San Diego Unified Port District
P.O. Box 120488
San Diego, California 92112-0488
(619) 686-6291

NOTICE OF PREPARATION
of a
DRAFT ENVIRONMENTAL IMPACT REPORT

PROJECT TITLE: **MITSUBISHI CEMENT CORPORATION AT WAREHOUSE C: BULK CEMENT WAREHOUSE AND LOADING FACILITY PROJECT (UPD #EIR-2016-178)**

APPLICANT: Mitsubishi Cement Corporation

LOCATION: 645 Switzer Street, City of San Diego, in San Diego County, California

REFERENCE: California Code of Regulations, Title 14, Sections 15082(a), 15103, 15375

The San Diego Unified Port District (District) will be the Lead Agency in preparing a Subsequent Environmental Impact Report (SEIR) for the project identified above (Proposed Project, or Project). The District is soliciting input and feedback from various agencies, stakeholders, and the public pertaining to the scope and content of the environmental information that will be included in the SEIR. For certain agencies, this may be germane to statutory responsibilities in connection with the Proposed Project. An agency may need to use the Proposed Project's SEIR when considering its permit or other approval for the Project. The Project description, location, and possible environmental effects of the Proposed Project are contained in the attached materials.

Due to the time limits mandated by state law, your comments must be sent at the earliest possible date but no later than 30 days after issuance of this notice. **Comments regarding environmental concerns will be accepted until 5:00 p.m. on Wednesday, October 18, 2017**, and should be mailed to: San Diego Unified Port District, Development Services Department, Attn: Kelly Czechowski, Senior Planner, P.O. Box 120488, San Diego, CA 92112-0488 or emailed to: kczechowski@portofsandiego.org.

A public scoping meeting regarding the proposed SEIR will be held on Wednesday, September 27, 2017 at 5:00 p.m. at the San Diego Unified Port District Administration Building, Training Room, 3165 Pacific Highway, San Diego, CA 92101.

For questions on this Notice of Preparation, please contact Kelly Czechowski, Senior Planner, at (619) 686-7213.

Signature: Wileen C Manaois Date: 9/14/17

Wileen C. Manaois
Director, Development Services

Issuance Date: September 18, 2017

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NOTICE OF PREPARATION
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DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE
MITSUBISHI CEMENT CORPORATION AT WAREHOUSE C:
BULK CEMENT WAREHOUSE AND LOADING FACILITY PROJECT
(UPD #EIR-2016-178)

Publication of this Notice of Preparation (NOP) initiates the San Diego Unified Port District's (District's) compliance with the California Environmental Quality Act (CEQA) for the Mitsubishi Cement Corporation at Warehouse C: Bulk Cement Warehouse and Loading Facility Project (Proposed Project, or Project). The NOP is the first step in the Environmental Impact Report (EIR) process and will in most cases establish the baseline for the environmental setting. It describes the Proposed Project and is distributed to responsible agencies, trustee agencies, cooperating federal agencies, and the general public. As stated in State CEQA Guidelines Section 15375, the purpose of the NOP is "to solicit guidance from those agencies as to the scope and content of the environmental information to be included in the EIR." The District is the CEQA lead agency and the Project Applicant/Proponent is the Mitsubishi Cement Corporation (Mitsubishi or Applicant).

TIERING FROM PROGRAM EIR

Consistent with Section 15152 of the State CEQA Guidelines, the Subsequent EIR (SEIR) for the Project will tier-off of the Tenth Avenue Marine Terminal (TAMT) Redevelopment Plan and Demolition and Initial Rail Component (Redevelopment Plan) and the Final Program EIR (PEIR) for the Redevelopment Plan (State Clearinghouse Number 2015031046; Clerk Document Number 65901), certified and adopted by the Board of Port Commissioners in December 2016, by Resolution Numbers 2016-199 and 2016-200, respectively. The Draft PEIR, Final PEIR, associated Mitigation, Monitoring and Reporting Program (MMRP), CEQA findings, including a Statement of Overriding Consideration, are incorporated herein by reference (see State CEQA Guidelines Section 15150) and are available at https://www.portofsandiego.org/environment/environmental-downloads/land-use-planning.html and at the Office of the District Clerk located at 3165 Pacific Highway, San Diego, CA 92101.

PROJECT SUMMARY

The Proposed Project site is located at 645 Switzer Street (Warehouse C) on the District's TAMT. The Proposed Project involves two phases of improvements to Bays C-7 through C-10 of Warehouse C for the receipt, storage, and distribution of cement and cementitious materials including, but not limited to, cement, slag, fly ash, and pozzolans. At maximum operation, the Proposed Project would be able to import and distribute up to 600,000 metric tons per year (MT/yr) of cementitious material. The cementitious material would be pneumatically unloaded into Warehouse C from dry bulk cargo ships using mobile vacuum unloaders. At maximum operation there would be up to 24 vessel calls per year at Berths 10-7/10-8. No in-water construction activities would be required for implementation of the Proposed Project. The operational lifetime of the Proposed Project would be anticipated to be 15 years following District approval based on a lease or similarly binding agreement with the District. The term of that agreement will be five (5) years with two five (5) year options to extend, for a maximum total of 15 years. Approval of the Proposed Project would also require issuance of a Coastal Development Permit (CDP) by the District prior to development and operation.

PROJECT LOCATION

The Proposed Project site is located at 645 Switzer Street on the District's TAMT. The TAMT is located along San Diego Bay, south of downtown San Diego, east of the San Diego Convention Center and the Hilton San Diego Bayfront Hotel, and adjacent to the San Diego community of Barrio Logan. Harbor Drive is located near the northern boundary of the TAMT. Site access from Harbor Drive is provided primarily from Cesar E. Chavez Parkway, which becomes Crosby Road as it approaches the TAMT.

Major circulation facilities in the area include State Route 75 (SR 75), also known as the Coronado Bridge, approximately 0.25 mile to the south, and Interstate 5 (I-5), approximately 0.5 mile to the north. Figure 1 provides a regional map of the Proposed Project's location. Figure 2 provides an aerial view of the Proposed Project site.

