthene	0.000	1.00	ND	0.010	
Benzo (g,h,i) Perylene	0.000	1.00	ND	0.010	
Benzo (k) Fluoranthene	0.000	1.00	ND	0.010	

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RAW DATA SHEET
FOR METHOD: EPA 8270C SIM

WORK ORDER: **18-06-1646**
INSTRUMENT: GC/MS JJJ
EXTRACTION : EPA 3545
D/T EXTRACTED: 2018-06-26 00:00

ANALYZED BY: 923
D/T ANALYZED: 2018-06-29 19:34
REVIEWED BY:
D/T REVIEWED:

DATA FILE: W:\GCMS_JJJ\GCMS_JJJ_DATA\2018\180629\JJJ29JUN032.D\JJJ29JUN032.rr

 # 15 **CLIENT SAMPLE NUMBER:** **1802258-60 / TP-21-5-9**

LCS/MB BATCH: 180626L09
MS/MSD BATCH: 180626S09
UNITS: mg/kg

SAMPLE VOLUME / WEIGHT: DEFAULT: 20.00 g / ACTUAL: 20.10 g
FINAL VOLUME / WEIGHT: DEFAULT: 2.00 ml / ACTUAL: 2.00 ml
ADJUSTMENT RATIO TO PF: 1.00

COMMENT:

COMPOUND	ON COL CONC	DF	CONC	RL	QUAL
Benzyl Alcohol	0.000	1.00	ND	0.010	
Bis(2-Chloroethoxy) Methane	0.000	1.00	ND	0.010	
Bis(2-Chloroethyl) Ether	0.000	1.00	ND	0.010	
Bis(2-Chloroisopropyl) Ether	0.000	1.00	ND	0.010	
Bis(2-Ethylhexyl) Phthalate	0.000	1.00	ND	0.25	
Butyl Benzyl Phthalate	0.000	1.00	ND	0.25	
Chrysene	0.000	1.00	ND	0.010	
Di-n-Butyl Phthalate	0.0777	1.00	ND	0.25	
Di-n-Octyl Phthalate	0.000	1.00	ND	0.25	
Dibenz (a,h) Anthracene	0.000	1.00	ND	0.010	
Dibenzofuran	0.000	1.00	ND	0.010	
Diethyl Phthalate	0.000	1.00	ND	0.010	
Dimethyl Phthalate	2.52	1.00	0.250	0.25	
Fluoranthene	0.000	1.00	ND	0.010	
Fluorene	0.000	1.00	ND	0.010	
Hexachloro-1,3-Butadiene	0.000	1.00	ND	0.010	
Hexachlorobenzene	0.000	1.00	ND	0.010	
Hexachlorocyclopentadiene	0.000	1.00	ND	0.010	
Hexachloroethane	0.000	1.00	ND	0.010	
Indeno (1,2,3-c,d) Pyrene	0.000	1.00	ND	0.010	
Isophorone	0.000	1.00	ND	0.50	
N-Nitroso-di-n-propylamine	0.000	1.00	ND	0.010	
N-Nitrosodimethylamine	0.000	1.00	ND	0.010	
N-Nitrosodiphenylamine	0.000	1.00	ND	0.010	
Naphthalene	0.000	1.00	ND	0.010	
Nitrobenzene	0.000	1.00	ND	0.010	
Pentachlorophenol	0.000	1.00	ND	0.25	
Phenanthrene	0.000	1.00	ND	0.010	
Phenol	0.000	1.00	ND	0.010	
Pyrene	0.000	1.00	ND	0.010	
Pyridine	0.000	1.00	ND	0.010	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN032.D Vial: 32
Acq On : 29 Jun 2018 7:34 pm Operator: N8CZ
Sample : 18-06-1646-15 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 17:36:07 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	3.402	152	215591	5.00 mg/l	# 0.00
19) Naphthalene-d8	4.655	136	779490	5.00 mg/l	0.00
36) Acenaphthene-d10	6.427	164	306334	5.00 mg/l	0.00
56) Phenanthrene-d10	7.875	188	1080210	5.00 mg/l	0.00
69) Chrysene-d12	10.567	240	1226518	5.00 mg/l	-0.01
81) Perylene-d12	12.397	264	1184287	5.00 mg/l	0.00
System Monitoring Compounds					
4) 2-Fluorophenol	2.359	112	242621	4.98 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 49.80%	
6) Phenol-d6	3.062	99	409436	6.61 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 66.10%	
20) Nitrobenzene-d5	3.957	82	203415	3.56 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 35.60%	
41) 2-Fluorobiphenyl	5.760	172	474698	4.09 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 40.90%	
60) 2,4,6-Tribromophenol	7.213	330	130578	5.05 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	= 50.50%	
71) p-Terphenyl-d14	9.453	244	1678967	6.67 mg/l	-0.01
Spiked Amount 10.000	Range 0 - 200		Recovery	= 66.70%	
Target Compounds					Qvalue
2) Pyridine	1.729	52	1004	N.D.	
3) N-Nitrosodimethylamine	0.000		0	N.D.	
5) Aniline	3.068	93	362	N.D.	
7) Phenol	0.000		0	N.D. d	
8) Bis(2-Chloroethyl) Ether	3.149	93	350	N.D.	
9) 2-Chlorophenol	3.241	128	811	N.D.	
10) 1,3-Dichlorobenzene	3.371	146	613	N.D.	
11) 1,4-Dichlorobenzene	3.420	146	1142	N.D.	
12) Benzyl Alcohol	3.593	79	623	N.D.	
13) 1,2-Dichlorobenzene	3.599	146	605	N.D.	
14) 2-Methylphenol	0.000		0	N.D. d	
15) Bis(2-Chloroisopropyl)...	0.000		0	N.D. d	
16) 3/4-Methylphenol	3.809	107	558	N.D.	
17) N-Nitroso-di-n-propyla...	3.828	70	576	N.D.	
18) Hexachloroethane	0.000		0	N.D. d	
21) Nitrobenzene	4.013	77	865	N.D.	
22) Isophorone	4.204	82	1253	N.D.	
23) 2-Nitrophenol	0.000		0	N.D.	
24) 2,4-Dimethylphenol	4.340	107	972	N.D.	
25) Benzoic Acid	0.000		0	N.D. d	
26) Bis(2-Chloroethoxy) Me...	4.433	93	817	N.D.	
27) 2,4-Dichlorophenol	4.550	162	587	N.D.	
28) 1,2,4-Trichlorobenzene	4.618	180	622	N.D.	
29) Naphthalene	4.673	128	2367	N.D.	
30) 2,6-Dichlorophenol	4.766	162	500	N.D.	
31) 4-Chloroaniline	4.735	127	96	N.D.	
32) Hexachloro-1,3-Butadiene	4.871	225	650	N.D.	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN032.D Vial: 32
Acq On : 29 Jun 2018 7:34 pm Operator: N8CZ
Sample : 18-06-1646-15 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 17:36:07 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
33) 4-Chloro-3-Methylphenol	5.260	107	711	N.D.	
34) 2-Methylnaphthalene	5.371	142	810	N.D.	
35) 1-Methylnaphthalene	5.482	142	876	N.D.	
37) Hexachlorocyclopentadiene	5.593	237	227	N.D.	
38) 2,4,6-Trichlorophenol	5.686	196	361	N.D.	
39) 2,4,5-Trichlorophenol	5.723	196	208	N.D.	
40) 2-Chloronaphthalene	5.859	162	873	N.D.	
42) 2-Nitroaniline	0.000		0	N.D. d	
43) Dimethyl Phthalate	6.205	163	301322	2.52 mg/l	100
44) Acenaphthylene	6.273	152	1959	N.D.	
45) 3-Nitroaniline	6.421	138	284	N.D.	
46) Acenaphthene	6.458	154	912	N.D.	
47) 2,4-Dinitrophenol	0.000		0	N.D. d	
48) 4-Nitrophenol	6.576	65	480	N.D.	
49) Dibenzofuran	6.619	168	1170	N.D.	
50) 2,4-Dinitrotoluene	0.000		0	N.D. d	
51) 2,6-Dinitrotoluene	0.000		0	N.D. d	
52) Diethyl Phthalate	0.000		0	N.D. d	
53) 4-Chlorophenyl-Phenyl ...	6.965	204	554	N.D.	
54) Fluorene	6.958	166	975	N.D.	
55) 4-Nitroaniline	7.027	138	102	N.D.	
57) 4,6-Dinitro-2-Methylph...	0.000		0	N.D. d	
58) N-Nitrosodiphenylamine	7.086	169	635	N.D.	
59) Azobenzene	7.112	77	790	N.D.	
61) 4-Bromophenyl-Phenyl E...	7.443	248	348	N.D.	
62) Hexachlorobenzene	7.578	284	389	N.D.	
63) Pentachlorophenol	0.000		0	N.D. d	
64) Phenanthrene	0.000		0	N.D. d	
65) Anthracene	7.943	178	1460	N.D.	
66) Di-n-Butyl Phthalate	8.503	149	20959	0.08 mg/l	95
67) Fluoranthene	9.071	202	4809	N.D.	
68) Benzidine	9.215	184	116	N.D.	
70) Pyrene	9.287	202	5923	N.D.	
72) Butyl Benzyl Phthalate	0.000		0	N.D. d	
73) 3,3'-Dichlorobenzidine	10.537	252	743	N.D.	
74) Benzo (a) Anthracene	10.563	228	5568	N.D.	
75) Bis(2-Ethylhexyl) Phth...	0.000		0	N.D. d	
76) Chrysene	10.597	228	3517	N.D.	
77) Di-n-Octyl Phthalate	11.444	149	2412	N.D.	
78) Benzo (b) Fluoranthene	11.902	252	2758	N.D.	
79) Benzo (k) Fluoranthene	11.965	252	203	N.D.	
80) Benzo (a) Pyrene	12.325	252	3043	N.D.	
82) Indeno (1,2,3-c,d) Pyrene	13.834	276	3995	N.D.	
83) Dibenz (a,h) Anthracene	13.863	278	1415	N.D.	
84) Benzo (g,h,i) Perylene	14.207	276	4300	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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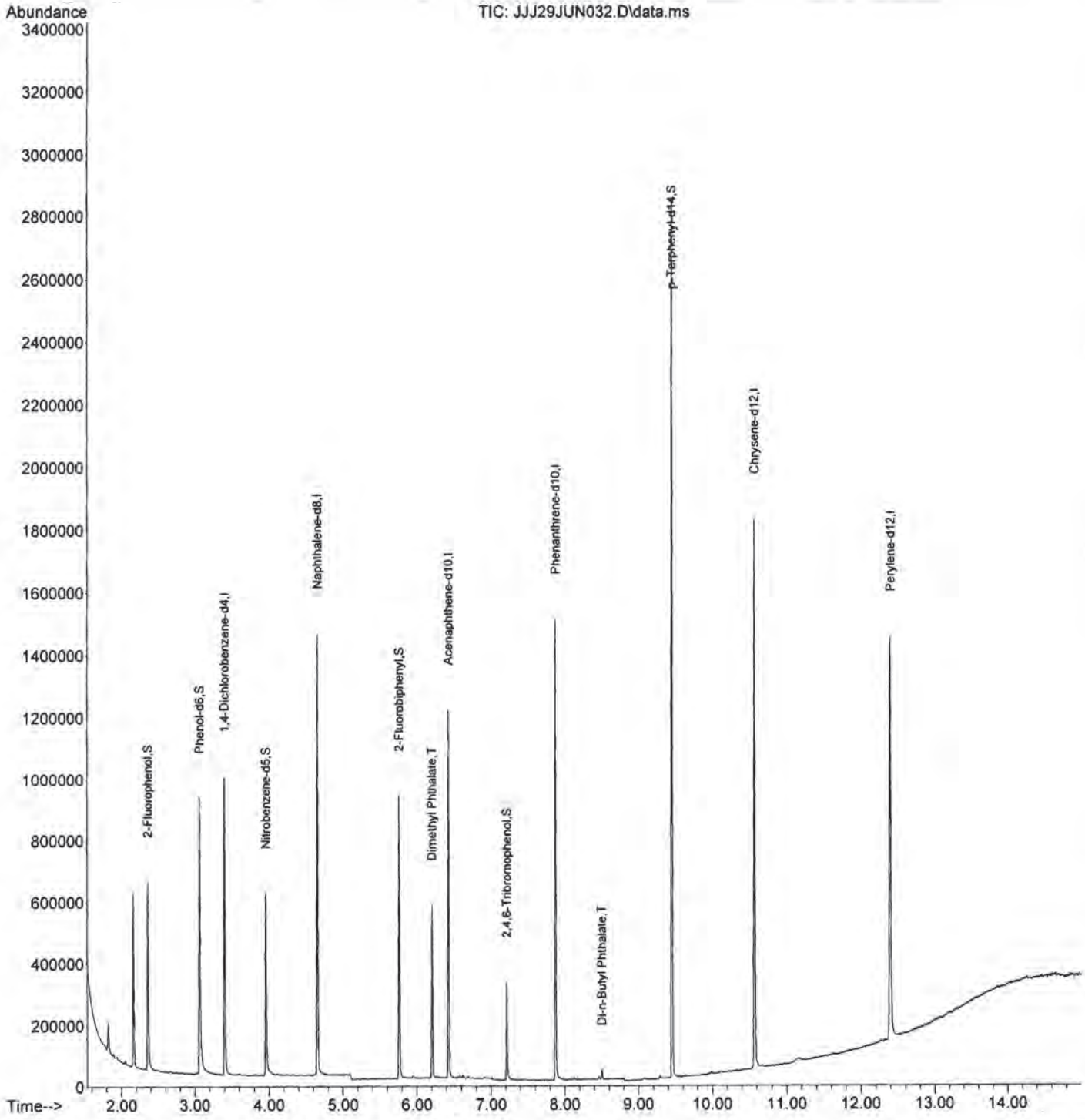
Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN032.D Vial: 32
Acq On : 29 Jun 2018 7:34 pm Operator: N8CZ
Sample : 18-06-1646-15 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 17:36:07 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M



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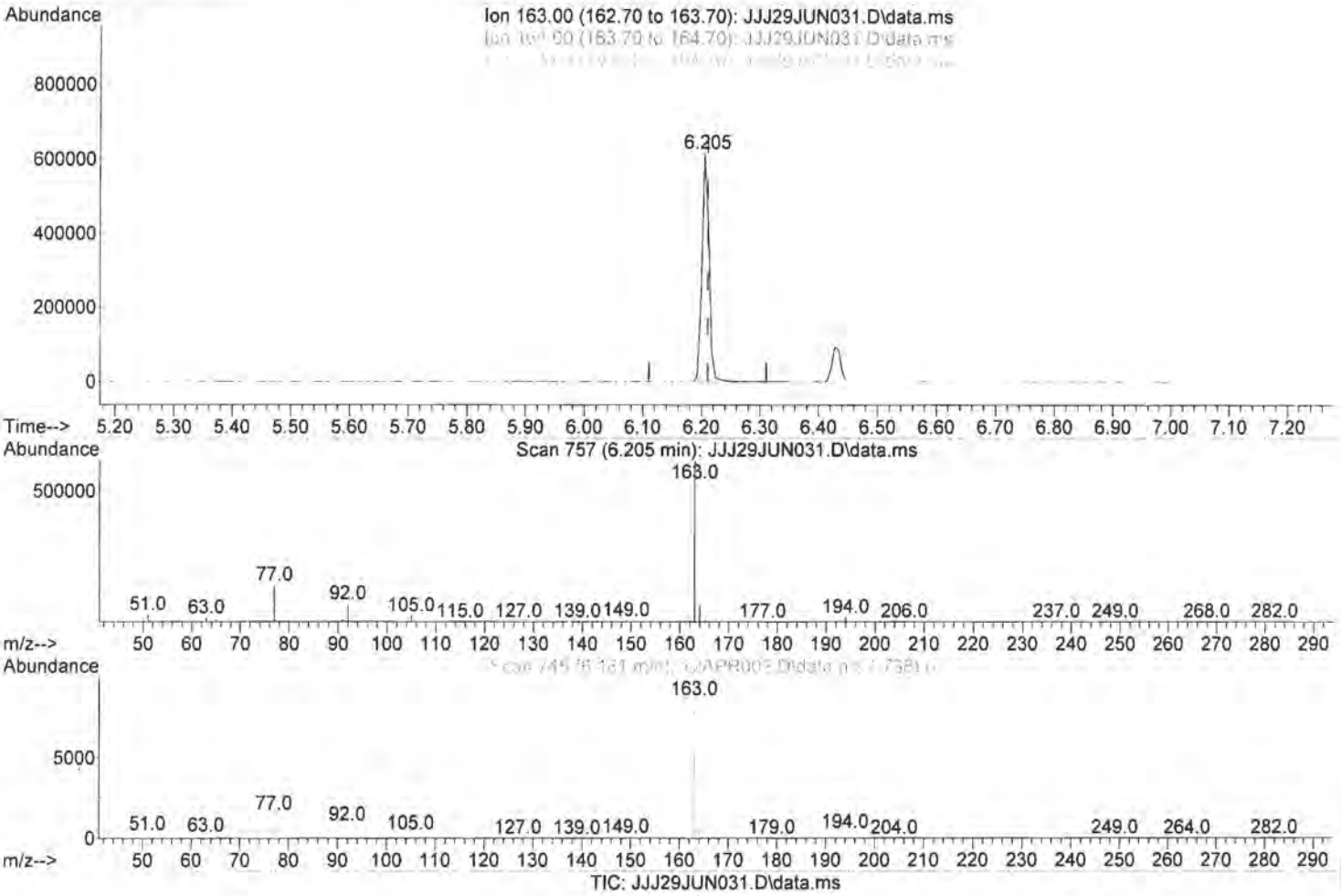
Quantitation Report (Qedit)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN031.D Vial: 31
Acq On : 29 Jun 2018 7:16 pm Operator: N8CZ
Sample : 18-06-1646-14 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 16:35:13 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M



(43) Dimethyl Phthalate (T)

6.2050min (-0.0059) 4.0537 mg/l

response 514055

Ion	Exp%	Act%
163.0000	100	100
164.0000	10.0000	10.2549
194.0000	3.1000	2.9684
0.0000	0.0000	0.0000

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN008.D Vial: 8
Acq On : 29 Jun 2018 12:16 pm Operator: N8CZ
Sample : LCS 180626L09 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 11:35:33 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.408	152	173413	5.00	mg/l	0.00
19) Naphthalene-d8	4.661	136	608088	5.00	mg/l	0.00
36) Acenaphthene-d10	6.427	164	238564	5.00	mg/l	0.00
56) Phenanthrene-d10	7.880	188	832700	5.00	mg/l	0.00
69) Chrysene-d12	10.576	240	936902	5.00	mg/l	0.00
81) Perylene-d12	12.402	264	909808	5.00	mg/l	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	2.359	112	285097	7.27	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	=	72.70%	
6) Phenol-d6	3.069	99	390232	7.83	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	=	78.30%	
20) Nitrobenzene-d5	3.957	82	385702	8.65	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	=	86.50%	
41) 2-Fluorobiphenyl	5.766	172	700189	7.75	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	=	77.50%	
60) 2,4,6-Tribromophenol	7.218	330	136299	6.84	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	=	68.40%	
71) p-Terphenyl-d14	9.461	244	1344077	6.99	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery	=	69.90%	
Target Compounds						Qvalue
2) Pyridine	1.723	52	293820	5.75	mg/l #	71
3) N-Nitrosodimethylamine	1.704	42	239401	6.93	mg/l	85
5) Aniline	3.130	93	271736	4.30	mg/l	92
7) Phenol	3.081	94	390631	7.71	mg/l	85
8) Bis(2-Chloroethyl) Ether	3.173	93	279527	7.47	mg/l	97
9) 2-Chlorophenol	3.235	128	333073	7.63	mg/l	99
10) 1,3-Dichlorobenzene	3.377	146	392071	7.41	mg/l	98
11) 1,4-Dichlorobenzene	3.420	146	404019	7.52	mg/l	99
12) Benzyl Alcohol	3.538	79	286230	6.82	mg/l	94
13) 1,2-Dichlorobenzene	3.599	146	392148	7.63	mg/l	98
14) 2-Methylphenol	3.649	108	294529	7.75	mg/l	95
15) Bis(2-Chloroisopropyl)...	3.692	45	654500	8.89	mg/l	95
16) 3/4-Methylphenol	3.791	107	706567	15.76	mg/l	96
17) N-Nitroso-di-n-propyla...	3.822	70	236110	7.78	mg/l #	97
18) Hexachloroethane	3.896	117	139955	7.15	mg/l	93
21) Nitrobenzene	3.976	77	380624	8.17	mg/l	96
22) Isophorone	4.204	82	620618	7.54	mg/l	99
23) 2-Nitrophenol	4.297	139	149460	8.33	mg/l	89
24) 2,4-Dimethylphenol	4.328	107	366976	7.91	mg/l	94
25) Benzoic Acid	4.439	105	1011	1.58	mg/l #	14
26) Bis(2-Chloroethoxy) Me...	4.433	93	380434	7.62	mg/l	100
27) 2,4-Dichlorophenol	4.525	162	333051	7.63	mg/l	100
28) 1,2,4-Trichlorobenzene	4.618	180	384527	7.51	mg/l	99
29) Naphthalene	4.680	128	1032927	8.15	mg/l	100
30) 2,6-Dichlorophenol	4.760	162	334180	7.63	mg/l	99
31) 4-Chloroaniline	4.754	127	241049	4.22	mg/l	95
32) Hexachloro-1,3-Butadiene	4.865	225	241855	7.08	mg/l	100

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN008.D Vial: 8
Acq On : 29 Jun 2018 12:16 pm Operator: N8CZ
Sample : LCS 180626L09 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 11:35:33 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
33) 4-Chloro-3-Methylphenol	5.241	107	250514	7.57 mg/l #	24
34) 2-Methylnaphthalene	5.371	142	533598	8.09 mg/l	96
35) 1-Methylnaphthalene	5.482	142	507878	8.26 mg/l	95
37) Hexachlorocyclopentadiene	5.606	237	206619	8.69 mg/l	99
38) 2,4,6-Trichlorophenol	5.686	196	194479	6.80 mg/l	100
39) 2,4,5-Trichlorophenol	5.723	196	214350	6.76 mg/l	99
40) 2-Chloronaphthalene	5.859	162	603077	8.06 mg/l	98
42) 2-Nitroaniline	5.989	65	183080	8.18 mg/l	95
43) Dimethyl Phthalate	6.211	163	719864	7.72 mg/l	100
44) Acenaphthylene	6.279	152	853445	8.12 mg/l	100
45) 3-Nitroaniline	6.403	138	106333	6.58 mg/l	97
46) Acenaphthene	6.458	154	508522	7.89 mg/l	98
47) 2,4-Dinitrophenol	6.582	184	4115	1.80 mg/l #	1
48) 4-Nitrophenol	6.569	65	127154	6.16 mg/l	91
49) Dibenzofuran	6.619	168	904844	7.86 mg/l	95
50) 2,4-Dinitrotoluene	6.656	165	187352	8.35 mg/l	91
51) 2,6-Dinitrotoluene	6.273	165	143651	8.94 mg/l	95
52) Diethyl Phthalate	6.909	149	731945	7.35 mg/l #	87
53) 4-Chlorophenyl-Phenyl ...	6.965	204	318811	6.82 mg/l	96
54) Fluorene	6.959	166	576761	7.39 mg/l	97
55) 4-Nitroaniline	7.008	138	149934	10.04 mg/l	90
57) 4,6-Dinitro-2-Methylph...	7.061	198	55982	5.52 mg/l	90
58) N-Nitrosodiphenylamine	7.086	169	776516	9.52 mg/l	98
59) Azobenzene	7.116	77	808046	7.51 mg/l	97
61) 4-Bromophenyl-Phenyl E...	7.443	248	310202	7.40 mg/l	95
62) Hexachlorobenzene	7.583	284	341061	7.53 mg/l	93
63) Pentachlorophenol	7.761	266	40679	1.91 mg/l	99
64) Phenanthrene	7.901	178	1519873	8.25 mg/l	99
65) Anthracene	7.943	178	1488816	8.14 mg/l	100
66) Di-n-Butyl Phthalate	8.512	149	1517018	7.30 mg/l	99
67) Fluoranthene	9.076	202	1968841	8.35 mg/l	98
68) Benzidine	9.207	184	172203	1.59 mg/l	95
70) Pyrene	9.292	202	2020381	8.45 mg/l	99
72) Butyl Benzyl Phthalate	9.995	149	687820	7.65 mg/l	99
73) 3,3'-Dichlorobenzidine	10.546	252	470590	4.94 mg/l	95
74) Benzo (a) Anthracene	10.554	228	2017876	8.05 mg/l	99
75) Bis(2-Ethylhexyl) Phth...	10.677	149	886762	6.69 mg/l	98
76) Chrysene	10.605	228	2035006	8.33 mg/l	99
77) Di-n-Octyl Phthalate	11.436	149	1531478	6.44 mg/l	100
78) Benzo (b) Fluoranthene	11.902	252	2075059	8.20 mg/l	99
79) Benzo (k) Fluoranthene	11.931	252	1995353	7.95 mg/l	98
80) Benzo (a) Pyrene	12.325	252	1955519	8.34 mg/l	97
82) Indeno (1,2,3-c,d) Pyrene	13.842	276	2221747	8.24 mg/l	96
83) Dibenz (a,h) Anthracene	13.872	278	1836171	8.57 mg/l	96
84) Benzo (g,h,i) Perylene	14.211	276	1923539	9.43 mg/l	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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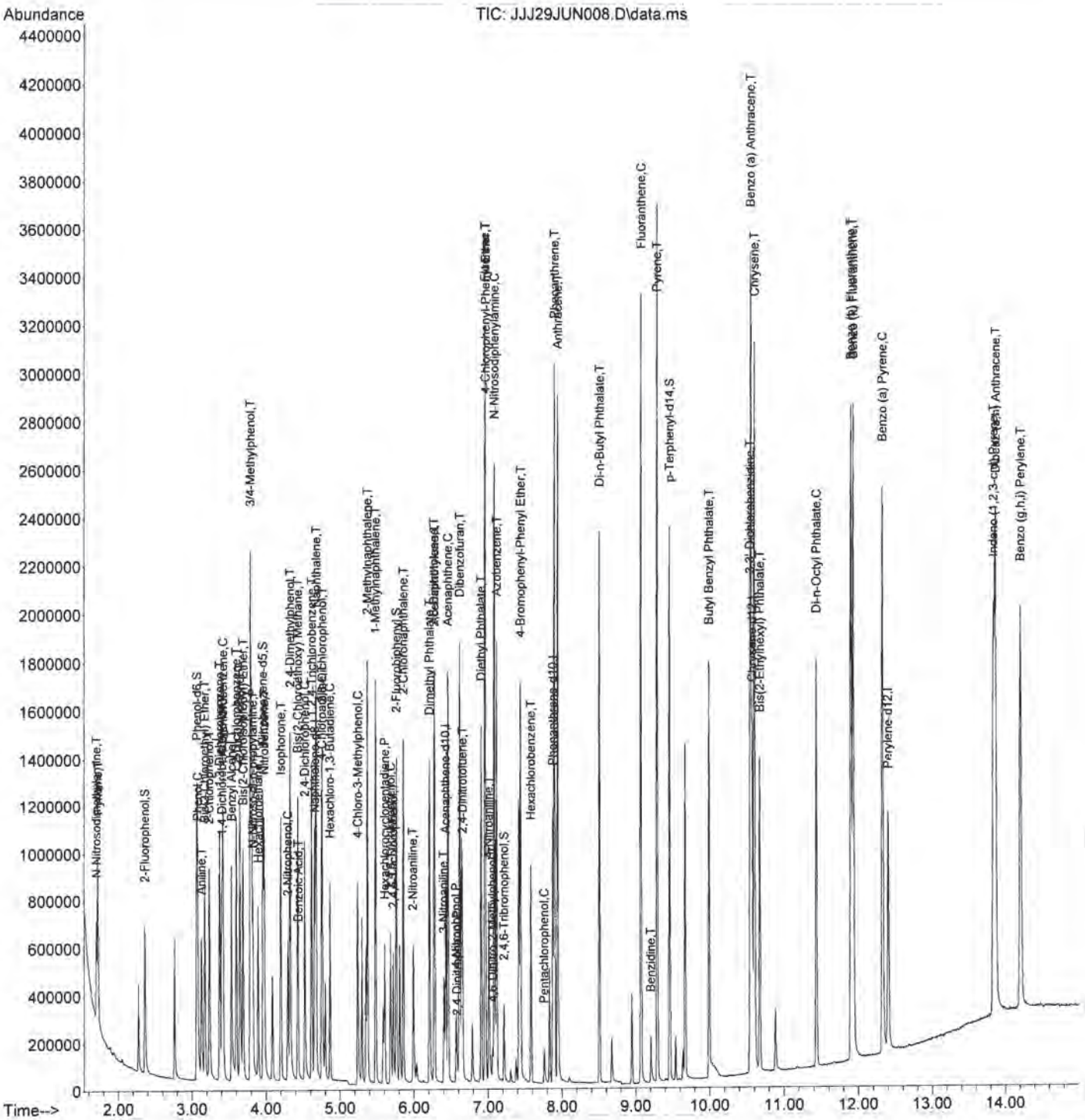
Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN008.D Vial: 8
Acq On : 29 Jun 2018 12:16 pm Operator: N8CZ
Sample : LCS 180626L09 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 11:35:33 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M



Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN009.D Vial: 9
Acq On : 29 Jun 2018 12:38 pm Operator: N8CZ
Sample : MB 180626L09 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 11:54:07 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
Internal Standards					
1) 1,4-Dichlorobenzene-d4	3.408	152	192023	5.00 mg/l	0.00
19) Naphthalene-d8	4.661	136	698579	5.00 mg/l	0.00
36) Acenaphthene-d10	6.433	164	264826	5.00 mg/l	0.00
56) Phenanthrene-d10	7.880	188	910164	5.00 mg/l	0.00
69) Chrysene-d12	10.575	240	1074888	5.00 mg/l	0.00
81) Perylene-d12	12.402	264	1076950	5.00 mg/l	0.00
System Monitoring Compounds					
4) 2-Fluorophenol	2.365	112	308498	7.11 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 71.10%		
6) Phenol-d6	3.068	99	438492	7.95 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 79.50%		
20) Nitrobenzene-d5	3.963	82	392041	7.65 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 76.50%		
41) 2-Fluorobiphenyl	5.766	172	826656	8.25 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 82.50%		
60) 2,4,6-Tribromophenol	7.218	330	141580	6.50 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 65.00%		
71) p-Terphenyl-d14	9.461	244	1688167	7.65 mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 76.50%		
Target Compounds					Qvalue
2) Pyridine	0.000		0	N.D.	
3) N-Nitrosodimethylamine	0.000		0	N.D.	
5) Aniline	3.149	93	456	N.D.	
7) Phenol	3.087	94	745	N.D.	
8) Bis(2-Chloroethyl) Ether	3.198	93	453	N.D.	
9) 2-Chlorophenol	3.260	128	168	N.D.	
10) 1,3-Dichlorobenzene	3.377	146	141	N.D.	
11) 1,4-Dichlorobenzene	3.420	146	333	N.D.	
12) Benzyl Alcohol	3.538	79	456	N.D.	
13) 1,2-Dichlorobenzene	3.605	146	206	N.D.	
14) 2-Methylphenol	3.680	108	104	N.D.	
15) Bis(2-Chloroisopropyl)...	3.729	45	431	N.D.	
16) 3/4-Methylphenol	3.803	107	195	N.D.	
17) N-Nitroso-di-n-propyla...	3.865	70	459	N.D.	
18) Hexachloroethane	3.926	117	112	N.D.	
21) Nitrobenzene	0.000		0	N.D. d	
22) Isophorone	4.260	82	353	N.D.	
23) 2-Nitrophenol	4.315	139	114	N.D.	
24) 2,4-Dimethylphenol	4.359	107	234	N.D.	
25) Benzoic Acid	0.000		0	N.D. d	
26) Bis(2-Chloroethoxy) Me...	4.420	93	206	N.D.	
27) 2,4-Dichlorophenol	4.507	162	185	N.D.	
28) 1,2,4-Trichlorobenzene	4.642	180	395	N.D.	
29) Naphthalene	4.661	128	289	N.D.	
30) 2,6-Dichlorophenol	4.741	162	125	N.D.	
31) 4-Chloroaniline	4.784	127	313	N.D.	
32) Hexachloro-1,3-Butadiene	4.877	225	597	N.D.	

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN009.D Vial: 9
Acq On : 29 Jun 2018 12:38 pm Operator: N8CZ
Sample : MB 180626L09 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 11:54:07 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
33) 4-Chloro-3-Methylphenol	5.241	107	241	N.D.	
34) 2-Methylnaphthalene	5.420	142	115	N.D.	
35) 1-Methylnaphthalene	5.476	142	274	N.D.	
37) Hexachlorocyclopentadiene	5.612	237	263	N.D.	
38) 2,4,6-Trichlorophenol	5.668	196	187	N.D.	
39) 2,4,5-Trichlorophenol	5.729	196	350	N.D.	
40) 2-Chloronaphthalene	5.871	162	334	N.D.	
42) 2-Nitroaniline	0.000		0	N.D.	d
43) Dimethyl Phthalate	6.211	163	852	N.D.	
44) Acenaphthylene	6.310	152	350	N.D.	
45) 3-Nitroaniline	6.427	138	286	N.D.	
46) Acenaphthene	6.489	154	391	N.D.	
47) 2,4-Dinitrophenol	0.000		0	N.D.	d
48) 4-Nitrophenol	0.000		0	N.D.	d
49) Dibenzofuran	6.588	168	404	N.D.	
50) 2,4-Dinitrotoluene	0.000		0	N.D.	d
51) 2,6-Dinitrotoluene	0.000		0	N.D.	d
52) Diethyl Phthalate	6.897	149	422	N.D.	
53) 4-Chlorophenyl-Phenyl ...	7.002	204	98	N.D.	
54) Fluorene	6.940	166	238	N.D.	
55) 4-Nitroaniline	7.014	138	160	N.D.	
57) 4,6-Dinitro-2-Methylph...	0.000		0	N.D.	d
58) N-Nitrosodiphenylamine	7.090	169	465	N.D.	
59) Azobenzene	7.133	77	754	N.D.	
61) 4-Bromophenyl-Phenyl E...	7.443	248	471	N.D.	
62) Hexachlorobenzene	7.587	284	322	N.D.	
63) Pentachlorophenol	0.000		0	N.D.	d
64) Phenanthrene	7.880	178	787	N.D.	
65) Anthracene	7.943	178	609	N.D.	
66) Di-n-Butyl Phthalate	0.000		0	N.D.	d
67) Fluoranthene	9.080	202	1724	N.D.	
68) Benzidine	9.215	184	514	N.D.	
70) Pyrene	9.292	202	1612	N.D.	
72) Butyl Benzyl Phthalate	9.999	149	1418	N.D.	
73) 3,3'-Dichlorobenzidine	10.465	252	572	N.D.	
74) Benzo (a) Anthracene	10.575	228	3765	N.D.	
75) Bis(2-Ethylhexyl) Phth...	0.000		0	N.D.	d
76) Chrysene	10.601	228	1943	N.D.	
77) Di-n-Octyl Phthalate	11.423	149	960	N.D.	
78) Benzo (b) Fluoranthene	11.889	252	4444	N.D.	
79) Benzo (k) Fluoranthene	11.995	252	1050	N.D.	
80) Benzo (a) Pyrene	12.342	252	1241	N.D.	
82) Indeno (1,2,3-c,d) Pyrene	0.000		0	N.D.	d
83) Dibenz (a,h) Anthracene	0.000		0	N.D.	d
84) Benzo (g,h,i) Perylene	14.194	276	7401	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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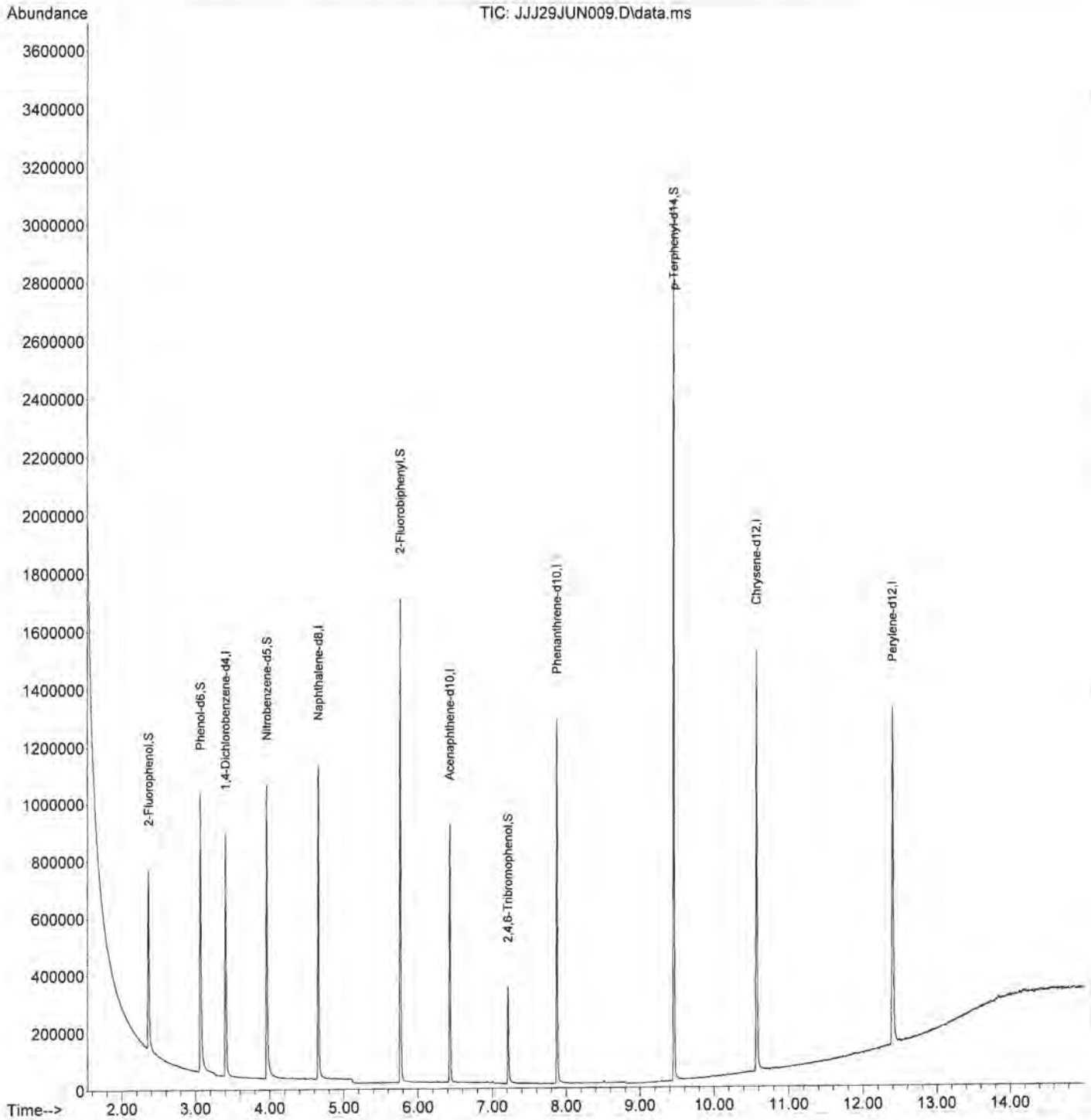
Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN009.D Vial: 9
Acq On : 29 Jun 2018 12:38 pm Operator: N8CZ
Sample : MB 180626L09 Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jun 29 11:54:07 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M



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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN033.D Vial: 33
Acq On : 29 Jun 2018 7:52 pm Operator: N8CZ
Sample : 18-06-1646-7 MS Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 09:42:11 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.408	152	217551	5.00	mg/l	0.00
19) Naphthalene-d8	4.655	136	786865	5.00	mg/l	0.00
36) Acenaphthene-d10	6.427	164	312733	5.00	mg/l	0.00
56) Phenanthrene-d10	7.875	188	1128328	5.00	mg/l	0.00
69) Chrysene-d12	10.567	240	1294258	5.00	mg/l	-0.01
81) Perylene-d12	12.397	264	1261166	5.00	mg/l	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	2.359	112	328611	6.68	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 66.80%			
6) Phenol-d6	3.069	99	432548	6.92	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 69.20%			
20) Nitrobenzene-d5	3.957	82	424784	7.36	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 73.60%			
41) 2-Fluorobiphenyl	5.760	172	815732	6.89	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 68.90%			
60) 2,4,6-Tribromophenol	7.214	330	145757	5.40	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 54.00%			
71) p-Terphenyl-d14	9.453	244	1651804	6.21	mg/l	-0.01
Spiked Amount 10.000	Range 0 - 200		Recovery = 62.10%			
Target Compounds						Qvalue
2) Pyridine	1.723	52	252421	3.94	mg/l #	86
3) N-Nitrosodimethylamine	1.704	42	249414	5.73	mg/l	83
5) Aniline	3.130	93	390770	4.93	mg/l	92
7) Phenol	3.075	94	446435	7.03	mg/l	85
8) Bis(2-Chloroethyl) Ether	3.173	93	319509	6.81	mg/l	97
9) 2-Chlorophenol	3.235	128	386015	7.05	mg/l	99
10) 1,3-Dichlorobenzene	3.371	146	429128	6.47	mg/l	99
11) 1,4-Dichlorobenzene	3.420	146	447503	6.64	mg/l	98
12) Benzyl Alcohol	3.538	79	306818	5.83	mg/l	93
13) 1,2-Dichlorobenzene	3.599	146	437415	6.78	mg/l	99
14) 2-Methylphenol	3.649	108	338060	7.09	mg/l	97
15) Bis(2-Chloroisopropyl)...	3.686	45	761681	8.24	mg/l	95
16) 3/4-Methylphenol	3.791	107	784720	13.95	mg/l	96
17) N-Nitroso-di-n-propyla...	3.822	70	267038	7.02	mg/l #	96
18) Hexachloroethane	3.889	117	154918	6.31	mg/l	95
21) Nitrobenzene	3.976	77	442374	7.34	mg/l	97
22) Isophorone	4.198	82	708034	6.65	mg/l	99
23) 2-Nitrophenol	4.297	139	180129	7.76	mg/l	87
24) 2,4-Dimethylphenol	4.328	107	395109	6.58	mg/l	95
25) Benzoic Acid	4.451	105	485	1.54	mg/l #	14
26) Bis(2-Chloroethoxy) Me...	4.433	93	442732	6.85	mg/l	99
27) 2,4-Dichlorophenol	4.525	162	400832	7.10	mg/l	99
28) 1,2,4-Trichlorobenzene	4.618	180	457098	6.90	mg/l	99
29) Naphthalene	4.673	128	1206079	7.36	mg/l	100
30) 2,6-Dichlorophenol	4.760	162	389341	6.87	mg/l	100
31) 4-Chloroaniline	4.754	127	400810	5.42	mg/l	94
32) Hexachloro-1,3-Butadiene	4.865	225	291725	6.60	mg/l	100

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN033.D Vial: 33
Acq On : 29 Jun 2018 7:52 pm Operator: N8CZ
Sample : 18-06-1646-7 MS Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 09:42:11 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
33) 4-Chloro-3-Methylphenol	5.241	107	297026	6.94 mg/l #	24
34) 2-Methylnaphthalene	5.371	142	636017	7.45 mg/l	96
35) 1-Methylnaphthalene	5.482	142	609674	7.66 mg/l	96
37) Hexachlorocyclopentadiene	5.606	237	214403	6.88 mg/l	100
38) 2,4,6-Trichlorophenol	5.686	196	241826	6.45 mg/l	100
39) 2,4,5-Trichlorophenol	5.717	196	276136	6.64 mg/l	99
40) 2-Chloronaphthalene	5.853	162	727212	7.42 mg/l	98
42) 2-Nitroaniline	5.989	65	206155	7.22 mg/l	98
43) Dimethyl Phthalate	6.205	163	1191693	9.74 mg/l	100
44) Acenaphthylene	6.273	152	1024078	7.44 mg/l	100
45) 3-Nitroaniline	6.403	138	146404	6.91 mg/l	95
46) Acenaphthene	6.458	154	618170	7.32 mg/l	100
47) 2,4-Dinitrophenol	6.532	184	169	0.96 mg/l #	1
48) 4-Nitrophenol	6.569	65	135819	5.02 mg/l	88
49) Dibenzofuran	6.619	168	1080773	7.16 mg/l	94
50) 2,4-Dinitrotoluene	6.656	165	225289	7.72 mg/l	95
51) 2,6-Dinitrotoluene	6.273	165	170566	8.16 mg/l	95
52) Diethyl Phthalate	6.903	149	881067	6.75 mg/l #	88
53) 4-Chlorophenyl-Phenyl ...	6.965	204	394493	6.44 mg/l	95
54) Fluorene	6.959	166	704163	6.88 mg/l	98
55) 4-Nitroaniline	7.008	138	162278	8.29 mg/l	91
57) 4,6-Dinitro-2-Methylph...	7.057	198	25201	2.39 mg/l #	1
58) N-Nitrosodiphenylamine	7.082	169	940440	8.51 mg/l	99
59) Azobenzene	7.112	77	979545	6.71 mg/l	98
61) 4-Bromophenyl-Phenyl E...	7.438	248	383391	6.75 mg/l	95
62) Hexachlorobenzene	7.578	284	416643	6.79 mg/l	92
63) Pentachlorophenol	7.757	266	2007	0.70 mg/l #	78
64) Phenanthrene	7.897	178	1859420	7.45 mg/l	100
65) Anthracene	7.939	178	1832208	7.39 mg/l	99
66) Di-n-Butyl Phthalate	8.503	149	2006617	7.12 mg/l	99
67) Fluoranthene	9.067	202	2477157	7.76 mg/l	98
68) Benzidine	9.203	184	152514	1.04 mg/l	94
70) Pyrene	9.288	202	2537159	7.68 mg/l	100
72) Butyl Benzyl Phthalate	9.987	149	968823	7.80 mg/l	99
73) 3,3'-Dichlorobenzidine	10.537	252	861694	6.55 mg/l	97
74) Benzo (a) Anthracene	10.550	228	2587126	7.48 mg/l	99
75) Bis(2-Ethylhexyl) Phth...	10.669	149	1309051	7.15 mg/l	98
76) Chrysene	10.597	228	2572572	7.62 mg/l	99
77) Di-n-Octyl Phthalate	11.427	149	2339329	7.12 mg/l	100
78) Benzo (b) Fluoranthene	11.897	252	2612099	7.48 mg/l	99
79) Benzo (k) Fluoranthene	11.927	252	2418523	6.98 mg/l	98
80) Benzo (a) Pyrene	12.321	252	2514199	7.76 mg/l	97
82) Indeno (1,2,3-c,d) Pyrene	13.838	276	2798100	7.49 mg/l	96
83) Dibenz (a,h) Anthracene	13.863	278	2307872	7.77 mg/l	96
84) Benzo (g,h,i) Perylene	14.207	276	2426695	8.59 mg/l	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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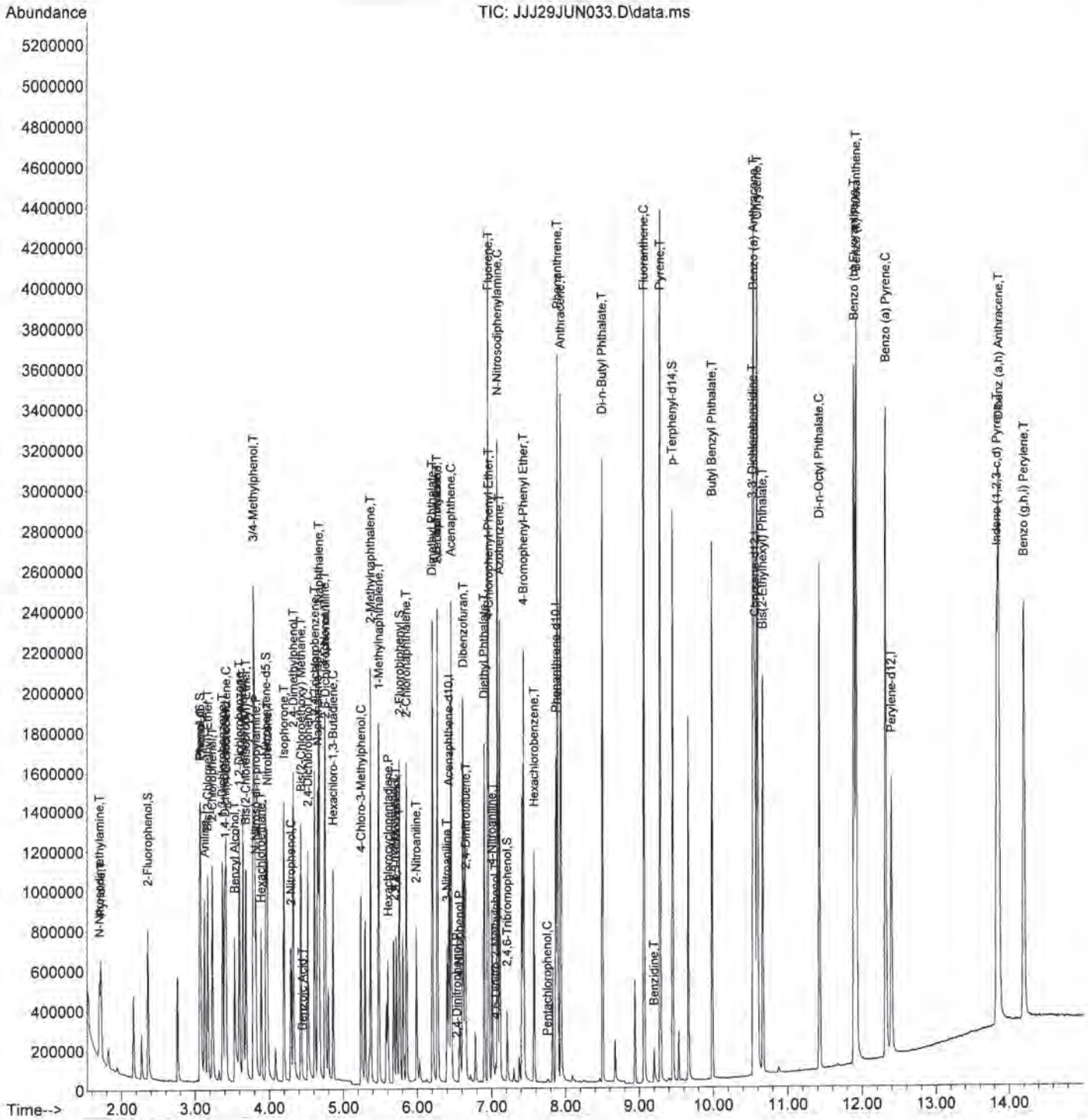
Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN033.D Vial: 33
Acq On : 29 Jun 2018 7:52 pm Operator: N8CZ
Sample : 18-06-1646-7 MS Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 09:42:11 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M



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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN034.D Vial: 34
Acq On : 29 Jun 2018 8:11 pm Operator: N8CZ
Sample : 18-06-1646-7 MSD Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 09:42:14 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc	Units	Dev(Min)
Internal Standards						
1) 1,4-Dichlorobenzene-d4	3.401	152	233539	5.00	mg/l	0.00
19) Naphthalene-d8	4.654	136	848339	5.00	mg/l	0.00
36) Acenaphthene-d10	6.427	164	334319	5.00	mg/l	0.00
56) Phenanthrene-d10	7.875	188	1196853	5.00	mg/l	0.00
69) Chrysene-d12	10.571	240	1362467	5.00	mg/l	0.00
81) Perylene-d12	12.397	264	1338007	5.00	mg/l	0.00
System Monitoring Compounds						
4) 2-Fluorophenol	2.358	112	364213	6.90	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 69.00%			
6) Phenol-d6	3.068	99	487863	7.27	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 72.70%			
20) Nitrobenzene-d5	3.957	82	450007	7.23	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 72.30%			
41) 2-Fluorobiphenyl	5.760	172	862403	6.81	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 68.10%			
60) 2,4,6-Tribromophenol	7.217	330	164515	5.74	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 57.40%			
71) p-Terphenyl-d14	9.457	244	1811087	6.47	mg/l	0.00
Spiked Amount 10.000	Range 0 - 200		Recovery = 64.70%			
Target Compounds						Qvalue
2) Pyridine	1.722	52	279532	4.06	mg/l #	85
3) N-Nitrosodimethylamine	1.704	42	270829	5.80	mg/l	85
5) Aniline	3.130	93	464805	5.46	mg/l	92
7) Phenol	3.074	94	512278	7.51	mg/l	86
8) Bis(2-Chloroethyl) Ether	3.173	93	362111	7.19	mg/l	99
9) 2-Chlorophenol	3.235	128	439637	7.48	mg/l	98
10) 1,3-Dichlorobenzene	3.371	146	480749	6.75	mg/l	99
11) 1,4-Dichlorobenzene	3.420	146	498511	6.89	mg/l	99
12) Benzyl Alcohol	3.537	79	347228	6.14	mg/l	94
13) 1,2-Dichlorobenzene	3.599	146	483704	6.99	mg/l	99
14) 2-Methylphenol	3.648	108	393699	7.69	mg/l	97
15) Bis(2-Chloroisopropyl)...	3.685	45	832582	8.39	mg/l	95
16) 3/4-Methylphenol	3.790	107	915161	15.16	mg/l	97
17) N-Nitroso-di-n-propyla...	3.821	70	301216	7.37	mg/l #	96
18) Hexachloroethane	3.889	117	174053	6.60	mg/l	94
21) Nitrobenzene	3.975	77	491849	7.57	mg/l	96
22) Isophorone	4.198	82	811447	7.07	mg/l	99
23) 2-Nitrophenol	4.296	139	203879	8.15	mg/l	87
24) 2,4-Dimethylphenol	4.327	107	478965	7.40	mg/l	95
25) Benzoic Acid	4.426	105	997	1.56	mg/l #	14
26) Bis(2-Chloroethoxy) Me...	4.432	93	500884	7.19	mg/l	99
27) 2,4-Dichlorophenol	4.525	162	456819	7.50	mg/l	100
28) 1,2,4-Trichlorobenzene	4.617	180	504149	7.06	mg/l	99
29) Naphthalene	4.673	128	1331352	7.53	mg/l	100
30) 2,6-Dichlorophenol	4.759	162	450402	7.38	mg/l	99
31) 4-Chloroaniline	4.753	127	476200	5.97	mg/l	96
32) Hexachloro-1,3-Butadiene	4.864	225	317842	6.67	mg/l	100

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Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN034.D Vial: 34
Acq On : 29 Jun 2018 8:11 pm Operator: N8CZ
Sample : 18-06-1646-7 MSD Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 09:42:14 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M

Compound	R.T.	QIon	Response	Conc Units	Dev(Min)
33) 4-Chloro-3-Methylphenol	5.241	107	346563	7.51 mg/l #	24
34) 2-Methylnaphthalene	5.371	142	700835	7.61 mg/l	96
35) 1-Methylnaphthalene	5.482	142	664296	7.74 mg/l	96
37) Hexachlorocyclopentadiene	5.605	237	248777	7.46 mg/l	100
38) 2,4,6-Trichlorophenol	5.686	196	279198	6.96 mg/l	100
39) 2,4,5-Trichlorophenol	5.717	196	322053	7.24 mg/l	98
40) 2-Chloronaphthalene	5.859	162	798019	7.61 mg/l	98
42) 2-Nitroaniline	5.988	65	250720	8.03 mg/l	96
43) Dimethyl Phthalate	6.205	163	1348288	10.31 mg/l	100
44) Acenaphthylene	6.273	152	1136130	7.72 mg/l	100
45) 3-Nitroaniline	6.402	138	177412	7.83 mg/l	97
46) Acenaphthene	6.458	154	686652	7.60 mg/l	99
47) 2,4-Dinitrophenol	6.507	184	98	0.95 mg/l #	33
48) 4-Nitrophenol	6.569	65	167508	5.79 mg/l	90
49) Dibenzofuran	6.618	168	1211702	7.51 mg/l	94
50) 2,4-Dinitrotoluene	6.655	165	261595	8.32 mg/l	94
51) 2,6-Dinitrotoluene	6.273	165	197908	8.80 mg/l	93
52) Diethyl Phthalate	6.903	149	1007869	7.22 mg/l #	88
53) 4-Chlorophenyl-Phenyl ...	6.964	204	444345	6.79 mg/l	96
54) Fluorene	6.958	166	792327	7.24 mg/l	98
55) 4-Nitroaniline	7.008	138	200606	9.59 mg/l	92
57) 4,6-Dinitro-2-Methylph...	7.056	198	42096	3.34 mg/l	82
58) N-Nitrosodiphenylamine	7.082	169	1073080	9.15 mg/l	99
59) Azobenzene	7.111	77	1130026	7.30 mg/l	98
61) 4-Bromophenyl-Phenyl E...	7.438	248	432581	7.18 mg/l	95
62) Hexachlorobenzene	7.578	284	473658	7.27 mg/l	94
63) Pentachlorophenol	7.756	266	4519	0.75 mg/l	90
64) Phenanthrene	7.896	178	2088394	7.89 mg/l	99
65) Anthracene	7.943	178	2038666	7.76 mg/l	99
66) Di-n-Butyl Phthalate	8.507	149	2243308	7.51 mg/l	99
67) Fluoranthene	9.071	202	2751174	8.12 mg/l	98
68) Benzidine	9.202	184	285043	1.83 mg/l	96
70) Pyrene	9.287	202	2823907	8.12 mg/l	99
72) Butyl Benzyl Phthalate	9.986	149	1090379	8.34 mg/l	99
73) 3,3'-Dichlorobenzidine	10.537	252	951795	6.87 mg/l	96
74) Benzo (a) Anthracene	10.550	228	2862248	7.86 mg/l	99
75) Bis(2-Ethylhexyl) Phth...	10.668	149	1466299	7.61 mg/l	98
76) Chrysene	10.601	228	2864314	8.06 mg/l	99
77) Di-n-Octyl Phthalate	11.427	149	2606329	7.53 mg/l	100
78) Benzo (b) Fluoranthene	11.897	252	2986429	8.12 mg/l	98
79) Benzo (k) Fluoranthene	11.927	252	2459566	6.74 mg/l #	93
80) Benzo (a) Pyrene	12.321	252	2772298	8.13 mg/l	98
82) Indeno (1,2,3-c,d) Pyrene	13.838	276	3028844	7.64 mg/l	96
83) Dibenz (a,h) Anthracene	13.863	278	2497393	7.92 mg/l	97
84) Benzo (g,h,i) Perylene	14.206	276	2602962	8.68 mg/l	96

(#) = qualifier out of range (m) = manual integration (+) = signals summed

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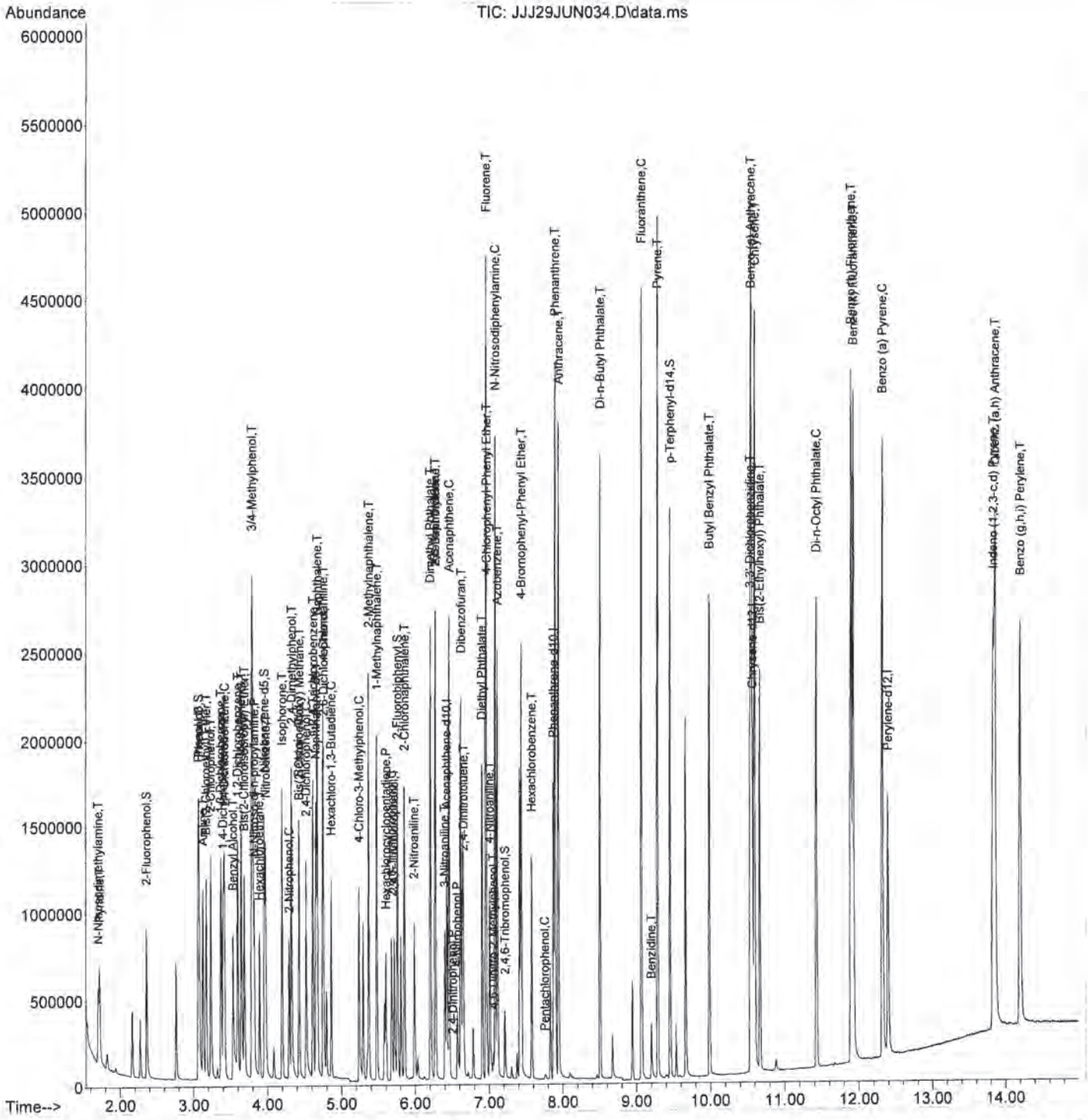
Quantitation Report (QT Reviewed)

Data File : W:\GCMS_JJJ\GCMS_JJJ...\180629\JJJ29JUN034.D Vial: 34
Acq On : 29 Jun 2018 8:11 pm Operator: N8CZ
Sample : 18-06-1646-7 MSD Inst : GCMS JJJ
Misc : 10ul SS051018A Multiplr: 1.00
Integrator: RTE
Quant Time: Jul 02 09:42:14 2018
Quant Results File: 180302_SIMFL.RES
Quant Method : C:\MSDCHEM\1\METHODS\180302_SIMFL.M

Quant Title : BNA 8270C
QLast Update : Fri Jun 29 09:48:44 2018
Response via : Initial Calibration
DataAcq Meth:625SIM.M



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Quality Control - Spike/Spike Duplicate

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
Project: 1802258			Page 1 of 1

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
1802258-27 / TP-19-4-8	**Sample**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 17:09**	**180626S09**
1802258-27 / TP-19-4-8	**Matrix Spike**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 19:52**	**180626S09**
1802258-27 / TP-19-4-8	**Matrix Spike Duplicate**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 20:11**	**180626S09**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
2,4,6-Trichlorophenol	ND	1.000	0.6448	64	0.6963	70	40-160	8	0-20	
2,4-Dichlorophenol	ND	1.000	0.7098	71	0.7503	75	40-160	6	0-20	
2-Methylphenol	ND	1.000	0.7087	71	0.7689	77	50-130	8	0-20	
2-Nitrophenol	ND	1.000	0.7761	78	0.8147	81	40-160	5	0-20	
4-Chloro-3-Methylphenol	ND	1.000	0.6939	69	0.7510	75	40-160	8	0-20	
Acenaphthene	ND	1.000	0.7318	73	0.7604	76	40-160	4	0-20	
Benzo (a) Pyrene	ND	1.000	0.7763	78	0.8131	81	17-163	5	0-20	
Chrysene	ND	1.000	0.7623	76	0.8062	81	17-168	6	0-20	
Di-n-Butyl Phthalate	ND	1.000	0.7123	71	0.7507	75	40-160	5	0-20	
Dimethyl Phthalate	0.2871	1.000	0.9744	69	1.031	74	40-160	6	0-20	
Fluoranthene	ND	1.000	0.7757	78	0.8122	81	26-137	5	0-20	
Fluorene	ND	1.000	0.6879	69	0.7241	72	59-121	5	0-20	
Naphthalene	ND	1.000	0.7355	74	0.7531	75	21-133	2	0-20	
Phenanthrene	ND	1.000	0.7451	75	0.7889	79	54-120	6	0-20	
Phenol	ND	1.000	0.7027	70	0.7511	75	40-160	7	0-20	
Pyrene	ND	1.000	0.7679	77	0.8119	81	6-156	6	0-46	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
Project: 1802258			Page 1 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-16-921-22	**LCS**	**Solid**	**GC/MS JJJ**	**06/26/18**	**06/29/18 12:16**	**180626L09**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
2,4,6-Trichlorophenol	1.000	0.6797	68	40-160	20-180	
2,4-Dichlorophenol	1.000	0.7632	76	40-160	20-180	
2-Methylphenol	1.000	0.7746	77	40-160	20-180	
2-Nitrophenol	1.000	0.8332	83	40-160	20-180	
4-Chloro-3-Methylphenol	1.000	0.7573	76	40-160	20-180	
Acenaphthene	1.000	0.7891	79	40-160	20-180	
Benzo (a) Pyrene	1.000	0.8341	83	17-163	0-187	
Chrysene	1.000	0.8330	83	17-168	0-193	
Di-n-Butyl Phthalate	1.000	0.7297	73	40-160	20-180	
Dimethyl Phthalate	1.000	0.7716	77	40-160	20-180	
Fluoranthene	1.000	0.8354	84	26-137	8-156	
Fluorene	1.000	0.7386	74	59-121	49-131	
Naphthalene	1.000	0.8151	82	21-133	2-152	
Phenanthrene	1.000	0.8252	83	54-120	43-131	
Phenol	1.000	0.7714	77	40-160	20-180	
Pyrene	1.000	0.8448	84	28-106	15-119	

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
Project: 1802258			Page 2 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-16-921-23	**LCS**	**Solid**	**GC/MS JJJ**	**07/11/18**	**07/13/18 12:18**	**180711L11**
099-16-921-23	**LCSD**	**Solid**	**GC/MS JJJ**	**07/11/18**	**07/13/18 12:36**	**180711L11**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
2,4,6-Trichlorophenol	1.000	0.6991	70	0.7416	74	40-160	20-180	6	0-20	
2,4-Dichlorophenol	1.000	0.7340	73	0.7926	79	40-160	20-180	8	0-20	
2-Methylphenol	1.000	0.7486	75	0.8064	81	40-160	20-180	7	0-20	
2-Nitrophenol	1.000	0.8033	80	0.8704	87	40-160	20-180	8	0-20	
4-Chloro-3-Methylphenol	1.000	0.7317	73	0.7844	78	40-160	20-180	7	0-20	
Acenaphthene	1.000	0.7499	75	0.7935	79	40-160	20-180	6	0-11	
Benzo (a) Pyrene	1.000	0.7871	79	0.8460	85	17-163	0-187	7	0-20	
Chrysene	1.000	0.7547	75	0.8084	81	17-168	0-193	7	0-20	
Di-n-Butyl Phthalate	1.000	0.7572	76	0.8082	81	40-160	20-180	7	0-20	
Dimethyl Phthalate	1.000	0.7649	76	0.8036	80	40-160	20-180	5	0-20	
Fluoranthene	1.000	0.7870	79	0.8675	87	26-137	8-156	10	0-20	
Fluorene	1.000	0.7338	73	0.7787	78	59-121	49-131	6	0-20	
Naphthalene	1.000	0.7532	75	0.8040	80	21-133	2-152	7	0-20	
Phenanthrene	1.000	0.7752	78	0.8330	83	54-120	43-131	7	0-20	
Phenol	1.000	0.7440	74	0.8071	81	40-160	20-180	8	0-20	
Pyrene	1.000	0.7711	77	0.8129	81	28-106	15-119	5	0-16	

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM
Project: 1802258			Page 3 of 3

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-16-941-31	**LCS**	**Aqueous**	**GC/MS JJJ**	**06/26/18**	**06/29/18 10:47**	**180626L01A**
099-16-941-31	**LCSD**	**Aqueous**	**GC/MS JJJ**	**06/26/18**	**06/29/18 11:33**	**180626L01A**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
2,4,6-Trichlorophenol	20.00	14.15	71	13.00	65	37-144	19-162	8	0-20	
2,4-Dichlorophenol	20.00	14.67	73	14.09	70	39-135	23-151	4	0-20	
2-Methylphenol	20.00	13.40	67	12.33	62	50-130	37-143	8	0-20	
2-Nitrophenol	20.00	15.94	80	15.35	77	29-182	4-208	4	0-20	
4-Chloro-3-Methylphenol	20.00	14.94	75	14.08	70	55-121	44-132	6	0-18	
Acenaphthene	20.00	15.73	79	14.77	74	55-139	41-153	6	0-17	
Benzo (a) Pyrene	20.00	16.39	82	15.37	77	17-163	0-187	6	0-20	
Chrysene	20.00	16.52	83	15.73	79	17-168	0-193	5	0-20	
Di-n-Butyl Phthalate	20.00	14.26	71	13.66	68	1-118	0-138	4	0-20	
Dimethyl Phthalate	20.00	15.87	79	14.76	74	0-112	0-131	7	0-20	
Fluoranthene	20.00	16.76	84	15.76	79	26-137	8-156	6	0-20	
Fluorene	20.00	15.23	76	13.89	69	59-121	49-131	9	0-20	
Naphthalene	20.00	13.81	69	13.08	65	21-133	2-152	5	0-20	
Phenanthrene	20.00	16.79	84	15.77	79	54-120	43-131	6	0-20	
Phenol	20.00	6.240	31	5.893	29	4-142	0-165	6	0-24	
Pyrene	20.00	16.88	84	16.03	80	38-170	16-192	5	0-27	

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 18-06-1646

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8270C SIM	EPA 3545	923	GC/MS JJJ	1
EPA 8270C SIM	EPA 3510C	923	GC/MS JJJ	1

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Glossary of Terms and Qualifiers

Work Order: 18-06-1646 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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ADVANCED TECHNOLOGY LABORATORIES

SUBCONTRACT ORDER

Work Order: 1802258

18-06-1646

SENDING LABORATORY:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone: 562.989.4045
Fax: 562.989.6348
Project Manager: Rachelle Arada (Rachelle@atlglobal.com)
Sampler: Jake Lippman

RECEIVING LABORATORY:

Eurofins Calscience, Inc.
7440 Lincoln Way
Garden Grove, CA 92841-1427
Phone :(714) 895-5494
Fax: (714) 894-7501
PO#: SC12897-STANDARD TAT

IMPORTANT : Please include Work Order # and PO # in your invoice.

Special Instructions: Need EQUIS EDD.

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1802258-20 / EB-061918	1	**Water**	**06/19/18 13:00**	**Return samples when analysis is done. Call ATL for pick up.**
8270_SIM	**07/09/18 17:00**	06/26/18 13:00		
[Semivolatile Organic Compounds]				
Amber Unpres - 1000mL				
ATL Lab#: 1802258-21 / SW-061918	2	**Water**	**06/19/18 13:00**	
8270_SIM	**07/09/18 17:00**	06/26/18 13:00		
[Semivolatile Organic Compounds]				
Amber Unpres - 1000mL				
ATL Lab#: 1802258-22 / TP-16-0-0.5	3	**Soil**	**06/19/18 13:50**	
8270_SIM	**07/09/18 17:00**	07/03/18 13:50		
[Semivolatile Organic Compounds]				
Glass Jar - 8 oz				
ATL Lab#: 1802258-23 / TP-16-0.5-3.5	4	**Soil**	**06/19/18 13:55**	
8270_SIM	**07/09/18 17:00**	07/03/18 13:55		
[Semivolatile Organic Compounds]				
Glass Jar - 8 oz				

Released By	Date	Received By	Date
[signature]	6/22/18 1035	[signature]	6/22/18 1035

ADVANCED TECHNOLOGY
LABORATORIES

SUBCONTRACT ORDER

Work Order: 1802258

164L

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1802258-24 / TP-16-3.5-5 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	5 **07/09/18 17:00**	**Soil** 07/03/18 13:58	**06/19/18 13:58**	
ATL Lab#: 1802258-26 / TP-19-0-4 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	6 **07/09/18 17:00**	**Soil** 07/03/18 08:40	**06/19/18 08:40**	
ATL Lab#: 1802258-27 / TP-19-4-8 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	7 **07/09/18 17:00**	**Soil** 07/03/18 08:45	**06/19/18 08:45**	
ATL Lab#: 1802258-28 / TP-19-8-10 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	8 **07/09/18 17:00**	**Soil** 07/03/18 08:50	**06/19/18 08:50**	
ATL Lab#: 1802258-29 / TP-25-0-4 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	9 **07/09/18 17:00**	**Soil** 07/03/18 10:40	**06/19/18 10:40**	
ATL Lab#: 1802258-30 / TP-25-4-6 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	10 **07/09/18 17:00**	**Soil** 07/03/18 10:45	**06/19/18 10:45**	

Released By	Date	Received By	Date
[signature]	6/22/18 1035	[signature]	6/22/18 1035

ADVANCED TECHNOLOGY LABORATORIES

SUBCONTRACT ORDER

Work Order: 1802258

1646

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1802258-54 / TP-9-0-0.25 8270_SIM [Semivolatile Organic Compounds]	11 **07/09/18 17:00**	**Soil** 07/04/18 12:30	**06/20/18 12:30**	
ATL Lab#: 1802258-55 / TP-9-0.25-2.5 8270_SIM [Semivolatile Organic Compounds]	12 **07/09/18 17:00**	**Soil** 07/04/18 12:35	**06/20/18 12:35**	
ATL Lab#: 1802258-56 / TP-9-2.5-7 8270_SIM [Semivolatile Organic Compounds]	13 **07/09/18 17:00**	**Soil** 07/04/18 12:40	**06/20/18 12:40**	
ATL Lab#: 1802258-59 / TP-21-0-5 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	14 **07/09/18 17:00**	**Soil** 07/04/18 13:15	**06/20/18 13:15**	
ATL Lab#: 1802258-60 / TP-21-5-9 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	15 **07/09/18 17:00**	**Soil** 07/04/18 13:20	**06/20/18 13:20**	

Released By	Date	Received By	Date
[signature]	6/22/18 1035	[signature]	6/22/18 1035

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WORK ORDER NUMBER: 18-06-1646

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: ATL

DATE: 06/22/2018

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC6 (CF: +0.1°C); Temperature (w/o CF): 2-8 °C (w/ CF): 2-9 °C; ☐ Blank ☑ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: SMG

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: SMG

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: TTB

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☐	☐	☑
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☑	☐	☐
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Acid/base preserved samples - pH within acceptable range	☐	☐	☑
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOA**h** ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB ☐ 125PB**znna** (pH__9)

☐ 250AGB ☐ 250CGB ☐ 250CGB**s** (pH__2) ☐ 250PB ☐ 250PB**n** (pH__2) ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s** (pH__2) ☐ 500PB

☑ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** (pH__2) ☐ 1AGB**s** (O&G) ☐ 1PB ☐ 1PB**na** (pH__12) ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☑ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (___) ☐ EnCores® (___) ☐ TerraCores® (___) ☐ _____ ☐ _____ ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: TTB

Reviewed by: SMG

ADVANCED TECHNOLOGY LABORATORIES

July 16, 2018

Jake Lippman
Kleinfelder
550 W. C. Suite 1200
San Diego, CA 92101
Tel: (619) 831-4600
Fax:

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003

Re: ATL Work Order Number : 1802258
Client Reference : Salt Pond 20, 20164596.018A

Enclosed are the results for sample(s) received on June 20, 2018 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/16/2018

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TP-21-0-5	1802258-59	Soil	6/20/18 13:15	6/20/18 15:58

CASE NARRATIVE

The sample for EPA 8270 SIM (Semivolatile Organic Compounds) analysis was subcontracted to Eurofins Calscience, Inc. with ELAP Cert.#1230.

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Supplemental Report 1

Additional requested analyses are reported as a stand-alone report.

WORK ORDER NUMBER: 18-06-1646

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Advanced Technology Laboratories

Client Project Name: 1802258

Attention: Rachelle Arada
3275 Walnut Street
Signal Hill, CA 90755-5225

Approved for release on 07/16/2018 by:
Lori Thompson
Project Manager

ResultLink ▸

Email your PM ▸

Eurofins Calscience (Calscience) certifies that the test results provided in this report meet all NELAC Institute requirements for parameters for which accreditation is required or available. Any exceptions to NELAC Institute requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

7440 Lincoln Way, Garden Grove, CA 92841-1432 • TEL: (714) 895-5494 • FAX: (714) 894-7501 • www.calscience.com

CA ELAP ID: 2944 | CSDLAC ID: 10109

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Work Order Number: 18-06-1646

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Work Order Narrative

Work Order: 18-06-1646 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 06/22/18. They were assigned to Work Order 18-06-1646.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.

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Sample Summary

Client:	Advanced Technology Laboratories 3275 Walnut Street Signal Hill, CA 90755-5225	Work Order:	18-06-1646
		Project Name:	1802258
		PO Number:	SC12897
		Date/Time Received:	06/22/18 10:35
		Number of Containers:	15
Attn:	Rachelle Arada		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
1802258-59 / TP-21-0-5	18-06-1646-14	06/20/18 13:15	1	Solid

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 1 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802258-59 / TP-21-0-5	**18-06-1646-14-A**	**06/20/18 13:15**	**Solid**	**GC/MS JJJ**	**07/11/18**	**07/13/18 12:56**	**180711L11**

Comment(s): - Sample extracted outside recommended holding time.

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.0099	1.00	ET
1,2-Dichlorobenzene	ND	0.0099	1.00	ET
1,3-Dichlorobenzene	ND	0.0099	1.00	ET
1,4-Dichlorobenzene	ND	0.0099	1.00	ET
1-Methylnaphthalene	ND	0.0099	1.00	ET
2,4,5-Trichlorophenol	ND	0.25	1.00	ET
2,4,6-Trichlorophenol	ND	0.25	1.00	ET
2,4-Dichlorophenol	ND	0.25	1.00	ET
2,4-Dimethylphenol	ND	0.49	1.00	ET
2,4-Dinitrophenol	ND	0.25	1.00	ET
2,4-Dinitrotoluene	ND	0.0099	1.00	ET
2,6-Dichlorophenol	ND	0.25	1.00	ET
2,6-Dinitrotoluene	ND	0.0099	1.00	ET
2-Chloronaphthalene	ND	0.0099	1.00	ET
2-Chlorophenol	ND	0.0099	1.00	ET
2-Methylnaphthalene	ND	0.0099	1.00	ET
2-Methylphenol	ND	0.25	1.00	ET
2-Nitroaniline	ND	0.25	1.00	ET
2-Nitrophenol	ND	0.25	1.00	ET
3,3'-Dichlorobenzidine	ND	0.25	1.00	ET
3-Nitroaniline	ND	0.25	1.00	ET
3/4-Methylphenol	ND	0.099	1.00	ET
4-Bromophenyl-Phenyl Ether	ND	0.0099	1.00	ET
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	ET
4-Chloro-3-Methylphenol	ND	0.25	1.00	ET
4-Chloroaniline	ND	0.25	1.00	ET
4-Chlorophenyl-Phenyl Ether	ND	0.0099	1.00	ET
4-Nitroaniline	ND	0.25	1.00	ET
4-Nitrophenol	ND	0.49	1.00	ET
Acenaphthene	ND	0.0099	1.00	ET
Acenaphthylene	ND	0.0099	1.00	ET
Aniline	ND	0.0099	1.00	ET
Anthracene	ND	0.0099	1.00	ET
Azobenzene	ND	0.0099	1.00	ET

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 2 of 6

Parameter	Result	RL	DF	Qualifiers
Benzidine	ND	0.25	1.00	ET
Benzo (a) Anthracene	ND	0.0099	1.00	ET
Benzo (a) Pyrene	ND	0.0099	1.00	ET
Benzo (b) Fluoranthene	ND	0.0099	1.00	ET
Benzo (g,h,i) Perylene	ND	0.0099	1.00	ET
Benzo (k) Fluoranthene	ND	0.0099	1.00	ET
Benzyl Alcohol	ND	0.0099	1.00	ET
Bis(2-Chloroethoxy) Methane	ND	0.0099	1.00	ET
Bis(2-Chloroethyl) Ether	ND	0.0099	1.00	ET
Bis(2-Chloroisopropyl) Ether	ND	0.0099	1.00	ET
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	ET
Butyl Benzyl Phthalate	ND	0.25	1.00	ET
Chrysene	ND	0.0099	1.00	ET
Di-n-Butyl Phthalate	ND	0.25	1.00	ET
Di-n-Octyl Phthalate	ND	0.25	1.00	ET
Dibenz (a,h) Anthracene	ND	0.0099	1.00	ET
Dibenzofuran	ND	0.0099	1.00	ET
Diethyl Phthalate	ND	0.0099	1.00	ET
Dimethyl Phthalate	ND	0.25	1.00	ET
Fluoranthene	ND	0.0099	1.00	ET
Fluorene	ND	0.0099	1.00	ET
Hexachloro-1,3-Butadiene	ND	0.0099	1.00	ET
Hexachlorobenzene	ND	0.0099	1.00	ET
Hexachlorocyclopentadiene	ND	0.0099	1.00	ET
Hexachloroethane	ND	0.0099	1.00	ET
Indeno (1,2,3-c,d) Pyrene	ND	0.0099	1.00	ET
Isophorone	ND	0.49	1.00	ET
N-Nitroso-di-n-propylamine	ND	0.0099	1.00	ET
N-Nitrosodimethylamine	ND	0.0099	1.00	ET
N-Nitrosodiphenylamine	ND	0.0099	1.00	ET
Naphthalene	ND	0.0099	1.00	ET
Nitrobenzene	ND	0.0099	1.00	ET
Pentachlorophenol	ND	0.25	1.00	ET
Phenanthrene	ND	0.0099	1.00	ET
Phenol	ND	0.0099	1.00	ET
Pyrene	ND	0.0099	1.00	ET
Pyridine	ND	0.0099	1.00	ET

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 3 of 6

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	64	32-143	
2-Fluorobiphenyl	62	14-146	
2-Fluorophenol	66	15-138	
Nitrobenzene-d5	70	18-162	
Phenol-d6	67	17-141	
p-Terphenyl-d14	38	34-148	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 4 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-16-921-23**	**N/A**	**Solid**	**GC/MS JJJ**	**07/11/18**	**07/13/18 12:00**	**180711L11**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.010	1.00	
1,2-Dichlorobenzene	ND	0.010	1.00	
1,3-Dichlorobenzene	ND	0.010	1.00	
1,4-Dichlorobenzene	ND	0.010	1.00	
1-Methylnaphthalene	ND	0.010	1.00	
2,4,5-Trichlorophenol	ND	0.25	1.00	
2,4,6-Trichlorophenol	ND	0.25	1.00	
2,4-Dichlorophenol	ND	0.25	1.00	
2,4-Dimethylphenol	ND	0.50	1.00	
2,4-Dinitrophenol	ND	0.25	1.00	
2,4-Dinitrotoluene	ND	0.010	1.00	
2,6-Dichlorophenol	ND	0.25	1.00	
2,6-Dinitrotoluene	ND	0.010	1.00	
2-Chloronaphthalene	ND	0.010	1.00	
2-Chlorophenol	ND	0.010	1.00	
2-Methylnaphthalene	ND	0.010	1.00	
2-Methylphenol	ND	0.25	1.00	
2-Nitroaniline	ND	0.25	1.00	
2-Nitrophenol	ND	0.25	1.00	
3,3'-Dichlorobenzidine	ND	0.25	1.00	
3-Nitroaniline	ND	0.25	1.00	
3/4-Methylphenol	ND	0.10	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.010	1.00	
4,6-Dinitro-2-Methylphenol	ND	0.25	1.00	
4-Chloro-3-Methylphenol	ND	0.25	1.00	
4-Chloroaniline	ND	0.25	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.010	1.00	
4-Nitroaniline	ND	0.25	1.00	
4-Nitrophenol	ND	0.50	1.00	
Acenaphthene	ND	0.010	1.00	
Acenaphthylene	ND	0.010	1.00	
Aniline	ND	0.010	1.00	
Anthracene	ND	0.010	1.00	
Azobenzene	ND	0.010	1.00	
Benzidine	ND	0.25	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
		Units:	mg/kg
Project: 1802258			Page 5 of 6

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.010	1.00	
Benzo (a) Pyrene	ND	0.010	1.00	
Benzo (b) Fluoranthene	ND	0.010	1.00	
Benzo (g,h,i) Perylene	ND	0.010	1.00	
Benzo (k) Fluoranthene	ND	0.010	1.00	
Benzyl Alcohol	ND	0.010	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.010	1.00	
Bis(2-Chloroethyl) Ether	ND	0.010	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.010	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	0.25	1.00	
Butyl Benzyl Phthalate	ND	0.25	1.00	
Chrysene	ND	0.010	1.00	
Di-n-Butyl Phthalate	ND	0.25	1.00	
Di-n-Octyl Phthalate	ND	0.25	1.00	
Dibenz (a,h) Anthracene	ND	0.010	1.00	
Dibenzofuran	ND	0.010	1.00	
Diethyl Phthalate	ND	0.010	1.00	
Dimethyl Phthalate	ND	0.25	1.00	
Fluoranthene	ND	0.010	1.00	
Fluorene	ND	0.010	1.00	
Hexachloro-1,3-Butadiene	ND	0.010	1.00	
Hexachlorobenzene	ND	0.010	1.00	
Hexachlorocyclopentadiene	ND	0.010	1.00	
Hexachloroethane	ND	0.010	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.010	1.00	
Isophorone	ND	0.50	1.00	
N-Nitroso-di-n-propylamine	ND	0.010	1.00	
N-Nitrosodimethylamine	ND	0.010	1.00	
N-Nitrosodiphenylamine	ND	0.010	1.00	
Naphthalene	ND	0.010	1.00	
Nitrobenzene	ND	0.010	1.00	
Pentachlorophenol	ND	0.25	1.00	
Phenanthrene	ND	0.010	1.00	
Phenol	ND	0.010	1.00	
Pyrene	ND	0.010	1.00	
Pyridine	ND	0.010	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	73	32-143	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1646
Signal Hill, CA 90755-5225	Preparation:	EPA 3545
	Method:	EPA 8270C SIM
	Units:	mg/kg
Project: 1802258		Page 6 of 6

Surrogate	Rec. (%)	Control Limits	Qualifiers
2-Fluorobiphenyl	82	14-146	
2-Fluorophenol	73	15-138	
Nitrobenzene-d5	82	18-162	
Phenol-d6	78	17-141	
p-Terphenyl-d14	75	34-148	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - LCS/LCSD

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1646
Signal Hill, CA 90755-5225		Preparation:	EPA 3545
		Method:	EPA 8270C SIM
Project: 1802258			Page 1 of 1

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-16-921-23	**LCS**	**Solid**	**GC/MS JJJ**	**07/11/18**	**07/13/18 12:18**	**180711L11**
099-16-921-23	**LCSD**	**Solid**	**GC/MS JJJ**	**07/11/18**	**07/13/18 12:36**	**180711L11**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
2,4,6-Trichlorophenol	1.000	0.6991	70	0.7416	74	40-160	20-180	6	0-20	
2,4-Dichlorophenol	1.000	0.7340	73	0.7926	79	40-160	20-180	8	0-20	
2-Methylphenol	1.000	0.7486	75	0.8064	81	40-160	20-180	7	0-20	
2-Nitrophenol	1.000	0.8033	80	0.8704	87	40-160	20-180	8	0-20	
4-Chloro-3-Methylphenol	1.000	0.7317	73	0.7844	78	40-160	20-180	7	0-20	
Acenaphthene	1.000	0.7499	75	0.7935	79	40-160	20-180	6	0-11	
Benzo (a) Pyrene	1.000	0.7871	79	0.8460	85	17-163	0-187	7	0-20	
Chrysene	1.000	0.7547	75	0.8084	81	17-168	0-193	7	0-20	
Di-n-Butyl Phthalate	1.000	0.7572	76	0.8082	81	40-160	20-180	7	0-20	
Dimethyl Phthalate	1.000	0.7649	76	0.8036	80	40-160	20-180	5	0-20	
Fluoranthene	1.000	0.7870	79	0.8675	87	26-137	8-156	10	0-20	
Fluorene	1.000	0.7338	73	0.7787	78	59-121	49-131	6	0-20	
Naphthalene	1.000	0.7532	75	0.8040	80	21-133	2-152	7	0-20	
Phenanthrene	1.000	0.7752	78	0.8330	83	54-120	43-131	7	0-20	
Phenol	1.000	0.7440	74	0.8071	81	40-160	20-180	8	0-20	
Pyrene	1.000	0.7711	77	0.8129	81	28-106	15-119	5	0-16	

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

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RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 18-06-1646

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8270C SIM	EPA 3545	923	GC/MS JJJ	1

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Glossary of Terms and Qualifiers

Work Order: 18-06-1646 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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ADVANCED TECHNOLOGY
LABORATORIES

SUBCONTRACT ORDER

Work Order: 1802258

18-06-1646

SENDING LABORATORY:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone: 562.989.4045
Fax: 562.989.6348
Project Manager: Rachelle Arada (Rachelle@atlglobal.com)
Sampler: Jake Lippman

RECEIVING LABORATORY:

Eurofins Calscience, Inc.
7440 Lincoln Way
Garden Grove, CA 92841-1427
Phone :(714) 895-5494
Fax: (714) 894-7501
PO#: SC12897-STANDARD TAT

IMPORTANT : Please include Work Order # and PO # in your invoice.