PROJECT DESCRIPTION

The Proposed Project involves phased modifications to Bays C-7 through C-10 of Warehouse C to import and distribute up to 600,000 MT/yr of cementitious material. The cementitious material would be pneumatically unloaded into Warehouse C from dry bulk cargo ships using up to two 400 MT per hour mobile vacuum unloaders at maximum operation. The vessels would use Berths 10-7/10-8, as shown in Figure 3.

The Proposed Project is located in Planning District 4, the TAMT, which is delineated on Precise Plan Map Figure 13 of the certified Port Master Plan (PMP). The PMP land use designation within the limits of the Proposed Project is Marine Terminal. Bays C-7 through C-10 are located on the western end of Warehouse C. Other warehouses are located to the south, north, and east sides of Warehouse C. A group of storage silos is located directly northeast of Warehouse C with a railroad yard and auto distribution facility located farther northeast. Non-industrial land uses nearest to the Project site include: a residence, approximately 2,200 feet to the east; Perkins Elementary School, approximately 1,700 feet to the northeast; and Cesar Chavez Park and Pier, approximately 1,500 feet to the southeast. The entire TAMT area is highly industrialized in character, and no general public access is permitted within the TAMT area.

Bays C-7 and C-9 are currently vacant. Bays C-8 and C-10 are currently occupied by a District tenant and used for the storage of bauxite. It is anticipated that the bays adjacent to the Project site would continue to be used for similar operations until such time that Warehouse C is demolished, as addressed in the previously approved and certified TAMT Redevelopment Plan and the Final PEIR for the Redevelopment Plan. The timeframe for demolition is unknown, but likely would not occur within the next 15 years while Mitsubishi occupies the Bays. With the District's approval, the Proposed Project's interim uses would include a term of up to five years with two five year options, for a total term of up to 15 years. At the end of the lease term, Mitsubishi would be responsible for the removal of all equipment and improvements within the Project Site. Consistent with State CEQA Guidelines Section 15168(c) and (d), the Proposed Project requires subsequent environmental review, but may tier off of the Final PEIR for the TAMT Redevelopment Plan.

PROJECT CONSTRUCTION

There are two Project options to be analyzed in the SEIR, both of which have alternative construction scenarios. Under either of these options, operational throughput of materials and other operational characteristics would remain the same. Option A proposes truck loading inside Warehouse C and Option B proposes truck loading outside of Warehouse C. Under Option A (interior truck loading) and Option B (exterior truck loading), there are two sub-options related to the proposed ship to warehouse unloading pipelines. As shown in Figure 4, Sub-Option 1 (Subterranean Pipeline) would allow for cementitious material to be pneumatically transferred to Warehouse C via a subterranean unloading pipeline. As shown in Figure 5, Sub-Option 2 (Overhead Pipeline) would allow for cementitious material to be pneumatically transferred to Warehouse C via an overhead unloading pipeline. The pipeline alignment would be the same under both sub-options as shown in Figure 3.

Construction of Option A1 (Truck loading inside Warehouse C with the subterranean unloading pipeline) would require a worst case maximum excavation of approximately 10,460 cubic yards (cy) of material. Option B1 (Truck loading outside Warehouse C with the subterranean unloading pipeline) would require a maximum excavation of 9,420 cy of material. Total excavation activities for Option A and Option B are detailed in Table NOP-1.

Table NOP-1. Summary of Excavation Activities (cubic yards)

Construction Option	Excavation	Backfill	Imports	Spoils
Option A (Interior Truck Loading) – Per Phase	9,760	1,500	8,600	Soil: 9,760 Asphalt: 1,780
Option B (Exterior Truck Loading) – Per Phase	8,720	900	8,000	Soil: 8,720 Asphalt: 150
Sub-Option 1 (Subterranean Pipeline)	700	600	70	Soil: 100 Asphalt: 100
Sub-Option 2 (Overhead Pipeline)	230	0	0	Soil: 230 Asphalt: 30

Regardless of which options are implemented, construction of the Proposed Project would occur in two phases (Phase I and Phase II). Bays C-7 and C-9 are anticipated to be upgraded first (Phase I), followed by Bays C-8 and C-10 (Phase II). The improvements would involve five principal construction activities including: (1) concrete demolition and excavation; (2) foundation and concrete pouring; (3) roof demolition and repair; (4) installation of mechanical equipment; and, (5) electrical tie-ins. The improvements would take an estimated seven to ten months to complete. Upon completion of Phase I, the Proposed Project would have a maximum throughput of 600,000 MT/yr of cementitious material, which is considered the worst case scenario for CEQA purposes.

Phase I of the Proposed Project would involve improvements to Bays C-7 and C-9. The improvements would include:

- Sealing the bays to prevent cementitious material loss through joints and seams;
- Installing a truck loading rack either inside or outside Bay C-7 equipped with two 200 MT silos with dust control truck loading spouts (Figures 6 and 7);
- Installing one truck scale;
- Installing piping to each bay to pneumatically transfer cementitious material from the dock to the warehouse (Figures 8 and 9);
- Installing a reclaim hopper, air slide, screw conveyor, and bucket elevator in the truck loading areas to mechanically transfer cementitious material to the silos (Figures 8 and 9);
- Potential structural upgrades to the roof of Warehouse C, installation of roof-mounted piping, and a berth-side unloader for the pneumatic transfer of cementitious material from ships to the cementitious material storage areas (Figure 3);
- Installing two 26,000 cubic feet per minute dust collectors to control dust emissions from the storage areas and truck loading racks (Figures 2 and 3); and,
- Upgrading electrical equipment to support the electrical demand of the Proposed Project's operation.

Phase II improvements to Bays C-8 and C-10 would be anticipated to begin two to three years after Phase I is operational. These improvements would be identical to those undertaken for Bays C-7 and C-9, and require seven to ten months to implement (Figures 10 and 11). At the conclusion of Phase II, the maximum annual throughput would remain the same; however, the additional equipment and storage would allow more flexible operations (e.g., store multiple cementitious materials concurrently) and improved ability to respond to seasonal and other market fluctuations.

Because the Proposed Project's construction would be undertaken in phases, its implementation would also involve the installation of temporary construction modular buildings and utilities within Warehouse C, as well as their removal upon completion of construction of Phase II.

All modifications would be made within the existing footprint of the Warehouse C and areas immediately adjacent to the warehouse. Bays C-7 through C-10 have a combined gross floor area of 192,000 square feet. The roof height would remain unchanged; however, the silos and dust collector would extend above the existing roof height. The tallest units would be the dust collector stacks at approximately 40 feet above

the roof; the equipment added to the roof would have a total maximum height of approximately 75 feet above grade.

The excavated area for the truck loading racks would be compacted and capped with reinforced concrete to support trucks and the warehouse area would be excavated compacted and filled with structural fill and capped with reinforced concrete to support equipment and cementitious material. It is not expected that the Proposed Project would change the amount of impervious surface or alter the Project area's existing drainage patterns.

Irrespective of the options selected, the Proposed Project includes implementation of the recommendations made in the Project's Geotechnical Report, as a project feature (see Appendix A). The detailed design would incorporate requirements of the City of San Diego's ordinances (e.g., grading), the California Building Code (e.g., seismic standards), and American Society for Testing and Materials (ASTM) standards. Depending on which option is chosen, the removal of existing surface material, excavation of existing fill, and replacement with compacted fill with an Expansion Index of 50 or less may be necessary to provide the proper foundation for the Proposed Project's activities. Saturated subgrades are proposed to be treated in accordance with the Geotechnical Report's recommendations. All fill and backfill would be compacted to meet the 95 percent criterion of the maximum dry density per ASTM Standard D1557. Imported fill would be tested for soil characteristics for optimum compaction as specified in the Geotechnical Report. Any cement slurry used in lieu of structural fill would be sampled and tested pursuant to Chapter 5 of the American Concrete Institute Building Code ACI318.[1]

To support the Project truck loadouts, between 30 and 40 piles per truck loadout spaced 12 to 14 feet center to center would be installed. The piles would be installed to at least 45 feet below grade and up to 90 feet below grade. The piles are expected to be one of three pile types: (1) auger cast; (2) cast-in-drilled hole; or (3) driven, if rig access is available.

The soil borings collected for the Project's Geotechnical Report did not indicate the presence of expansive soils and they indicate negligible potential for sulfate attack; therefore, special measures are not anticipated to be taken for these considerations. However, the on-site soils were found to be corrosive to buried metals, so standard measures would be taken to protect against corrosion.

No outdoor lighting would be required during construction activities, which are expected to occur during daylight hours. No nighttime construction activities are expected. Equipment used for construction would be matte finished.

No changes would be made to on-site parking. A number of parking spaces are available within the TAMT; however, the majority of these parking spaces are not marked in order to provide maximum flexibility for existing operations. The area immediately adjacent to the east side of Warehouse C could accommodate up to 85 passenger vehicles, and are proposed to service the Project.

No changes to the Project site's existing drainage system are proposed; only domestic waste would be discharged into the existing sewer system. Additionally, no changes to the existing piles at Berths 10-7/10-8 are proposed, and no in-water activity, such as dredging or fill, would be required.

The estimated maximum number of on-site construction personnel would be 50. The workforce would be anticipated to be drawn from the local region.

PROJECT OPERATIONS

As noted under "Project Construction," above, the Proposed Project would be implemented in two phases. The facility would become operational following the completion of Phase I construction and have a maximum loading, storage, and distribution capacity of 600,000 MT/yr. Once Phase I throughput increases, and based upon market demand, Phase II construction would occur. At the conclusion of Phase II, the maximum annual throughput proposed by the Applicant would remain the same; however, the additional equipment and storage would allow more flexible operations and improved ability to respond to seasonal and other

[1] Project features associated with the Project's Geotechnical Report would be incorporated into the Coastal Development Permit special provisions section.

market fluctuations. The Proposed Project's 600,000 MT annual throughput would be considered new throughput, over and above the dry bulk throughput of 289,864 MT/yr identified in the TAMT Final PEIR as part of existing baseline conditions. It should be noted that the previously approved and certified TAMT Final PEIR contemplated 1,987,500 MT/yr of dry bulk throughput for the ultimate buildout of TAMT.

At maximum operation, the Proposed Project would be able to unload and distribute up to 600,000 MT of cementitious material annually. The demand for cementitious material fluctuates due to seasonal and economic drivers. However, at full throughput, it is estimated that the facility would generate an estimated 24,000 round-trip truck trips per year. Based on a 600,000 MT/yr throughput and using trucks with a carrying capacity of 25 MT over 365 days, an annual average of 66 round-trip truck trips per day is anticipated. However, based on maximum loading capabilities, the maximum number of round-trip truck trips from the Proposed Project site would be 176 per day on a peak day, but no more than 145 trucks per day on a 30-day rolling average.

It is estimated that up to 24 vessel calls per year at Berths 10-7/10-8 would occur. Depending on market availability, the origins of the vessels would be anticipated to be Asia, South America, and Mexico. The vessels would be dry-bulk ocean-going vessels with a minimum holding estimated at 20,000 MT to a maximum holding capacity of an estimated 40,000 MT deadweight tonnage (DWT). At maximum operation, it is anticipated that each vessel would be at berth for 168 hours (seven days), and that two 400 MT unloaders would be used. The vessels would hotel at the berths continuously; however, actual unloading activities would occur for up to 20 hours per day in two work shifts. Table NOP-2 provides a summary of at-berth vessel operations.