Special Instructions: Need EQUIS EDD.

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1802258-20 / EB-061918 8270_SIM [Semivolatile Organic Compounds] Amber Unpres - 1000mL	1 **07/09/18 17:00**	**Water** 06/26/18 13:00	**06/19/18 13:00**	**Return samples when analysis is done. Call ATL for pick up.**
ATL Lab#: 1802258-21 / SW-061918 8270_SIM [Semivolatile Organic Compounds] Amber Unpres - 1000mL	2 **07/09/18 17:00**	**Water** 06/26/18 13:00	**06/19/18 13:00**	
ATL Lab#: 1802258-22 / TP-16-0-0.5 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	3 **07/09/18 17:00**	**Soil** 07/03/18 13:50	**06/19/18 13:50**	
ATL Lab#: 1802258-23 / TP-16-0.5-3.5 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	4 **07/09/18 17:00**	**Soil** 07/03/18 13:55	**06/19/18 13:55**	

Released By	Date	Received By	Date
[signature]	6/22/18 1035	[signature]	6/22/18 1035

ADVANCED TECHNOLOGY
LABORATORIES

SUBCONTRACT ORDER

Work Order: 1802258

164L

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1802258-24 / TP-16-3.5-5 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	5 **07/09/18 17:00**	**Soil** 07/03/18 13:58	**06/19/18 13:58**	
ATL Lab#: 1802258-26 / TP-19-0-4 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	6 **07/09/18 17:00**	**Soil** 07/03/18 08:40	**06/19/18 08:40**	
ATL Lab#: 1802258-27 / TP-19-4-8 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	7 **07/09/18 17:00**	**Soil** 07/03/18 08:45	**06/19/18 08:45**	
ATL Lab#: 1802258-28 / TP-19-8-10 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	8 **07/09/18 17:00**	**Soil** 07/03/18 08:50	**06/19/18 08:50**	
ATL Lab#: 1802258-29 / TP-25-0-4 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	9 **07/09/18 17:00**	**Soil** 07/03/18 10:40	**06/19/18 10:40**	
ATL Lab#: 1802258-30 / TP-25-4-6 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	10 **07/09/18 17:00**	**Soil** 07/03/18 10:45	**06/19/18 10:45**	

Released By	Date	Received By	Date
[signature]	6/22/18 1035	[signature]	6/22/18 1035

ADVANCED TECHNOLOGY
LABORATORIES

SUBCONTRACT ORDER

Work Order: 1802258

1646

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1802258-54 / TP-9-0-0.25 8270_SIM [Semivolatile Organic Compounds]	11 **07/09/18 17:00**	**Soil** 07/04/18 12:30	**06/20/18 12:30**	
ATL Lab#: 1802258-55 / TP-9-0.25-2.5 8270_SIM [Semivolatile Organic Compounds]	12 **07/09/18 17:00**	**Soil** 07/04/18 12:35	**06/20/18 12:35**	
ATL Lab#: 1802258-56 / TP-9-2.5-7 8270_SIM [Semivolatile Organic Compounds]	13 **07/09/18 17:00**	**Soil** 07/04/18 12:40	**06/20/18 12:40**	
ATL Lab#: 1802258-59 / TP-21-0-5 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	14 **07/09/18 17:00**	**Soil** 07/04/18 13:15	**06/20/18 13:15**	
ATL Lab#: 1802258-60 / TP-21-5-9 8270_SIM [Semivolatile Organic Compounds] Glass Jar - 8 oz	15 **07/09/18 17:00**	**Soil** 07/04/18 13:20	**06/20/18 13:20**	

Released By	Date	Received By	Date
[signature]	6/22/18 1035	[signature]	6/22/18 1035

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WORK ORDER NUMBER: 18-06-1646

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: ATL

DATE: 06/22/2018

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC6 (CF: +0.1°C); Temperature (w/o CF): 2-8 °C (w/ CF): 2-9 °C; ☐ Blank ☑ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: SMG

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: SMG

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: TTB

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☐	☐	☑
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☑	☐	☐
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Acid/base preserved samples - pH within acceptable range	☐	☐	☑
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOA**h** ☐ VOA**na₂** ☐ 100PJ ☐ 100PJ**na₂** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB ☐ 125PB**znna** (pH__9)

☐ 250AGB ☐ 250CGB ☐ 250CGB**s** (pH__2) ☐ 250PB ☐ 250PB**n** (pH__2) ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s** (pH__2) ☐ 500PB

☑ 1AGB ☐ 1AGB**na₂** ☐ 1AGB**s** (pH__2) ☐ 1AGB**s** (O&G) ☐ 1PB ☐ 1PB**na** (pH__12) ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☑ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (___) ☐ EnCores® (___) ☐ TerraCores® (___) ☐ _____ ☐ _____ ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na₂** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: TTB

Reviewed by: SMG

Rachelle Arada

From: Jake Lippman <JLippman@kleinfelder.com>
Sent: Tuesday, July 10, 2018 6:56 PM
To: Lori Thompson; Rachelle Arada
Subject: RE: Dimethyl Phthalate

Rachelle/Lori,

Can we please re-extract and analyze TP-21-0-5 for dimethyl phthalate? Lori indicated that if the new result is ND then we would not be charged an additional fee.

Thank you

Jake Lippman, PG, CHg
Project Manager

550 West C Street, Suite 1200
San Diego, CA 92101
d| 619.831.4677
o| 619.831.4600
m| 619.348.8415

KLEINFELDER
Bright People. Right Solutions.

This email may contain confidential information. If you have received this email—including any attachments—in error, please notify the sender promptly and delete the email and any attachments from all of your systems.

From: Lori Thompson <LoriThompson@eurofinsUS.com>
Sent: Tuesday, July 10, 2018 4:45 PM
To: Jake Lippman <JLippman@kleinfelder.com>
Subject: RE: Dimethyl Phthalate

No, if phthalates were ND we would not charge for the re-extraction and analysis.

Lori Thompson
Project Management

Eurofins Calscience
7440 Lincoln Way
Garden Grove, Ca 92841
USA

P: +1 714 895 5494
F: +1 714 894 7501

LoriThompson@EurofinsUS.com
www.EurofinsUS.com/Calscience

ADVANCED TECHNOLOGY LABORATORIES

September 13, 2018

Jake Lippman
Kleinfelder
550 W. C. Suite 1200
San Diego, CA 92101
Tel: (619) 831-4600
Fax:

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003

Re: ATL Work Order Number : 1802258
Client Reference : Salt Pond 20, 20164596.018A

Enclosed are the results for sample(s) received on June 20, 2018 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	09/13/2018

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HA-5-4.0	1802258-03	Soil	6/19/18 9:40	6/20/18 15:58

CASE NARRATIVE

The samples for EPA 8270 SIM (Semivolatile Organic Compounds) analysis were subcontracted to Eurofins Calscience, Inc. with ELAP Cert.#1230.

The samples for EPA 8270 SIM (Phenols/Phthalates) were subcontracted to AETL with ELAP Cert.# 1541.

DETECTION SUMMARY

Client Sample ID HA-5-4.0

Lab ID: 1802258-03

Total Metals by ICP-AES EPA 6010B **Analyst: GO**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**3.9**	1.0	1	B8I0237	09/11/2018	09/11/18 15:48	
Zinc	**22**	1.0	1	B8I0237	09/11/2018	09/11/18 15:48	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	09/13/2018

Client Sample ID HA-5-4.0

Lab ID: 1802258-03

Total Metals by ICP-AES EPA 6010B **Analyst: GO**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Lead	**3.9**	1.0	1	B8I0237	09/11/2018	09/11/18 15:48	
Zinc	**22**	1.0	1	B8I0237	09/11/2018	09/11/18 15:48	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	09/13/2018

QUALITY CONTROL SECTION

Total Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8I0237 - EPA 3050B_S										
Blank (B8I0237-BLK1)					Prepared: 9/11/2018 Analyzed: 9/11/2018					
Lead	ND	1.0	0.18							
Zinc	ND	1.0	0.15							
LCS (B8I0237-BS1)					Prepared: 9/11/2018 Analyzed: 9/11/2018					
Lead	46.5645	1.0	0.18	50.0000		93.1	80 - 120			
Zinc	43.5468	1.0	0.15	50.0000		87.1	80 - 120			
Matrix Spike (B8I0237-MS1)			**Source: 1803317-44**		Prepared: 9/11/2018 Analyzed: 9/11/2018					
Lead	94.7737	1.0	0.18	125.000	6.14759	70.9	36 - 121			
Zinc	130.545	1.0	0.15	125.000	49.4386	64.9	26 - 117			
Matrix Spike Dup (B8I0237-MSD1)			**Source: 1803317-44**		Prepared: 9/11/2018 Analyzed: 9/11/2018					
Lead	91.7432	1.0	0.18	125.000	6.14759	68.5	36 - 121	3.25	20	
Zinc	126.438	1.0	0.15	125.000	49.4386	61.6	26 - 117	3.20	20	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	09/13/2018

Notes and Definitions

ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

Rachelle Arada

From: Jake Lippman <JLippman@kleinfelder.com>
Sent: Thursday, September 6, 2018 9:24 AM
To: Rachelle Arada
Cc: Carmen Aguila; customer.relations@atlglobal.com
Subject: RE: 20164596 STLC/TCLP

Thank you. Please also add Zinc 6010B to HA-5-4.

Jake Lippman, PG, CHg
Project Manager

550 West C Street, Suite 1200
San Diego, CA 92101
d| 619.831.4677
o| 619.831.4600
m| 619.348.8415

This email may contain confidential information. If you have received this email—including any attachments—in error, please notify the sender promptly and delete the email and any attachments from all of your systems.

From: Rachelle Arada <Rachelle@atlglobal.com>
Sent: Wednesday, September 5, 2018 5:18 PM
To: Jake Lippman <JLippman@kleinfelder.com>
Cc: Carmen Aguila <Carmen@atlglobal.com>; customer.relations@atlglobal.com
Subject: RE: 20164596 STLC/TCLP

External Email.

Good afternoon Jake,

We received your request. Thanks.

Rachelle

From: Jake Lippman [mailto:JLippman@kleinfelder.com]
Sent: Wednesday, September 5, 2018 5:14 PM
To: Carmen Aguila; Rachelle Arada
Subject: RE: 20164596 STLC/TCLP

Please analyze HA-5-4.0 and HA-7-4.0 for lead 6010B. Standard TAT.

Thank you

ADVANCED TECHNOLOGY LABORATORIES

July 09, 2018

Jake Lippman
Kleinfelder
550 W. C. Suite 1200
San Diego, CA 92101
Tel: (619) 831-4600
Fax:

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003

Re: ATL Work Order Number : 1802292
Client Reference : Salt Pond 20, 20164596.018A

Enclosed are the results for sample(s) received on June 21, 2018 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/09/2018

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EB-062018	1802292-01	Water	6/20/18 16:10	6/21/18 15:53

CASE NARRATIVE

The sample for EPA 8270 SIM (Semivolatile Organic Compounds) analysis was subcontracted to Eurofins Calscience, Inc. with ELAP Cert.#1230.

The sample for EPA 8270 SIM (Phenols/Phthalates) was subcontracted to AETL with ELAP Cert.# 1541.

DETECTION SUMMARY

Client Sample ID EB-062018

Lab ID: 1802292-01

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Barium	**1.0**	1.0	1	B8F0662	06/26/2018	06/26/18 16:33	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/09/2018

Client Sample ID EB-062018
Lab ID: 1802292-01

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:33	U
Arsenic	ND	1.0	1	B8F0662	06/26/2018	06/26/18 16:33	U
Barium	**1.0**	1.0	1	B8F0662	06/26/2018	06/26/18 16:33	
Beryllium	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:33	U
Cadmium	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:33	U
Chromium	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:33	U
Cobalt	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:33	U
Copper	ND	1.0	1	B8F0662	06/26/2018	06/26/18 16:33	U
Lead	ND	1.0	1	B8F0662	06/26/2018	06/26/18 16:33	U
Molybdenum	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:33	U
Nickel	ND	1.0	1	B8F0662	06/26/2018	06/26/18 16:33	U
Selenium	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:33	U
Silver	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:33	U
Thallium	ND	0.50	1	B8F0662	06/26/2018	06/26/18 16:33	U
Vanadium	ND	1.0	1	B8F0662	06/26/2018	06/26/18 16:33	U
Zinc	ND	10	1	B8F0662	06/26/2018	06/26/18 16:33	U

Mercury by AA (Cold Vapor) EPA 7470A

Analyst: KEK

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.20	1	B8F0677	06/26/2018	06/27/18 11:46	U

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C6	ND	0.20	1	B8F0687	06/27/2018	06/27/18 11:22	U
C7	ND	0.20	1	B8F0687	06/27/2018	06/27/18 11:22	U
C8	ND	0.20	1	B8F0687	06/27/2018	06/27/18 11:22	U
C9	ND	0.20	1	B8F0687	06/27/2018	06/27/18 11:22	U
C10	ND	0.20	1	B8F0687	06/27/2018	06/27/18 11:22	U
C11	ND	0.20	1	B8F0687	06/27/2018	06/27/18 11:22	U
C12	ND	0.20	1	B8F0687	06/27/2018	06/27/18 11:22	U
Surrogate: 4-Bromofluorobenzene	*112 %*	*70 - 130*		B8F0687	06/27/2018	*06/27/18 11:22*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/09/2018

Client Sample ID EB-062018

Lab ID: 1802292-01

Hydrocarbon Chain Distribution by EPA 8015B (Modified) **Analyst: CR**

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
C13	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C14	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C15	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C16	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C17	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C18	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C19	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C20	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C21	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C22	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C23	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C24	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C25	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C26	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C27	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C28	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C29	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C30	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C31	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C32	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C33	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C34	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C35	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C36	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C37	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C38	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C39	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
C40	ND	0.20	1	B8F0704	06/26/2018	06/27/18 17:49	U
Surrogate: p-Terphenyl	*70.7 %*	*32 - 169*		B8F0704	06/26/2018	*06/27/18 17:49*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/09/2018

Client Sample ID EB-062018

Lab ID: 1802292-01

Organochlorine Pesticides by EPA 8081 **Analyst: CO**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4´-DDD	ND	0.05	1	B8F0616	06/23/2018	06/24/18 19:23	U
4,4´-DDE	ND	0.05	1	B8F0616	06/23/2018	06/24/18 19:23	U
4,4´-DDT	ND	0.05	1	B8F0616	06/23/2018	06/24/18 19:23	U
Aldrin	ND	0.02	1	B8F0616	06/23/2018	06/24/18 19:23	U
alpha-BHC	ND	0.02	1	B8F0616	06/23/2018	06/24/18 19:23	U
alpha-Chlordane	ND	0.02	1	B8F0616	06/23/2018	06/24/18 19:23	U
beta-BHC	ND	0.02	1	B8F0616	06/23/2018	06/24/18 19:23	U
Chlordane	ND	0.25	1	B8F0616	06/23/2018	06/24/18 19:23	U
delta-BHC	ND	0.02	1	B8F0616	06/23/2018	06/24/18 19:23	U
Dieldrin	ND	0.05	1	B8F0616	06/23/2018	06/24/18 19:23	U
Endosulfan I	ND	0.02	1	B8F0616	06/23/2018	06/24/18 19:23	U
Endosulfan II	ND	0.05	1	B8F0616	06/23/2018	06/24/18 19:23	U
Endosulfan sulfate	ND	0.05	1	B8F0616	06/23/2018	06/24/18 19:23	U
Endrin	ND	0.05	1	B8F0616	06/23/2018	06/24/18 19:23	U
Endrin aldehyde	ND	0.05	1	B8F0616	06/23/2018	06/24/18 19:23	U
Endrin ketone	ND	0.05	1	B8F0616	06/23/2018	06/24/18 19:23	U
gamma-BHC	ND	0.02	1	B8F0616	06/23/2018	06/24/18 19:23	U
gamma-Chlordane	ND	0.02	1	B8F0616	06/23/2018	06/24/18 19:23	U
Heptachlor	ND	0.02	1	B8F0616	06/23/2018	06/24/18 19:23	U
Heptachlor epoxide	ND	0.02	1	B8F0616	06/23/2018	06/24/18 19:23	U
Methoxychlor	ND	0.25	1	B8F0616	06/23/2018	06/24/18 19:23	U
Toxaphene	ND	2.5	1	B8F0616	06/23/2018	06/24/18 19:23	U
Surrogate: Decachlorobiphenyl	*90.4 %*	*1 - 110*		B8F0616	06/23/2018	*06/24/18 19:23*	
Surrogate: Tetrachloro-m-xylene	*87.4 %*	*19 - 117*		B8F0616	06/23/2018	*06/24/18 19:23*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/09/2018

Client Sample ID EB-062018

Lab ID: 1802292-01

Polychlorinated Biphenyls by EPA 8082

Analyst: CO

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Aroclor 1016	ND	0.50	1	B8F0616	06/23/2018	06/24/18 18:22	U
Aroclor 1221	ND	1.0	1	B8F0616	06/23/2018	06/24/18 18:22	U
Aroclor 1232	ND	0.50	1	B8F0616	06/23/2018	06/24/18 18:22	U
Aroclor 1242	ND	0.50	1	B8F0616	06/23/2018	06/24/18 18:22	U
Aroclor 1248	ND	0.50	1	B8F0616	06/23/2018	06/24/18 18:22	U
Aroclor 1254	ND	0.50	1	B8F0616	06/23/2018	06/24/18 18:22	U
Aroclor 1260	ND	0.50	1	B8F0616	06/23/2018	06/24/18 18:22	U
Aroclor 1262	ND	0.50	1	B8F0616	06/23/2018	06/24/18 18:22	U
Aroclor 1268	ND	0.50	1	B8F0616	06/23/2018	06/24/18 18:22	U
Surrogate: Decachlorobiphenyl	*80.9 %*	*1 - 110*		B8F0616	06/23/2018	*06/24/18 18:22*	
Surrogate: Tetrachloro-m-xylene	*91.5 %*	*19 - 117*		B8F0616	06/23/2018	*06/24/18 18:22*	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
1,1,1-Trichloroethane	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
1,1,2,2-Tetrachloroethane	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
1,1,2-Trichloroethane	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
1,1-Dichloroethane	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
1,1-Dichloroethene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
1,1-Dichloropropene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
1,2,3-Trichloropropane	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
1,2,3-Trichlorobenzene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
1,2,4-Trichlorobenzene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
1,2,4-Trimethylbenzene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
1,2-Dibromo-3-chloropropane	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
1,2-Dibromoethane	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
1,2-Dichlorobenzene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
1,2-Dichloroethane	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
1,2-Dichloropropane	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
1,3,5-Trimethylbenzene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
1,3-Dichlorobenzene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
1,3-Dichloropropane	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
1,4-Dichlorobenzene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
2,2-Dichloropropane	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/09/2018

Client Sample ID EB-062018

Lab ID: 1802292-01

Volatile Organic Compounds by EPA 8260B **Analyst: QP**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
4-Chlorotoluene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
4-Isopropyltoluene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Benzene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Bromobenzene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Bromochloromethane	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Bromodichloromethane	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Bromoform	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Bromomethane	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Carbon disulfide	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Carbon tetrachloride	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Chlorobenzene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Chloroethane	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Chloroform	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Chloromethane	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
cis-1,2-Dichloroethene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
cis-1,3-Dichloropropene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Di-isopropyl ether	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Dibromochloromethane	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Dibromomethane	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Dichlorodifluoromethane	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Ethyl Acetate	ND	50	1	B8F0703	06/27/2018	06/27/18 01:32	U
Ethyl Ether	ND	50	1	B8F0703	06/27/2018	06/27/18 01:32	U
Ethyl tert-butyl ether	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Ethylbenzene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Freon-113	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Hexachlorobutadiene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Isopropylbenzene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
m,p-Xylene	ND	10	1	B8F0703	06/27/2018	06/27/18 01:32	U
Methylene chloride	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
MTBE	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
n-Butylbenzene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
n-Propylbenzene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Naphthalene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
o-Xylene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
sec-Butylbenzene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Styrene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/09/2018

Client Sample ID EB-062018

Lab ID: 1802292-01

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
tert-Butanol	ND	100	1	B8F0703	06/27/2018	06/27/18 01:32	U
tert-Butylbenzene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Tetrachloroethene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Toluene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
trans-1,2-Dichloroethene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
trans-1,3-Dichloropropene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Trichloroethene	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Trichlorofluoromethane	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Vinyl acetate	ND	50	1	B8F0703	06/27/2018	06/27/18 01:32	U
Vinyl chloride	ND	5.0	1	B8F0703	06/27/2018	06/27/18 01:32	U
Surrogate: 1,2-Dichloroethane-d4	*102 %*	*74 - 132*		B8F0703	06/27/2018	*06/27/18 01:32*	
Surrogate: 4-Bromofluorobenzene	*95.9 %*	*82 - 123*		B8F0703	06/27/2018	*06/27/18 01:32*	
Surrogate: Dibromofluoromethane	*112 %*	*76 - 135*		B8F0703	06/27/2018	*06/27/18 01:32*	
Surrogate: Toluene-d8	*101 %*	*85 - 125*		B8F0703	06/27/2018	*06/27/18 01:32*	

Semivolatile Organic Compounds by EPA 8270/SIM

Analyst: SP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Methylnaphthalene	ND	0.20	1	B8F0676	06/26/2018	06/28/18 09:34	U
Acenaphthene	ND	0.20	1	B8F0676	06/26/2018	06/28/18 09:34	U
Acenaphthylene	ND	0.20	1	B8F0676	06/26/2018	06/28/18 09:34	U
Anthracene	ND	0.20	1	B8F0676	06/26/2018	06/28/18 09:34	U
Benzo(a)anthracene	ND	0.20	1	B8F0676	06/26/2018	06/28/18 09:34	U
Benzo(a)pyrene	ND	0.20	1	B8F0676	06/26/2018	06/28/18 09:34	U
Benzo(b)fluoranthene	ND	0.20	1	B8F0676	06/26/2018	06/28/18 09:34	U
Benzo(g,h,i)perylene	ND	0.20	1	B8F0676	06/26/2018	06/28/18 09:34	U
Benzo(k)fluoranthene	ND	0.20	1	B8F0676	06/26/2018	06/28/18 09:34	U
Chrysene	ND	0.20	1	B8F0676	06/26/2018	06/28/18 09:34	U
Dibenz(a,h)anthracene	ND	0.20	1	B8F0676	06/26/2018	06/28/18 09:34	U
Fluoranthene	ND	0.20	1	B8F0676	06/26/2018	06/28/18 09:34	U
Fluorene	ND	0.20	1	B8F0676	06/26/2018	06/28/18 09:34	U
Indeno(1,2,3-cd)pyrene	ND	0.20	1	B8F0676	06/26/2018	06/28/18 09:34	U
Naphthalene	ND	0.20	1	B8F0676	06/26/2018	06/28/18 09:34	U
Phenanthrene	ND	0.20	1	B8F0676	06/26/2018	06/28/18 09:34	U
Pyrene	ND	0.20	1	B8F0676	06/26/2018	06/28/18 09:34	U

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/09/2018

Client Sample ID EB-062018

Lab ID: 1802292-01

Semivolatile Organic Compounds by EPA 8270/SIM **Analyst: SP**

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Surrogate: 1,2-Dichlorobenzene-d4	*74.4 %*	*36 - 99*		B8F0676	06/26/2018	*06/28/18 09:34*	
Surrogate: 2-Fluorobiphenyl	*77.6 %*	*33 - 111*		B8F0676	06/26/2018	*06/28/18 09:34*	
Surrogate: Nitrobenzene-d5	*57.6 %*	*12 - 124*		B8F0676	06/26/2018	*06/28/18 09:34*	
Surrogate: 4-Terphenyl-d14	*93.2 %*	*43 - 118*		B8F0676	06/26/2018	*06/28/18 09:34*	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/09/2018

QUALITY CONTROL SECTION

Total Metals by ICP-MS EPA 6020 - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0662 - EPA 3010A MS_W										
Blank (B8F0662-BLK1)					Prepared: 6/26/2018 Analyzed: 6/26/2018					
Antimony	ND	0.50	0.06							U
Arsenic	ND	1.0	0.39							U
Barium	ND	1.0	0.14							U
Beryllium	ND	0.50	0.08							U
Cadmium	ND	0.50	0.14							U
Chromium	ND	0.50	0.09							U
Cobalt	ND	0.50	0.05							U
Copper	ND	1.0	0.10							U
Lead	ND	1.0	0.32							U
Molybdenum	ND	0.50	0.08							U
Nickel	ND	1.0	0.16							U
Selenium	ND	0.50	0.22							U
Silver	ND	0.50	0.08							U
Thallium	ND	0.50	0.14							U
Vanadium	ND	1.0	0.59							U
Zinc	ND	10	1.6							U
LCS (B8F0662-BS1)					Prepared: 6/26/2018 Analyzed: 6/26/2018					
Antimony	10.3938	0.50	0.06	10.0000		104	85 - 115			
Arsenic	9.77330	1.0	0.39	10.0000		97.7	85 - 115			
Barium	10.2504	1.0	0.14	10.0000		103	85 - 115			
Beryllium	9.82296	0.50	0.08	10.0000		98.2	85 - 115			
Cadmium	9.87712	0.50	0.14	10.0000		98.8	85 - 115			
Chromium	10.1319	0.50	0.09	10.0000		101	85 - 115			
Cobalt	9.79577	0.50	0.05	10.0000		98.0	85 - 115			
Copper	9.79152	1.0	0.10	10.0000		97.9	85 - 115			
Lead	9.98270	1.0	0.32	10.0000		99.8	85 - 115			
Molybdenum	9.74877	0.50	0.08	10.0000		97.5	85 - 115			
Nickel	9.73333	1.0	0.16	10.0000		97.3	85 - 115			
Selenium	9.96620	0.50	0.22	10.0000		99.7	85 - 115			
Silver	9.87298	0.50	0.08	10.0000		98.7	85 - 115			
Thallium	10.0743	0.50	0.14	10.0000		101	85 - 115			
Vanadium	10.5274	1.0	0.59	10.0000		105	85 - 115			
Zinc	97.4094	10	1.6	100.000		97.4	85 - 115			
Matrix Spike (B8F0662-MS1)			**Source: 1802292-01**		Prepared: 6/26/2018 Analyzed: 6/26/2018					
Antimony	10.1132	0.50	0.06	10.0000	ND	101	75 - 125			
Arsenic	9.15822	1.0	0.39	10.0000	ND	91.6	75 - 125			
Barium	10.3226	1.0	0.14	10.0000	1.04118	92.8	75 - 125			
Beryllium	9.14562	0.50	0.08	10.0000	ND	91.5	75 - 125			

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Total Metals by ICP-MS EPA 6020 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0662 - EPA 3010A MS_W (continued)										
Matrix Spike (B8F0662-MS1) - Continued			**Source: 1802292-01**		Prepared: 6/26/2018 Analyzed: 6/26/2018					
Cadmium	9.88144	0.50	0.14	10.0000	ND	98.8	75 - 125			
Chromium	10.4544	0.50	0.09	10.0000	ND	105	75 - 125			
Cobalt	10.7575	0.50	0.05	10.0000	ND	108	75 - 125			
Copper	11.9589	1.0	0.10	10.0000	0.938270	110	75 - 125			
Lead	10.1987	1.0	0.32	10.0000	ND	102	75 - 125			
Molybdenum	10.6540	0.50	0.08	10.0000	ND	107	75 - 125			
Nickel	10.9155	1.0	0.16	10.0000	0.268750	106	75 - 125			
Selenium	9.00981	0.50	0.22	10.0000	ND	90.1	75 - 125			
Silver	10.4730	0.50	0.08	10.0000	ND	105	75 - 125			
Thallium	10.0624	0.50	0.14	10.0000	ND	101	75 - 125			
Vanadium	10.6072	1.0	0.59	10.0000	ND	106	75 - 125			
Zinc	97.7254	10	1.6	100.000	2.46000	95.3	75 - 125			
Matrix Spike Dup (B8F0662-MSD1)			**Source: 1802292-01**		Prepared: 6/26/2018 Analyzed: 6/26/2018					
Antimony	10.4292	0.50	0.06	10.0000	ND	104	75 - 125	3.08	20	
Arsenic	9.48039	1.0	0.39	10.0000	ND	94.8	75 - 125	3.46	20	
Barium	10.8011	1.0	0.14	10.0000	1.04118	97.6	75 - 125	4.53	20	
Beryllium	9.09060	0.50	0.08	10.0000	ND	90.9	75 - 125	0.603	20	
Cadmium	9.85266	0.50	0.14	10.0000	ND	98.5	75 - 125	0.292	20	
Chromium	10.9270	0.50	0.09	10.0000	ND	109	75 - 125	4.42	20	
Cobalt	11.4394	0.50	0.05	10.0000	ND	114	75 - 125	6.14	20	
Copper	12.3005	1.0	0.10	10.0000	0.938270	114	75 - 125	2.82	20	
Lead	10.4841	1.0	0.32	10.0000	ND	105	75 - 125	2.76	20	
Molybdenum	10.9352	0.50	0.08	10.0000	ND	109	75 - 125	2.61	20	
Nickel	11.6599	1.0	0.16	10.0000	0.268750	114	75 - 125	6.59	20	
Selenium	9.24542	0.50	0.22	10.0000	ND	92.5	75 - 125	2.58	20	
Silver	10.6918	0.50	0.08	10.0000	ND	107	75 - 125	2.07	20	
Thallium	10.2745	0.50	0.14	10.0000	ND	103	75 - 125	2.09	20	
Vanadium	10.9896	1.0	0.59	10.0000	ND	110	75 - 125	3.54	20	
Zinc	96.2025	10	1.6	100.000	2.46000	93.7	75 - 125	1.57	20	
Post Spike (B8F0662-PS1)			**Source: 1802292-01**		Prepared: 6/26/2018 Analyzed: 6/26/2018					
Antimony	10.2188			10.0000	0.02342	102	75 - 125			
Arsenic	8.98115			10.0000	-0.198750	89.8	75 - 125			
Barium	10.8829			10.0000	1.04118	98.4	75 - 125			
Beryllium	8.89789			10.0000	0.01189	88.9	75 - 125			
Cadmium	9.69513			10.0000	0.00873	96.9	75 - 125			
Chromium	10.6440			10.0000	0.02635	106	75 - 125			
Cobalt	10.8081			10.0000	0.04849	108	75 - 125			
Copper	12.0468			10.0000	0.938270	111	75 - 125			
Lead	10.0193			10.0000	0.130250	98.9	75 - 125			
Molybdenum	10.5105			10.0000	0.04856	105	75 - 125			

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San Diego , CA 92101		Reported :	07/09/2018

Total Metals by ICP-MS EPA 6020 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0662 - EPA 3010A MS_W (continued)									
Post Spike (B8F0662-PS1) - Continued			**Source: 1802292-01**		Prepared: 6/26/2018 Analyzed: 6/26/2018				
Nickel	11.0709		10.0000	0.268750	108	75 - 125			
Selenium	8.71079		10.0000	-0.00889	87.1	75 - 125			
Silver	10.4556		10.0000	0.00581	104	75 - 125			
Thallium	9.91830		10.0000	0.01073	99.1	75 - 125			
Vanadium	10.8197		10.0000	-0.100690	108	75 - 125			
Zinc	93.0454		100.000	2.46000	90.6	75 - 125			

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San Diego , CA 92101		Reported :	07/09/2018

Mercury by AA (Cold Vapor) EPA 7470A - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0677 - EPA 245.1/7470_W										
Blank (B8F0677-BLK1)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	ND	0.20	0.03							U
LCS (B8F0677-BS1)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	9.62451	0.20	0.03	10.0000		96.2	80 - 120			
Matrix Spike (B8F0677-MS1)			**Source: 1802237-22**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	9.58006	0.20	0.03	10.0000	ND	95.8	70 - 130			
Matrix Spike Dup (B8F0677-MSD1)			**Source: 1802237-22**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	9.47061	0.20	0.03	10.0000	ND	94.7	70 - 130	1.15	20	
Post Spike (B8F0677-PS1)			**Source: 1802237-22**		Prepared: 6/26/2018 Analyzed: 6/27/2018					
Mercury	4.85579			5.00000	0.000187	97.1	85 - 115			

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San Diego , CA 92101	Reported :	07/09/2018

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0687 - GCVOA_W										
Blank (B8F0687-BLK1)					Prepared: 6/27/2018 Analyzed: 6/27/2018					
C6	ND	0.20	0.05							U
C7	ND	0.20	0.05							U
C8	ND	0.20	0.05							U
C9	ND	0.20	0.05							U
C10	ND	0.20	0.05							U
C11	ND	0.20	0.05							U
C12	ND	0.20	0.05							U
Surrogate: 4-Bromofluorobenzene	*0.09312*			*0.100000*		*93.1*	*70 - 130*			
LCS (B8F0687-BS1)					Prepared: 6/27/2018 Analyzed: 6/27/2018					
Gasoline Range Organics	0.884000	0.20	0.05	1.00000		88.4	70 - 130			
Surrogate: 4-Bromofluorobenzene	*0.1124*			*0.100000*		*112*	*70 - 130*			
LCS Dup (B8F0687-BSD1)					Prepared: 6/27/2018 Analyzed: 6/27/2018					
Gasoline Range Organics	0.867000	0.20	0.05	1.00000		86.7	70 - 130	1.94	20	
Surrogate: 4-Bromofluorobenzene	*0.1182*			*0.100000*		*118*	*70 - 130*			

Certificate of Analysis

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550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/09/2018

Hydrocarbon Chain Distribution by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0704 - GCSEMI_DRO_W										
Blank (B8F0704-BLK1)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
C13	ND	0.20	0.20							U
C14	ND	0.20	0.20							U
C15	ND	0.20	0.20							U
C16	ND	0.20	0.20							U
C17	ND	0.20	0.20							U
C18	ND	0.20	0.20							U
C19	ND	0.20	0.20							U
C20	ND	0.20	0.20							U
C21	ND	0.20	0.20							U
C22	ND	0.20	0.20							U
C23	ND	0.20	0.20							U
C24	ND	0.20	0.20							U
C25	ND	0.20	0.20							U
C26	ND	0.20	0.20							U
C27	ND	0.20	0.20							U
C28	ND	0.20	0.20							U
C29	ND	0.20	0.20							U
C30	ND	0.20	0.20							U
C31	ND	0.20	0.20							U
C32	ND	0.20	0.20							U
C33	ND	0.20	0.20							U
C34	ND	0.20	0.20							U
C35	ND	0.20	0.20							U
C36	ND	0.20	0.20							U
C37	ND	0.20	0.20							U
C38	ND	0.20	0.20							U
C39	ND	0.20	0.20							U
C40	ND	0.20	0.20							U
Surrogate: p-Terphenyl	*0.06599*			*8.00000E-2*		*82.5*	*32 - 169*			
LCS (B8F0704-BS1)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
DRO	1.01774	0.20	0.20	1.00000		102	45 - 161			
Surrogate: p-Terphenyl	*0.06982*			*8.00000E-2*		*87.3*	*32 - 169*			
LCS Dup (B8F0704-BSD1)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
DRO	1.03336	0.20	0.20	1.00000		103	45 - 161	1.52	20	
Surrogate: p-Terphenyl	*0.08539*			*8.00000E-2*		*107*	*32 - 169*			

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550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/09/2018

Organochlorine Pesticides by EPA 8081 - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0616 - GCSEMI_PCB/PEST_W										
Blank (B8F0616-BLK1)					Prepared: 6/23/2018 Analyzed: 6/24/2018					
4,4´-DDD	ND	0.05	0.006							U
4,4´-DDD [2C]	ND	0.05	0.006							U
4,4´-DDE	ND	0.05	0.005							U
4,4´-DDE [2C]	ND	0.05	0.005							U
4,4´-DDT	ND	0.05	0.01							U
4,4´-DDT [2C]	ND	0.05	0.01							U
Aldrin	ND	0.02	0.002							U
Aldrin [2C]	ND	0.02	0.002							U
alpha-BHC	ND	0.02	0.002							U
alpha-BHC [2C]	ND	0.02	0.002							U
alpha-Chlordane	ND	0.02	0.003							U
alpha-Chlordane [2C]	ND	0.02	0.003							U
beta-BHC	ND	0.02	0.002							U
beta-BHC [2C]	ND	0.02	0.002							U
Chlordane	ND	0.25	0.03							U
Chlordane [2C]	ND	0.25	0.03							U
delta-BHC	ND	0.02	0.002							U
delta-BHC [2C]	ND	0.02	0.002							U
Dieldrin	ND	0.05	0.002							U
Dieldrin [2C]	ND	0.05	0.002							U
Endosulfan I	ND	0.02	0.005							U
Endosulfan I [2C]	ND	0.02	0.005							U
Endosulfan II	ND	0.05	0.009							U
Endosulfan II [2C]	ND	0.05	0.009							U
Endosulfan sulfate	ND	0.05	0.01							U
Endosulfan Sulfate [2C]	ND	0.05	0.01							U
Endrin	ND	0.05	0.005							U
Endrin [2C]	ND	0.05	0.005							U
Endrin aldehyde	ND	0.05	0.003							U
Endrin aldehyde [2C]	ND	0.05	0.003							U
Endrin ketone	ND	0.05	0.003							U
Endrin ketone [2C]	ND	0.05	0.003							U
gamma-BHC	ND	0.02	0.002							U
gamma-BHC [2C]	ND	0.02	0.002							U
gamma-Chlordane	ND	0.02	0.002							U
gamma-Chlordane [2C]	ND	0.02	0.002							U
Heptachlor	ND	0.02	0.002							U
Heptachlor [2C]	ND	0.02	0.002							U
Heptachlor epoxide	ND	0.02	0.002							U
Heptachlor epoxide [2C]	ND	0.02	0.002							U
Methoxychlor	ND	0.25	0.008							U

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550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/09/2018

Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0616 - GCSEMI_PCB/PEST_W (continued)										
Blank (B8F0616-BLK1) - Continued					Prepared: 6/23/2018 Analyzed: 6/24/2018					
Methoxychlor [2C]	ND	0.25	0.008							U
Toxaphene	ND	2.5	0.23							U
Toxaphene [2C]	ND	2.5	0.23							U
Surrogate: Decachlorobiphenyl	*0.3976*			*0.500000*		*79.5*	*1 - 110*			
Surrogate: Decachlorobiphenyl [	*0.3325*			*0.500000*		*66.5*	*1 - 110*			
Surrogate: Tetrachloro-m-xylene	*0.4055*			*0.500000*		*81.1*	*19 - 117*			
Surrogate: Tetrachloro-m-xylene	*0.3808*			*0.500000*		*76.2*	*19 - 117*			
LCS (B8F0616-BS1)					Prepared: 6/23/2018 Analyzed: 6/24/2018					
4,4´-DDD	0.521215	0.05	0.006	0.500000		104	51 - 125			
4,4´-DDD [2C]	0.508690	0.05	0.006	0.500000		102	51 - 125			
4,4´-DDE	0.470755	0.05	0.005	0.500000		94.2	41 - 121			
4,4´-DDE [2C]	0.443940	0.05	0.005	0.500000		88.8	41 - 121			
4,4´-DDT	0.289665	0.05	0.01	0.500000		57.9	11 - 131			
4,4´-DDT [2C]	0.297685	0.05	0.01	0.500000		59.5	11 - 131			
Aldrin	0.467130	0.02	0.002	0.500000		93.4	43 - 116			
Aldrin [2C]	0.461705	0.02	0.002	0.500000		92.3	43 - 116			
alpha-BHC	0.469220	0.02	0.002	0.500000		93.8	53 - 114			
alpha-BHC [2C]	0.466135	0.02	0.002	0.500000		93.2	53 - 114			
alpha-Chlordane	0.469575	0.02	0.003	0.500000		93.9	44 - 117			
alpha-Chlordane [2C]	0.440500	0.02	0.003	0.500000		88.1	44 - 117			
beta-BHC	0.453460	0.02	0.002	0.500000		90.7	49 - 111			
beta-BHC [2C]	0.450870	0.02	0.002	0.500000		90.2	49 - 111			
delta-BHC	0.505800	0.02	0.002	0.500000		101	38 - 108			
delta-BHC [2C]	0.486355	0.02	0.002	0.500000		97.3	38 - 108			
Dieldrin	0.441860	0.05	0.002	0.500000		88.4	43 - 112			
Dieldrin [2C]	0.424070	0.05	0.002	0.500000		84.8	43 - 112			
Endosulfan I	0.449705	0.02	0.005	0.500000		89.9	37 - 111			
Endosulfan I [2C]	0.435015	0.02	0.005	0.500000		87.0	37 - 111			
Endosulfan II	0.510800	0.05	0.009	0.500000		102	46 - 121			
Endosulfan II [2C]	0.460415	0.05	0.009	0.500000		92.1	46 - 121			
Endosulfan sulfate	0.475240	0.05	0.01	0.500000		95.0	41 - 123			
Endosulfan Sulfate [2C]	0.439280	0.05	0.01	0.500000		87.9	41 - 123			
Endrin	0.441830	0.05	0.005	0.500000		88.4	46 - 125			
Endrin [2C]	0.428125	0.05	0.005	0.500000		85.6	46 - 125			
Endrin aldehyde	0.525350	0.05	0.003	0.500000		105	41 - 129			
Endrin aldehyde [2C]	0.495890	0.05	0.003	0.500000		99.2	41 - 129			
Endrin ketone	0.464650	0.05	0.003	0.500000		92.9	35 - 134			
Endrin ketone [2C]	0.454450	0.05	0.003	0.500000		90.9	35 - 134			
gamma-BHC	0.451375	0.02	0.002	0.500000		90.3	51 - 112			
gamma-BHC [2C]	0.453210	0.02	0.002	0.500000		90.6	51 - 112			

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San Diego , CA 92101		Reported :	07/09/2018

Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0616 - GCSEMI_PCB/PEST_W (continued)										
LCS (B8F0616-BS1) - Continued					Prepared: 6/23/2018 Analyzed: 6/24/2018					
gamma-Chlordane	0.456915	0.02	0.002	0.500000		91.4	41 - 116			
gamma-Chlordane [2C]	0.447145	0.02	0.002	0.500000		89.4	41 - 116			
Heptachlor	0.427140	0.02	0.002	0.500000		85.4	49 - 120			
Heptachlor [2C]	0.446595	0.02	0.002	0.500000		89.3	49 - 120			
Heptachlor epoxide	0.439705	0.02	0.002	0.500000		87.9	46 - 110			
Heptachlor epoxide [2C]	0.435985	0.02	0.002	0.500000		87.2	46 - 110			
Methoxychlor	0.340695	0.25	0.008	0.500000		68.1	25 - 155			
Methoxychlor [2C]	0.337950	0.25	0.008	0.500000		67.6	25 - 155			
Surrogate: Decachlorobiphenyl	*0.4302*			*0.500000*		*86.0*	*1 - 110*			
Surrogate: Decachlorobiphenyl [	*0.3730*			*0.500000*		*74.6*	*1 - 110*			
Surrogate: Tetrachloro-m-xylene	*0.4298*			*0.500000*		*86.0*	*19 - 117*			
Surrogate: Tetrachloro-m-xylene	*0.4211*			*0.500000*		*84.2*	*19 - 117*			
LCS Dup (B8F0616-BSD1)					Prepared: 6/23/2018 Analyzed: 6/24/2018					
4,4´-DDD	0.544255	0.05	0.006	0.500000		109	51 - 125	4.32	20	
4,4´-DDD [2C]	0.506780	0.05	0.006	0.500000		101	51 - 125	0.376	20	
4,4´-DDE	0.488525	0.05	0.005	0.500000		97.7	41 - 121	3.70	20	
4,4´-DDE [2C]	0.439435	0.05	0.005	0.500000		87.9	41 - 121	1.02	20	
4,4´-DDT	0.274090	0.05	0.01	0.500000		54.8	11 - 131	5.53	20	
4,4´-DDT [2C]	0.277880	0.05	0.01	0.500000		55.6	11 - 131	6.88	20	
Aldrin	0.480690	0.02	0.002	0.500000		96.1	43 - 116	2.86	20	
Aldrin [2C]	0.455625	0.02	0.002	0.500000		91.1	43 - 116	1.33	20	
alpha-BHC	0.480745	0.02	0.002	0.500000		96.1	53 - 114	2.43	20	
alpha-BHC [2C]	0.458345	0.02	0.002	0.500000		91.7	53 - 114	1.69	20	
alpha-Chlordane	0.485730	0.02	0.003	0.500000		97.1	44 - 117	3.38	20	
alpha-Chlordane [2C]	0.434485	0.02	0.003	0.500000		86.9	44 - 117	1.37	20	
beta-BHC	0.464045	0.02	0.002	0.500000		92.8	49 - 111	2.31	20	
beta-BHC [2C]	0.442875	0.02	0.002	0.500000		88.6	49 - 111	1.79	20	
delta-BHC	0.517690	0.02	0.002	0.500000		104	38 - 108	2.32	20	
delta-BHC [2C]	0.476445	0.02	0.002	0.500000		95.3	38 - 108	2.06	20	
Dieldrin	0.456885	0.05	0.002	0.500000		91.4	43 - 112	3.34	20	
Dieldrin [2C]	0.418995	0.05	0.002	0.500000		83.8	43 - 112	1.20	20	
Endosulfan I	0.465680	0.02	0.005	0.500000		93.1	37 - 111	3.49	20	
Endosulfan I [2C]	0.431145	0.02	0.005	0.500000		86.2	37 - 111	0.894	20	
Endosulfan II	0.526925	0.05	0.009	0.500000		105	46 - 121	3.11	20	
Endosulfan II [2C]	0.456015	0.05	0.009	0.500000		91.2	46 - 121	0.960	20	
Endosulfan sulfate	0.498860	0.05	0.01	0.500000		99.8	41 - 123	4.85	20	
Endosulfan Sulfate [2C]	0.431845	0.05	0.01	0.500000		86.4	41 - 123	1.71	20	
Endrin	0.442715	0.05	0.005	0.500000		88.5	46 - 125	0.200	20	
Endrin [2C]	0.409615	0.05	0.005	0.500000		81.9	46 - 125	4.42	20	
Endrin aldehyde	0.547925	0.05	0.003	0.500000		110	41 - 129	4.21	20	

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Organochlorine Pesticides by EPA 8081 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0616 - GCSEMI_PCB/PEST_W (continued)										
LCS Dup (B8F0616-BSD1) - Continued					Prepared: 6/23/2018 Analyzed: 6/24/2018					
Endrin aldehyde [2C]	0.497465	0.05	0.003	0.500000		99.5	41 - 129	0.317	20	
Endrin ketone	0.487105	0.05	0.003	0.500000		97.4	35 - 134	4.72	20	
Endrin ketone [2C]	0.444590	0.05	0.003	0.500000		88.9	35 - 134	2.19	20	
gamma-BHC	0.464270	0.02	0.002	0.500000		92.9	51 - 112	2.82	20	
gamma-BHC [2C]	0.445485	0.02	0.002	0.500000		89.1	51 - 112	1.72	20	
gamma-Chlordane	0.471380	0.02	0.002	0.500000		94.3	41 - 116	3.12	20	
gamma-Chlordane [2C]	0.438900	0.02	0.002	0.500000		87.8	41 - 116	1.86	20	
Heptachlor	0.432450	0.02	0.002	0.500000		86.5	49 - 120	1.24	20	
Heptachlor [2C]	0.432215	0.02	0.002	0.500000		86.4	49 - 120	3.27	20	
Heptachlor epoxide	0.452965	0.02	0.002	0.500000		90.6	46 - 110	2.97	20	
Heptachlor epoxide [2C]	0.426120	0.02	0.002	0.500000		85.2	46 - 110	2.29	20	
Methoxychlor	0.330845	0.25	0.008	0.500000		66.2	25 - 155	2.93	20	
Methoxychlor [2C]	0.312390	0.25	0.008	0.500000		62.5	25 - 155	7.86	20	
Surrogate: Decachlorobiphenyl	*0.4554*			*0.500000*		*91.1*	*1 - 110*			
Surrogate: Decachlorobiphenyl [	*0.3536*			*0.500000*		*70.7*	*1 - 110*			
Surrogate: Tetrachloro-m-xylene	*0.4368*			*0.500000*		*87.4*	*19 - 117*			
Surrogate: Tetrachloro-m-xylene	*0.4069*			*0.500000*		*81.4*	*19 - 117*			

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550 W. C. Suite 1200	Report To :	Jake Lippman
San Diego , CA 92101	Reported :	07/09/2018

Polychlorinated Biphenyls by EPA 8082 - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0616 - GCSEMI_PCB/PEST_W										
Blank (B8F0616-BLK2)					Prepared: 6/23/2018 Analyzed: 6/24/2018					
Aroclor 1016	ND	0.50	0.04							U
Aroclor 1221	ND	1.0	0.04							U
Aroclor 1232	ND	0.50	0.04							U
Aroclor 1242	ND	0.50	0.04							U
Aroclor 1248	ND	0.50	0.04							U
Aroclor 1254	ND	0.50	0.04							U
Aroclor 1260	ND	0.50	0.04							U
Aroclor 1262	ND	0.50	0.04							U
Aroclor 1268	ND	0.50	0.04							U
Surrogate: Decachlorobiphenyl	*0.3984*			*0.500000*		*79.7*	*1 - 110*			
Surrogate: Tetrachloro-m-xylene	*0.4306*			*0.500000*		*86.1*	*19 - 117*			
LCS (B8F0616-BS2)					Prepared: 6/23/2018 Analyzed: 6/24/2018					
Aroclor 1016	4.35058	0.50	0.04	5.00000		87.0	60 - 110			
Aroclor 1260	4.73685	0.50	0.04	5.00000		94.7	44 - 119			
Surrogate: Decachlorobiphenyl	*0.4121*			*0.500000*		*82.4*	*1 - 110*			
Surrogate: Tetrachloro-m-xylene	*0.4461*			*0.500000*		*89.2*	*19 - 117*			
LCS Dup (B8F0616-BSD2)					Prepared: 6/23/2018 Analyzed: 6/24/2018					
Aroclor 1016	4.29838	0.50	0.04	5.00000		86.0	60 - 110	1.21	20	
Aroclor 1260	4.67278	0.50	0.04	5.00000		93.5	44 - 119	1.36	20	
Surrogate: Decachlorobiphenyl	*0.4053*			*0.500000*		*81.1*	*1 - 110*			
Surrogate: Tetrachloro-m-xylene	*0.4424*			*0.500000*		*88.5*	*19 - 117*			

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Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0703 - MSVOA_W										
Blank (B8F0703-BLK1)					Prepared: 6/27/2018 Analyzed: 6/27/2018					
1,1,1,2-Tetrachloroethane	ND	5.0	0.13							U
1,1,1-Trichloroethane	ND	5.0	0.38							U
1,1,2,2-Tetrachloroethane	ND	5.0	0.20							U
1,1,2-Trichloroethane	ND	5.0	0.19							U
1,1-Dichloroethane	ND	5.0	0.20							U
1,1-Dichloroethene	ND	5.0	0.28							U
1,1-Dichloropropene	ND	5.0	0.36							U
1,2,3-Trichloropropane	ND	5.0	0.16							U
1,2,3-Trichlorobenzene	ND	5.0	0.06							U
1,2,4-Trichlorobenzene	ND	5.0	0.07							U
1,2,4-Trimethylbenzene	ND	5.0	0.09							U
1,2-Dibromo-3-chloropropane	ND	5.0	0.20							U
1,2-Dibromoethane	ND	5.0	0.13							U
1,2-Dichlorobenzene	ND	5.0	0.12							U
1,2-Dichloroethane	ND	5.0	0.39							U
1,2-Dichloropropane	ND	5.0	0.47							U
1,3,5-Trimethylbenzene	ND	5.0	0.08							U
1,3-Dichlorobenzene	ND	5.0	0.13							U
1,3-Dichloropropane	ND	5.0	0.08							U
1,4-Dichlorobenzene	ND	5.0	0.18							U
2,2-Dichloropropane	ND	5.0	0.23							U
2-Chlorotoluene	ND	5.0	0.12							U
4-Chlorotoluene	ND	5.0	0.11							U
4-Isopropyltoluene	ND	5.0	0.12							U
Benzene	ND	5.0	0.21							U
Bromobenzene	ND	5.0	0.12							U
Bromochloromethane	ND	5.0	0.10							U
Bromodichloromethane	ND	5.0	0.32							U
Bromoform	ND	5.0	0.14							U
Bromomethane	ND	5.0	0.22							U
Carbon disulfide	ND	5.0	0.21							U
Carbon tetrachloride	ND	5.0	0.31							U
Chlorobenzene	ND	5.0	0.16							U
Chloroethane	ND	5.0	0.29							U
Chloroform	ND	5.0	0.16							U
Chloromethane	ND	5.0	0.19							U
cis-1,2-Dichloroethene	ND	5.0	0.39							U
cis-1,3-Dichloropropene	ND	5.0	0.08							U
Di-isopropyl ether	ND	5.0	0.14							U
Dibromochloromethane	ND	5.0	0.11							U
Dibromomethane	ND	5.0	0.09							U

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0703 - MSVOA_W (continued)										
Blank (B8F0703-BLK1) - Continued					Prepared: 6/27/2018 Analyzed: 6/27/2018					
Dichlorodifluoromethane	ND	5.0	0.31							U
Ethyl Acetate	ND	50	1.1							U
Ethyl Ether	ND	50	1.4							U
Ethyl tert-butyl ether	ND	5.0	0.08							U
Ethylbenzene	ND	5.0	0.08							U
Freon-113	ND	5.0	0.34							U
Hexachlorobutadiene	ND	5.0	0.22							U
Isopropylbenzene	ND	5.0	0.10							U
m,p-Xylene	ND	10	0.18							U
Methylene chloride	ND	5.0	0.26							U
MTBE	ND	5.0	0.09							U
n-Butylbenzene	ND	5.0	0.15							U
n-Propylbenzene	ND	5.0	0.14							U
Naphthalene	ND	5.0	0.09							U
o-Xylene	ND	5.0	0.04							U
sec-Butylbenzene	ND	5.0	0.15							U
Styrene	ND	5.0	0.05							U
tert-Amyl methyl ether	ND	5.0	0.10							U
tert-Butanol	ND	100	3.0							U
tert-Butylbenzene	ND	5.0	0.11							U
Tetrachloroethene	ND	5.0	0.18							U
Toluene	ND	5.0	0.14							U
trans-1,2-Dichloroethene	ND	5.0	0.15							U
trans-1,3-Dichloropropene	ND	5.0	0.09							U
Trichloroethene	ND	5.0	0.15							U
Trichlorofluoromethane	ND	5.0	0.33							U
Vinyl acetate	ND	50	1.9							U
Vinyl chloride	ND	5.0	0.25							U
Surrogate: 1,2-Dichloroethane-d4	*24.62*			*25.0000*		*98.5*	*74 - 132*			
Surrogate: 4-Bromofluorobenzene	*24.33*			*25.0000*		*97.3*	*82 - 123*			
Surrogate: Dibromofluoromethan	*26.50*			*25.0000*		*106*	*76 - 135*			
Surrogate: Toluene-d8	*25.22*			*25.0000*		*101*	*85 - 125*			
LCS (B8F0703-BS1)					Prepared: 6/26/2018 Analyzed: 6/26/2018					
1,1,1,2-Tetrachloroethane	19.0100	5.0	0.13	20.0000		95.0	67 - 140			
1,1,1-Trichloroethane	21.3200	5.0	0.38	20.0000		107	74 - 136			
1,1,2,2-Tetrachloroethane	18.4900	5.0	0.20	20.0000		92.4	73 - 116			
1,1,2-Trichloroethane	18.0700	5.0	0.19	20.0000		90.4	78 - 116			
1,1-Dichloroethane	18.9900	5.0	0.20	20.0000		95.0	64 - 134			
1,1-Dichloroethene	20.5700	5.0	0.28	20.0000		103	72 - 123			
1,1-Dichloropropene	21.7500	5.0	0.36	20.0000		109	79 - 137			

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San Diego , CA 92101		Reported :	07/09/2018

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0703 - MSVOA_W (continued)										
LCS (B8F0703-BS1) - Continued					Prepared: 6/26/2018 Analyzed: 6/26/2018					
1,2,3-Trichloropropane	18.8000	5.0	0.16	20.0000		94.0	81 - 121			
1,2,3-Trichlorobenzene	19.7500	5.0	0.06	20.0000		98.8	71 - 114			
1,2,4-Trichlorobenzene	19.2600	5.0	0.07	20.0000		96.3	80 - 119			
1,2,4-Trimethylbenzene	18.9900	5.0	0.09	20.0000		95.0	78 - 142			
1,2-Dibromo-3-chloropropane	17.2200	5.0	0.20	20.0000		86.1	47 - 130			
1,2-Dibromoethane	18.0000	5.0	0.13	20.0000		90.0	79 - 116			
1,2-Dichlorobenzene	19.3700	5.0	0.12	20.0000		96.8	82 - 121			
1,2-Dichloroethane	18.8800	5.0	0.39	20.0000		94.4	71 - 126			
1,2-Dichloropropane	17.7700	5.0	0.47	20.0000		88.8	76 - 119			
1,3,5-Trimethylbenzene	19.4300	5.0	0.08	20.0000		97.2	78 - 144			
1,3-Dichlorobenzene	19.1800	5.0	0.13	20.0000		95.9	83 - 125			
1,3-Dichloropropane	18.2300	5.0	0.08	20.0000		91.2	78 - 117			
1,4-Dichlorobenzene	19.3100	5.0	0.18	20.0000		96.6	82 - 118			
2,2-Dichloropropane	18.8300	5.0	0.23	20.0000		94.2	67 - 144			
2-Chlorotoluene	19.3000	5.0	0.12	20.0000		96.5	73 - 143			
4-Chlorotoluene	19.0200	5.0	0.11	20.0000		95.1	72 - 143			
4-Isopropyltoluene	19.7600	5.0	0.12	20.0000		98.8	77 - 149			
Benzene	36.9800	5.0	0.21	40.0000		92.4	77 - 139			
Bromobenzene	19.5400	5.0	0.12	20.0000		97.7	83 - 121			
Bromochloromethane	21.8300	5.0	0.10	20.0000		109	73 - 121			
Bromodichloromethane	18.3100	5.0	0.32	20.0000		91.6	73 - 125			
Bromoform	18.3100	5.0	0.14	20.0000		91.6	73 - 125			
Bromomethane	16.9600	5.0	0.22	20.0000		84.8	48 - 144			
Carbon disulfide	20.8300	5.0	0.21	20.0000		104	73 - 132			
Carbon tetrachloride	22.4500	5.0	0.31	20.0000		112	75 - 151			
Chlorobenzene	19.1900	5.0	0.16	20.0000		96.0	82 - 123			
Chloroethane	21.0700	5.0	0.29	20.0000		105	55 - 170			
Chloroform	20.0900	5.0	0.16	20.0000		100	74 - 125			
Chloromethane	14.4800	5.0	0.19	20.0000		72.4	34 - 146			
cis-1,2-Dichloroethene	19.7400	5.0	0.39	20.0000		98.7	69 - 124			
cis-1,3-Dichloropropene	17.5300	5.0	0.08	20.0000		87.6	71 - 123			
Di-isopropyl ether	16.0000	5.0	0.14	20.0000		80.0	54 - 147			
Dibromochloromethane	18.2400	5.0	0.11	20.0000		91.2	57 - 140			
Dibromomethane	18.7300	5.0	0.09	20.0000		93.6	78 - 115			
Dichlorodifluoromethane	20.2000	5.0	0.31	20.0000		101	67 - 136			
Ethyl Acetate	167.320	50	1.1	200.000		83.7	49 - 121			
Ethyl Ether	172.080	50	1.4	200.000		86.0	62 - 120			
Ethyl tert-butyl ether	18.4200	5.0	0.08	20.0000		92.1	62 - 123			
Ethylbenzene	39.6600	5.0	0.08	40.0000		99.2	80 - 142			
Freon-113	21.3600	5.0	0.34	20.0000		107	77 - 147			
Hexachlorobutadiene	21.3800	5.0	0.22	20.0000		107	83 - 135			
Isopropylbenzene	20.1900	5.0	0.10	20.0000		101	75 - 147			

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0703 - MSVOA_W (continued)										
LCS (B8F0703-BS1) - Continued					Prepared: 6/26/2018 Analyzed: 6/26/2018					
m,p-Xylene	39.1000	10	0.18	40.0000		97.8	74 - 148			
Methylene chloride	19.2700	5.0	0.26	20.0000		96.4	67 - 135			
MTBE	19.0000	5.0	0.09	20.0000		95.0	55 - 128			
n-Butylbenzene	19.5200	5.0	0.15	20.0000		97.6	76 - 153			
n-Propylbenzene	20.1700	5.0	0.14	20.0000		101	72 - 155			
Naphthalene	18.0100	5.0	0.09	20.0000		90.0	69 - 113			
o-Xylene	38.6600	5.0	0.04	40.0000		96.6	71 - 153			
sec-Butylbenzene	20.1000	5.0	0.15	20.0000		100	74 - 154			
Styrene	18.1400	5.0	0.05	20.0000		90.7	75 - 143			
tert-Amyl methyl ether	17.0100	5.0	0.10	20.0000		85.0	61 - 123			
tert-Butanol	87.9100	100	3.0	100.000		87.9	40 - 112			U
tert-Butylbenzene	20.0100	5.0	0.11	20.0000		100	77 - 144			
Tetrachloroethene	20.8600	5.0	0.18	20.0000		104	82 - 136			
Toluene	38.5400	5.0	0.14	40.0000		96.4	75 - 142			
trans-1,2-Dichloroethene	20.3300	5.0	0.15	20.0000		102	63 - 135			
trans-1,3-Dichloropropene	17.9600	5.0	0.09	20.0000		89.8	65 - 131			
Trichloroethene	19.2300	5.0	0.15	20.0000		96.2	82 - 124			
Trichlorofluoromethane	22.7200	5.0	0.33	20.0000		114	70 - 159			
Vinyl acetate	175.810	50	1.9	200.000		87.9	48 - 133			
Vinyl chloride	18.4200	5.0	0.25	20.0000		92.1	67 - 131			
Surrogate: 1,2-Dichloroethane-d4	*24.37*			*25.0000*		*97.5*	*74 - 132*			
Surrogate: 4-Bromofluorobenzene	*24.79*			*25.0000*		*99.2*	*82 - 123*			
Surrogate: Dibromofluoromethan	*26.86*			*25.0000*		*107*	*76 - 135*			
Surrogate: Toluene-d8	*25.48*			*25.0000*		*102*	*85 - 125*			
LCS Dup (B8F0703-BSD1)					Prepared: 6/26/2018 Analyzed: 6/26/2018					
1,1,1,2-Tetrachloroethane	18.6700	5.0	0.13	20.0000		93.4	67 - 140	1.80	20	
1,1,1-Trichloroethane	20.0300	5.0	0.38	20.0000		100	74 - 136	6.24	20	
1,1,2,2-Tetrachloroethane	16.7000	5.0	0.20	20.0000		83.5	73 - 116	10.2	20	
1,1,2-Trichloroethane	17.8800	5.0	0.19	20.0000		89.4	78 - 116	1.06	20	
1,1-Dichloroethane	18.4900	5.0	0.20	20.0000		92.4	64 - 134	2.67	20	
1,1-Dichloroethene	19.7600	5.0	0.28	20.0000		98.8	72 - 123	4.02	20	
1,1-Dichloropropene	20.9300	5.0	0.36	20.0000		105	79 - 137	3.84	20	
1,2,3-Trichloropropane	17.4100	5.0	0.16	20.0000		87.0	81 - 121	7.68	20	
1,2,3-Trichlorobenzene	18.6600	5.0	0.06	20.0000		93.3	71 - 114	5.68	20	
1,2,4-Trichlorobenzene	18.4100	5.0	0.07	20.0000		92.0	80 - 119	4.51	20	
1,2,4-Trimethylbenzene	18.4100	5.0	0.09	20.0000		92.0	78 - 142	3.10	20	
1,2-Dibromo-3-chloropropane	16.1000	5.0	0.20	20.0000		80.5	47 - 130	6.72	20	
1,2-Dibromoethane	17.8100	5.0	0.13	20.0000		89.0	79 - 116	1.06	20	
1,2-Dichlorobenzene	18.2300	5.0	0.12	20.0000		91.2	82 - 121	6.06	20	
1,2-Dichloroethane	18.1500	5.0	0.39	20.0000		90.8	71 - 126	3.94	20	

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0703 - MSVOA_W (continued)										
LCS Dup (B8F0703-BSD1) - Continued					Prepared: 6/26/2018 Analyzed: 6/26/2018					
1,2-Dichloropropane	17.8300	5.0	0.47	20.0000		89.2	76 - 119	0.337	20	
1,3,5-Trimethylbenzene	18.7200	5.0	0.08	20.0000		93.6	78 - 144	3.72	20	
1,3-Dichlorobenzene	18.4000	5.0	0.13	20.0000		92.0	83 - 125	4.15	20	
1,3-Dichloropropane	18.0600	5.0	0.08	20.0000		90.3	78 - 117	0.937	20	
1,4-Dichlorobenzene	18.6800	5.0	0.18	20.0000		93.4	82 - 118	3.32	20	
2,2-Dichloropropane	17.6500	5.0	0.23	20.0000		88.2	67 - 144	6.47	20	
2-Chlorotoluene	18.3300	5.0	0.12	20.0000		91.6	73 - 143	5.16	20	
4-Chlorotoluene	18.3000	5.0	0.11	20.0000		91.5	72 - 143	3.86	20	
4-Isopropyltoluene	18.9700	5.0	0.12	20.0000		94.8	77 - 149	4.08	20	
Benzene	36.9300	5.0	0.21	40.0000		92.3	77 - 139	0.135	20	
Bromobenzene	18.4700	5.0	0.12	20.0000		92.4	83 - 121	5.63	20	
Bromochloromethane	20.8000	5.0	0.10	20.0000		104	73 - 121	4.83	20	
Bromodichloromethane	17.9500	5.0	0.32	20.0000		89.8	73 - 125	1.99	20	
Bromoform	17.6000	5.0	0.14	20.0000		88.0	73 - 125	3.95	20	
Bromomethane	15.7500	5.0	0.22	20.0000		78.8	48 - 144	7.40	20	
Carbon disulfide	19.9700	5.0	0.21	20.0000		99.8	73 - 132	4.22	20	
Carbon tetrachloride	21.2800	5.0	0.31	20.0000		106	75 - 151	5.35	20	
Chlorobenzene	18.6700	5.0	0.16	20.0000		93.4	82 - 123	2.75	20	
Chloroethane	19.5400	5.0	0.29	20.0000		97.7	55 - 170	7.54	20	
Chloroform	19.0000	5.0	0.16	20.0000		95.0	74 - 125	5.58	20	
Chloromethane	15.4100	5.0	0.19	20.0000		77.0	34 - 146	6.22	20	
cis-1,2-Dichloroethene	19.0500	5.0	0.39	20.0000		95.2	69 - 124	3.56	20	
cis-1,3-Dichloropropene	17.2400	5.0	0.08	20.0000		86.2	71 - 123	1.67	20	
Di-isopropyl ether	15.4900	5.0	0.14	20.0000		77.4	54 - 147	3.24	20	
Dibromochloromethane	17.6300	5.0	0.11	20.0000		88.2	57 - 140	3.40	20	
Dibromomethane	18.2800	5.0	0.09	20.0000		91.4	78 - 115	2.43	20	
Dichlorodifluoromethane	19.0300	5.0	0.31	20.0000		95.2	67 - 136	5.96	20	
Ethyl Acetate	161.750	50	1.1	200.000		80.9	49 - 121	3.39	20	
Ethyl Ether	165.570	50	1.4	200.000		82.8	62 - 120	3.86	20	
Ethyl tert-butyl ether	17.7200	5.0	0.08	20.0000		88.6	62 - 123	3.87	20	
Ethylbenzene	38.6000	5.0	0.08	40.0000		96.5	80 - 142	2.71	20	
Freon-113	20.2200	5.0	0.34	20.0000		101	77 - 147	5.48	20	
Hexachlorobutadiene	20.4600	5.0	0.22	20.0000		102	83 - 135	4.40	20	
Isopropylbenzene	19.1300	5.0	0.10	20.0000		95.6	75 - 147	5.39	20	
m,p-Xylene	38.3900	10	0.18	40.0000		96.0	74 - 148	1.83	20	
Methylene chloride	18.6000	5.0	0.26	20.0000		93.0	67 - 135	3.54	20	
MTBE	18.5500	5.0	0.09	20.0000		92.8	55 - 128	2.40	20	
n-Butylbenzene	18.7300	5.0	0.15	20.0000		93.6	76 - 153	4.13	20	
n-Propylbenzene	19.2600	5.0	0.14	20.0000		96.3	72 - 155	4.62	20	
Naphthalene	17.2100	5.0	0.09	20.0000		86.0	69 - 113	4.54	20	
o-Xylene	38.0200	5.0	0.04	40.0000		95.0	71 - 153	1.67	20	
sec-Butylbenzene	19.1600	5.0	0.15	20.0000		95.8	74 - 154	4.79	20	

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0703 - MSVOA_W (continued)										
LCS Dup (B8F0703-BSD1) - Continued					Prepared: 6/26/2018 Analyzed: 6/26/2018					
Styrene	17.9200	5.0	0.05	20.0000		89.6	75 - 143	1.22	20	
tert-Amyl methyl ether	16.7500	5.0	0.10	20.0000		83.8	61 - 123	1.54	20	
tert-Butanol	85.9400	100	3.0	100.000		85.9	40 - 112	2.27	20	U
tert-Butylbenzene	18.9200	5.0	0.11	20.0000		94.6	77 - 144	5.60	20	
Tetrachloroethene	20.1600	5.0	0.18	20.0000		101	82 - 136	3.41	20	
Toluene	37.0500	5.0	0.14	40.0000		92.6	75 - 142	3.94	20	
trans-1,2-Dichloroethene	19.8000	5.0	0.15	20.0000		99.0	63 - 135	2.64	20	
trans-1,3-Dichloropropene	17.2300	5.0	0.09	20.0000		86.2	65 - 131	4.15	20	
Trichloroethene	19.4200	5.0	0.15	20.0000		97.1	82 - 124	0.983	20	
Trichlorofluoromethane	21.2800	5.0	0.33	20.0000		106	70 - 159	6.55	20	
Vinyl acetate	138.780	50	1.9	200.000		69.4	48 - 133	23.5	20	R
Vinyl chloride	18.0500	5.0	0.25	20.0000		90.2	67 - 131	2.03	20	
Surrogate: 1,2-Dichloroethane-d4	*23.94*			*25.0000*		*95.8*	*74 - 132*			
Surrogate: 4-Bromofluorobenzene	*25.14*			*25.0000*		*101*	*82 - 123*			
Surrogate: Dibromofluoromethan	*26.79*			*25.0000*		*107*	*76 - 135*			
Surrogate: Toluene-d8	*25.34*			*25.0000*		*101*	*85 - 125*			

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Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0676 - MSSEMI_W										
Blank (B8F0676-BLK1)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
2-Methylnaphthalene	ND	0.20	0.02							U
Acenaphthene	ND	0.20	0.02							U
Acenaphthylene	ND	0.20	0.02							U
Anthracene	ND	0.20	0.01							U
Benzo(a)anthracene	ND	0.20	0.01							U
Benzo(a)pyrene	ND	0.20	0.01							U
Benzo(b)fluoranthene	ND	0.20	0.06							U
Benzo(g,h,i)perylene	ND	0.20	0.02							U
Benzo(k)fluoranthene	ND	0.20	0.02							U
Chrysene	ND	0.20	0.02							U
Dibenz(a,h)anthracene	ND	0.20	0.02							U
Fluoranthene	ND	0.20	0.02							U
Fluorene	ND	0.20	0.02							U
Indeno(1,2,3-cd)pyrene	ND	0.20	0.02							U
Naphthalene	ND	0.20	0.02							U
Phenanthrene	ND	0.20	0.02							U
Pyrene	ND	0.20	0.02							U
Surrogate: 1,2-Dichlorobenzene-d	*0.6800*			*1.00000*		*68.0*	*36 - 99*			
Surrogate: 2-Fluorobiphenyl	*0.6910*			*1.00000*		*69.1*	*33 - 111*			
Surrogate: Nitrobenzene-d5	*0.5000*			*1.00000*		*50.0*	*12 - 124*			
Surrogate: 4-Terphenyl-d14	*0.8036*			*1.00000*		*80.4*	*43 - 118*			
LCS (B8F0676-BS1)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
2-Methylnaphthalene	0.487630	0.20	0.02	1.00000		48.8	7 - 150			
Acenaphthene	0.513820	0.20	0.02	1.00000		51.4	42 - 97			
Acenaphthylene	0.537170	0.20	0.02	1.00000		53.7	45 - 95			
Anthracene	0.633320	0.20	0.01	1.00000		63.3	49 - 91			
Benzo(a)anthracene	0.660240	0.20	0.01	1.00000		66.0	58 - 93			
Benzo(a)pyrene	0.600020	0.20	0.01	1.00000		60.0	58 - 92			
Benzo(b)fluoranthene	0.465450	0.20	0.06	1.00000		46.5	61 - 100			L2
Benzo(g,h,i)perylene	0.625200	0.20	0.02	1.00000		62.5	48 - 100			
Benzo(k)fluoranthene	0.643210	0.20	0.02	1.00000		64.3	60 - 125			
Chrysene	0.657650	0.20	0.02	1.00000		65.8	60 - 97			
Dibenz(a,h)anthracene	0.646780	0.20	0.02	1.00000		64.7	43 - 104			
Fluoranthene	0.661450	0.20	0.02	1.00000		66.1	43 - 109			
Fluorene	0.562780	0.20	0.02	1.00000		56.3	49 - 97			
Indeno(1,2,3-cd)pyrene	0.817970	0.20	0.02	1.00000		81.8	48 - 99			
Naphthalene	0.557910	0.20	0.02	1.00000		55.8	25 - 129			
Phenanthrene	0.638880	0.20	0.02	1.00000		63.9	48 - 102			
Pyrene	0.700600	0.20	0.02	1.00000		70.1	51 - 100			
Surrogate: 1,2-Dichlorobenzene-d	*0.5917*			*1.00000*		*59.2*	*36 - 99*			

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Semivolatile Organic Compounds by EPA 8270/SIM - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)		Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0676 - MSSEMI_W (continued)										
LCS (B8F0676-BS1) - Continued					Prepared: 6/26/2018 Analyzed: 6/27/2018					
Surrogate: 2-Fluorobiphenyl	*0.5756*			*1.00000*		*57.6*	*33 - 111*			
Surrogate: Nitrobenzene-d5	*0.4195*			*1.00000*		*41.9*	*12 - 124*			
Surrogate: 4-Terphenyl-d14	*0.7085*			*1.00000*		*70.9*	*43 - 118*			
LCS Dup (B8F0676-BSD1)					Prepared: 6/26/2018 Analyzed: 6/27/2018					
2-Methylnaphthalene	0.580020	0.20	0.02	1.00000		58.0	7 - 150	17.3	20	
Acenaphthene	0.688960	0.20	0.02	1.00000		68.9	42 - 97	29.1	20	R
Acenaphthylene	0.710490	0.20	0.02	1.00000		71.0	45 - 95	27.8	20	R
Anthracene	0.787180	0.20	0.01	1.00000		78.7	49 - 91	21.7	20	R
Benzo(a)anthracene	0.806810	0.20	0.01	1.00000		80.7	58 - 93	20.0	20	
Benzo(a)pyrene	0.719590	0.20	0.01	1.00000		72.0	58 - 92	18.1	20	
Benzo(b)fluoranthene	0.578180	0.20	0.06	1.00000		57.8	61 - 100	21.6	20	L4
Benzo(g,h,i)perylene	0.759540	0.20	0.02	1.00000		76.0	48 - 100	19.4	20	
Benzo(k)fluoranthene	0.889450	0.20	0.02	1.00000		88.9	60 - 125	32.1	20	R
Chrysene	0.803440	0.20	0.02	1.00000		80.3	60 - 97	20.0	20	
Dibenz(a,h)anthracene	0.784900	0.20	0.02	1.00000		78.5	43 - 104	19.3	20	
Fluoranthene	0.820390	0.20	0.02	1.00000		82.0	43 - 109	21.5	20	R
Fluorene	0.711820	0.20	0.02	1.00000		71.2	49 - 97	23.4	20	R
Indeno(1,2,3-cd)pyrene	0.993610	0.20	0.02	1.00000		99.4	48 - 99	19.4	20	L2
Naphthalene	0.657660	0.20	0.02	1.00000		65.8	25 - 129	16.4	20	
Phenanthrene	0.795040	0.20	0.02	1.00000		79.5	48 - 102	21.8	20	R
Pyrene	0.853460	0.20	0.02	1.00000		85.3	51 - 100	19.7	20	
Surrogate: 1,2-Dichlorobenzene-d	*0.7214*			*1.00000*		*72.1*	*36 - 99*			
Surrogate: 2-Fluorobiphenyl	*0.7796*			*1.00000*		*78.0*	*33 - 111*			
Surrogate: Nitrobenzene-d5	*0.5019*			*1.00000*		*50.2*	*12 - 124*			
Surrogate: 4-Terphenyl-d14	*0.8796*			*1.00000*		*88.0*	*43 - 118*			

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/09/2018

Notes and Definitions

U	Analyte included in the analysis, but not detected
R	RPD value outside acceptance criteria. Calculation is based on raw values.
L4	Laboratory Control Sample outside of control limit but within Marginal Exceedance (ME) limit.
L2	Laboratory control sample outside of acceptance limits. Reextraction and/or reanalysis is not possible due to limited amount of sample.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

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WORK ORDER NUMBER: 18-06-1732

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Advanced Technology Laboratories

Client Project Name: 1802292

Attention: Rachelle Arada
3275 Walnut Street
Signal Hill, CA 90755-5225

Approved for release on 07/09/2018 by:
Lori Thompson
Project Manager

ResultLink

Email your PM

Eurofins Calscience (Calscience) certifies that the test results provided in this report meet all NELAC Institute requirements for parameters for which accreditation is required or available. Any exceptions to NELAC Institute requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

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Client Project Name: 1802292
Work Order Number: 18-06-1732

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Work Order Narrative

Work Order: 18-06-1732 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 06/22/18. They were assigned to Work Order 18-06-1732.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

DoD Projects:

The test results contained in this report are accredited under the laboratory's ISO/IEC 17025:2005 and DoD-ELAP accreditation issued by the ANSI-ASQ National Accreditation Board. Refer to certificate and scope of accreditation ADE-1864.

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Sample Summary

Client:	Advanced Technology Laboratories 3275 Walnut Street Signal Hill, CA 90755-5225	Work Order:	18-06-1732
		Project Name:	1802292
		PO Number:	SC12902
		Date/Time Received:	06/22/18 13:12
		Number of Containers:	1
Attn:	Rachelle Arada		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
1802292-01 / EB-062018	18-06-1732-1	06/20/18 16:10	1	Aqueous

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1732
Signal Hill, CA 90755-5225		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM
		Units:	ug/L
Project: 1802292			Page 1 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
1802292-01 / EB-062018	**18-06-1732-1-A**	**06/20/18 16:10**	**Aqueous**	**GC/MS JJJ**	**06/26/18**	**06/29/18 14:08**	**180626L01A**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.21	1.00	
1,2-Dichlorobenzene	ND	0.21	1.00	
1,3-Dichlorobenzene	ND	0.21	1.00	
1,4-Dichlorobenzene	ND	0.21	1.00	
1-Methylnaphthalene	ND	0.21	1.00	
2,4,5-Trichlorophenol	ND	5.2	1.00	
2,4,6-Trichlorophenol	ND	5.2	1.00	
2,4-Dichlorophenol	ND	5.2	1.00	
2,4-Dimethylphenol	ND	0.21	1.00	
2,4-Dinitrophenol	ND	5.2	1.00	
2,4-Dinitrotoluene	ND	0.21	1.00	
2,6-Dichlorophenol	ND	5.2	1.00	
2,6-Dinitrotoluene	ND	0.21	1.00	
2-Chloronaphthalene	ND	0.21	1.00	
2-Chlorophenol	ND	0.21	1.00	
2-Methylnaphthalene	ND	0.21	1.00	
2-Methylphenol	ND	5.2	1.00	
2-Nitroaniline	ND	5.2	1.00	
2-Nitrophenol	ND	5.2	1.00	
3,3'-Dichlorobenzidine	ND	5.2	1.00	
3-Nitroaniline	ND	5.2	1.00	
3/4-Methylphenol	ND	2.1	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.21	1.00	
4,6-Dinitro-2-Methylphenol	ND	5.2	1.00	
4-Chloro-3-Methylphenol	ND	5.2	1.00	
4-Chloroaniline	ND	5.2	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.21	1.00	
4-Nitroaniline	ND	5.2	1.00	
4-Nitrophenol	ND	5.2	1.00	
Acenaphthene	ND	0.21	1.00	
Acenaphthylene	ND	0.21	1.00	
Aniline	ND	0.21	1.00	
Anthracene	ND	0.21	1.00	
Azobenzene	ND	0.21	1.00	
Benzidine	ND	5.2	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1732
Signal Hill, CA 90755-5225		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM
		Units:	ug/L
Project: 1802292			Page 2 of 6

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.21	1.00	
Benzo (a) Pyrene	ND	0.21	1.00	
Benzo (b) Fluoranthene	ND	0.21	1.00	
Benzo (g,h,i) Perylene	ND	0.21	1.00	
Benzo (k) Fluoranthene	ND	0.21	1.00	
Benzoic Acid	ND	5.2	1.00	
Benzyl Alcohol	ND	0.21	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.21	1.00	
Bis(2-Chloroethyl) Ether	ND	0.21	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.21	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	5.2	1.00	
Butyl Benzyl Phthalate	ND	5.2	1.00	
Chrysene	ND	0.21	1.00	
Di-n-Butyl Phthalate	ND	5.2	1.00	
Di-n-Octyl Phthalate	ND	5.2	1.00	
Dibenz (a,h) Anthracene	ND	0.21	1.00	
Dibenzofuran	ND	0.21	1.00	
Diethyl Phthalate	ND	5.2	1.00	
Dimethyl Phthalate	ND	5.2	1.00	
Fluoranthene	ND	0.21	1.00	
Fluorene	ND	0.21	1.00	
Hexachloro-1,3-Butadiene	ND	0.21	1.00	
Hexachlorobenzene	ND	0.21	1.00	
Hexachlorocyclopentadiene	ND	0.21	1.00	
Hexachloroethane	ND	0.21	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.21	1.00	
Isophorone	ND	2.1	1.00	
N-Nitroso-di-n-propylamine	ND	0.21	1.00	
N-Nitrosodimethylamine	ND	0.21	1.00	
N-Nitrosodiphenylamine	ND	0.21	1.00	
Naphthalene	ND	0.21	1.00	
Nitrobenzene	ND	0.21	1.00	
Pentachlorophenol	ND	5.2	1.00	
Phenanthrene	ND	0.21	1.00	
Phenol	ND	0.21	1.00	
Pyrene	ND	0.21	1.00	
Pyridine	ND	0.21	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1732
Signal Hill, CA 90755-5225	Preparation:	EPA 3510C
	Method:	EPA 8270C SIM
	Units:	ug/L
Project: 1802292		Page 3 of 6

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	60	25-137	
2-Fluorobiphenyl	56	42-138	
2-Fluorophenol	45	7-121	
Nitrobenzene-d5	79	10-146	
Phenol-d6	29	1-127	
p-Terphenyl-d14	70	47-173	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1732
Signal Hill, CA 90755-5225		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM
		Units:	ug/L
Project: 1802292			Page 4 of 6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-16-941-31**	**N/A**	**Aqueous**	**GC/MS JJJ**	**06/26/18**	**06/29/18 10:29**	**180626L01A**

Parameter	Result	RL	DF	Qualifiers
1,2,4-Trichlorobenzene	ND	0.20	1.00	
1,2-Dichlorobenzene	ND	0.20	1.00	
1,3-Dichlorobenzene	ND	0.20	1.00	
1,4-Dichlorobenzene	ND	0.20	1.00	
1-Methylnaphthalene	ND	0.20	1.00	
2,4,5-Trichlorophenol	ND	5.0	1.00	
2,4,6-Trichlorophenol	ND	5.0	1.00	
2,4-Dichlorophenol	ND	5.0	1.00	
2,4-Dimethylphenol	ND	0.20	1.00	
2,4-Dinitrophenol	ND	5.0	1.00	
2,4-Dinitrotoluene	ND	0.20	1.00	
2,6-Dichlorophenol	ND	5.0	1.00	
2,6-Dinitrotoluene	ND	0.20	1.00	
2-Chloronaphthalene	ND	0.20	1.00	
2-Chlorophenol	ND	0.20	1.00	
2-Methylnaphthalene	ND	0.20	1.00	
2-Methylphenol	ND	5.0	1.00	
2-Nitroaniline	ND	5.0	1.00	
2-Nitrophenol	ND	5.0	1.00	
3,3'-Dichlorobenzidine	ND	5.0	1.00	
3-Nitroaniline	ND	5.0	1.00	
3/4-Methylphenol	ND	2.0	1.00	
4-Bromophenyl-Phenyl Ether	ND	0.20	1.00	
4,6-Dinitro-2-Methylphenol	ND	5.0	1.00	
4-Chloro-3-Methylphenol	ND	5.0	1.00	
4-Chloroaniline	ND	5.0	1.00	
4-Chlorophenyl-Phenyl Ether	ND	0.20	1.00	
4-Nitroaniline	ND	5.0	1.00	
4-Nitrophenol	ND	5.0	1.00	
Acenaphthene	ND	0.20	1.00	
Acenaphthylene	ND	0.20	1.00	
Aniline	ND	0.20	1.00	
Anthracene	ND	0.20	1.00	
Azobenzene	ND	0.20	1.00	
Benzidine	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1732
Signal Hill, CA 90755-5225		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM
		Units:	ug/L
Project: 1802292			Page 5 of 6

Parameter	Result	RL	DF	Qualifiers
Benzo (a) Anthracene	ND	0.20	1.00	
Benzo (a) Pyrene	ND	0.20	1.00	
Benzo (b) Fluoranthene	ND	0.20	1.00	
Benzo (g,h,i) Perylene	ND	0.20	1.00	
Benzo (k) Fluoranthene	ND	0.20	1.00	
Benzoic Acid	ND	5.0	1.00	
Benzyl Alcohol	ND	0.20	1.00	
Bis(2-Chloroethoxy) Methane	ND	0.20	1.00	
Bis(2-Chloroethyl) Ether	ND	0.20	1.00	
Bis(2-Chloroisopropyl) Ether	ND	0.20	1.00	
Bis(2-Ethylhexyl) Phthalate	ND	5.0	1.00	
Butyl Benzyl Phthalate	ND	5.0	1.00	
Chrysene	ND	0.20	1.00	
Di-n-Butyl Phthalate	ND	5.0	1.00	
Di-n-Octyl Phthalate	ND	5.0	1.00	
Dibenz (a,h) Anthracene	ND	0.20	1.00	
Dibenzofuran	ND	0.20	1.00	
Diethyl Phthalate	ND	5.0	1.00	
Dimethyl Phthalate	ND	5.0	1.00	
Fluoranthene	ND	0.20	1.00	
Fluorene	ND	0.20	1.00	
Hexachloro-1,3-Butadiene	ND	0.20	1.00	
Hexachlorobenzene	ND	0.20	1.00	
Hexachlorocyclopentadiene	ND	0.20	1.00	
Hexachloroethane	ND	0.20	1.00	
Indeno (1,2,3-c,d) Pyrene	ND	0.20	1.00	
Isophorone	ND	2.0	1.00	
N-Nitroso-di-n-propylamine	ND	0.20	1.00	
N-Nitrosodimethylamine	ND	0.20	1.00	
N-Nitrosodiphenylamine	ND	0.20	1.00	
Naphthalene	ND	0.20	1.00	
Nitrobenzene	ND	0.20	1.00	
Pentachlorophenol	ND	5.0	1.00	
Phenanthrene	ND	0.20	1.00	
Phenol	ND	0.20	1.00	
Pyrene	ND	0.20	1.00	
Pyridine	ND	0.20	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Advanced Technology Laboratories	Date Received:	06/22/18
3275 Walnut Street	Work Order:	18-06-1732
Signal Hill, CA 90755-5225	Preparation:	EPA 3510C
	Method:	EPA 8270C SIM
	Units:	ug/L
Project: 1802292		Page 6 of 6

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4,6-Tribromophenol	61	25-137	
2-Fluorobiphenyl	70	42-138	
2-Fluorophenol	48	7-121	
Nitrobenzene-d5	87	10-146	
Phenol-d6	31	1-127	
p-Terphenyl-d14	76	47-173	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - LCS/LCSD

Advanced Technology Laboratories		Date Received:	06/22/18
3275 Walnut Street		Work Order:	18-06-1732
Signal Hill, CA 90755-5225		Preparation:	EPA 3510C
		Method:	EPA 8270C SIM
Project: 1802292			Page 1 of 1

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-16-941-31	**LCS**	**Aqueous**	**GC/MS JJJ**	**06/26/18**	**06/29/18 10:47**	**180626L01A**
099-16-941-31	**LCSD**	**Aqueous**	**GC/MS JJJ**	**06/26/18**	**06/29/18 11:33**	**180626L01A**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
2,4,6-Trichlorophenol	20.00	14.15	71	13.00	65	37-144	19-162	8	0-20	
2,4-Dichlorophenol	20.00	14.67	73	14.09	70	39-135	23-151	4	0-20	
2-Methylphenol	20.00	13.40	67	12.33	62	50-130	37-143	8	0-20	
2-Nitrophenol	20.00	15.94	80	15.35	77	29-182	4-208	4	0-20	
4-Chloro-3-Methylphenol	20.00	14.94	75	14.08	70	55-121	44-132	6	0-18	
Acenaphthene	20.00	15.73	79	14.77	74	55-139	41-153	6	0-17	
Benzo (a) Pyrene	20.00	16.39	82	15.37	77	17-163	0-187	6	0-20	
Chrysene	20.00	16.52	83	15.73	79	17-168	0-193	5	0-20	
Di-n-Butyl Phthalate	20.00	14.26	71	13.66	68	1-118	0-138	4	0-20	
Dimethyl Phthalate	20.00	15.87	79	14.76	74	0-112	0-131	7	0-20	
Fluoranthene	20.00	16.76	84	15.76	79	26-137	8-156	6	0-20	
Fluorene	20.00	15.23	76	13.89	69	59-121	49-131	9	0-20	
Naphthalene	20.00	13.81	69	13.08	65	21-133	2-152	5	0-20	
Phenanthrene	20.00	16.79	84	15.77	79	54-120	43-131	6	0-20	
Phenol	20.00	6.240	31	5.893	29	4-142	0-165	6	0-24	
Pyrene	20.00	16.88	84	16.03	80	38-170	16-192	5	0-27	

Total number of LCS compounds: 16
Total number of ME compounds: 0
Total number of ME compounds allowed: 1
LCS ME CL validation result: Pass

RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 18-06-1732

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 8270C SIM	EPA 3510C	923	GC/MS JJJ	1

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Glossary of Terms and Qualifiers

Work Order: 18-06-1732 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

Return to Contents

ADVANCED TECHNOLOGY LABORATORIES

SUBCONTRACT ORDER

Work Order: 1802292

18-06-1732

SENDING LABORATORY:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone: 562.989.4045
Fax: 562.989.6348
Project Manager: Rachelle Arada (Rachelle@atlglobal.com)
Sampler: Jake Lippman

RECEIVING LABORATORY:

Eurofins Calscience, Inc.
7440 Lincoln Way
Garden Grove, CA 92841-1427
Phone :(714) 895-5494
Fax: (714) 894-7501
PO#: SC12902-STANDARD TAT CN

IMPORTANT : Please include Work Order # and PO # in your invoice.

Special Instructions: Need EQUIS EDD.

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1802292-01 / EB-062018		**Water**	**06/20/18 16:10**	
8270_SIM [Semivolatile Organic Compounds] Amber Unpres - 1000mL	**07/09/18 17:00**	06/27/18 16:10		

Released By	Date	Received By	Date
[signature]	6/22/18 1312	[signature]	06/22/18 1312

Temp. 5.1

eurofins | Calscience

WORK ORDER NUMBER: 18-06-1732

SAMPLE RECEIPT CHECKLIST

COOLER ∅ OF ∅

CLIENT: Advanced Technology

DATE: 06 / 22 / 2018

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC6 (CF: +0.1°C); Temperature (w/o CF): 5.0 °C (w/ CF): 5.1 °C; ☐ Blank ☑ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: 728

CUSTODY SEAL:

Cooler	☐ Present and Intact	☐ Present but Not Intact	☐ Not Present	☑ N/A	Checked by: 728
Sample(s)	☐ Present and Intact	☐ Present but Not Intact	☑ Not Present	☐ N/A	Checked by: 836

SAMPLE CONDITION:

	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☑	☐	☐
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Acid/base preserved samples - pH within acceptable range	☐	☐	☑
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOA**h** ☐ VOA**na₂** ☐ 100PJ ☐ 100PJ**na₂** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB ☐ 125PB**znna** (pH__9)

☐ 250AGB ☐ 250CGB ☐ 250CGB**s** (pH__2) ☐ 250PB ☐ 250PB**n** (pH__2) ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s** (pH__2) ☐ 500PB

☑ 1AGB ☐ 1AGB**na₂** ☐ 1AGB**s** (pH__2) ☐ 1AGB**s** (O&G) ☐ 1PB ☐ 1PB**na** (pH__12) ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (___) ☐ EnCores® (___) ☐ TerraCores® (___) ☐ _____ ☐ _____ ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na₂** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: 836

Reviewed by: 728

Return to Contents

American Environmental Testing Laboratory Inc.
2834 & 2908 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

Ordered By

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225

Telephone: (562)989-4045
Attention: Rachelle Arada

Number of Pages 3
Date Received 06/25/2018
Date Reported 07/03/2018

Job Number	Order Date	Client
93079	06/25/2018	ATL

Project ID: 1802292
Project Name: PO# SC12901

Enclosed please find results of analyses of 1 water sample which was analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.
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Ordered By

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225

Telephone: (562)989-4045
Attention: Rachelle Arada

Project ID: 1802292
Date Received 06/25/2018
Date Reported 07/03/2018

Job Number	Order Date	Client
93079	06/25/2018	ATL

CERTIFICATE OF ANALYSIS
CASE NARRATIVE

AETL received 1 samples with the following specification on 06/25/2018.

Lab ID	Sample ID	Sample Date	Matrix	Quantity Of Containers
93079.01	1802292-01	06/20/2018	Aqueous	1

Method ^ Submethod	Req Date	Priority	TAT	Units
8270C-SIM ^ ATL-P&P	07/02/2018	2	Normal	ug/L

The samples were analyzed as specified on the enclosed chain of custody.
No analytical non-conformances were encountered.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Direc

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ANALYTICAL RESULTS

Ordered By

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225

Telephone: (562)989-4045
Attn: Rachelle Arada
Page: 2

Project ID: 1802292
Project Name: PO# SC12901

AETL Job Number	Submitted	Client
93079	06/25/2018	ATL

Method: 8270C-SIM, Phenols and Phthalates by GC/MS SIM (Modified 8270C)

QC Batch No: 062518JB1

Our Lab I.D.			Method Blank	**93079.01**			
Client Sample I.D.				1802292-01			
Date Sampled				06/20/2018			
Date Prepared			06/25/2018	06/25/2018			
Preparation Method			3510C	3510C			
Date Analyzed			06/29/2018	06/29/2018			
Matrix			Aqueous	Aqueous			
Units			ug/L	ug/L			
Dilution Factor			1	1			
Analytes	**MDL**	**PQL**	**Results**	**Results**			
Bis(2-ethylhexyl) phthalate	0.50	1.00	ND	ND			
Butyl benzyl phthalate	0.50	1.00	ND	ND			
Di-n-butyl phthalate	0.50	1.00	ND	ND			
Di-n-octyl phthalate	0.50	1.00	ND	ND			
Diethyl phthalate	0.50	1.00	ND	ND			
Dimethyl phthalate	0.50	1.00	ND	ND			
2-Nitrophenol	0.50	1.00	ND	ND			
Bisphenol A (BPA)	1.00	2.00	ND	ND			
4-Chloro-3-Methylphenol	0.50	1.00	ND	ND			
3,4-Dimethylphenol	0.50	1.00	ND	ND			
4,6-Dinitro-2-methylphenol	0.50	1.00	ND	ND			
2-Methylphenol (2-Cresol)	0.50	1.00	ND	ND			
Total Target Phenols	0.50	1.00	ND	ND			
Our Lab I.D.			Method Blank	**93079.01**			
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**			
2-Fluorophenol	40-130		60.0	64.5			
2-Fluorobiphenyl	40-130		79.3	93.9			
p-Terphenyl-D14	40-130		107	119			
Phenol-d6	40-130		41.6	45.3			

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QUALITY CONTROL RESULTS

Ordered By

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755-5225

Telephone: (562)989-4045
Attn: Rachelle Arada
Page: 3

Project ID: 1802292
Project Name: PO# SC12901

AETL Job Number	Submitted	Client
93079	06/25/2018	ATL

Method: 8270C-SIM, Phenols and Phthalates by GC/MS SIM (Modified 8270C)

QC Batch No: 062518JB1; LCS: Clean Water; LCS Prepared: 06/25/2018; LCS Analyzed: 06/29/2018; Units: ug/L

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
4-Chloro-3-Methylphenol	20.0	14.2	71.0	20.0	13.9	69.5	2.1	20-130	<30	
2-Chlorophenol	20.0	14.2	71.0	20.0	13.5	67.5	5.1	20-130	<30	
4-Nitrophenol	20.0	5.20	26.0	20.0	4.60	23.0	12.2	20-130	<30	
Surrogates										
2-Fluorophenol	20.0	10.0	50.0	20.0	9.68	48.4	3.3	40-130	<30	
2-Fluorobiphenyl	10.0	8.52	85.2	10.0	8.25	82.5	3.2	40-130	<30	
p-Terphenyl-D14	10.0	12.3	123	10.0	11.3	113	8.5	40-130	<30	
Phenol-d6	20.0	8.10	40.5	20.0	8.48	42.4	4.6	40-130	<30	

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Data Qualifiers and Descriptors

Data Qualifier:

#:	Recovery is not within acceptable control limits.
*:	In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied.
B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
H:	Analysis was performed over the allowed holding time due to circumstances which were beyond laboratory control.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).
M:	Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable.
MCL:	Maximum Contaminant Level
NS:	No Standard Available
S6:	Surrogate recovery is outside control limits due to matrix interference.
S8:	The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria.
X:	Results represent LCS and LCSD data.

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.

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Data Qualifiers and Descriptors

MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

ADVANCED TECHNOLOGY LABORATORIES

93079

SUBCONTRACT ORDER

Work Order: 1802292

SENDING LABORATORY:

Advanced Technology Laboratories
3275 Walnut Avenue
Signal Hill, CA 90755
Phone: 562.989.4045
Fax: 562.989.6348
Project Manager: Rachelle Arada (Rachelle@atlglobal.com)
Sampler: Jake Lippman

RECEIVING LABORATORY:

AETL
2834 North Naomi Street
Burbank, CA 91504
Phone :(818) 845-8200
Fax: (818) 845-8840
PO#: SC12901-STANDARD TAT

IMPORTANT : Please include Work Order # and PO # in your invoice.

Special Instructions: Need EQUIS EDD.

Analysis	Due	Expires	Sampled	Comments
ATL Lab#: 1802292-01 / EB-062018		**Water** 93074-01	**06/20/18 16:10**	**Phenols/Phthalates 8270C SIM**
8270_SIM_SUB	**06/29/18 17:00**	06/27/18 16:10		
[Semivolatile Organic Compounds]				
Amber Unpres - 1000mL				

Released By	Date	Received By	Date
	6/25/18 1033		6/25/18 1033
	6/25/18 1315	Jean Claude	13115
			06/25/18

American Environmental Testing Laboratory Inc.
2834 North Naomi Street Burbank, CA 91504 • DOHS NO: 1541, LACSD NO: 10181
Tel: (888) 288-AETL • (818) 845-8200 • Fax: (818) 845-8840 • www.aetlab.com

COOLER RECEIPT FORM

Client Name: ATC

Project Name:

AETL Job Number: 93079, 93080 & 93081

Date Received: 06/25/18 Received by: Jean Claude

Carrier: ☒ AETL Courier ☐ Client ☐ GSO ☐ FedEx ☐ UPS
☐ Others:

Samples were received in: ☒ Cooler (1) ☐ Other (Specify):

Inside temperature of shipping container No 1: 2.7°C, No 2: _____, No 3: _____

Type of sample containers: ☐ VOA, ☒ Glass bottles, ☒ Wide mouth jars, ☐ HDPE bottles, ☐ Metal sleeves, ☐ Others (Specify):

How are samples preserved: ☐ None, ☐ Ice , ☒ Blue Ice, ☐ Dry Ice
X None, _ HNO_3, _ NaOH, _ ZnOAc, _ HCl, _ $Na_2S_2O_3$, _ MeOH
_ Other (Specify):

	Yes	No, explain below	Name, if client was notified.
1. Are the COCs Correct?	X		
2. Are the Sample labels legible?	X		
3. Do samples match the COC?	X		
4. Are the required analyses clear?	X		
5. Is there enough samples for required analysis?	X		
6. Are samples sealed with evidence tape?	N/A		
7. Are sample containers in good condition?	X		
8. Are samples preserved?	X		
9. Are samples preserved properly for the intended analysis?	X		
10. Are the VOAs free of headspace?	N/A		
11. Are the jars free of headspace?	X		

Explain all "No" answers for above questions:

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 1 of 1

Temp blank: 5.9 °C

Instruction: Complete all shaded areas.

For Laboratory Use Only			ATLCOC Ver:20180321
Method of Transport	Sample Conditions: Condition	Y	N
☐ Client ☐ ATL* ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other:	1. CHILLED	☑	☐
	2. HEADSPACE (VOA)	☐	☐
	3. CONTAINER INTACT	☑	☐
	4. SEALED	☑	☐
	5. # OF SAMPLES MATCH COC	☑	☐
	6. PRESERVED	☑	☐
	7. COOLER TEMP, deg C: 5.2, ice		

CUSTOMER

Company: Kleinfelder, Inc.
Address: 550 West C Street, Suite 1200
City: San Diego State: CA Zip: 92101
Tel: 6198314677
Fax:

SEND REPORT TO:
Attn: Jake Lippman
Email: jlippman@kleinfelder.com
Company:
Address: 550 W C Street Ste. 1200
City: San Diego State: CA Zip: 92101

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn:
Email: accountspayableus@kleinfelder.com
Company: Same
Address:
City: State: Zip:

EDD: ○ Excel ○ EDF ◉ Equis ○ _____

QA/QC: ☑ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV ☐ _____

PROJECT SAMPLES

Project Name: Salt Pond 20
Project No.: 20164596.018A
Sampler: Jake Lippman
Quote #:
PO #: 20164596.018A
Special Instructions/Comments: Archive remaining samples

ITEM	Laboratory ID (For Lab Use Only)	Sample Description: Sample ID / Location	Date	Time	8081 (Organochlorine Pesticides)	8082 (PCBs)	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	PAHs (8270C SIM)	Phenols/Phthalates (8270C SIM)	TPH C6-40 (8015B)	SVOCs (8270C SIM)	Title 22 Metals (6020/7471A)	VOCs 5260B				Soil	Select Solid Matrix	Select Water Matrix	Wastewater	Select Non-aqueous Matrix	Enter Custom Matrix	Turnaround Time (TAT)	Quantity	Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister	Material: 1=Glass; 2=Plastic; 3=Metal	Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn(Ac)2; 6=NaOH; 7=NA2S2O3	Remarks
1	1802292-01	EB-062018	6/20/18	1610	X	X							X	X	X	X	X	X						X				5	11	3	1/2	1/2	
2																																	
3																																	
4																																	
5																																	
6																																	
7																																	
8																																	
9																																	
10																																	

6/20/18

TERMS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples submitted AFTER 3:00 PM are considered received the following business day at 8:00 AM.
3. The following turnaround time conditions apply:
   - TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   - TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   - TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   - TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   - TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   - TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)
4. Weekend, holiday, after-hours work --- ask for quote.
5. Subcontract TATs 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab --- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
   - Air samples: Complimentary storage for ten (10) calendar days from receipt of samples; $20 sample/week if extended storage is requested.
   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reformatted report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.
12. The laboratory will randomly select from all QC samples received the sample to spike for Matrix Spike/Matrix Spike Duplicate (MS/MSD) at no cost. However, if you want the laboratory to additionally perform MS/MSD on your sample, a charge will be assessed for the specific sample used.

CUSTODY

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Jake Lippman	6/20/18	1630		6/21/18	1553
	6/21/18	1426	MPL	6/21/18	1519

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Printed Name _____ Signature _____

ADVANCED TECHNOLOGY LABORATORIES

Sample Receipt Acknowledgement

Work Order # 1802292

Client:	**Kleinfelder - SD**	**Project Manager:**	**Rachelle Arada**
Project:	**Salt Pond 20, 20164596.018A**	**Project Number:**	**Salt Pond 20, 20164596.018A**

Report To:	**Invoice To:**
Kleinfelder	Kleinfelder
Jake Lippman	Accounts Payable
550 W. C. Suite 1200	550 W. C. Suite 1200
San Diego, CA 92101	San Diego, CA 92101
Phone: (619) 831-4600	Phone :(619) 831-4600
Fax:	Fax:

Date Due:	06/29/18 17:00 (5 day TAT)	Date Received:	06/21/18 15:53
Received By:	Joel Arceo	Date Logged In:	06/22/18 11:18
Logged In By:	Marnellie Ramos	Shipped by:	ATL

All samples that require thermal preservation are considered acceptable if the arrival temperature is within 2 °C of the required temperature or method-specified range. For samples with a specified temperature of 4 °C, samples received with a temperature ranging from just above freezing temperature of water to 6 °C shall be acceptable. Samples that are hand-delivered immediately following collection may not meet these criteria; however, they will be deemed acceptable according to NELAC standards if there is evidence that the chilling process has begun, such as arrival on ice, etc.

The laboratory documents the condition of the sample/s as received per requirement of laboratory certification. If the sample received is unpreserved or under-preserved, the laboratory will adjust the preservatives to bring the sample to preservation criteria.

Any sample compliance issues will be communicated to the client. If the client does not respond within 24 hours of sample receipt, all tests will be performed as requested regardless. For short holding time samples (< 24 hours), analysis will proceed regardless.

If you have any questions or further instructions, please contact your Project Manager at (562) 989-4045.

Sample(s) received on ice?	Yes	☑	No	☐
Sample(s) received on blue ice?	Yes	☐	No	☑
Cooler temperature within acceptance limit?	Yes	☑	No	☐
Shipping container received in good condition?	Not Applicable			
Chain of Custody (COC) present?	Yes	☑	No	☐
Sampler name present in COC?	Yes	☑	No	☐
COC signed when relinquished and received?	Yes	☑	No	☐
COC agrees with sample labels?	Yes	☑	No	☐
Samples in proper container/bottle?	Yes	☑	No	☐
Sample containers intact?	Yes	☑	No	☐
Sufficient sample amount for indicated tests?	Yes	☑	No	☐
All samples received within holding time?	Yes	☑	No	☐
Water samples submitted?	Yes	☑	No	☐
Water samples meet preservation criteria?	Yes	☑	No	☐
Water for VOC -- Were VOA vials submitted?	Yes	☑	No	☐
VOA vials for VOC meet headspace criteria?	Yes	☑	No	☐

Cooler #1	Temp: 5.2 °C

Sample Receipt Comments:

Temp Blank (C): 5.9.

Printed: 6/26/2018 2:46:42PM

Form Version: 12 Issued: 12/06/2016 12:55 PM

ADVANCED TECHNOLOGY LABORATORIES

July 03, 2018

Jake Lippman
Kleinfelder
550 W. C. Suite 1200
San Diego, CA 92101
Tel: (619) 831-4600
Fax:

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003

Re: ATL Work Order Number : 1802300
Client Reference : Salt Pond 20, 20164596.018A

Enclosed are the results for sample(s) received on June 22, 2018 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TP-7-0-0.5	1802300-01	Soil	6/20/18 10:10	6/22/18 15:55
TP-7-0.5-1.5	1802300-02	Soil	6/20/18 10:15	6/22/18 15:55
TP-7-1.5-2	1802300-03	Soil	6/20/18 10:20	6/22/18 15:55
TP-8-0-0.25	1802300-04	Soil	6/20/18 9:30	6/22/18 15:55
TP-8-0.25-1	1802300-05	Soil	6/20/18 9:35	6/22/18 15:55
TP-8-1-5	1802300-06	Soil	6/20/18 9:40	6/22/18 15:55
TP-8-5-8	1802300-07	Soil	6/20/18 9:45	6/22/18 15:55
TP-10-0-0.25	1802300-08	Soil	6/20/18 13:00	6/22/18 15:55
TP-10-0.25-2	1802300-09	Soil	6/20/18 13:05	6/22/18 15:55
TP-11-0-4	1802300-10	Soil	6/19/18 7:53	6/22/18 15:55
TP-11-4-5	1802300-11	Soil	6/19/18 7:55	6/22/18 15:55
TP-11-5-10	1802300-12	Soil	6/19/18 8:00	6/22/18 15:55
TP-17-0.083-1.5	1802300-13	Soil	6/20/18 9:15	6/22/18 15:55
TP-17-1.5-2	1802300-14	Soil	6/20/18 9:20	6/22/18 15:55
TP-18-0-4	1802300-15	Soil	6/19/18 9:10	6/22/18 15:55
TP-18-4-6	1802300-16	Soil	6/19/18 9:15	6/22/18 15:55
TP-20-0.083-4	1802300-17	Soil	6/19/18 12:45	6/22/18 15:55
TP-20-4-5	1802300-18	Soil	6/19/18 12:55	6/22/18 15:55
TP-22-0-2.5	1802300-19	Soil	6/19/18 13:15	6/22/18 15:55
TP-22-2.5-3	1802300-20	Soil	6/19/18 13:15	6/22/18 15:55
TP-24-0-4.5	1802300-21	Soil	6/19/18 9:33	6/22/18 15:55
TP-24-4.5-6	1802300-22	Soil	6/19/18 9:40	6/22/18 15:55
TP-26-0-4	1802300-23	Soil	6/19/18 10:05	6/22/18 15:55
TP-26-4-6	1802300-24	Soil	6/19/18 10:10	6/22/18 15:55
TP-26-6-6.5	1802300-25	Soil	6/19/18 10:13	6/22/18 15:55
TP-27-0-4	1802300-26	Soil	6/19/18 12:25	6/22/18 15:55
TP-27-4-10	1802300-27	Soil	6/19/18 12:25	6/22/18 15:55
TP-28-0-2	1802300-28	Soil	6/20/18 7:30	6/22/18 15:55
TP-28-2-4	1802300-29	Soil	6/20/18 7:35	6/22/18 15:55
TP-29-0-4	1802300-30	Soil	6/19/18 11:10	6/22/18 15:55
TP-29-4-8	1802300-31	Soil	6/19/18 11:11	6/22/18 15:55
TP-29-8-10	1802300-32	Soil	6/19/18 11:15	6/22/18 15:55
TP-30-0-4	1802300-33	Soil	6/19/18 11:55	6/22/18 15:55
TP-30-4-8	1802300-34	Soil	6/19/18 12:00	6/22/18 15:55
TP-30-8-10	1802300-35	Soil	6/19/18 12:10	6/22/18 15:55
TP-31-0-3	1802300-36	Soil	6/20/18 7:00	6/22/18 15:55
TP-31-3-4	1802300-37	Soil	6/20/18 7:05	6/22/18 15:55

Certificate of Analysis

Kleinfelder	Project Number :	Salt Pond 20, 20164596.018A	
550 W. C. Suite 1200	Report To :	Jake Lippman	
San Diego , CA 92101	Reported :	07/03/2018	

TP-32-0-4	1802300-38	Soil	6/20/18 8:00	6/22/18 15:55
TP-32-4-7	1802300-39	Soil	6/20/18 8:05	6/22/18 15:55
TP-32-7-9	1802300-40	Soil	6/20/18 8:10	6/22/18 15:55

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

DETECTION SUMMARY

Client Sample ID TP-7-0-0.5

Lab ID: 1802300-01

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Barium	**8800**	1000	20	B8F0755	06/28/2018	07/02/18 16:36	
Copper	**3400**	1000	20	B8F0755	06/28/2018	07/02/18 16:36	
Lead	**10000**	1000	20	B8F0755	06/28/2018	07/02/18 16:36	
Nickel	**3400**	1000	20	B8F0755	06/28/2018	07/02/18 16:36	
Vanadium	**6000**	2000	20	B8F0755	06/28/2018	07/02/18 16:36	
Zinc	**10000**	5000	20	B8F0755	06/28/2018	07/02/18 16:36	

Client Sample ID TP-7-0.5-1.5

Lab ID: 1802300-02

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1500**	1000	20	B8F0755	06/28/2018	07/02/18 16:43	
Barium	**51000**	1000	20	B8F0755	06/28/2018	07/02/18 16:43	
Chromium	**7000**	2000	20	B8F0755	06/28/2018	07/02/18 16:43	
Cobalt	**3900**	1000	20	B8F0755	06/28/2018	07/02/18 16:43	
Copper	**6600**	1000	20	B8F0755	06/28/2018	07/02/18 16:43	
Lead	**2700**	1000	20	B8F0755	06/28/2018	07/02/18 16:43	
Nickel	**2900**	1000	20	B8F0755	06/28/2018	07/02/18 16:43	
Vanadium	**36000**	2000	20	B8F0755	06/28/2018	07/02/18 16:43	
Zinc	**15000**	5000	20	B8F0755	06/28/2018	07/02/18 16:43	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

DETECTION SUMMARY

Client Sample ID TP-7-1.5-2

Lab ID: 1802300-03

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1400**	1000	20	B8F0755	06/28/2018	07/02/18 16:45	
Barium	**120000**	1000	20	B8F0755	06/28/2018	07/02/18 16:45	
Chromium	**15000**	2000	20	B8F0755	06/28/2018	07/02/18 16:45	
Cobalt	**7300**	1000	20	B8F0755	06/28/2018	07/02/18 16:45	
Copper	**16000**	1000	20	B8F0755	06/28/2018	07/02/18 16:45	
Lead	**32000**	1000	20	B8F0755	06/28/2018	07/02/18 16:45	
Nickel	**7600**	1000	20	B8F0755	06/28/2018	07/02/18 16:45	
Vanadium	**53000**	2000	20	B8F0755	06/28/2018	07/02/18 16:45	
Zinc	**32000**	5000	20	B8F0755	06/28/2018	07/02/18 16:45	

Client Sample ID TP-8-0-0.25

Lab ID: 1802300-04

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Barium	**12000**	1000	20	B8F0755	06/28/2018	07/02/18 16:47	
Chromium	**2100**	2000	20	B8F0755	06/28/2018	07/02/18 16:47	
Cobalt	**1300**	1000	20	B8F0755	06/28/2018	07/02/18 16:47	
Copper	**4700**	1000	20	B8F0755	06/28/2018	07/02/18 16:47	
Lead	**8600**	1000	20	B8F0755	06/28/2018	07/02/18 16:47	
Nickel	**4400**	1000	20	B8F0755	06/28/2018	07/02/18 16:47	
Vanadium	**8000**	2000	20	B8F0755	06/28/2018	07/02/18 16:47	
Zinc	**18000**	5000	20	B8F0755	06/28/2018	07/02/18 16:47	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

DETECTION SUMMARY

Client Sample ID TP-8-0.25-1

Lab ID: 1802300-05

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2100**	1000	20	B8F0755	06/28/2018	07/02/18 16:49	
Barium	**52000**	1000	20	B8F0755	06/28/2018	07/02/18 16:49	
Chromium	**9000**	2000	20	B8F0755	06/28/2018	07/02/18 16:49	
Cobalt	**2900**	1000	20	B8F0755	06/28/2018	07/02/18 16:49	
Copper	**6200**	1000	20	B8F0755	06/28/2018	07/02/18 16:49	
Lead	**2700**	1000	20	B8F0755	06/28/2018	07/02/18 16:49	
Molybdenum	**1800**	1000	20	B8F0755	06/28/2018	07/02/18 16:49	
Nickel	**2900**	1000	20	B8F0755	06/28/2018	07/02/18 16:49	
Vanadium	**49000**	2000	20	B8F0755	06/28/2018	07/02/18 16:49	
Zinc	**14000**	5000	20	B8F0755	06/28/2018	07/02/18 16:49	

Client Sample ID TP-8-1-5

Lab ID: 1802300-06

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**3400**	1000	20	B8F0755	06/28/2018	07/02/18 16:57	
Barium	**130000**	1000	20	B8F0755	06/28/2018	07/02/18 16:57	
Chromium	**18000**	2000	20	B8F0755	06/28/2018	07/02/18 16:57	
Cobalt	**15000**	1000	20	B8F0755	06/28/2018	07/02/18 16:57	
Copper	**15000**	1000	20	B8F0755	06/28/2018	07/02/18 16:57	
Lead	**4800**	1000	20	B8F0755	06/28/2018	07/02/18 16:57	
Nickel	**11000**	1000	20	B8F0755	06/28/2018	07/02/18 16:57	
Vanadium	**70000**	2000	20	B8F0755	06/28/2018	07/02/18 16:57	
Zinc	**32000**	5000	20	B8F0755	06/28/2018	07/02/18 16:57	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

DETECTION SUMMARY

Client Sample ID TP-8-5-8

Lab ID: 1802300-07

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**3900**	1000	20	B8F0755	06/28/2018	07/02/18 16:59	
Barium	**46000**	1000	20	B8F0755	06/28/2018	07/02/18 16:59	
Chromium	**12000**	2000	20	B8F0755	06/28/2018	07/02/18 16:59	
Cobalt	**8400**	1000	20	B8F0755	06/28/2018	07/02/18 16:59	
Copper	**12000**	1000	20	B8F0755	06/28/2018	07/02/18 16:59	
Lead	**3400**	1000	20	B8F0755	06/28/2018	07/02/18 16:59	
Nickel	**6800**	1000	20	B8F0755	06/28/2018	07/02/18 16:59	
Vanadium	**43000**	2000	20	B8F0755	06/28/2018	07/02/18 16:59	
Zinc	**24000**	5000	20	B8F0755	06/28/2018	07/02/18 16:59	

Client Sample ID TP-10-0-0.25

Lab ID: 1802300-08

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Barium	**13000**	1000	20	B8F0755	06/28/2018	07/02/18 17:01	
Chromium	**2400**	2000	20	B8F0755	06/28/2018	07/02/18 17:01	
Cobalt	**1100**	1000	20	B8F0755	06/28/2018	07/02/18 17:01	
Copper	**5300**	1000	20	B8F0755	06/28/2018	07/02/18 17:01	
Lead	**7900**	1000	20	B8F0755	06/28/2018	07/02/18 17:01	
Nickel	**3800**	1000	20	B8F0755	06/28/2018	07/02/18 17:01	
Vanadium	**7400**	2000	20	B8F0755	06/28/2018	07/02/18 17:01	
Zinc	**18000**	5000	20	B8F0755	06/28/2018	07/02/18 17:01	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

DETECTION SUMMARY

Client Sample ID TP-10-0.25-2

Lab ID: 1802300-09

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Barium	**31000**	1000	20	B8F0755	06/28/2018	07/02/18 17:02	
Chromium	**9300**	2000	20	B8F0755	06/28/2018	07/02/18 17:02	
Cobalt	**3000**	1000	20	B8F0755	06/28/2018	07/02/18 17:02	
Copper	**6800**	1000	20	B8F0755	06/28/2018	07/02/18 17:02	
Lead	**2100**	1000	20	B8F0755	06/28/2018	07/02/18 17:02	
Nickel	**4400**	1000	20	B8F0755	06/28/2018	07/02/18 17:02	
Vanadium	**25000**	2000	20	B8F0755	06/28/2018	07/02/18 17:02	
Zinc	**15000**	5000	20	B8F0755	06/28/2018	07/02/18 17:02	

Client Sample ID TP-11-0-4

Lab ID: 1802300-10

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2000**	1000	20	B8F0755	06/28/2018	07/02/18 17:04	
Barium	**48000**	1000	20	B8F0755	06/28/2018	07/02/18 17:04	
Chromium	**5700**	2000	20	B8F0755	06/28/2018	07/02/18 17:04	
Cobalt	**3400**	1000	20	B8F0755	06/28/2018	07/02/18 17:04	
Copper	**5500**	1000	20	B8F0755	06/28/2018	07/02/18 17:04	
Lead	**3200**	1000	20	B8F0755	06/28/2018	07/02/18 17:04	
Nickel	**2400**	1000	20	B8F0755	06/28/2018	07/02/18 17:04	
Vanadium	**33000**	2000	20	B8F0755	06/28/2018	07/02/18 17:04	
Zinc	**13000**	5000	20	B8F0755	06/28/2018	07/02/18 17:04	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

DETECTION SUMMARY

Client Sample ID TP-11-4-5

Lab ID: 1802300-11

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**3000**	1000	20	B8F0755	06/28/2018	07/02/18 17:06	
Barium	**51000**	1000	20	B8F0755	06/28/2018	07/02/18 17:06	
Chromium	**12000**	2000	20	B8F0755	06/28/2018	07/02/18 17:06	
Cobalt	**6700**	1000	20	B8F0755	06/28/2018	07/02/18 17:06	
Copper	**10000**	1000	20	B8F0755	06/28/2018	07/02/18 17:06	
Lead	**3500**	1000	20	B8F0755	06/28/2018	07/02/18 17:06	
Molybdenum	**1400**	1000	20	B8F0755	06/28/2018	07/02/18 17:06	
Nickel	**5700**	1000	20	B8F0755	06/28/2018	07/02/18 17:06	
Vanadium	**37000**	2000	20	B8F0755	06/28/2018	07/02/18 17:06	
Zinc	**25000**	5000	20	B8F0755	06/28/2018	07/02/18 17:06	

Client Sample ID TP-11-5-10

Lab ID: 1802300-12

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**3100**	1000	20	B8F0755	06/28/2018	07/02/18 17:08	
Barium	**170000**	1000	20	B8F0755	06/28/2018	07/02/18 17:08	
Chromium	**17000**	2000	20	B8F0755	06/28/2018	07/02/18 17:08	
Cobalt	**11000**	1000	20	B8F0755	06/28/2018	07/02/18 17:08	
Copper	**20000**	1000	20	B8F0755	06/28/2018	07/02/18 17:08	
Lead	**4800**	1000	20	B8F0755	06/28/2018	07/02/18 17:08	
Nickel	**8500**	1000	20	B8F0755	06/28/2018	07/02/18 17:08	
Vanadium	**72000**	2000	20	B8F0755	06/28/2018	07/02/18 17:08	
Zinc	**43000**	5000	20	B8F0755	06/28/2018	07/02/18 17:08	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

DETECTION SUMMARY

Client Sample ID TP-17-0.083-1.5

Lab ID: 1802300-13

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1100**	1000	20	B8F0755	06/28/2018	07/02/18 17:10	
Barium	**55000**	1000	20	B8F0755	06/28/2018	07/02/18 17:10	
Chromium	**6200**	2000	20	B8F0755	06/28/2018	07/02/18 17:10	
Cobalt	**3300**	1000	20	B8F0755	06/28/2018	07/02/18 17:10	
Copper	**7600**	1000	20	B8F0755	06/28/2018	07/02/18 17:10	
Lead	**2400**	1000	20	B8F0755	06/28/2018	07/02/18 17:10	
Nickel	**2900**	1000	20	B8F0755	06/28/2018	07/02/18 17:10	
Vanadium	**28000**	2000	20	B8F0755	06/28/2018	07/02/18 17:10	
Zinc	**14000**	5000	20	B8F0755	06/28/2018	07/02/18 17:10	

Client Sample ID TP-17-1.5-2

Lab ID: 1802300-14

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Barium	**120000**	1000	20	B8F0755	06/28/2018	07/02/18 17:12	
Chromium	**7200**	2000	20	B8F0755	06/28/2018	07/02/18 17:12	
Cobalt	**4000**	1000	20	B8F0755	06/28/2018	07/02/18 17:12	
Copper	**8800**	1000	20	B8F0755	06/28/2018	07/02/18 17:12	
Lead	**2400**	1000	20	B8F0755	06/28/2018	07/02/18 17:12	
Nickel	**4000**	1000	20	B8F0755	06/28/2018	07/02/18 17:12	
Vanadium	**36000**	2000	20	B8F0755	06/28/2018	07/02/18 17:12	
Zinc	**17000**	5000	20	B8F0755	06/28/2018	07/02/18 17:12	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

DETECTION SUMMARY

Client Sample ID TP-18-0-4

Lab ID: 1802300-15

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1600**	1000	20	B8F0755	06/28/2018	07/02/18 17:14	
Barium	**42000**	1000	20	B8F0755	06/28/2018	07/02/18 17:14	
Chromium	**5800**	2000	20	B8F0755	06/28/2018	07/02/18 17:14	
Cobalt	**3000**	1000	20	B8F0755	06/28/2018	07/02/18 17:14	
Copper	**4700**	1000	20	B8F0755	06/28/2018	07/02/18 17:14	
Lead	**2500**	1000	20	B8F0755	06/28/2018	07/02/18 17:14	
Nickel	**2500**	1000	20	B8F0755	06/28/2018	07/02/18 17:14	
Vanadium	**32000**	2000	20	B8F0755	06/28/2018	07/02/18 17:14	
Zinc	**12000**	5000	20	B8F0755	06/28/2018	07/02/18 17:14	

Client Sample ID TP-18-4-6

Lab ID: 1802300-16

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1500**	1000	20	B8F0755	06/28/2018	07/02/18 17:19	
Barium	**55000**	1000	20	B8F0755	06/28/2018	07/02/18 17:19	
Chromium	**7800**	2000	20	B8F0755	06/28/2018	07/02/18 17:19	
Cobalt	**4700**	1000	20	B8F0755	06/28/2018	07/02/18 17:19	
Copper	**9300**	1000	20	B8F0755	06/28/2018	07/02/18 17:19	
Lead	**2900**	1000	20	B8F0755	06/28/2018	07/02/18 17:19	
Nickel	**3900**	1000	20	B8F0755	06/28/2018	07/02/18 17:19	
Vanadium	**36000**	2000	20	B8F0755	06/28/2018	07/02/18 17:19	
Zinc	**20000**	5000	20	B8F0755	06/28/2018	07/02/18 17:19	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

DETECTION SUMMARY

Client Sample ID TP-20-0.083-4

Lab ID: 1802300-17

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1100**	1000	20	B8F0755	06/28/2018	07/02/18 17:21	
Barium	**33000**	1000	20	B8F0755	06/28/2018	07/02/18 17:21	
Chromium	**4600**	2000	20	B8F0755	06/28/2018	07/02/18 17:21	
Cobalt	**2200**	1000	20	B8F0755	06/28/2018	07/02/18 17:21	
Copper	**3800**	1000	20	B8F0755	06/28/2018	07/02/18 17:21	
Lead	**2100**	1000	20	B8F0755	06/28/2018	07/02/18 17:21	
Nickel	**1800**	1000	20	B8F0755	06/28/2018	07/02/18 17:21	
Vanadium	**26000**	2000	20	B8F0755	06/28/2018	07/02/18 17:21	
Zinc	**11000**	5000	20	B8F0755	06/28/2018	07/02/18 17:21	

Client Sample ID TP-20-4-5

Lab ID: 1802300-18

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1500**	1000	20	B8F0755	06/28/2018	07/02/18 17:23	
Barium	**96000**	1000	20	B8F0755	06/28/2018	07/02/18 17:23	
Chromium	**11000**	2000	20	B8F0755	06/28/2018	07/02/18 17:23	
Cobalt	**7300**	1000	20	B8F0755	06/28/2018	07/02/18 17:23	
Copper	**19000**	1000	20	B8F0755	06/28/2018	07/02/18 17:23	
Lead	**3400**	1000	20	B8F0755	06/28/2018	07/02/18 17:23	
Molybdenum	**1500**	1000	20	B8F0755	06/28/2018	07/02/18 17:23	
Nickel	**6300**	1000	20	B8F0755	06/28/2018	07/02/18 17:23	
Vanadium	**47000**	2000	20	B8F0755	06/28/2018	07/02/18 17:23	
Zinc	**29000**	5000	20	B8F0755	06/28/2018	07/02/18 17:23	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
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DETECTION SUMMARY

Client Sample ID TP-22-0-2.5

Lab ID: 1802300-19

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2600**	1000	20	B8F0755	06/28/2018	07/02/18 17:25	
Barium	**99000**	1000	20	B8F0755	06/28/2018	07/02/18 17:25	
Chromium	**11000**	2000	20	B8F0755	06/28/2018	07/02/18 17:25	
Cobalt	**6800**	1000	20	B8F0755	06/28/2018	07/02/18 17:25	
Copper	**12000**	1000	20	B8F0755	06/28/2018	07/02/18 17:25	
Lead	**3700**	1000	20	B8F0755	06/28/2018	07/02/18 17:25	
Nickel	**6300**	1000	20	B8F0755	06/28/2018	07/02/18 17:25	
Vanadium	**43000**	2000	20	B8F0755	06/28/2018	07/02/18 17:25	
Zinc	**31000**	5000	20	B8F0755	06/28/2018	07/02/18 17:25	

Client Sample ID TP-22-2.5-3

Lab ID: 1802300-20

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1300**	1000	20	B8F0755	06/28/2018	07/02/18 17:27	
Barium	**45000**	1000	20	B8F0755	06/28/2018	07/02/18 17:27	
Chromium	**5100**	2000	20	B8F0755	06/28/2018	07/02/18 17:27	
Cobalt	**2500**	1000	20	B8F0755	06/28/2018	07/02/18 17:27	
Copper	**4400**	1000	20	B8F0755	06/28/2018	07/02/18 17:27	
Lead	**2200**	1000	20	B8F0755	06/28/2018	07/02/18 17:27	
Nickel	**2000**	1000	20	B8F0755	06/28/2018	07/02/18 17:27	
Vanadium	**27000**	2000	20	B8F0755	06/28/2018	07/02/18 17:27	
Zinc	**12000**	5000	20	B8F0755	06/28/2018	07/02/18 17:27	

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Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
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DETECTION SUMMARY

Client Sample ID TP-24-0-4.5

Lab ID: 1802300-21

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1200**	1000	20	B8F0757	06/28/2018	07/02/18 17:32	
Barium	**45000**	1000	20	B8F0757	06/28/2018	07/02/18 17:32	
Chromium	**5300**	2000	20	B8F0757	06/28/2018	07/02/18 17:32	
Cobalt	**2700**	1000	20	B8F0757	06/28/2018	07/02/18 17:32	
Copper	**4200**	1000	20	B8F0757	06/28/2018	07/02/18 17:32	
Lead	**2500**	1000	20	B8F0757	06/28/2018	07/02/18 17:32	
Nickel	**2000**	1000	20	B8F0757	06/28/2018	07/02/18 17:32	
Vanadium	**28000**	2000	20	B8F0757	06/28/2018	07/02/18 17:32	
Zinc	**12000**	5000	20	B8F0757	06/28/2018	07/02/18 17:32	

Client Sample ID TP-24-4.5-6

Lab ID: 1802300-22

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1600**	1000	20	B8F0757	06/28/2018	07/02/18 17:43	
Barium	**89000**	1000	20	B8F0757	06/28/2018	07/02/18 17:43	
Chromium	**8900**	2000	20	B8F0757	06/28/2018	07/02/18 17:43	
Cobalt	**6300**	1000	20	B8F0757	06/28/2018	07/02/18 17:43	
Copper	**12000**	1000	20	B8F0757	06/28/2018	07/02/18 17:43	
Lead	**2700**	1000	20	B8F0757	06/28/2018	07/02/18 17:43	
Nickel	**4700**	1000	20	B8F0757	06/28/2018	07/02/18 17:43	
Vanadium	**42000**	2000	20	B8F0757	06/28/2018	07/02/18 17:43	
Zinc	**24000**	5000	20	B8F0757	06/28/2018	07/02/18 17:43	

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Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
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DETECTION SUMMARY

Client Sample ID TP-26-0-4

Lab ID: 1802300-23

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1900**	1000	20	B8F0757	06/28/2018	07/02/18 17:45	
Barium	**37000**	1000	20	B8F0757	06/28/2018	07/02/18 17:45	
Chromium	**5000**	2000	20	B8F0757	06/28/2018	07/02/18 17:45	
Cobalt	**2700**	1000	20	B8F0757	06/28/2018	07/02/18 17:45	
Copper	**4000**	1000	20	B8F0757	06/28/2018	07/02/18 17:45	
Lead	**2300**	1000	20	B8F0757	06/28/2018	07/02/18 17:45	
Nickel	**1900**	1000	20	B8F0757	06/28/2018	07/02/18 17:45	
Vanadium	**29000**	2000	20	B8F0757	06/28/2018	07/02/18 17:45	
Zinc	**11000**	5000	20	B8F0757	06/28/2018	07/02/18 17:45	

Client Sample ID TP-26-4-6

Lab ID: 1802300-24

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1900**	1000	20	B8F0757	06/28/2018	07/02/18 17:47	
Barium	**130000**	1000	20	B8F0757	06/28/2018	07/02/18 17:47	
Chromium	**14000**	2000	20	B8F0757	06/28/2018	07/02/18 17:47	
Cobalt	**8500**	1000	20	B8F0757	06/28/2018	07/02/18 17:47	
Copper	**20000**	1000	20	B8F0757	06/28/2018	07/02/18 17:47	
Lead	**4300**	1000	20	B8F0757	06/28/2018	07/02/18 17:47	
Nickel	**7800**	1000	20	B8F0757	06/28/2018	07/02/18 17:47	
Vanadium	**53000**	2000	20	B8F0757	06/28/2018	07/02/18 17:47	
Zinc	**36000**	5000	20	B8F0757	06/28/2018	07/02/18 17:47	

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Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
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DETECTION SUMMARY

Client Sample ID TP-26-6-6.5

Lab ID: 1802300-25

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Barium	**35000**	1000	20	B8F0757	06/28/2018	07/02/18 17:49	
Chromium	**4300**	2000	20	B8F0757	06/28/2018	07/02/18 17:49	
Cobalt	**2700**	1000	20	B8F0757	06/28/2018	07/02/18 17:49	
Copper	**4800**	1000	20	B8F0757	06/28/2018	07/02/18 17:49	
Lead	**2000**	1000	20	B8F0757	06/28/2018	07/02/18 17:49	
Nickel	**2600**	1000	20	B8F0757	06/28/2018	07/02/18 17:49	
Vanadium	**21000**	2000	20	B8F0757	06/28/2018	07/02/18 17:49	
Zinc	**12000**	5000	20	B8F0757	06/28/2018	07/02/18 17:49	

Client Sample ID TP-27-0-4

Lab ID: 1802300-26

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Barium	**37000**	1000	20	B8F0757	06/28/2018	07/02/18 17:51	
Chromium	**5100**	2000	20	B8F0757	06/28/2018	07/02/18 17:51	
Cobalt	**2400**	1000	20	B8F0757	06/28/2018	07/02/18 17:51	
Copper	**3900**	1000	20	B8F0757	06/28/2018	07/02/18 17:51	
Lead	**2200**	1000	20	B8F0757	06/28/2018	07/02/18 17:51	
Nickel	**2000**	1000	20	B8F0757	06/28/2018	07/02/18 17:51	
Vanadium	**25000**	2000	20	B8F0757	06/28/2018	07/02/18 17:51	
Zinc	**11000**	5000	20	B8F0757	06/28/2018	07/02/18 17:51	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
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DETECTION SUMMARY

Client Sample ID TP-27-4-10

Lab ID: 1802300-27

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2800**	1000	20	B8F0757	06/28/2018	07/02/18 17:52	
Barium	**130000**	1000	20	B8F0757	06/28/2018	07/02/18 17:52	
Chromium	**12000**	2000	20	B8F0757	06/28/2018	07/02/18 17:52	
Cobalt	**7200**	1000	20	B8F0757	06/28/2018	07/02/18 17:52	
Copper	**12000**	1000	20	B8F0757	06/28/2018	07/02/18 17:52	
Lead	**4100**	1000	20	B8F0757	06/28/2018	07/02/18 17:52	
Nickel	**6300**	1000	20	B8F0757	06/28/2018	07/02/18 17:52	
Vanadium	**42000**	2000	20	B8F0757	06/28/2018	07/02/18 17:52	
Zinc	**31000**	5000	20	B8F0757	06/28/2018	07/02/18 17:52	

Client Sample ID TP-28-0-2

Lab ID: 1802300-28

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Barium	**26000**	1000	20	B8F0757	06/28/2018	07/02/18 17:54	
Chromium	**3600**	2000	20	B8F0757	06/28/2018	07/02/18 17:54	
Cobalt	**1200**	1000	20	B8F0757	06/28/2018	07/02/18 17:54	
Copper	**3200**	1000	20	B8F0757	06/28/2018	07/02/18 17:54	
Lead	**3100**	1000	20	B8F0757	06/28/2018	07/02/18 17:54	
Nickel	**1300**	1000	20	B8F0757	06/28/2018	07/02/18 17:54	
Vanadium	**17000**	2000	20	B8F0757	06/28/2018	07/02/18 17:54	
Zinc	**7700**	5000	20	B8F0757	06/28/2018	07/02/18 17:54	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
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DETECTION SUMMARY

Client Sample ID TP-28-2-4

Lab ID: 1802300-29

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1600**	1000	20	B8F0757	06/28/2018	07/02/18 17:56	
Barium	**100000**	1000	20	B8F0757	06/28/2018	07/02/18 17:56	
Chromium	**8800**	2000	20	B8F0757	06/28/2018	07/02/18 17:56	
Cobalt	**5300**	1000	20	B8F0757	06/28/2018	07/02/18 17:56	
Copper	**12000**	1000	20	B8F0757	06/28/2018	07/02/18 17:56	
Lead	**3200**	1000	20	B8F0757	06/28/2018	07/02/18 17:56	
Nickel	**4500**	1000	20	B8F0757	06/28/2018	07/02/18 17:56	
Vanadium	**40000**	2000	20	B8F0757	06/28/2018	07/02/18 17:56	
Zinc	**25000**	5000	20	B8F0757	06/28/2018	07/02/18 17:56	

Client Sample ID TP-29-0-4

Lab ID: 1802300-30

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1700**	1000	20	B8F0757	06/28/2018	07/02/18 17:58	
Barium	**44000**	1000	20	B8F0757	06/28/2018	07/02/18 17:58	
Chromium	**5900**	2000	20	B8F0757	06/28/2018	07/02/18 17:58	
Cobalt	**3000**	1000	20	B8F0757	06/28/2018	07/02/18 17:58	
Copper	**5100**	1000	20	B8F0757	06/28/2018	07/02/18 17:58	
Lead	**3700**	1000	20	B8F0757	06/28/2018	07/02/18 17:58	
Nickel	**2500**	1000	20	B8F0757	06/28/2018	07/02/18 17:58	
Vanadium	**31000**	2000	20	B8F0757	06/28/2018	07/02/18 17:58	
Zinc	**13000**	5000	20	B8F0757	06/28/2018	07/02/18 17:58	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
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DETECTION SUMMARY

Client Sample ID TP-29-4-8

Lab ID: 1802300-31

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2000**	1000	20	B8F0757	06/28/2018	07/02/18 18:04	
Barium	**77000**	1000	20	B8F0757	06/28/2018	07/02/18 18:04	
Chromium	**10000**	2000	20	B8F0757	06/28/2018	07/02/18 18:04	
Cobalt	**6900**	1000	20	B8F0757	06/28/2018	07/02/18 18:04	
Copper	**11000**	1000	20	B8F0757	06/28/2018	07/02/18 18:04	
Lead	**3200**	1000	20	B8F0757	06/28/2018	07/02/18 18:04	
Nickel	**5300**	1000	20	B8F0757	06/28/2018	07/02/18 18:04	
Vanadium	**39000**	2000	20	B8F0757	06/28/2018	07/02/18 18:04	
Zinc	**25000**	5000	20	B8F0757	06/28/2018	07/02/18 18:04	

Client Sample ID TP-29-8-10

Lab ID: 1802300-32

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1500**	1000	20	B8F0757	06/28/2018	07/02/18 18:06	
Barium	**41000**	1000	20	B8F0757	06/28/2018	07/02/18 18:06	
Chromium	**5800**	2000	20	B8F0757	06/28/2018	07/02/18 18:06	
Cobalt	**3300**	1000	20	B8F0757	06/28/2018	07/02/18 18:06	
Copper	**5500**	1000	20	B8F0757	06/28/2018	07/02/18 18:06	
Lead	**2500**	1000	20	B8F0757	06/28/2018	07/02/18 18:06	
Nickel	**2600**	1000	20	B8F0757	06/28/2018	07/02/18 18:06	
Vanadium	**30000**	2000	20	B8F0757	06/28/2018	07/02/18 18:06	
Zinc	**15000**	5000	20	B8F0757	06/28/2018	07/02/18 18:06	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
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DETECTION SUMMARY

Client Sample ID TP-30-0-4

Lab ID: 1802300-33

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1300**	1000	20	B8F0757	06/28/2018	07/02/18 18:07	
Barium	**36000**	1000	20	B8F0757	06/28/2018	07/02/18 18:07	
Chromium	**5000**	2000	20	B8F0757	06/28/2018	07/02/18 18:07	
Cobalt	**2800**	1000	20	B8F0757	06/28/2018	07/02/18 18:07	
Copper	**4100**	1000	20	B8F0757	06/28/2018	07/02/18 18:07	
Lead	**2300**	1000	20	B8F0757	06/28/2018	07/02/18 18:07	
Nickel	**2200**	1000	20	B8F0757	06/28/2018	07/02/18 18:07	
Vanadium	**28000**	2000	20	B8F0757	06/28/2018	07/02/18 18:07	
Zinc	**11000**	5000	20	B8F0757	06/28/2018	07/02/18 18:07	

Client Sample ID TP-30-4-8

Lab ID: 1802300-34

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Barium	**110000**	1000	20	B8F0757	06/28/2018	07/02/18 18:09	
Chromium	**13000**	2000	20	B8F0757	06/28/2018	07/02/18 18:09	
Cobalt	**8300**	1000	20	B8F0757	06/28/2018	07/02/18 18:09	
Copper	**23000**	1000	20	B8F0757	06/28/2018	07/02/18 18:09	
Lead	**4000**	1000	20	B8F0757	06/28/2018	07/02/18 18:09	
Nickel	**7700**	1000	20	B8F0757	06/28/2018	07/02/18 18:09	
Vanadium	**45000**	2000	20	B8F0757	06/28/2018	07/02/18 18:09	
Zinc	**34000**	5000	20	B8F0757	06/28/2018	07/02/18 18:09	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

DETECTION SUMMARY

Client Sample ID TP-30-8-10

Lab ID: 1802300-35

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1700**	1000	20	B8F0757	06/28/2018	07/02/18 18:11	
Barium	**64000**	1000	20	B8F0757	06/28/2018	07/02/18 18:11	
Chromium	**7700**	2000	20	B8F0757	06/28/2018	07/02/18 18:11	
Cobalt	**4600**	1000	20	B8F0757	06/28/2018	07/02/18 18:11	
Copper	**8600**	1000	20	B8F0757	06/28/2018	07/02/18 18:11	
Lead	**3000**	1000	20	B8F0757	06/28/2018	07/02/18 18:11	
Nickel	**3700**	1000	20	B8F0757	06/28/2018	07/02/18 18:11	
Vanadium	**36000**	2000	20	B8F0757	06/28/2018	07/02/18 18:11	
Zinc	**19000**	5000	20	B8F0757	06/28/2018	07/02/18 18:11	

Client Sample ID TP-31-0-3

Lab ID: 1802300-36

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2100**	1000	20	B8F0757	06/28/2018	07/02/18 18:13	
Barium	**95000**	1000	20	B8F0757	06/28/2018	07/02/18 18:13	
Chromium	**10000**	2000	20	B8F0757	06/28/2018	07/02/18 18:13	
Cobalt	**6800**	1000	20	B8F0757	06/28/2018	07/02/18 18:13	
Copper	**11000**	1000	20	B8F0757	06/28/2018	07/02/18 18:13	
Lead	**4200**	1000	20	B8F0757	06/28/2018	07/02/18 18:13	
Nickel	**5100**	1000	20	B8F0757	06/28/2018	07/02/18 18:13	
Vanadium	**43000**	2000	20	B8F0757	06/28/2018	07/02/18 18:13	
Zinc	**25000**	5000	20	B8F0757	06/28/2018	07/02/18 18:13	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

DETECTION SUMMARY

Client Sample ID TP-31-3-4

Lab ID: 1802300-37

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2400**	1000	20	B8F0757	06/28/2018	07/02/18 18:15	
Barium	**76000**	1000	20	B8F0757	06/28/2018	07/02/18 18:15	
Chromium	**8200**	2000	20	B8F0757	06/28/2018	07/02/18 18:15	
Cobalt	**4500**	1000	20	B8F0757	06/28/2018	07/02/18 18:15	
Copper	**10000**	1000	20	B8F0757	06/28/2018	07/02/18 18:15	
Lead	**3100**	1000	20	B8F0757	06/28/2018	07/02/18 18:15	
Nickel	**4200**	1000	20	B8F0757	06/28/2018	07/02/18 18:15	
Vanadium	**38000**	2000	20	B8F0757	06/28/2018	07/02/18 18:15	
Zinc	**23000**	5000	20	B8F0757	06/28/2018	07/02/18 18:15	

Client Sample ID TP-32-0-4

Lab ID: 1802300-38

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Barium	**37000**	1000	20	B8F0757	06/28/2018	07/02/18 18:17	
Chromium	**4500**	2000	20	B8F0757	06/28/2018	07/02/18 18:17	
Cobalt	**2300**	1000	20	B8F0757	06/28/2018	07/02/18 18:17	
Copper	**3900**	1000	20	B8F0757	06/28/2018	07/02/18 18:17	
Lead	**2000**	1000	20	B8F0757	06/28/2018	07/02/18 18:17	
Nickel	**1900**	1000	20	B8F0757	06/28/2018	07/02/18 18:17	
Vanadium	**24000**	2000	20	B8F0757	06/28/2018	07/02/18 18:17	
Zinc	**10000**	5000	20	B8F0757	06/28/2018	07/02/18 18:17	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

DETECTION SUMMARY

Client Sample ID TP-32-4-7

Lab ID: 1802300-39

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**2600**	1000	20	B8F0757	06/28/2018	07/02/18 18:18	
Barium	**77000**	1000	20	B8F0757	06/28/2018	07/02/18 18:18	
Chromium	**10000**	2000	20	B8F0757	06/28/2018	07/02/18 18:18	
Cobalt	**6300**	1000	20	B8F0757	06/28/2018	07/02/18 18:18	
Copper	**14000**	1000	20	B8F0757	06/28/2018	07/02/18 18:18	
Lead	**4100**	1000	20	B8F0757	06/28/2018	07/02/18 18:18	
Nickel	**5200**	1000	20	B8F0757	06/28/2018	07/02/18 18:18	
Vanadium	**43000**	2000	20	B8F0757	06/28/2018	07/02/18 18:18	
Zinc	**26000**	5000	20	B8F0757	06/28/2018	07/02/18 18:18	

Client Sample ID TP-32-7-9

Lab ID: 1802300-40

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	**1800**	1000	20	B8F0757	06/28/2018	07/02/18 18:20	
Barium	**21000**	1000	20	B8F0757	06/28/2018	07/02/18 18:20	
Chromium	**9400**	2000	20	B8F0757	06/28/2018	07/02/18 18:20	
Cobalt	**3200**	1000	20	B8F0757	06/28/2018	07/02/18 18:20	
Copper	**4500**	1000	20	B8F0757	06/28/2018	07/02/18 18:20	
Lead	**1900**	1000	20	B8F0757	06/28/2018	07/02/18 18:20	
Nickel	**2400**	1000	20	B8F0757	06/28/2018	07/02/18 18:20	
Vanadium	**59000**	2000	20	B8F0757	06/28/2018	07/02/18 18:20	
Zinc	**12000**	5000	20	B8F0757	06/28/2018	07/02/18 18:20	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-7-0-0.5
Lab ID: 1802300-01

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:36	U
Arsenic	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:36	U
Barium	**8800**	1000	20	B8F0755	06/28/2018	07/02/18 16:36	
Beryllium	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:36	U
Cadmium	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:36	U
Chromium	ND	2000	20	B8F0755	06/28/2018	07/02/18 16:36	U
Cobalt	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:36	U
Copper	**3400**	1000	20	B8F0755	06/28/2018	07/02/18 16:36	
Lead	**10000**	1000	20	B8F0755	06/28/2018	07/02/18 16:36	
Molybdenum	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:36	U
Nickel	**3400**	1000	20	B8F0755	06/28/2018	07/02/18 16:36	
Selenium	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:36	U
Silver	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:36	U
Thallium	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:36	U
Vanadium	**6000**	2000	20	B8F0755	06/28/2018	07/02/18 16:36	
Zinc	**10000**	5000	20	B8F0755	06/28/2018	07/02/18 16:36	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0736	06/27/2018	06/28/18 16:37	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-7-0.5-1.5
Lab ID: 1802300-02

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:43	U
Arsenic	**1500**	1000	20	B8F0755	06/28/2018	07/02/18 16:43	
Barium	**51000**	1000	20	B8F0755	06/28/2018	07/02/18 16:43	
Beryllium	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:43	U
Cadmium	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:43	U
Chromium	**7000**	2000	20	B8F0755	06/28/2018	07/02/18 16:43	
Cobalt	**3900**	1000	20	B8F0755	06/28/2018	07/02/18 16:43	
Copper	**6600**	1000	20	B8F0755	06/28/2018	07/02/18 16:43	
Lead	**2700**	1000	20	B8F0755	06/28/2018	07/02/18 16:43	
Molybdenum	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:43	U
Nickel	**2900**	1000	20	B8F0755	06/28/2018	07/02/18 16:43	
Selenium	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:43	U
Silver	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:43	U
Thallium	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:43	U
Vanadium	**36000**	2000	20	B8F0755	06/28/2018	07/02/18 16:43	
Zinc	**15000**	5000	20	B8F0755	06/28/2018	07/02/18 16:43	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0736	06/27/2018	06/28/18 16:44	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-7-1.5-2
Lab ID: 1802300-03

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:45	U
Arsenic	**1400**	1000	20	B8F0755	06/28/2018	07/02/18 16:45	
Barium	**120000**	1000	20	B8F0755	06/28/2018	07/02/18 16:45	
Beryllium	ND	2500	50	B8F0755	06/28/2018	07/02/18 18:33	U
Cadmium	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:45	U
Chromium	**15000**	2000	20	B8F0755	06/28/2018	07/02/18 16:45	
Cobalt	**7300**	1000	20	B8F0755	06/28/2018	07/02/18 16:45	
Copper	**16000**	1000	20	B8F0755	06/28/2018	07/02/18 16:45	
Lead	**32000**	1000	20	B8F0755	06/28/2018	07/02/18 16:45	
Molybdenum	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:45	U
Nickel	**7600**	1000	20	B8F0755	06/28/2018	07/02/18 16:45	
Selenium	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:45	U
Silver	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:45	U
Thallium	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:45	U
Vanadium	**53000**	2000	20	B8F0755	06/28/2018	07/02/18 16:45	
Zinc	**32000**	5000	20	B8F0755	06/28/2018	07/02/18 16:45	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0736	06/27/2018	06/28/18 16:46	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-8-0-0.25
Lab ID: 1802300-04

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:47	U
Arsenic	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:47	U
Barium	**12000**	1000	20	B8F0755	06/28/2018	07/02/18 16:47	
Beryllium	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:47	U
Cadmium	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:47	U
Chromium	**2100**	2000	20	B8F0755	06/28/2018	07/02/18 16:47	
Cobalt	**1300**	1000	20	B8F0755	06/28/2018	07/02/18 16:47	
Copper	**4700**	1000	20	B8F0755	06/28/2018	07/02/18 16:47	
Lead	**8600**	1000	20	B8F0755	06/28/2018	07/02/18 16:47	
Molybdenum	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:47	U
Nickel	**4400**	1000	20	B8F0755	06/28/2018	07/02/18 16:47	
Selenium	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:47	U
Silver	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:47	U
Thallium	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:47	U
Vanadium	**8000**	2000	20	B8F0755	06/28/2018	07/02/18 16:47	
Zinc	**18000**	5000	20	B8F0755	06/28/2018	07/02/18 16:47	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0736	06/27/2018	06/28/18 16:48	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-8-0.25-1
Lab ID: 1802300-05

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:49	U
Arsenic	**2100**	1000	20	B8F0755	06/28/2018	07/02/18 16:49	
Barium	**52000**	1000	20	B8F0755	06/28/2018	07/02/18 16:49	
Beryllium	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:49	U
Cadmium	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:49	U
Chromium	**9000**	2000	20	B8F0755	06/28/2018	07/02/18 16:49	
Cobalt	**2900**	1000	20	B8F0755	06/28/2018	07/02/18 16:49	
Copper	**6200**	1000	20	B8F0755	06/28/2018	07/02/18 16:49	
Lead	**2700**	1000	20	B8F0755	06/28/2018	07/02/18 16:49	
Molybdenum	**1800**	1000	20	B8F0755	06/28/2018	07/02/18 16:49	
Nickel	**2900**	1000	20	B8F0755	06/28/2018	07/02/18 16:49	
Selenium	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:49	U
Silver	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:49	U
Thallium	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:49	U
Vanadium	**49000**	2000	20	B8F0755	06/28/2018	07/02/18 16:49	
Zinc	**14000**	5000	20	B8F0755	06/28/2018	07/02/18 16:49	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0736	06/27/2018	06/28/18 16:50	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-8-1-5
Lab ID: 1802300-06

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:57	U
Arsenic	**3400**	1000	20	B8F0755	06/28/2018	07/02/18 16:57	
Barium	**130000**	1000	20	B8F0755	06/28/2018	07/02/18 16:57	
Beryllium	ND	2500	50	B8F0755	06/28/2018	07/02/18 18:35	U
Cadmium	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:57	U
Chromium	**18000**	2000	20	B8F0755	06/28/2018	07/02/18 16:57	
Cobalt	**15000**	1000	20	B8F0755	06/28/2018	07/02/18 16:57	
Copper	**15000**	1000	20	B8F0755	06/28/2018	07/02/18 16:57	
Lead	**4800**	1000	20	B8F0755	06/28/2018	07/02/18 16:57	
Molybdenum	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:57	U
Nickel	**11000**	1000	20	B8F0755	06/28/2018	07/02/18 16:57	
Selenium	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:57	U
Silver	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:57	U
Thallium	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:57	U
Vanadium	**70000**	2000	20	B8F0755	06/28/2018	07/02/18 16:57	
Zinc	**32000**	5000	20	B8F0755	06/28/2018	07/02/18 16:57	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0736	06/27/2018	06/28/18 16:56	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-8-5-8
Lab ID: 1802300-07

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:59	U
Arsenic	**3900**	1000	20	B8F0755	06/28/2018	07/02/18 16:59	
Barium	**46000**	1000	20	B8F0755	06/28/2018	07/02/18 16:59	
Beryllium	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:59	U
Cadmium	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:59	U
Chromium	**12000**	2000	20	B8F0755	06/28/2018	07/02/18 16:59	
Cobalt	**8400**	1000	20	B8F0755	06/28/2018	07/02/18 16:59	
Copper	**12000**	1000	20	B8F0755	06/28/2018	07/02/18 16:59	
Lead	**3400**	1000	20	B8F0755	06/28/2018	07/02/18 16:59	
Molybdenum	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:59	U
Nickel	**6800**	1000	20	B8F0755	06/28/2018	07/02/18 16:59	
Selenium	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:59	U
Silver	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:59	U
Thallium	ND	1000	20	B8F0755	06/28/2018	07/02/18 16:59	U
Vanadium	**43000**	2000	20	B8F0755	06/28/2018	07/02/18 16:59	
Zinc	**24000**	5000	20	B8F0755	06/28/2018	07/02/18 16:59	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0736	06/27/2018	06/28/18 16:58	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-10-0-0.25
Lab ID: 1802300-08

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:01	U
Arsenic	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:01	U
Barium	**13000**	1000	20	B8F0755	06/28/2018	07/02/18 17:01	
Beryllium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:01	U
Cadmium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:01	U
Chromium	**2400**	2000	20	B8F0755	06/28/2018	07/02/18 17:01	
Cobalt	**1100**	1000	20	B8F0755	06/28/2018	07/02/18 17:01	
Copper	**5300**	1000	20	B8F0755	06/28/2018	07/02/18 17:01	
Lead	**7900**	1000	20	B8F0755	06/28/2018	07/02/18 17:01	
Molybdenum	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:01	U
Nickel	**3800**	1000	20	B8F0755	06/28/2018	07/02/18 17:01	
Selenium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:01	U
Silver	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:01	U
Thallium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:01	U
Vanadium	**7400**	2000	20	B8F0755	06/28/2018	07/02/18 17:01	
Zinc	**18000**	5000	20	B8F0755	06/28/2018	07/02/18 17:01	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0736	06/27/2018	06/28/18 17:00	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-10-0.25-2
Lab ID: 1802300-09

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:02	U
Arsenic	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:02	U
Barium	**31000**	1000	20	B8F0755	06/28/2018	07/02/18 17:02	
Beryllium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:02	U
Cadmium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:02	U
Chromium	**9300**	2000	20	B8F0755	06/28/2018	07/02/18 17:02	
Cobalt	**3000**	1000	20	B8F0755	06/28/2018	07/02/18 17:02	
Copper	**6800**	1000	20	B8F0755	06/28/2018	07/02/18 17:02	
Lead	**2100**	1000	20	B8F0755	06/28/2018	07/02/18 17:02	
Molybdenum	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:02	U
Nickel	**4400**	1000	20	B8F0755	06/28/2018	07/02/18 17:02	
Selenium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:02	U
Silver	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:02	U
Thallium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:02	U
Vanadium	**25000**	2000	20	B8F0755	06/28/2018	07/02/18 17:02	
Zinc	**15000**	5000	20	B8F0755	06/28/2018	07/02/18 17:02	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0736	06/27/2018	06/28/18 17:01	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-11-0-4
Lab ID: 1802300-10

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:04	U
Arsenic	**2000**	1000	20	B8F0755	06/28/2018	07/02/18 17:04	
Barium	**48000**	1000	20	B8F0755	06/28/2018	07/02/18 17:04	
Beryllium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:04	U
Cadmium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:04	U
Chromium	**5700**	2000	20	B8F0755	06/28/2018	07/02/18 17:04	
Cobalt	**3400**	1000	20	B8F0755	06/28/2018	07/02/18 17:04	
Copper	**5500**	1000	20	B8F0755	06/28/2018	07/02/18 17:04	
Lead	**3200**	1000	20	B8F0755	06/28/2018	07/02/18 17:04	
Molybdenum	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:04	U
Nickel	**2400**	1000	20	B8F0755	06/28/2018	07/02/18 17:04	
Selenium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:04	U
Silver	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:04	U
Thallium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:04	U
Vanadium	**33000**	2000	20	B8F0755	06/28/2018	07/02/18 17:04	
Zinc	**13000**	5000	20	B8F0755	06/28/2018	07/02/18 17:04	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0736	06/27/2018	06/28/18 17:03	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-11-4-5
Lab ID: 1802300-11

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:06	U
Arsenic	**3000**	1000	20	B8F0755	06/28/2018	07/02/18 17:06	
Barium	**51000**	1000	20	B8F0755	06/28/2018	07/02/18 17:06	
Beryllium	ND	2500	50	B8F0755	06/28/2018	07/02/18 18:37	U
Cadmium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:06	U
Chromium	**12000**	2000	20	B8F0755	06/28/2018	07/02/18 17:06	
Cobalt	**6700**	1000	20	B8F0755	06/28/2018	07/02/18 17:06	
Copper	**10000**	1000	20	B8F0755	06/28/2018	07/02/18 17:06	
Lead	**3500**	1000	20	B8F0755	06/28/2018	07/02/18 17:06	
Molybdenum	**1400**	1000	20	B8F0755	06/28/2018	07/02/18 17:06	
Nickel	**5700**	1000	20	B8F0755	06/28/2018	07/02/18 17:06	
Selenium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:06	U
Silver	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:06	U
Thallium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:06	U
Vanadium	**37000**	2000	20	B8F0755	06/28/2018	07/02/18 17:06	
Zinc	**25000**	5000	20	B8F0755	06/28/2018	07/02/18 17:06	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0736	06/27/2018	06/28/18 17:05	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-11-5-10
Lab ID: 1802300-12

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:08	U
Arsenic	**3100**	1000	20	B8F0755	06/28/2018	07/02/18 17:08	
Barium	**170000**	1000	20	B8F0755	06/28/2018	07/02/18 17:08	
Beryllium	ND	2500	50	B8F0755	06/28/2018	07/02/18 18:39	U
Cadmium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:08	U
Chromium	**17000**	2000	20	B8F0755	06/28/2018	07/02/18 17:08	
Cobalt	**11000**	1000	20	B8F0755	06/28/2018	07/02/18 17:08	
Copper	**20000**	1000	20	B8F0755	06/28/2018	07/02/18 17:08	
Lead	**4800**	1000	20	B8F0755	06/28/2018	07/02/18 17:08	
Molybdenum	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:08	U
Nickel	**8500**	1000	20	B8F0755	06/28/2018	07/02/18 17:08	
Selenium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:08	U
Silver	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:08	U
Thallium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:08	U
Vanadium	**72000**	2000	20	B8F0755	06/28/2018	07/02/18 17:08	
Zinc	**43000**	5000	20	B8F0755	06/28/2018	07/02/18 17:08	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0736	06/27/2018	06/28/18 17:07	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-17-0.083-1.5
Lab ID: 1802300-13

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:10	U
Arsenic	**1100**	1000	20	B8F0755	06/28/2018	07/02/18 17:10	
Barium	**55000**	1000	20	B8F0755	06/28/2018	07/02/18 17:10	
Beryllium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:10	U
Cadmium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:10	U
Chromium	**6200**	2000	20	B8F0755	06/28/2018	07/02/18 17:10	
Cobalt	**3300**	1000	20	B8F0755	06/28/2018	07/02/18 17:10	
Copper	**7600**	1000	20	B8F0755	06/28/2018	07/02/18 17:10	
Lead	**2400**	1000	20	B8F0755	06/28/2018	07/02/18 17:10	
Molybdenum	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:10	U
Nickel	**2900**	1000	20	B8F0755	06/28/2018	07/02/18 17:10	
Selenium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:10	U
Silver	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:10	U
Thallium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:10	U
Vanadium	**28000**	2000	20	B8F0755	06/28/2018	07/02/18 17:10	
Zinc	**14000**	5000	20	B8F0755	06/28/2018	07/02/18 17:10	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0736	06/27/2018	06/28/18 17:09	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-17-1.5-2
Lab ID: 1802300-14

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:12	U
Arsenic	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:12	U
Barium	**120000**	1000	20	B8F0755	06/28/2018	07/02/18 17:12	
Beryllium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:12	U
Cadmium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:12	U
Chromium	**7200**	2000	20	B8F0755	06/28/2018	07/02/18 17:12	
Cobalt	**4000**	1000	20	B8F0755	06/28/2018	07/02/18 17:12	
Copper	**8800**	1000	20	B8F0755	06/28/2018	07/02/18 17:12	
Lead	**2400**	1000	20	B8F0755	06/28/2018	07/02/18 17:12	
Molybdenum	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:12	U
Nickel	**4000**	1000	20	B8F0755	06/28/2018	07/02/18 17:12	
Selenium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:12	U
Silver	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:12	U
Thallium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:12	U
Vanadium	**36000**	2000	20	B8F0755	06/28/2018	07/02/18 17:12	
Zinc	**17000**	5000	20	B8F0755	06/28/2018	07/02/18 17:12	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0736	06/27/2018	06/28/18 17:11	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-18-0-4
Lab ID: 1802300-15

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:14	U
Arsenic	**1600**	1000	20	B8F0755	06/28/2018	07/02/18 17:14	
Barium	**42000**	1000	20	B8F0755	06/28/2018	07/02/18 17:14	
Beryllium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:14	U
Cadmium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:14	U
Chromium	**5800**	2000	20	B8F0755	06/28/2018	07/02/18 17:14	
Cobalt	**3000**	1000	20	B8F0755	06/28/2018	07/02/18 17:14	
Copper	**4700**	1000	20	B8F0755	06/28/2018	07/02/18 17:14	
Lead	**2500**	1000	20	B8F0755	06/28/2018	07/02/18 17:14	
Molybdenum	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:14	U
Nickel	**2500**	1000	20	B8F0755	06/28/2018	07/02/18 17:14	
Selenium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:14	U
Silver	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:14	U
Thallium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:14	U
Vanadium	**32000**	2000	20	B8F0755	06/28/2018	07/02/18 17:14	
Zinc	**12000**	5000	20	B8F0755	06/28/2018	07/02/18 17:14	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0736	06/27/2018	06/28/18 17:13	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-18-4-6
Lab ID: 1802300-16

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:19	U
Arsenic	**1500**	1000	20	B8F0755	06/28/2018	07/02/18 17:19	
Barium	**55000**	1000	20	B8F0755	06/28/2018	07/02/18 17:19	
Beryllium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:19	U
Cadmium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:19	U
Chromium	**7800**	2000	20	B8F0755	06/28/2018	07/02/18 17:19	
Cobalt	**4700**	1000	20	B8F0755	06/28/2018	07/02/18 17:19	
Copper	**9300**	1000	20	B8F0755	06/28/2018	07/02/18 17:19	
Lead	**2900**	1000	20	B8F0755	06/28/2018	07/02/18 17:19	
Molybdenum	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:19	U
Nickel	**3900**	1000	20	B8F0755	06/28/2018	07/02/18 17:19	
Selenium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:19	U
Silver	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:19	U
Thallium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:19	U
Vanadium	**36000**	2000	20	B8F0755	06/28/2018	07/02/18 17:19	
Zinc	**20000**	5000	20	B8F0755	06/28/2018	07/02/18 17:19	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0736	06/27/2018	06/28/18 17:18	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-20-0.083-4

Lab ID: 1802300-17

Total Metals by ICP-MS EPA 6020 **Analyst: PT**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:21	U
Arsenic	**1100**	1000	20	B8F0755	06/28/2018	07/02/18 17:21	
Barium	**33000**	1000	20	B8F0755	06/28/2018	07/02/18 17:21	
Beryllium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:21	U
Cadmium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:21	U
Chromium	**4600**	2000	20	B8F0755	06/28/2018	07/02/18 17:21	
Cobalt	**2200**	1000	20	B8F0755	06/28/2018	07/02/18 17:21	
Copper	**3800**	1000	20	B8F0755	06/28/2018	07/02/18 17:21	
Lead	**2100**	1000	20	B8F0755	06/28/2018	07/02/18 17:21	
Molybdenum	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:21	U
Nickel	**1800**	1000	20	B8F0755	06/28/2018	07/02/18 17:21	
Selenium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:21	U
Silver	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:21	U
Thallium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:21	U
Vanadium	**26000**	2000	20	B8F0755	06/28/2018	07/02/18 17:21	
Zinc	**11000**	5000	20	B8F0755	06/28/2018	07/02/18 17:21	

Mercury by AA (Cold Vapor) EPA 7471A **Analyst: KEK**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0736	06/27/2018	06/28/18 17:20	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-20-4-5
Lab ID: 1802300-18

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:23	U
Arsenic	**1500**	1000	20	B8F0755	06/28/2018	07/02/18 17:23	
Barium	**96000**	1000	20	B8F0755	06/28/2018	07/02/18 17:23	
Beryllium	ND	2500	50	B8F0755	06/28/2018	07/02/18 18:41	U
Cadmium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:23	U
Chromium	**11000**	2000	20	B8F0755	06/28/2018	07/02/18 17:23	
Cobalt	**7300**	1000	20	B8F0755	06/28/2018	07/02/18 17:23	
Copper	**19000**	1000	20	B8F0755	06/28/2018	07/02/18 17:23	
Lead	**3400**	1000	20	B8F0755	06/28/2018	07/02/18 17:23	
Molybdenum	**1500**	1000	20	B8F0755	06/28/2018	07/02/18 17:23	
Nickel	**6300**	1000	20	B8F0755	06/28/2018	07/02/18 17:23	
Selenium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:23	U
Silver	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:23	U
Thallium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:23	U
Vanadium	**47000**	2000	20	B8F0755	06/28/2018	07/02/18 17:23	
Zinc	**29000**	5000	20	B8F0755	06/28/2018	07/02/18 17:23	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0736	06/27/2018	06/28/18 17:22	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-22-0-2.5
Lab ID: 1802300-19

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:25	U
Arsenic	**2600**	1000	20	B8F0755	06/28/2018	07/02/18 17:25	
Barium	**99000**	1000	20	B8F0755	06/28/2018	07/02/18 17:25	
Beryllium	ND	2500	50	B8F0755	06/28/2018	07/02/18 18:43	U
Cadmium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:25	U
Chromium	**11000**	2000	20	B8F0755	06/28/2018	07/02/18 17:25	
Cobalt	**6800**	1000	20	B8F0755	06/28/2018	07/02/18 17:25	
Copper	**12000**	1000	20	B8F0755	06/28/2018	07/02/18 17:25	
Lead	**3700**	1000	20	B8F0755	06/28/2018	07/02/18 17:25	
Molybdenum	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:25	U
Nickel	**6300**	1000	20	B8F0755	06/28/2018	07/02/18 17:25	
Selenium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:25	U
Silver	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:25	U
Thallium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:25	U
Vanadium	**43000**	2000	20	B8F0755	06/28/2018	07/02/18 17:25	
Zinc	**31000**	5000	20	B8F0755	06/28/2018	07/02/18 17:25	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0736	06/27/2018	06/28/18 17:24	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-22-2.5-3
Lab ID: 1802300-20

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:27	U
Arsenic	**1300**	1000	20	B8F0755	06/28/2018	07/02/18 17:27	
Barium	**45000**	1000	20	B8F0755	06/28/2018	07/02/18 17:27	
Beryllium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:27	U
Cadmium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:27	U
Chromium	**5100**	2000	20	B8F0755	06/28/2018	07/02/18 17:27	
Cobalt	**2500**	1000	20	B8F0755	06/28/2018	07/02/18 17:27	
Copper	**4400**	1000	20	B8F0755	06/28/2018	07/02/18 17:27	
Lead	**2200**	1000	20	B8F0755	06/28/2018	07/02/18 17:27	
Molybdenum	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:27	U
Nickel	**2000**	1000	20	B8F0755	06/28/2018	07/02/18 17:27	
Selenium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:27	U
Silver	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:27	U
Thallium	ND	1000	20	B8F0755	06/28/2018	07/02/18 17:27	U
Vanadium	**27000**	2000	20	B8F0755	06/28/2018	07/02/18 17:27	
Zinc	**12000**	5000	20	B8F0755	06/28/2018	07/02/18 17:27	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0736	06/27/2018	06/28/18 17:26	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-24-0-4.5
Lab ID: 1802300-21