Table NOP-2. Summary of At-Berth Vessel Operations (annual)

Proposed Project Phase	Unloader Size (Metric Tons)	Hours at Berth[a]	Weight of Material Received	Number of Vessels
Phase I (Interim Operation (600,000 MT))	One (1) 200	144 to 216	20,000 MT to 40,000 MT	12 to 24
	One (1) 200 and One (1) 400 MT	144 to 192	20,000 MT to 40,000 MT	12 to 24
	Two 400 MT	120 to 168	20,000 MT to 40,000 MT	12 to 24
Phase II (Maximum Operation (600,000 MT))	One (1) 200 and One (1) 400 MT	144 to 192	20,000 MT to 40,000 MT	12 to 24
	Two (2) 400 MT	120 to 168	20,000 MT to 40,000 MT	12 to 24

[a] At Phase I, when one (1) 200 MT is in use, and 40,000 MT weight of material is received, it is anticipated that each vessel would be at berth for up to 216 hours. At completion of Phase II when two (2) 400 MT unloaders are in use, and 40,000 MT weight of material is received, it is anticipated that each vessel would be at berth up to 168 hours.

The Proposed Project would require one full-time supervisor and up to three maintenance staff workers at all times, for a total of four onsite workers. Vessel unloading and truck loading operations are considered independent activities that may either occur at different times or simultaneously. During truck loading operations up to three additional workers would be required, for a total of seven onsite workers per shift. During ship unloading operations, up to 16 workers per shift would be required. When vessel unloading and truck loading occur at the same time up to 20 workers would be required, for a total of 24 onsite workers per shift for two shifts per day.

During simultaneous operations, the Proposed Project would operate up to 20 hours per day for marine vessel unloading in two shifts for dock workers (7:00am to 5:00pm and 5:00pm to 3:00am), and 24 hours per day for Mitsubishi staff for truck loading. Based upon the California Emissions Estimator Model, on average, onsite workers would be expected to come from the San Diego area with a commute distance approximately 10.8 miles, one-way. Therefore, a daily commute of 10.8 miles each way by the maximum of 24 workers over two shifts would total approximately 519 vehicle miles traveled per day by workers' commute vehicles.

The Proposed Project would be designed to service the San Diego area and the maximum expected truck trip length during normal operating conditions is assumed to be 124 miles per round trip. On a peak operation day, the Project would generate a maximum of 21,824 truck miles per day for 176 trucks. The maximum daily truck mileage would not occur every day. Daily truck visits would vary based on market demand, and the Project would not exceed 145 trucks per day on a 30-day rolling average. The exact locations served would be dependent on customer needs and are expected to be within the assumed 62 mile one-way distance, which encompasses the majority of the densely populated areas in San Diego County. Beyond 62 miles, areas are expected to be more efficiently supplied by other sources of cement. The annual maximum facility throughput of 600,000 MT would equate to 24,000 truck trips per year. For the purposes of the Proposed Project's environmental analysis, a worst case scenario of 24,000 truck trips per year has been assumed.

The truck fleet visiting the Proposed Project site would comply with the District's Clean Truck Program, which requires all trucks visiting the District to meet the California Air Resources Board's (CARB's) emissions standards. The trucks would follow the District's prescribed transportation routes to access and exit the facility to minimize effects on the surrounding community.

The Proposed Project would augment existing exterior lighting with lighting on the proposed equipment necessary to provide adequate illumination to safely access the equipment and provide security. All new lighting would be aimed toward the facility with the necessary shrouds to limit spill light. New equipment would be matte finished to eliminate glare.

The Proposed Project involves minimal potable water use. However, a small quantity of compressor condensate is expected to be generated that would discharge to the sanitary sewer. Therefore, no water treatment processes are proposed. In addition, cementitious material from the ship would be transferred to storage pneumatically through piping to a sealed building having emissions control, which would provide for minimal loss of cementitious material during handling.

The Proposed Project would be expected to routinely generate small quantities of office trash. Periodically, bags from the dust collector would require change out (once every few years). All solid waste would be expected to be transported to a local landfill.

The Proposed Project's portion of Warehouse C is serviced by two fire hydrants, one each on the water and land sides of the building. The Proposed Project involves the storage of cement and cementitious like materials which is noncombustible. Therefore, no additional fire protection would be required during either construction or operation.

PROJECT ENVIRONMENTAL REVIEW ASSUMPTION

As described above, the District adopted the Final PEIR for the TAMT Redevelopment Plan and Demolition and Initial Rail Component (State Clearinghouse Number 2015031046) on December 13, 2016.

The Sustainable Terminal Capacity Alternative (STC Alternative), a reduced project alternative, was adopted by the District as part of its certification of the Final PEIR. Under this alternative, the throughput that could be reached under the maximum practical capacity (MPC) scenario of the Proposed Project would be reduced by 25 percent for each of the three cargo nodes that are proposed for changes under the TAMT Redevelopment Plan (i.e., Dry Bulk, Refrigerated Containers, and Multipurpose General Cargo). Total throughput would be limited to 4,675,567 MT/yr, with dry bulk cargo limited to 1,987,500 MT/yr. Under the STC Alternative, the Proposed Project would operate at Warehouse C within the total allowable dry bulk throughput, although in a different location, which will be accounted for in the analysis.

Consistent with State CEQA Guidelines Section 15168 (c) and (d), the Proposed Project may tier off of the Final PEIR for the TAMT Redevelopment Plan and Demolition and Initial Rail Component for the purposes of the Proposed Project's environmental documentation and review process. Consequently, the content and mitigation measures of the Final PEIR are incorporated by reference within the Proposed Project's Initial Study, and applicable mitigation measures identified in the Final PEIR are noted in each subject-specific analysis (Initial Study Sections I (Aesthetics) through XVII (Utilities and Service Systems)), as warranted.[2]

[2] The Final PEIR and Mitigation Monitoring and Reporting Program are available at https://www.portofsandiego.org/environment/environmental-downloads/land-use-planning.html and the Office of the District Clerk (Resolution Numbers 2016-199 and 2016-200 respectively).

ENVIRONMENTAL CONSIDERATIONS

The Draft SEIR will address the following potential Project-related and cumulative environmental effects of the Proposed Project, including: Air Quality; Greenhouse Gas Emissions; Hazards and Hazardous Materials; Noise; and Traffic/Traffic and Circulation. The SEIR will also address other potential impacts identified during the NOP process, identify feasible mitigation measures and a reasonable range of alternatives, and include the other additional mandatory sections required by CEQA. A proposed Mitigation Monitoring and Reporting Program to address the potentially significant adverse impacts of the Proposed Project will also be presented to the Board of Port Commissioners for its consideration. The Initial Study/Environmental Checklist is attached.