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:32	U
Arsenic	**1200**	1000	20	B8F0757	06/28/2018	07/02/18 17:32	
Barium	**45000**	1000	20	B8F0757	06/28/2018	07/02/18 17:32	
Beryllium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:32	U
Cadmium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:32	U
Chromium	**5300**	2000	20	B8F0757	06/28/2018	07/02/18 17:32	
Cobalt	**2700**	1000	20	B8F0757	06/28/2018	07/02/18 17:32	
Copper	**4200**	1000	20	B8F0757	06/28/2018	07/02/18 17:32	
Lead	**2500**	1000	20	B8F0757	06/28/2018	07/02/18 17:32	
Molybdenum	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:32	U
Nickel	**2000**	1000	20	B8F0757	06/28/2018	07/02/18 17:32	
Selenium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:32	U
Silver	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:32	U
Thallium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:32	U
Vanadium	**28000**	2000	20	B8F0757	06/28/2018	07/02/18 17:32	
Zinc	**12000**	5000	20	B8F0757	06/28/2018	07/02/18 17:32	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0737	06/27/2018	06/28/18 17:32	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-24-4.5-6
Lab ID: 1802300-22

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:43	U
Arsenic	**1600**	1000	20	B8F0757	06/28/2018	07/02/18 17:43	
Barium	**89000**	1000	20	B8F0757	06/28/2018	07/02/18 17:43	
Beryllium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:43	U
Cadmium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:43	U
Chromium	**8900**	2000	20	B8F0757	06/28/2018	07/02/18 17:43	
Cobalt	**6300**	1000	20	B8F0757	06/28/2018	07/02/18 17:43	
Copper	**12000**	1000	20	B8F0757	06/28/2018	07/02/18 17:43	
Lead	**2700**	1000	20	B8F0757	06/28/2018	07/02/18 17:43	
Molybdenum	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:43	U
Nickel	**4700**	1000	20	B8F0757	06/28/2018	07/02/18 17:43	
Selenium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:43	U
Silver	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:43	U
Thallium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:43	U
Vanadium	**42000**	2000	20	B8F0757	06/28/2018	07/02/18 17:43	
Zinc	**24000**	5000	20	B8F0757	06/28/2018	07/02/18 17:43	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0737	06/27/2018	06/28/18 17:43	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-26-0-4
Lab ID: 1802300-23

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:45	U
Arsenic	**1900**	1000	20	B8F0757	06/28/2018	07/02/18 17:45	
Barium	**37000**	1000	20	B8F0757	06/28/2018	07/02/18 17:45	
Beryllium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:45	U
Cadmium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:45	U
Chromium	**5000**	2000	20	B8F0757	06/28/2018	07/02/18 17:45	
Cobalt	**2700**	1000	20	B8F0757	06/28/2018	07/02/18 17:45	
Copper	**4000**	1000	20	B8F0757	06/28/2018	07/02/18 17:45	
Lead	**2300**	1000	20	B8F0757	06/28/2018	07/02/18 17:45	
Molybdenum	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:45	U
Nickel	**1900**	1000	20	B8F0757	06/28/2018	07/02/18 17:45	
Selenium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:45	U
Silver	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:45	U
Thallium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:45	U
Vanadium	**29000**	2000	20	B8F0757	06/28/2018	07/02/18 17:45	
Zinc	**11000**	5000	20	B8F0757	06/28/2018	07/02/18 17:45	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0737	06/27/2018	06/28/18 17:45	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-26-4-6
Lab ID: 1802300-24

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:47	U
Arsenic	**1900**	1000	20	B8F0757	06/28/2018	07/02/18 17:47	
Barium	**130000**	1000	20	B8F0757	06/28/2018	07/02/18 17:47	
Beryllium	ND	2500	50	B8F0757	06/28/2018	07/02/18 18:45	U
Cadmium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:47	U
Chromium	**14000**	2000	20	B8F0757	06/28/2018	07/02/18 17:47	
Cobalt	**8500**	1000	20	B8F0757	06/28/2018	07/02/18 17:47	
Copper	**20000**	1000	20	B8F0757	06/28/2018	07/02/18 17:47	
Lead	**4300**	1000	20	B8F0757	06/28/2018	07/02/18 17:47	
Molybdenum	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:47	U
Nickel	**7800**	1000	20	B8F0757	06/28/2018	07/02/18 17:47	
Selenium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:47	U
Silver	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:47	U
Thallium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:47	U
Vanadium	**53000**	2000	20	B8F0757	06/28/2018	07/02/18 17:47	
Zinc	**36000**	5000	20	B8F0757	06/28/2018	07/02/18 17:47	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0737	06/27/2018	06/28/18 17:47	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-26-6-6.5
Lab ID: 1802300-25

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:49	U
Arsenic	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:49	U
Barium	**35000**	1000	20	B8F0757	06/28/2018	07/02/18 17:49	
Beryllium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:49	U
Cadmium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:49	U
Chromium	**4300**	2000	20	B8F0757	06/28/2018	07/02/18 17:49	
Cobalt	**2700**	1000	20	B8F0757	06/28/2018	07/02/18 17:49	
Copper	**4800**	1000	20	B8F0757	06/28/2018	07/02/18 17:49	
Lead	**2000**	1000	20	B8F0757	06/28/2018	07/02/18 17:49	
Molybdenum	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:49	U
Nickel	**2600**	1000	20	B8F0757	06/28/2018	07/02/18 17:49	
Selenium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:49	U
Silver	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:49	U
Thallium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:49	U
Vanadium	**21000**	2000	20	B8F0757	06/28/2018	07/02/18 17:49	
Zinc	**12000**	5000	20	B8F0757	06/28/2018	07/02/18 17:49	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0737	06/27/2018	06/28/18 17:49	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-27-0-4
Lab ID: 1802300-26

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:51	U
Arsenic	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:51	U
Barium	**37000**	1000	20	B8F0757	06/28/2018	07/02/18 17:51	
Beryllium	ND	2500	50	B8F0757	06/28/2018	07/02/18 18:46	U
Cadmium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:51	U
Chromium	**5100**	2000	20	B8F0757	06/28/2018	07/02/18 17:51	
Cobalt	**2400**	1000	20	B8F0757	06/28/2018	07/02/18 17:51	
Copper	**3900**	1000	20	B8F0757	06/28/2018	07/02/18 17:51	
Lead	**2200**	1000	20	B8F0757	06/28/2018	07/02/18 17:51	
Molybdenum	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:51	U
Nickel	**2000**	1000	20	B8F0757	06/28/2018	07/02/18 17:51	
Selenium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:51	U
Silver	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:51	U
Thallium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:51	U
Vanadium	**25000**	2000	20	B8F0757	06/28/2018	07/02/18 17:51	
Zinc	**11000**	5000	20	B8F0757	06/28/2018	07/02/18 17:51	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0737	06/27/2018	06/28/18 17:50	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-27-4-10
Lab ID: 1802300-27

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:52	U
Arsenic	**2800**	1000	20	B8F0757	06/28/2018	07/02/18 17:52	
Barium	**130000**	1000	20	B8F0757	06/28/2018	07/02/18 17:52	
Beryllium	ND	2500	50	B8F0757	06/28/2018	07/02/18 18:48	U
Cadmium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:52	U
Chromium	**12000**	2000	20	B8F0757	06/28/2018	07/02/18 17:52	
Cobalt	**7200**	1000	20	B8F0757	06/28/2018	07/02/18 17:52	
Copper	**12000**	1000	20	B8F0757	06/28/2018	07/02/18 17:52	
Lead	**4100**	1000	20	B8F0757	06/28/2018	07/02/18 17:52	
Molybdenum	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:52	U
Nickel	**6300**	1000	20	B8F0757	06/28/2018	07/02/18 17:52	
Selenium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:52	U
Silver	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:52	U
Thallium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:52	U
Vanadium	**42000**	2000	20	B8F0757	06/28/2018	07/02/18 17:52	
Zinc	**31000**	5000	20	B8F0757	06/28/2018	07/02/18 17:52	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0737	06/27/2018	06/28/18 17:52	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-28-0-2
Lab ID: 1802300-28

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:54	U
Arsenic	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:54	U
Barium	**26000**	1000	20	B8F0757	06/28/2018	07/02/18 17:54	
Beryllium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:54	U
Cadmium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:54	U
Chromium	**3600**	2000	20	B8F0757	06/28/2018	07/02/18 17:54	
Cobalt	**1200**	1000	20	B8F0757	06/28/2018	07/02/18 17:54	
Copper	**3200**	1000	20	B8F0757	06/28/2018	07/02/18 17:54	
Lead	**3100**	1000	20	B8F0757	06/28/2018	07/02/18 17:54	
Molybdenum	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:54	U
Nickel	**1300**	1000	20	B8F0757	06/28/2018	07/02/18 17:54	
Selenium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:54	U
Silver	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:54	U
Thallium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:54	U
Vanadium	**17000**	2000	20	B8F0757	06/28/2018	07/02/18 17:54	
Zinc	**7700**	5000	20	B8F0757	06/28/2018	07/02/18 17:54	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0737	06/27/2018	06/28/18 17:54	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-28-2-4
Lab ID: 1802300-29

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:56	U
Arsenic	**1600**	1000	20	B8F0757	06/28/2018	07/02/18 17:56	
Barium	**100000**	1000	20	B8F0757	06/28/2018	07/02/18 17:56	
Beryllium	ND	2500	50	B8F0757	06/28/2018	07/02/18 18:50	U
Cadmium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:56	U
Chromium	**8800**	2000	20	B8F0757	06/28/2018	07/02/18 17:56	
Cobalt	**5300**	1000	20	B8F0757	06/28/2018	07/02/18 17:56	
Copper	**12000**	1000	20	B8F0757	06/28/2018	07/02/18 17:56	
Lead	**3200**	1000	20	B8F0757	06/28/2018	07/02/18 17:56	
Molybdenum	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:56	U
Nickel	**4500**	1000	20	B8F0757	06/28/2018	07/02/18 17:56	
Selenium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:56	U
Silver	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:56	U
Thallium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:56	U
Vanadium	**40000**	2000	20	B8F0757	06/28/2018	07/02/18 17:56	
Zinc	**25000**	5000	20	B8F0757	06/28/2018	07/02/18 17:56	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0737	06/27/2018	06/28/18 17:56	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-29-0-4
Lab ID: 1802300-30

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:58	U
Arsenic	**1700**	1000	20	B8F0757	06/28/2018	07/02/18 17:58	
Barium	**44000**	1000	20	B8F0757	06/28/2018	07/02/18 17:58	
Beryllium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:58	U
Cadmium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:58	U
Chromium	**5900**	2000	20	B8F0757	06/28/2018	07/02/18 17:58	
Cobalt	**3000**	1000	20	B8F0757	06/28/2018	07/02/18 17:58	
Copper	**5100**	1000	20	B8F0757	06/28/2018	07/02/18 17:58	
Lead	**3700**	1000	20	B8F0757	06/28/2018	07/02/18 17:58	
Molybdenum	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:58	U
Nickel	**2500**	1000	20	B8F0757	06/28/2018	07/02/18 17:58	
Selenium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:58	U
Silver	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:58	U
Thallium	ND	1000	20	B8F0757	06/28/2018	07/02/18 17:58	U
Vanadium	**31000**	2000	20	B8F0757	06/28/2018	07/02/18 17:58	
Zinc	**13000**	5000	20	B8F0757	06/28/2018	07/02/18 17:58	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0737	06/27/2018	06/28/18 17:58	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-29-4-8
Lab ID: 1802300-31

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:04	U
Arsenic	**2000**	1000	20	B8F0757	06/28/2018	07/02/18 18:04	
Barium	**77000**	1000	20	B8F0757	06/28/2018	07/02/18 18:04	
Beryllium	ND	2500	50	B8F0757	06/28/2018	07/02/18 18:56	U
Cadmium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:04	U
Chromium	**10000**	2000	20	B8F0757	06/28/2018	07/02/18 18:04	
Cobalt	**6900**	1000	20	B8F0757	06/28/2018	07/02/18 18:04	
Copper	**11000**	1000	20	B8F0757	06/28/2018	07/02/18 18:04	
Lead	**3200**	1000	20	B8F0757	06/28/2018	07/02/18 18:04	
Molybdenum	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:04	U
Nickel	**5300**	1000	20	B8F0757	06/28/2018	07/02/18 18:04	
Selenium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:04	U
Silver	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:04	U
Thallium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:04	U
Vanadium	**39000**	2000	20	B8F0757	06/28/2018	07/02/18 18:04	
Zinc	**25000**	5000	20	B8F0757	06/28/2018	07/02/18 18:04	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0737	06/27/2018	06/28/18 18:03	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-29-8-10
Lab ID: 1802300-32

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:06	U
Arsenic	**1500**	1000	20	B8F0757	06/28/2018	07/02/18 18:06	
Barium	**41000**	1000	20	B8F0757	06/28/2018	07/02/18 18:06	
Beryllium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:06	U
Cadmium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:06	U
Chromium	**5800**	2000	20	B8F0757	06/28/2018	07/02/18 18:06	
Cobalt	**3300**	1000	20	B8F0757	06/28/2018	07/02/18 18:06	
Copper	**5500**	1000	20	B8F0757	06/28/2018	07/02/18 18:06	
Lead	**2500**	1000	20	B8F0757	06/28/2018	07/02/18 18:06	
Molybdenum	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:06	U
Nickel	**2600**	1000	20	B8F0757	06/28/2018	07/02/18 18:06	
Selenium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:06	U
Silver	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:06	U
Thallium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:06	U
Vanadium	**30000**	2000	20	B8F0757	06/28/2018	07/02/18 18:06	
Zinc	**15000**	5000	20	B8F0757	06/28/2018	07/02/18 18:06	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0737	06/27/2018	06/28/18 18:05	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-30-0-4
Lab ID: 1802300-33

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:07	U
Arsenic	**1300**	1000	20	B8F0757	06/28/2018	07/02/18 18:07	
Barium	**36000**	1000	20	B8F0757	06/28/2018	07/02/18 18:07	
Beryllium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:07	U
Cadmium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:07	U
Chromium	**5000**	2000	20	B8F0757	06/28/2018	07/02/18 18:07	
Cobalt	**2800**	1000	20	B8F0757	06/28/2018	07/02/18 18:07	
Copper	**4100**	1000	20	B8F0757	06/28/2018	07/02/18 18:07	
Lead	**2300**	1000	20	B8F0757	06/28/2018	07/02/18 18:07	
Molybdenum	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:07	U
Nickel	**2200**	1000	20	B8F0757	06/28/2018	07/02/18 18:07	
Selenium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:07	U
Silver	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:07	U
Thallium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:07	U
Vanadium	**28000**	2000	20	B8F0757	06/28/2018	07/02/18 18:07	
Zinc	**11000**	5000	20	B8F0757	06/28/2018	07/02/18 18:07	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0737	06/27/2018	06/28/18 18:07	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-30-4-8
Lab ID: 1802300-34

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:09	U
Arsenic	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:09	U
Barium	**110000**	1000	20	B8F0757	06/28/2018	07/02/18 18:09	
Beryllium	ND	2500	50	B8F0757	06/28/2018	07/02/18 18:57	U
Cadmium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:09	U
Chromium	**13000**	2000	20	B8F0757	06/28/2018	07/02/18 18:09	
Cobalt	**8300**	1000	20	B8F0757	06/28/2018	07/02/18 18:09	
Copper	**23000**	1000	20	B8F0757	06/28/2018	07/02/18 18:09	
Lead	**4000**	1000	20	B8F0757	06/28/2018	07/02/18 18:09	
Molybdenum	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:09	U
Nickel	**7700**	1000	20	B8F0757	06/28/2018	07/02/18 18:09	
Selenium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:09	U
Silver	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:09	U
Thallium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:09	U
Vanadium	**45000**	2000	20	B8F0757	06/28/2018	07/02/18 18:09	
Zinc	**34000**	5000	20	B8F0757	06/28/2018	07/02/18 18:09	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0737	06/27/2018	06/28/18 18:09	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-30-8-10
Lab ID: 1802300-35

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:11	U
Arsenic	**1700**	1000	20	B8F0757	06/28/2018	07/02/18 18:11	
Barium	**64000**	1000	20	B8F0757	06/28/2018	07/02/18 18:11	
Beryllium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:11	U
Cadmium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:11	U
Chromium	**7700**	2000	20	B8F0757	06/28/2018	07/02/18 18:11	
Cobalt	**4600**	1000	20	B8F0757	06/28/2018	07/02/18 18:11	
Copper	**8600**	1000	20	B8F0757	06/28/2018	07/02/18 18:11	
Lead	**3000**	1000	20	B8F0757	06/28/2018	07/02/18 18:11	
Molybdenum	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:11	U
Nickel	**3700**	1000	20	B8F0757	06/28/2018	07/02/18 18:11	
Selenium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:11	U
Silver	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:11	U
Thallium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:11	U
Vanadium	**36000**	2000	20	B8F0757	06/28/2018	07/02/18 18:11	
Zinc	**19000**	5000	20	B8F0757	06/28/2018	07/02/18 18:11	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0737	06/27/2018	06/28/18 18:11	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-31-0-3
Lab ID: 1802300-36

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:13	U
Arsenic	**2100**	1000	20	B8F0757	06/28/2018	07/02/18 18:13	
Barium	**95000**	1000	20	B8F0757	06/28/2018	07/02/18 18:13	
Beryllium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:13	U
Cadmium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:13	U
Chromium	**10000**	2000	20	B8F0757	06/28/2018	07/02/18 18:13	
Cobalt	**6800**	1000	20	B8F0757	06/28/2018	07/02/18 18:13	
Copper	**11000**	1000	20	B8F0757	06/28/2018	07/02/18 18:13	
Lead	**4200**	1000	20	B8F0757	06/28/2018	07/02/18 18:13	
Molybdenum	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:13	U
Nickel	**5100**	1000	20	B8F0757	06/28/2018	07/02/18 18:13	
Selenium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:13	U
Silver	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:13	U
Thallium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:13	U
Vanadium	**43000**	2000	20	B8F0757	06/28/2018	07/02/18 18:13	
Zinc	**25000**	5000	20	B8F0757	06/28/2018	07/02/18 18:13	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0737	06/27/2018	06/28/18 18:13	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-31-3-4
Lab ID: 1802300-37

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:15	U
Arsenic	**2400**	1000	20	B8F0757	06/28/2018	07/02/18 18:15	
Barium	**76000**	1000	20	B8F0757	06/28/2018	07/02/18 18:15	
Beryllium	ND	2500	50	B8F0757	06/28/2018	07/02/18 18:59	U
Cadmium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:15	U
Chromium	**8200**	2000	20	B8F0757	06/28/2018	07/02/18 18:15	
Cobalt	**4500**	1000	20	B8F0757	06/28/2018	07/02/18 18:15	
Copper	**10000**	1000	20	B8F0757	06/28/2018	07/02/18 18:15	
Lead	**3100**	1000	20	B8F0757	06/28/2018	07/02/18 18:15	
Molybdenum	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:15	U
Nickel	**4200**	1000	20	B8F0757	06/28/2018	07/02/18 18:15	
Selenium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:15	U
Silver	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:15	U
Thallium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:15	U
Vanadium	**38000**	2000	20	B8F0757	06/28/2018	07/02/18 18:15	
Zinc	**23000**	5000	20	B8F0757	06/28/2018	07/02/18 18:15	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0737	06/27/2018	06/28/18 18:15	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-32-0-4
Lab ID: 1802300-38

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:17	U
Arsenic	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:17	U
Barium	**37000**	1000	20	B8F0757	06/28/2018	07/02/18 18:17	
Beryllium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:17	U
Cadmium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:17	U
Chromium	**4500**	2000	20	B8F0757	06/28/2018	07/02/18 18:17	
Cobalt	**2300**	1000	20	B8F0757	06/28/2018	07/02/18 18:17	
Copper	**3900**	1000	20	B8F0757	06/28/2018	07/02/18 18:17	
Lead	**2000**	1000	20	B8F0757	06/28/2018	07/02/18 18:17	
Molybdenum	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:17	U
Nickel	**1900**	1000	20	B8F0757	06/28/2018	07/02/18 18:17	
Selenium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:17	U
Silver	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:17	U
Thallium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:17	U
Vanadium	**24000**	2000	20	B8F0757	06/28/2018	07/02/18 18:17	
Zinc	**10000**	5000	20	B8F0757	06/28/2018	07/02/18 18:17	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0737	06/27/2018	06/28/18 18:17	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-32-4-7
Lab ID: 1802300-39

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:18	U
Arsenic	**2600**	1000	20	B8F0757	06/28/2018	07/02/18 18:18	
Barium	**77000**	1000	20	B8F0757	06/28/2018	07/02/18 18:18	
Beryllium	ND	2500	50	B8F0757	06/28/2018	07/02/18 19:01	U
Cadmium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:18	U
Chromium	**10000**	2000	20	B8F0757	06/28/2018	07/02/18 18:18	
Cobalt	**6300**	1000	20	B8F0757	06/28/2018	07/02/18 18:18	
Copper	**14000**	1000	20	B8F0757	06/28/2018	07/02/18 18:18	
Lead	**4100**	1000	20	B8F0757	06/28/2018	07/02/18 18:18	
Molybdenum	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:18	U
Nickel	**5200**	1000	20	B8F0757	06/28/2018	07/02/18 18:18	
Selenium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:18	U
Silver	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:18	U
Thallium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:18	U
Vanadium	**43000**	2000	20	B8F0757	06/28/2018	07/02/18 18:18	
Zinc	**26000**	5000	20	B8F0757	06/28/2018	07/02/18 18:18	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0737	06/27/2018	06/28/18 18:19	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Client Sample ID TP-32-7-9
Lab ID: 1802300-40

Total Metals by ICP-MS EPA 6020

Analyst: PT

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Antimony	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:20	U
Arsenic	**1800**	1000	20	B8F0757	06/28/2018	07/02/18 18:20	
Barium	**21000**	1000	20	B8F0757	06/28/2018	07/02/18 18:20	
Beryllium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:20	U
Cadmium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:20	U
Chromium	**9400**	2000	20	B8F0757	06/28/2018	07/02/18 18:20	
Cobalt	**3200**	1000	20	B8F0757	06/28/2018	07/02/18 18:20	
Copper	**4500**	1000	20	B8F0757	06/28/2018	07/02/18 18:20	
Lead	**1900**	1000	20	B8F0757	06/28/2018	07/02/18 18:20	
Molybdenum	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:20	U
Nickel	**2400**	1000	20	B8F0757	06/28/2018	07/02/18 18:20	
Selenium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:20	U
Silver	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:20	U
Thallium	ND	1000	20	B8F0757	06/28/2018	07/02/18 18:20	U
Vanadium	**59000**	2000	20	B8F0757	06/28/2018	07/02/18 18:20	
Zinc	**12000**	5000	20	B8F0757	06/28/2018	07/02/18 18:20	

Mercury by AA (Cold Vapor) EPA 7471A

Analyst: KEK

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Mercury	ND	0.10	1	B8F0737	06/27/2018	06/28/18 18:20	

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

QUALITY CONTROL SECTION

Total Metals by ICP-MS EPA 6020 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0755 - EPA 3050B MS_S										
Blank (B8F0755-BLK1)					Prepared: 6/28/2018 Analyzed: 7/2/2018					
Antimony	ND	250	71							U
Arsenic	ND	250	44							U
Barium	ND	250	37							U
Beryllium	ND	250	23							U
Cadmium	ND	250	17							U
Chromium	ND	500	110							U
Cobalt	ND	250	19							U
Copper	ND	250	25							U
Lead	ND	250	28							U
Molybdenum	ND	250	49							U
Nickel	ND	250	16							U
Selenium	ND	250	55							U
Silver	ND	250	10							U
Thallium	ND	250	16							U
Vanadium	ND	500	72							U
Zinc	ND	1200	720							U
LCS (B8F0755-BS1)					Prepared: 6/28/2018 Analyzed: 7/2/2018					
Antimony	5092.26	250	71	5000.00		102	70 - 130			
Arsenic	4977.08	250	44	5000.00		99.5	70 - 130			
Barium	5080.11	250	37	5000.00		102	70 - 130			
Beryllium	4998.71	250	23	5000.00		100	70 - 130			
Cadmium	5124.22	250	17	5000.00		102	70 - 130			
Chromium	5120.08	500	110	5000.00		102	70 - 130			
Cobalt	5133.62	250	19	5000.00		103	70 - 130			
Copper	5143.66	250	25	5000.00		103	70 - 130			
Lead	4976.95	250	28	5000.00		99.5	70 - 130			
Molybdenum	5006.22	250	49	5000.00		100	70 - 130			
Nickel	5075.51	250	16	5000.00		102	70 - 130			
Selenium	5206.51	250	55	5000.00		104	70 - 130			
Silver	5177.43	250	10	5000.00		104	70 - 130			
Thallium	5076.00	250	16	5000.00		102	70 - 130			
Vanadium	5190.52	500	72	5000.00		104	70 - 130			
Zinc	52424.4	1200	720	50000.0		105	70 - 130			
Matrix Spike (B8F0755-MS1)			**Source: 1802300-01**		Prepared: 6/28/2018 Analyzed: 7/2/2018					
Antimony	4561.86	1000	280	5000.00	ND	91.2	75 - 125			
Arsenic	3976.65	1000	180	5000.00	ND	79.5	75 - 125			
Barium	13426.0	1000	150	5000.00	8840.02	91.7	75 - 125			
Beryllium	3754.84	1000	93	5000.00	ND	75.1	75 - 125			

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Total Metals by ICP-MS EPA 6020 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0755 - EPA 3050B MS_S (continued)										
Matrix Spike (B8F0755-MS1) - Continued			**Source: 1802300-01**		Prepared: 6/28/2018 Analyzed: 7/2/2018					
Cadmium	4476.47	1000	69	5000.00	ND	89.5	75 - 125			
Chromium	6185.03	2000	450	5000.00	1365.04	96.4	75 - 125			
Cobalt	6460.67	1000	75	5000.00	917.766	111	75 - 125			
Copper	8721.22	1000	100	5000.00	3421.89	106	75 - 125			
Lead	16330.1	1000	110	5000.00	10284.6	121	75 - 125			
Molybdenum	5805.90	1000	200	5000.00	299.766	110	75 - 125			
Nickel	8201.73	1000	64	5000.00	3386.24	96.3	75 - 125			
Selenium	3130.03	1000	220	5000.00	ND	62.6	75 - 125			M1
Silver	2885.76	1000	41	5000.00	ND	57.7	75 - 125			M1
Thallium	4753.58	1000	62	5000.00	ND	95.1	75 - 125			
Vanadium	10794.8	2000	290	5000.00	6017.70	95.5	75 - 125			
Zinc	43410.1	5000	2900	50000.0	10086.4	66.6	75 - 125			M1
Matrix Spike Dup (B8F0755-MSD1)			**Source: 1802300-01**		Prepared: 6/28/2018 Analyzed: 7/2/2018					
Antimony	4520.08	1000	280	5000.00	ND	90.4	75 - 125	0.920	20	
Arsenic	3935.26	1000	180	5000.00	ND	78.7	75 - 125	1.05	20	
Barium	12027.2	1000	150	5000.00	8840.02	63.7	75 - 125	11.0	20	M1
Beryllium	3808.42	1000	93	5000.00	ND	76.2	75 - 125	1.42	20	
Cadmium	4483.69	1000	69	5000.00	ND	89.7	75 - 125	0.161	20	
Chromium	6368.10	2000	450	5000.00	1365.04	100	75 - 125	2.92	20	
Cobalt	6452.52	1000	75	5000.00	917.766	111	75 - 125	0.126	20	
Copper	8489.72	1000	100	5000.00	3421.89	101	75 - 125	2.69	20	
Lead	11764.1	1000	110	5000.00	10284.6	29.6	75 - 125	32.5	20	M1
Molybdenum	5739.97	1000	200	5000.00	299.766	109	75 - 125	1.14	20	
Nickel	8217.60	1000	64	5000.00	3386.24	96.6	75 - 125	0.193	20	
Selenium	3451.72	1000	220	5000.00	ND	69.0	75 - 125	9.78	20	M1
Silver	5254.80	1000	41	5000.00	ND	105	75 - 125	58.2	20	R
Thallium	4833.58	1000	62	5000.00	ND	96.7	75 - 125	1.67	20	
Vanadium	10411.8	2000	290	5000.00	6017.70	87.9	75 - 125	3.61	20	
Zinc	44677.8	5000	2900	50000.0	10086.4	69.2	75 - 125	2.88	20	M1
Post Spike (B8F0755-PS1)			**Source: 1802300-01**		Prepared: 6/28/2018 Analyzed: 7/2/2018					
Antimony	4.90262			5.00000	0.069951	96.7	75 - 125			
Arsenic	4.12384			5.00000	-0.058523	82.5	75 - 125			
Barium	9.42534			5.00000	4.42001	100	75 - 125			
Beryllium	3.94453			5.00000	0.016578	78.6	75 - 125			
Cadmium	4.53937			5.00000	0.01514	90.5	75 - 125			
Chromium	5.90806			5.00000	0.682521	105	75 - 125			
Cobalt	6.23302			5.00000	0.458883	115	75 - 125			
Copper	8.81512			5.00000	1.71095	142	75 - 125			
Lead	8.94171			5.00000	5.14230	76.0	75 - 125			
Molybdenum	5.71232			5.00000	0.149883	111	75 - 125			

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Total Metals by ICP-MS EPA 6020 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0755 - EPA 3050B MS_S (continued)									
Post Spike (B8F0755-PS1) - Continued			**Source: 1802300-01**		Prepared: 6/28/2018 Analyzed: 7/2/2018				
Nickel	7.12963		5.00000	1.69312	109	75 - 125			
Selenium	3.51150		5.00000	-0.119682	70.2	75 - 125			
Silver	5.44215		5.00000	0.000874	109	75 - 125			
Thallium	4.87443		5.00000	0.009128	97.3	75 - 125			
Vanadium	8.06955		5.00000	3.00885	101	75 - 125			
Zinc	42.0667		50.0000	5.04321	74.0	75 - 125			

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Total Metals by ICP-MS EPA 6020 - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0757 - EPA 3050B MS_S										
Blank (B8F0757-BLK1)					Prepared: 6/28/2018 Analyzed: 7/2/2018					
Antimony	ND	250	71							U
Arsenic	ND	250	44							U
Barium	ND	250	37							U
Beryllium	ND	250	23							U
Cadmium	ND	250	17							U
Chromium	ND	500	110							U
Cobalt	ND	250	19							U
Copper	ND	250	25							U
Lead	ND	250	28							U
Molybdenum	ND	250	49							U
Nickel	ND	250	16							U
Selenium	ND	250	55							U
Silver	ND	250	10							U
Thallium	ND	250	16							U
Vanadium	ND	500	72							U
Zinc	ND	1200	720							U
LCS (B8F0757-BS1)					Prepared: 6/28/2018 Analyzed: 7/2/2018					
Antimony	4948.03	250	71	5000.00		99.0	70 - 130			
Arsenic	4974.37	250	44	5000.00		99.5	70 - 130			
Barium	5005.28	250	37	5000.00		100	70 - 130			
Beryllium	4744.22	250	23	5000.00		94.9	70 - 130			
Cadmium	4994.80	250	17	5000.00		99.9	70 - 130			
Chromium	5136.54	500	110	5000.00		103	70 - 130			
Cobalt	5103.91	250	19	5000.00		102	70 - 130			
Copper	4989.71	250	25	5000.00		99.8	70 - 130			
Lead	4894.14	250	28	5000.00		97.9	70 - 130			
Molybdenum	4991.38	250	49	5000.00		99.8	70 - 130			
Nickel	4822.61	250	16	5000.00		96.5	70 - 130			
Selenium	5115.58	250	55	5000.00		102	70 - 130			
Silver	4984.68	250	10	5000.00		99.7	70 - 130			
Thallium	4977.82	250	16	5000.00		99.6	70 - 130			
Vanadium	5050.92	500	72	5000.00		101	70 - 130			
Zinc	50837.6	1200	720	50000.0		102	70 - 130			
Matrix Spike (B8F0757-MS1)			**Source: 1802300-21**		Prepared: 6/28/2018 Analyzed: 7/2/2018					
Antimony	2427.53	1000	280	5000.00	ND	48.6	75 - 125			M1
Arsenic	5182.05	1000	180	5000.00	1186.27	79.9	75 - 125			
Barium	50285.1	1000	150	5000.00	44735.1	111	75 - 125			
Beryllium	3629.58	1000	93	5000.00	100.536	70.6	75 - 125			M1
Cadmium	4573.10	1000	69	5000.00	ND	91.5	75 - 125			
Chromium	10532.8	2000	450	5000.00	5256.29	106	75 - 125			

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Total Metals by ICP-MS EPA 6020 - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0757 - EPA 3050B MS_S (continued)										
Matrix Spike (B8F0757-MS1) - Continued			**Source: 1802300-21**		Prepared: 6/28/2018 Analyzed: 7/2/2018					
Cobalt	8379.49	1000	75	5000.00	2701.02	114	75 - 125			
Copper	10078.4	1000	100	5000.00	4243.88	117	75 - 125			
Lead	7053.54	1000	110	5000.00	2527.26	90.5	75 - 125			
Molybdenum	5136.69	1000	200	5000.00	ND	103	75 - 125			
Nickel	7530.29	1000	64	5000.00	1974.80	111	75 - 125			
Selenium	3084.88	1000	220	5000.00	ND	61.7	75 - 125			M1
Silver	2102.02	1000	41	5000.00	ND	42.0	75 - 125			M1
Thallium	4773.20	1000	62	5000.00	62.6880	94.2	75 - 125			
Vanadium	33515.8	2000	290	5000.00	27661.8	117	75 - 125			
Zinc	49916.9	5000	2900	50000.0	11522.4	76.8	75 - 125			
Matrix Spike Dup (B8F0757-MSD1)			**Source: 1802300-21**		Prepared: 6/28/2018 Analyzed: 7/2/2018					
Antimony	2672.27	1000	280	5000.00	ND	53.4	75 - 125	9.60	20	M1
Arsenic	5386.93	1000	180	5000.00	1186.27	84.0	75 - 125	3.88	20	
Barium	54266.3	1000	150	5000.00	44735.1	191	75 - 125	7.62	20	M1
Beryllium	3809.99	1000	93	5000.00	100.536	74.2	75 - 125	4.85	20	M1
Cadmium	4459.27	1000	69	5000.00	ND	89.2	75 - 125	2.52	20	
Chromium	11263.1	2000	450	5000.00	5256.29	120	75 - 125	6.70	20	
Cobalt	8837.50	1000	75	5000.00	2701.02	123	75 - 125	5.32	20	
Copper	10226.1	1000	100	5000.00	4243.88	120	75 - 125	1.46	20	
Lead	7240.79	1000	110	5000.00	2527.26	94.3	75 - 125	2.62	20	
Molybdenum	5157.37	1000	200	5000.00	ND	103	75 - 125	0.402	20	
Nickel	8148.37	1000	64	5000.00	1974.80	123	75 - 125	7.88	20	
Selenium	3159.79	1000	220	5000.00	ND	63.2	75 - 125	2.40	20	M1
Silver	1952.26	1000	41	5000.00	ND	39.0	75 - 125	7.39	20	M1
Thallium	4783.46	1000	62	5000.00	62.6880	94.4	75 - 125	0.215	20	
Vanadium	33881.9	2000	290	5000.00	27661.8	124	75 - 125	1.09	20	
Zinc	51313.4	5000	2900	50000.0	11522.4	79.6	75 - 125	2.76	20	
Post Spike (B8F0757-PS1)			**Source: 1802300-21**		Prepared: 6/28/2018 Analyzed: 7/2/2018					
Antimony	4.82254			5.00000	0.034543	95.8	75 - 125			
Arsenic	4.86156			5.00000	0.593135	85.4	75 - 125			
Barium	28.0914			5.00000	22.3675	114	75 - 125			
Beryllium	3.74974			5.00000	0.050268	74.0	75 - 125			
Cadmium	4.48170			5.00000	0.025809	89.1	75 - 125			
Chromium	8.02205			5.00000	2.62814	108	75 - 125			
Cobalt	7.29812			5.00000	1.35051	119	75 - 125			
Copper	8.01545			5.00000	2.12194	118	75 - 125			
Lead	5.87113			5.00000	1.26363	92.2	75 - 125			
Molybdenum	5.64289			5.00000	0.081844	111	75 - 125			
Nickel	6.41444			5.00000	0.987399	109	75 - 125			
Selenium	3.48160			5.00000	-0.122738	69.6	75 - 125			

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Total Metals by ICP-MS EPA 6020 - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0757 - EPA 3050B MS_S (continued)									
Post Spike (B8F0757-PS1) - Continued			**Source: 1802300-21**		Prepared: 6/28/2018 Analyzed: 7/2/2018				
Silver	5.33660		5.00000	0.000132	107	75 - 125			
Thallium	4.73976		5.00000	0.031344	94.2	75 - 125			
Vanadium	20.7856		5.00000	13.8309	139	75 - 125			
Zinc	44.6027		50.0000	5.76118	77.7	75 - 125			

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Mercury by AA (Cold Vapor) EPA 7471A - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0736 - EPA 7471_S										
Blank (B8F0736-BLK1)					Prepared: 6/27/2018 Analyzed: 6/28/2018					
Mercury	ND	0.10	0.006							
LCS (B8F0736-BS1)					Prepared: 6/27/2018 Analyzed: 6/28/2018					
Mercury	0.903279	0.10	0.006	0.833333		108	80 - 120			
Matrix Spike (B8F0736-MS1)			**Source: 1802300-01**		Prepared: 6/27/2018 Analyzed: 6/28/2018					
Mercury	0.912766	0.10	0.006	0.847458	ND	108	70 - 130			
Matrix Spike Dup (B8F0736-MSD1)			**Source: 1802300-01**		Prepared: 6/27/2018 Analyzed: 6/28/2018					
Mercury	0.887562	0.10	0.006	0.833333	ND	107	70 - 130	2.80	20	
Post Spike (B8F0736-PS1)			**Source: 1802300-01**		Prepared: 6/27/2018 Analyzed: 6/28/2018					
Mercury	0.006066			5.00000E-3	0.000032	121	85 - 115			M1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Mercury by AA (Cold Vapor) EPA 7471A - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B8F0737 - EPA 7471_S										
Blank (B8F0737-BLK1)					Prepared: 6/27/2018 Analyzed: 6/28/2018					
Mercury	ND	0.10	0.006							
LCS (B8F0737-BS1)					Prepared: 6/27/2018 Analyzed: 6/28/2018					
Mercury	0.882071	0.10	0.006	0.833333		106	80 - 120			
Matrix Spike (B8F0737-MS1)			**Source: 1802300-21**		Prepared: 6/27/2018 Analyzed: 6/28/2018					
Mercury	0.921662	0.10	0.006	0.819672	ND	112	70 - 130			
Matrix Spike Dup (B8F0737-MSD1)			**Source: 1802300-21**		Prepared: 6/27/2018 Analyzed: 6/28/2018					
Mercury	0.951955	0.10	0.006	0.847458	ND	112	70 - 130	3.23	20	
Post Spike (B8F0737-PS1)			**Source: 1802300-21**		Prepared: 6/27/2018 Analyzed: 6/28/2018					
Mercury	0.006240			5.00000E-3	1.980E-5	124	85 - 115			M1

Certificate of Analysis

Kleinfelder		Project Number :	Salt Pond 20, 20164596.018A
550 W. C. Suite 1200		Report To :	Jake Lippman
San Diego , CA 92101		Reported :	07/03/2018

Notes and Definitions

U	Analyte included in the analysis, but not detected
R	RPD value outside acceptance criteria. Calculation is based on raw values.
M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)

Notes:
(1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
(2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
(3) Results are wet unless otherwise specified.

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 1 of 4

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver:20180321

Method of Transport: ☐ Client ☑ ATL ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other:

Sample Conditions: Condition	Y	N	Receipt Condition	Y	N
1. CHILLED	☑	☐	5. # OF SAMPLES MATCH COC	☑	☐
2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☑
3. CONTAINER INTACT	☑	☐	7. COOLER TEMP, deg C: 5.7		
4. SEALED	☐	☑	5.4		

CUSTOMER

Company: Kleinfelder, Inc.
Address: 550 West C Street, Suite 1200
City: San Diego State: CA Zip: 92101
Tel: 6198314677
Fax:

SEND REPORT TO:
Attn: Jake Lippman
Email: jlippman@kleinfelder.com
Company:
Address:
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn:
Email: accountspayableus@kleinfelder.com
Company: Same
Address:
City: State: Zip:

EDD: ○ Excel ○ EDF ◉ Equis ○ _____

QA/QC: ☑ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV ☐ _____

PROJECT SAMPLES

Project Name: Salt Pond 20
Project No.: 20164596.018A
Sampler: Jake Lippman
Quote #:
PO #: 20164596.018A
Special Instructions/Comments: Archive remaining samples

ITEM	Laboratory ID (For Lab Use Only)	Sample ID / Location	Date	Time	8081 (Organochlorine Pesticides)	8082 (PCBs)	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	PAHs (8270C SIM)	Phenols/Phthalates (8270C SIM)	TPH C6-40 (8015B)	SVOCs (8270C SIM)	Title 22 Metals (6020/7471A)					Soil	Select Solid Matrix	Select Water Matrix	Wastewater	Select Non-aqueous Matrix	Enter Custom Matrix	Turnaround Time (TAT)	Quantity	Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7 = Canister	Material: 1=Glass; 2=Plastic; 3=Metal	Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=ZnAcl2; 6=NaOH; 7=NA2S2O3	Remarks
1	1802300 -01	TP-7-0-0.5	6/20/18	10:10													X					X						5	1	5	1		
2	-02	TP-7-0.5-1.5		10:15																													
3	-03	TP-7-1.5-2		10:20																													
4	-04	TP-8-0-0.25		09:30																													
5	-05	TP-8-0.25-1		09:35																													
6	-06	TP-8-1-5		09:40																													
7	-07	TP-8-5-8		09:45																													
8	-08	TP-10-0-0.25		13:00																													
9	-09	TP-10-0.25-2		13:05																													
10	-10	TP-11-0-4	6/19/18	07:53																													

TERMS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
2. Samples submitted AFTER 3:00 PM are considered received the following business day at 8:00 AM.
3. The following turnaround time conditions apply:
   - TAT = 0 : 300% Surcharge SAME BUSINESS DAY if received by 9:00 AM
   - TAT = 1 : 100% Surcharge NEXT BUSINESS DAY (COB 5:00 PM)
   - TAT = 2 : 50% Surcharge 2ND BUSINESS DAY (COB 5:00 PM)
   - TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
   - TAT = 4 : 20% Surcharge 4TH BUSINESS DAY (COB 5:00 PM)
   - TAT = 5 : NO SURCHARGE 5th BUSINESS DAY (COB 5:00 PM)

   Weekend, holiday after-hours work -- ask for quote.
   Subcontract TAT is 10 - 15 business days. Projects requiring shorter TATs will incur a surcharge respective to the subcontract lab -- ask for quote.
6. Liquid and solid samples will be disposed of after 45 calendar days from receipt of samples; air samples will be disposed of after 14 calendar days after receipt of samples.
7. Electronic records maintained for five (5) years from report date.
8. Hard copy reports will be disposed of after 45 calendar days from report date.
9. Storage and Report Fees:
   - Liquid & solid samples: Complimentary storage for forty-five (45) calendar days from receipt of samples; $2/sample/month if extended storage or hold is requested.
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   - Hard copy and regenerated reports/EDDs: $17.50 per hard copy report requested; $50.00 per regenerated/reformatted report; $35 per reprocessed EDD.
10. Rush TCLP/STLC samples: add 2 days to analysis TAT for extraction procedure.
11. Unanalyzed samples will incur a disposal fee of $7 per sample.
12. The laboratory will randomly select from all QC samples received the sample to spike for Matrix Spike/ Matrix Spike Duplicate (MS/MSD) at no cost. However, if you want the laboratory to additionally perform MS/MSD on your sample, a charge will be assessed for the specific sample used.

CUSTODY

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Jake Lippm	6/22/18	14:00		6/22/18	1555
	6/22/18	1915		6/22/18	1915

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Printed Name _____ Signature _____

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 2 of 4

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver:20180321

Method of Transport: ☐ Client ☐ ATL ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other: _____

Sample Condition: Condition	Y	N	Sample Condition: Condition	Y	N
1. CHILLED	☐	☐	5. # OF SAMPLES MATCH COC	☐	☐
2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☐
3. CONTAINER INTACT	☐	☐	7. COOLER TEMP, deg C:		
4. SEALED	☐	☐			

CUSTOMER

Company: Kleinfelder, Inc.
Address: 550 West C Street, Suite 1200
City: San Diego State: CA Zip: 92101
Tel: 6198314677
Fax:

SEND REPORT TO:
Attn: Jake Lippman
Email: jlippman@kleinfelder.com
Company:
Address:
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn:
Email: accountspayableus@kleinfelder.com
Company: Same
Address:
City: State: Zip:

EDD: ○ Excel ○ EDF ◉ Equis ○ _____

QA/QC: ☑ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV ☐ _____

PROJECT SAMPLES

Project Name: Salt Pond 20
Project No.: 20164596.018A
Sampler: Jake Lippman
Quote #:
PO #: 20164596.018A
Special Instructions/Comments: Archive remaining samples

ITEM	Laboratory ID (For Lab Use Only)	Sample ID / Location	Date	Time	8081 (Organochlorine Pesticides)	8082 (PCBs)	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	PAHs (8270C SIM)	Phenols/Phthalates (8270C SIM)	TPH C6-40 (8015B)	SVOCs (8270C SIM)	Title 22 Metals (6020/7471A)					Soil	Select Solid Matrix	Select Water Matrix	Wastewater	Select Non-aqueous Matrix	Enter Custom Matrix	Turnaround Time (TAT)	Quantity	Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister	Material: 1=Glass; 2=Plastic; 3=Metal	Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn(Ac)2; 6=NaOH; 7=NA2S2O3	Remarks
1	1802300-11	TP-11-4-5	6/19/18	07:55													X					X						5	1	5	1		
2	-12	TP-11-5-10	↓	08:00													↓					↓						↓	↓	↓	↓		
3	-13	TP-17-0.083-1.5	6/20/18	09:15																													
4	-14	TP-17-1.5-2	↓	09:20																													
5	-15	TP-18-0-4	6/19/18	09:10																													
6	-16	TP-18-4-6		09:15																													
7	-17	TP-20-0.083-4		12:45																													
8	-18	TP-20-4-5		12:55																													
9	-19	TP-22-0-2.5		13:15																													
10	-20	TP-22-2.5-3	↓	13:15													↓					↓						↓	↓	↓	↓		

TERMS

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CUSTODY

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Jake Lippman	6/22/18	14:00	[signature]	6/22/18	1555
[signature]	6/22/18	1945	[signature] FEDEX	6/22/18	1915

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Printed Name _____ Signature _____

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 3 of 4

Instruction: Complete all shaded areas.

For Laboratory Use Only — ATLCOC Ver:20180321

Method of Transport: ☐ Client ☐ ATL ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other: _____

Sample Condition	Y	N	Sample Condition Receipt	Y	N
1. CHILLED	☐	☐	5. # OF SAMPLES MATCH COC	☐	☐
2. HEADSPACE (VOA)	☐	☐	6. PRESERVED	☐	☐
3. CONTAINER INTACT	☐	☐	7. COOLER TEMP, deg C:		
4. SEALED	☐	☐			

CUSTOMER

Company: Kleinfelder, Inc.
Address: 550 West C Street, Suite 1200
City: San Diego State: CA Zip: 92101
Tel: 6198314677 Fax:

SEND REPORT TO:
Attn: Jake Lippman Email: jlippman@kleinfelder.com
Company:
Address:
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn: Email: accountspayableus@kleinfelder.com
Company: Same
Address:
City: State: Zip:

EDD: ○ Excel ○ EDF ◉ Equis ○ _____

QA/QC: ☑ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV ☐ _____

PROJECT SAMPLES

Project Name: Salt Pond 20
Project No.: 20164596.018A
Sampler: Jake Lippman
Quote #:
PO #: 20164596.018A
Special Instructions/Comments: Archive remaining samples

ITEM	Laboratory ID (For Lab Use Only)	Sample ID / Location	Date	Time	8081 (Organochlorine Pesticides)	8082 (PCBs)	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	PAHs (8270C SIM)	Phenols/Phthalates (8270C SIM)	TPH C6-40 (8015B)	SVOCs (8270C SIM)	Title 22 Metals (6020/7471A)					Soil	Select Solid Matrix	Select Water Matrix	Wastewater	Select Non-aqueous Matrix	Enter Custom Matrix	Turnaround Time (TAT)	Quantity	Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister	Material: 1=Glass; 2=Plastic; 3=Metal	Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn(Ac)2; 6=NaOH; 7=NA2S2O3	Remarks
1	1802300-21	TP-24-0-4.5	6/19/18	09:33													X					X						5	1	5	1		
2	-22	TP-24-4.5-6		09:40																													
3	-23	TP-26-0-4		10:05																													
4	-24	TP-26-4-6		10:10																													
5	-25	TP-26-6-6.5		10:13																													
6	-26	TP-27-0-4		12:25																													
7	-27	TP-27-4-10		12:25																													
8	-28	TP-28-0-2	6/20/18	07:30																													
9	-29	TP-28-2-4		07:35																													
10	-30	TP-29-0-4	6/18/18	11:10																													

TERMS

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CUSTODY

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Jake Lippman	6/22/18	14:00		6/22/18	1655
	6/22/18	1915	Fedex	6/22/18	1915

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Printed Name _____ Signature _____

ADVANCED TECHNOLOGY LABORATORIES
3275 Walnut Ave., Signal Hill, CA 90755
Tel: (562) 989-4045 • Fax: (562) 989-4040

CHAIN OF CUSTODY RECORD

Page 4 of 4

Instruction: Complete all shaded areas.

For Laboratory Use Only			ATLCOC Ver:20180321
Method of Transport	Sample Condition: Condition	Y	N
☐ Client ☐ ATL ☐ FedEx ☐ OnTrac ☐ GSO ☐ Other:	1. CHILLED	☐	☐
	2. HEADSPACE (VOA)	☐	☐
	3. CONTAINER INTACT	☐	☐
	4. SEALED	☐	☐
	Receipt Condition	Y	N
	5. # OF SAMPLES MATCH COC	☐	☐
	6. PRESERVED	☐	☐
	7. COOLER TEMP, deg C:		

CUSTOMER

Company: Kleinfelder, Inc.
Address: 550 West C Street, Suite 1200
City: San Diego State: CA Zip: 92101
Tel: 6198314677
Fax:

SEND REPORT TO:
Attn: Jake Lippman
Email: jlippman@kleinfelder.com
Company:
Address:
City: State: Zip:

SEND INVOICE TO: ☐ same as SEND REPORT TO
Attn:
Email: accountspayableus@kleinfelder.com
Company: Same
Address:
City: State: Zip:

EDD: ○ Excel ○ EDF ◉ Equis ○ _____

QA/QC: ☑ Routine ☐ Caltrans ☐ Legal ☐ RWQCB ☐ Level IV ☐ _____

PROJECT SAMPLES

Project Name: Salt Pond 20
Project No.: 20164596.018A
Sampler: Jake Lippman
Quote #:
PO #: 20164596.018A
Special Instructions/Comments: Archive remaining samples

ITEM	Laboratory ID (For Lab Use Only)	Sample ID / Location	Date	Time	8081 (Organochlorine Pesticides)	8082 (PCBs)	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	Select Analysis	PAHs (8270C SIM)	Phenols/Phthalates (8270C SIM)	TPH C6-40 (8015B)	SVOCs (8270C SIM)	Title 22 Metals (6020/7471A)						Soil	Select Solid Matrix	Select Water Matrix	Wastewater	Select Non-aqueous Matrix	Enter Custom Matrix	Turnaround Time (TAT)	Quantity	Type: 1=Tube; 2=VOA; 3=Liter; 4=Pint; 5=Jar; 6=Tedlar; 7=Canister	Material: 1=Glass; 2=Plastic; 3=Metal	Preservative: 1=HCl; 2=HNO3; 3=H2SO4; 4=4C; 5=Zn/Ac/2; 6=NaOH; 7=NA2S2O3	Remarks
1	1802300-31	TP-29-4-8	6/19/18	11:11													X						X						5	1	5	1		
2	-32	TP-29-8-10	↓	11:15													↓						↓						↓	↓	↓	↓		
3	-33	TP-30-0-4		11:55																														
4	-34	TP-30-4-8		12:00																														
5	-35	TP-30-8-10	↓	12:10																														
6	-36	TP-31-0-3	6/20/18	07:00																														
7	-37	TP-31-3-4		07:05																														
8	-38	TP-32-0-4		08:00																														
9	-39	TP-32-4-7		08:05																														
10	-40	TP-32-7-9	↓	08:10																														

TERMS

1. Sample receiving hours: 7:30 AM to 7:30 PM Monday - Friday; Saturday 8:00 AM to 12:00 PM.
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   - TAT = 3 : 30% Surcharge 3RD BUSINESS DAY (COB 5:00 PM)
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11. Unanalyzed samples will incur a disposal fee of $7 per sample.
12. The laboratory will randomly select from all QC samples received the sample to spike for Matrix Spike/Matrix Spike Duplicate (MS/MSD) at no cost. However, if you want the laboratory to additionally perform MS/MSD on your sample, a charge will be assessed for the specific sample used.

CUSTODY

Relinquished by: (Signature and Printed Name)	Date:	Time:	Received by: (Signature and Printed Name)	Date:	Time:
Jake Lippman	6/22/18	14:00	[signature]	6/22/18	1555
[signature]	6/22/18	1915	[signature]	6/22/18	1915

As the authorized agent of the company above, I hereby purchase laboratory services from ATL as shown above and hereby guarantee payment as quoted.

Printed Name _____ Signature _____

ADVANCED TECHNOLOGY LABORATORIES

Sample Receipt Acknowledgement

Work Order # 1802300

Client:	**Kleinfelder - SD**	**Project Manager:**	**Rachelle Arada**
Project:	**Salt Pond 20, 20164596.018A**	**Project Number:**	**Salt Pond 20, 20164596.018A**

Report To:	**Invoice To:**
Kleinfelder	Kleinfelder
Jake Lippman	Accounts Payable
550 W. C. Suite 1200	550 W. C. Suite 1200
San Diego, CA 92101	San Diego, CA 92101
Phone: (619) 831-4600	Phone :(619) 831-4600
Fax:	Fax:

Date Due:	07/02/18 17:00 (5 day TAT)	Date Received:	06/22/18 15:55
Received By:	Joel Arceo	Date Logged In:	06/22/18 16:45
Logged In By:	Marnellie Ramos	Shipped by:	ATL

All samples that require thermal preservation are considered acceptable if the arrival temperature is within 2 °C of the required temperature or method-specified range. For samples with a specified temperature of 4 °C, samples received with a temperature ranging from just above freezing temperature of water to 6 °C shall be acceptable. Samples that are hand-delivered immediately following collection may not meet these criteria; however, they will be deemed acceptable according to NELAC standards if there is evidence that the chilling process has begun, such as arrival on ice, etc.

The laboratory documents the condition of the sample/s as received per requirement of laboratory certification. If the sample received is unpreserved or under-preserved, the laboratory will adjust the preservatives to bring the sample to preservation criteria.

Any sample compliance issues will be communicated to the client. If the client does not respond within 24 hours of sample receipt, all tests will be performed as requested regardless. For short holding time samples (< 24 hours), analysis will proceed regardless.

If you have any questions or further instructions, please contact your Project Manager at (562) 989-4045.

Sample(s) received on ice?	Yes ☑	No ☐
Sample(s) received on blue ice?	Yes ☐	No ☑
Cooler temperature within acceptance limit?	Yes ☑	No ☐
Shipping container received in good condition?	Not Applicable	
Chain of Custody (COC) present?	Yes ☑	No ☐
Sampler name present in COC?	Yes ☑	No ☐
COC signed when relinquished and received?	Yes ☑	No ☐
COC agrees with sample labels?	Yes ☑	No ☐
Samples in proper container/bottle?	Yes ☑	No ☐
Sample containers intact?	Yes ☑	No ☐
Sufficient sample amount for indicated tests?	Yes ☑	No ☐
All samples received within holding time?	Yes ☑	No ☐
Water samples submitted?	Yes ☐	No ☑
Water samples meet preservation criteria?	Not Applicable	

Cooler #1	Temp: 5.7 °C
Cooler #2	Temp: 5.4 °C

Sample Receipt Comments:

Printed: 6/26/2018 3:09:23PM

Form Version: 12 Issued: 12/06/2016 12:55 PM

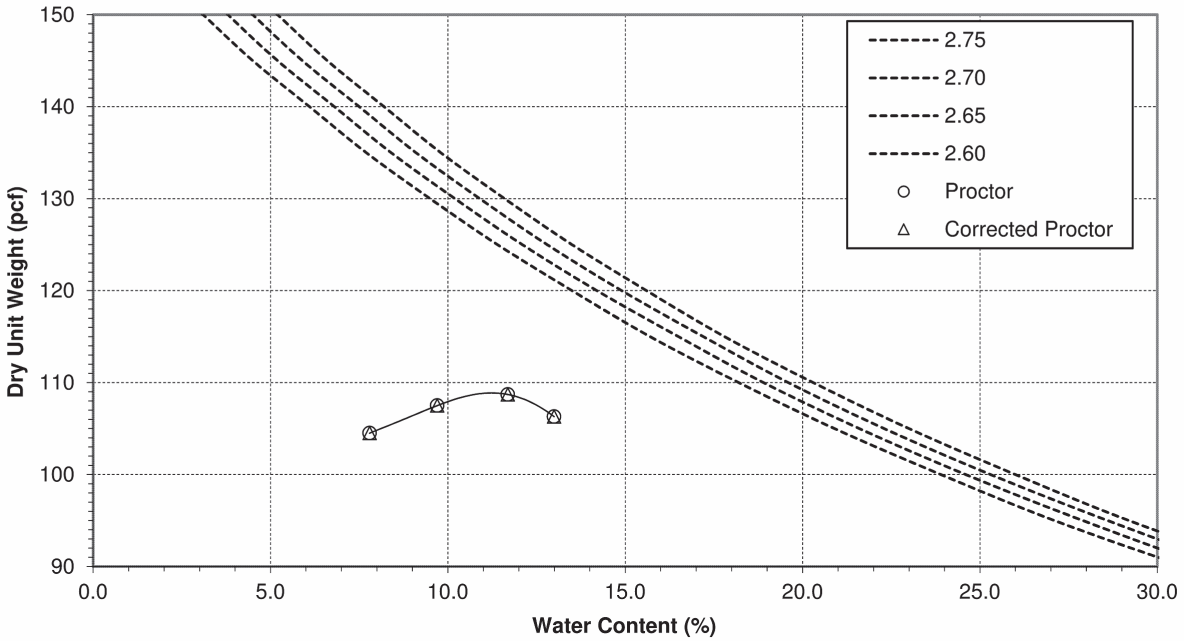
Laboratory Test Report

Client:	**Port of San Diego**	Report No.:	**18-SAN-00480 Rev. 0**	Issued:	**7/31/2018**
Project:	**20164596.018A**				
	Pond 20 Soil Sampling	Sampled by:	**Jake Lippman**	Date:	**6/18/2018**
	07-000L - Lab Testing	Submitted by:	**Jake Lippman**	Date:	**6/29/2018**

Tested on **7/3/2018** by **L. Bainer**

Material Description: **Brown Sand with Silt**

Location: **C-5**



Test Method: ASTM D1557 A	Uncorrected	Corrected
Maximum Dry Unit Weight (pcf)	**108.9**	**na**
Optimum Water Content (%)	**11.2**	**na**
Oversize Fraction, retained on #4 (%)		**<5**
Bulk Specific Gravity of Oversize Fraction		**na**

Rammer Type: Mechanical

Specimen Preparation: Moist

Reviewed on 7/31/2018 by Lee Bainer, Technician IV

Limitations: Pursuant to applicable building codes, the results presented in this report are for the exclusive use of the client and the registered design professional in responsible charge. The results apply only to the samples tested. If changes to the specifications were made and not communicated to Kleinfelder, Kleinfelder assumes no responsibility for pass/fail statements (meets/did not meet). , if provided. This report may not be reproduced, except in full, without written approval of Kleinfelder.

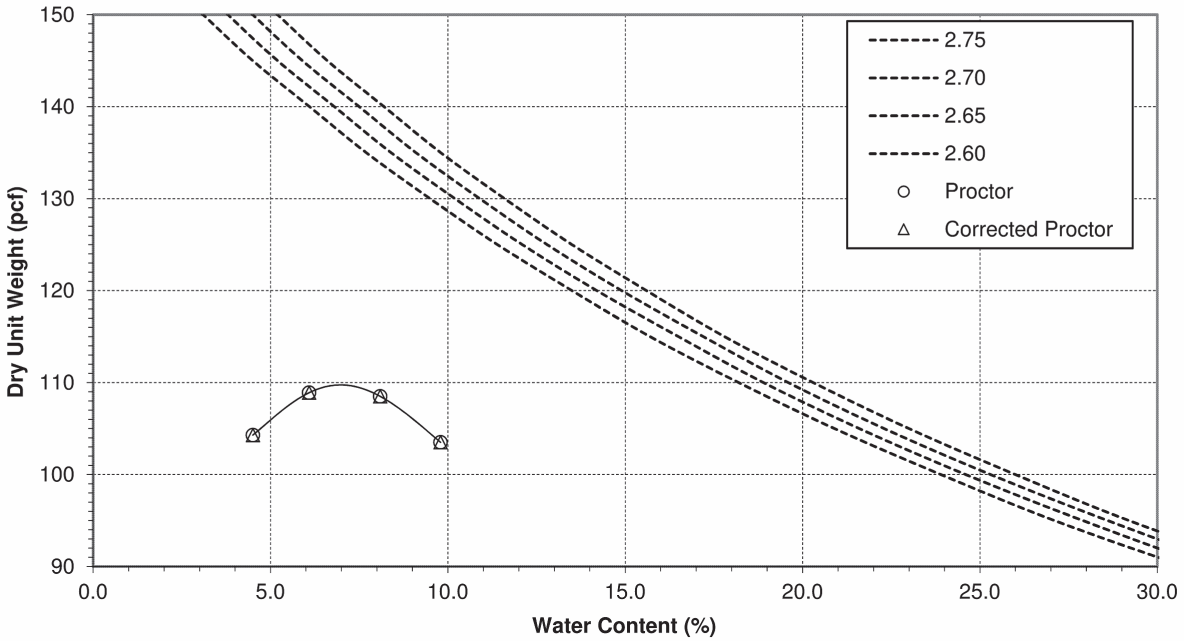
Laboratory Test Report

Client:	**Port of San Diego**	Report No.:	**18-SAN-00480 Rev. 0**	Issued:	**7/31/2018**
Project:	**20164596.018A**				
	Pond 20 Soil Sampling	Sampled by:	**Jake Lippman**	Date:	**6/18/2018**
	07-000L - Lab Testing	Submitted by:	**Jake Lippman**	Date:	**6/29/2018**

Tested on **7/17/2018** by **S. Anderson**

Material Description: **Brown Sand with Silt**

Location: **C-6**



Test Method: ASTM D1557 A	Uncorrected	Corrected
Maximum Dry Unit Weight (pcf)	**109.7**	**na**
Optimum Water Content (%)	**6.9**	**na**
Oversize Fraction, retained on #4 (%)		**<5**
Bulk Specific Gravity of Oversize Fraction		**na**

Rammer Type: Mechanical

Specimen Preparation: Moist

Reviewed on 7/31/2018 by Lee Bainer, Technician IV

Limitations: Pursuant to applicable building codes, the results presented in this report are for the exclusive use of the client and the registered design professional in responsible charge. The results apply only to the samples tested. If changes to the specifications were made and not communicated to Kleinfelder, Kleinfelder assumes no responsibility for pass/fail statements (meets/did not meet). , if provided. This report may not be reproduced, except in full, without written approval of Kleinfelder.

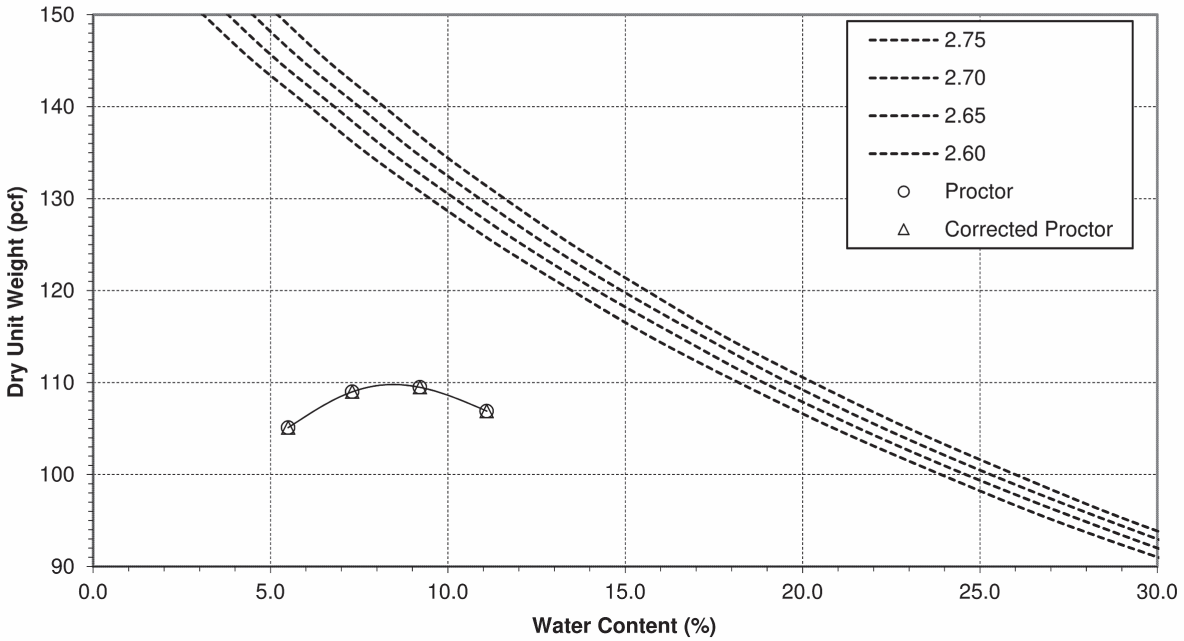
Laboratory Test Report

Client:	**Port of San Diego**	Report No.:	**18-SAN-00480 Rev. 0**	Issued:	**7/31/2018**
Project:	**20164596.018A**				
	Pond 20 Soil Sampling	Sampled by:	**Jake Lippman**	Date:	**6/18/2018**
	07-000L - Lab Testing	Submitted by:	**Jake Lippman**	Date:	**6/29/2018**

Tested on **7/20/2018** by **S. Anderson**

Material Description: **Light Brown Sand with Silt**

Location: **C-7**



Test Method: ASTM D1557 A	Uncorrected	Corrected
Maximum Dry Unit Weight (pcf)	**109.8**	**na**
Optimum Water Content (%)	**8.4**	**na**
Oversize Fraction, retained on #4 (%)		**<5**
Bulk Specific Gravity of Oversize Fraction		**na**

Rammer Type: Mechanical

Specimen Preparation: Moist

Reviewed on 7/31/2018 by Lee Bainer, Technician IV

Limitations: Pursuant to applicable building codes, the results presented in this report are for the exclusive use of the client and the registered design professional in responsible charge. The results apply only to the samples tested. If changes to the specifications were made and not communicated to Kleinfelder, Kleinfelder assumes no responsibility for pass/fail statements (meets/did not meet). , if provided. This report may not be reproduced, except in full, without written approval of Kleinfelder.

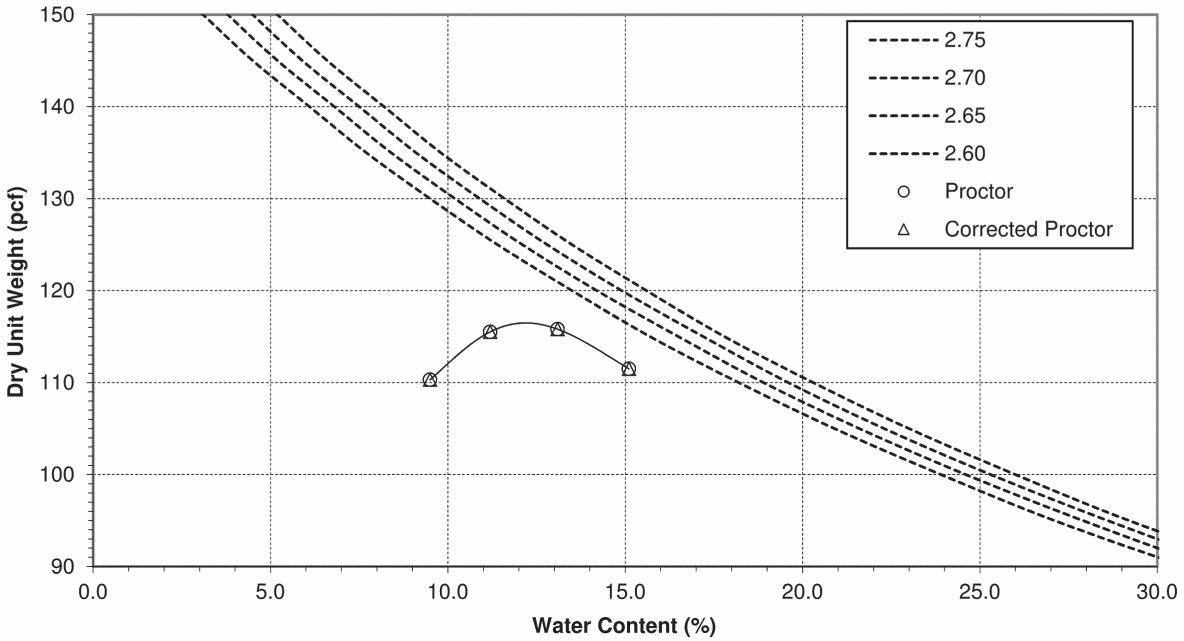
Laboratory Test Report

Client:	**Port of San Diego**	Report No.:	**18-SAN-00480 Rev. 0**	Issued:	**7/31/2018**
Project:	**20164596.018A**				
	Pond 20 Soil Sampling	Sampled by:	**Jake Lippman**	Date:	**6/18/2018**
	07-000L - Lab Testing	Submitted by:	**Jake Lippman**	Date:	**6/29/2018**

Tested on **7/25/2018** by **L. Bainer**

Material Description: **Olive Brown Sand Silty Clay**

Location: **C-8**



Test Method: ASTM D1557 A	Uncorrected	Corrected
Maximum Dry Unit Weight (pcf)	**116.5**	**na**
Optimum Water Content (%)	**12.2**	**na**
Oversize Fraction, retained on #4 (%)		**<5**
Bulk Specific Gravity of Oversize Fraction		**na**

Rammer Type: Mechanical

Specimen Preparation: Moist

Reviewed on 7/31/2018 by Lee Bainer, Technician IV

Limitations: Pursuant to applicable building codes, the results presented in this report are for the exclusive use of the client and the registered design professional in responsible charge. The results apply only to the samples tested. If changes to the specifications were made and not communicated to Kleinfelder, Kleinfelder assumes no responsibility for pass/fail statements (meets/did not meet). , if provided. This report may not be reproduced, except in full, without written approval of Kleinfelder.

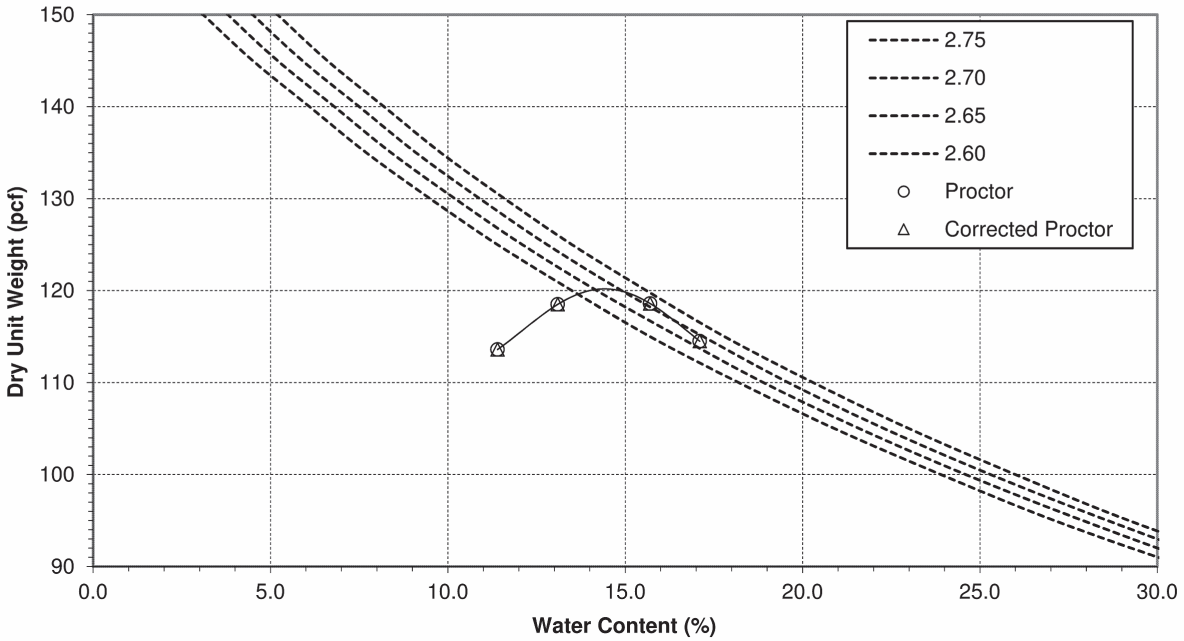
Laboratory Test Report

Client:	**Port of San Diego**	Report No.:	**18-SAN-00480 Rev. 0**	Issued:	**7/31/2018**
Project:	**20164596.018A**				
	Pond 20 Soil Sampling	Sampled by:	**Jake Lippman**	Date:	**6/18/2018**
	07-000L - Lab Testing	Submitted by:	**Jake Lippman**	Date:	**6/29/2018**

Tested on **7/26/2018** by **L. Bainer**

Material Description: **Brown Sandy Silty Clay**

Location: **C-9**



Test Method: ASTM D1557 A	Uncorrected	Corrected
Maximum Dry Unit Weight (pcf)	**120.2**	**na**
Optimum Water Content (%)	**14.4**	**na**
Oversize Fraction, retained on #4 (%)		**<5**
Bulk Specific Gravity of Oversize Fraction		**na**

Rammer Type: Mechanical

Specimen Preparation: Moist

Reviewed on 7/31/2018 by Lee Bainer, Technician IV

Limitations: Pursuant to applicable building codes, the results presented in this report are for the exclusive use of the client and the registered design professional in responsible charge. The results apply only to the samples tested. If changes to the specifications were made and not communicated to Kleinfelder, Kleinfelder assumes no responsibility for pass/fail statements (meets/did not meet). , if provided. This report may not be reproduced, except in full, without written approval of Kleinfelder.

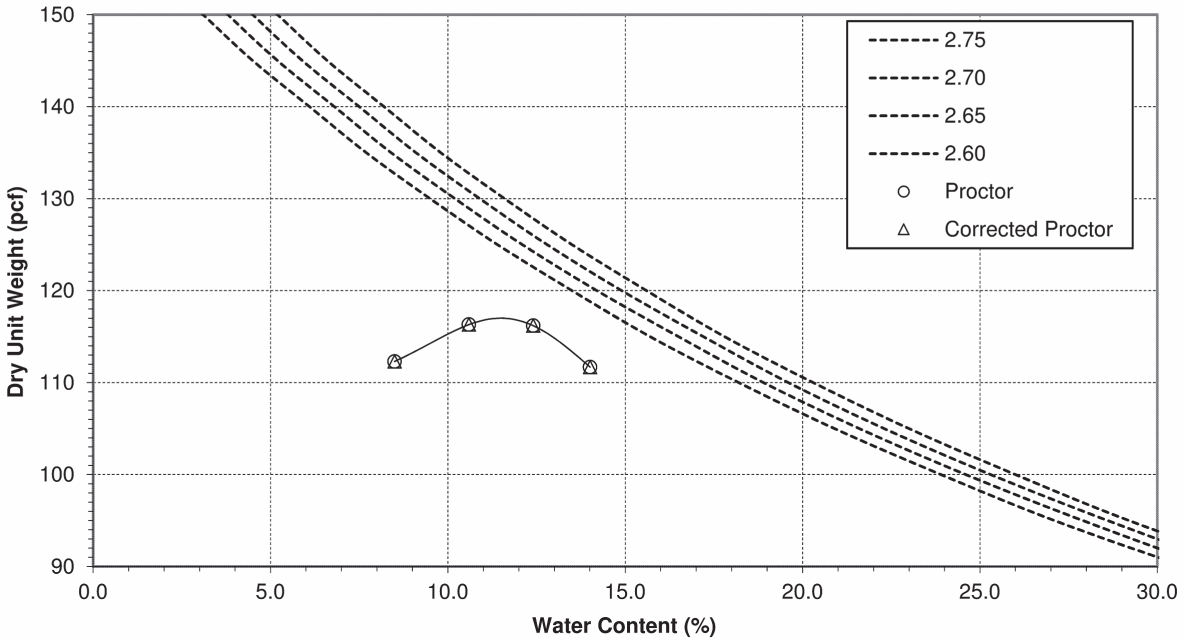
Laboratory Test Report

Client:	**Port of San Diego**	Report No.:	**18-SAN-00480 Rev. 0**	Issued:	**7/31/2018**
Project:	**20164596.018A**				
	Pond 20 Soil Sampling	Sampled by:	**Jake Lippman**	Date:	**6/18/2018**
	07-000L - Lab Testing	Submitted by:	**Jake Lippman**	Date:	**6/29/2018**

Tested on **7/23/2018** by **L. Bainer**

Material Description: **Dark Brown Clay**

Location: **C-10**



Test Method: ASTM D1557 A	Uncorrected	Corrected
Maximum Dry Unit Weight (pcf)	**117.0**	**na**
Optimum Water Content (%)	**11.5**	**na**
Oversize Fraction, retained on #4 (%)		**<5**
Bulk Specific Gravity of Oversize Fraction		**na**

Rammer Type: Mechanical

Specimen Preparation: Moist

Reviewed on 7/31/2018 by Lee Bainer, Technician IV

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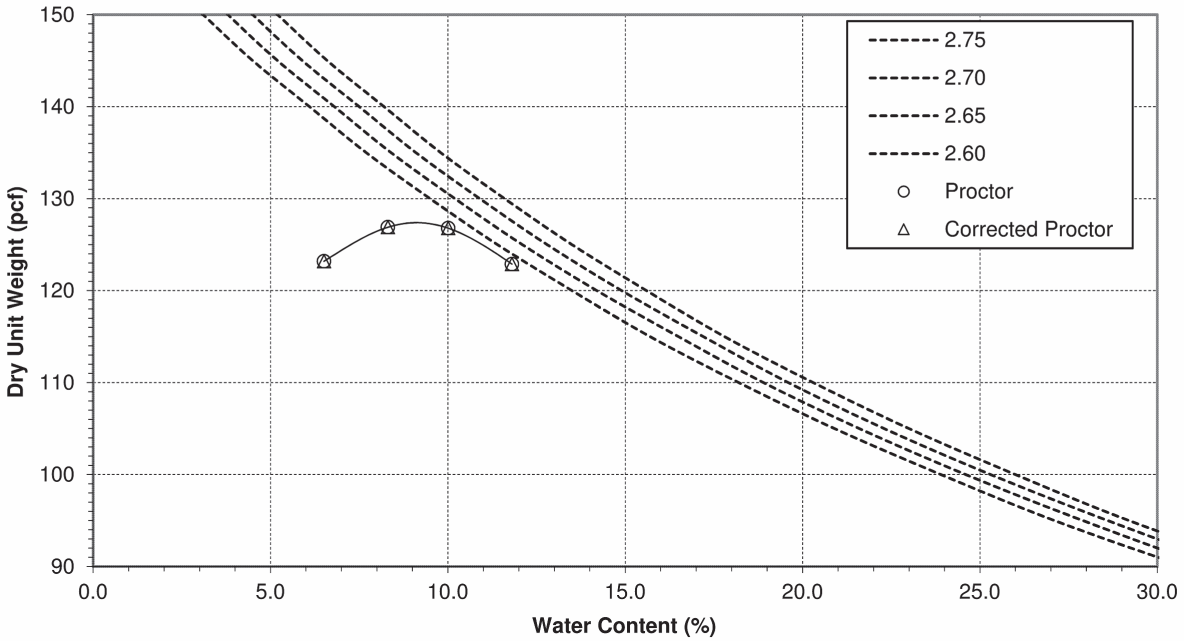
Laboratory Test Report

Client:	**Port of San Diego**	Report No.:	**18-SAN-00480 Rev. 0**	Issued:	**7/31/2018**
Project:	**20164596.018A**				
	Pond 20 Soil Sampling	Sampled by:	**Jake Lippman**	Date:	**6/18/2018**
	07-000L - Lab Testing	Submitted by:	**Jake Lippman**	Date:	**6/29/2018**

Tested on **7/10/2018** by **L. Bainer**

Material Description: **Brown Sandy Clay**

Location: **C-11**



Test Method: ASTM D1557 A	Uncorrected	Corrected
Maximum Dry Unit Weight (pcf)	**127.4**	**na**
Optimum Water Content (%)	**9.2**	**na**
Oversize Fraction, retained on #4 (%)		**<5**
Bulk Specific Gravity of Oversize Fraction		**na**

Rammer Type: Mechanical

Specimen Preparation: Moist

Reviewed on 7/31/2018 by Lee Bainer, Technician IV

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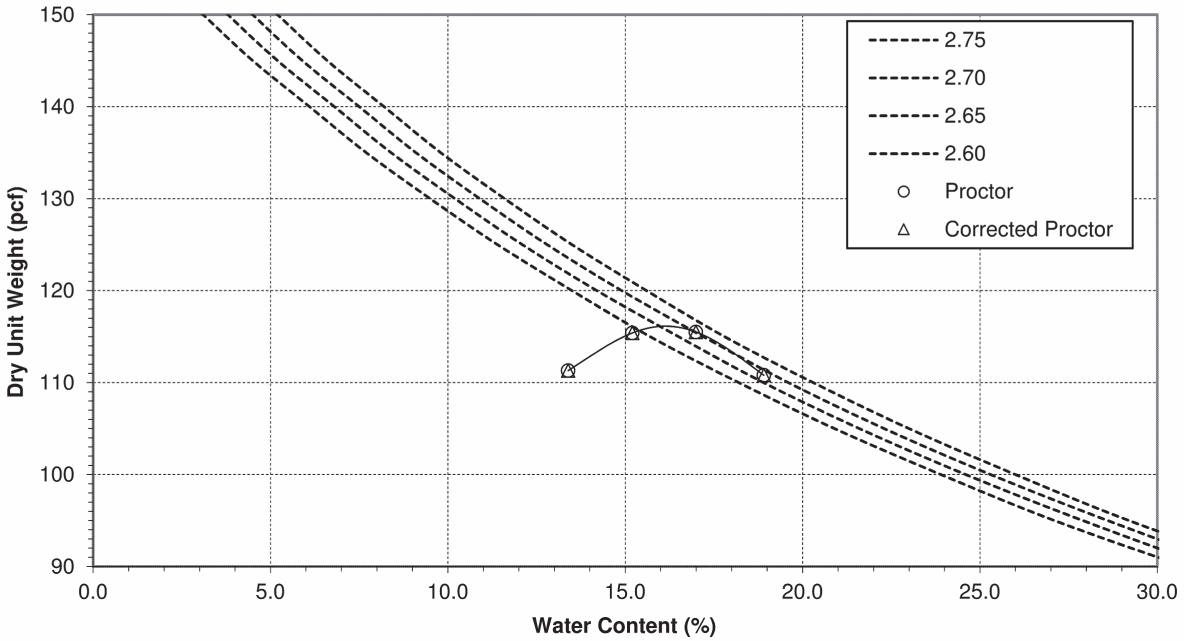
Laboratory Test Report

Client:	**Port of San Diego**	Report No.:	**18-SAN-00480 Rev. 0**	Issued:	**7/31/2018**
Project:	**20164596.018A**				
	Pond 20 Soil Sampling	Sampled by:	**Jake Lippman**	Date:	**6/18/2018**
	07-000L - Lab Testing	Submitted by:	**Jake Lippman**	Date:	**6/29/2018**

Tested on **7/25/2018** by **L. Bainer**

Material Description: **Black Clayey Sand**

Location: **C-12**



Test Method: ASTM D1557 A	Uncorrected	Corrected
Maximum Dry Unit Weight (pcf)	**116.1**	**na**
Optimum Water Content (%)	**16.1**	**na**
Oversize Fraction, retained on #4 (%)		**<5**
Bulk Specific Gravity of Oversize Fraction		**na**

Rammer Type: Mechanical

Specimen Preparation: Moist

Reviewed on 7/31/2018 by Lee Bainer, Technician IV

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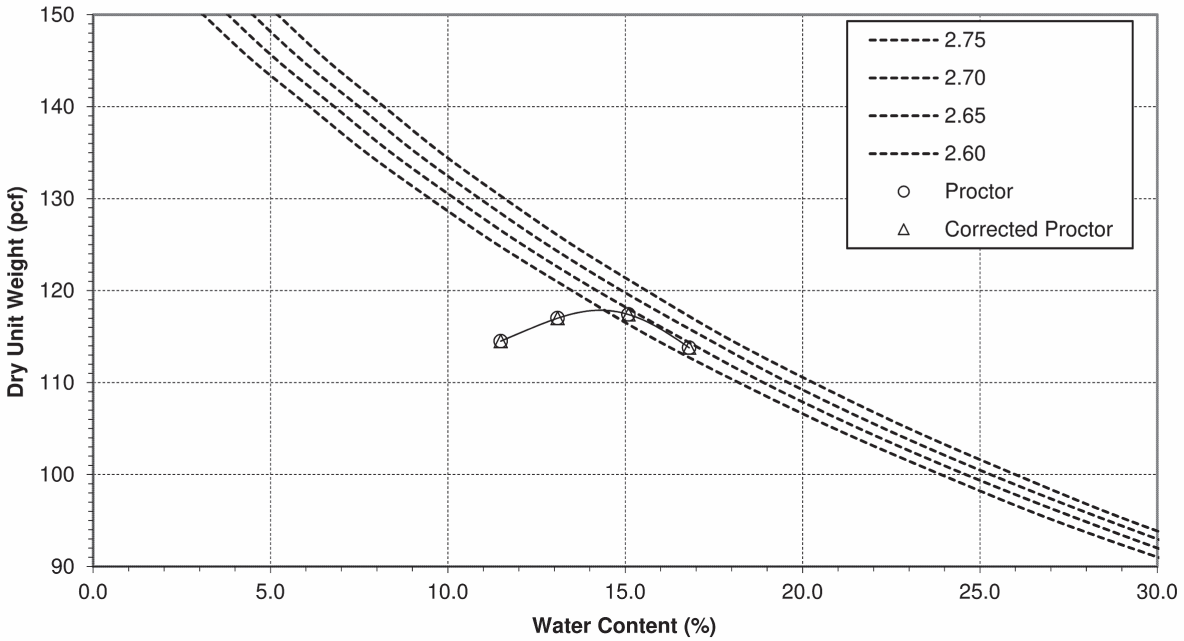
Laboratory Test Report

Client: **Port of San Diego**
Project: **20164596.018A**
Pond 20 Soil Sampling
07-000L - Lab Testing

Report No.: **18-SAN-00480 Rev. 0** Issued: **7/31/2018**

Sampled by: **Jake Lippman** Date: **6/18/2018**
Submitted by: **Jake Lippman** Date: **6/29/2018**

Tested on **7/23/2018** by **L. Bainer**
Material Description: **Black Sandy Clay**
Location: **C-13**



Test Method: ASTM D1557 A	Uncorrected	Corrected
Maximum Dry Unit Weight (pcf)	**117.9**	**na**
Optimum Water Content (%)	**14.3**	**na**
Oversize Fraction, retained on #4 (%)		**<5**
Bulk Specific Gravity of Oversize Fraction		**na**

Rammer Type: Mechanical
Specimen Preparation: Moist

Reviewed on 7/31/2018 by Lee Bainer,
Technician IV

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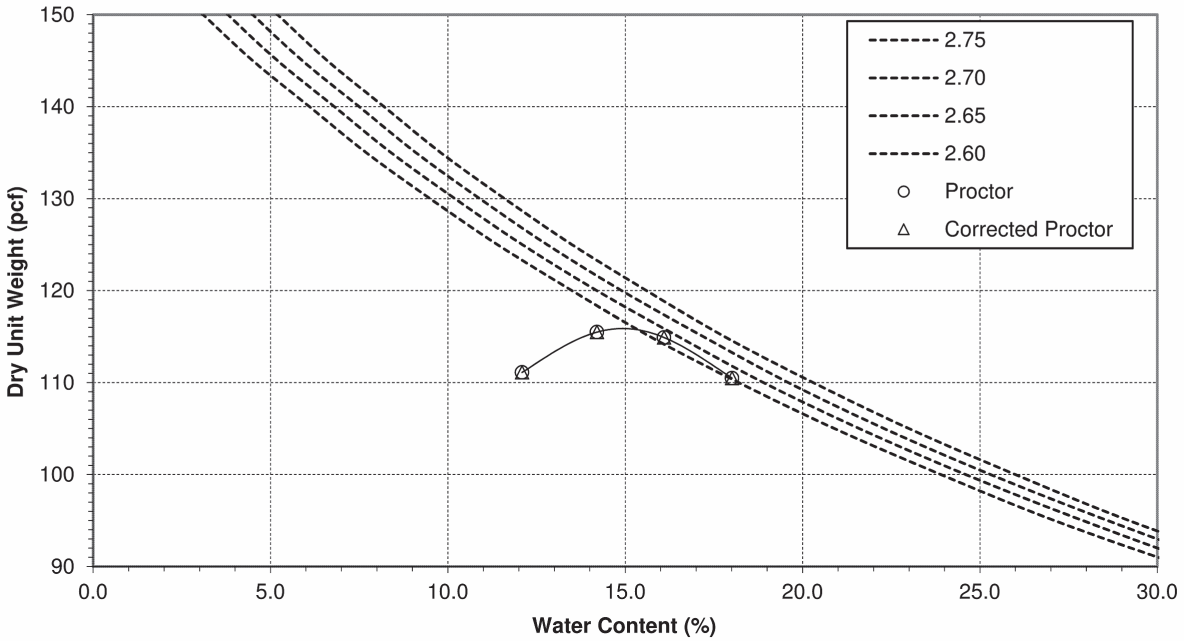
Laboratory Test Report

Client:	**Port of San Diego**	Report No.:	**18-SAN-00480 Rev. 0**	Issued:	**7/31/2018**
Project:	**20164596.018A**				
	Pond 20 Soil Sampling	Sampled by:	**Jake Lippman**	Date:	**6/18/2018**
	07-000L - Lab Testing	Submitted by:	**Jake Lippman**	Date:	**6/29/2018**

Tested on **7/26/2018** by **L. Bainer**

Material Description: **Dark Olive Brown Clay with Sand**

Location: **C-14**



Test Method: ASTM D1557 A	Uncorrected	Corrected
Maximum Dry Unit Weight (pcf)	**115.9**	**na**
Optimum Water Content (%)	**14.9**	**na**
Oversize Fraction, retained on #4 (%)		**<5**
Bulk Specific Gravity of Oversize Fraction		**na**

Rammer Type: Mechanical

Specimen Preparation: Moist

Reviewed on 7/31/2018 by Lee Bainer, Technician IV

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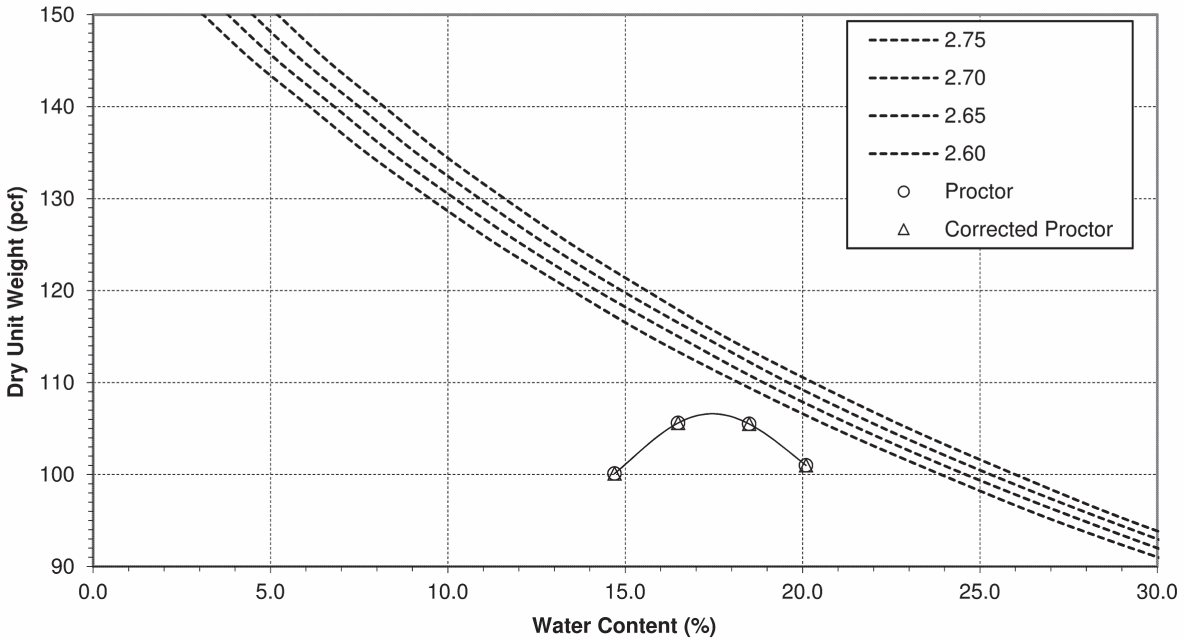
Laboratory Test Report

Client:	**Port of San Diego**	Report No.:	**18-SAN-00480 Rev. 0**	Issued:	**7/31/2018**
Project:	**20164596.018A**				
	Pond 20 Soil Sampling	Sampled by:	**Jake Lippman**	Date:	**6/18/2018**
	07-000L - Lab Testing	Submitted by:	**Jake Lippman**	Date:	**6/29/2018**

Tested on **7/23/2018** by **L. Bainer**

Material Description: **Black Silt**

Location: **C-15**



Test Method: ASTM D1557 A	Uncorrected	Corrected
Maximum Dry Unit Weight (pcf)	**106.6**	**na**
Optimum Water Content (%)	**17.5**	**na**
Oversize Fraction, retained on #4 (%)		**<5**
Bulk Specific Gravity of Oversize Fraction		**na**

Rammer Type: Mechanical

Specimen Preparation: Moist

Reviewed on 7/31/2018 by Lee Bainer, Technician IV

Limitations: Pursuant to applicable building codes, the results presented in this report are for the exclusive use of the client and the registered design professional in responsible charge. The results apply only to the samples tested. If changes to the specifications were made and not communicated to Kleinfelder, Kleinfelder assumes no responsibility for pass/fail statements (meets/did not meet). , if provided. This report may not be reproduced, except in full, without written approval of Kleinfelder.