COMMENTS

This NOP is available for a 30-day public review period that starts on Monday, September 18, 2017, and ends at 5:00 p.m. on Wednesday, October 18, 2017. Comments regarding the scope and content of the environmental information that should be included in the SEIR and other environmental concerns should be mailed to:

San Diego Unified Port District
Development Services Department
Attn: Kelly Czechowski, Senior Planner
P.O. Box 120488
San Diego, CA 92112-0488

Or emailed to: kczechowski@portofsandiego.org

PUBLIC SCOPING MEETING

A public scoping meeting to solicit comments on the scope and content of the SEIR for the Proposed Project will be held on Wednesday, September 27, 2017, from 5:00 p.m. to 7:00 p.m. at the San Diego Unified Port District Administration Building, Training Room, 3165 Pacific Highway, San Diego, CA 92101.

The District, as Lead Agency pursuant to CEQA, will review the public comments received during the scoping period to determine what issues should be addressed in the SEIR. Other opportunities for the public to comment on the potential environmental effects of the Proposed Project are as follows:

- A minimum 45-day public review and comment period for the Draft SEIR;
- A public hearing for the Board of Port Commissioners to consider certification of the SEIR.

For questions regarding this NOP, please contact Kelly Czechowski, Senior Planner, at (619) 686-7213.

ATTACHMENTS

Figure 1: Regional Map
Figure 2: Aerial View of Project Site
Figure 3: Overall Site Plan
Figure 4: Sub-Option 1 (Subterranean Pipeline)
Figure 5: Sub-Option 2 (Overhead Pipeline)
Figure 6: Option A (Interior Truck Loading) – Truck Loading Racks with 200MT Silos with Dust Collectors
Figure 7: Option B (Exterior Truck Loading) – Truck Loading Racks with 200MT Silos with Dust Collectors
Figure 8: Option A (Interior Truck Loading) – Truck Loading Facility at Bay C-7
Figure 9: Option B (Exterior Truck Loading) – Truck Loading Facility at Bay C-7
Figure 10: Option A (Interior Truck Loading) – Truck Loading Facility at Bay C-8
Figure 11: Option B (Exterior Truck Loading) – Truck Loading Facility at Bay C-8
Initial Study/Environmental Checklist