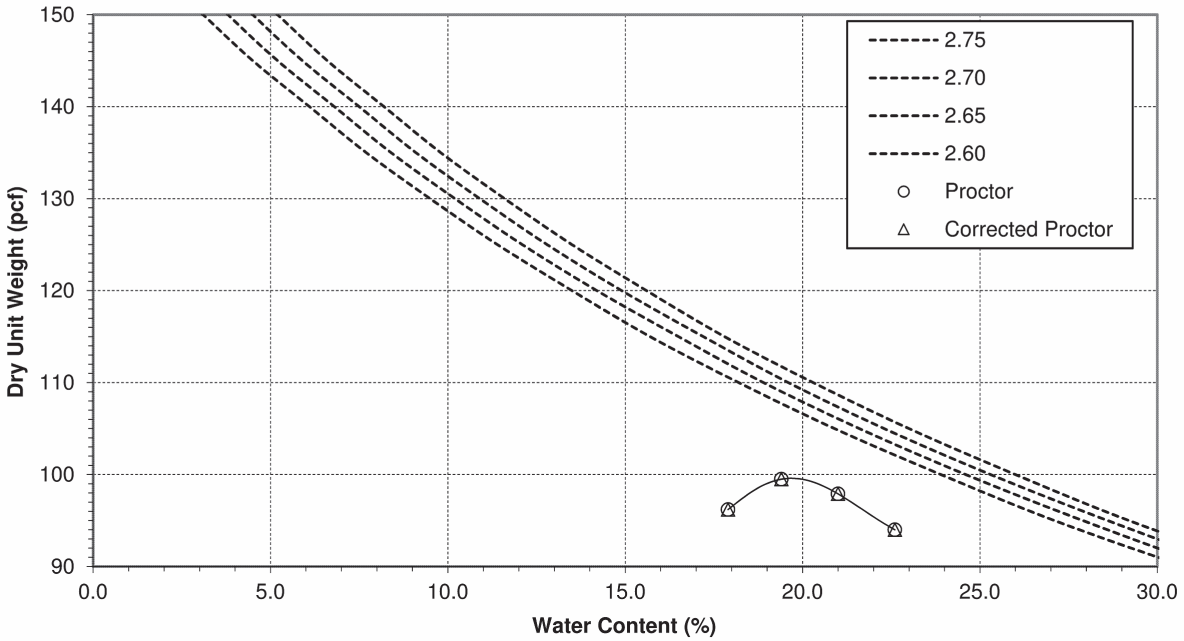
Laboratory Test Report

Client:	**Port of San Diego**	Report No.:	**18-SAN-00480 Rev. 0**	Issued:	**7/31/2018**
Project:	**20164596.018A**				
	Pond 20 Soil Sampling	Sampled by:	**Jake Lippman**	Date:	**6/18/2018**
	07-000L - Lab Testing	Submitted by:	**Jake Lippman**	Date:	**6/29/2018**

Tested on **7/27/2018** by **L. Bainer**

Material Description: **Dark Gray Clay**

Location: **C-16**



Test Method: ASTM D1557 A	Uncorrected	Corrected
Maximum Dry Unit Weight (pcf)	**99.6**	**na**
Optimum Water Content (%)	**19.7**	**na**
Oversize Fraction, retained on #4 (%)		**<5**
Bulk Specific Gravity of Oversize Fraction		**na**

Rammer Type: Manual

Specimen Preparation: Moist

Reviewed on 7/31/2018 by Lee Bainer, Technician IV

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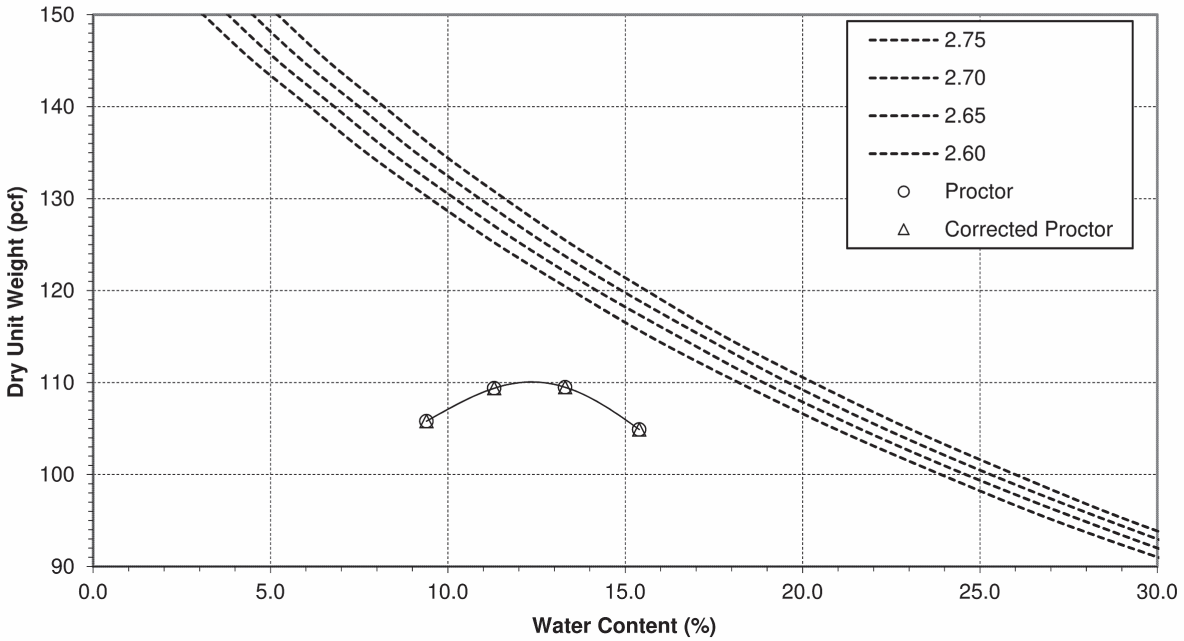
Laboratory Test Report

Client:	**Port of San Diego**	Report No.:	**18-SAN-00480 Rev. 0**	Issued:	**7/31/2018**
Project:	**20164596.018A**				
	Pond 20 Soil Sampling	Sampled by:	**Jake Lippman**	Date:	**6/18/2018**
	07-000L - Lab Testing	Submitted by:	**Jake Lippman**	Date:	**6/29/2018**

Tested on **7/26/2018** by **L. Bainer**

Material Description: **Light Brown Sand with Silt**

Location: **C-17**



Test Method: ASTM D1557 A	Uncorrected	Corrected
Maximum Dry Unit Weight (pcf)	**110.1**	**na**
Optimum Water Content (%)	**12.4**	**na**
Oversize Fraction, retained on #4 (%)		**<5**
Bulk Specific Gravity of Oversize Fraction		**na**

Rammer Type: Manual

Specimen Preparation: Moist

Reviewed on 7/31/2018 by Lee Bainer, Technician IV

Limitations: Pursuant to applicable building codes, the results presented in this report are for the exclusive use of the client and the registered design professional in responsible charge. The results apply only to the samples tested. If changes to the specifications were made and not communicated to Kleinfelder, Kleinfelder assumes no responsibility for pass/fail statements (meets/did not meet). , if provided. This report may not be reproduced, except in full, without written approval of Kleinfelder.

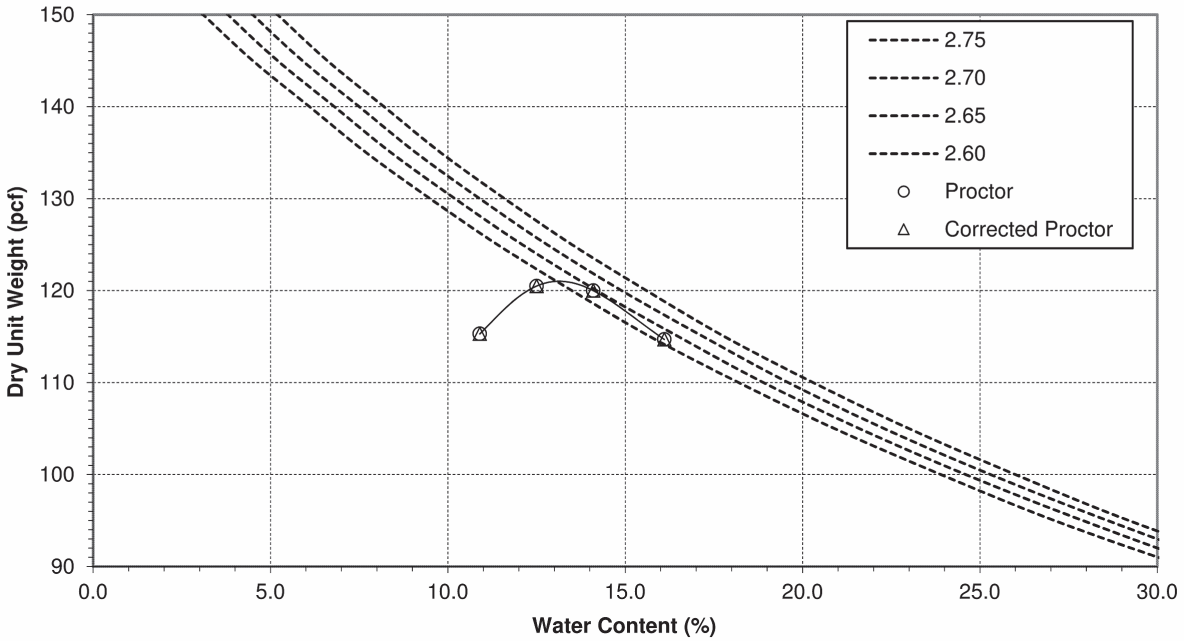
Laboratory Test Report

Client:	**Port of San Diego**	Report No.:	**18-SAN-00480 Rev. 0**	Issued:	**7/31/2018**
Project:	**20164596.018A**				
	Pond 20 Soil Sampling	Sampled by:	**Jake Lippman**	Date:	**6/18/2018**
	07-000L - Lab Testing	Submitted by:	**Jake Lippman**	Date:	**6/29/2018**

Tested on **7/27/2018** by **L. Bainer**

Material Description: **Dark Brown Clay with Sand**

Location: **C-18**



Test Method: ASTM D1557 A	Uncorrected	Corrected
Maximum Dry Unit Weight (pcf)	**121.0**	**na**
Optimum Water Content (%)	**13.2**	**na**
Oversize Fraction, retained on #4 (%)		**<5**
Bulk Specific Gravity of Oversize Fraction		**na**

Rammer Type: Mechanical

Specimen Preparation: Moist

Reviewed on 7/31/2018 by Lee Bainer, Technician IV

Limitations: Pursuant to applicable building codes, the results presented in this report are for the exclusive use of the client and the registered design professional in responsible charge. The results apply only to the samples tested. If changes to the specifications were made and not communicated to Kleinfelder, Kleinfelder assumes no responsibility for pass/fail statements (meets/did not meet). , if provided. This report may not be reproduced, except in full, without written approval of Kleinfelder.

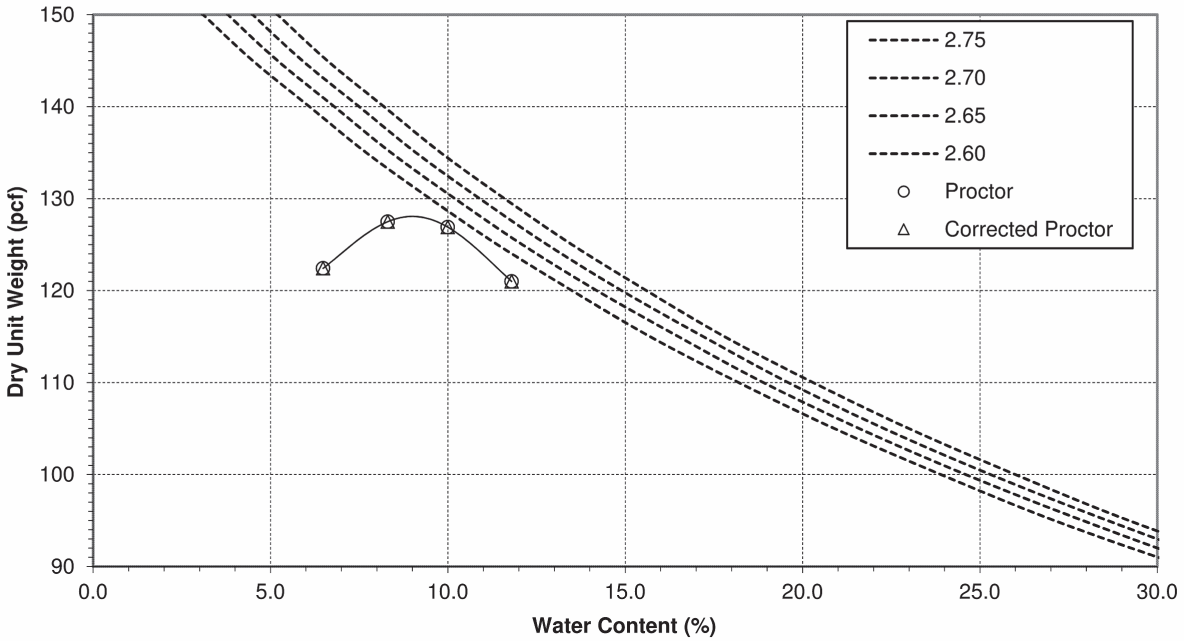
Laboratory Test Report

Client:	**Port of San Diego**	Report No.:	**18-SAN-00480 Rev. 0**	Issued:	**7/31/2018**
Project:	**20164596.018A**				
	Pond 20 Soil Sampling	Sampled by:	**Jake Lippman**	Date:	**6/18/2018**
	07-000L - Lab Testing	Submitted by:	**Jake Lippman**	Date:	**6/29/2018**

Tested on **7/10/2018** by **L. Bainer**

Material Description: **Light Brown Silty Sand**

Location: **C19**



Test Method: ASTM D1557 A	Uncorrected	Corrected
Maximum Dry Unit Weight (pcf)	**128.1**	**na**
Optimum Water Content (%)	**9.0**	**na**
Oversize Fraction, retained on #4 (%)		**<5**
Bulk Specific Gravity of Oversize Fraction		**na**

Rammer Type: Mechanical

Specimen Preparation: Moist

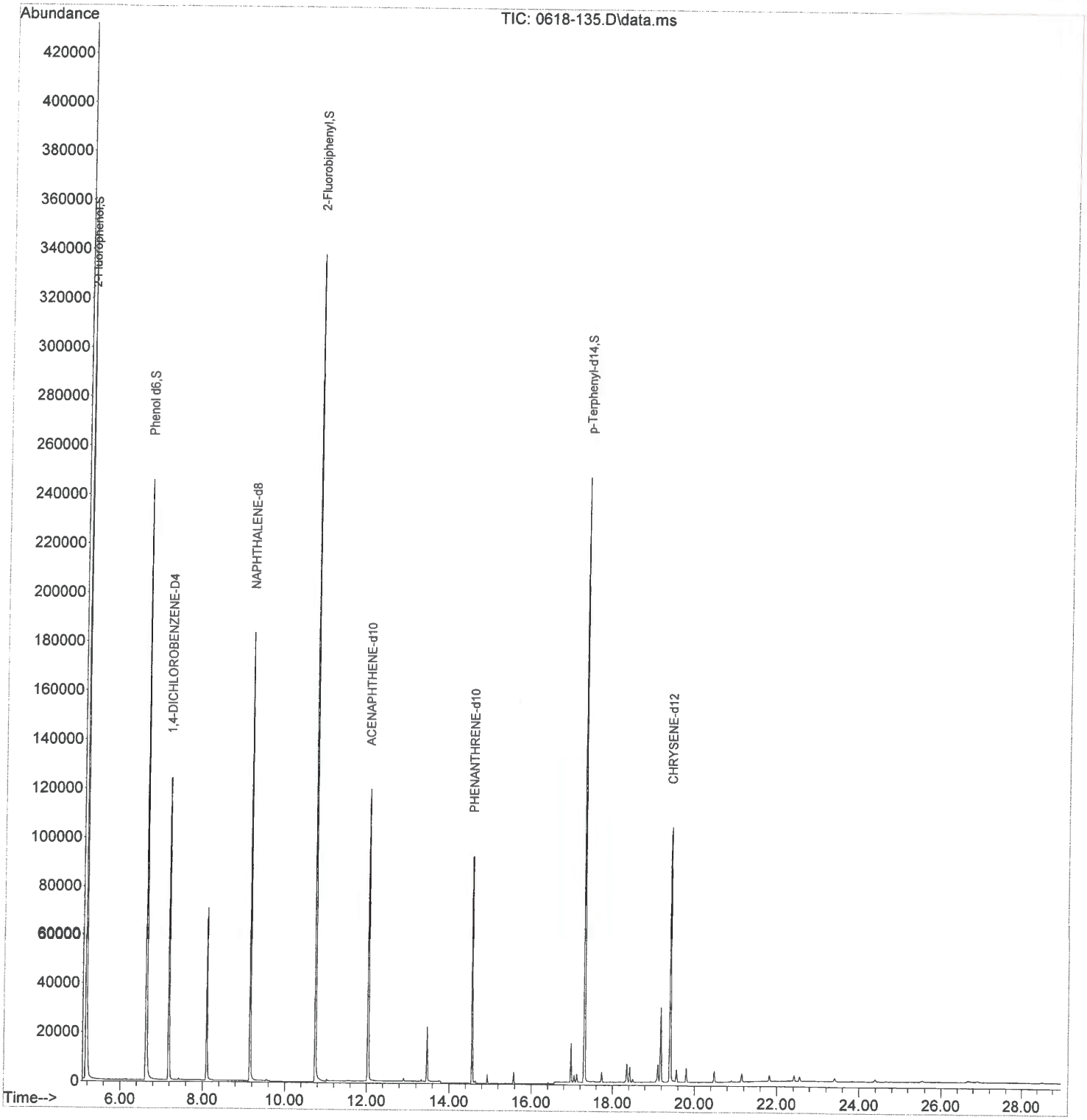
Reviewed on 7/31/2018 by Lee Bainer, Technician IV

Limitations: Pursuant to applicable building codes, the results presented in this report are for the exclusive use of the client and the registered design professional in responsible charge. The results apply only to the samples tested. If changes to the specifications were made and not communicated to Kleinfelder, Kleinfelder assumes no responsibility for pass/fail statements (meets/did not meet). , if provided. This report may not be reproduced, except in full, without written approval of Kleinfelder.

Quantitation Report (QT Reviewed)

Data Path : D:\DATA\Jun2018\062918\
Data File : 0618-135.D
Acq On : 29 Jun 2018 5:47 pm
Operator : zh
Sample : S-0627 MB
Misc : V12-226-A; M=0.02, D=1
ALS Vial : 4 Sample Multiplier: 1

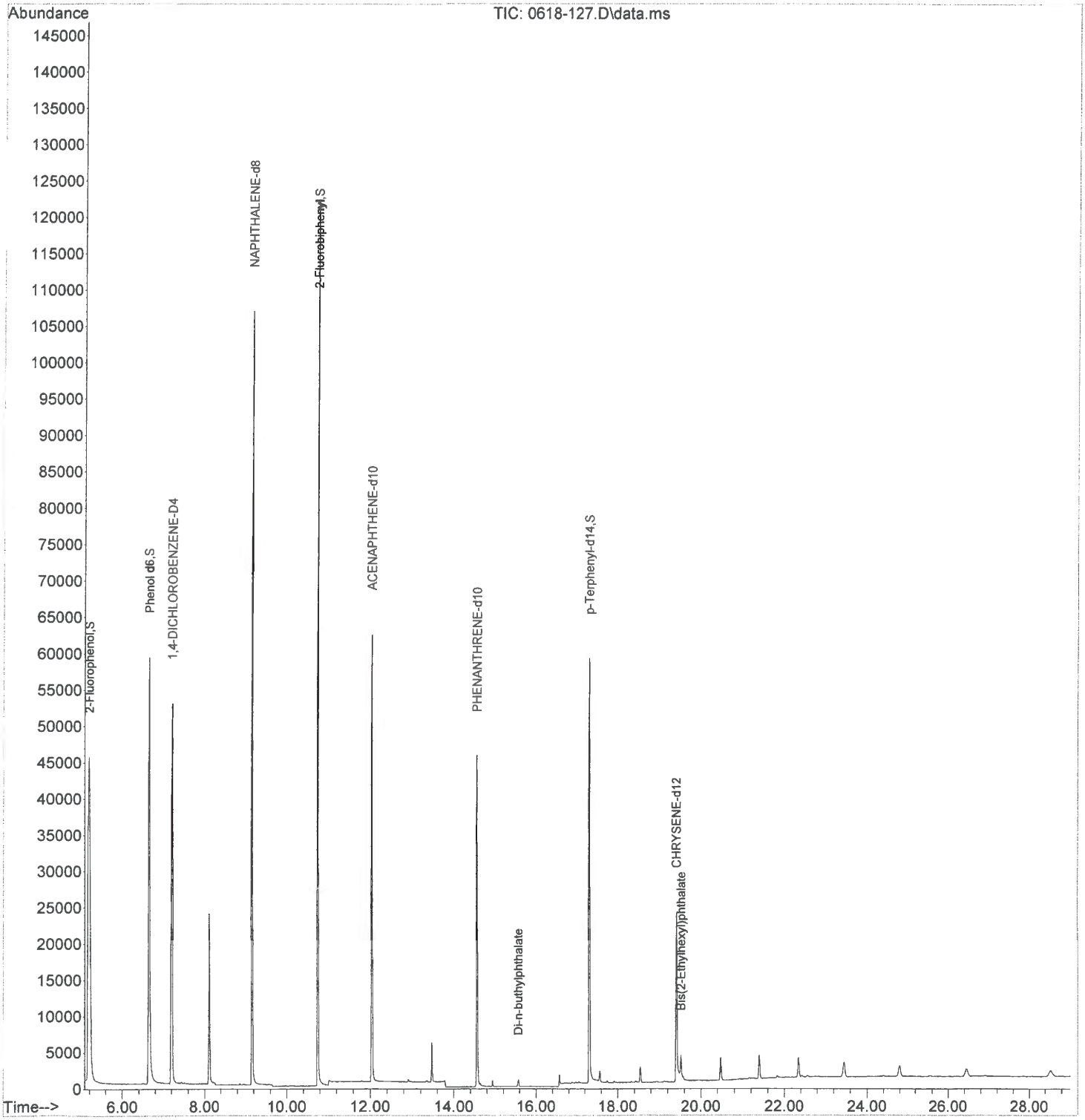
Quant Time: Jul 02 08:56:17 2018
Quant Method : C:\msdchem\1\METHODS\BNA_062818Q.M
Quant Title :
QLast Update : Mon Jul 02 08:40:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : D:\DATA\Jun2018\062818\
Data File : 0618-127.D
Acq On : 29 Jun 2018 1:00 pm
Operator : zh
Sample : S-93067.18 50G->1mL
Misc : V12-226-A; M=0.02, D=1
ALS Vial : 33 Sample Multiplier: 1

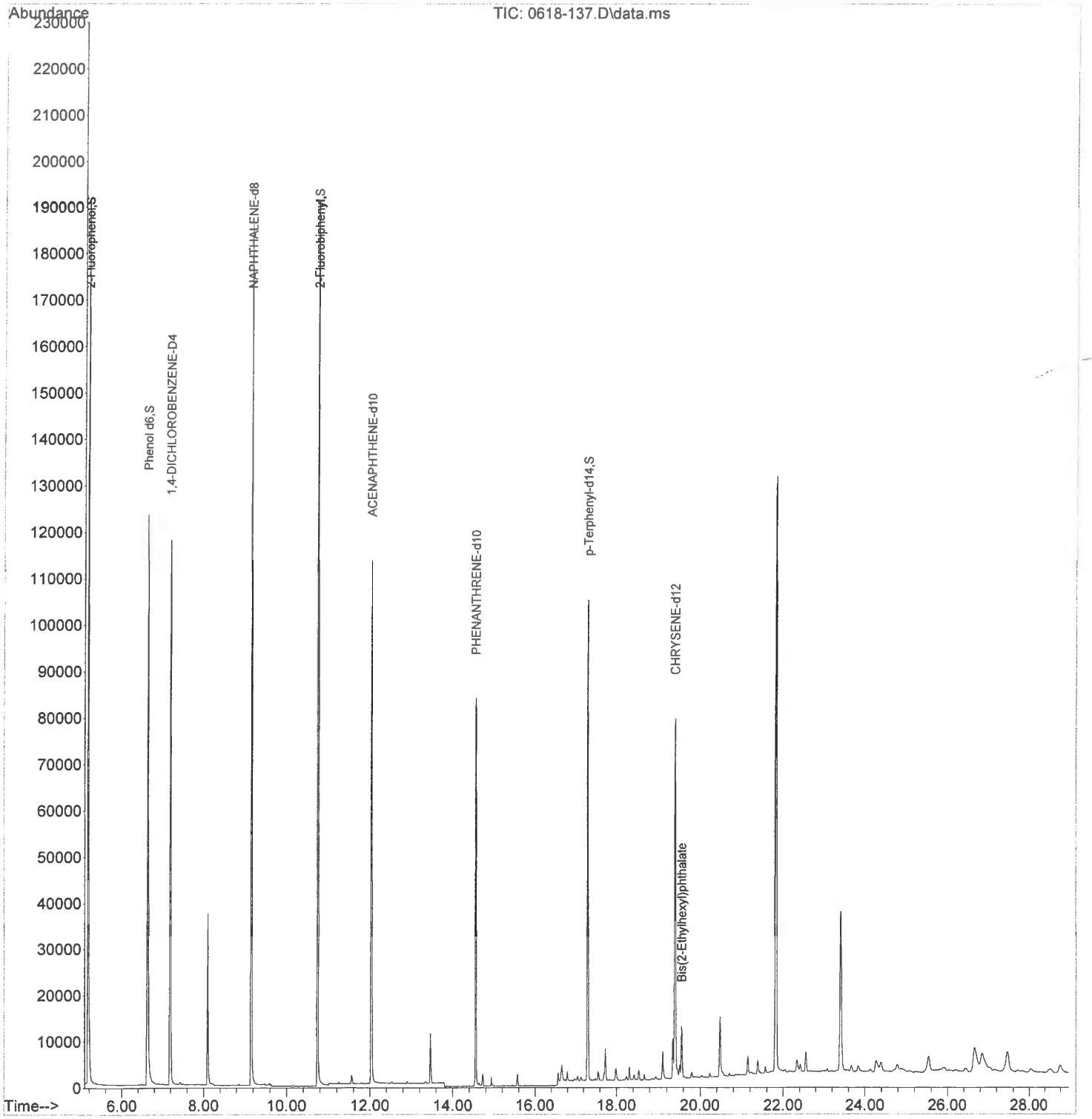
Quant Time: Jul 02 14:43:19 2018
Quant Method : C:\msdchem\1\METHODS\BNA_062818Q.M
Quant Title :
QLast Update : Mon Jul 02 11:44:48 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : D:\DATA\Jun2018\062918\
Data File : 0618-137.D
Acq On : 29 Jun 2018 7:06 pm
Operator : zh
Sample : S-93067.17 50G->1mL
Misc : V12-226-A; M=0.02, D=1
ALS Vial : 6 Sample Multiplier: 1

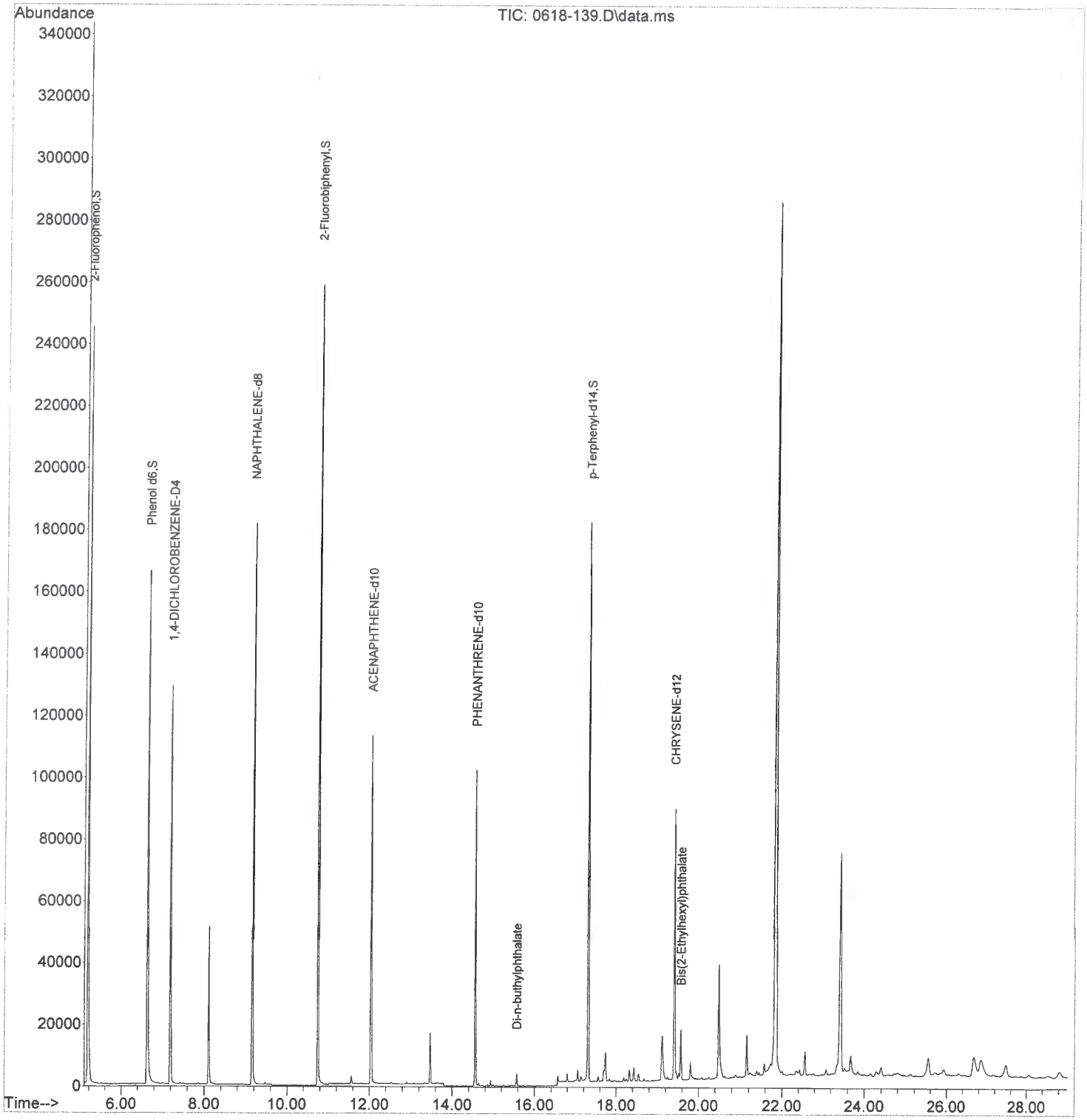
Quant Time: Jul 02 08:57:43 2018
Quant Method : C:\msdchem\1\METHODS\BNA_062818Q.M
Quant Title :
QLast Update : Mon Jul 02 08:40:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : D:\DATA\Jun2018\062918\
Data File : 0618-139.D
Acq On : 29 Jun 2018 8:24 pm
Operator : zh
Sample : S-93067.20 50G->1mL
Misc : V12-226-A; M=0.02, D=1
ALS Vial : 8 Sample Multiplier: 1

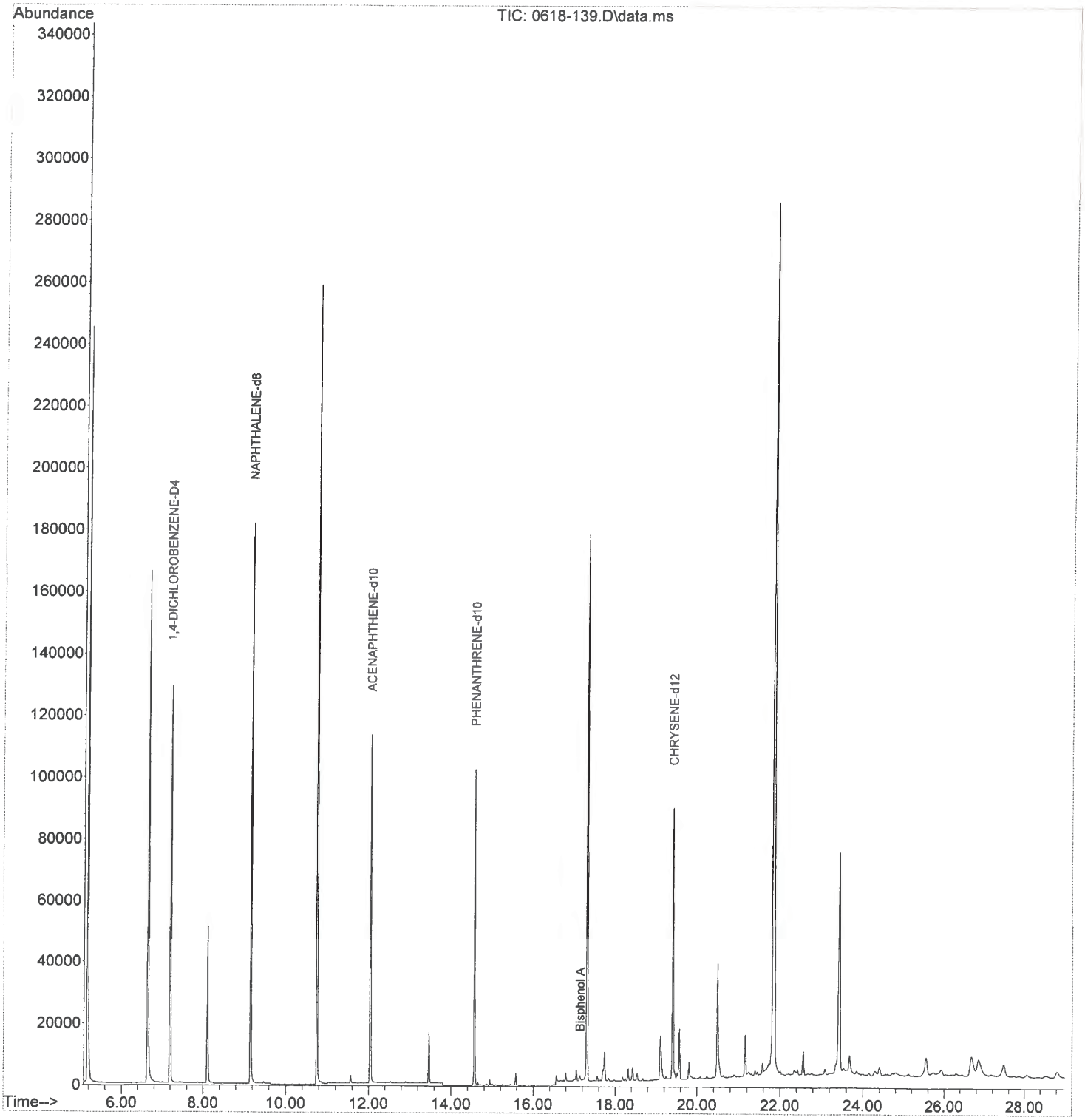
Quant Time: Jul 02 09:03:56 2018
Quant Method : C:\msdchem\1\METHODS\BNA_062818Q.M
Quant Title :
QLast Update : Mon Jul 02 08:40:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : D:\DATA\Jun2018\062918\
Data File : 0618-139.D
Acq On : 29 Jun 2018 8:24 pm
Operator : zh
Sample : S-93067.20 50G->1mL
Misc : V12-226-A; M=0.02, D=1
ALS Vial : 8 Sample Multiplier: 1

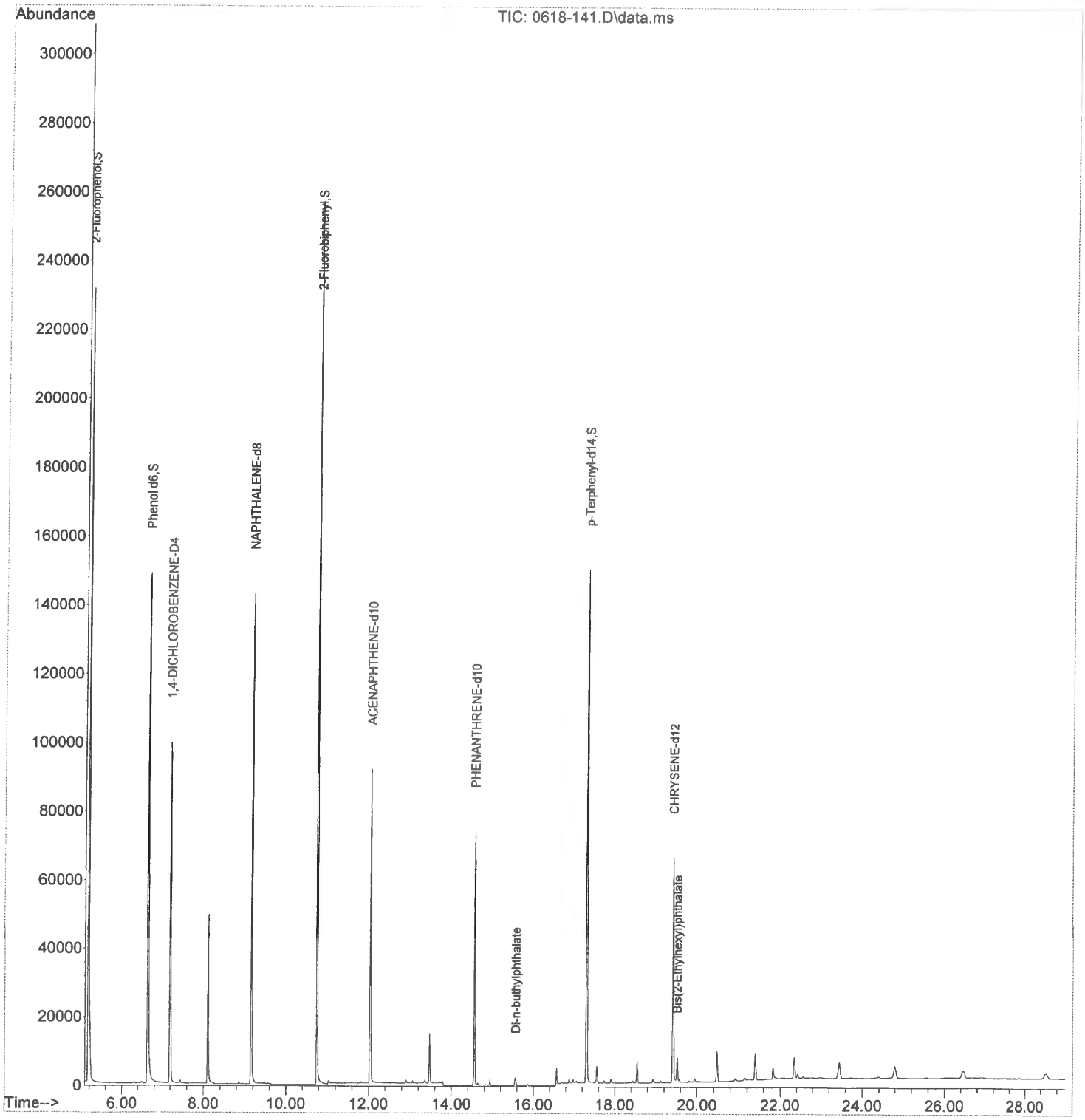
Quant Time: Jul 03 10:06:49 2018
Quant Method : C:\msdchem\1\METHODS\BisphA_062818Q.M
Quant Title :
QLast Update : Mon Jul 02 14:23:57 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : D:\DATA\Jun2018\062918\
Data File : 0618-141.D
Acq On : 29 Jun 2018 9:43 pm
Operator : zh
Sample : S-93067.22 50G->1mL
Misc : V12-226-A; M=0.02, D=1
ALS Vial : 10 Sample Multiplier: 1

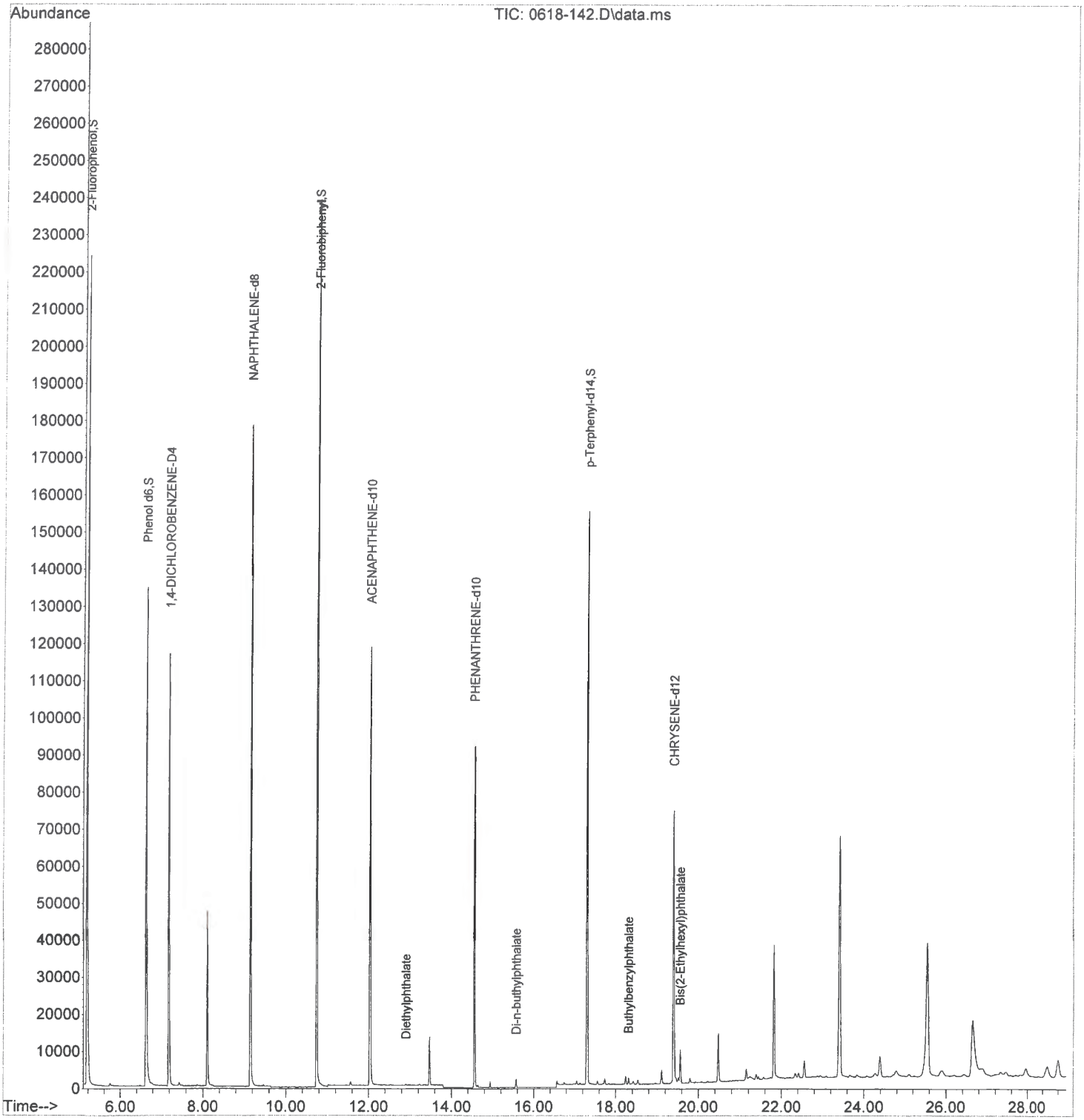
Quant Time: Jul 02 09:10:08 2018
Quant Method : C:\msdchem\1\METHODS\BNA_062818Q.M
Quant Title :
QLast Update : Mon Jul 02 08:40:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : D:\DATA\Jun2018\062918\
Data File : 0618-142.D
Acq On : 29 Jun 2018 10:22 pm
Operator : zh
Sample : S-93067.23 5OG->1mL
Misc : V12-226-A; M=0.02, D=1
ALS Vial : 11 Sample Multiplier: 1

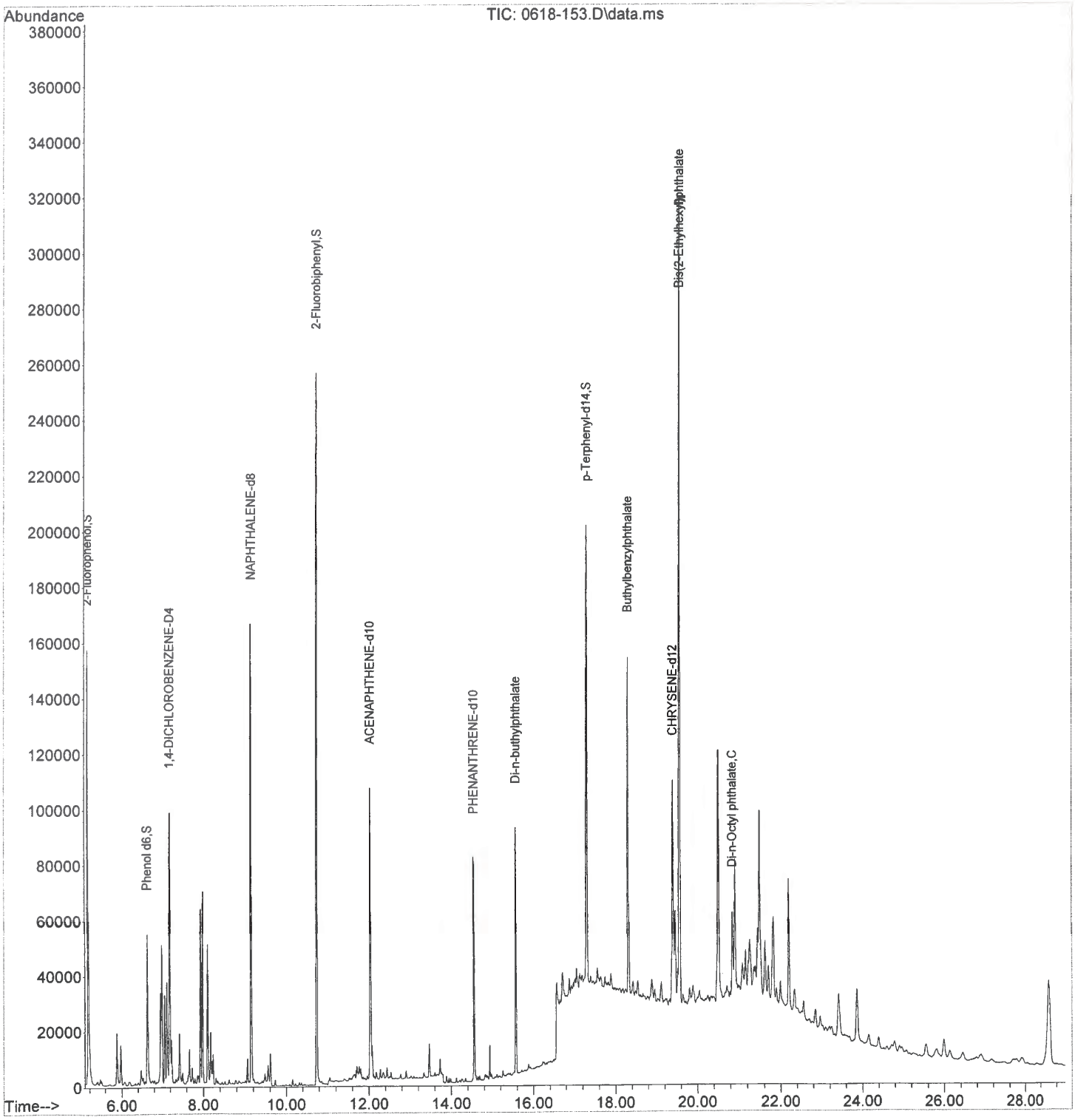
Quant Time: Jul 02 09:11:33 2018
Quant Method : C:\msdchem\1\METHODS\BNA_062818Q.M
Quant Title :
QLast Update : Mon Jul 02 08:40:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : D:\DATA\Jun2018\062918\
Data File : 0618-153.D
Acq On : 30 Jun 2018 5:12 am
Operator : zh
Sample : S-93067.01 5G->1mL
Misc : V12-226-A; M=0.2, D=10
ALS Vial : 19 Sample Multiplier: 1

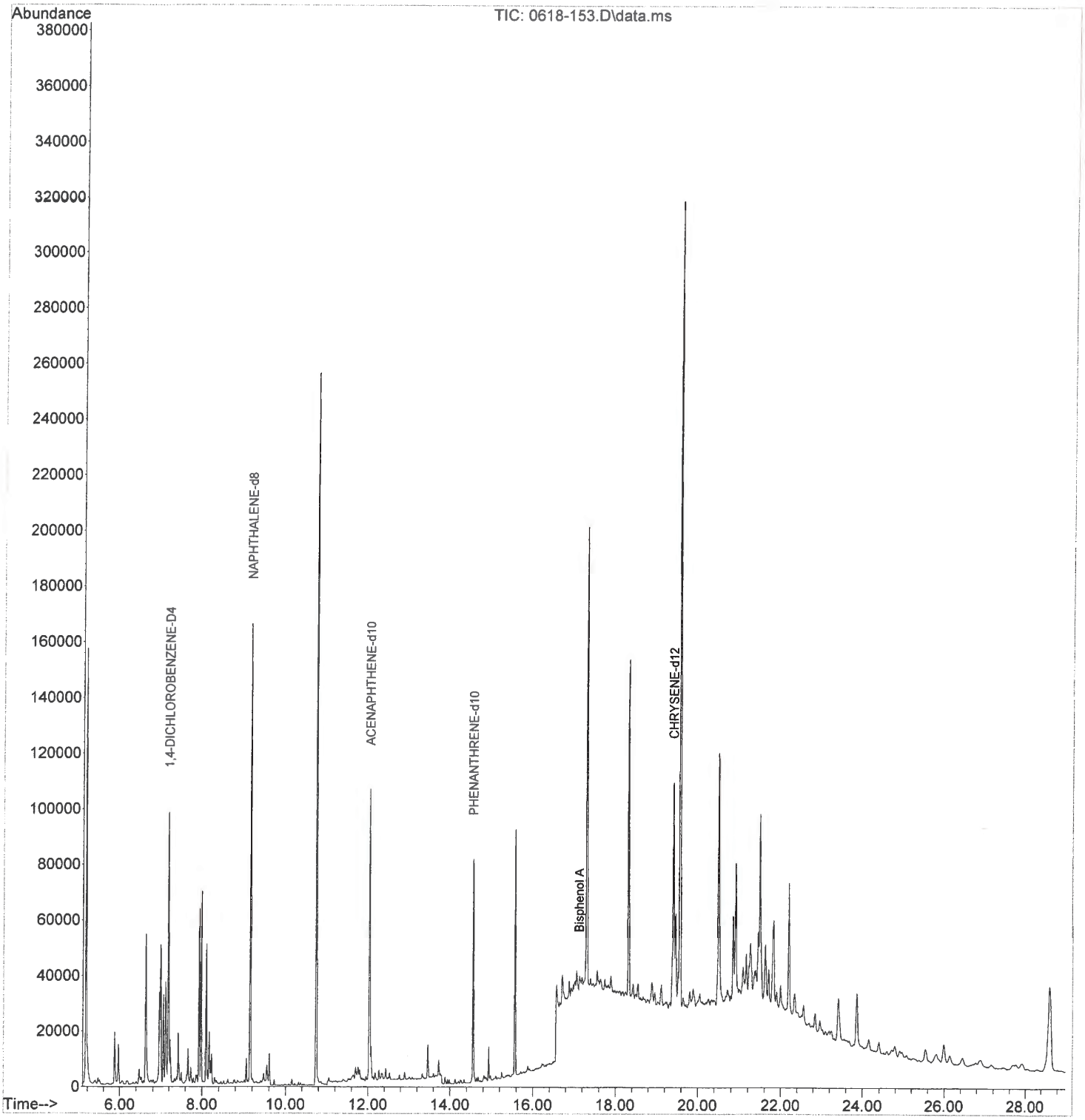
Quant Time: Jul 02 09:23:26 2018
Quant Method : C:\msdchem\1\METHODS\BNA_062818Q.M
Quant Title :
QLast Update : Mon Jul 02 08:40:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : D:\DATA\Jun2018\062918\
Data File : 0618-153.D
Acq On : 30 Jun 2018 5:12 am
Operator : zh
Sample : S-93067.01 5G->1mL
Misc : V12-226-A; M=0.2, D=10
ALS Vial : 19 Sample Multiplier: 1

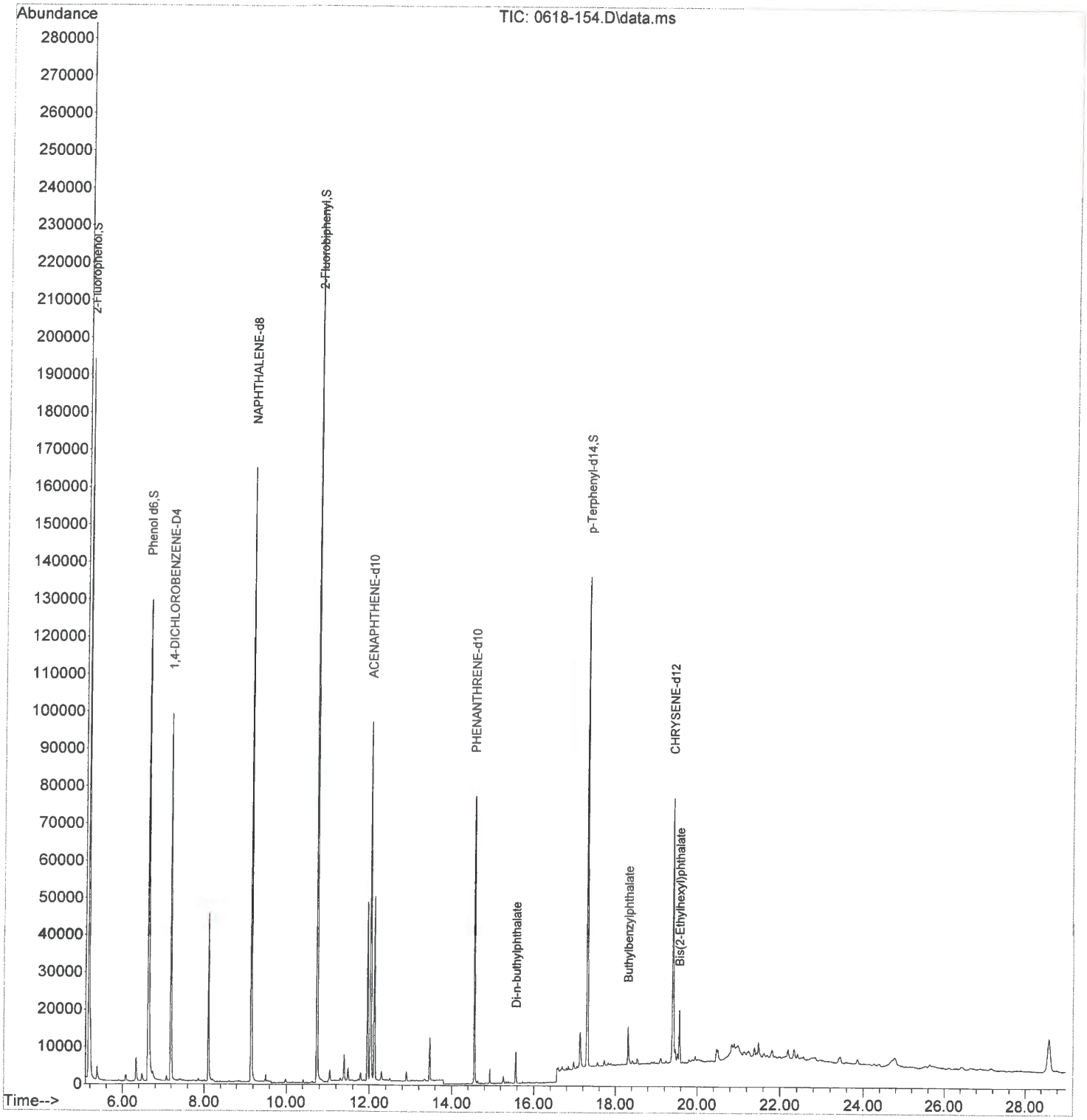
Quant Time: Jul 03 10:09:46 2018
Quant Method : C:\msdchem\1\METHODS\BisphA_062818Q.M
Quant Title :
QLast Update : Mon Jul 02 14:23:57 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : D:\DATA\Jun2018\062918\
Data File : 0618-154.D
Acq On : 30 Jun 2018 5:52 am
Operator : zh
Sample : S-93067.02 50G->1mL
Misc : V12-226-A; M=0.02, D=1
ALS Vial : 20 Sample Multiplier: 1

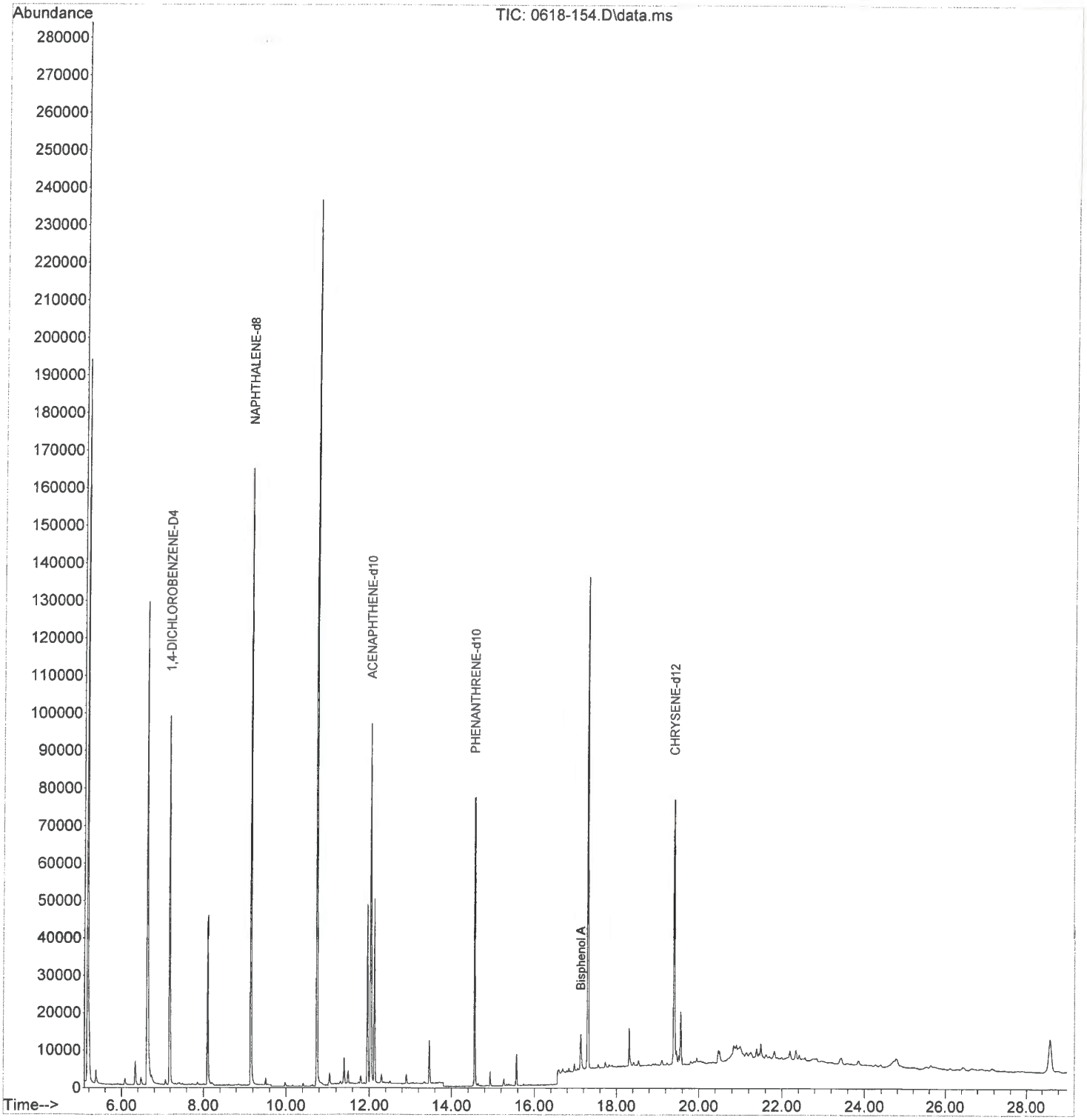
Quant Time: Jul 02 09:27:32 2018
Quant Method : C:\msdchem\1\METHODS\BNA_062818Q.M
Quant Title :
QLast Update : Mon Jul 02 08:40:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : D:\DATA\Jun2018\062918\
Data File : 0618-154.D
Acq On : 30 Jun 2018 5:52 am
Operator : zh
Sample : S-93067.02 5OG->1mL
Misc : V12-226-A; M=0.02, D=1
ALS Vial : 20 Sample Multiplier: 1

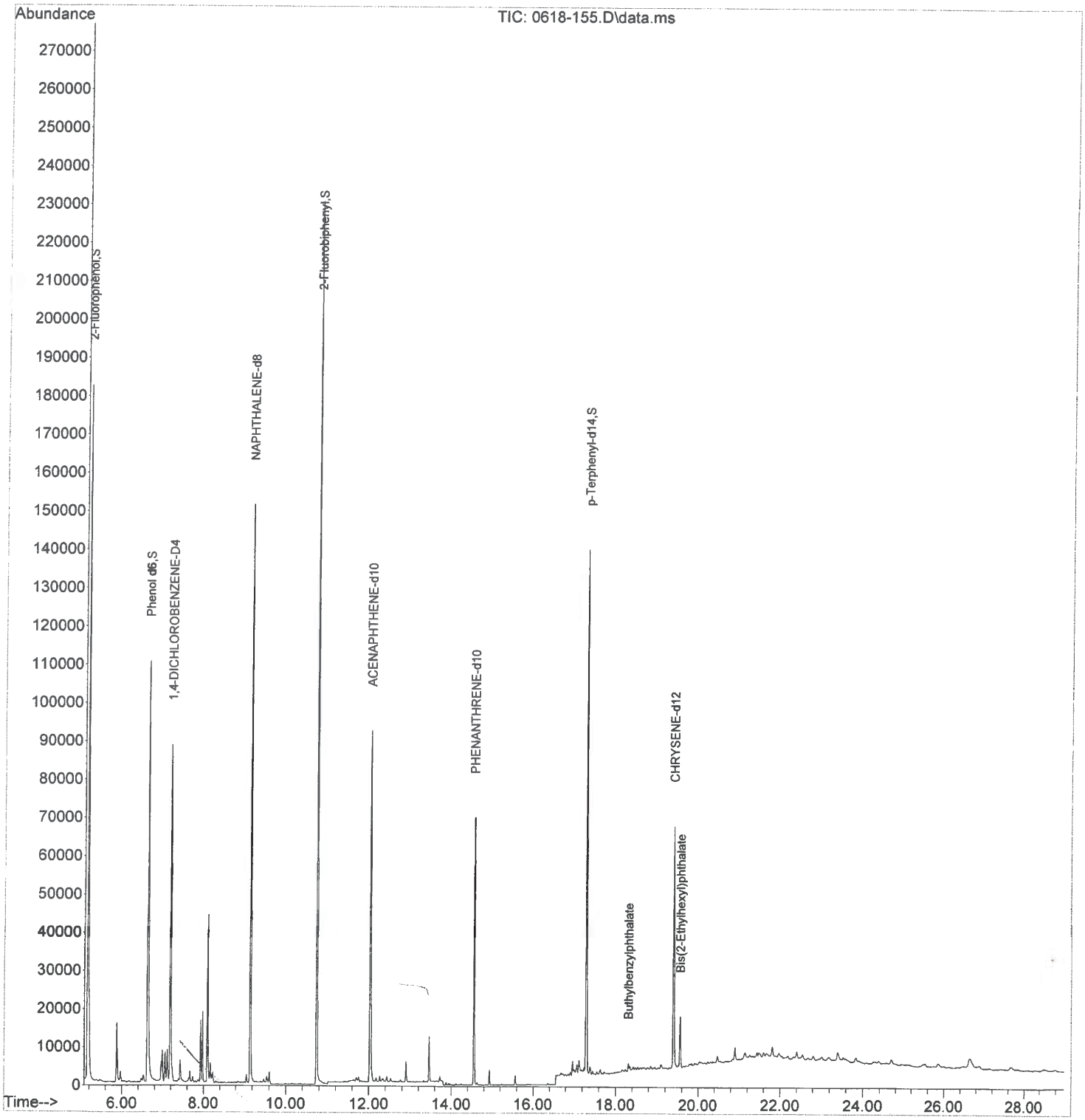
Quant Time: Jul 03 10:10:15 2018
Quant Method : C:\msdchem\1\METHODS\BisphA_062818Q.M
Quant Title :
QLast Update : Mon Jul 02 14:23:57 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : D:\DATA\Jun2018\062918\
Data File : 0618-155.D
Acq On : 30 Jun 2018 6:31 am
Operator : zh
Sample : S-93067.05 50G->1mL
Misc : V12-226-A; M=0.02, D=1
ALS Vial : 21 Sample Multiplier: 1

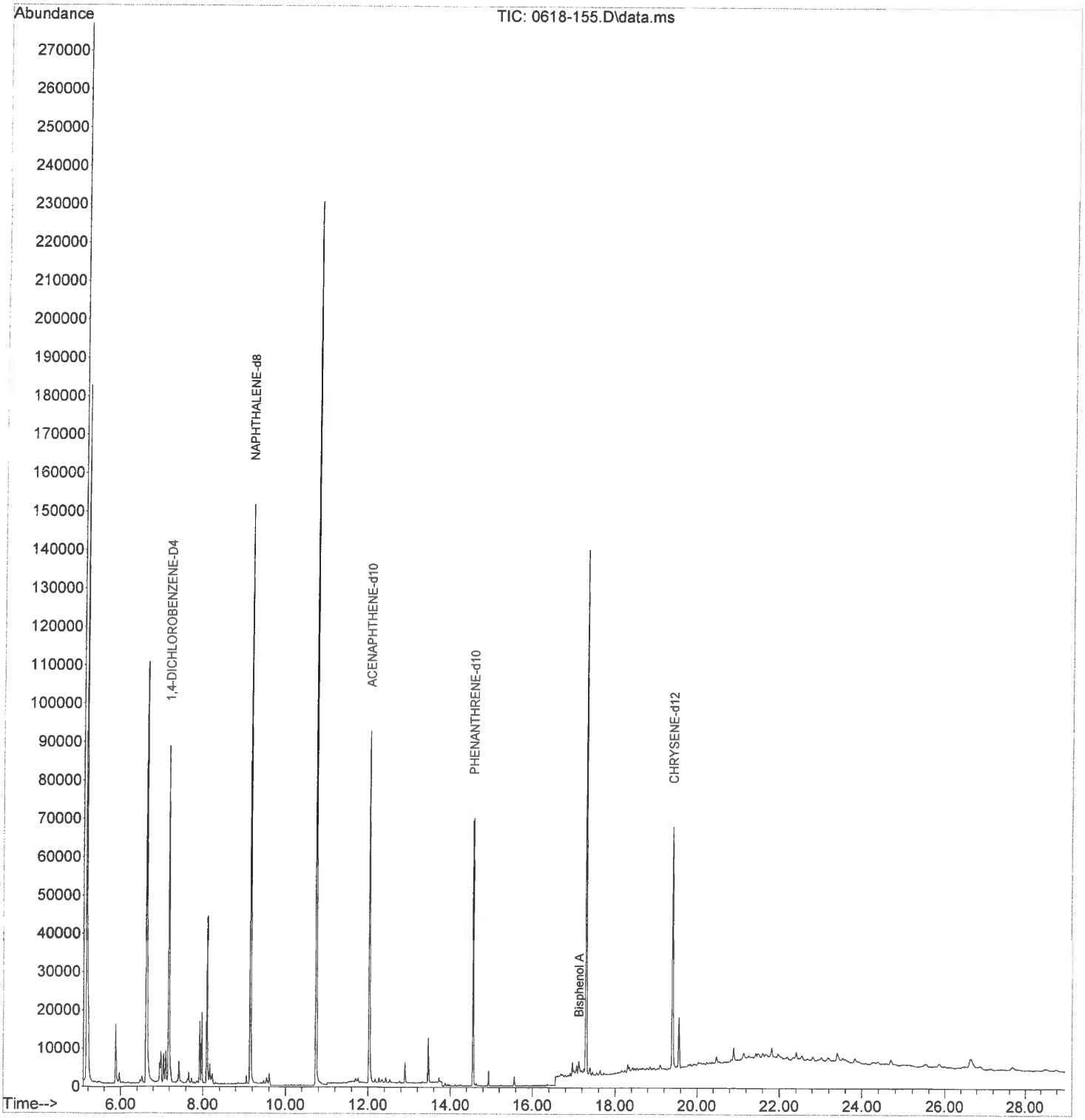
Quant Time: Jul 02 09:30:55 2018
Quant Method : C:\msdchem\1\METHODS\BNA_062818Q.M
Quant Title :
QLast Update : Mon Jul 02 08:40:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : D:\DATA\Jun2018\062918\
Data File : 0618-155.D
Acq On : 30 Jun 2018 6:31 am
Operator : zh
Sample : S-93067.05 50G->1mL
Misc : V12-226-A; M=0.02, D=1
ALS Vial : 21 Sample Multiplier: 1

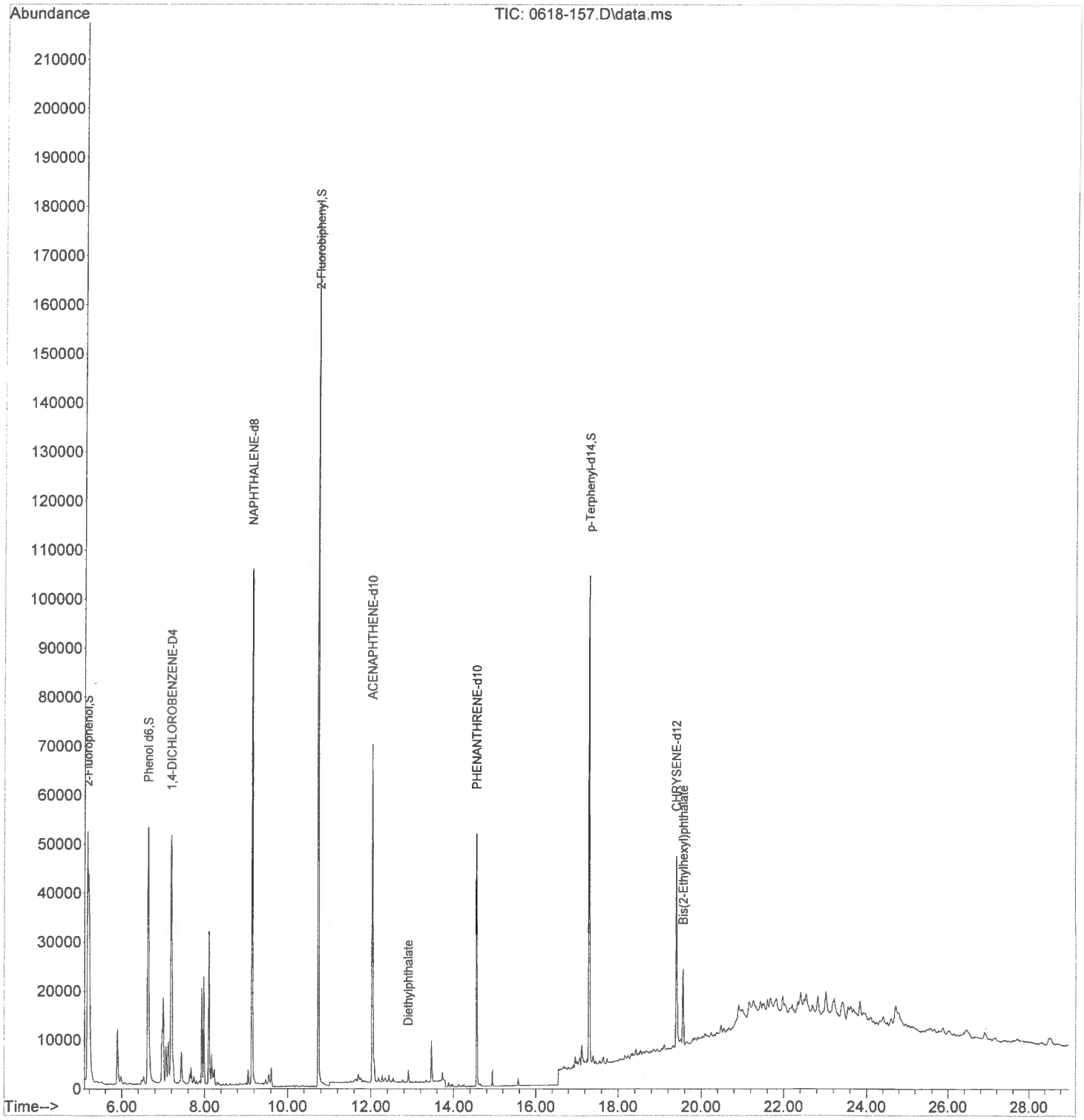
Quant Time: Jul 03 10:10:57 2018
Quant Method : C:\msdchem\1\METHODS\BisphA_062818Q.M
Quant Title :
QLast Update : Mon Jul 02 14:23:57 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : D:\DATA\Jun2018\062918\
Data File : 0618-157.D
Acq On : 30 Jun 2018 7:51 am
Operator : zh
Sample : S-93067.08 5G->1mL
Misc : V12-226-A; M=0.2, D=10
ALS Vial : 23 Sample Multiplier: 1

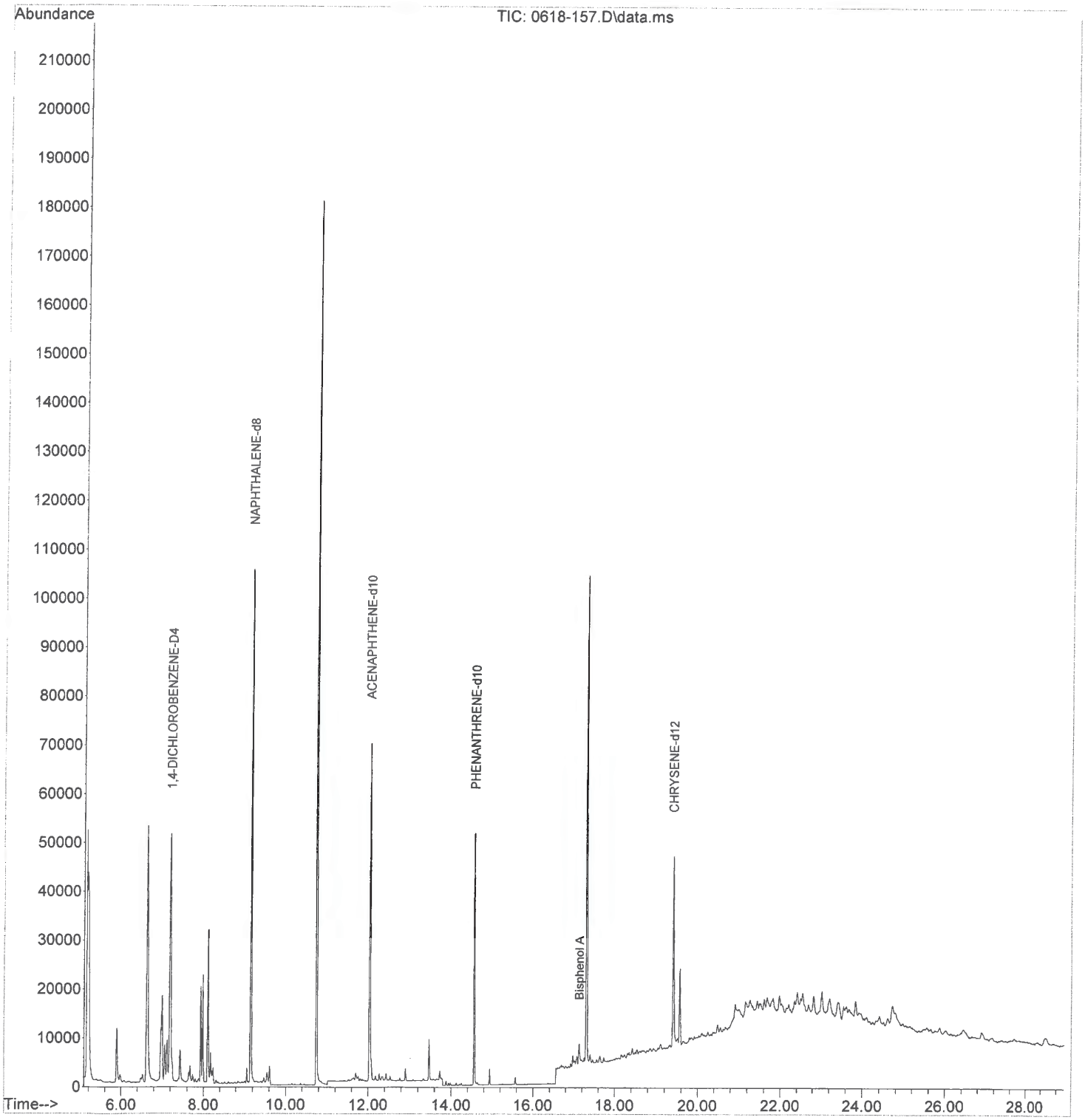
Quant Time: Jul 02 09:32:49 2018
Quant Method : C:\msdchem\1\METHODS\BNA_062818Q.M
Quant Title :
QLast Update : Mon Jul 02 08:40:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : D:\DATA\Jun2018\062918\
Data File : 0618-157.D
Acq On : 30 Jun 2018 7:51 am
Operator : zh
Sample : S-93067.08 5G->1mL
Misc : V12-226-A; M=0.2, D=10
ALS Vial : 23 Sample Multiplier: 1

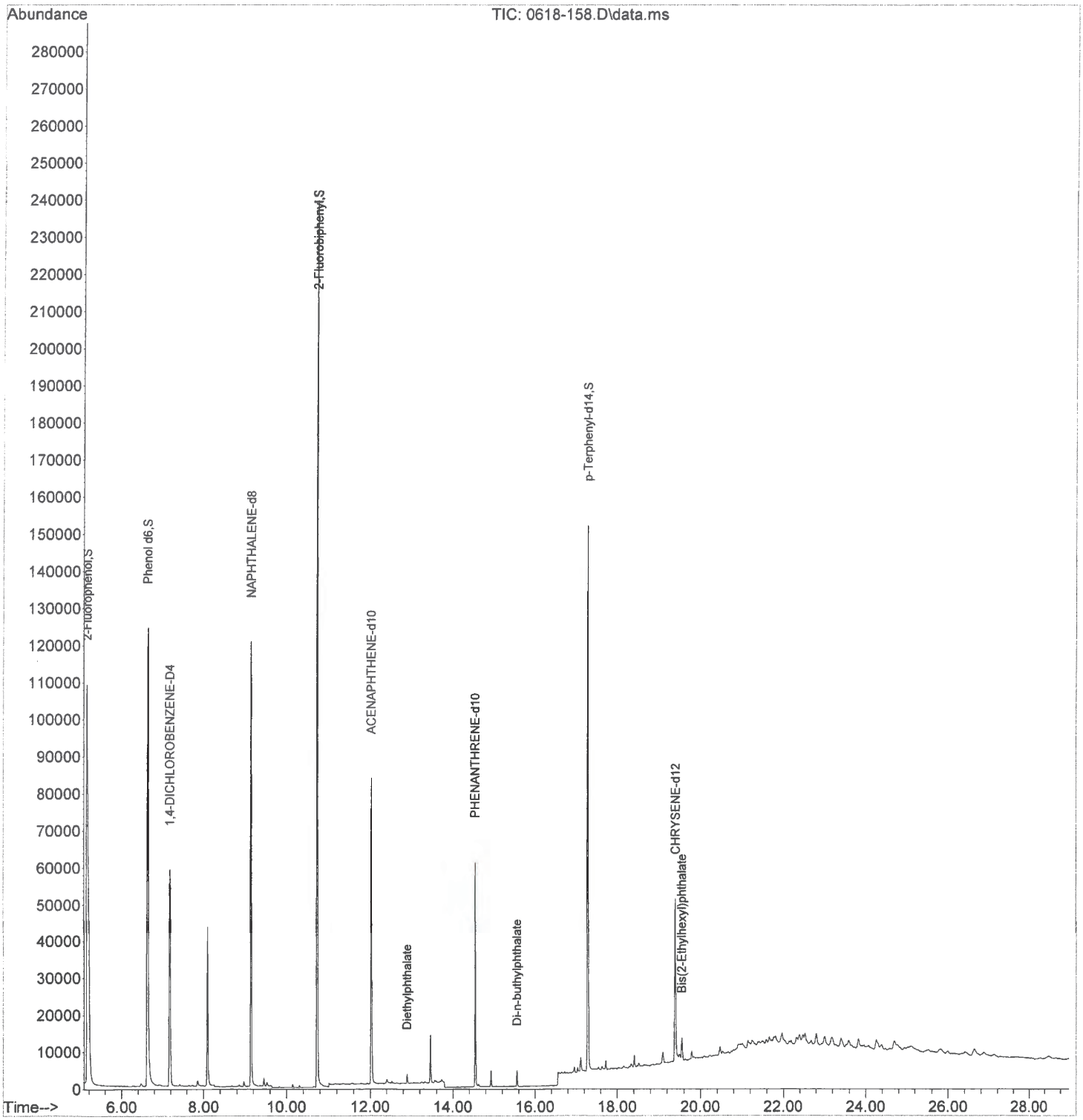
Quant Time: Jul 03 10:12:18 2018
Quant Method : C:\msdchem\1\METHODS\BisphA_062818Q.M
Quant Title :
QLast Update : Mon Jul 02 14:23:57 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : D:\DATA\Jun2018\062918\
Data File : 0618-158.D
Acq On : 30 Jun 2018 8:31 am
Operator : zh
Sample : S-93067.09 5OG->1mL
Misc : V12-226-A; M=0.02, D=1
ALS Vial : 24 Sample Multiplier: 1

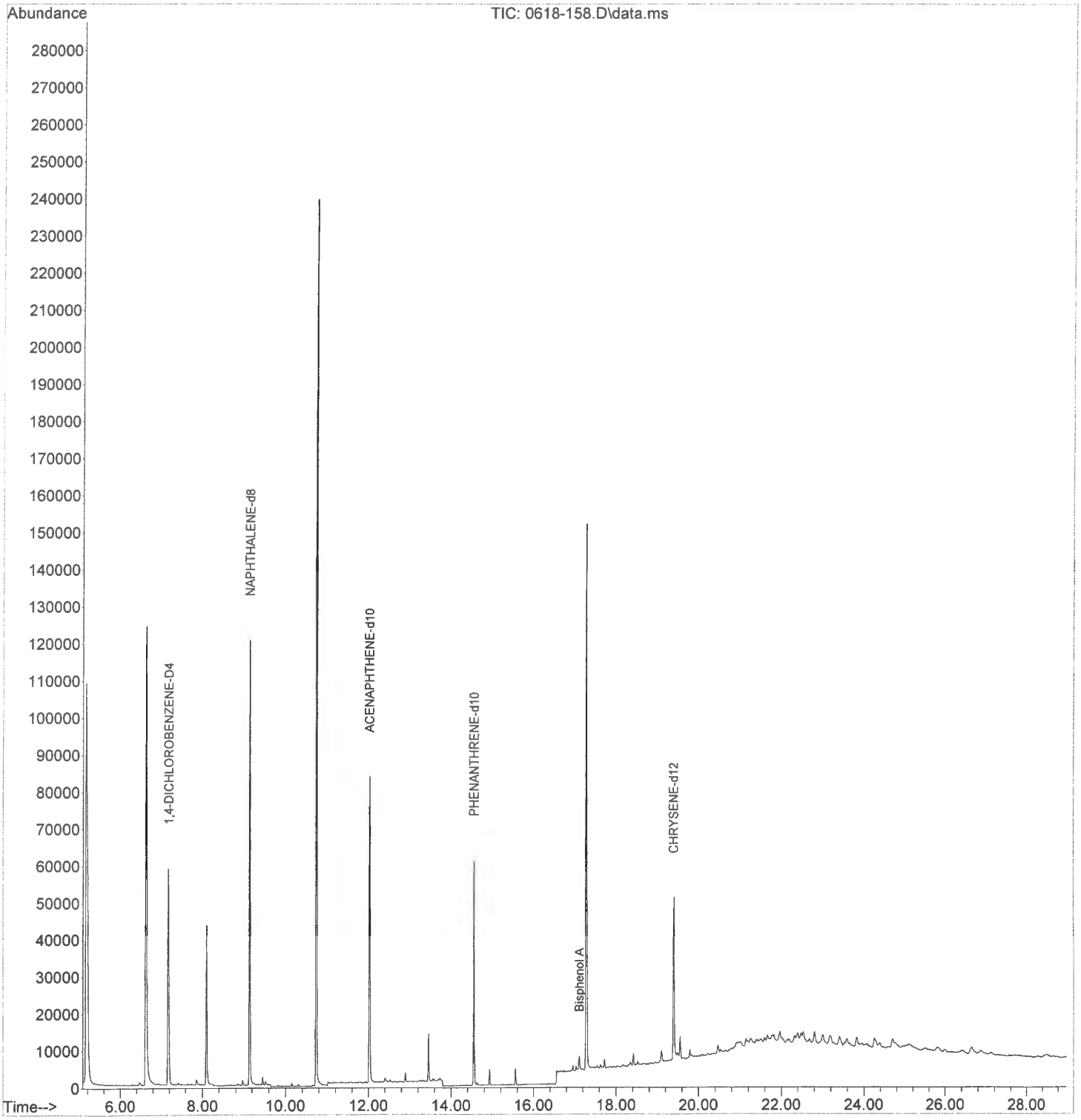
Quant Time: Jul 02 09:33:41 2018
Quant Method : C:\msdchem\1\METHODS\BNA_062818Q.M
Quant Title :
QLast Update : Mon Jul 02 08:40:17 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : D:\DATA\Jun2018\062918\
Data File : 0618-158.D
Acq On : 30 Jun 2018 8:31 am
Operator : zh
Sample : S-93067.09 50G->1mL
Misc : V12-226-A; M=0.02, D=1
ALS Vial : 24 Sample Multiplier: 1

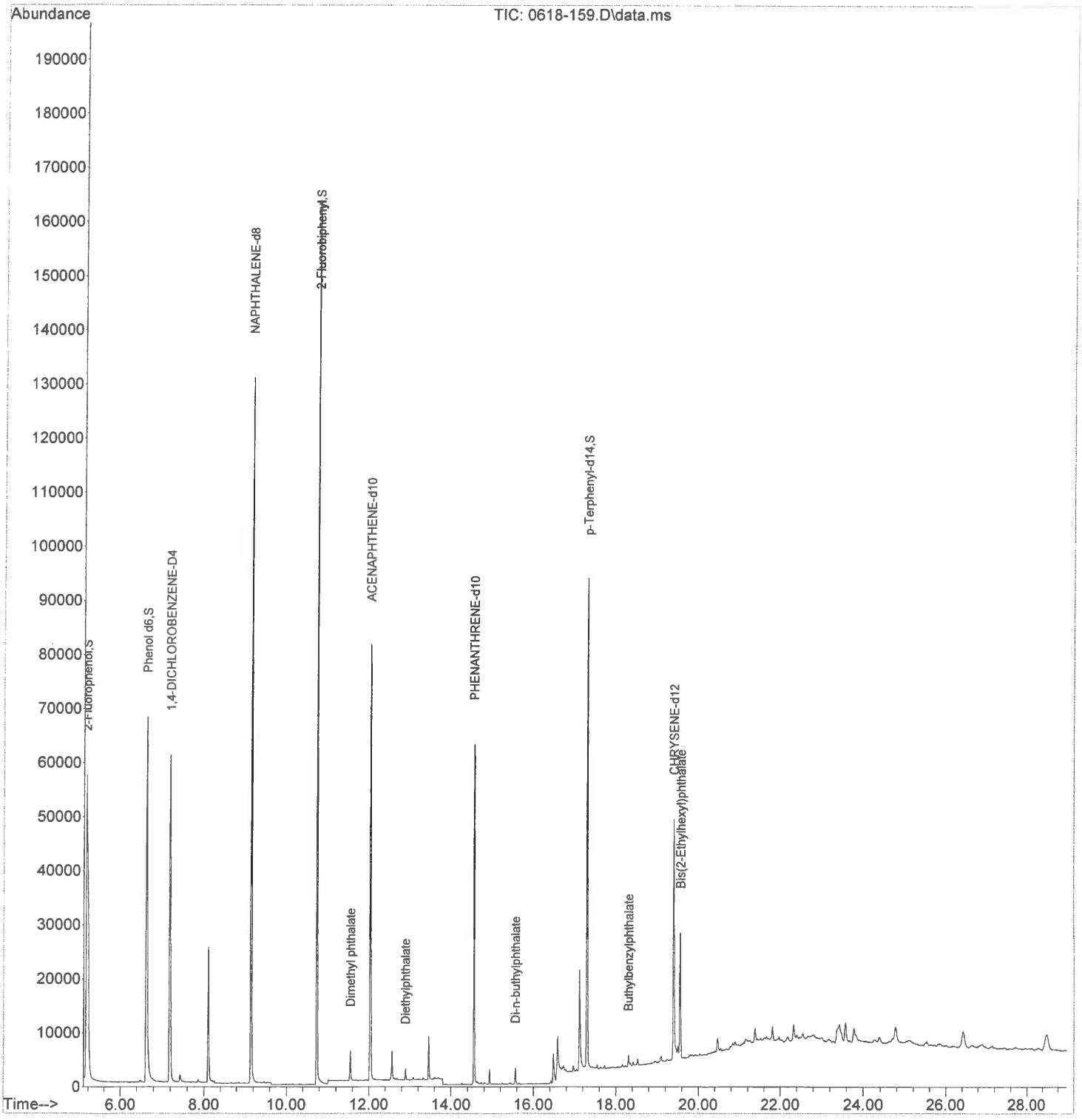
Quant Time: Jul 03 10:12:34 2018
Quant Method : C:\msdchem\1\METHODS\BisphA_062818Q.M
Quant Title :
QLast Update : Mon Jul 02 14:23:57 2018
Response via : Initial Calibration



Quantitation Report (QT Reviewed)

Data Path : D:\DATA\Jun2018\062918\
Data File : 0618-159.D
Acq On : 30 Jun 2018 9:10 am
Operator : zh
Sample : S-93067.14 5OG->1mL
Misc : V12-226-A; M=0.02, D=1
ALS Vial : 25 Sample Multiplier: 1

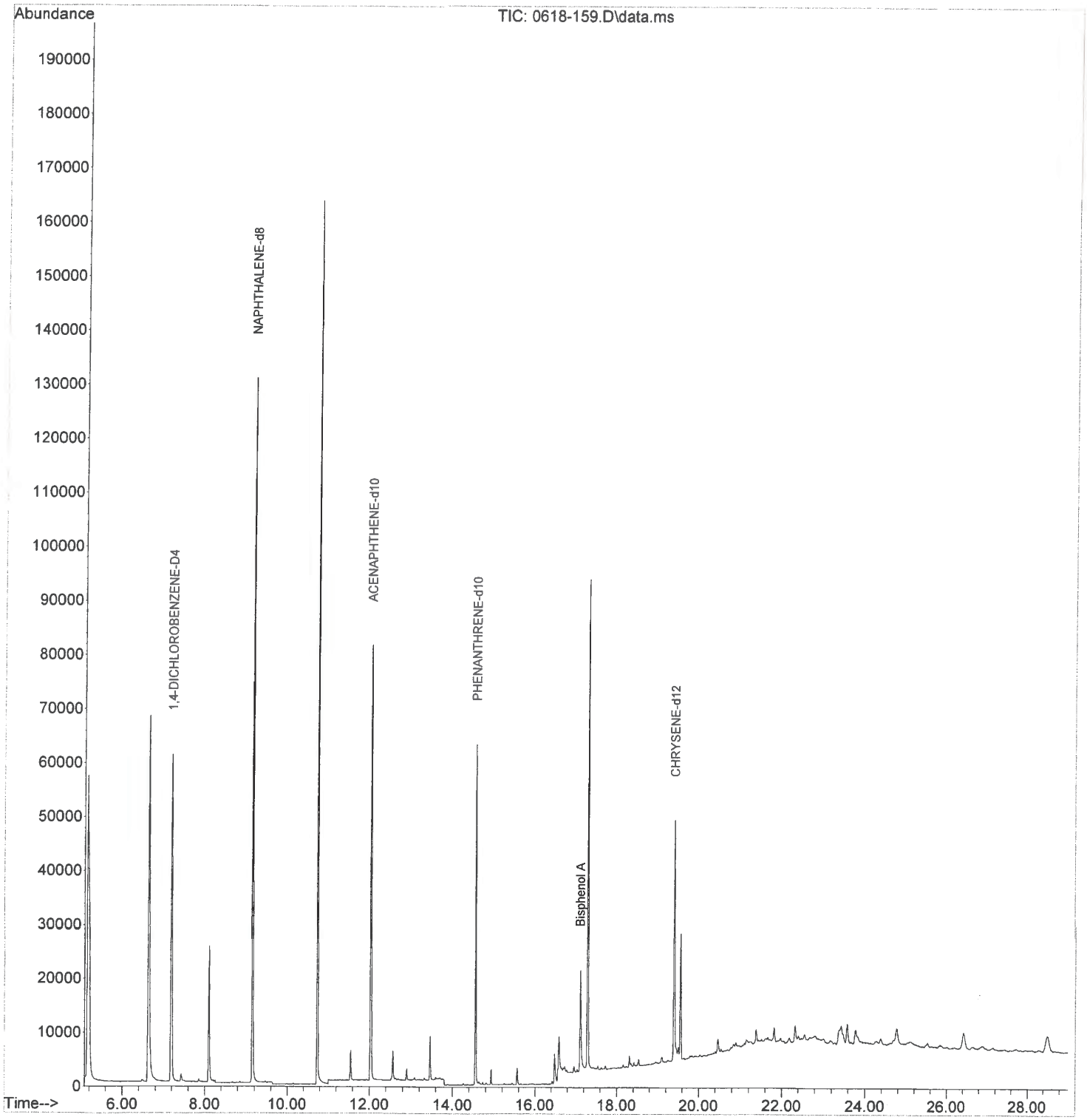
Quant Time: Jul 02 09:35:07 2018
Quant Method : C:\msdchem\1\METHODS\BNA_062818Q.M
Quant Title :
QLast Update : Mon Jul 02 08:40:17 2018
Response via : Initial Calibration



Quantitation Report (Not Reviewed)

Data Path : D:\DATA\Jun2018\062918\
Data File : 0618-159.D
Acq On : 30 Jun 2018 9:10 am
Operator : zh
Sample : S-93067.14 50G->1mL
Misc : V12-226-A; M=0.02, D=1
ALS Vial : 25 Sample Multiplier: 1

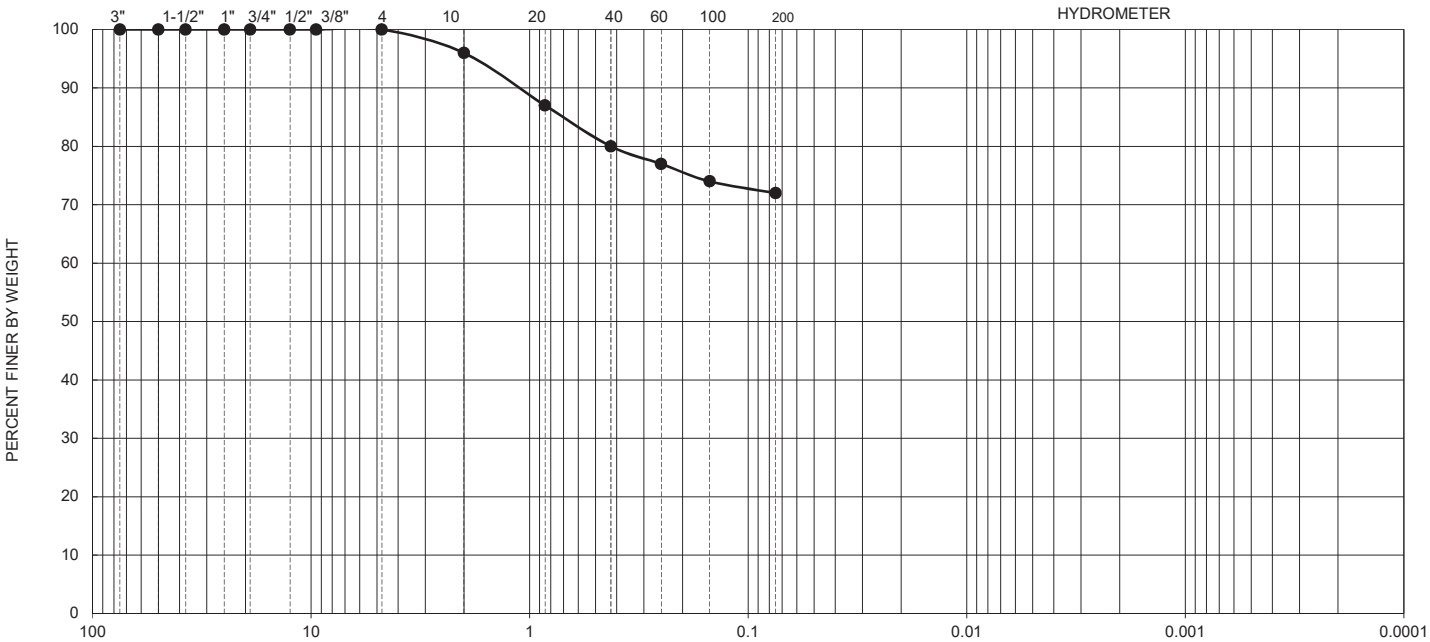
Quant Time: Jul 03 10:13:12 2018
Quant Method : C:\msdchem\1\METHODS\BisphA_062818Q.M
Quant Title :
QLast Update : Mon Jul 02 14:23:57 2018
Response via : Initial Calibration



Date Tested: 7/13/2018

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
Composite Sample	C-1	N/A	72.0	ML

Sample Description	Tan Silt with Sand	Moisture Percent: 17.3%

Sieve Analysis	Sieve Size		% Passing
	3"	75 mm	100
	2"	50 mm	100
	1.5"	37.5 mm	100
	1"	25 mm	100
	3/4"	19 mm	100
	1/2"	12.5 mm	100
	3/8"	9.5 mm	100
	No. 4	4.75 mm	100
	No. 10	2.0 mm	96
	No. 20	0.85 mm	87
	No. 40	0.425 mm	80
	No. 60	0.25 mm	77
	No 100	0.15 mm	74
	No 200	.075 mm	72

Atterberg Limits Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318

Liquid Limit: Non-Plastic
Plastic Limit: Non-Plastic
Plasticity Index: Non-Plastic

Expansion Index Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4829

Expansion Index: 3
Dry Density, pcf: 79.2
As Molded Water Content, %: 20.6
Final Water Content, %: 41
Initial Saturation, as molded, %: 49.5

Orgainic Content, ASTM D2974, C

Organic Matter, %: 6.3

KLEINFELDER
Bright People. Right Solutions.

Checked by:	JLB	Tech:	L.B.
Project No.	20164596.018A	Date:	8-Aug-18

GRADATION TEST RESULTS
Composite Sample C-1

Salt Pond 20
San Diego, California

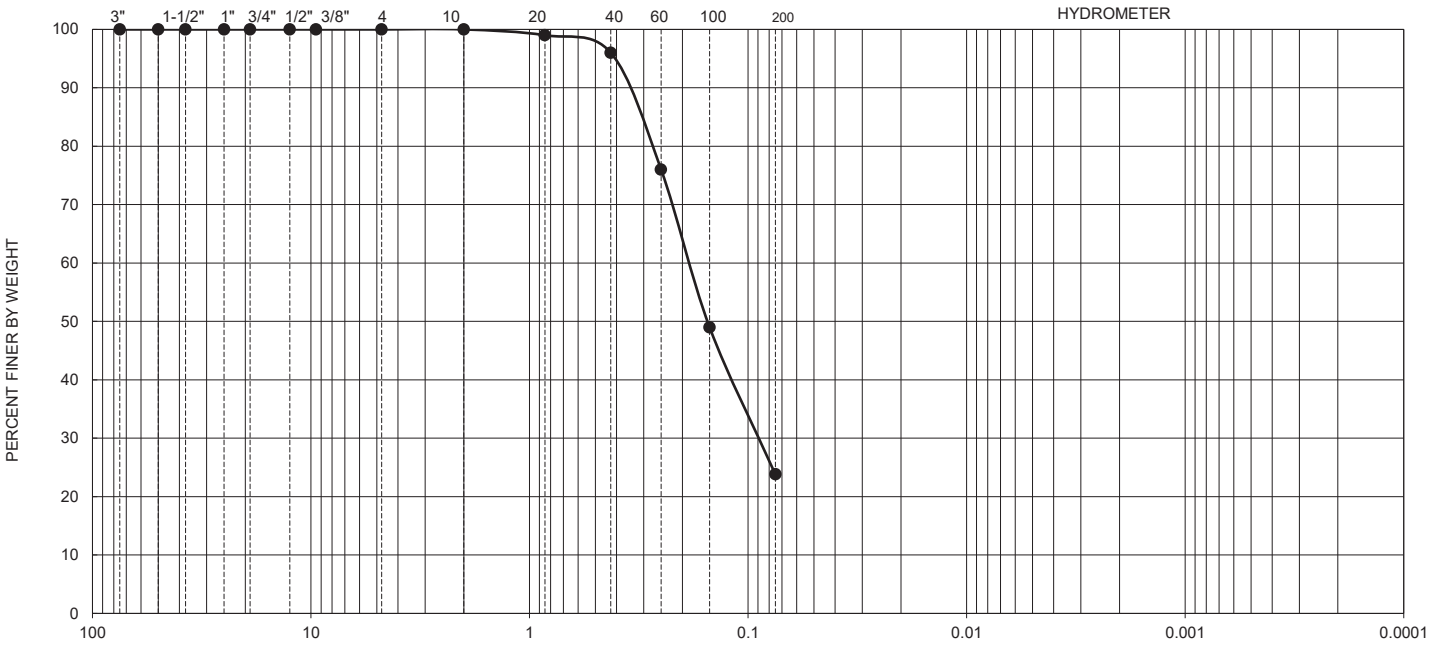
FIGURE

B-1

Date Tested: 7/13/2018

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
Composite Sample	C-2	N/A	23.8	SM

Sample Description	Dark Brown Silty Sand	Moisture Percent: 12.6%

Sieve Analysis	Sieve Size		% Passing
	3"	75 mm	100
	2"	50 mm	100
	1.5"	37.5 mm	100
	1"	25 mm	100
	3/4"	19 mm	100
	1/2"	12.5 mm	100
	3/8"	9.5 mm	100
	No. 4	4.75 mm	100
	No. 10	2.0 mm	100
	No. 20	0.85 mm	99
	No. 40	0.425 mm	96
	No. 60	0.25 mm	76
	No 100	0.15 mm	49
	No 200	.075 mm	23.8

Atterberg Limits Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318

Liquid Limit: Non-Plastic
Plastic Limit: Non-Plastic
Plasticity Index: Non-Plastic

Expansion Index Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4829

Expansion Index: 4
Dry Density, pcf: 103.4
As Molded Water Content, %: 11.4
Final Water Content, %: 21
Initial Saturation, as molded, %: 49.2

Orgainic Content, ASTM D2974, C

Organic Matter, %: 1.2

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Project No.	20164596.018A	Date:	9-Aug-18

GRADATION TEST RESULTS
Composite Sample C-2

Salt Pond 20
San Diego, California

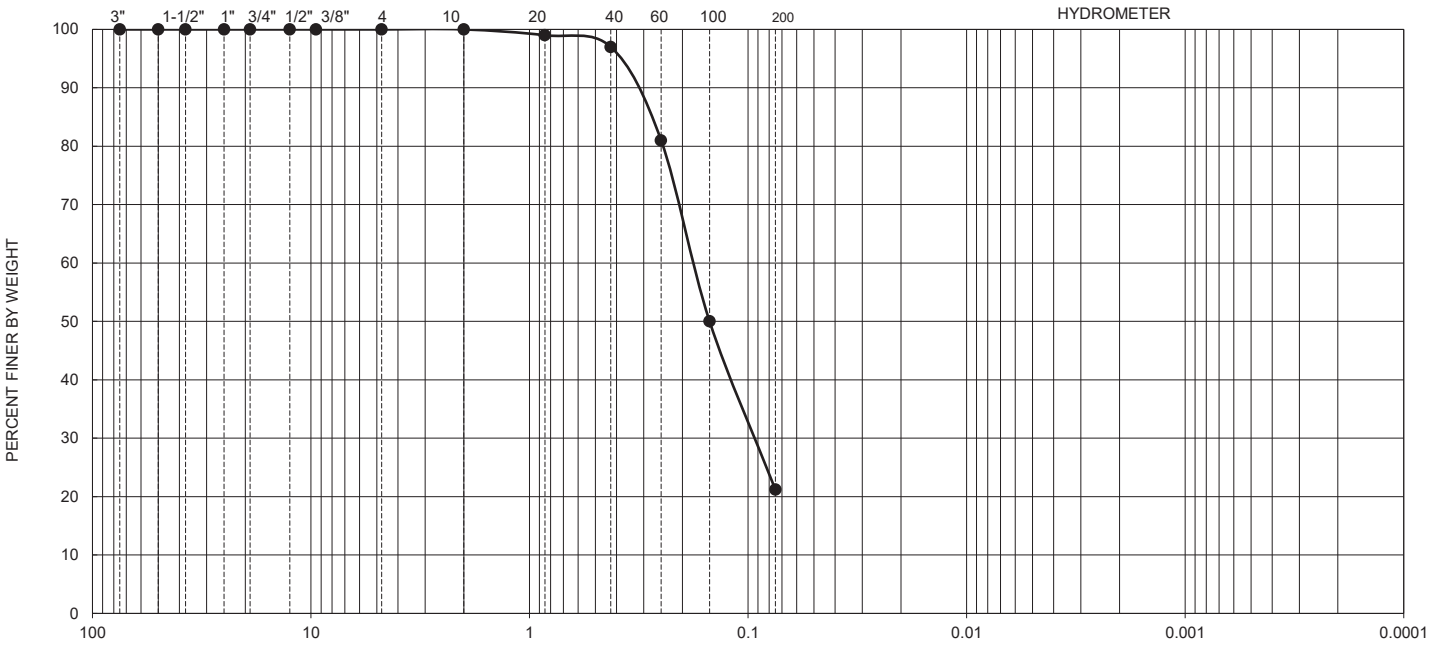
FIGURE

B-2

Date Tested: 7/13/2018

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
Composite Sample	C-3	N/A	21.2	SM

Sample Description	Brown Silty Sand	Moisture Percent: 14.6%

Sieve Analysis	Sieve Size		% Passing
	3"	75 mm	100
	2"	50 mm	100
	1.5"	37.5 mm	100
	1"	25 mm	100
	3/4"	19 mm	100
	1/2"	12.5 mm	100
	3/8"	9.5 mm	100
	No. 4	4.75 mm	100
	No. 10	2.0 mm	100
	No. 20	0.85 mm	99
	No. 40	0.425 mm	97
	No. 60	0.25 mm	81
	No 100	0.15 mm	50
	No 200	.075 mm	21.2

Atterberg Limits Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318

Liquid Limit: Non-Plastic
Plastic Limit: Non-Plastic
Plasticity Index: Non-Plastic

Expansion Index Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4829

Expansion Index: 9
Dry Density, pcf: 100.1
As Molded Water Content, %: 12.6
Final Water Content, %: 21
Initial Saturation, as molded, %: 50.1

Orgainic Content, ASTM D2974, C

Organic Matter, %: 1.2

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Project No.	20164596.018A	Date:	9-Aug-18

GRADATION TEST RESULTS
Composite Sample C-3

Salt Pond 20
San Diego, California

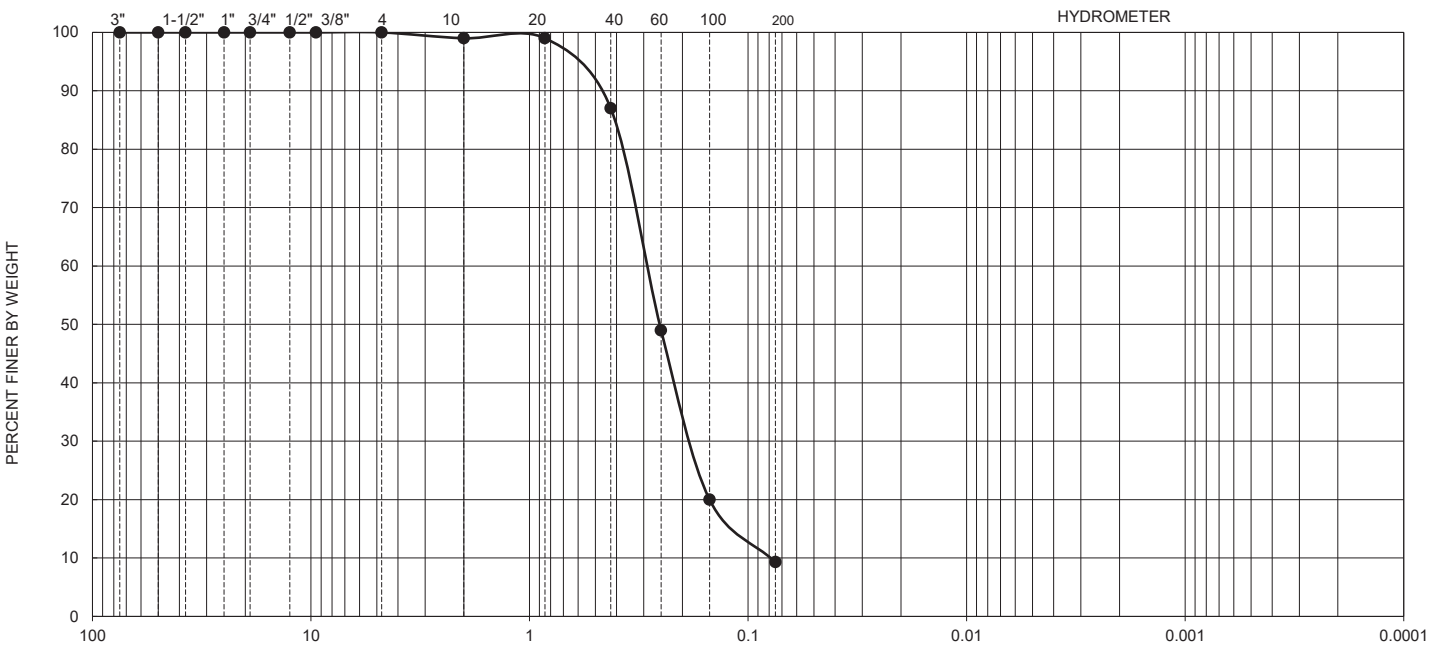
FIGURE

B-3

Date Tested: 7/13/2018

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
Composite Sample	C-4	N/A	9.3	SP-SM

Sample Description	Light Brown Poorly Graded Sand with Silt	Moisture Percent: 3.9%

Sieve Analysis

Sieve Size		% Passing
3"	75 mm	100
2"	50 mm	100
1.5"	37.5 mm	100
1"	25 mm	100
3/4"	19 mm	100
1/2"	12.5 mm	100
3/8"	9.5 mm	100
No. 4	4.75 mm	100
No. 10	2.0 mm	99
No. 20	0.85 mm	99
No. 40	0.425 mm	87
No. 60	0.25 mm	49
No 100	0.15 mm	20
No 200	.075 mm	9.3

Atterberg Limits Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318

Liquid Limit: Non-Plastic
Plastic Limit: Non-Plastic
Plasticity Index: Non-Plastic

Expansion Index Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4829

Expansion Index: 2
Dry Density, pcf: 102.1
As Molded Water Content, %: 12.0
Final Water Content, %: 22
Initial Saturation, as molded, %: 50.1

Orgainic Content, ASTM D2974, C

Organic Matter, %: 1

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Project No.	20164596.018A	Date:	9-Aug-18

GRADATION TEST RESULTS
Composite Sample C-4

Salt Pond 20
San Diego, California

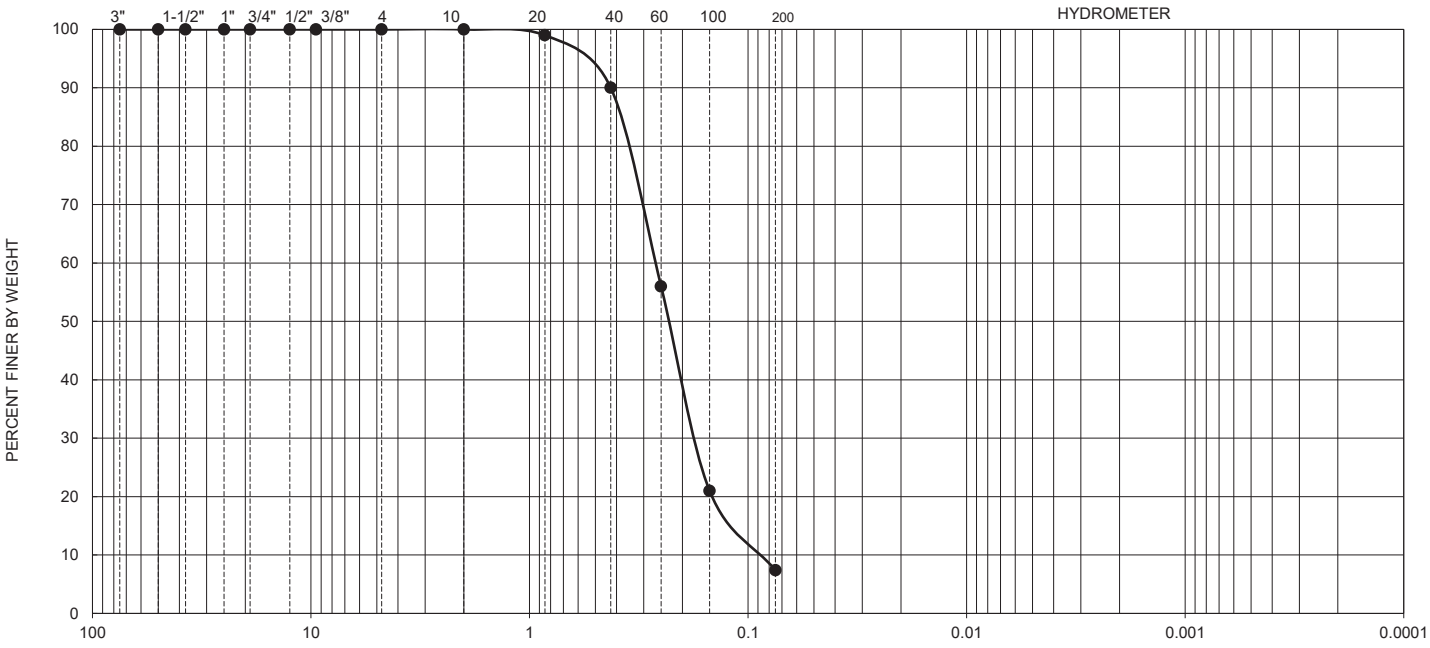
FIGURE

B-4

Date Tested: 7/11/2018

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
Composite Sample	C-5	N/A	7.4	SP-SM

Sample Description	Brown Poorly Graded Sand with Silt	Moisture Percent: 4.2%

Sieve Analysis	Sieve Size		% Passing
	3"	75 mm	100
	2"	50 mm	100
	1.5"	37.5 mm	100
	1"	25 mm	100
	3/4"	19 mm	100
	1/2"	12.5 mm	100
	3/8"	9.5 mm	100
	No. 4	4.75 mm	100
	No. 10	2.0 mm	100
	No. 20	0.85 mm	99
	No. 40	0.425 mm	90
	No. 60	0.25 mm	56
	No 100	0.15 mm	21
	No 200	.075 mm	7.4

Atterberg Limits Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318

Liquid Limit: Non-Plastic
Plastic Limit: Non-Plastic
Plasticity Index: Non-Plastic

Expansion Index Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4829

Expansion Index: 1
Dry Density, pcf: 113.2
As Molded Water Content, %: 8.8
Final Water Content, %: 16
Initial Saturation, as molded, %: 48.7

Orgainic Content, ASTM D2974, C

Organic Matter, %: 0.5

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Project No.	20164596.018A	Date:	9-Aug-18

GRADATION TEST RESULTS
Composite Sample C-5

Salt Pond 20
San Diego, California

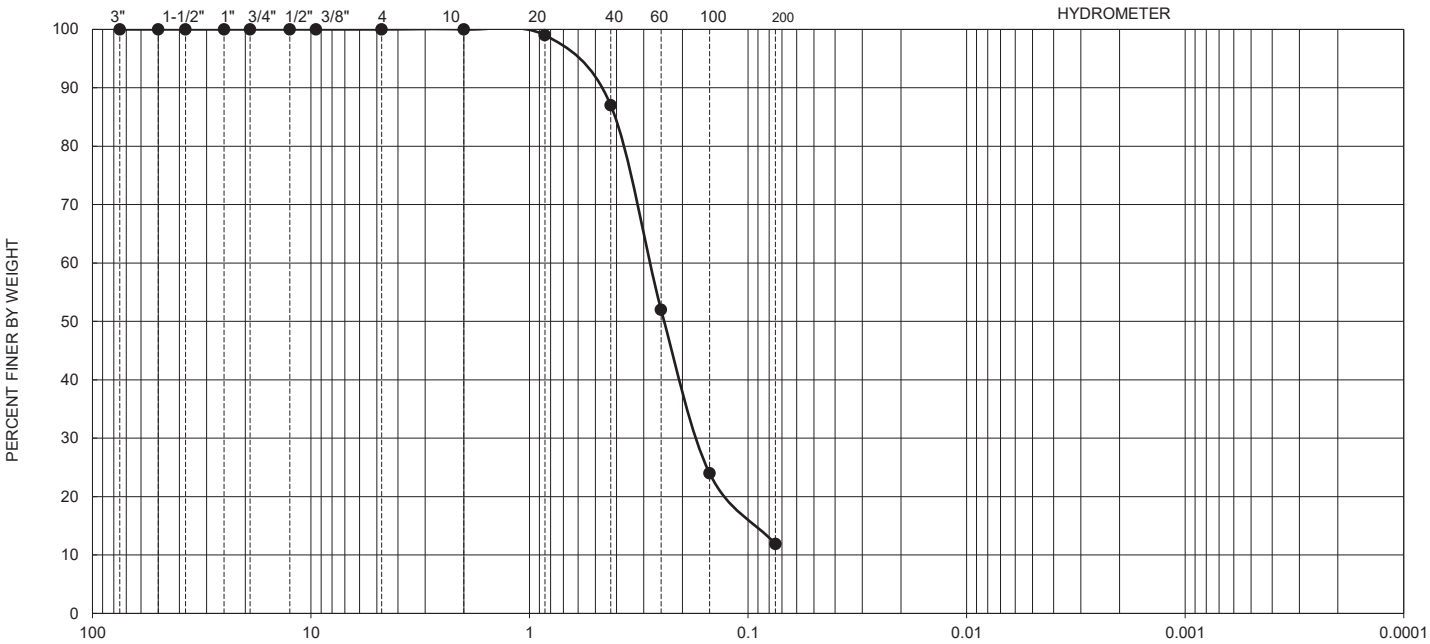
FIGURE

B-5

Date Tested: 7/13/2018

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
Composite Sample	C-6	N/A	11.9	SP-SM

Sample Description	Brown Poorly Graded Sand with Silt	Moisture Percent: 3.3%

Sieve Analysis	Sieve Size		% Passing
	3"	75 mm	100
	2"	50 mm	100
	1.5"	37.5 mm	100
	1"	25 mm	100
	3/4"	19 mm	100
	1/2"	12.5 mm	100
	3/8"	9.5 mm	100
	No. 4	4.75 mm	100
	No. 10	2.0 mm	100
	No. 20	0.85 mm	99
	No. 40	0.425 mm	87
	No. 60	0.25 mm	52
	No 100	0.15 mm	24
	No 200	.075 mm	11.9

Atterberg Limits Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318

Liquid Limit: Non-Plastic
Plastic Limit: Non-Plastic
Plasticity Index: Non-Plastic

Expansion Index Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4829

Expansion Index: 2
Dry Density, pcf: 98.7
As Molded Water Content, %: 13.4
Final Water Content, %: 15
Initial Saturation, as molded, %: 51.4

Orgainic Content, ASTM D2974, C

Organic Matter, %: 0.5

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Project No.	20164596.018A	Date:	9-Aug-18

GRADATION TEST RESULTS
Composite Sample C-6

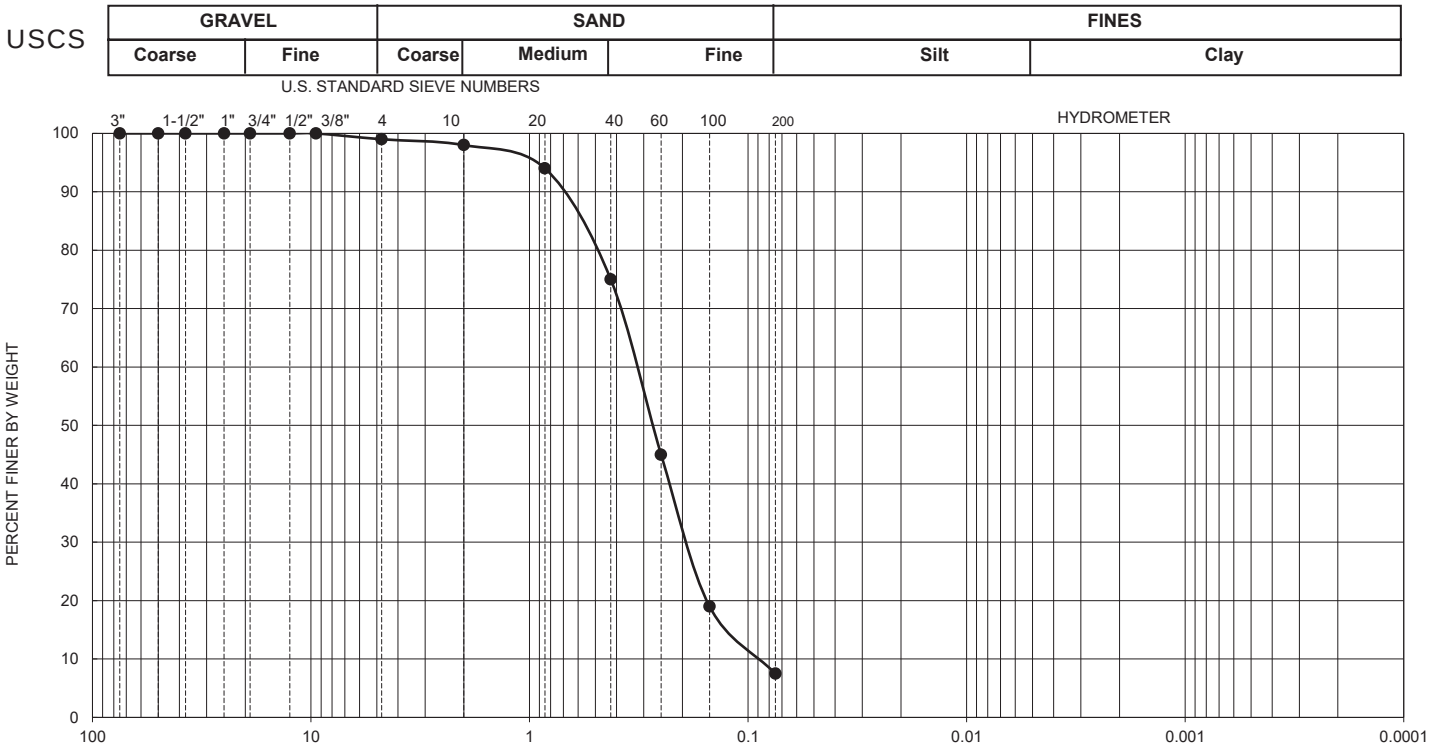
Salt Pond 20
San Diego, California

FIGURE

B-6

Date Tested: 7/13/2018

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
Composite Sample	C-7	N/A	7.5	SP-SM

Sample Description	Light Brown Poorly Graded Sand with Silt	Moisture Percent: 4.1%

Sieve Analysis

Sieve Size		% Passing
3"	75 mm	100
2"	50 mm	100
1.5"	37.5 mm	100
1"	25 mm	100
3/4"	19 mm	100
1/2"	12.5 mm	100
3/8"	9.5 mm	100
No. 4	4.75 mm	99
No. 10	2.0 mm	98
No. 20	0.85 mm	94
No. 40	0.425 mm	75
No. 60	0.25 mm	45
No 100	0.15 mm	19
No 200	.075 mm	7.5

Atterberg Limits Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318

Liquid Limit: Non-Plastic
Plastic Limit: Non-Plastic
Plasticity Index: Non-Plastic

Expansion Index Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4829

Expansion Index: 1
Dry Density, pcf: 97.5
As Molded Water Content, %: 13.2
Final Water Content, %: 17
Initial Saturation, as molded, %: 49.1

Orgainic Content, ASTM D2974, C

Organic Matter, %: 0.7

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Project No.	20164596.018A	Date:	9-Aug-18

GRADATION TEST RESULTS
Composite Sample C-7

Salt Pond 20
San Diego, California

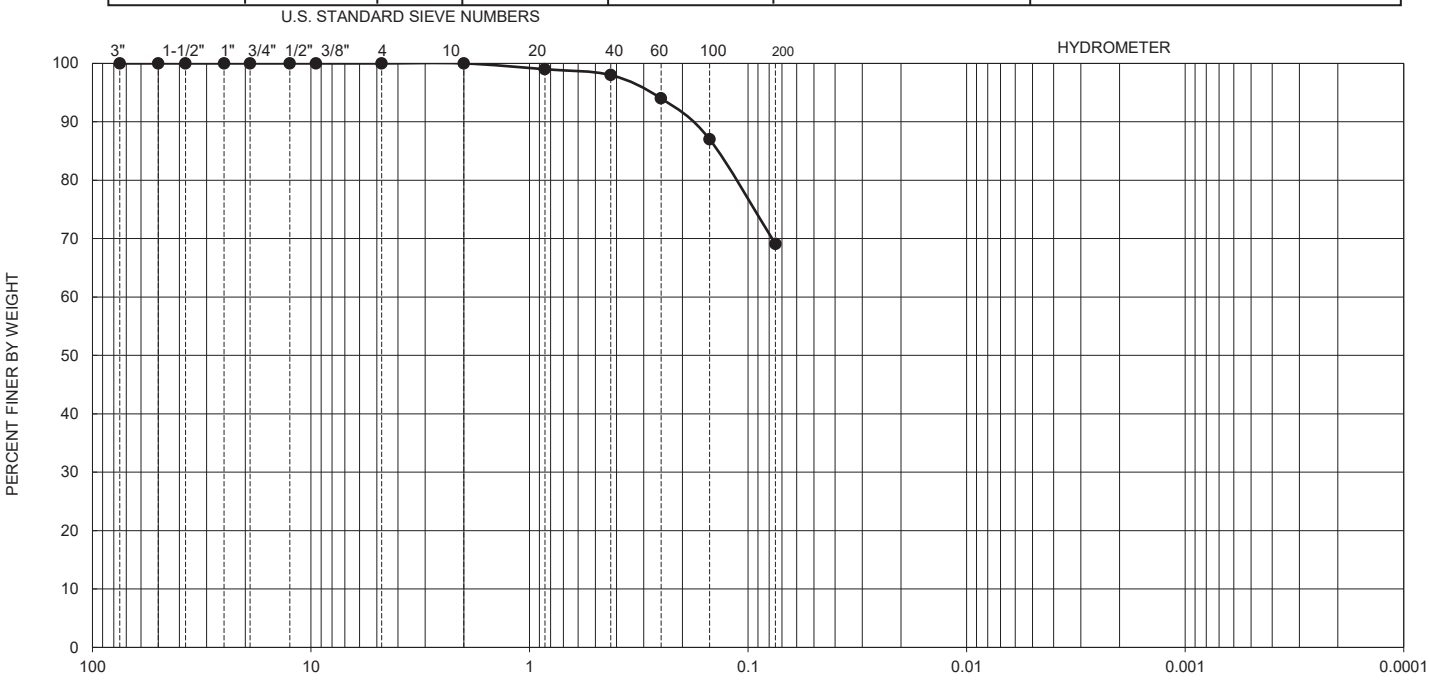
FIGURE

B-7

Date Tested: 7/13/2018

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
Composite Sample	C-8	N/A	69.1	CL-ML

Sample Description	Olive Brown Sandy Silty Clay	Moisture Percent: 85.1%

Sieve Analysis

Sieve Size		% Passing
3"	75 mm	100
2"	50 mm	100
1.5"	37.5 mm	100
1"	25 mm	100
3/4"	19 mm	100
1/2"	12.5 mm	100
3/8"	9.5 mm	100
No. 4	4.75 mm	100
No. 10	2.0 mm	100
No. 20	0.85 mm	99
No. 40	0.425 mm	98
No. 60	0.25 mm	94
No 100	0.15 mm	87
No 200	.075 mm	69.1

Atterberg Limits Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318

Liquid Limit: 26
Plastic Limit: 20
Plasticity Index: 6 (CL)

Expansion Index Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4829

Expansion Index: 39
Dry Density, pcf: 105.9
As Molded Water Content, %: 10.6
Final Water Content, %: 23
Initial Saturation, as molded, %: 48.8

Orgainic Content, ASTM D2974, C

Organic Matter, %: 2.8

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Project No.	20164596.018A	Date:	9-Aug-18

GRADATION TEST RESULTS
Composite Sample C-8

Salt Pond 20
San Diego, California

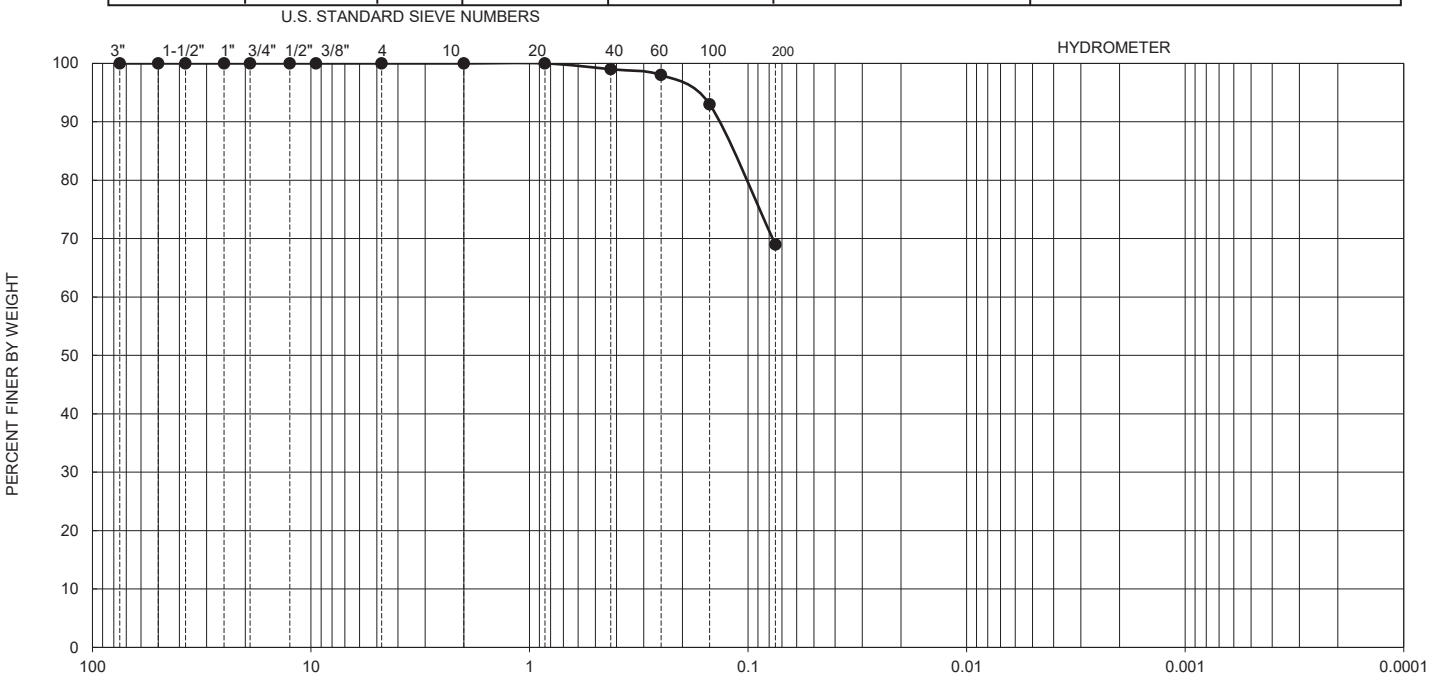
FIGURE

B-8

Date Tested: 7/13/2018

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
Composite Sample	C-9	N/A	69.0	CL-ML

Sample Description	Brown Sandy Silty Clay	Moisture Percent: 32.7%

Sieve Analysis	Sieve Size		% Passing
	3"	75 mm	100
	2"	50 mm	100
	1.5"	37.5 mm	100
	1"	25 mm	100
	3/4"	19 mm	100
	1/2"	12.5 mm	100
	3/8"	9.5 mm	100
	No. 4	4.75 mm	100
	No. 10	2.0 mm	100
	No. 20	0.85 mm	100
	No. 40	0.425 mm	99
	No. 60	0.25 mm	98
	No 100	0.15 mm	93
	No 200	.075 mm	69.0

Atterberg Limits Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318

Liquid Limit: 28
Plastic Limit: 22
Plasticity Index: 6 (CL-ML)

Expansion Index Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4829

Expansion Index: 32
Dry Density, pcf: 104.5
As Molded Water Content, %: 11.2
Final Water Content, %: 22
Initial Saturation, as molded, %: 49.4

Orgainic Content, ASTM D2974, C

Organic Matter, %: 1.9

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Project No.	20164596.018A	Date:	9-Aug-18

GRADATION TEST RESULTS
Composite Sample C-9

Salt Pond 20
San Diego, California

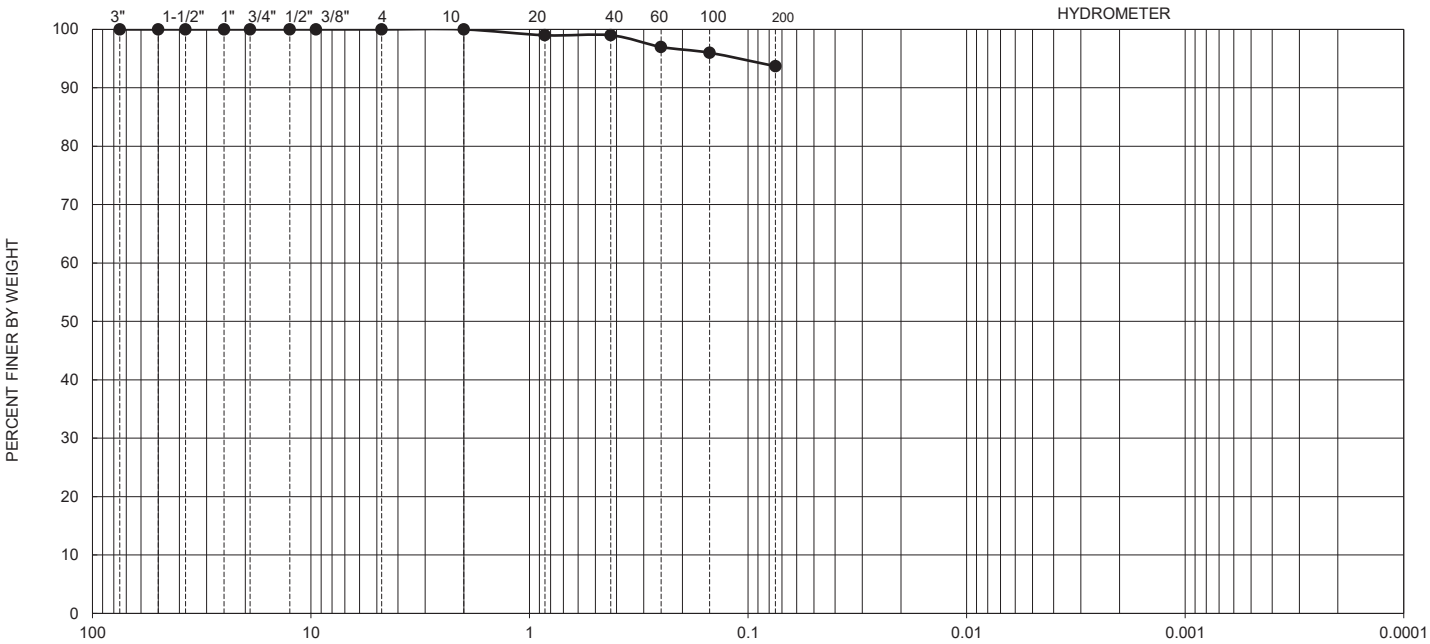
FIGURE

B-9

Date Tested: 7/13/2018

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
Composite Sample	C-10	N/A	93.7	CL

Sample Description	Dark Brown Lean Clay	Moisture Percent: 40.0%

Sieve Analysis

Sieve Size		% Passing
3"	75 mm	100
2"	50 mm	100
1.5"	37.5 mm	100
1"	25 mm	100
3/4"	19 mm	100
1/2"	12.5 mm	100
3/8"	9.5 mm	100
No. 4	4.75 mm	100
No. 10	2.0 mm	100
No. 20	0.85 mm	99
No. 40	0.425 mm	99
No. 60	0.25 mm	97
No 100	0.15 mm	96
No 200	.075 mm	93.7

Atterberg Limits Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318

Liquid Limit: 33
Plastic Limit: 22
Plasticity Index: 11 (CL)

Expansion Index Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4829

Expansion Index: 53
Dry Density, pcf: 99.4
As Molded Water Content, %: 13.2
Final Water Content, %: 29
Initial Saturation, as molded, %: 51.5

Orgainic Content, ASTM D2974, C

Organic Matter, %: 2.9

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Project No.	20164596.018A	Date:	9-Aug-18

GRADATION TEST RESULTS
Composite Sample C-10

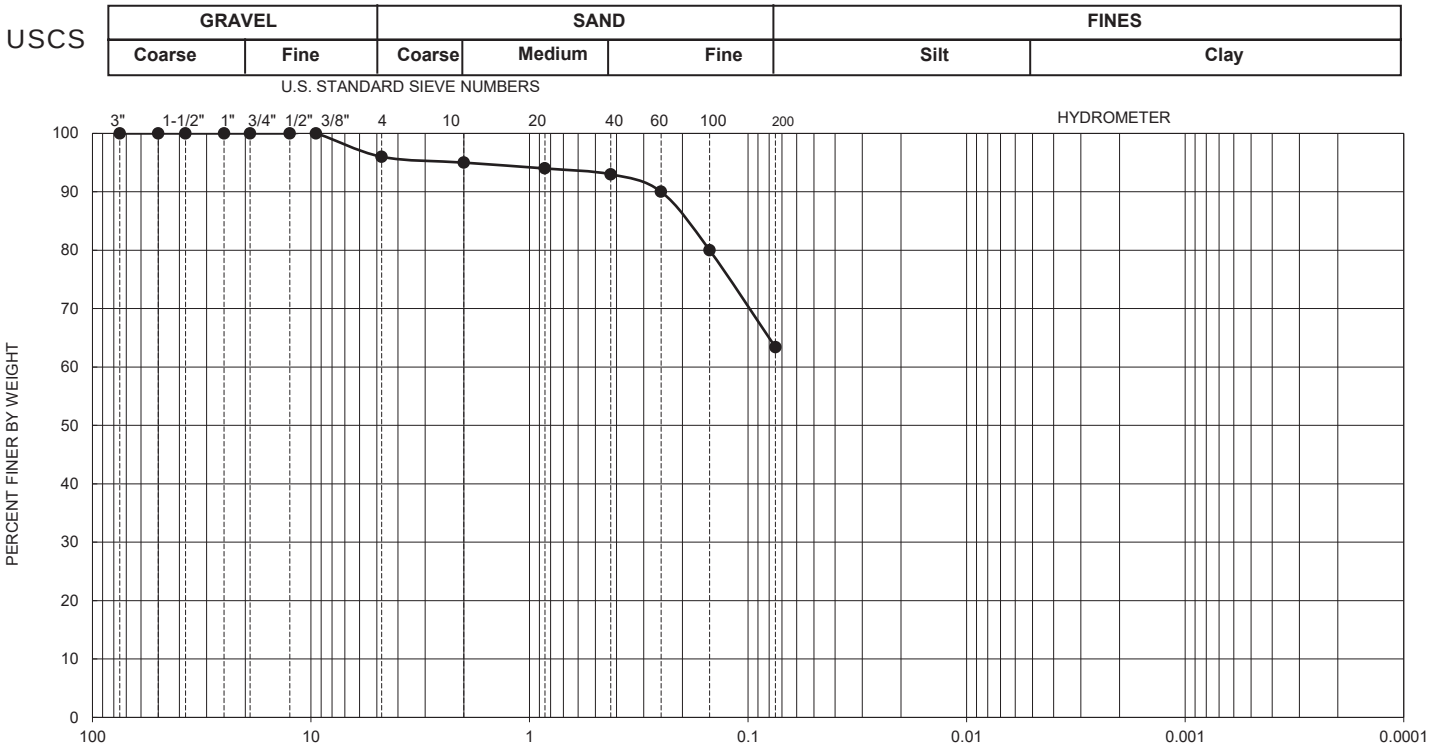
Salt Pond 20
San Diego, California

FIGURE

B-10

Date Tested: 7/13/2018

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
Composite Sample	C-11	N/A	63.4	CL

Sample Description	Brown Sandy Lean Clay	Moisture Percent: 30.6%

Sieve Analysis

Sieve Size		% Passing
3"	75 mm	100
2"	50 mm	100
1.5"	37.5 mm	100
1"	25 mm	100
3/4"	19 mm	100
1/2"	12.5 mm	100
3/8"	9.5 mm	100
No. 4	4.75 mm	96
No. 10	2.0 mm	95
No. 20	0.85 mm	94
No. 40	0.425 mm	93
No. 60	0.25 mm	90
No 100	0.15 mm	80
No 200	.075 mm	63.4

Atterberg Limits Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318

Liquid Limit: 27
Plastic Limit: 19
Plasticity Index: 8 (CL)

Expansion Index Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4829

Expansion Index: 11
Dry Density, pcf: 116.8
As Molded Water Content, %: 8.2
Final Water Content, %: 20
Initial Saturation, as molded, %: 50.1

Orgainic Content, ASTM D2974, C

Organic Matter, %: 1.5

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Checked by:	JLB	Tech:	L.B.
Project No.	20164596.018A	Date:	9-Aug-18

GRADATION TEST RESULTS
Composite Sample C-11

Salt Pond 20
San Diego, California

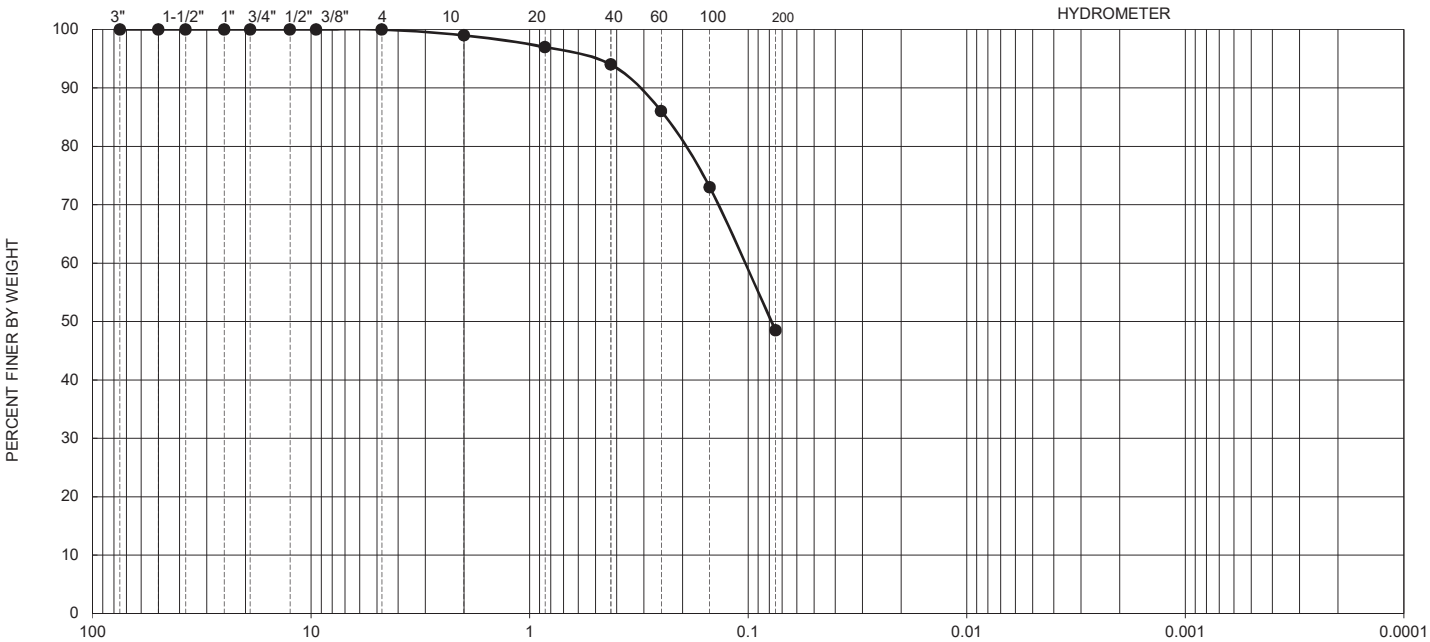
FIGURE

B-11

Date Tested: 7/13/2018

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
Composite Sample	C-12	N/A	48.5	SC-SM

Sample Description	Black Silty Clayey Sand	Moisture Percent: 29.9%

Sieve Analysis

Sieve Size		% Passing
3"	75 mm	100
2"	50 mm	100
1.5"	37.5 mm	100
1"	25 mm	100
3/4"	19 mm	100
1/2"	12.5 mm	100
3/8"	9.5 mm	100
No. 4	4.75 mm	100
No. 10	2.0 mm	99
No. 20	0.85 mm	97
No. 40	0.425 mm	94
No. 60	0.25 mm	86
No 100	0.15 mm	73
No 200	.075 mm	48.5

Atterberg Limits Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318

Liquid Limit: 27
Plastic Limit: 20
Plasticity Index: 7 (CL-ML)

Expansion Index Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4829

Expansion Index: 18
Dry Density, pcf: 107.2
As Molded Water Content, %: 10.8
Final Water Content, %: 21
Initial Saturation, as molded, %: 51.3

Orgainic Content, ASTM D2974, C

Organic Matter, %: 3.8

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Checked by:	JLB	Tech:	L.B.
Project No.	20164596.018A	Date:	9-Aug-18

GRADATION TEST RESULTS
Composite Sample C-12

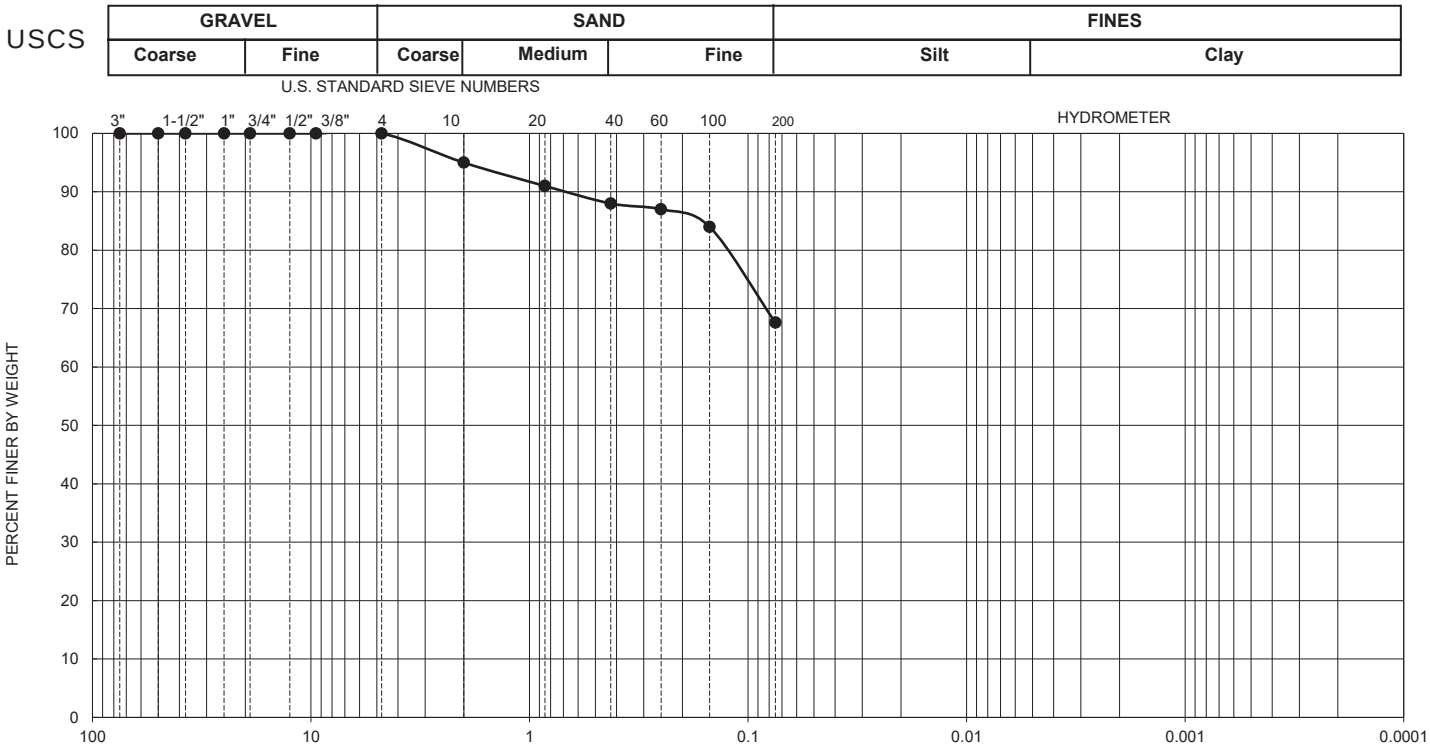
Salt Pond 20
San Diego, California

FIGURE

B-12

Date Tested: 7/11/2018

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
Composite Sample	C-13	N/A	67.6	CL

Sample Description	Black Sandy Lean Clay	Moisture Percent: 30.0%

Sieve Analysis

Sieve Size		% Passing
3"	75 mm	100
2"	50 mm	100
1.5"	37.5 mm	100
1"	25 mm	100
3/4"	19 mm	100
1/2"	12.5 mm	100
3/8"	9.5 mm	100
No. 4	4.75 mm	100
No. 10	2.0 mm	95
No. 20	0.85 mm	91
No. 40	0.425 mm	88
No. 60	0.25 mm	87
No 100	0.15 mm	84
No 200	.075 mm	67.6

Atterberg Limits Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318

Liquid Limit: 30
Plastic Limit: 21
Plasticity Index: 9

Expansion Index Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4829

Expansion Index: 38
Dry Density, pcf: 102.8
As Molded Water Content, %: 11.6
Final Water Content, %: 24
Initial Saturation, as molded, %: 49.2

Orgainic Content, ASTM D2974, C

Organic Matter, %: 2.9

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Checked by:	JLB	Tech:	S.A.
Project No.	20164596.018A	Date:	9-Aug-18

GRADATION TEST RESULTS
Composite Sample C-13

Salt Pond 20
San Diego, California

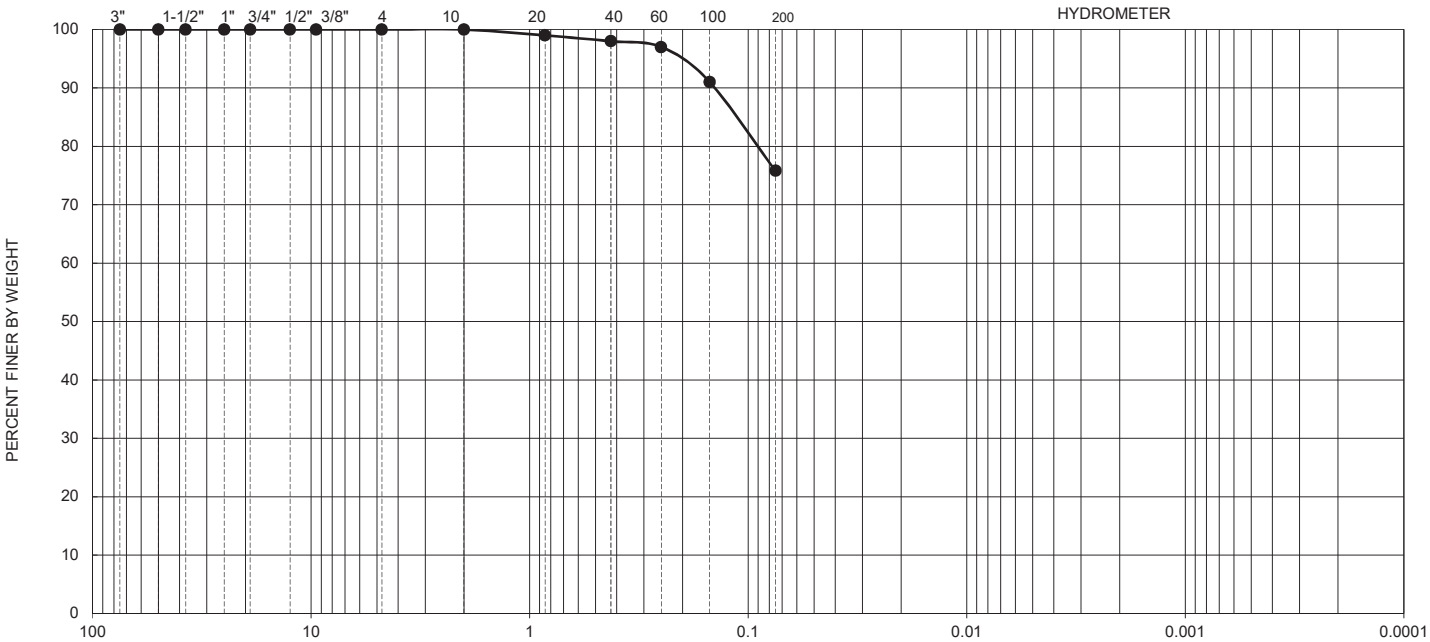
FIGURE

B-13

Date Tested: 7/13/2018

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
Composite Sample	C-14	N/A	75.8	CL

Sample Description	Dark Olive Brown Lean Clay with Sand	Moisture Percent: 36.9%

Sieve Analysis

Sieve Size		% Passing
3"	75 mm	100
2"	50 mm	100
1.5"	37.5 mm	100
1"	25 mm	100
3/4"	19 mm	100
1/2"	12.5 mm	100
3/8"	9.5 mm	100
No. 4	4.75 mm	100
No. 10	2.0 mm	100
No. 20	0.85 mm	99
No. 40	0.425 mm	98
No. 60	0.25 mm	97
No 100	0.15 mm	91
No 200	.075 mm	75.8

Atterberg Limits Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318

Liquid Limit: 31
Plastic Limit: 22
Plasticity Index: 9 (CL)

Expansion Index Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4829

Expansion Index: 61
Dry Density, pcf: 104.5
As Molded Water Content, %: 11.3
Final Water Content, %: 25
Initial Saturation, as molded, %: 49.9

Orgainic Content, ASTM D2974, C

Organic Matter, %: 2.4

KLEINFELDER
Bright People. Right Solutions.