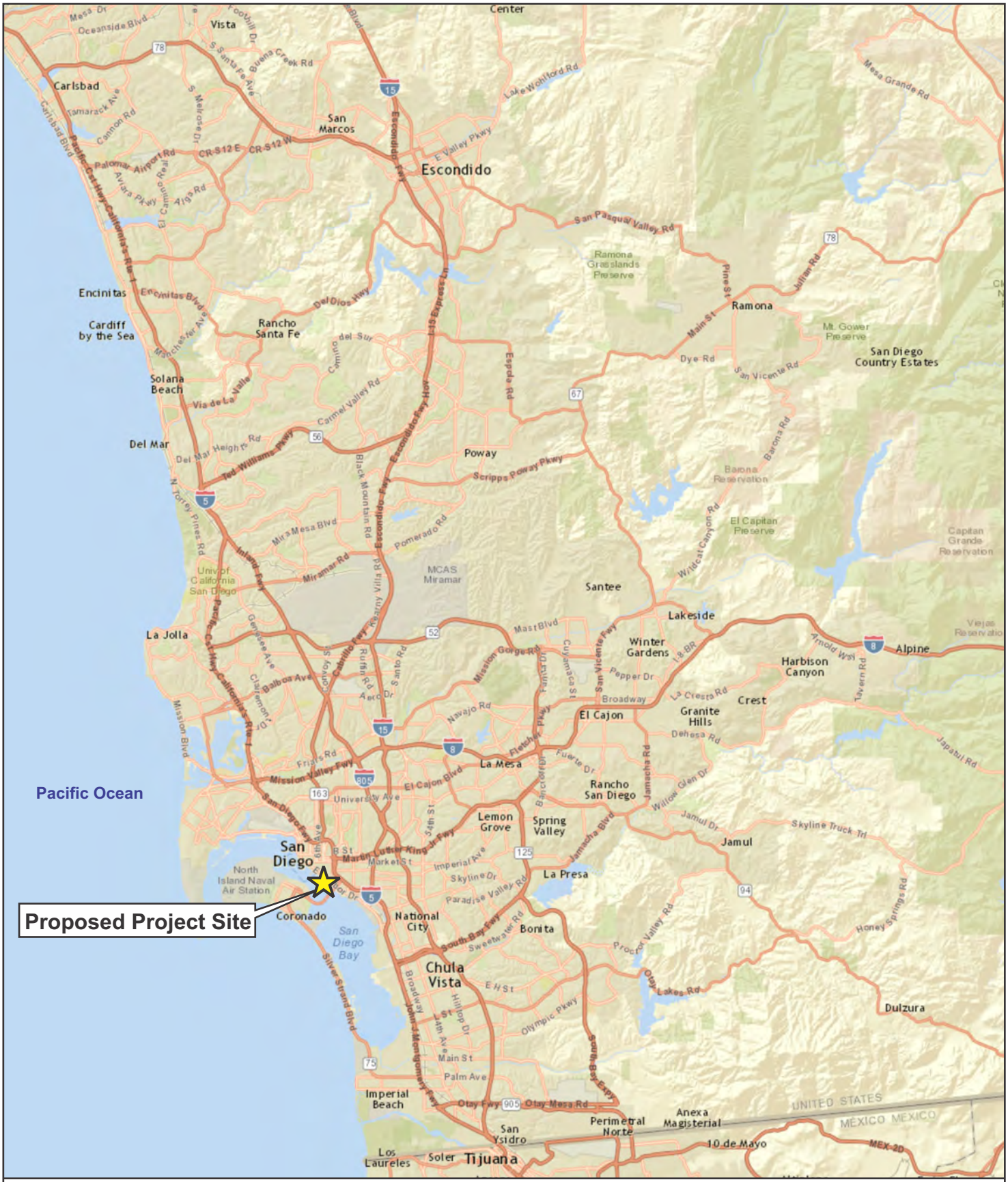


Figure 1

Regional Map

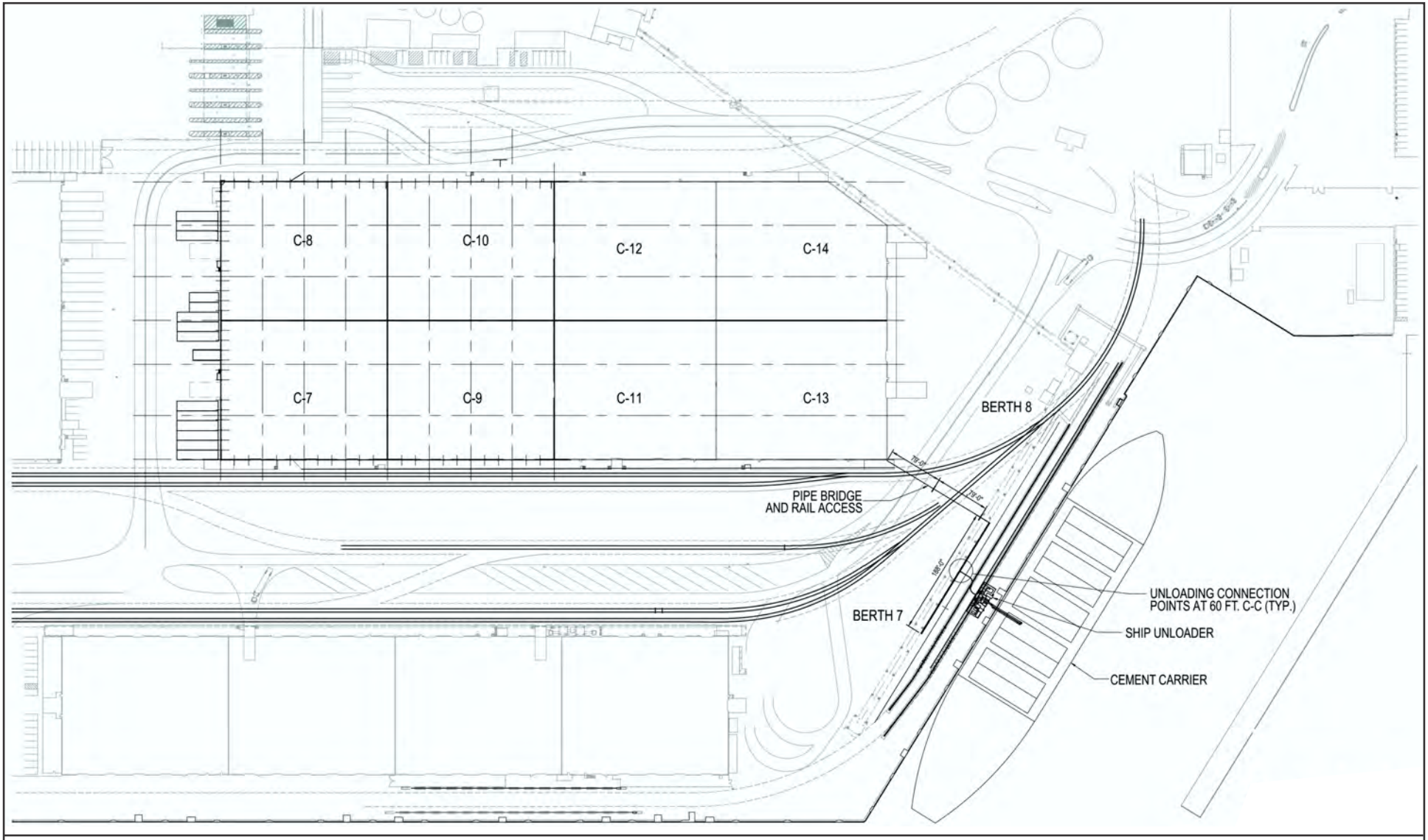
Source: GoogleEarth, 2017.

Tenth Avenue Marine Terminal Boundary

0 250 500 1,000 Feet

Figure 2

Aerial View of Project Site

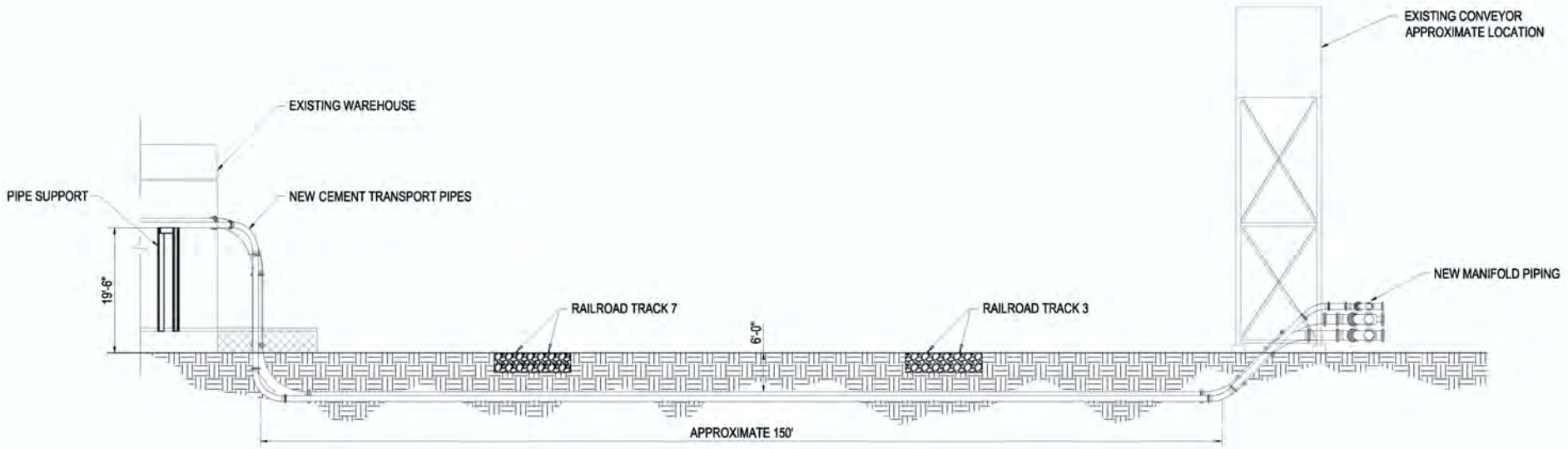


Source: Environmental Audit, Inc. 2017

0 120 240 480 Feet

Figure 3

Overall Site Plan

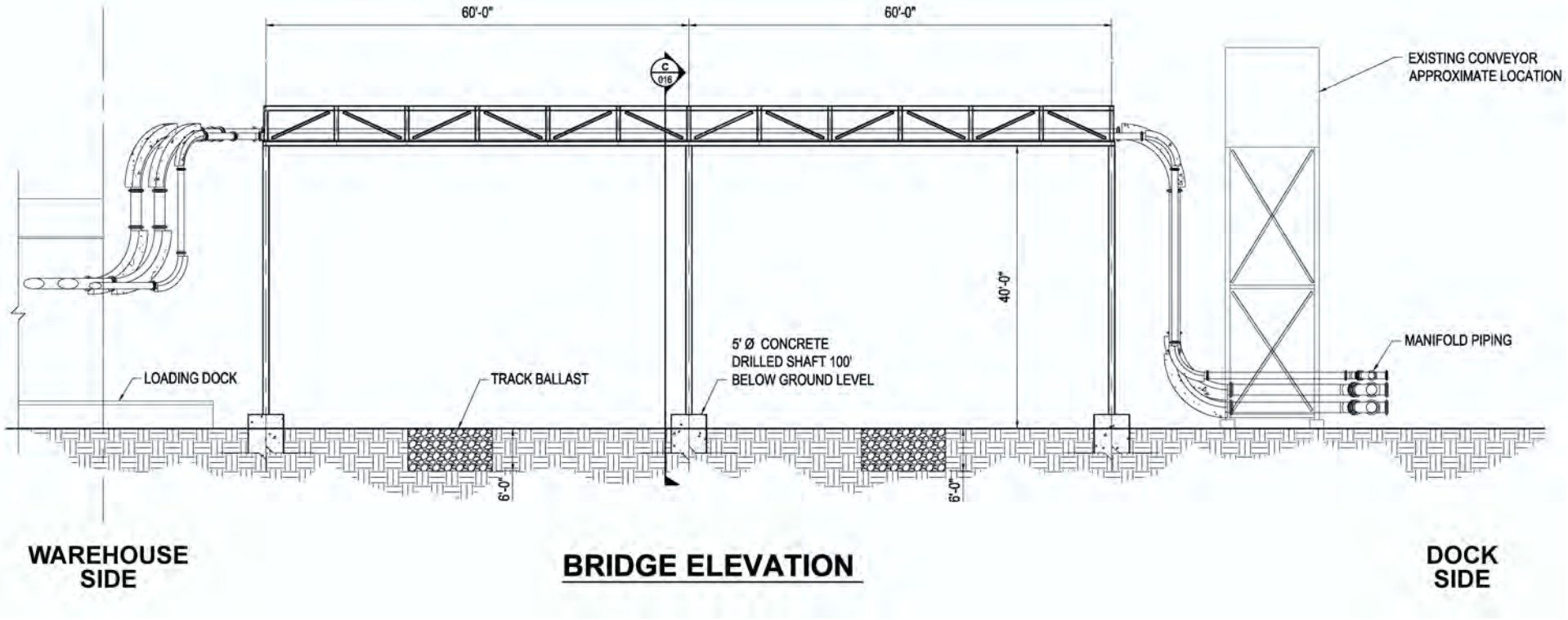


SUBTERRANEAN PIPELINE

Source: Environmental Audit, Inc. 2017

Figure 4

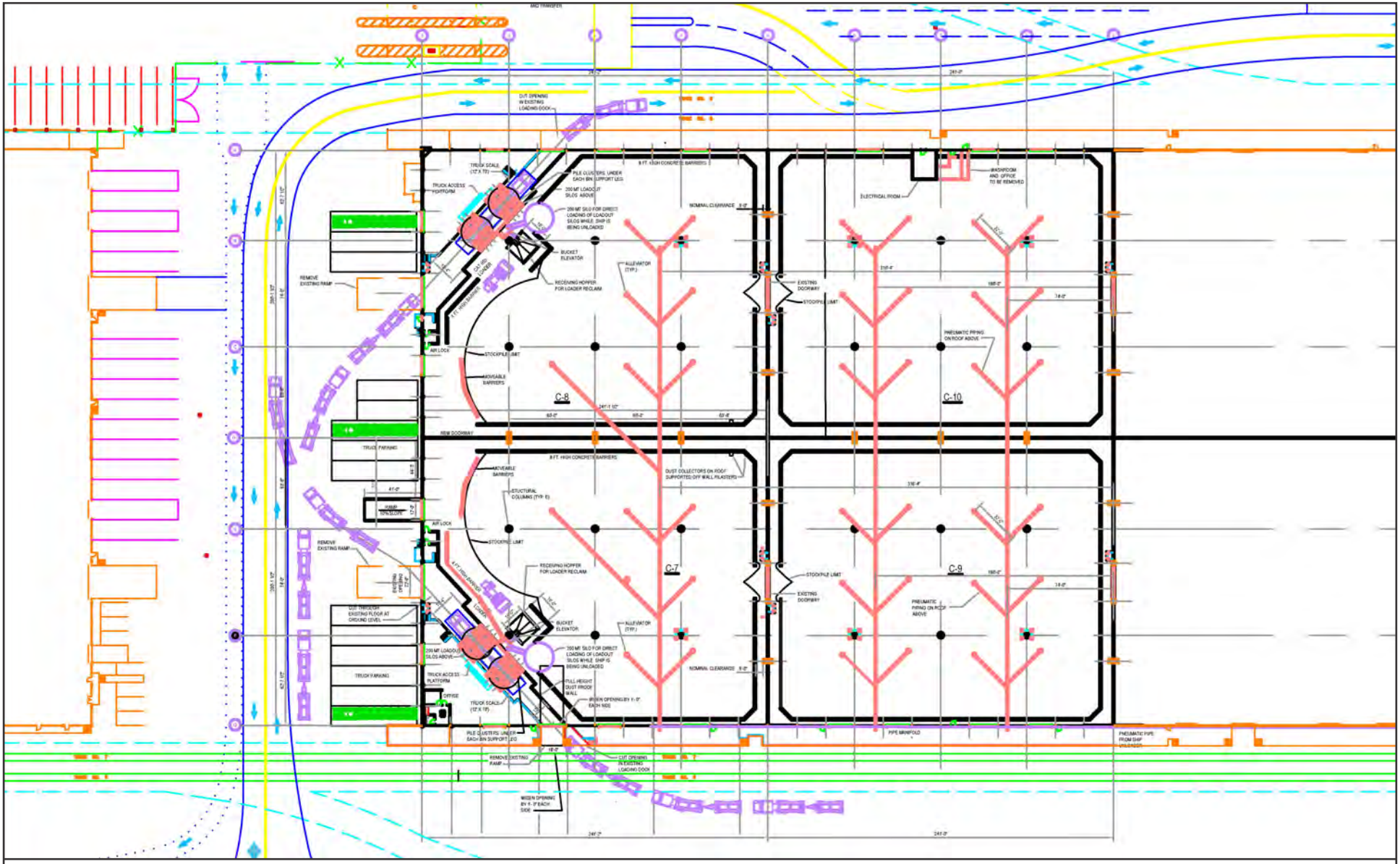
Sub-Option 1 (Subterranean Pipeline)