Checked by:	JLB	Tech:	L.B.
Project No.	20164596.018A	Date:	9-Aug-18

GRADATION TEST RESULTS
Composite Sample C-14

Salt Pond 20
San Diego, California

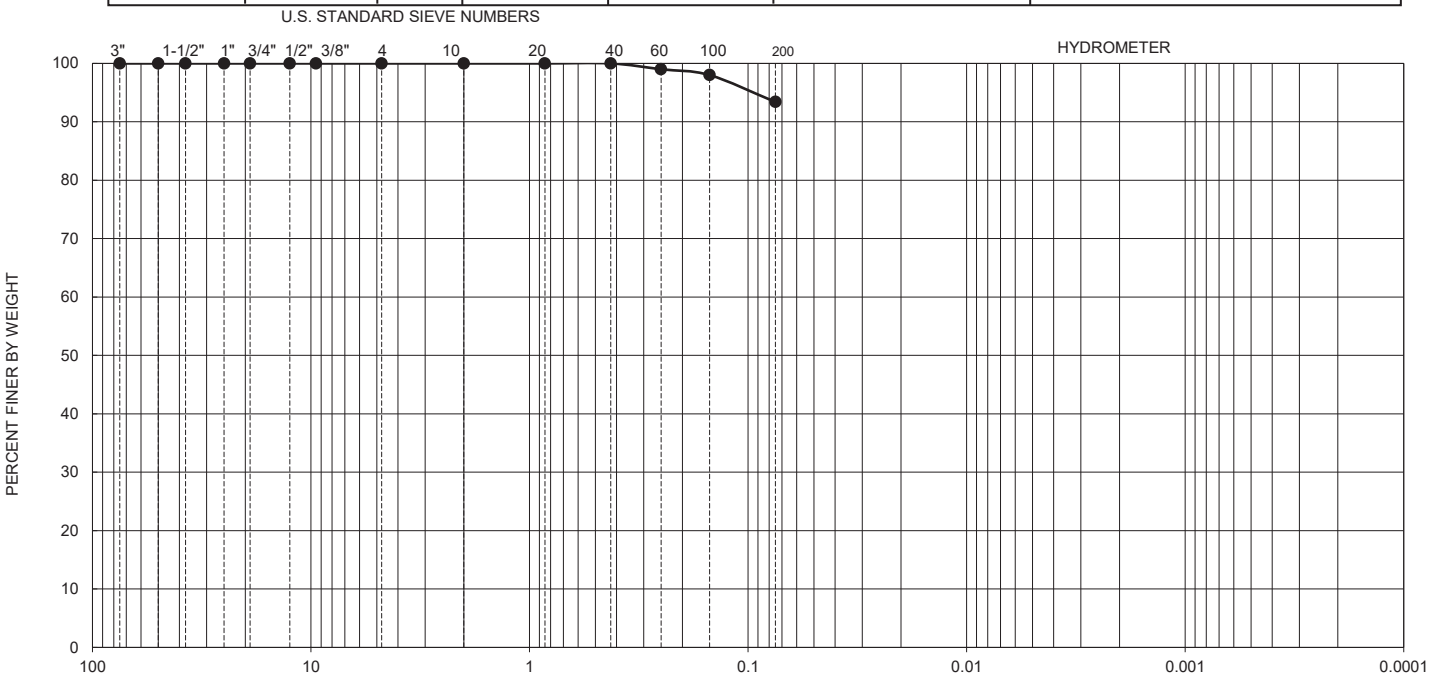
FIGURE

B-14

Date Tested: 7/13/2018

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
Composite Sample	C-15	N/A	93.4	ML

Sample Description	Black Silt	Moisture Percent: 43.9%

Sieve Analysis

Sieve Size		% Passing
3"	75 mm	100
2"	50 mm	100
1.5"	37.5 mm	100
1"	25 mm	100
3/4"	19 mm	100
1/2"	12.5 mm	100
3/8"	9.5 mm	100
No. 4	4.75 mm	100
No. 10	2.0 mm	100
No. 20	0.85 mm	100
No. 40	0.425 mm	100
No. 60	0.25 mm	99
No 100	0.15 mm	98
No 200	.075 mm	93.4

Atterberg Limits Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318

Liquid Limit: 43
Plastic Limit: 29
Plasticity Index: 14 (ML)

Expansion Index Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4829

Expansion Index: 77
Dry Density, pcf: 97.2
As Molded Water Content, %: 13.7
Final Water Content, %: 30
Initial Saturation, as molded, %: 50.8

Orgainic Content, ASTM D2974, C

Organic Matter, %: 4.7

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Checked by:	JLB	Tech:	L.B.
Project No.	20164596.018A	Date:	9-Aug-18

GRADATION TEST RESULTS
Composite Sample C-15

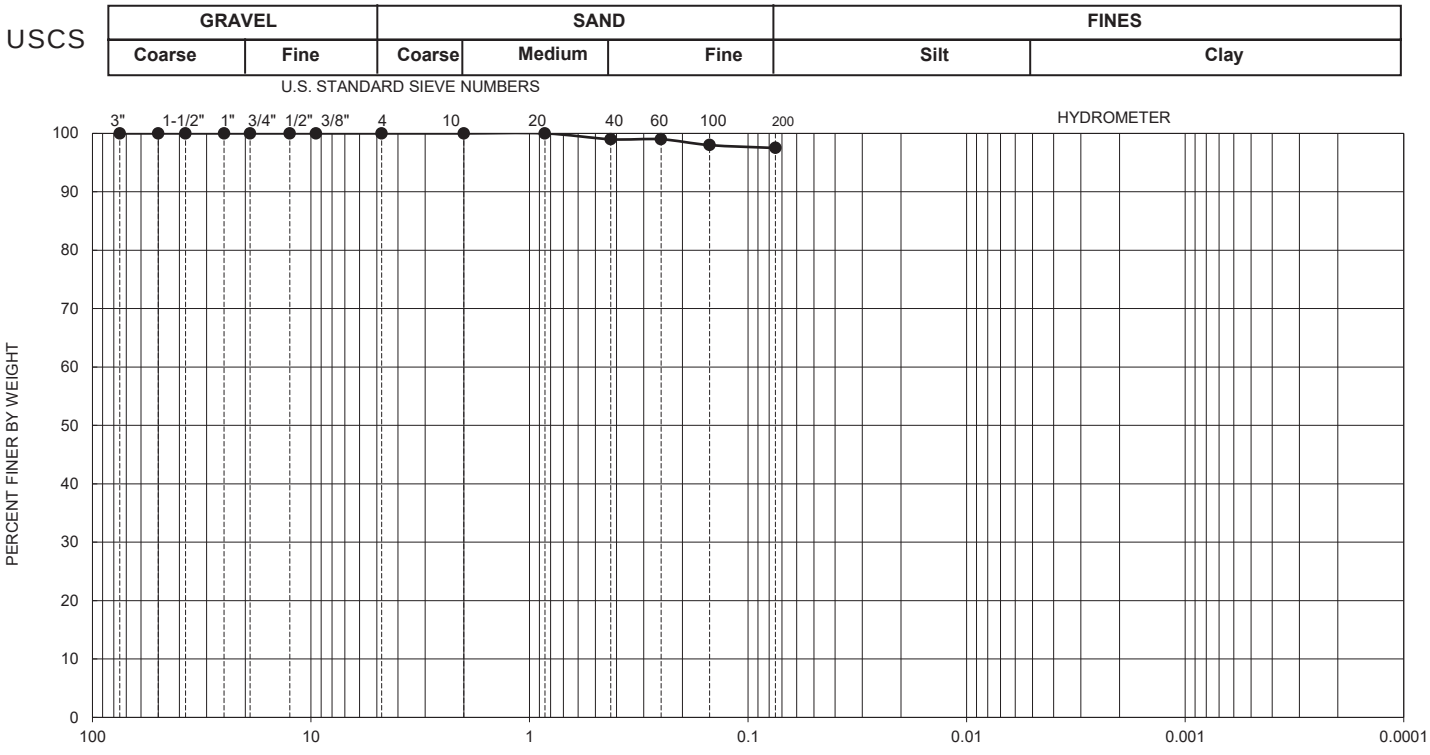
Salt Pond 20
San Diego, California

FIGURE

B-15

Date Tested: 7/13/2018

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
Composite Sample	C-16	N/A	97.5	CH

Sample Description	Dark Gray Fat Clay	Moisture Percent: 58.1%

Sieve Analysis

Sieve Size		% Passing
3"	75 mm	100
2"	50 mm	100
1.5"	37.5 mm	100
1"	25 mm	100
3/4"	19 mm	100
1/2"	12.5 mm	100
3/8"	9.5 mm	100
No. 4	4.75 mm	100
No. 10	2.0 mm	100
No. 20	0.85 mm	100
No. 40	0.425 mm	99
No. 60	0.25 mm	99
No 100	0.15 mm	98
No 200	.075 mm	97.5

Atterberg Limits Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318

Liquid Limit: 87
Plastic Limit: 30
Plasticity Index: 57 (CH)

Expansion Index Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4829

Expansion Index: 97
Dry Density, pcf: 88.2
As Molded Water Content, %: 17.0
Final Water Content, %: 43
Initial Saturation, as molded, %: 50.8

Orgainic Content, ASTM D2974, C

Organic Matter, %: 5.3

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Checked by:	JLB	Tech:	L.B.
Project No.	20164596.018A	Date:	9-Aug-18

GRADATION TEST RESULTS
Composite Sample C-16

Salt Pond 20
San Diego, California

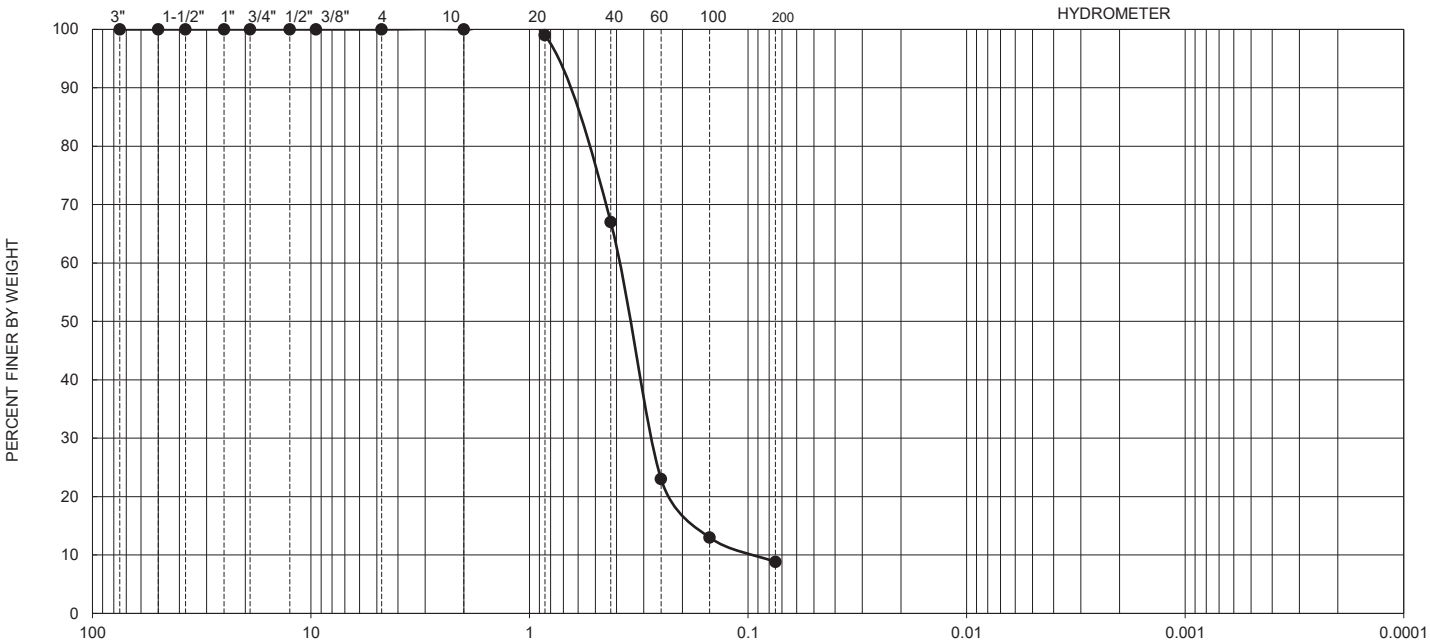
FIGURE

B-16

Date Tested: 7/13/2018

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
Composite Sample	C-17	N/A	8.8	SP-SM

Sample Description	Light Brown Poorly Graded Sand with Silt	Moisture Percent: 18.9%

Sieve Analysis

Sieve Size		% Passing
3"	75 mm	100
2"	50 mm	100
1.5"	37.5 mm	100
1"	25 mm	100
3/4"	19 mm	100
1/2"	12.5 mm	100
3/8"	9.5 mm	100
No. 4	4.75 mm	100
No. 10	2.0 mm	100
No. 20	0.85 mm	99
No. 40	0.425 mm	67
No. 60	0.25 mm	23
No 100	0.15 mm	13
No 200	.075 mm	8.8

Atterberg Limits Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318

Liquid Limit: Non-Plastic
Plastic Limit: Non-Plastic
Plasticity Index: Non-Plastic

Expansion Index Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4829

Expansion Index: 1
Dry Density, pcf: 106.0
As Molded Water Content, %: 10.5
Final Water Content, %: 14
Initial Saturation, as molded, %: 48.3

Orgainic Content, ASTM D2974, C

Organic Matter, %: 0.9

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Checked by:	JLB	Tech:	L.B.
Project No.	20164596.018A	Date:	9-Aug-18

GRADATION TEST RESULTS
Composite Sample C-17

Salt Pond 20
San Diego, California

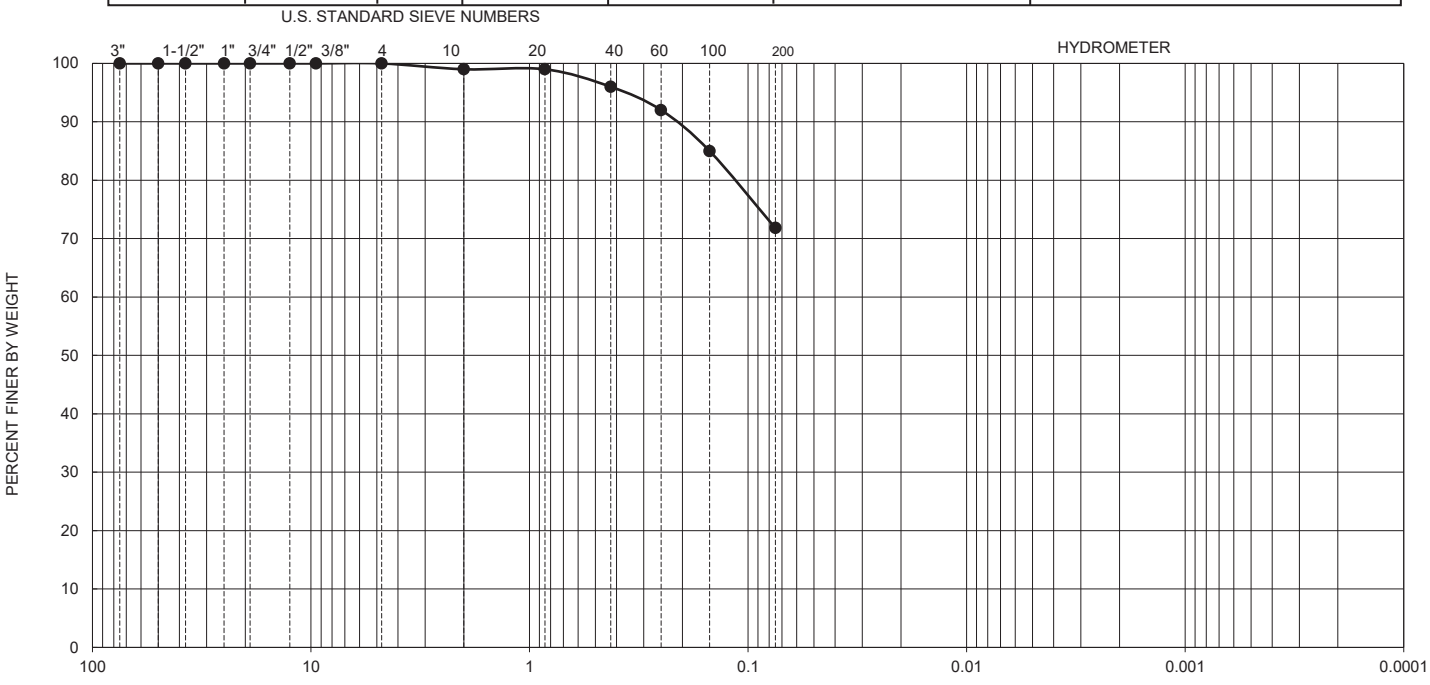
FIGURE

B-17

Date Tested: 7/13/2018

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913

USCS	GRAVEL		SAND			FINES	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
Composite Sample	C-18	N/A	71.8	CL

Sample Description	Dark Brown Lean Clay with Sand	Moisture Percent: 26.6%

Sieve Analysis	Sieve Size		% Passing
	3"	75 mm	100
	2"	50 mm	100
	1.5"	37.5 mm	100
	1"	25 mm	100
	3/4"	19 mm	100
	1/2"	12.5 mm	100
	3/8"	9.5 mm	100
	No. 4	4.75 mm	100
	No. 10	2.0 mm	99
	No. 20	0.85 mm	99
	No. 40	0.425 mm	96
	No. 60	0.25 mm	92
	No 100	0.15 mm	85
	No 200	.075 mm	71.8

Atterberg Limits Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318

Liquid Limit: 25
Plastic Limit: 16
Plasticity Index: 9

Expansion Index Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4829

Expansion Index: 25
Dry Density, pcf: 100.4
As Molded Water Content, %: 12.2
Final Water Content, %: 26
Initial Saturation, as molded, %: 48.7

Orgainic Content, ASTM D2974, C

Organic Matter, %: 3.3

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Checked by:	JLB	Tech:	L.B.
Project No.	20164596.018A	Date:	9-Aug-18

GRADATION TEST RESULTS
Composite Sample C-18

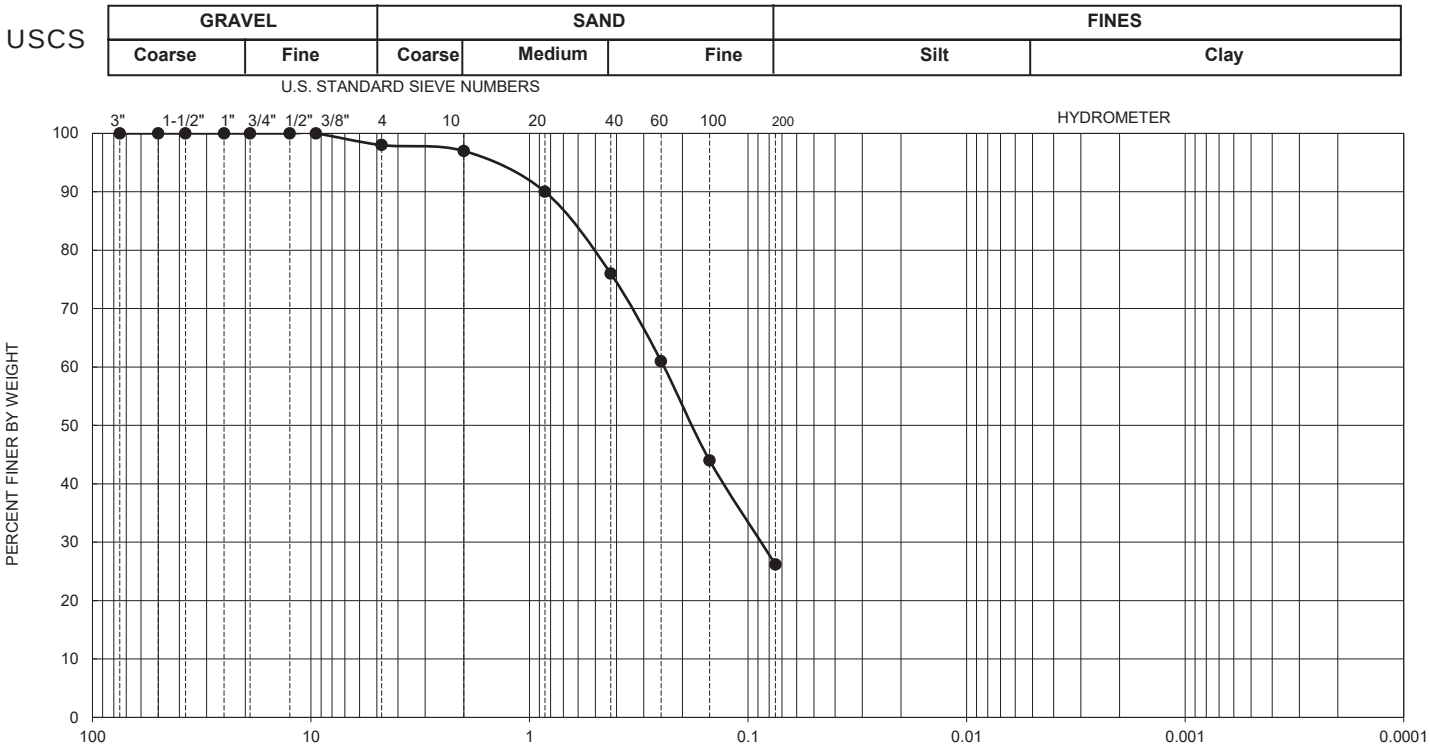
Salt Pond 20
San Diego, California

FIGURE

B-18

Date Tested: 7/13/2018

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 6913



Boring No.	Sample No.	Depth (ft)	Passing 200 (%)	USCS Classification
Composite Sample	C-19	N/A	26.2	SM

Sample Description	Light Brown Silty Sand	Moisture Percent: 23.3%

Sieve Analysis	Sieve Size		% Passing
	3"	75 mm	100
	2"	50 mm	100
	1.5"	37.5 mm	100
	1"	25 mm	100
	3/4"	19 mm	100
	1/2"	12.5 mm	100
	3/8"	9.5 mm	100
	No. 4	4.75 mm	98
	No. 10	2.0 mm	97
	No. 20	0.85 mm	90
	No. 40	0.425 mm	76
	No. 60	0.25 mm	61
	No 100	0.15 mm	44
	No 200	.075 mm	26.2

Atterberg Limits Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4318

Liquid Limit: Non-Plastic
Plastic Limit: Non-Plastic
Plasticity Index: Non-Plastic

Expansion Index Test Results

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D 4829

Expansion Index: 1
Dry Density, pcf: 117.2
As Molded Water Content, %: 8.1
Final Water Content, %: 11
Initial Saturation, as molded, %: 50.3

Orgainic Content, ASTM D2974, C

Organic Matter, %: 0.8

KLEINFELDER
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Checked by:	JLB	Tech:	L.B.
Project No.	20164596.018A	Date:	9-Aug-18

GRADATION TEST RESULTS
Composite Sample C-19

Salt Pond 20
San Diego, California

FIGURE

B-19

L A B O R A T O R Y R E P O R T

Telephone (619) 425-1993 Fax 425-7917 Established 1928

C L A R K S O N L A B O R A T O R Y A N D S U P P L Y I N C.
350 Trousdale Dr. Chula Vista, Ca. 91910 www.clarksonlab.com
A N A L Y T I C A L A N D C O N S U L T I N G C H E M I S T S

Date: July 31, 2018
Purchase Order Number: PROJECT#20164596.018A
Sales Order Number: 40950
Account Number: KLE

To:

Kleinfelder Inc.
550 West C Street Ste 1200
San Diego, CA 92101
Attention: Uly Panuncialman

Laboratory Number: SO6939-1 Customers Phone: 831-4600
Fax: 831-4619
Sample Designation:

One soil sample received on 07/23/18 at 9:00am,
marked as:
Project: Salt Point 20
Project #: 20164596.018A
Sample #: C1
Sampled by JL
Date Sampled 06/18-20/2018

Analysis By California Test 643, 1999, Department of Transportation Division of Construction, Method for Estimating the Service Life of Steel Culverts.

pH 8.0

Water Added (ml)	Resistivity (ohm-cm)
20	150
5	130
5	95
5	82
5	78
5	74
5	65
5	69
5	71

10 years to perforation for a 16 gauge metal culvert.
13 years to perforation for a 14 gauge metal culvert.
18 years to perforation for a 12 gauge metal culvert.
23 years to perforation for a 10 gauge metal culvert.
28 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.585%(5850ppm)

Water Soluble Chloride Calif. Test 422 1.18% (11800ppm)

Laura Torres
LT/ilv

L A B O R A T O R Y R E P O R T

Telephone (619) 425-1993 Fax 425-7917 Established 1928

C L A R K S O N L A B O R A T O R Y A N D S U P P L Y I N C.
350 Trousdale Dr. Chula Vista, Ca. 91910 www.clarksonlab.com
A N A L Y T I C A L A N D C O N S U L T I N G C H E M I S T S

Date: July 31, 2018
Purchase Order Number: PROJECT#20164596.018A
Sales Order Number: 40950
Account Number: KLE

To:

Kleinfelder Inc.
550 West C Street Ste 1200
San Diego, CA 92101
Attention: Uly Panuncialman

Laboratory Number: SO6939-2 Customers Phone: 831-4600
Fax: 831-4619
Sample Designation:

One soil sample received on 07/23/18 at 9:00am,
marked as:
Project: Salt Point 20
Project #: 20164596.018A
Sample #: C2
Sampled by JL
Date Sampled 06/18-20/2018

Analysis By California Test 643, 1999, Department of Transportation Division of Construction, Method for Estimating the Service Life of Steel Culverts.

pH 7.0

Water Added (ml)	Resistivity (ohm-cm)
10	410
5	320
5	250
5	170
5	130
5	120
5	180
5	230

Less than 5 years to perforation for a 16 gauge metal culvert.
6 years to perforation for a 14 gauge metal culvert.
9 years to perforation for a 12 gauge metal culvert.
11 years to perforation for a 10 gauge metal culvert.
14 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.204% (2040ppm)

Water Soluble Chloride Calif. Test 422 0.454% (4540ppm)

Laura Torres
LT/ilv

L A B O R A T O R Y R E P O R T

Telephone (619) 425-1993 Fax 425-7917 Established 1928

C L A R K S O N L A B O R A T O R Y A N D S U P P L Y I N C.
350 Trousdale Dr. Chula Vista, Ca. 91910 www.clarksonlab.com
A N A L Y T I C A L A N D C O N S U L T I N G C H E M I S T S

Date: July 31, 2018
Purchase Order Number: PROJECT#20164596.018A TASK 5
Sales Order Number: 40950
Account Number: KLE

To:

Kleinfelder Inc.
550 West C Street Ste 1200
San Diego, CA 92101
Attention: Uly Panuncialman

Laboratory Number: SO6939-3 Customers Phone: 831-4600
Fax: 831-4619
Sample Designation:

One soil sample received on 07/23/18 at 9:00am,
marked as:
Project: Salt Point 20
Project #: 20164596.018A
Sample #: C3
Sampled by JL
Date Sampled 06/18-20/2018

Analysis By California Test 643, 1999, Department of Transportation Division of Construction, Method for Estimating the Service Life of Steel Culverts.

pH 7.9

Water Added (ml)	Resistivity (ohm-cm)
10	510
5	440
5	350
5	220
5	170
5	150
5	130
5	170
5	240

13 years to perforation for a 16 gauge metal culvert.
17 years to perforation for a 14 gauge metal culvert.
24 years to perforation for a 12 gauge metal culvert.
30 years to perforation for a 10 gauge metal culvert.
37 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.138% (1380ppm)

Water Soluble Chloride Calif. Test 422 0.294% (2940ppm)

Laura Torres
LT/ilv

L A B O R A T O R Y R E P O R T

Telephone (619) 425-1993 Fax 425-7917 Established 1928

C L A R K S O N L A B O R A T O R Y A N D S U P P L Y I N C.
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A N A L Y T I C A L A N D C O N S U L T I N G C H E M I S T S

Date: July 31, 2018
Purchase Order Number: PROJECT#20164596.018A
Sales Order Number: 40950
Account Number: KLE

To:

Kleinfelder Inc.
550 West C Street Ste 1200
San Diego, CA 92101
Attention: Uly Panuncialman

Laboratory Number: SO6939-4 Customers Phone: 831-4600
Fax: 831-4619
Sample Designation:

One soil sample received on 07/23/18 at 9:00am,
marked as:
Project: Salt Point 20
Project #: 20164596.018A
Sample #: C4
Sampled by JL
Date Sampled 06/18-20/2018

Analysis By California Test 643, 1999, Department of Transportation Division of Construction, Method for Estimating the Service Life of Steel Culverts.

pH 7.6

Water Added (ml)	Resistivity (ohm-cm)
10	2300
5	1200
5	1100
5	800
5	760
5	720
5	750
5	790

27 years to perforation for a 16 gauge metal culvert.
35 years to perforation for a 14 gauge metal culvert.
48 years to perforation for a 12 gauge metal culvert.
61 years to perforation for a 10 gauge metal culvert.
75 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.122% (1220ppm)

Water Soluble Chloride Calif. Test 422 0.038% (380ppm)

Laura Torres

Laura Torres
LT/ilv

L A B O R A T O R Y R E P O R T

Telephone (619) 425-1993 Fax 425-7917 Established 1928

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A N A L Y T I C A L A N D C O N S U L T I N G C H E M I S T S

Date: July 31, 2018
Purchase Order Number: PROJECT#20164596.018A
Sales Order Number: 40950
Account Number: KLE

To:

Kleinfelder Inc.
550 West C Street Ste 1200
San Diego, CA 92101
Attention: Uly Panuncialman

Laboratory Number: SO6939-5 Customers Phone: 831-4600
Fax: 831-4619
Sample Designation:

One soil sample received on 07/23/18 at 9:00am,
marked as:
Project: Salt Point 20
Project #: 20164596.018A
Sample #: C5
Sampled by JL
Date Sampled 06/18-20/2018

Analysis By California Test 643, 1999, Department of Transportation Division of Construction, Method for Estimating the Service Life of Steel Culverts.

pH 8.2

Water Added (ml)	Resistivity (ohm-cm)
15	1300
5	950
5	800
5	650
5	560
5	550
5	490
5	510
5	550

23 years to perforation for a 16 gauge metal culvert.
30 years to perforation for a 14 gauge metal culvert.
41 years to perforation for a 12 gauge metal culvert.
52 years to perforation for a 10 gauge metal culvert.
64 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.051% (510ppm)

Water Soluble Chloride Calif. Test 422 0.085% (850ppm)

Laura Torres
LT/ilv

L A B O R A T O R Y R E P O R T

Telephone (619) 425-1993 Fax 425-7917 Established 1928

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Date: July 31, 2018
Purchase Order Number: PROJECT#20164596.018A
Sales Order Number: 40950
Account Number: KLE

To:

Kleinfelder Inc.
550 West C Street Ste 1200
San Diego, CA 92101
Attention: Uly Panuncialman

Laboratory Number: SO6939-6 Customers Phone: 831-4600
Fax: 831-4619
Sample Designation:

One soil sample received on 07/23/18 at 9:00am,
marked as:
Project: Salt Point 20
Project #: 20164596.018A
Sample #: C6
Sampled by JL
Date Sampled 06/18-20/2018

Analysis By California Test 643, 1999, Department of Transportation Division of Construction, Method for Estimating the Service Life of Steel Culverts.

pH 8.8

Water Added (ml)	Resistivity (ohm-cm)
10	2200
5	1500
5	1100
5	930
5	760
5	630
5	560
5	640
5	710

24 years to perforation for a 16 gauge metal culvert.
31 years to perforation for a 14 gauge metal culvert.
43 years to perforation for a 12 gauge metal culvert.
55 years to perforation for a 10 gauge metal culvert.
67 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.014% (140ppm)

Water Soluble Chloride Calif. Test 422 0.042% (420ppm)

Laura Torres
LT/ilv

L A B O R A T O R Y R E P O R T

Telephone (619) 425-1993 Fax 425-7917 Established 1928

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A N A L Y T I C A L A N D C O N S U L T I N G C H E M I S T S

Date: July 31, 2018
Purchase Order Number: PROJECT#20164596.018A
Sales Order Number: 40950
Account Number: KLE

To:

Kleinfelder Inc.
550 West C Street Ste 1200
San Diego, CA 92101
Attention: Uly Panuncialman

Laboratory Number: SO6939-7 Customers Phone: 831-4600
Fax: 831-4619
Sample Designation:

One soil sample received on 07/23/18 at 9:00am,
marked as:
Project: Salt Point 20
Project #: 20164596.018A
Sample #: C7
Sampled by JL
Date Sampled 06/18-20/2018

Analysis By California Test 643, 1999, Department of Transportation Division of Construction, Method for Estimating the Service Life of Steel Culverts.

pH 7.6

Water Added (ml)	Resistivity (ohm-cm)
10	1300
5	890
5	700
5	580
5	430
5	370
5	340
5	370
5	400

20 years to perforation for a 16 gauge metal culvert.
26 years to perforation for a 14 gauge metal culvert.
35 years to perforation for a 12 gauge metal culvert.
45 years to perforation for a 10 gauge metal culvert.
55 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.138% (1380ppm)

Water Soluble Chloride Calif. Test 422 0.240% (2400ppm)

Laura Torres
LT/ilv

L A B O R A T O R Y R E P O R T

Telephone (619) 425-1993 Fax 425-7917 Established 1928

C L A R K S O N L A B O R A T O R Y A N D S U P P L Y I N C.
350 Trousdale Dr. Chula Vista, Ca. 91910 www.clarksonlab.com
A N A L Y T I C A L A N D C O N S U L T I N G C H E M I S T S

Date: July 31, 2018
Purchase Order Number: PROJECT#20164596.018A
Sales Order Number: 40950
Account Number: KLE

To:

Kleinfelder Inc.
550 West C Street Ste 1200
San Diego, CA 92101
Attention: Uly Panuncialman

Laboratory Number: SO6939-8 Customers Phone: 831-4600
Fax: 831-4619
Sample Designation:

One soil sample received on 07/23/18 at 9:00am,
marked as:
Project: Salt Point 20
Project #: 20164596.018A
Sample #: C8
Sampled by JL
Date Sampled 06/18-20/2018

Analysis By California Test 643, 1999, Department of Transportation Division of Construction, Method for Estimating the Service Life of Steel Culverts.

pH 8.0

Water Added (ml)	Resistivity (ohm-cm)
10	200
5	100
5	60
5	49
5	46
5	43
5	48
5	49

8 years to perforation for a 16 gauge metal culvert.
11 years to perforation for a 14 gauge metal culvert.
15 years to perforation for a 12 gauge metal culvert.
19 years to perforation for a 10 gauge metal culvert.
24 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.548%(5480ppm)

Water Soluble Chloride Calif. Test 422 1.5%% (15000ppm)

Laura Torres
LT/ilv

L A B O R A T O R Y R E P O R T

Telephone (619) 425-1993 Fax 425-7917 Established 1928

C L A R K S O N L A B O R A T O R Y A N D S U P P L Y I N C.
350 Trousdale Dr. Chula Vista, Ca. 91910 www.clarksonlab.com
A N A L Y T I C A L A N D C O N S U L T I N G C H E M I S T S

Date: July 31, 2018
Purchase Order Number: PROJECT#20164596.018A
Sales Order Number: 40950
Account Number: KLE

To:

Kleinfelder Inc.
550 West C Street Ste 1200
San Diego, CA 92101
Attention: Uly Panuncialman

Laboratory Number: SO6939-9 Customers Phone: 831-4600
Fax: 831-4619
Sample Designation:

One soil sample received on 07/23/18 at 9:00am,
marked as:
Project: Salt Point 20
Project #: 20164596.018A
Sample #: C9
Sampled by JL
Date Sampled 06/18-20/2018

Analysis By California Test 643, 1999, Department of Transportation Division of Construction, Method for Estimating the Service Life of Steel Culverts.

pH 8.2

Water Added (ml)	Resistivity (ohm-cm)
10	170
5	110
5	69
5	53
5	50
5	46
5	49
5	51

9 years to perforation for a 16 gauge metal culvert.
11 years to perforation for a 14 gauge metal culvert.
16 years to perforation for a 12 gauge metal culvert.
20 years to perforation for a 10 gauge metal culvert.
24 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.177%(1770ppm)

Water Soluble Chloride Calif. Test 422 1.38% (13800ppm)

Laura Torres
LT/ilv

L A B O R A T O R Y R E P O R T

Telephone (619) 425-1993 Fax 425-7917 Established 1928

C L A R K S O N L A B O R A T O R Y A N D S U P P L Y I N C.
350 Trousdale Dr. Chula Vista, Ca. 91910 www.clarksonlab.com
A N A L Y T I C A L A N D C O N S U L T I N G C H E M I S T S

Date: August 2, 2018
Purchase Order Number: PROJECT#20164596.018A
Sales Order Number: 40950
Account Number: KLE

To:

Kleinfelder Inc.
550 West C Street Ste 1200
San Diego, CA 92101
Attention: Uly Panuncialman

Laboratory Number: SO6939-10 Customers Phone: 831-4600
Fax: 831-4619
Sample Designation:

One soil sample received on 07/23/18 at 9:00am,
marked as:
Project: Salt Point 20
Project #: 20164596.018A
Sample #: C10
Sampled by JL
Date Sampled 06/18-20/2018

Analysis By California Test 643, 1999, Department of Transportation Division of Construction, Method for Estimating the Service Life of Steel Culverts.

pH 8.3

Water Added (ml)	Resistivity (ohm-cm)
10	550
5	170
5	98
5	76
5	57
5	55
5	48
5	51
5	58

9 years to perforation for a 16 gauge metal culvert.
11 years to perforation for a 14 gauge metal culvert.
16 years to perforation for a 12 gauge metal culvert.
20 years to perforation for a 10 gauge metal culvert.
25 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.159% (1590ppm)

Water Soluble Chloride Calif. Test 422 1.28% (12800ppm)

Laura Torres
LT/ilv

L A B O R A T O R Y R E P O R T

Telephone (619) 425-1993 Fax 425-7917 Established 1928

C L A R K S O N L A B O R A T O R Y A N D S U P P L Y I N C.
350 Trousdale Dr. Chula Vista, Ca. 91910 www.clarksonlab.com
A N A L Y T I C A L A N D C O N S U L T I N G C H E M I S T S

Date: August 2, 2018
Purchase Order Number: PROJECT#20164596.018A
Sales Order Number: 40950
Account Number: KLE

To:

Kleinfelder Inc.
550 West C Street Ste 1200
San Diego, CA 92101
Attention: Uly Panuncialman

Laboratory Number: SO6939-11 Customers Phone: 831-4600
Fax: 831-4619
Sample Designation:

One soil sample received on 07/23/18 at 9:00am,
marked as:
Project: Salt Point 20
Project #: 20164596.018A
Sample #: C11
Sampled by JL
Date Sampled 06/18-20/2018

Analysis By California Test 643, 1999, Department of Transportation Division of Construction, Method for Estimating the Service Life of Steel Culverts.

pH 8.4

Water Added (ml)	Resistivity (ohm-cm)
10	200
5	110
5	57
5	45
5	43
5	40
5	37
5	39
5	42

8 years to perforation for a 16 gauge metal culvert.
10 years to perforation for a 14 gauge metal culvert.
14 years to perforation for a 12 gauge metal culvert.
18 years to perforation for a 10 gauge metal culvert.
22 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.338% (3380ppm)

Water Soluble Chloride Calif. Test 422 1.71% (17100ppm)

Laura Torres
LT/ilv

L A B O R A T O R Y R E P O R T

Telephone (619) 425-1993 Fax 425-7917 Established 1928

C L A R K S O N L A B O R A T O R Y A N D S U P P L Y I N C.
350 Trousdale Dr. Chula Vista, Ca. 91910 www.clarksonlab.com
A N A L Y T I C A L A N D C O N S U L T I N G C H E M I S T S

Date: August 2, 2018
Purchase Order Number: PROJECT#20164596.018A
Sales Order Number: 40950
Account Number: KLE

To:

Kleinfelder Inc.
550 West C Street Ste 1200
San Diego, CA 92101
Attention: Uly Panuncialman

Laboratory Number: SO6939-12 Customers Phone: 831-4600
Fax: 831-4619
Sample Designation:

One soil sample received on 07/23/18 at 9:00am,
marked as:
Project: Salt Point 20
Project #: 20164596.018A
Sample #: C12
Sampled by JL
Date Sampled 06/18-20/2018

Analysis By California Test 643, 1999, Department of Transportation Division of Construction, Method for Estimating the Service Life of Steel Culverts.

pH 8.3

Water Added (ml)	Resistivity (ohm-cm)
10	180
5	77
5	47
5	42
5	40
5	39
5	44
5	45

8 years to perforation for a 16 gauge metal culvert.
11 years to perforation for a 14 gauge metal culvert.
15 years to perforation for a 12 gauge metal culvert.
19 years to perforation for a 10 gauge metal culvert.
23 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.480% (4800ppm)

Water Soluble Chloride Calif. Test 422 1.5% (15000ppm)

Laura Torres
LT/ilv

L A B O R A T O R Y R E P O R T

Telephone (619) 425-1993 Fax 425-7917 Established 1928

C L A R K S O N L A B O R A T O R Y A N D S U P P L Y I N C.
350 Trousdale Dr. Chula Vista, Ca. 91910 www.clarksonlab.com
A N A L Y T I C A L A N D C O N S U L T I N G C H E M I S T S

Date: August 2, 2018
Purchase Order Number: PROJECT#20164596.018A
Sales Order Number: 40950
Account Number: KLE

To:

Kleinfelder Inc.
550 West C Street Ste 1200
San Diego, CA 92101
Attention: Uly Panuncialman

Laboratory Number: SO6939-13 Customers Phone: 831-4600
Fax: 831-4619
Sample Designation:

One soil sample received on 07/23/18 at 9:00am,
marked as:
Project: Salt Point 20
Project #: 20164596.018A
Sample #: C13
Sampled by JL
Date Sampled 06/18-20/2018

Analysis By California Test 643, 1999, Department of Transportation Division of Construction, Method for Estimating the Service Life of Steel Culverts.

pH 8.0

Water Added (ml)	Resistivity (ohm-cm)
20	31
5	28
5	28
5	27
5	26
5	26
5	26
5	27
5	28

7 years to perforation for a 16 gauge metal culvert.
9 years to perforation for a 14 gauge metal culvert.
12 years to perforation for a 12 gauge metal culvert.
16 years to perforation for a 10 gauge metal culvert.
29 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.435% (4350ppm)

Water Soluble Chloride Calif. Test 422 2.6 % (26000ppm)

Laura Torres
LT/ilv

L A B O R A T O R Y R E P O R T

Telephone (619) 425-1993 Fax 425-7917 Established 1928

C L A R K S O N L A B O R A T O R Y A N D S U P P L Y I N C.
350 Trousdale Dr. Chula Vista, Ca. 91910 www.clarksonlab.com
A N A L Y T I C A L A N D C O N S U L T I N G C H E M I S T S

Date: August 2, 2018
Purchase Order Number: PROJECT#20164596.018A
Sales Order Number: 40950
Account Number: KLE

To:

Kleinfelder Inc.
550 West C Street Ste 1200
San Diego, CA 92101
Attention: Uly Panuncialman

Laboratory Number: SO6939-14 Customers Phone: 831-4600
Fax: 831-4619
Sample Designation:

One soil sample received on 07/23/18 at 9:00am,
marked as:
Project: Salt Point 20
Project #: 20164596.018A
Sample #: C14
Sampled by JL
Date Sampled 06/18-20/2018

Analysis By California Test 643, 1999, Department of Transportation Division of Construction, Method for Estimating the Service Life of Steel Culverts.

pH 8.2

Water Added (ml)	Resistivity (ohm-cm)
10	180
5	120
5	52
5	37
5	31
5	34
5	39

7 years to perforation for a 16 gauge metal culvert.
10 years to perforation for a 14 gauge metal culvert.
13 years to perforation for a 12 gauge metal culvert.
17 years to perforation for a 10 gauge metal culvert.
21 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.540% (5400ppm)

Water Soluble Chloride Calif. Test 422 2.46 % (24600ppm)

Laura Torres
LT/ilv

L A B O R A T O R Y R E P O R T

Telephone (619) 425-1993 Fax 425-7917 Established 1928

C L A R K S O N L A B O R A T O R Y A N D S U P P L Y I N C.
350 Trousdale Dr. Chula Vista, Ca. 91910 www.clarksonlab.com
A N A L Y T I C A L A N D C O N S U L T I N G C H E M I S T S

Date: August 2, 2018
Purchase Order Number: PROJECT#20164596.018A
Sales Order Number: 40950
Account Number: KLE

To:

Kleinfelder Inc.
550 West C Street Ste 1200
San Diego, CA 92101
Attention: Uly Panuncialman

Laboratory Number: SO6939-15 Customers Phone: 831-4600
Fax: 831-4619
Sample Designation:

One soil sample received on 07/23/18 at 9:00am,
marked as:
Project: Salt Point 20
Project #: 20164596.018A
Sample #: C15
Sampled by JL
Date Sampled 06/18-20/2018

Analysis By California Test 643, 1999, Department of Transportation Division of Construction, Method for Estimating the Service Life of Steel Culverts.

pH 8.1

Water Added (ml)	Resistivity (ohm-cm)
15	130
5	99
5	59
5	50
5	49
5	43
5	41
5	43
5	47

8 years to perforation for a 16 gauge metal culvert.
11 years to perforation for a 14 gauge metal culvert.
15 years to perforation for a 12 gauge metal culvert.
19 years to perforation for a 10 gauge metal culvert.
23 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.276% (2760ppm)

Water Soluble Chloride Calif. Test 422 1.6 % (16000ppm)

Laura Torres
LT/ilv

L A B O R A T O R Y R E P O R T

Telephone (619) 425-1993 Fax 425-7917 Established 1928

C L A R K S O N L A B O R A T O R Y A N D S U P P L Y I N C.
350 Trousdale Dr. Chula Vista, Ca. 91910 www.clarksonlab.com
A N A L Y T I C A L A N D C O N S U L T I N G C H E M I S T S

Date: August 2, 2018
Purchase Order Number: PROJECT#20164596.018A
Sales Order Number: 40950
Account Number: KLE

To:

Kleinfelder Inc.
550 West C Street Ste 1200
San Diego, CA 92101
Attention: Uly Panuncialman

Laboratory Number: SO6939-16 Customers Phone: 831-4600
Fax: 831-4619
Sample Designation:

One soil sample received on 07/23/18 at 9:00am,
marked as:
Project: Salt Point 20
Project #: 20164596.018A
Sample #: C16
Sampled by JL
Date Sampled 06/18-20/2018

Analysis By California Test 643, 1999, Department of Transportation Division of Construction, Method for Estimating the Service Life of Steel Culverts.

pH 7.7

Water Added (ml)	Resistivity (ohm-cm)
25	24
5	20
5	18
5	15
5	15
5	15
5	14
5	15
5	16

5 years to perforation for a 16 gauge metal culvert.
7 years to perforation for a 14 gauge metal culvert.
10 years to perforation for a 12 gauge metal culvert.
12 years to perforation for a 10 gauge metal culvert.
15 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 1.03% (10300ppm)

Water Soluble Chloride Calif. Test 422 9.6 % (96000ppm)

Laura Torres
LT/ilv

L A B O R A T O R Y R E P O R T

Telephone (619) 425-1993 Fax 425-7917 Established 1928

C L A R K S O N L A B O R A T O R Y A N D S U P P L Y I N C.
350 Trousdale Dr. Chula Vista, Ca. 91910 www.clarksonlab.com
A N A L Y T I C A L A N D C O N S U L T I N G C H E M I S T S

Date: August 2, 2018
Purchase Order Number: PROJECT#20164596.018A
Sales Order Number: 40950
Account Number: KLE

To:

Kleinfelder Inc.
550 West C Street Ste 1200
San Diego, CA 92101
Attention: Uly Panuncialman

Laboratory Number: SO6939-17 Customers Phone: 831-4600
Fax: 831-4619
Sample Designation:

One soil sample received on 07/23/18 at 9:00am,
marked as:
Project: Salt Point 20
Project #: 20164596.018A
Sample #: C17
Sampled by JL
Date Sampled 06/18-20/2018

Analysis By California Test 643, 1999, Department of Transportation Division of Construction, Method for Estimating the Service Life of Steel Culverts.

pH 7.9

Water Added (ml)	Resistivity (ohm-cm)
10	170
5	110
5	68
5	55
5	50
5	42
5	43
5	44

8 years to perforation for a 16 gauge metal culvert.
11 years to perforation for a 14 gauge metal culvert.
15 years to perforation for a 12 gauge metal culvert.
19 years to perforation for a 10 gauge metal culvert.
23 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.225% (2250ppm)

Water Soluble Chloride Calif. Test 422 1.39 % (13900ppm)

Laura Torres
LT/ilv

L A B O R A T O R Y R E P O R T

Telephone (619) 425-1993 Fax 425-7917 Established 1928

C L A R K S O N L A B O R A T O R Y A N D S U P P L Y I N C.
350 Trousdale Dr. Chula Vista, Ca. 91910 www.clarksonlab.com
A N A L Y T I C A L A N D C O N S U L T I N G C H E M I S T S

Date: August 2, 2018
Purchase Order Number: PROJECT#20164596.018A
Sales Order Number: 40950
Account Number: KLE

To:

Kleinfelder Inc.
550 West C Street Ste 1200
San Diego, CA 92101
Attention: Uly Panuncialman

Laboratory Number: SO6939-18 Customers Phone: 831-4600
Fax: 831-4619
Sample Designation:

One soil sample received on 07/23/18 at 9:00am,
marked as:
Project: Salt Point 20
Project #: 20164596.018A
Sample #: C18
Sampled by JL
Date Sampled 06/18-20/2018

Analysis By California Test 643, 1999, Department of Transportation Division of Construction, Method for Estimating the Service Life of Steel Culverts.

pH 8.3

Water Added (ml)	Resistivity (ohm-cm)
10	270
5	73
5	43
5	39
5	37
5	38
5	39

8 years to perforation for a 16 gauge metal culvert.
10 years to perforation for a 14 gauge metal culvert.
14 years to perforation for a 12 gauge metal culvert.
18 years to perforation for a 10 gauge metal culvert.
22 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.570% (5700ppm)

Water Soluble Chloride Calif. Test 422 1.81 % (18100ppm)

Laura Torres
LT/ilv

L A B O R A T O R Y R E P O R T

Telephone (619) 425-1993 Fax 425-7917 Established 1928

C L A R K S O N L A B O R A T O R Y A N D S U P P L Y I N C.
350 Trousdale Dr. Chula Vista, Ca. 91910 www.clarksonlab.com
A N A L Y T I C A L A N D C O N S U L T I N G C H E M I S T S

Date: August 2, 2018
Purchase Order Number: PROJECT#20164596.018A
Sales Order Number: 40950
Account Number: KLE

To:

Kleinfelder Inc.
550 West C Street Ste 1200
San Diego, CA 92101
Attention: Uly Panuncialman

Laboratory Number: SO6939-19 Customers Phone: 831-4600
Fax: 831-4619
Sample Designation:

One soil sample received on 07/23/18 at 9:00am,
marked as:
Project: Salt Point 20
Project #: 20164596.018A
Sample #: C19
Sampled by JL
Date Sampled 06/18-20/2018

Analysis By California Test 643, 1999, Department of Transportation Division of Construction, Method for Estimating the Service Life of Steel Culverts.

pH 8.3

Water Added (ml)	Resistivity (ohm-cm)
10	170
5	100
5	76
5	54
5	51
5	50
5	50
5	50
5	54
5	55

9 years to perforation for a 16 gauge metal culvert.
12 years to perforation for a 14 gauge metal culvert.
16 years to perforation for a 12 gauge metal culvert.
21 years to perforation for a 10 gauge metal culvert.
25 years to perforation for a 8 gauge metal culvert.

Water Soluble Sulfate Calif. Test 417 0.174% (1740ppm)

Water Soluble Chloride Calif. Test 422 1.28 % (12800ppm)

Laura Torres
LT/ilv

APPENDIX H
90% Upper Confidence Limit Calculations

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	A	B	C	D	E	F	G	H	I	J	K	L
1	UCL Statistics for Uncensored Full Data Sets											
2												
3	User Selected Options											
4	Date/Time of Computation			ProUCL 5.16/26/2019 10:15:42 AM								
5	From File			WorkSheet.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10												
11	Lead											
12												
13	General Statistics											
14	Total Number of Observations					98	Number of Distinct Observations					52
15							Number of Missing Observations					0
16	Minimum					1	Mean					4.792
17	Maximum					32	Median					3.45
18	SD					4.059	Std. Error of Mean					0.41
19	Coefficient of Variation					0.847	Skewness					3.837
20												
21	Normal GOF Test											
22	Shapiro Wilk Test Statistic					0.656	Shapiro Wilk GOF Test					
23	5% Shapiro Wilk P Value					0	Data Not Normal at 5% Significance Level					
24	Lilliefors Test Statistic					0.244	Lilliefors GOF Test					
25	5% Lilliefors Critical Value					0.0897	Data Not Normal at 5% Significance Level					
26	Data Not Normal at 5% Significance Level											
27												
28	Assuming Normal Distribution											
29	95% Normal UCL						95% UCLs (Adjusted for Skewness)					
30	95% Student's-t UCL					5.473	95% Adjusted-CLT UCL (Chen-1995)					5.636
31							95% Modified-t UCL (Johnson-1978)					5.499
32												
33	Gamma GOF Test											
34	A-D Test Statistic					3.752	Anderson-Darling Gamma GOF Test					
35	5% A-D Critical Value					0.761	Data Not Gamma Distributed at 5% Significance Level					
36	K-S Test Statistic					0.162	Kolmogorov-Smirnov Gamma GOF Test					
37	5% K-S Critical Value					0.0912	Data Not Gamma Distributed at 5% Significance Level					
38	Data Not Gamma Distributed at 5% Significance Level											
39												
40	Gamma Statistics											
41	k hat (MLE)					2.658	k star (bias corrected MLE)					2.584
42	Theta hat (MLE)					1.803	Theta star (bias corrected MLE)					1.855
43	nu hat (MLE)					521	nu star (bias corrected)					506.4
44	MLE Mean (bias corrected)					4.792	MLE Sd (bias corrected)					2.981
45							Approximate Chi Square Value (0.05)					455.2
46	Adjusted Level of Significance					0.0476	Adjusted Chi Square Value					454.5
47												
48	Assuming Gamma Distribution											
49	95% Approximate Gamma UCL (use when n>=50))					5.331	95% Adjusted Gamma UCL (use when n<50)					5.339
50												
51	Lognormal GOF Test											
52	Shapiro Wilk Test Statistic					0.946	Shapiro Wilk Lognormal GOF Test					
53	5% Shapiro Wilk P Value					0.00135	Data Not Lognormal at 5% Significance Level					

	A	B	C	D	E	F	G	H	I	J	K	L
54					Lilliefors Test Statistic	0.111	Lilliefors Lognormal GOF Test					
55					5% Lilliefors Critical Value	0.0897	Data Not Lognormal at 5% Significance Level					
56	Data Not Lognormal at 5% Significance Level											
57												
58	Lognormal Statistics											
59					Minimum of Logged Data	0				Mean of logged Data		1.367
60					Maximum of Logged Data	3.466				SD of logged Data		0.582
61												
62	Assuming Lognormal Distribution											
63					95% H-UCL	5.205				90% Chebyshev (MVUE) UCL		5.52
64					95% Chebyshev (MVUE) UCL	5.918				97.5% Chebyshev (MVUE) UCL		6.471
65					99% Chebyshev (MVUE) UCL	7.558						
66												
67	Nonparametric Distribution Free UCL Statistics											
68	Data do not follow a Discernible Distribution (0.05)											
69												
70	Nonparametric Distribution Free UCLs											
71					95% CLT UCL	5.466				95% Jackknife UCL		5.473
72					95% Standard Bootstrap UCL	5.47				95% Bootstrap-t UCL		5.711
73					95% Hall's Bootstrap UCL	6.018				95% Percentile Bootstrap UCL		5.508
74					95% BCA Bootstrap UCL	5.689						
75					90% Chebyshev(Mean, Sd) UCL	6.022				95% Chebyshev(Mean, Sd) UCL		6.579
76					97.5% Chebyshev(Mean, Sd) UCL	7.352				99% Chebyshev(Mean, Sd) UCL		8.871
77												
78	Suggested UCL to Use											
79					95% Chebyshev (Mean, Sd) UCL	6.579						
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												

	A	B	C	D	E	F	G	H	I	J	K	L
1	UCL Statistics for Uncensored Full Data Sets											
2												
3	User Selected Options											
4	Date/Time of Computation			ProUCL 5.16/26/2019 10:18:01 AM								
5	From File			WorkSheet.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			90%								
8	Number of Bootstrap Operations			2000								
9												
10												
11	Vanadium											
12												
13	General Statistics											
14	Total Number of Observations					98	Number of Distinct Observations					48
15							Number of Missing Observations					0
16	Minimum					3.5	Mean					33.89
17	Maximum					72	Median					36
18	SD					14.39	Std. Error of Mean					1.454
19	Coefficient of Variation					0.425	Skewness					-0.0629
20												
21	Normal GOF Test											
22	Shapiro Wilk Test Statistic					0.963	Shapiro Wilk GOF Test					
23	5% Shapiro Wilk P Value					0.0454	Data Not Normal at 5% Significance Level					
24	Lilliefors Test Statistic					0.0774	Lilliefors GOF Test					
25	5% Lilliefors Critical Value					0.0897	Data appear Normal at 5% Significance Level					
26	Data appear Approximate Normal at 5% Significance Level											
27												
28	Assuming Normal Distribution											
29	90% Normal UCL						90% UCLs (Adjusted for Skewness)					
30	90% Student's-t UCL					35.77	90% Adjusted-CLT UCL (Chen-1995)					35.75
31							90% Modified-t UCL (Johnson-1978)					35.77
32												
33	Gamma GOF Test											
34	A-D Test Statistic					3.58	Anderson-Darling Gamma GOF Test					
35	5% A-D Critical Value					0.757	Data Not Gamma Distributed at 5% Significance Level					
36	K-S Test Statistic					0.158	Kolmogorov-Smirnov Gamma GOF Test					
37	5% K-S Critical Value					0.0908	Data Not Gamma Distributed at 5% Significance Level					
38	Data Not Gamma Distributed at 5% Significance Level											
39												
40	Gamma Statistics											
41	k hat (MLE)					3.863	k star (bias corrected MLE)					3.752
42	Theta hat (MLE)					8.774	Theta star (bias corrected MLE)					9.035
43	nu hat (MLE)					757.1	nu star (bias corrected)					735.3
44	MLE Mean (bias corrected)					33.89	MLE Sd (bias corrected)					17.5
45							Approximate Chi Square Value (0.1)					686.6
46	Adjusted Level of Significance					0.0973	Adjusted Chi Square Value					686
47												
48	Assuming Gamma Distribution											
49	90% Approximate Gamma UCL (use when n>=50))					36.3	90% Adjusted Gamma UCL (use when n<50)					36.33
50												
51	Lognormal GOF Test											
52	Shapiro Wilk Test Statistic					0.832	Shapiro Wilk Lognormal GOF Test					
53	5% Shapiro Wilk P Value					1.110E-16	Data Not Lognormal at 5% Significance Level					

	A	B	C	D	E	F	G	H	I	J	K	L
54					Lilliefors Test Statistic	0.2			Lilliefors Lognormal GOF Test			
55					5% Lilliefors Critical Value	0.0897			Data Not Lognormal at 5% Significance Level			
56					Data Not Lognormal at 5% Significance Level							
57												
58					Lognormal Statistics							
59					Minimum of Logged Data	1.253				Mean of logged Data		3.388
60					Maximum of Logged Data	4.277				SD of logged Data		0.601
61												
62					Assuming Lognormal Distribution							
63					90% H-UCL	38.81				90% Chebyshev (MVUE) UCL		42.36
64					95% Chebyshev (MVUE) UCL	45.52				97.5% Chebyshev (MVUE) UCL		49.89
65					99% Chebyshev (MVUE) UCL	58.48						
66												
67					Nonparametric Distribution Free UCL Statistics							
68					Data appear to follow a Discernible Distribution at 5% Significance Level							
69												
70					Nonparametric Distribution Free UCLs							
71					90% CLT UCL	35.76				90% Jackknife UCL		35.77
72					90% Standard Bootstrap UCL	35.72				90% Bootstrap-t UCL		35.78
73					90% Hall's Bootstrap UCL	35.79				90% Percentile Bootstrap UCL		35.77
74					90% BCA Bootstrap UCL	35.73						
75					90% Chebyshev(Mean, Sd) UCL	38.26				95% Chebyshev(Mean, Sd) UCL		40.23
76					97.5% Chebyshev(Mean, Sd) UCL	42.97				99% Chebyshev(Mean, Sd) UCL		48.36
77												
78					Suggested UCL to Use							
79					Recommendation Provided only for 95% Confidence Coefficient							
80												
81					Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be							
82					reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.							
83												

	A	B	C	D	E	F	G	H	I	J	K	L
1	UCL Statistics for Uncensored Full Data Sets											
2												
3	User Selected Options											
4	Date/Time of Computation			ProUCL 5.16/25/2019 1:38:43 PM								
5	From File			WorkSheet.xls								
6	Full Precision			OFF								
7	Confidence Coefficient			95%								
8	Number of Bootstrap Operations			2000								
9												
10												
11	Vanadium											
12												
13	General Statistics											
14	Total Number of Observations					116	Number of Distinct Observations					49
15							Number of Missing Observations					0
16	Minimum					3.5	Mean					34.06
17	Maximum					72	Median					35
18	SD					13.87	Std. Error of Mean					1.288
19	Coefficient of Variation					0.407	Skewness					-0.0581
20												
21	Normal GOF Test											
22	Shapiro Wilk Test Statistic					0.969	Shapiro Wilk GOF Test					
23	5% Shapiro Wilk P Value					0.0922	Data appear Normal at 5% Significance Level					
24	Lilliefors Test Statistic					0.0652	Lilliefors GOF Test					
25	5% Lilliefors Critical Value					0.0826	Data appear Normal at 5% Significance Level					
26	Data appear Normal at 5% Significance Level											
27												
28	Assuming Normal Distribution											
29	95% Normal UCL						95% UCLs (Adjusted for Skewness)					
30	95% Student's-t UCL					36.19	95% Adjusted-CLT UCL (Chen-1995)					36.17
31							95% Modified-t UCL (Johnson-1978)					36.19
32												
33	Gamma GOF Test											
34	A-D Test Statistic					3.624	Anderson-Darling Gamma GOF Test					
35	5% A-D Critical Value					0.756	Data Not Gamma Distributed at 5% Significance Level					
36	K-S Test Statistic					0.142	Kolmogorov-Smirnov Gamma GOF Test					
37	5% K-S Critical Value					0.0856	Data Not Gamma Distributed at 5% Significance Level					
38	Data Not Gamma Distributed at 5% Significance Level											
39												
40	Gamma Statistics											
41	k hat (MLE)					4.269	k star (bias corrected MLE)					4.164
42	Theta hat (MLE)					7.978	Theta star (bias corrected MLE)					8.178
43	nu hat (MLE)					990.4	nu star (bias corrected)					966.1
44	MLE Mean (bias corrected)					34.06	MLE Sd (bias corrected)					16.69
45							Approximate Chi Square Value (0.05)					895
46	Adjusted Level of Significance					0.0479	Adjusted Chi Square Value					894.1
47												
48	Assuming Gamma Distribution											
49	95% Approximate Gamma UCL (use when n>=50))					36.76	95% Adjusted Gamma UCL (use when n<50)					36.8
50												
51	Lognormal GOF Test											
52	Shapiro Wilk Test Statistic					0.838	Shapiro Wilk Lognormal GOF Test					
53	5% Shapiro Wilk P Value					0	Data Not Lognormal at 5% Significance Level					

	A	B	C	D	E	F	G	H	I	J	K	L
54					Lilliefors Test Statistic	0.182	Lilliefors Lognormal GOF Test					
55					5% Lilliefors Critical Value	0.0826	Data Not Lognormal at 5% Significance Level					
56	Data Not Lognormal at 5% Significance Level											
57												
58	Lognormal Statistics											
59					Minimum of Logged Data	1.253				Mean of logged Data		3.406
60					Maximum of Logged Data	4.277				SD of logged Data		0.568
61												
62	Assuming Lognormal Distribution											
63					95% H-UCL	39.14				90% Chebyshev (MVUE) UCL		41.38
64					95% Chebyshev (MVUE) UCL	44.1				97.5% Chebyshev (MVUE) UCL		47.87
65					99% Chebyshev (MVUE) UCL	55.28						
66												
67	Nonparametric Distribution Free UCL Statistics											
68	Data appear to follow a Discernible Distribution at 5% Significance Level											
69												
70	Nonparametric Distribution Free UCLs											
71					95% CLT UCL	36.18				95% Jackknife UCL		36.19
72					95% Standard Bootstrap UCL	36.18				95% Bootstrap-t UCL		36.2
73					95% Hall's Bootstrap UCL	36.17				95% Percentile Bootstrap UCL		36.19
74					95% BCA Bootstrap UCL	36.21						
75					90% Chebyshev(Mean, Sd) UCL	37.92				95% Chebyshev(Mean, Sd) UCL		39.67
76					97.5% Chebyshev(Mean, Sd) UCL	42.1				99% Chebyshev(Mean, Sd) UCL		46.87
77												
78	Suggested UCL to Use											
79					95% Student's-t UCL	36.19						
80												
81	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
82	Recommendations are based upon data size, data distribution, and skewness.											
83	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
84	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
85												
86	Note: For highly negatively-skewed data, confidence limits (e.g., Chen, Johnson, Lognormal, and Gamma) may not be											
87	reliable. Chen's and Johnson's methods provide adjustments for positvely skewed data sets.											
88												

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Appendix I. Limited Geotechnical Investigation for the San Diego Wildlife Refuge Pond 20 Mitigation

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LIMITED
GEOTECHNICAL INVESTIGATION

SAN DIEGO WILDLIFE REFUGE
POND 20 MITIGATION
SAN DIEGO, CALIFORNIA

GEOCON
INCORPORATED

GEOTECHNICAL
ENVIRONMENTAL
MATERIALS

PREPARED FOR

GREAT ecology
ENVIRONMENT + DESIGN

SAN DIEGO, CALIFORNIA

AUGUST 2, 2019
PROJECT NO. G2079-52-01

GEOCON

Project No. G2079-52-01
August 2, 2019

Great Ecology
2251 San Diego Avenue, Suite A218
San Diego, California 92110

Attention: Dr. Mark Laska

Subject: LIMITED GEOTECHNICAL INVESTIGATION
SAN DIEGO WILDLIFE REFUGE
POND 20 MITIGATION
SAN DIEGO, CALIFORNIA

Dear Dr. Laska:

In accordance with your request and authorization of our proposal LG-16478 dated December 29, 2016, we prepared this limited geotechnical investigation report for the proposed wildlife refuge property located north of Palm Avenue and east of 13th Street in the City of San Diego, California. The accompanying report presents the findings of our study and our recommendations relative to the geotechnical aspects of developing the property as presently proposed. Based on our study, the site can be developed as proposed provided the recommendations in this report are incorporated into design and construction.

Should you have any questions regarding this report, or if we may be of further service, please contact the undersigned at your convenience.

Very truly yours,

GEOCON INCORPORATED

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LIMITED GEOTECHNICAL INVESTIGATION

1. PURPOSE AND SCOPE

This report presents the results of our geotechnical investigation for proposed wetland development of a wildlife refuge associated with the subject site. The wetland will be located at Pond 20 at the San Diego Wildlife Refuge located in the north of Palm Avenue and east of 13th Street just east of the city of Imperial Beach in the City of San Diego, California (see Vicinity Map, Figure 1 and Geologic Map, Figure 2). The purpose of the geotechnical investigation is to evaluate the surface and subsurface soil conditions and general site geology to help evaluate the soils ability to support earthmoving equipment and slope stability analyses of channels and berms. The scope of this geotechnical investigation also includes a review of readily available published and unpublished geologic literature (see List of References). To aid in preparing this report, we reviewed a Pond 20 Mitigation Design *Draft* and site plan provided by Great Ecology.

We performed a field investigation that included excavating 4 hand-auger borings to a maximum depth of approximately 9 feet. Appendix A presents the exploratory boring logs. The approximate locations of the exploratory borings are presented on the Geologic Map, Figure 2. Appendix A presents the results of our field borings. We tested selected soil samples obtained during the field investigation to evaluate pertinent physical and chemical soil properties for engineering analyses and to assist in providing recommendations for site grading and development. Details of the laboratory tests and a summary of the test results are presented in Appendix B and on the borings logs in Appendix A. Appendix C present the boring logs and laboratory test results from previous explorations in the area. Appendix D presents the results of the slope stability analyses for the planned slope configurations.

The Geologic Map, Figure 2, depicts the existing soil and geologic conditions and mapped geologic contacts based on our site reconnaissance and field excavations. We used the *Wetland Restoration of Salt Pond 20, Preliminary Design,* prepared by Great Ecology, as the base file for Figure 2. The conclusions and recommendations presented herein are based on analyses of the data reviewed as part of this study and our experience with similar soil and geologic conditions.

2. SITE AND PROJECT DESCRIPTION

The project site is located at Salt Pond 20 at the San Diego Wildlife Refuge located north of Palm Avenue, east of 13th Street, south of Bayshore Bikeway and west of open space and existing residential housing in the City of San Diego, California. The site is bounded on the north by Western Salt, on the west by residential construction, the south by Palm Avenue and a trailer park, and on the east by the Eggers Property. The site is currently undeveloped and includes the Otay River along the western property line. Access to the property is at the southwest corner adjacent to Palm Avenue. The topography of the site is relatively flat with elevations approximately 7 to 12 feet above Mean Sea Level

(MSL). Based on a review of the referenced plans, the planned work includes excavations to create wetland areas that will be inundated at high tide and dry at low tide.

The planned project area will be regraded to allow a canal system enter the area and water to help support a tidal wetland habitat. The area will be lowered to support mid and high marsh habitat, mudflats, and subtidal habitat. This would be accomplished by excavating canals throughout the property and providing some mounding. The proposed elevations would range from about 5 feet to 7 feet MSL.

The locations and descriptions of the site and proposed development are based on a site reconnaissance and a review of the site plan. If development plans differ significantly from those described herein, Geocon Incorporated should be consulted for review and possible revisions to this report.

3. SOIL AND GEOLOGIC CONDITIONS

We encountered undocumented fill in one of our exploratory borings and alluvium/bay deposits in all of our exploratory borings. The surficial soil and geologic units are discussed herein in order of increasing age. The occurrence and distribution of the units encountered, including descriptions of the units, are shown on the exploratory trench logs in Appendix A. The approximate lateral extent of the geologic conditions is presented on the Geologic Map, Figure 2. The subsurface relationship between the geologic units is presented on the Geologic Cross-Sections, Figure 4 (map pocket). We prepared the geologic cross-sections using interpolations between exploratory borings and previous investigative borings from 1985 and 1986; therefore, actual geologic conditions between the borings may vary from those illustrated and our discussion should be considered approximate.

3.1 Undocumented Fill (Qudf)

We encountered undocumented fill in Boring B-4 to a maximum depth reached of about 4 feet. The undocumented fills are associated with graded berms for roadway access to the site with a maximum anticipated thickness in excess of 9 feet in the northeast portion of the site. The undocumented fill consists of damp to saturated dark gray, silty clay. The upper portions of the undocumented fill will require remedial grading where structural improvements are planned.

3.2 Alluvium (Qal)

Alluvium exists below the fill materials to depths greater than about 30 feet based on the information from our previous investigations. The alluvium consists of damp to saturated, dark gray to grayish brown, silty to clayey, fine to coarse sand. A gravel layer exists at an elevation of roughly 18 feet below MSL that may be discerned as a basal layer above the Old Paralic Deposits. The alluvium is saturated

due to the low elevation and adjacent San Diego Bay and nearby Pacific Ocean. The alluvium likely possesses a potential for liquefaction. Excavations for the proposed tidal zones will likely encounter saturated alluvium. It may be difficult to support excavation equipment on the alluvium due to the moisture content and the soft nature of the soil. Only low-pressure track equipment should be considered for use during grading operations. We understand some salt deposits are present on the surface and may be present within the upper soil.

3.3 Old Paralic Deposits (Qop)

Old Paralic Deposits (formerly called the Bay Point Formation) were not encountered underlying the undocumented fill soil in our recent exploratory borings. Based on geologic maps of the area and our previous investigative borings, this unit is at depth at an approximate elevation of 30 to 35 feet below MSL in the pond area and is underlying the alluvium and undocumented fill. Published geologic maps also show the Old Paralic Deposits are likely near the existing ground surface west and south of the site. This unit is characterized as stiff, moist, silty clay and dense to very dense, damp to moist, silty, clayey sand.

4. GROUNDWATER

We encountered groundwater during our excavations at 1.5 feet below ground surface in B-3 to 5 feet below ground surface in B-1 and B-2. It is not uncommon for groundwater or seepage conditions to develop where none previously existed due to the permeability characteristics of the geologic units encountered on site. During the rainy season, seepage conditions may develop that would require special consideration during grading operations. Groundwater elevations are dependent on seasonal precipitation, irrigation and land use, among other factors, and vary as a result. Proper surface drainage will be critical to future performance of the project. The groundwater should be considered brackish due to the site's proximity to the San Diego Bay and Pacific Ocean.

5. GEOLOGIC HAZARDS

5.1 Faulting and Seismicity

The *City of San Diego Study, Geologic Hazards and Faults*, Sheets 5 and 6 define the site with a *Hazard Category 31 – Liquefaction: High Potential – shallow groundwater, major drainages, hydraulic fills.*

A review of geologic literature and experience with the soil and geologic conditions in the general area indicate that known active, potentially active, or inactive faults are not located at the site. An active fault is defined by the California Geological Survey (CGS) as a fault showing evidence for activity within the last 11,000 years. The site is not located within a State of California Earthquake Fault Zone. Kennedy and Tan (2008) show a buried fault trending toward the property about 900 feet north.

According to the computer program *EZ-FRISK* (Version 7.65), six known active faults are located within a search radius of 50 miles from the property. We used the 2008 USGS fault database that provides several models and combinations of fault data to evaluate the fault information. The nearest known active faults are the Newport-Inglewood/Rose Canyon Fault system, located approximately 3 miles west of the site and is the dominant source of potential ground motion. Earthquakes that might occur on this fault system or other faults within the southern California and northern Baja California area are potential generators of significant ground motion at the site. The estimated deterministic maximum earthquake magnitude and peak ground acceleration for the Newport-Inglewood Fault are 7.5 and 0.49g, respectively. The estimated deterministic maximum earthquake magnitude and peak ground acceleration for the Rose Canyon Fault are 6.9 and 0.43g, respectively. Table 5.1.1 lists the estimated maximum earthquake magnitude and peak ground acceleration for these and other faults in relationship to the site location. We used acceleration attenuation relationships developed by Boore-Atkinson (2008) NGA USGS2008, Campbell-Bozorgnia (2008) NGA USGS2008, and Chiou-Youngs (2007) NGA USGS2008 acceleration-attenuation relationships in our analysis.

TABLE 5.1.1
DETERMINISTIC SITE PARAMETERS

Fault Name	Distance from Site (miles)	Maximum Earthquake Magnitude (Mw)	Peak Ground Acceleration		
			Boore-Atkinson 2008 (g)	Campbell-Bozorgnia 2008 (g)	Chiou-Youngs 2007 (g)
Newport-Inglewood	3	7.5	0.39	0.40	0.49
Rose Canyon	3	6.9	0.35	0.39	0.43
Coronado Bank	11	7.4	0.22	0.18	0.22
Palos Verdes Connected	11	7.7	0.24	0.19	0.25
Elsinore	46	7.9	0.10	0.07	0.08

It is our opinion the site could be subjected to moderate to severe ground shaking in the event of an earthquake along any of the faults listed on Table 5.1.1 or other faults in the southern California/ northern Baja California region. We do not consider the site to possess a greater risk than that of the surrounding developments.

We used the computer program *EZ-FRISK* to perform a probabilistic seismic hazard analysis. The computer program *EZ-FRISK* operates under the assumption that the occurrence rate of earthquakes on each mapped Quaternary fault is proportional to the faults slip rate. The program accounts for earthquake magnitude as a function of fault rupture length, and site acceleration estimates are made using the earthquake magnitude and distance from the site to the rupture zone. The program also accounts for uncertainty in each of following: (1) earthquake magnitude, (2) rupture length for a given

magnitude, (3) location of the rupture zone, (4) maximum possible magnitude of a given earthquake, and (5) acceleration at the site from a given earthquake along each fault. By calculating the expected accelerations from considered earthquake sources, the program calculates the total average annual expected number of occurrences of site acceleration greater than a specified value. We utilized acceleration-attenuation relationships suggested by Boore-Atkinson (2008) NGA USGS2008, Campbell-Bozorgnia (2008) NGA USGS2008, and Chiou-Youngs (2007) NGA USGS2008 in the analysis. Table 5.1.2 presents the site-specific probabilistic seismic hazard parameters including acceleration-attenuation relationships and the probability of exceedence.

TABLE 5.1.2
PROBABILISTIC SEISMIC HAZARD PARAMETERS

Probability of Exceedence	Peak Ground Acceleration		
	Boore-Atkinson 2008 (g)	Campbell-Bozorgnia 2008 (g)	Chiou-Youngs 2007 (g)
2% in a 50 Year Period	0.46	0.47	0.54
5% in a 50 Year Period	0.31	0.31	0.35
10% in a 50 Year Period	0.20	0.21	0.22

While listing peak accelerations is useful for comparison of potential effects of fault activity in a region, other considerations are important in seismic design, including the frequency and duration of motion and the soil conditions underlying the site. Seismic design of any proposed structures should be evaluated in accordance with the 2016 California Building Code (CBC) guidelines or guidelines currently adopted by the City of San Diego.

5.2 Ground Rupture

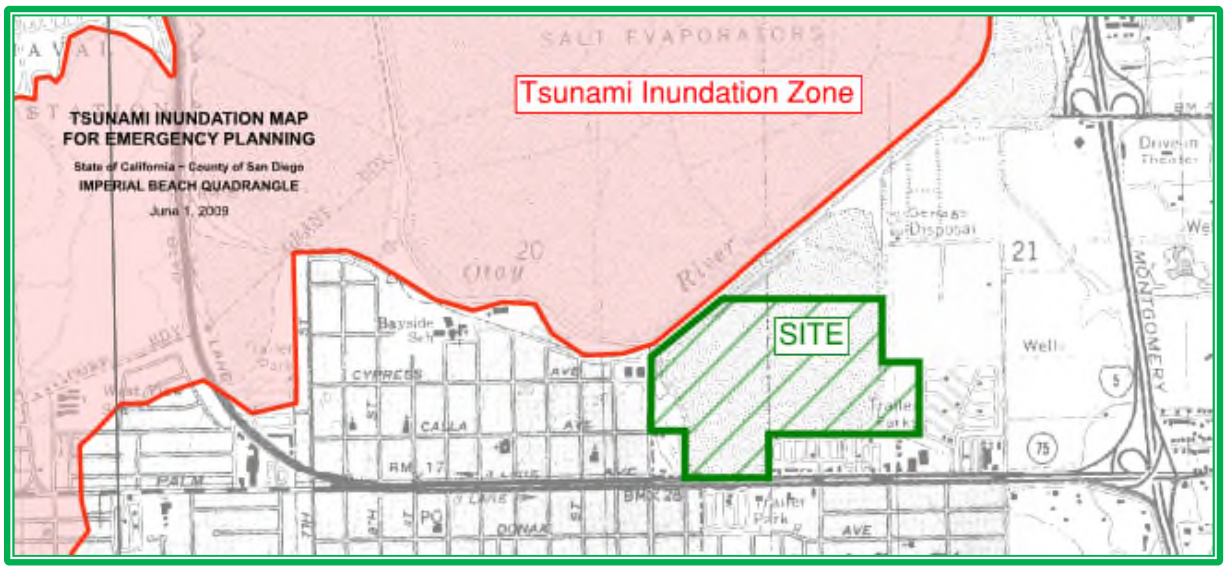
Ground surface rupture occurs when movement along a fault is sufficient to cause a gap or rupture where the upper edge of the fault zone intersects that earth surface. The potential for ground rupture is considered to be low due to the absence of active faults at the subject site.

5.3 Seiches and Tsunamis

A seiche is a run-up of water within a lake or embayment triggered by fault- or landslide-induced ground displacement. The property is located about 1 mile from the current San Diego Bay. The potential for seiches is considered low.

A tsunami is a series of long-period waves generated in the ocean by a sudden displacement of large volumes of water. Causes of tsunamis include underwater earthquakes, volcanic eruptions, or offshore slope failures. The first order driving force for locally generated tsunamis offshore southern California

is expected to be tectonic deformation from large earthquakes (Legg, *et al.*, 2002). The largest tsunami effect recorded in San Diego since 1950 was May 22, 1960 which had maximum run-up amplitudes of 2.1 feet (0.7 meters) [URS, 2004]. Wave heights and run-up elevations from tsunamis along the San Diego Coast have historically fallen within the normal range of the tides. The State of California Tsunami Inundation Map for Emergency Planning (CGS, 2009) does not show the property within a tsunami inundation zone as shown herein.



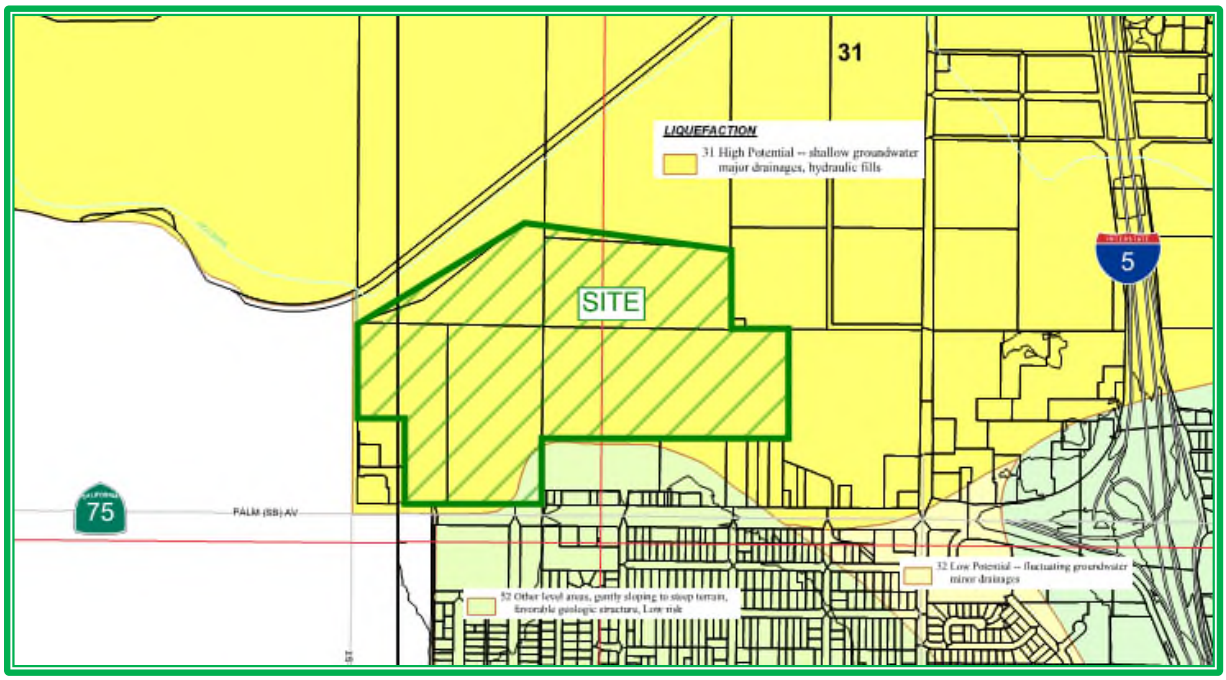
Tsunami Inundation Zone (CGS, 2009)

However, the area located north of the property and the existing bike trail does possess a risk for tsunamis. Excavations are planned on the northwest corner of the property that may extend to the same elevation of the area that may be affected by tsunamis. Therefore, tsunamis may affect the subject property because the property is being regraded to allow tidal flows into the area.

5.4 Liquefaction and Seismically Induced Settlement

Liquefaction typically occurs when a site is located in a zone with seismic activity, onsite soils are cohesionless, groundwater is encountered within 50 feet of the surface, and soil relative densities are less than about 70 percent. If the four of the previous criteria are met, a seismic event could result in a rapid pore-water pressure increase from the earthquake-generated ground accelerations. Seismically induced settlement may occur whether the potential for liquefaction exists or not. The potential for liquefaction and seismically induced settlement occurring within the site likely exists within the existing alluvium and fill materials located below the groundwater elevation. We did not provide a liquefaction assessment because habitable structures are not currently planned for the property.

The *City of San Diego Study, Geologic Hazards and Faults, Sheets 5 and 6* defines the site with a *Hazard Category 32*. *Hazard Category 31* is defined as *Liquefaction: High Potential – shallow groundwater, major drainages, hydraulic fills.* The southern portion is mapped as *Hazard Category 52* is defined as *Other Terrain: Other level areas, gently sloping to steep terrain, favorable geologic structure, low risk* as shown herein.



City of San Diego Seismic Safety Study

6. CONCLUSIONS AND RECOMMENDATIONS

6.1 General

6.1.1 We did not encounter soil or geologic conditions during our study that would preclude the development of the property as presently planned, provided the recommendations of this report are followed.

6.1.2 Significant geologic hazards that can affect the property consist of possible moderate to strong seismic shaking, tsunamis, and liquefaction.

6.1.3 The site is underlain by surficial soil consisting mainly alluvium/bay deposits and some areas of undocumented fill. Some salt precipitant is exposed at the surface of the property and may be included in the upper portions of the soil. The undocumented fill is located within a roughly north-south to northeast-southwest trending berm that was constructed at the west and north end of the project site and ranges from 1 foot to about 8 feet in depth. The alluvium/bay deposits overlying the majority of the site range from 1 foot at the west end to over 9 feet in the eastern portion of the property. The undocumented fill and alluvium are underlain by Old Paralic Deposits at approximately 30 to 35 feet in depth in the south eastern portion of the site, 35 to 40 feet in depth in the northwestern portion of the site and based on geologic maps is only exposed at grade along Palm Avenue to the south of the site.

6.1.4 Excavation of the existing materials should generally be possible with moderate to heavy effort using conventional, heavy-duty equipment during grading and trenching operations. However, the existing materials are soft to firm and saturated. Therefore, difficulty in equipment operation may be encountered where the underlying soil cannot support the equipment. Therefore, low pressure track equipment should be used such as swamp cats during grading operations and wide track excavators during trenching as evaluated by the grading contractor.

6.1.5 Geocon Incorporated should review the grading plans prior to the submittal to regulatory agencies for approval. Additional analyses may be required once the plans have been provided.

6.1.6 Subsurface conditions observed may be extrapolated to reflect general soil and geologic conditions; however, variations in subsurface conditions between exploratory borings should be expected.

6.1.7 The proposed project will not impact the structural integrity of adjacent properties and the existing public improvements and street right-of-ways located adjacent to the site based on our review of the design plans.

6.1.8 Surface settlement monuments and canyon subdrains will not be required on this project because settlement sensitive structures and canyon fills are not planned.

6.2 Soil and Excavation Characteristics

6.2.1 We expect that excavation of the in-situ fill materials and alluvium to be possible with moderate effort using conventional heavy-duty equipment. However, the existing materials may not be able to properly support heavy equipment and stabilization may be required as discussed herein. Saturated soil and water should be expected within the planned excavations and may be more economical if performed during low tides.

6.2.2 The contractor should ensure that all temporary excavations and trenches are properly maintained and/or shored in accordance with applicable OSHA rules and regulations for the safety and stability of adjacent existing improvements.

6.2.3 The soil encountered in the field investigation is likely considered to be "non-expansive" and "expansive" (expansion index [EI] of 20 or less and greater than 20, respectively) as defined by 2016 California Building Code (CBC) Section 1803.5.3. Table 6.2 presents soil classifications based on the expansion index. We expect a majority of the soil encountered possess a "very low" to "low" expansion potential (EI of 90 or less).

TABLE 6.2
EXPANSION CLASSIFICATION BASED ON EXPANSION INDEX

Expansion Index (EI)	Expansion Classification	2016 CBC Expansion Classification
0 – 20	Very Low	Non-Expansive
21 – 50	Low	Expansive
51 – 90	Medium	
91 – 130	High	
Greater Than 130	Very High	

6.3 Temporary Excavations

6.3.1 The recommendations included herein are provided for stable excavations. It is the responsibility of the contractor to provide a safe excavation during the construction of the proposed project.

6.3.2 The stability of the excavations is dependent on the design and construction of the shoring system and site condition. Therefore, Geocon Incorporated cannot be responsible for site safety and the stability of the proposed excavations. It is the responsibility of the contractors during excavations to follow all applicable safety standards and industry protocols when performing excavations during the construction of the proposed project.

6.3.3 Temporary excavations should be made in conformance with OSHA requirements. The existing fill and alluvium should be considered a Type C soil and properly compacted fill can be considered a Type B Soil (Type C soil if seepage or groundwater is encountered in accordance with OSHA requirements). In general, special shoring requirements may not be necessary if temporary excavations will be less than 4 feet in height. Temporary excavations greater than 4 feet in height, however, should be sloped back at an appropriate inclination. These excavations should not be allowed to become saturated or to dry out. Surcharge loads should not be permitted to a distance equal to the height of the excavation from the top of the excavation. The top of the excavation should be a minimum of 15 feet from the edge of existing improvements. Excavations steeper than those recommended or closer than 15 feet from an existing surface improvement should be shored in accordance with applicable OSHA codes and regulations.

6.4 Slope Stability Analyses

6.4.1 We performed slope stability analyses using the two-dimensional computer program *GeoStudio2007* created by Geo-Slope International Ltd. We calculated the factor of safety for the planned slopes for rotational-mode and block-mode analyses using the Spencer's method.

6.4.2 We used average drained direct shear strength parameters based on laboratory tests and our experience with similar soil types in nearby areas for the slope stability analyses. Our calculations indicate the proposed slopes, constructed of on-site materials, should have calculated factors of safety (FOS) of at least 1.5 under static for both deep-seated failure and shallow sloughing conditions when the recommendations of this report are followed.

6.4.3 We created geologic cross-sections A-A' and B-B' to perform our slope stability analyses. Appendix D presents the results of the slope stability analyses. Based on our calculations,

the proposed slopes possess a factor of safety for global and surficial analyses of at least 1.5 as required by the City of San Diego.

6.4.4 We performed the slope stability analyses based on the interpretation of geologic conditions encountered during our field investigation. We should evaluate the geologic conditions during the grading operations to check if the conditions observed during grading are consistent with our interpretations.

6.4.5 Even though the surficial and global slope stability show factors of safety of greater than 1.5, our experience has shown that some slope erosion occurs when water is present at the free face of a slope and when water is allowed to flow along the slope face. Considerations should be given to reinforcing the proposed manufactured slopes that will become saturated. Another option is to flatten the slopes to an inclination of at least 3:1 (horizontal to vertical), where possible. An erosion study may be required to help evaluate the surficial stability and erodibility of the proposed slopes.

6.5 Grading Recommendations

6.5.1 Grading should be performed in accordance with the attached *Recommended Grading Specifications* presented in Appendix E, however, the recommendations of this section will take precedence. Earthwork should be observed and fill tested for proper compaction by Geocon Incorporated.

6.5.2 Prior to commencing grading, a preconstruction conference should be held at the site with the owner or developer, city inspector, grading contractor, civil engineer, and geotechnical engineer in attendance. Special soil handling and/or the grading plans can be discussed at that time.

6.5.3 Site preparation should begin with demolishing existing improvements and removal of deleterious material and vegetation. Deleterious debris should be exported from the site and should not be mixed with the fill in areas of planned improvements. Existing underground improvements within the proposed limits of grading should be removed and the resulting depressions properly backfilled in accordance with the procedures described herein.

6.5.4 We do not expect remedial grading to be required for the planned wildlife refuge project. However, the upper 12 inches of exposed material should be scarified, moisture conditioned as necessary and properly compacted prior to placing fill materials, if planned.

6.5.5 Excavated, on-site soil generally free of deleterious debris can be placed as fill and compacted in layers to the design finish grade elevations. Fill and backfill soil should be placed in horizontal loose layers approximately 6 to 8 inches thick, moisture conditioned as necessary, and compacted to a dry density of at least 90 percent of the laboratory maximum dry density near to slightly above optimum moisture content as determined by ASTM D 1557. The upper 12 inches of soil beneath concrete or asphalt concrete pavement areas should be compacted to a dry density of at least 95 percent of the laboratory maximum dry density near to slightly above optimum moisture content shortly before paving operations.

6.5.6 Import fill (if necessary) should consist of granular materials with a "very low" to "medium" expansion potential (EI of 90 or less) free of deleterious material or stones larger than 3 inches and should be compacted as recommended herein. Geocon Incorporated should be notified of the import source and should perform laboratory testing of import soil prior to its arrival at the site to determine its suitability as fill material.

6.6 Preliminary Pavement Recommendations

6.6.1 We understand temporary roadways may be constructed to support the equipment during the grading operations. The existing soil possesses soft materials and is saturated in areas that will be difficult to support heavy equipment. The recommendations presented herein should be considered preliminary until discussions with manufacturers and grading contractors occur to help evaluate the equipment loading. For example, haul roads will likely not require the sections provided herein. Based on discussions with a soil reinforcement manufacturer, the existing sandy materials may be used on the haul roads with geotextile reinforcement (e.g. Tensar TX-7).

6.6.2 We calculated the flexible pavement sections in general conformance with the *Caltrans Method of Flexible Pavement Design* (Highway Design Manual, Section 608.4) using an estimated Traffic Index (TI) of 5.0, 5.5, 6.0, and 7.0 for parking stalls, driveways, medium truck traffic areas, and heavy truck traffic areas, respectively. The project civil engineer and owner should review the pavement designations to determine appropriate locations for pavement thickness. The final pavement sections for permanent pavements should be based on the R-Value of the subgrade soil encountered at final subgrade elevation. We have assumed an R-Value of 20/55 and 78 for the subgrade soil and base materials, respectively, for the purposes of this preliminary analysis. Table 6.6.1 presents the preliminary flexible pavement sections.

TABLE 6.6.1
PRELIMINARY FLEXIBLE PAVEMENT SECTION

Location	Assumed Traffic Index	Assumed Subgrade R-Value	Asphalt Concrete (inches)	Class 2 Aggregate Base (inches)
Parking stalls for automobiles and light-duty vehicles	5.0	20	3	7
		55	3	4
Driveways for automobiles and light-duty vehicles	5.5	20	3	9
		55	3	4
Medium truck traffic areas	6.0	20	3.5	10
		55	3.5	4
Driveways for heavy truck traffic	7.0	20	4	12
		55	4	4

6.6.3 Prior to placing base materials, the upper 12 inches of the subgrade soil should be scarified, moisture conditioned as necessary, and recompacted to a dry density of at least 95 percent of the laboratory maximum dry density near to slightly above optimum moisture content as determined by ASTM D 1557. Similarly, the base material should be compacted to a dry density of at least 95 percent of the laboratory maximum dry density near to slightly above optimum moisture content. Asphalt concrete should be compacted to a density of at least 95 percent of the laboratory Hveem density in accordance with ASTM D 2726.

6.6.4 Base materials should conform to Section 26-1.028 of the *Standard Specifications for The State of California Department of Transportation (Caltrans)* with a ¾-inch maximum size aggregate. The asphalt concrete should conform to Section 203-6 of the *Standard Specifications for Public Works Construction (Greenbook)*.

6.6.5 The base thickness can be reduced if a reinforcement geogrid is used during the installation of the pavement. Geocon should be contact for additional recommendations, if required.

6.6.6 A rigid Portland Cement concrete (PCC) pavement section should be placed in driveway entrance aprons. We calculated the rigid pavement section in general conformance with the procedure recommended by the American Concrete Institute report ACI 330R-08 *Guide for Design and Construction of Concrete Parking Lots* using the parameters presented in Table 6.6.2.

TABLE 6.6.2
RIGID PAVEMENT DESIGN PARAMETERS

Design Parameter	Design Value
Modulus of subgrade reaction, k	100 pci
Modulus of rupture for concrete, M_R	500 psi
Traffic Category, TC	A and C
Average daily truck traffic, ADTT	10 and 100

6.6.7 Based on the criteria presented herein, the PCC pavement sections should have a minimum thickness as presented in Table 6.6.3.

TABLE 6.6.3
RIGID PAVEMENT RECOMMENDATIONS

Location	Portland Cement Concrete (inches)
Automobile Parking Areas (TC=A)	5.5
Heavy Truck and Fire Lane Areas (TC=C)	7.0

6.6.8 The PCC pavement should be placed over subgrade soil that is compacted to a dry density of at least 95 percent of the laboratory maximum dry density near to slightly above optimum moisture content. This pavement section is based on a minimum concrete compressive strength of approximately 3,000 psi (pounds per square inch).

6.6.9 A thickened edge or integral curb should be constructed on the outside of concrete slabs subjected to wheel loads. The thickened edge should be 1.2 times the slab thickness or a minimum thickness of 2 inches, whichever results in a thicker edge, and taper back to the recommended slab thickness 4 feet behind the face of the slab (e.g., a 7-inch-thick slab would have a 9-inch-thick edge). Reinforcing steel will not be necessary within the concrete for geotechnical purposes with the possible exception of dowels at construction joints as discussed herein.

6.6.10 To control the location and spread of concrete shrinkage cracks, crack-control joints (weakened plane joints) should be included in the design of the concrete pavement slab. Crack-control joints should not exceed 30 times the slab thickness with a maximum spacing of 12.5 feet and 15 feet for the 5.5 and slabs thicker than 6 inches, respectively, and should be sealed with an appropriate sealant to prevent the migration of water through the control joint to the subgrade materials. The depth of the crack-control joints should be determined

by the referenced ACI report. The depth of the crack-control joints should be at least ¼ of the slab thickness when using a conventional saw, or at least 1 inch when using early-entry saws on slabs 9 inches or less in thickness, as determined by the referenced ACI report discussed in the pavement section herein. Cuts at least ¼ inch wide are required for sealed joints, and a ⅜ inch wide cut is commonly recommended. A narrow joint width of $^{1}/_{10}$ to $^{1}/_{8}$ inch wide is common for unsealed joints.

6.6.11 To provide load transfer between adjacent pavement slab sections, a butt-type construction joint should be constructed. The butt-type joint should be thickened by at least 20 percent at the edge and taper back at least 4 feet from the face of the slab. As an alternative to the butt-type construction joint, dowelling can be used between construction joints for pavements of 7 inches or thicker. As discussed in the referenced ACI guide, dowels should consist of smooth, 1-inch-diameter reinforcing steel 14 inches long embedded a minimum of 6 inches into the slab on either side of the construction joint. Dowels should be located at the midpoint of the slab, spaced at 12 inches on center and lubricated to allow joint movement while still transferring loads. In addition, tie bars should be installed at the as recommended in Section 3.8.3 of the referenced ACI guide. The structural engineer should provide other alternative recommendations for load transfer.

6.6.12 Concrete curb/gutter should be placed on soil subgrade compacted to a dry density of at least 90 percent of the laboratory maximum dry density near to slightly above optimum moisture content. Cross-gutters should be placed on subgrade soil compacted to a dry density of at least 95 percent of the laboratory maximum dry density near to slightly above optimum moisture content. Base materials should not be placed below the curb/gutter, cross-gutters, or sidewalk so water is not able to migrate from the adjacent parkways to the pavement sections. Where flatwork is located directly adjacent to the curb/gutter, the concrete flatwork should be structurally connected to the curbs to help reduce the potential for offsets between the curbs and the flatwork.

6.7 Site Drainage and Moisture Protection

6.7.1 Adequate site drainage is critical to reduce the potential for differential soil movement, erosion and subsurface seepage. Under no circumstances should water be allowed to pond adjacent to improvements. The site should be graded and maintained such that surface drainage is directed away from structures in accordance with 2016 CBC 1804.4 or other applicable standards. In addition, surface drainage should be directed away from the top of slopes into swales or other controlled drainage devices. Roof and pavement drainage should be directed into conduits that carry runoff away from the proposed structure.

6.7.2 In the case of subterranean walls or walls retaining landscaping areas, a water-proofing system should be used on the wall and joints, and a Miradrain drainage panel (or similar) should be placed over the waterproofing. A perforated drainpipe of schedule 40 or better should be installed at the base of the wall below the floor slab and drained to an appropriate discharge area. Accordion-type pipe is not acceptable. The project architect or civil engineer should provide detailed specifications on the plans for all waterproofing and drainage.

6.7.3 Underground utilities should be leak free. Utility and irrigation lines should be checked periodically for leaks, and detected leaks should be repaired promptly. Detrimental soil movement could occur if water is allowed to infiltrate the soil for prolonged periods of time.

6.7.4 Landscaping planters adjacent to paved areas are not recommended due to the potential for surface or irrigation water to infiltrate the pavement's subgrade and base course. We recommend that area drains to collect excess irrigation water and transmit it to drainage structures or impervious above-grade planter boxes be used. In addition, where landscaping is planned adjacent to the pavement, we recommend construction of a cutoff wall along the edge of the pavement that extends at least 6 inches below the bottom of the base material.

6.7.5 Detention basins, bioswales, retention basins, water infiltration, low impact development (LID), or storm water management devices should be designed by the project civil engineer and incorporate recommendations pertaining to the geotechnical aspects of possible impacts and design.

LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. The recommendations of this report pertain only to the site investigated and are based upon the assumption that the soil conditions do not deviate from those disclosed in the investigation. If any variations or undesirable conditions are encountered during construction, or if the proposed construction will differ from that anticipated herein, Geocon Incorporated should be notified so that supplemental recommendations can be given. The evaluation or identification of the potential presence of hazardous or corrosive materials was not part of the scope of services provided by Geocon Incorporated.

2. This report is issued with the understanding that it is the responsibility of the owner or his representative to ensure that the information and recommendations contained herein are brought to the attention of the architect and engineer for the project and incorporated into the plans, and that the necessary steps are taken to see that the contractor and subcontractors carry out such recommendations in the field.

3. The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether due to natural processes or the works of man on this or adjacent properties. In addition, changes in applicable or appropriate standards may occur, whether they result from legislation or the broadening of knowledge. Accordingly, the findings of this report may be invalidated wholly or partially by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of three years.

4. The firm that performed the geotechnical investigation for the project should be retained to provide testing and observation services during construction to provide continuity of geotechnical interpretation and to check that the recommendations presented for geotechnical aspects of site development are incorporated during site grading, construction of improvements, and excavation of foundations. If another geotechnical firm is selected to perform the testing and observation services during construction operations, that firm should prepare a letter indicating their intent to assume the responsibilities of project geotechnical engineer of record. A copy of the letter should be provided to the regulatory agency for their records. In addition, that firm should provide revised recommendations concerning the geotechnical aspects of the proposed development, or a written acknowledgement of their concurrence with the recommendations presented in our report. They should also perform additional analyses deemed necessary to assume the role of Geotechnical Engineer of Record.

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N

NO SCALE

VICINITY MAP

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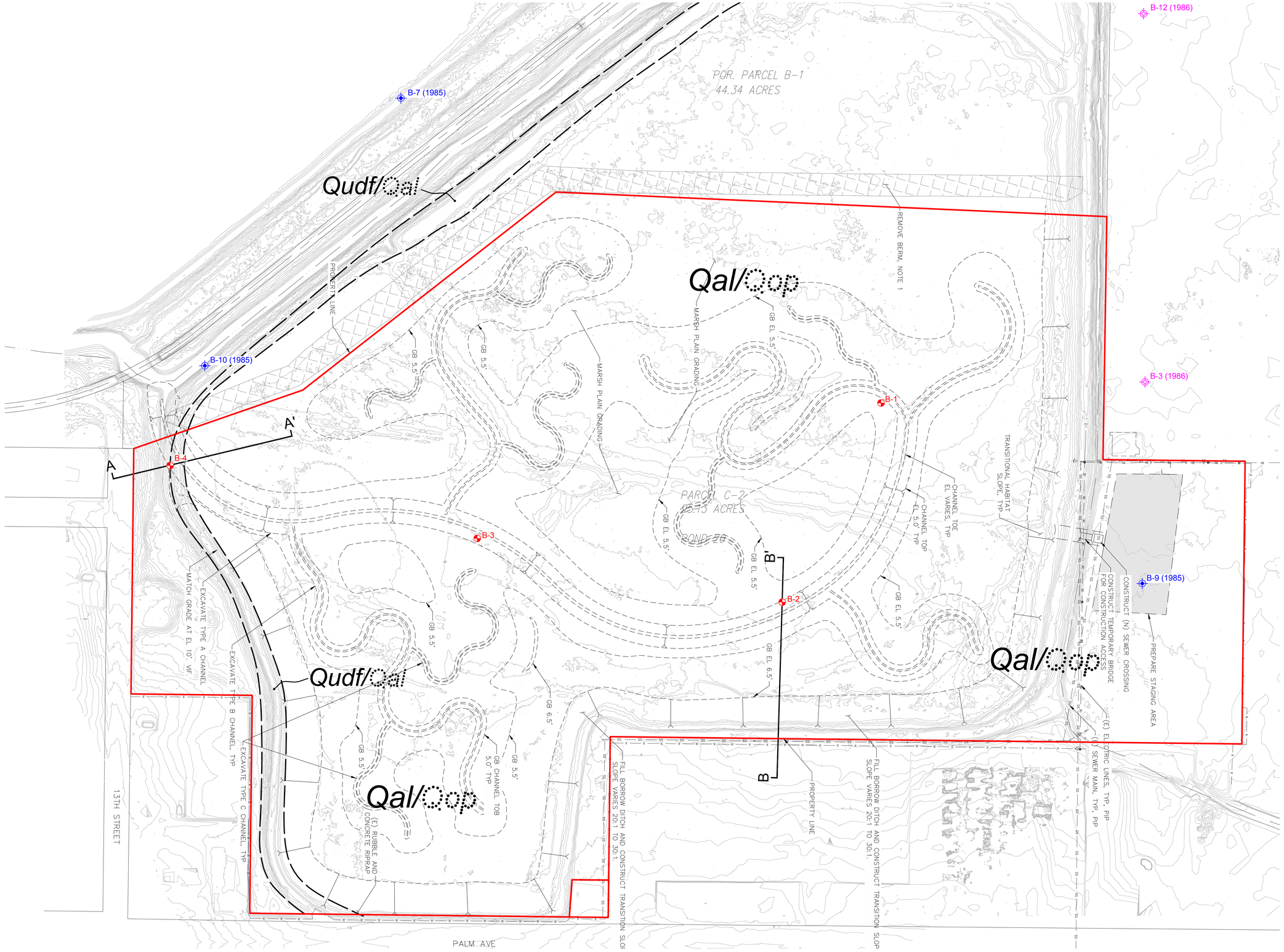
PHONE 858 558-6900 - FAX 858 558-6159

SAN DIEGO WILDLIFE REFUGE
POND 20 MITIGATION
SAN DIEGO, CALIFORNIA

KH / AML		DSK/GTYPD	DATE 08 - 02 - 2019	PROJECT NO. G2079 - 52 - 01	FIG. 1

Plotted:08/02/2019 10:43AM | By:ALVIN LADRILLONO | File Location:Y:\PROJECTS\G2079-52-01 (Wildlife Refuge)\DETAILS\G2079-52-01 Vic Map.dwg



GEOCON LEGEND

Qudf.....UNDOCUMENTED FILL

Qal.....ALLUVIUM

Qop.....OLD PARALIC DEPOSITS

B-4.....APPROX. LOCATION OF BORING (Current)

B-10.....APPROX. LOCATION OF BORING (Previous Investigation, 1985)

B-12.....APPROX. LOCATION OF BORING (Previous Investigation, 1986)

B B'.....APPROX. LOCATION OF GEOLOGIC CROSS SECTION

GEOLOGIC MAP

SAN DIEGO WILDLIFE REFUGE
POND 20 MITIGATION
SAN DIEGO, CALIFORNIA

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SCALE 1" = 120'	DATE 08 - 02 - 2019
PROJECT NO. G2079 - 52 - 01	FIGURE 2
SHEET 1 OF 1	

Ladrillono

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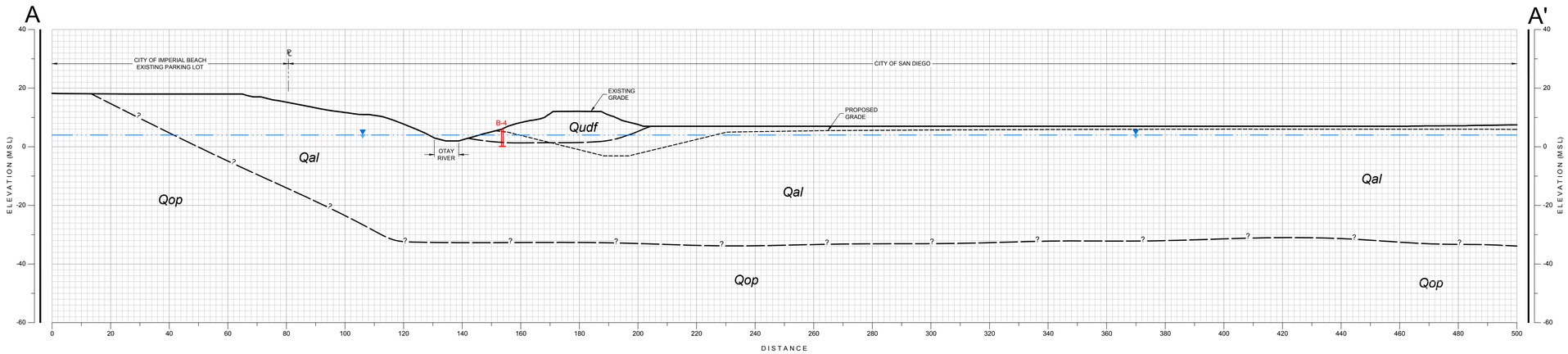

GEOLOGIC CROSS-SECTION A-A'

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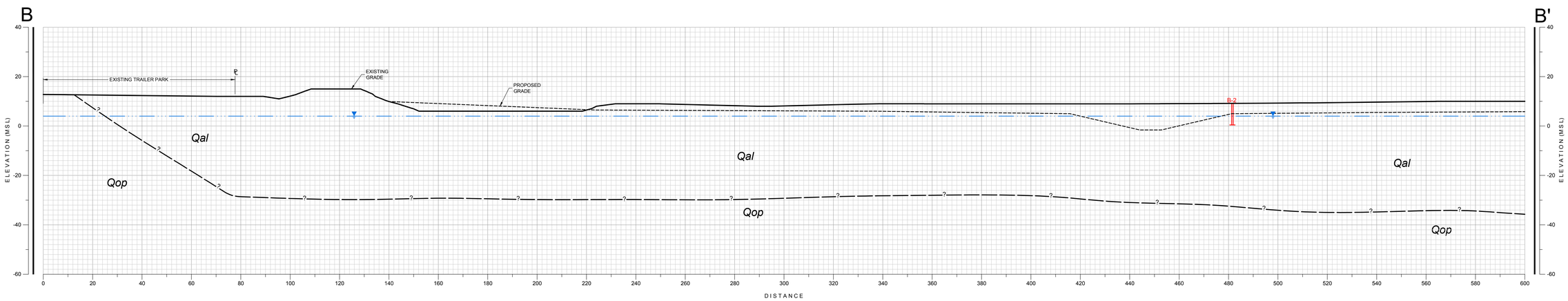

GEOLOGIC CROSS-SECTION B-B'

SCALE: 1" = 20' (Vert. = Horiz.)

GEOCON LEGEND

Qudf .....UNDOCUMENTED FILL

Qal .....ALLUVIUM

Qop .....OLD PARALIC DEPOSITS

.....APPROX. LOCATION OF GEOLOGIC CONTACT (Queried Where Uncertain)

B-4 .....APPROX. LOCATION OF BORING

.....APPROX. ELEVATION OF GROUNDWATER

GEOLOGIC CROSS SECTION

SAN DIEGO WILDLIFE REFUGE
POND 20 MITIGATION
SAN DIEGO, CALIFORNIA

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SCALE	1" = 20'	DATE	08 - 02 - 2019
PROJECT NO.	G2079 - 52 - 01	FIGURE	3
SHEET	1 OF 1		

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APPENDIX A

APPENDIX A

FIELD INVESTIGATION

We performed our field investigation on January 30, 2017. Fieldwork for our investigation included excavating 4 exploratory borings using a 3-inch hand auger and performing soil sampling. The locations of the exploratory trenches are shown on the Geologic Map, Figure 2. As augering proceeded, we logged and sampled the soil and geologic conditions encountered. Boring logs and an explanation of the geologic units encountered are presented on figures following the text in this appendix. We located the borings in the field using existing reference points. Therefore, actual boring locations may deviate slightly.

We visually examined the soil conditions encountered within the borings, classified, and logged in general accordance with the Unified Soil Classification System (USCS). Logs of the borings are presented on Figures A-1 through A-4.

PROJECT NO. G2079-52-01

BORING B 1

ELEV. (MSL.) 12' DATE COMPLETED 01-30-2017

EQUIPMENT HAND AUGER BY: K. HAASE

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0				SM	**ALLUVIUM/BAY DEPOSITS (Qal)** Wet, grayish brown, Silty, fine to coarse SAND			
	B1-1							19.3
2								
4								
6			▼		-Becomes saturated			
	B1-2							29.3
8					-Becomes, clayey			
	B1-3							27.8
					BORING TERMINATED AT 9.25 FEET Groundwater encountered at 6 feet (Too saturated for sample return)			

Figure A-1,
Log of Boring B 1, Page 1 of 1

G2079-52-01.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL
... STANDARD PENETRATION TEST
... DRIVE SAMPLE (UNDISTURBED)
... DISTURBED OR BAG SAMPLE
... CHUNK SAMPLE
... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. G2079-52-01

BORING B 2

ELEV. (MSL.) **9.5'** DATE COMPLETED **01-30-2017**

EQUIPMENT **HAND AUGER** BY: **K. HAASE**

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0	B2-1			SM	**ALLUVIUM/BAY DEPOSITS (Qal)** Damp, grayish brown, Silty, fine to medium SAND with trace gravel			
2	B2-2				-Becomes wet			9.9
	B2-3							
4			▼		-Becomes saturated			
6	B2-4							26.8
8					BORING TERMINATED AT 8 FEET Groundwater encountered at 4 feet (Too saturated for sample return)			

Figure A-2,
Log of Boring B 2, Page 1 of 1

G2079-52-01.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL
... STANDARD PENETRATION TEST
... DRIVE SAMPLE (UNDISTURBED)
... DISTURBED OR BAG SAMPLE
... CHUNK SAMPLE
... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. G2079-52-01

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	**BORING B 3** ELEV. (MSL.) **8'** DATE COMPLETED **01-30-2017** EQUIPMENT **HAND AUGER** BY: **K. HAASE**	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
					MATERIAL DESCRIPTION			
0				SM	**ALLUVIUM/BAY DEPOSITS (Qal)** Wet, grayish brown, Silty, fine to coarse SAND			
	B3-1							21.6
2			▼		-Becomes saturated			
	B3-2							34.7
					BORING TERMINATED AT 3 FEET Groundwater encountered at 2 feet (Too saturated for sample return)			

Figure A-3,
Log of Boring B 3, Page 1 of 1

G2079-52-01.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL
... STANDARD PENETRATION TEST
... DRIVE SAMPLE (UNDISTURBED)
... DISTURBED OR BAG SAMPLE
... CHUNK SAMPLE
... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

PROJECT NO. G2079-52-01

BORING B 4

ELEV. (MSL.) 6' DATE COMPLETED 01-30-2017

EQUIPMENT HAND AUGER BY: K. HAASE

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (USCS)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE (BLOWS/FT.)	DRY DENSITY (P.C.F.)	MOISTURE CONTENT (%)
0								
	B4-1			CL	**UNDOCUMENTED FILL (Qudf)** Saturated, dark gray, Silty CLAY			50.2
2								
4	B4-2			SM	**ALLUVIUM/BAY DEPOSITS (Qal)** Saturated, dark brown, Silty, fine to medium SAND			
	B4-3							
6				CL	Saturated, dark gray, Silty CLAY (BAY MUD)			55.8
					BORING TERMINATED AT 6.5 FEET Groundwater not encountered			

Figure A-4,
Log of Boring B 4, Page 1 of 1

G2079-52-01.GPJ

SAMPLE SYMBOLS

... SAMPLING UNSUCCESSFUL
... STANDARD PENETRATION TEST
... DRIVE SAMPLE (UNDISTURBED)
... DISTURBED OR BAG SAMPLE
... CHUNK SAMPLE
... WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

GEOCON

APPENDIX B

APPENDIX B

LABORATORY TESTING

We performed laboratory tests in general accordance with the current, generally-accepted test methods of the American Society for Testing and Materials (ASTM) or other suggested procedures. We tested selected samples for their in-place dry density/moisture content, maximum dry density/optimum moisture content, expansion index, shear strength, water-soluble sulfate content, resistance value (R-Value), pH and resistivity, unconfined compressive strength, consolidation, and grain-size characteristics. Tables B-I through B-IV and Figure B-1 present the results of our laboratory tests. The in-place dry density and moisture content results are presented on the exploratory trench logs in Appendix A.

TABLE B-I
SUMMARY OF LABORATORY MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT TEST RESULTS (ASTM D 1557)

Sample No.	Description	Maximum Dry Density (pcf)	Optimum Moisture Content (% dry weight)
B2-4	Grayish brown, silty, (f-m) SAND; trace gravel	124.2	11.3

TABLE B-II
SUMMARY OF LABORATORY DIRECT SHEAR TEST RESULTS ASTM D 3080

Sample No.	Dry Density (pcf)	Moisture Content (%)		Peak [Ultimate†] Cohesion (psf)	Peak [Ultimate†] Angle of Shear Resistance (degrees)
		Initial	Final		
B2-2	104.8	23.6	22.5	400 [275]	28 [27]
B4-2	94.5	30.7	29.0	575 [525]	25 [24]

† Ultimate measured at 0.2-inch deflection.

TABLE B-III
SUMMARY OF LABORATORY ATTERBERG LIMITS TEST RESULTS ASTM D 4318

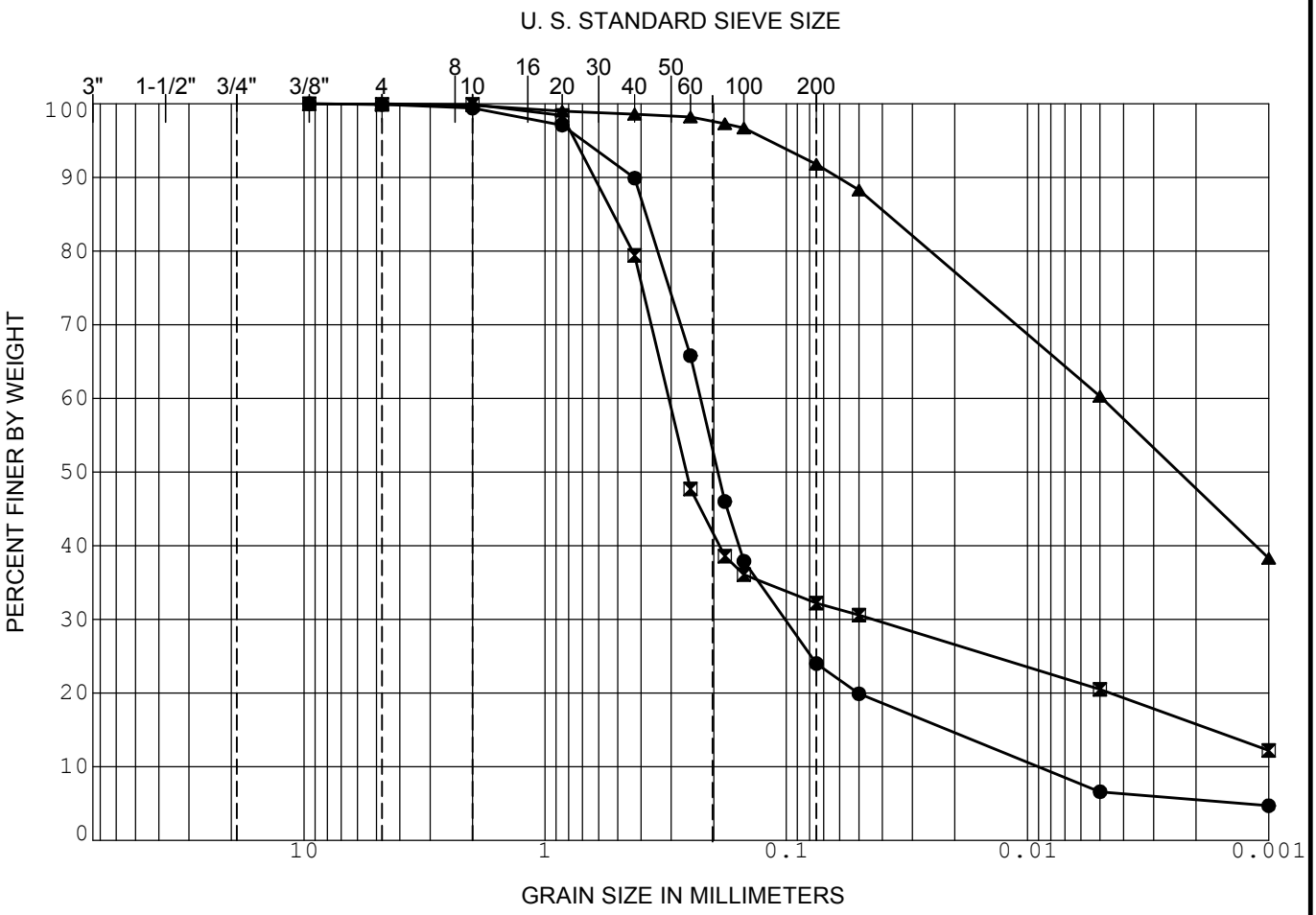
Sample No. (Geologic Unit)	Liquid Limit	Plastic Limit	Plasticity Index
B2-4 (Qal)	26	18	8
B4-1 (Qudf)	64	27	37

TABLE B-IV
SUMMARY OF LABORATORY RESISTANCE VALUE (R-VALUE) TEST RESULTS
ASTM D 2844

Sample No. (Geologic Unit)	R-Value
B2-4 (Qal)	55

PROJECT NO. G2079-52-01

GRAVEL		SAND			SILT OR CLAY
COARSE	FINE	COARSE	MEDIUM	FINE	



	SAMPLE	DEPTH (ft)	CLASSIFICATION	NAT WC	LL	PL	PI
●	B1-1	1.0	(SM) Silty SAND				
⊠	B2-4	5.5	(SC-SM) Silty, Clayey SAND				
▲	B4-1	1.0	(CH) Fat CLAY				

GRADATION CURVE

SAN DIEGO WILDLIFE REFUGE

SAN DIEGO, CALIFORNIA

G2079-52-01.GPJ

Figure B-1

GEOCON

APPENDIX C

APPENDIX C

PREVIOUS INVESTIGATION BORINGS (1985 AND 1986)

FOR

SAN DIEGO WILDLIFE REFUGE
POND 20 MITIGATION
SAN DIEGO, CALIFORNIA

PROJECT NO. G2079-52-01

File No. D-3445-T02
May 30, 1985

BORING 7

ELEVATION +13' MLLW DATE DRILLED 2/11/85

EQUIPMENT Rotary Wash Drill Rig

DEPTH IN FEET	SAMPLE NO.	SOIL CLASS (U.S.C.S.)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE BLOWS/FT.	DRY DENSITY P.C.F.	MOISTURE CONTENT, %
0			FILL			
2		SM	Moderately dense, damp, brwon, Silty fine SAND			
4						
6	7-1			3	95.3	22.8
8	7-2	SM	BAY DEPOSITS Loose, saturated, gray, Silty fine SAND	push		
		CL	Soft, dark gray Silty CLAY (BAY MUD)			
10	7-3	SM	Loose, dark gray, Silty fine to medium SAND with organics, samll gravel	3	97.2	25.8
12	7-4	CL-OL	Soft, blue-gray, Silty CLAY with organics (BAY MUD)	push		
14	7-5			push	86.8	34.1
16	7-6	CL	OLDER BAY DEPOSITS/ALLUVIUM Firm, light gray-brown, Sandy Silty CLAY	2	68.4	51.5
18	7-7		Soft, light gray to blue-gray Silty CLAY	push	65.3	61.3
20	7-8	CL-ML	Interlayered gray-brown Silty CLAY, Clayey SILT, Silty fine SAND	6	99.2	24.8
22	7-9	SC	Loose, grayish-brown, Silty Clayey fine SAND to Clayey SILT	3	96.7	27.0
	7-10			11		
24	7-11	CL	Soft, gray-brown Sandy Silty CLAY	2	86.5	33.7
26	7-12	CL-ML	Soft to firm, brown fine Sandy Clayey SILT	4	91.3	30.3
28	7-13	SM	Loose to moderately dense, gray-brown to brown, Silty fine SAND	5	101.2	24.2
30	7-14					

Figure A-13, Log of Test Boring 7

Continued next page

SAMPLE SYMBOLS
- SAMPLING UNSUCCESSFUL
- STANDARD PENETRATION TEST
- DRIVE SAMPLE (UNDISTURBED)
- DISTURBED OR BAG SAMPLE
- CHUNK SAMPLE
- WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

File No. D-3345-T02
May 30, 1985

BORING 7 CONTINUED

ELEVATION _____ DATE DRILLED _____

EQUIPMENT _____

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (U.S.C.S.)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE BLOWS/FT.	DRY DENSITY P.C.F.	MOISTURE CONTENT, %
30								
	7-15				Loose to moderately dense, gray-brown, Clayey fine Sandy SILT			
32								
	7-16				Moderately dense, brown to gray-brown, Silty fine SAND			
34								
	7-17				Moderately dense, gray-brown, Silty medium SAND with gravels			
36					GRAVELS			
38								
40								
42								
44								
					small "pea" gravels			
46								
48								
					larger gravel to 1"			
50								
52					Dense, olive gray, Silty fine SAND to Sandy fine SILT			
54	7-18							
56					Hard, gray to olive gray Silty CLAY "disturbed"			
58								
60								

Figure A-14, Log of Test Boring 7 Continued

Continued next page

SAMPLE SYMBOLS

- ☐ --- SAMPLING UNSUCCESSFUL
- ☒ --- DISTURBED OR BAG SAMPLE
- ◧ --- STANDARD PENETRATION TEST
- ◪ --- CHUNK SAMPLE
- ■ --- DRIVE SAMPLE (UNDISTURBED)
- ▼ --- WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

File No. D-3445-T02
May 30, 1985

BORING 7 CONTINUED

ELEVATION _____ DATE DRILLED _____

EQUIPMENT _____

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (U.S.C.S.)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE BLOWS/FT.	DRY DENSITY P.C.F.	MOISTURE CONTENT, %
60	7-19		]	CL	Stiff to hard, gray to blue-gray, Silty CLAY	6	95.2	28.2
62								
64								
66	7-20					28	NO RECOVERY	
68								
70					GRAVELS			
72	7-21			SW	Coarse SAND with gravels	15	NO RECOVERY	
74								
76								
78								
80					BORING REFUSAL AT 79.0 FEET			

Figure A-15, Log of Test Boring 7 Continued

SAMPLE SYMBOLS

- ☐ — SAMPLING UNSUCCESSFUL
- ◧ — STANDARD PENETRATION TEST
- ■ — DRIVE SAMPLE (UNDISTURBED)
- ☒ — DISTURBED OR BAG SAMPLE
- ◪ — CHUNK SAMPLE
- ▼ — WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

File No. D-3445-T02
May 30, 1985

BORING 9

ELEVATION +11.5 MLLW DATE DRILLED 2/13/85

EQUIPMENT Rotary Wash Drill Rig

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (U.S.C.S.)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE BLOWS/FT.	DRY DENSITY P.C.F.	MOISTURE CONTENT, %
0					ALLUVIUM			
2	9-1			SM	Loose, brown, moist to wet, Clayey fine SAND with gravel		NO RECOVERY	
4	9-2		▼		wet to saturated	2	104.8	18.7
6	9-3			SC	Loose, saturated, brown, Silty Clayey fine SAND with gravel	push	105.1	21.1
8	9-4				Loose, saturated, gray-brown, Silty fine SAND with tan-brown Silty CLAY lenses	4		
10	9-5			SM	Loose, gray-brown to gray fine SAND	6	97.5	26.0
12								
14	9-6			SM	Loose, interlayered brown Silty SAND and and gray Silty SAND	6		
16	9-7				Moderately dense, gray-brown to gray, Silty SAND	6	100.0	24.4
	9-8				brown, Silty SAND with Silty CLAY lense	11		
18	9-9			SM	Dark gray-brown, fine SAND with Sandy SILT to Silty SAND layers	6	109.0	19.5
20	9-10				Loose, gray-brown, Silty fine SAND with gravel	3	103.8	23.3
22	9-11			SM-ML	Loose, gray, Silty fine SAND with Sandy SILT lense	7		
24	9-12				Interlayered gray Silty SAND and Silty CLAY	7		
26	9-13			CL	Soft, grayish-brown, Silty Sandy CLAY	push	103.5	22.6
28					Hard, Sandy CLAY with gravel			
	9-14				GRAVELS "pea"	5		
30								

Figure A-18, Log of Test Boring 9

Continued next page

SAMPLE SYMBOLS

- ☐ --- SAMPLING UNSUCCESSFUL
- ◧ --- STANDARD PENETRATION TEST
- ■ --- DRIVE SAMPLE (UNDISTURBED)
- ☒ --- DISTURBED OR BAG SAMPLE
- ◪ --- CHUNK SAMPLE
- ▼ --- WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

File No. D-3445-T02
May 30, 1985

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (U.S.C.S.)	BORING 9 CONTINUED ELEVATION_____ DATE DRILLED_____ EQUIPMENT _____	PENETRATION RESISTANCE BLOWS/FT.	DRY DENSITY P.C.F.	MOISTURE CONTENT, %
					MATERIAL DESCRIPTION			
30					well graded GRAVEL to 1"-1½"			
32								
34								
36					Dense, Sandy Clayey GRAVEL			
38								
40					BORING REFUSAL AT 40.0 FEET			

Figure A-19, Log of Test Boring 9 Continued

SAMPLE SYMBOLS
☐ --- SAMPLING UNSUCCESSFUL
◧ --- STANDARD PENETRATION TEST
■ --- DRIVE SAMPLE (UNDISTURBED)
☒ --- DISTURBED OR BAG SAMPLE
◪ --- CHUNK SAMPLE
▽ --- WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

;File No. D-3445-T02
May 30, 1985

BORING 10

ELEVATION +10' MLLW DATE DRILLED 2/13/85

EQUIPMENT Rotary Wash Drill Rig

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (U.S.C.S.)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE BLOWS/FT.	DRY DENSITY P.C.F.	MOISTURE CONTENT, %
0					FILL Moderately dense, brown Silty SAND to Sandy SILT			
2				SM				
4	10-1				BAY DEPOSITS Soft, saturated, gray-brown, Silty CLAY (BAY MUD)	push	84.5	35.2
6	10-2				Soft, saturated, gray to gray-brown, Silty CLAY with organics (BAY MUD)	push	73.2	45.1
8	10-3					push	76.6	43.6
10	10-4			CL-OL		push	76.5	43.2
12	10-5					push	66.5	55.1
14	10-6				Soft, light gray-brown, fine Sandy SILT interlayered blue-gray Silty CLAY with organics and gray-brown fine Sandy SILT (BAY MUD)	1	76.3	43.5
16	10-7			CL-ML		push		
18	10-8					push	67.8	50.4
20	10-9			CL-OL	Soft, gray-brown to brown, fine Sandy Clayey SILT to Silty CLAY (BAY MUD)	1	66.2	52.0
22								
24	10-10					1	102.5	21.9
				CL	Gray fine SAND			
26	10-11			CL	Blue-gray Silty CLAY (BAY MUD)	push		
28								
30	10-12				BORING TERMINATED AT 30.0 FEET	1	69.6	50.9

Figure A-20, Log of Test Boring 10

SAMPLE SYMBOLS

- ☐ --- SAMPLING UNSUCCESSFUL
- ◧ --- STANDARD PENETRATION TEST
- ■ --- DRIVE SAMPLE (UNDISTURBED)
- ☒ --- DISTURBED OR BAG SAMPLE
- ◪ --- CHUNK SAMPLE
- ▽ --- WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

File No. D-3771-M01

BORING NO. 3

ELEVATION 10± MSL DATE DRILLED 9/3/86

EQUIPMENT Mayhew 1000

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (U.S.C.S.)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE BLOWS/FT.	DRY DENSITY P.C.F.	MOISTURE CONTENT, %
0				ML	FILL/ALUVIUM Loose to medium, dry to moist, brown fine-sandy SILT, traces/little CLAY			
2	3-1					6	114.7	14.4
				SM	Loose, moist, brown silty fine-medium SAND traces/little CLAY			
4	3-2		▼	CL		3		
6	3-3				ALLUVIUM/BAY DEPOSITS	3	109.2	20.1
8	3-4					3		
10	3-5				Soft, saturated, black gray fine sandy CLAY	4	106.5	23.8
	3-5A							
12	3-6							
14	3-7			CL/CH	Intermittant Sand Lenses	7		
	3-8					9		
16	3-9				(no recovery, too soft)	5		
18	3-10					6		
	3-11					3		
	3-12			CL	Soft, saturated, black, fine-medium Sandy CLAY	WOR		
20								
22	3-13					7		
24								
	3-14					8		
26				GP/SP	Medium to dense, saturated, gray-brown fine-coarse gravels and fine-coarse Silty SANDS			
28					Break in log			
	3-15				BORING TERMINATED AT 31 FEET	60		

Figure A-3, Log of Test Boring No. 3

SAMPLE SYMBOLS

- ☐ — SAMPLING UNSUCCESSFUL
- ☒ — DISTURBED OR BAG SAMPLE
- ◧ — STANDARD PENETRATION TEST
- ◪ — CHUNK SAMPLE
- ■ — DRIVE SAMPLE (UNDISTURBED)
- ▼ — WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

File No. D-3771-M01

BORING NO. 12

ELEVATION 9± MSL DATE DRILLED 9/10

EQUIPMENT Mayhew 1000

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (U.S.C.S.)	MATERIAL DESCRIPTION	PENETRATION RESISTANCE BLOWS/FT.	DRY DENSITY P.C.F.	MOISTURE CONTENT, %
0				ML	FILL SOILS Loose, dry, brown fine Sandy Silt			
2	12-1			SM/ML	ALLUVIUM/BAY DEPOSITS Soft, loose to medium, moist to very moist gray, brown fine Sand and Silt	4		
4	12-2			SM	Loose, saturated, brown fine-medium Sand, little Silt	4		
6	12-3					4	84.0	88.4
8	12-4			SM	Loose, Saturated, tan-brown fine-medium Sand little Silt	2		
10	12-5			ML	Soft, saturated, brown Silt, traces/little fine-Sand, traces Clay	4		
	12-6				grading more Clay (no recovery)	3	99.0	25.9
12	12-7			CL		PUSH		
14	12-8				Soft, saturated, gray Clay, traces/little fine Sand, Silt	2		
	12-9				Alt. layers of gray-white fine-coarse Sand (no recovery)	7		
16	12-10					3		
	12-11				Alt. layers of fine-coase Sand	4		
18	12-12			ML	Medium, soft, saturated, gray Silt, little fine Sand, traces Clay	3		
20	12-13				(no recovery)	6		
	12-14				(no recovery)	6		
22	12-15			CL/CH	Medium to stiff, saturated black Clay, traces fine Sand	36		
24	12-16			ML	Medium, saturated gray brown fine-Sandy Silt (no recovery)	6		
26					grading more fine-coarse gravels			
28				GP/SW	Medium, saturated, gray to tan gray fine-coarse Sand and very fine-coarse Gravel			

Figure A-12, Log of Test Boring No. 12

SAMPLE SYMBOLS

- ☐ — SAMPLING UNSUCCESSFUL
- ◧ — STANDARD PENETRATION TEST
- ■ — DRIVE SAMPLE (UNDISTURBED)
- ☒ — DISTURBED OR BAG SAMPLE
- ◪ — CHUNK SAMPLE
- ▼ — WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

File No. D-3771-M01

DEPTH IN FEET	SAMPLE NO.	LITHOLOGY	GROUNDWATER	SOIL CLASS (U.S.C.S)	BORING NO. 12 CONTINUED ELEVATION _____ DATE DRILLED _____ EQUIPMENT _____	PENETRATION RESISTANCE BLOWS/FT.	DRY DENSITY P.C.F.	MOISTURE CONTENT, %
					MATERIAL DESCRIPTION			
30								
					grading denser,(difficult to drill)			
32								
34					BORING TERMINATED AT 31 FEET			

Figure A-13, Log of Testing Boring No. 12 (Continued)

SAMPLE SYMBOLS

- ☐ — SAMPLING UNSUCCESSFUL
- ◧ — STANDARD PENETRATION TEST
- ■ — DRIVE SAMPLE (UNDISTURBED)
- ☒ — DISTURBED OR BAG SAMPLE
- ◪ — CHUNK SAMPLE
- ▼ — WATER TABLE OR SEEPAGE

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING OR TRENCH LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

APPENDIX D

APPENDIX D

SLOPE STABILITY ANALYSES

FOR

SAN DIEGO WILDLIFE REFUGE
POND 20 MITIGATION
SAN DIEGO, CALIFORNIA

PROJECT NO. G2079-52-01

APPENDIX D

SLOPE STABILITY ANALYSES

We performed slope stability analyses using a two-dimensional computer software *GeoStudio2007* developed by Geo-Slope International Ltd. We analyzed the critical modes of potential slip surfaces including rotational-mode and block-mode based on Spencer's method. The soil parameters used, case conditions, and the calculated factors of safety were presented herein. Plots of analyses' results, including the soil stratigraphy, potential failure surfaces, and calculated Factors of Safety, are included in this appendix.

Shear strength characters of the existing geologic units were estimated based on laboratory direct shear tests on samples obtained during our field investigation in accordance with ASTM D 3080 (see x B), and based on empirical data obtained from the referenced geotechnical literature. Table D-I presents the soil parameters used for the stability analyses.

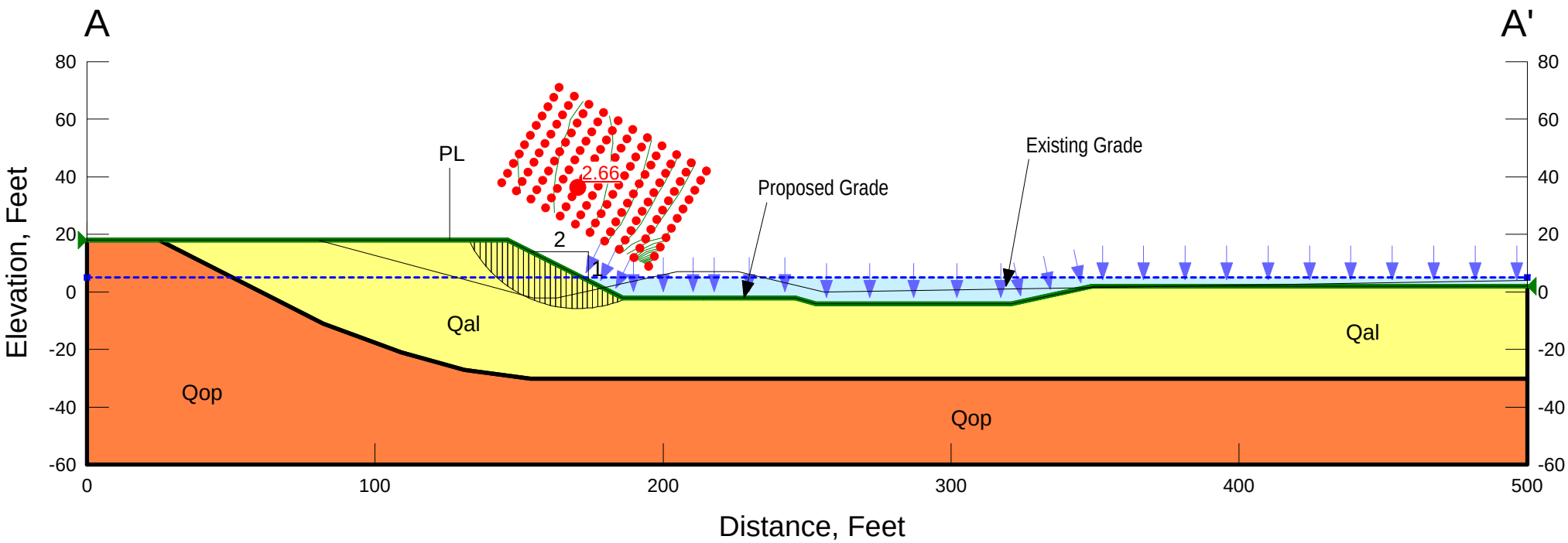
TABLE D-I
SUMMARY OF SOIL PROPERTIES USED FOR SLOPE STABILITY ANALYSES

Geologic Unit/Material	Density (pcf)	Cohesion (psf)	Friction Angle (degrees)
Alluvium/Bay Deposits (Qal)	125	400	28
Old Paralic Deposits	130	300	33

We selected Geologic Cross-Sections A-A' through B-B' to perform the slope stability analyses. The tables in this appendix provide a summary of cases analyzed and calculated factors of safety. A minimum Factor of Safety of 1.5 under static conditions is currently required by the City of San Diego for slope stability. Results of slope stability analyses generated by *GeoStudio 2007* are plotted on figures herein. We also included the surficial slope stability analyses.

San Diego Wildlife Refuge
Project No. G2079-52-01
Name: A-A'_Case 1.gsz
Date: 2/27/2017 Time: 12:24:20 PM

Material Properties:
Name: Qal Unit Weight: 125 pcf Cohesion: 400 psf Phi: 28 ° Piezometric Line: 1
Name: Qop Unit Weight: 130 pcf Cohesion: 300 psf Phi: 33 ° Piezometric Line: 1



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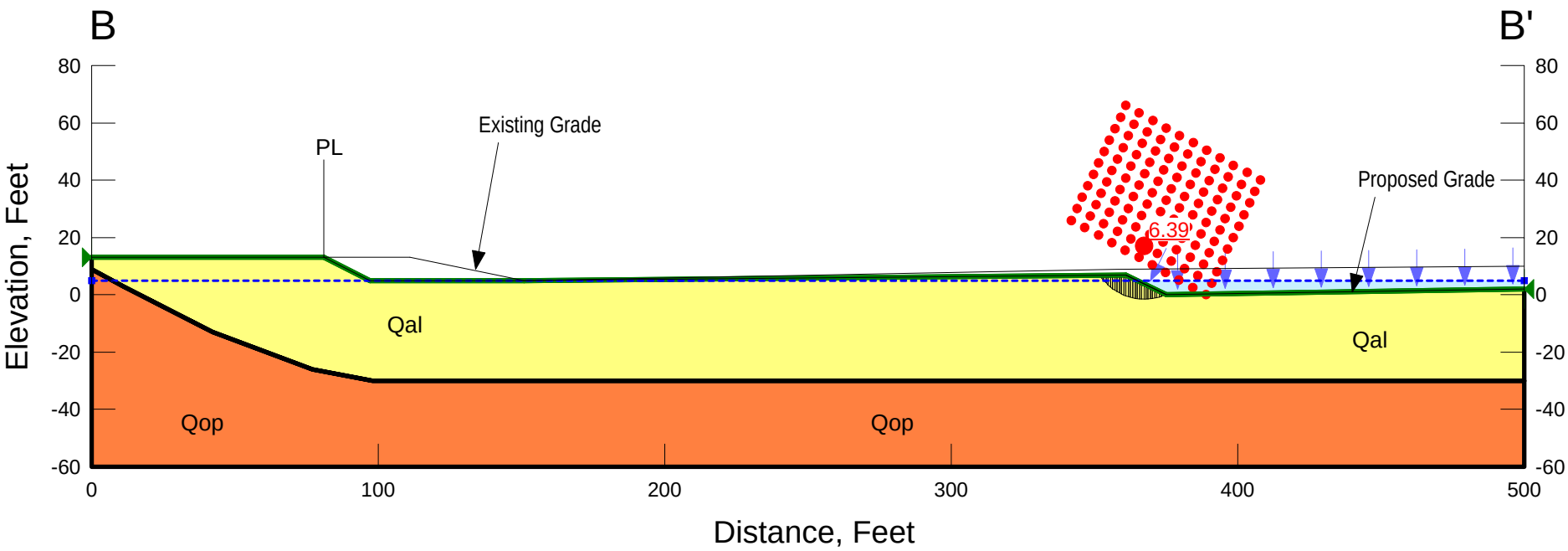
San Diego Wildlife Refuge
Project No. G2079-52-01
Name: B-B'_Case 1.gsz
Date: 2/27/2017 Time: 12:31:28 PM

Material Properties:
Name: Qal Unit Weight: 125 pcf Cohesion: 400 psf Phi: 28 ° Piezometric Line: 1
Name: Qop Unit Weight: 130 pcf Cohesion: 300 psf Phi: 33 ° Piezometric Line: 1



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Surficial Slope Stability Evaluation

Slope Height, H (feet)	∞	
Vertical Depth of Stauration, Z (feet)	3	
Slope Inclination	2.00	:1
Slope Inclination, I (degrees)	26.6	
Unit Weight of Water, γW (pcf)	62.4	
Total Unit Weight of Soil, γ_T (pcf)	125	
Friction Angle, ϕ (degrees)	28	
Cohesion, C (psf)	400	
Factor of Safety = $(C+(\gamma_T-\gamma_W)Z \cos^2 i \tan\phi)/(\gamma_T Z \sin i \cos i)$	3.20	

References: (1) Haefeli, R. *The Stability of Slopes Acted Upon by Parallel Seepage* , Proc. Second International Conference, SMFE, Rotterdam, 1948, 1, 57-62.

(2) Skempton, A. W., and F. A. Delory, *Stability of Natural Slopes in London Clay* , Proc. Fourth International Conference, SMFE, London, 1957, 2, 378-81.

GEOCON
INCORPORATED
GEOTECHNICAL CONSULTANTS
6960 FLANDERS DRIVE - SAN DIEGO, CALIFORNIA 92121-2974
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SLOPE STABILITY ANALYSIS

SAN DIEGO WILDLIFE REFUGE
SAN DIEGO, CALIFORNIA

SW / SW		
DATE 02-27-2017	PROJECT NO. G2079-52-01	

APPENDIX E

APPENDIX E

RECOMMENDED GRADING SPECIFICATIONS

FOR

SAN DIEGO WILDLIFE REFUGE
POND 20 MITIGATION
SAN DIEGO, CALIFORNIA

PROJECT NO. G2079-52-01

RECOMMENDED GRADING SPECIFICATIONS

1. GENERAL

1.1 These Recommended Grading Specifications shall be used in conjunction with the Geotechnical Report for the project prepared by Geocon. The recommendations contained in the text of the Geotechnical Report are a part of the earthwork and grading specifications and shall supersede the provisions contained hereinafter in the case of conflict.

1.2 Prior to the commencement of grading, a geotechnical consultant (Consultant) shall be employed for the purpose of observing earthwork procedures and testing the fills for substantial conformance with the recommendations of the Geotechnical Report and these specifications. The Consultant should provide adequate testing and observation services so that they may assess whether, in their opinion, the work was performed in substantial conformance with these specifications. It shall be the responsibility of the Contractor to assist the Consultant and keep them apprised of work schedules and changes so that personnel may be scheduled accordingly.

1.3 It shall be the sole responsibility of the Contractor to provide adequate equipment and methods to accomplish the work in accordance with applicable grading codes or agency ordinances, these specifications and the approved grading plans. If, in the opinion of the Consultant, unsatisfactory conditions such as questionable soil materials, poor moisture condition, inadequate compaction, and/or adverse weather result in a quality of work not in conformance with these specifications, the Consultant will be empowered to reject the work and recommend to the Owner that grading be stopped until the unacceptable conditions are corrected.

2. DEFINITIONS

2.1 **Owner** shall refer to the owner of the property or the entity on whose behalf the grading work is being performed and who has contracted with the Contractor to have grading performed.

2.2 **Contractor** shall refer to the Contractor performing the site grading work.

2.3 **Civil Engineer** or **Engineer of Work** shall refer to the California licensed Civil Engineer or consulting firm responsible for preparation of the grading plans, surveying and verifying as-graded topography.

2.4 **Consultant** shall refer to the soil engineering and engineering geology consulting firm retained to provide geotechnical services for the project.

2.5 **Soil Engineer** shall refer to a California licensed Civil Engineer retained by the Owner, who is experienced in the practice of geotechnical engineering. The Soil Engineer shall be responsible for having qualified representatives on-site to observe and test the Contractor's work for conformance with these specifications.

2.6 **Engineering Geologist** shall refer to a California licensed Engineering Geologist retained by the Owner to provide geologic observations and recommendations during the site grading.

2.7 **Geotechnical Report** shall refer to a soil report (including all addenda) which may include a geologic reconnaissance or geologic investigation that was prepared specifically for the development of the project for which these Recommended Grading Specifications are intended to apply.

3. MATERIALS

3.1 Materials for compacted fill shall consist of any soil excavated from the cut areas or imported to the site that, in the opinion of the Consultant, is suitable for use in construction of fills. In general, fill materials can be classified as *soil* fills, *soil-rock* fills or *rock* fills, as defined below.

3.1.1 **Soil fills** are defined as fills containing no rocks or hard lumps greater than 12 inches in maximum dimension and containing at least 40 percent by weight of material smaller than ¾ inch in size.

3.1.2 **Soil-rock fills** are defined as fills containing no rocks or hard lumps larger than 4 feet in maximum dimension and containing a sufficient matrix of soil fill to allow for proper compaction of soil fill around the rock fragments or hard lumps as specified in Paragraph 6.2. **Oversize rock** is defined as material greater than 12 inches.

3.1.3 **Rock fills** are defined as fills containing no rocks or hard lumps larger than 3 feet in maximum dimension and containing little or no fines. Fines are defined as material smaller than ¾ inch in maximum dimension. The quantity of fines shall be less than approximately 20 percent of the rock fill quantity.

3.2 Material of a perishable, spongy, or otherwise unsuitable nature as determined by the Consultant shall not be used in fills.

3.3 Materials used for fill, either imported or on-site, shall not contain hazardous materials as defined by the California Code of Regulations, Title 22, Division 4, Chapter 30, Articles 9

and 10; 40CFR; and any other applicable local, state or federal laws. The Consultant shall not be responsible for the identification or analysis of the potential presence of hazardous materials. However, if observations, odors or soil discoloration cause Consultant to suspect the presence of hazardous materials, the Consultant may request from the Owner the termination of grading operations within the affected area. Prior to resuming grading operations, the Owner shall provide a written report to the Consultant indicating that the suspected materials are not hazardous as defined by applicable laws and regulations.

3.4 The outer 15 feet of *soil-rock* fill slopes, measured horizontally, should be composed of properly compacted *soil* fill materials approved by the Consultant. *Rock* fill may extend to the slope face, provided that the slope is not steeper than 2:1 (horizontal:vertical) and a soil layer no thicker than 12 inches is track-walked onto the face for landscaping purposes. This procedure may be utilized provided it is acceptable to the governing agency, Owner and Consultant.

3.5 Samples of soil materials to be used for fill should be tested in the laboratory by the Consultant to determine the maximum density, optimum moisture content, and, where appropriate, shear strength, expansion, and gradation characteristics of the soil.

3.6 During grading, soil or groundwater conditions other than those identified in the Geotechnical Report may be encountered by the Contractor. The Consultant shall be notified immediately to evaluate the significance of the unanticipated condition.

4. CLEARING AND PREPARING AREAS TO BE FILLED

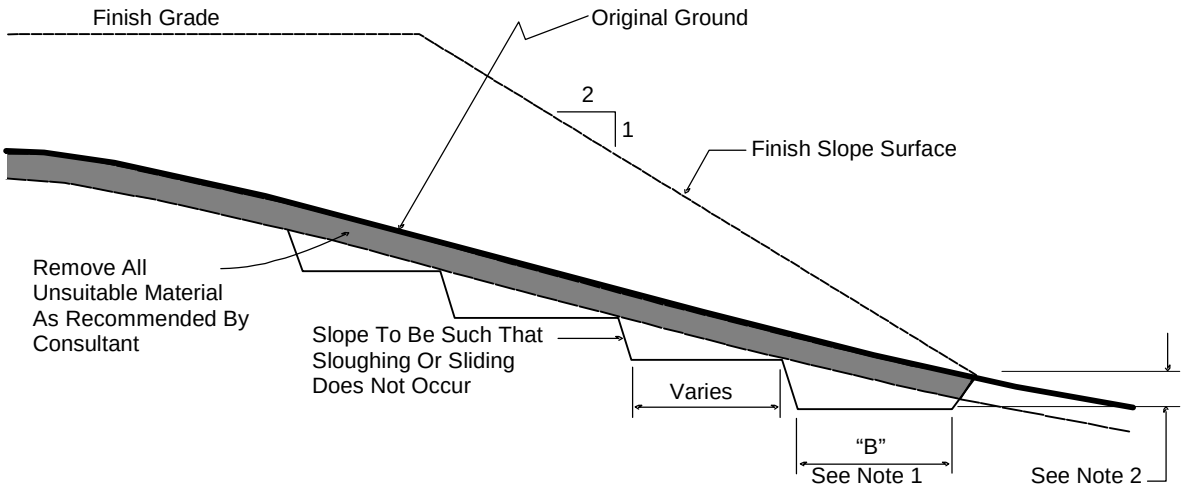
4.1 Areas to be excavated and filled shall be cleared and grubbed. Clearing shall consist of complete removal above the ground surface of trees, stumps, brush, vegetation, man-made structures, and similar debris. Grubbing shall consist of removal of stumps, roots, buried logs and other unsuitable material and shall be performed in areas to be graded. Roots and other projections exceeding 1½ inches in diameter shall be removed to a depth of 3 feet below the surface of the ground. Borrow areas shall be grubbed to the extent necessary to provide suitable fill materials.

4.2 Asphalt pavement material removed during clearing operations should be properly disposed at an approved off-site facility or in an acceptable area of the project evaluated by Geocon and the property owner. Concrete fragments that are free of reinforcing steel may be placed in fills, provided they are placed in accordance with Section 6.2 or 6.3 of this document.

4.3 After clearing and grubbing of organic matter and other unsuitable material, loose or porous soils shall be removed to the depth recommended in the Geotechnical Report. The depth of removal and compaction should be observed and approved by a representative of the Consultant. The exposed surface shall then be plowed or scarified to a minimum depth of 6 inches and until the surface is free from uneven features that would tend to prevent uniform compaction by the equipment to be used.

4.4 Where the slope ratio of the original ground is steeper than 5:1 (horizontal:vertical), or where recommended by the Consultant, the original ground should be benched in accordance with the following illustration.

TYPICAL BENCHING DETAIL



No Scale

DETAIL NOTES:

(1) Key width "B" should be a minimum of 10 feet, or sufficiently wide to permit complete coverage with the compaction equipment used. The base of the key should be graded horizontal, or inclined slightly into the natural slope.

(2) The outside of the key should be below the topsoil or unsuitable surficial material and at least 2 feet into dense formational material. Where hard rock is exposed in the bottom of the key, the depth and configuration of the key may be modified as approved by the Consultant.

4.5 After areas to receive fill have been cleared and scarified, the surface should be moisture conditioned to achieve the proper moisture content, and compacted as recommended in Section 6 of these specifications.

5. COMPACTION EQUIPMENT

5.1 Compaction of *soil* or *soil-rock* fill shall be accomplished by sheepsfoot or segmented-steel wheeled rollers, vibratory rollers, multiple-wheel pneumatic-tired rollers, or other types of acceptable compaction equipment. Equipment shall be of such a design that it will be capable of compacting the *soil* or *soil-rock* fill to the specified relative compaction at the specified moisture content.

5.2 Compaction of *rock* fills shall be performed in accordance with Section 6.3.

6. PLACING, SPREADING AND COMPACTION OF FILL MATERIAL

6.1 *Soil* fill, as defined in Paragraph 3.1.1, shall be placed by the Contractor in accordance with the following recommendations:

6.1.1 *Soil* fill shall be placed by the Contractor in layers that, when compacted, should generally not exceed 8 inches. Each layer shall be spread evenly and shall be thoroughly mixed during spreading to obtain uniformity of material and moisture in each layer. The entire fill shall be constructed as a unit in nearly level lifts. Rock materials greater than 12 inches in maximum dimension shall be placed in accordance with Section 6.2 or 6.3 of these specifications.

6.1.2 In general, the *soil* fill shall be compacted at a moisture content at or above the optimum moisture content as determined by ASTM D 1557.

6.1.3 When the moisture content of *soil* fill is below that specified by the Consultant, water shall be added by the Contractor until the moisture content is in the range specified.

6.1.4 When the moisture content of the *soil* fill is above the range specified by the Consultant or too wet to achieve proper compaction, the *soil* fill shall be aerated by the Contractor by blading/mixing, or other satisfactory methods until the moisture content is within the range specified.

6.1.5 After each layer has been placed, mixed, and spread evenly, it shall be thoroughly compacted by the Contractor to a relative compaction of at least 90 percent. Relative compaction is defined as the ratio (expressed in percent) of the in-place dry density of the compacted fill to the maximum laboratory dry density as determined in accordance with ASTM D 1557. Compaction shall be continuous over the entire area, and compaction equipment shall make sufficient passes so that the specified minimum relative compaction has been achieved throughout the entire fill.

6.1.6 Where practical, soils having an Expansion Index greater than 50 should be placed at least 3 feet below finish pad grade and should be compacted at a moisture content generally 2 to 4 percent greater than the optimum moisture content for the material.

6.1.7 Properly compacted *soil* fill shall extend to the design surface of fill slopes. To achieve proper compaction, it is recommended that fill slopes be over-built by at least 3 feet and then cut to the design grade. This procedure is considered preferable to track-walking of slopes, as described in the following paragraph.

6.1.8 As an alternative to over-building of slopes, slope faces may be back-rolled with a heavy-duty loaded sheepsfoot or vibratory roller at maximum 4-foot fill height intervals. Upon completion, slopes should then be track-walked with a D-8 dozer or similar equipment, such that a dozer track covers all slope surfaces at least twice.

6.2 *Soil-rock* fill, as defined in Paragraph 3.1.2, shall be placed by the Contractor in accordance with the following recommendations:

6.2.1 Rocks larger than 12 inches but less than 4 feet in maximum dimension may be incorporated into the compacted *soil* fill, but shall be limited to the area measured 15 feet minimum horizontally from the slope face and 5 feet below finish grade or 3 feet below the deepest utility, whichever is deeper.

6.2.2 Rocks or rock fragments up to 4 feet in maximum dimension may either be individually placed or placed in windrows. Under certain conditions, rocks or rock fragments up to 10 feet in maximum dimension may be placed using similar methods. The acceptability of placing rock materials greater than 4 feet in maximum dimension shall be evaluated during grading as specific cases arise and shall be approved by the Consultant prior to placement.

6.2.3 For individual placement, sufficient space shall be provided between rocks to allow for passage of compaction equipment.

6.2.4 For windrow placement, the rocks should be placed in trenches excavated in properly compacted *soil* fill. Trenches should be approximately 5 feet wide and 4 feet deep in maximum dimension. The voids around and beneath rocks should be filled with approved granular soil having a Sand Equivalent of 30 or greater and should be compacted by flooding. Windrows may also be placed utilizing an "open-face" method in lieu of the trench procedure, however, this method should first be approved by the Consultant.

6.2.5 Windrows should generally be parallel to each other and may be placed either parallel to or perpendicular to the face of the slope depending on the site geometry. The minimum horizontal spacing for windrows shall be 12 feet center-to-center with a 5-foot stagger or offset from lower courses to next overlying course. The minimum vertical spacing between windrow courses shall be 2 feet from the top of a lower windrow to the bottom of the next higher windrow.

6.2.6 Rock placement, fill placement and flooding of approved granular soil in the windrows should be continuously observed by the Consultant.

6.3 *Rock* fills, as defined in Section 3.1.3, shall be placed by the Contractor in accordance with the following recommendations:

6.3.1 The base of the *rock* fill shall be placed on a sloping surface (minimum slope of 2 percent). The surface shall slope toward suitable subdrainage outlet facilities. The *rock* fills shall be provided with subdrains during construction so that a hydrostatic pressure buildup does not develop. The subdrains shall be permanently connected to controlled drainage facilities to control post-construction infiltration of water.

6.3.2 *Rock* fills shall be placed in lifts not exceeding 3 feet. Placement shall be by rock trucks traversing previously placed lifts and dumping at the edge of the currently placed lift. Spreading of the *rock* fill shall be by dozer to facilitate *seating* of the rock. The *rock* fill shall be watered heavily during placement. Watering shall consist of water trucks traversing in front of the current rock lift face and spraying water continuously during rock placement. Compaction equipment with compactive energy comparable to or greater than that of a 20-ton steel vibratory roller or other compaction equipment providing suitable energy to achieve the required compaction or deflection as recommended in Paragraph 6.3.3 shall be utilized. The number of passes to be made should be determined as described in Paragraph 6.3.3. Once a *rock* fill lift has been covered with *soil* fill, no additional *rock* fill lifts will be permitted over the *soil* fill.

6.3.3 Plate bearing tests, in accordance with ASTM D 1196, may be performed in both the compacted *soil* fill and in the *rock* fill to aid in determining the required minimum number of passes of the compaction equipment. If performed, a minimum of three plate bearing tests should be performed in the properly compacted *soil* fill (minimum relative compaction of 90 percent). Plate bearing tests shall then be performed on areas of *rock* fill having two passes, four passes and six passes of the compaction equipment, respectively. The number of passes required for the *rock* fill shall be determined by comparing the results of the plate bearing tests for the *soil* fill and the *rock* fill and by evaluating the deflection

variation with number of passes. The required number of passes of the compaction equipment will be performed as necessary until the plate bearing deflections are equal to or less than that determined for the properly compacted *soil* fill. In no case will the required number of passes be less than two.

6.3.4 A representative of the Consultant should be present during *rock* fill operations to observe that the minimum number of "passes" have been obtained, that water is being properly applied and that specified procedures are being followed. The actual number of plate bearing tests will be determined by the Consultant during grading.

6.3.5 Test pits shall be excavated by the Contractor so that the Consultant can state that, in their opinion, sufficient water is present and that voids between large rocks are properly filled with smaller rock material. In-place density testing will not be required in the *rock* fills.

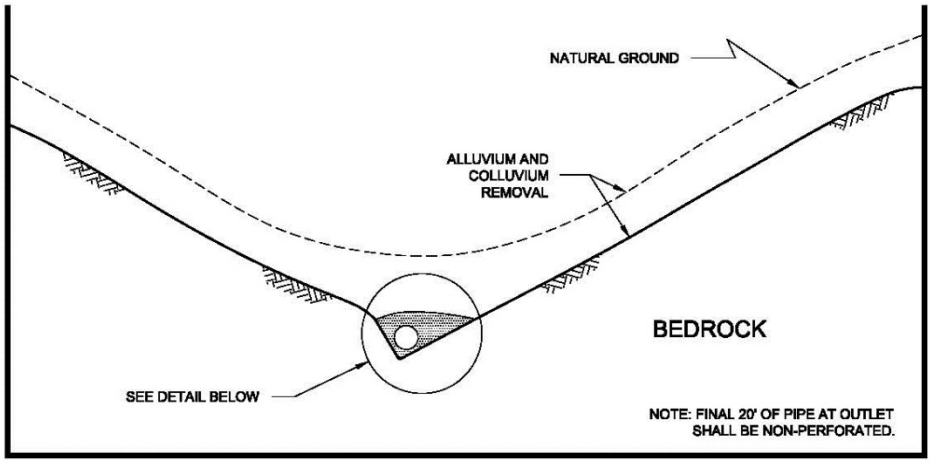
6.3.6 To reduce the potential for "piping" of fines into the *rock* fill from overlying *soil* fill material, a 2-foot layer of graded filter material shall be placed above the uppermost lift of *rock* fill. The need to place graded filter material below the *rock* should be determined by the Consultant prior to commencing grading. The gradation of the graded filter material will be determined at the time the *rock* fill is being excavated. Materials typical of the *rock* fill should be submitted to the Consultant in a timely manner, to allow design of the graded filter prior to the commencement of *rock* fill placement.

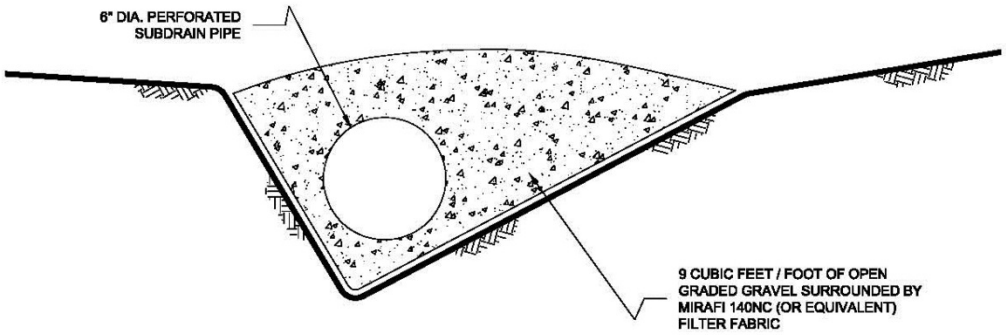
6.3.7 *Rock* fill placement should be continuously observed during placement by the Consultant.

7. SUBDRAINS

7.1 The geologic units on the site may have permeability characteristics and/or fracture systems that could be susceptible under certain conditions to seepage. The use of canyon subdrains may be necessary to mitigate the potential for adverse impacts associated with seepage conditions. Canyon subdrains with lengths in excess of 500 feet or extensions of existing offsite subdrains should use 8-inch-diameter pipes. Canyon subdrains less than 500 feet in length should use 6-inch-diameter pipes.

TYPICAL CANYON DRAIN DETAIL





NOTES:

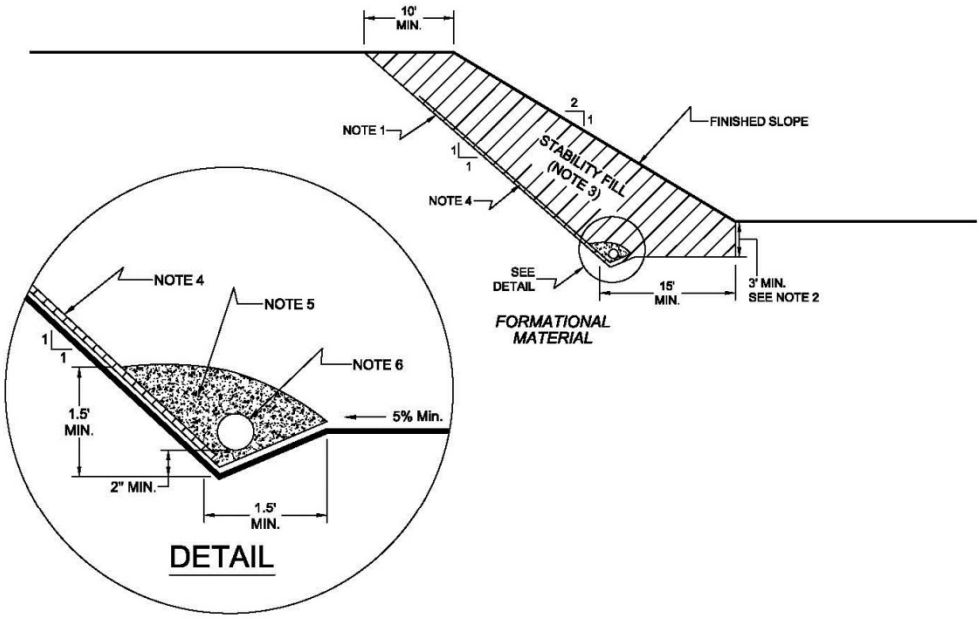
1.....8-INCH DIAMETER, SCHEDULE 80 PVC PERFORATED PIPE FOR FILLS
IN EXCESS OF 100-FEET IN DEPTH OR A PIPE LENGTH OF LONGER THAN 500 FEET.

2.....6-INCH DIAMETER, SCHEDULE 40 PVC PERFORATED PIPE FOR FILLS
LESS THAN 100-FEET IN DEPTH OR A PIPE LENGTH SHORTER THAN 500 FEET.

NO SCALE

7.2 Slope drains within stability fill keyways should use 4-inch-diameter (or lager) pipes.

TYPICAL STABILITY FILL DETAIL



NOTES:

1.....EXCAVATE BACKCUT AT 1:1 INCLINATION (UNLESS OTHERWISE NOTED).

2.....BASE OF STABILITY FILL TO BE 3 FEET INTO FORMATIONAL MATERIAL, SLOPING A MINIMUM 5% INTO SLOPE.

3.....STABILITY FILL TO BE COMPOSED OF PROPERLY COMPACTED GRANULAR SOIL.

4.....CHIMNEY DRAINS TO BE APPROVED PREFABRICATED CHIMNEY DRAIN PANELS (MIRADRAIN G200N OR EQUIVALENT) SPACED APPROXIMATELY 20 FEET CENTER TO CENTER AND 4 FEET WIDE. CLOSER SPACING MAY BE REQUIRED IF SEEPAGE IS ENCOUNTERED.

5.....FILTER MATERIAL TO BE 3/4-INCH, OPEN-GRADED CRUSHED ROCK ENCLOSED IN APPROVED FILTER FABRIC (MIRAFI 140NC).

6.....COLLECTOR PIPE TO BE 4-INCH MINIMUM DIAMETER, PERFORATED, THICK-WALLED PVC SCHEDULE 40 OR EQUIVALENT, AND SLOPED TO DRAIN AT 1 PERCENT MINIMUM TO APPROVED OUTLET.

NO SCALE

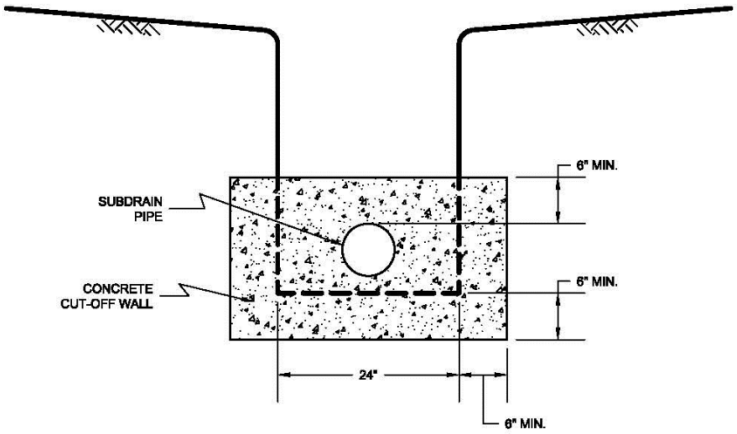
7.3 The actual subdrain locations will be evaluated in the field during the remedial grading operations. Additional drains may be necessary depending on the conditions observed and the requirements of the local regulatory agencies. Appropriate subdrain outlets should be evaluated prior to finalizing 40-scale grading plans.

7.4 *Rock* fill or *soil-rock* fill areas may require subdrains along their down-slope perimeters to mitigate the potential for buildup of water from construction or landscape irrigation. The subdrains should be at least 6-inch-diameter pipes encapsulated in gravel and filter fabric. *Rock* fill drains should be constructed using the same requirements as canyon subdrains.

7.5 Prior to outletting, the final 20-foot segment of a subdrain that will not be extended during future development should consist of non-perforated drainpipe. At the non-perforated/ perforated interface, a seepage cutoff wall should be constructed on the downslope side of the pipe.

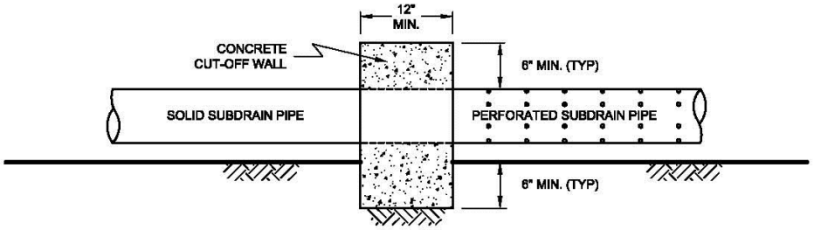
TYPICAL CUT OFF WALL DETAIL

FRONT VIEW



NO SCALE

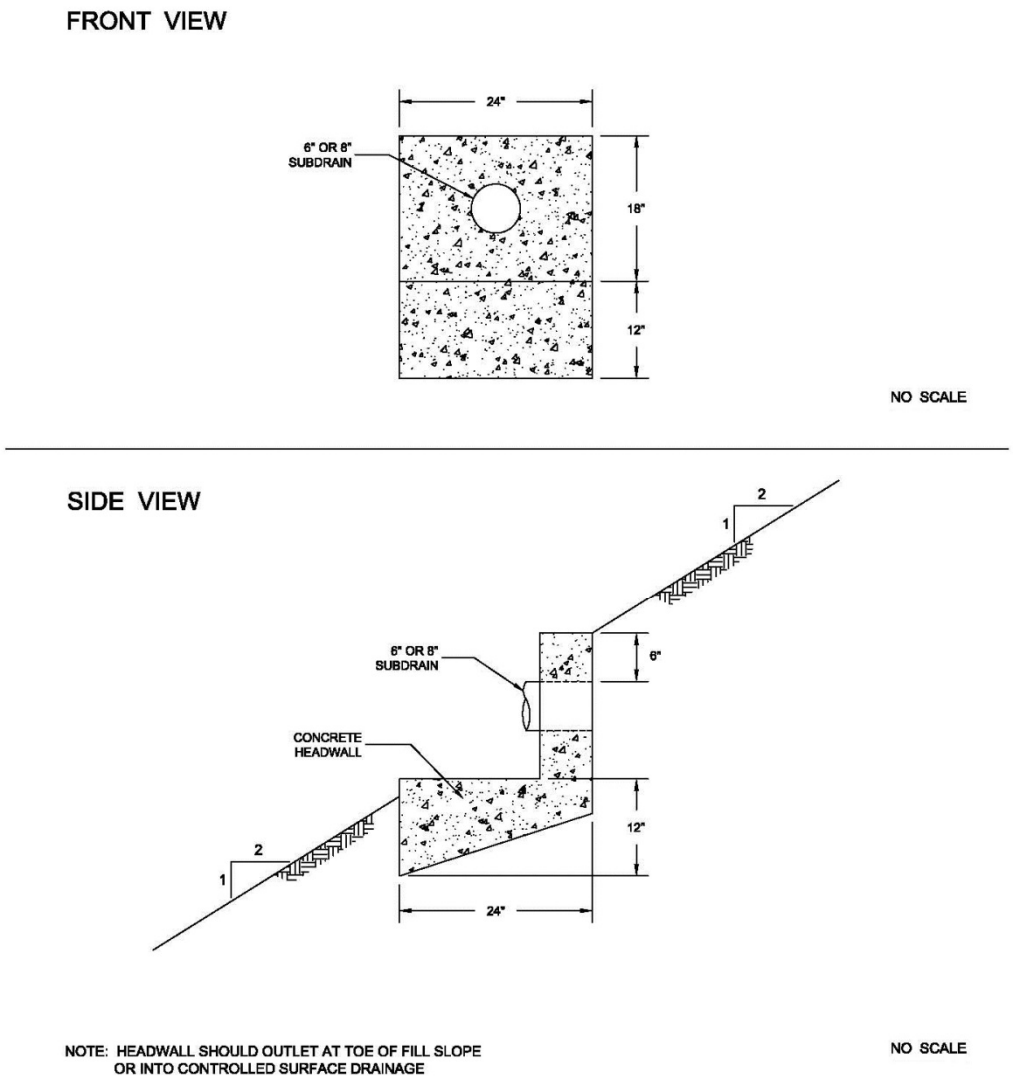
SIDE VIEW



NO SCALE

7.6 Subdrains that discharge into a natural drainage course or open space area should be provided with a permanent headwall structure.

TYPICAL HEADWALL DETAIL



7.7 The final grading plans should show the location of the proposed subdrains. After completion of remedial excavations and subdrain installation, the project civil engineer should survey the drain locations and prepare an “as-built” map showing the drain locations. The final outlet and connection locations should be determined during grading operations. Subdrains that will be extended on adjacent projects after grading can be placed on formational material and a vertical riser should be placed at the end of the subdrain. The grading contractor should consider videoing the subdrains shortly after burial to check proper installation and functionality. The contractor is responsible for the performance of the drains.

8. OBSERVATION AND TESTING

8.1 The Consultant shall be the Owner's representative to observe and perform tests during clearing, grubbing, filling, and compaction operations. In general, no more than 2 feet in vertical elevation of *soil* or *soil-rock* fill should be placed without at least one field density test being performed within that interval. In addition, a minimum of one field density test should be performed for every 2,000 cubic yards of *soil* or *soil-rock* fill placed and compacted.

8.2 The Consultant should perform a sufficient distribution of field density tests of the compacted *soil* or *soil-rock* fill to provide a basis for expressing an opinion whether the fill material is compacted as specified. Density tests shall be performed in the compacted materials below any disturbed surface. When these tests indicate that the density of any layer of fill or portion thereof is below that specified, the particular layer or areas represented by the test shall be reworked until the specified density has been achieved.

8.3 During placement of *rock* fill, the Consultant should observe that the minimum number of passes have been obtained per the criteria discussed in Section 6.3.3. The Consultant should request the excavation of observation pits and may perform plate bearing tests on the placed *rock* fills. The observation pits will be excavated to provide a basis for expressing an opinion as to whether the *rock* fill is properly seated and sufficient moisture has been applied to the material. When observations indicate that a layer of *rock* fill or any portion thereof is below that specified, the affected layer or area shall be reworked until the *rock* fill has been adequately seated and sufficient moisture applied.

8.4 A settlement monitoring program designed by the Consultant may be conducted in areas of *rock* fill placement. The specific design of the monitoring program shall be as recommended in the Conclusions and Recommendations section of the project Geotechnical Report or in the final report of testing and observation services performed during grading.

8.5 We should observe the placement of subdrains, to check that the drainage devices have been placed and constructed in substantial conformance with project specifications.

8.6 Testing procedures shall conform to the following Standards as appropriate:

8.6.1 Soil and Soil-Rock Fills:

8.6.1.1 Field Density Test, ASTM D 1556, *Density of Soil In-Place By the Sand-Cone Method.*

8.6.1.2 Field Density Test, Nuclear Method, ASTM D 6938, *Density of Soil and Soil-Aggregate In-Place by Nuclear Methods (Shallow Depth).*

8.6.1.3 Laboratory Compaction Test, ASTM D 1557, *Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-Pound Hammer and 18-Inch Drop*.

8.6.1.4. Expansion Index Test, ASTM D 4829, *Expansion Index Test*.

9. PROTECTION OF WORK

9.1 During construction, the Contractor shall properly grade all excavated surfaces to provide positive drainage and prevent ponding of water. Drainage of surface water shall be controlled to avoid damage to adjoining properties or to finished work on the site. The Contractor shall take remedial measures to prevent erosion of freshly graded areas until such time as permanent drainage and erosion control features have been installed. Areas subjected to erosion or sedimentation shall be properly prepared in accordance with the Specifications prior to placing additional fill or structures.

9.2 After completion of grading as observed and tested by the Consultant, no further excavation or filling shall be conducted except in conjunction with the services of the Consultant.

10. CERTIFICATIONS AND FINAL REPORTS

10.1 Upon completion of the work, Contractor shall furnish Owner a certification by the Civil Engineer stating that the lots and/or building pads are graded to within 0.1 foot vertically of elevations shown on the grading plan and that all tops and toes of slopes are within 0.5 foot horizontally of the positions shown on the grading plans. After installation of a section of subdrain, the project Civil Engineer should survey its location and prepare an *as-built* plan of the subdrain location. The project Civil Engineer should verify the proper outlet for the subdrains and the Contractor should ensure that the drain system is free of obstructions.

10.2 The Owner is responsible for furnishing a final as-graded soil and geologic report satisfactory to the appropriate governing or accepting agencies. The as-graded report should be prepared and signed by a California licensed Civil Engineer experienced in geotechnical engineering and by a California Certified Engineering Geologist, indicating that the geotechnical aspects of the grading were performed in substantial conformance with the Specifications or approved changes to the Specifications.

LIST OF REFERENCES

1. *2016 California Building Code, California Code of Regulations, Title 24, Part 2, based on the 2015 International Building Code,* prepared by California Building Standards Commission, dated July 2016.

2. *ACI 318-14, Building Code Requirements for Structural Concrete* and *Commentary on Building Code Requirements for Structural Concrete,* prepared by the American Concrete Institute, dated September 2014.

3. *ACI 330-08, Guide for the Design and Construction of Concrete Parking Lots*, prepared by the American Concrete Institute, dated June, 2008.

4. Boore, D. M., and G. M Atkinson (2008), *Ground-Motion Prediction for the Average Horizontal Component of PGA, PGV, and 5%-Damped PSA at Spectral Periods Between 0.01 and 10.0 S*, Earthquake Spectra, Volume 24, Issue 1, pages 99-138, February 2008.

5. California Department of Conservation, Division of Mines and Geology, *Probabilistic Seismic Hazard Assessment for the State of California,* Open File Report 96-08, 1996.

6. California Emergency Management Agency (CEMA), *Tsunami Inundation Map For Emergency Planning, San Diego Bay,* dated June 1, 2009

7. California Geological Survey, *Seismic Shaking Hazards in California,* Based on the USGS/CGS Probabilistic Seismic Hazards Assessment (PSHA) Model, 2002 (revised April 2003). 10% probability of being exceeded in 50 years. http://redirect.conservation.ca.gov/cgs/rghm/pshamap/pshamain.html.

8. Campbell, K. W., and Y. Bozorgnia, *NGA Ground Motion Model for the Geometric Mean Horizontal Component of PGA, PGV, PGD and 5% Damped Linear Elastic Response Spectra for Periods Ranging from 0.01 to 10 s,* Preprint of version submitted for publication in the NGA Special Volume of Earthquake Spectra, Volume 24, Issue 1, pages 139-171, February 2008.

9. Chiou, Brian S. J., and Robert R. Youngs, *A NGA Model for the Average Horizontal Component of Peak Ground Motion and Response Spectra,* preprint for article to be published in NGA Special Edition for Earthquake Spectra, Spring 2008.

10. *City of San Diego Seismic Safety Study, Geologic Hazards and Faults*, 2008 edition, Map Sheet 5 and 6.

11. CGS, 2008, *Geologic Map of the San Diego 30'X60' Quadrangle California*

12. *Geotechnical Engineering Investigation for Western Salt Company Salt Ponds, San Diego, California* prepared by Geocon Incorporated date May 30, 1985 (Project No. D-3345-T02).

13. *Geotechnical Engineering Investigation for Egger-Ghio Property, San Diego, California* prepared by Geocon Incorporated dated October 21, 1986 (Project No. D-3771-M01).

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14. Legg, M. R., J. C. Borrero, and C. E. Synolakis (2002), *Evaluation of Tsunami Risk to Southern California Coastal Cities*, 2002 NEHRP Professional Fellowship Report, dated January

15. Risk Engineering, *EZ-FRISK*, 2015.

16. Unpublished Geotechnical Reports and Information, Geocon Incorporated.