Source: Environmental Audit, Inc. 2017

Figure 5

Sub-Option 2 (Overhead Pipeline)

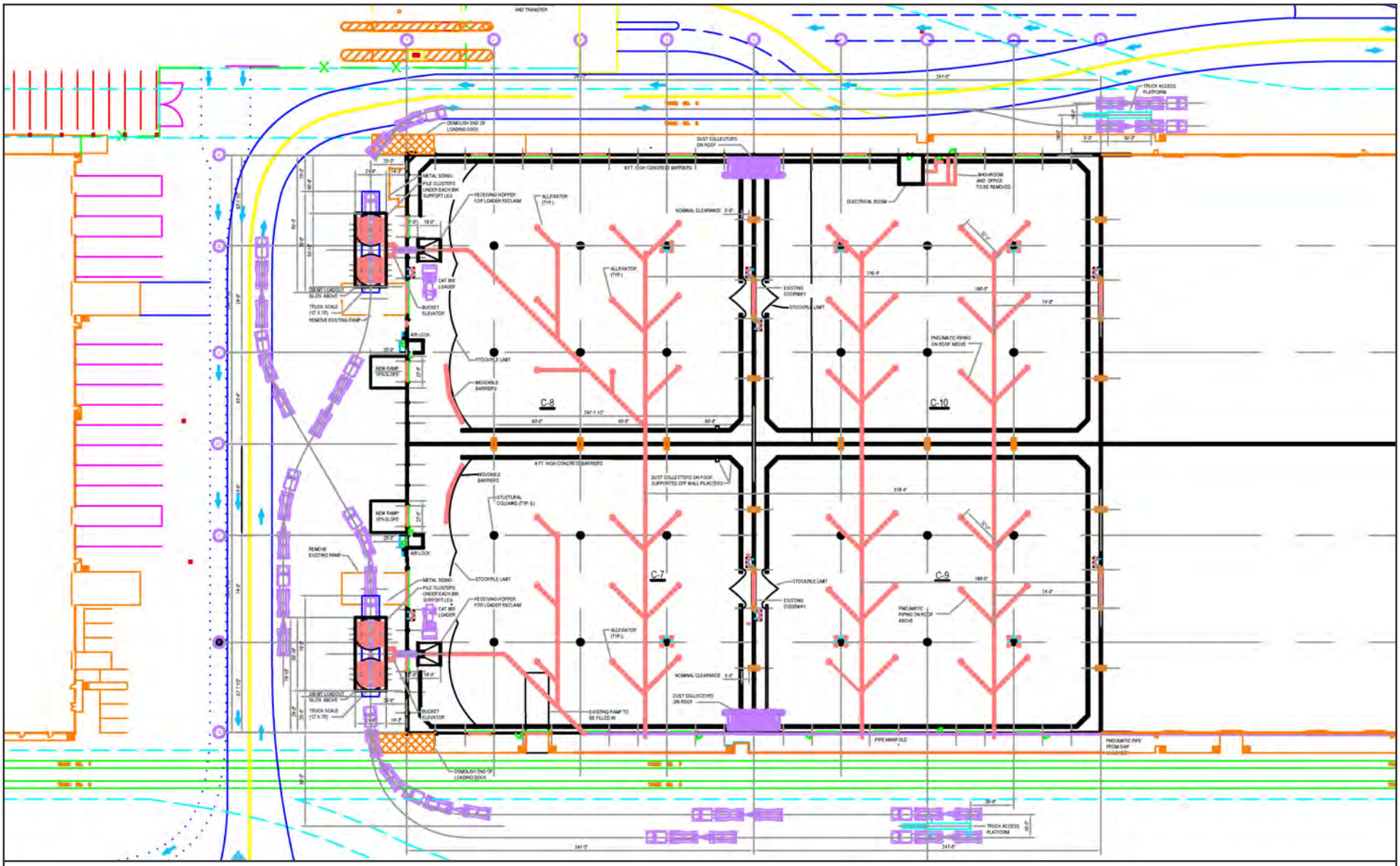


Source: Source: Environmental Audit, Inc. 2017

0 50 100 200 Feet

Figure 6

Option A - Truck Loading Racks with 200MT Silos with Dust Collection

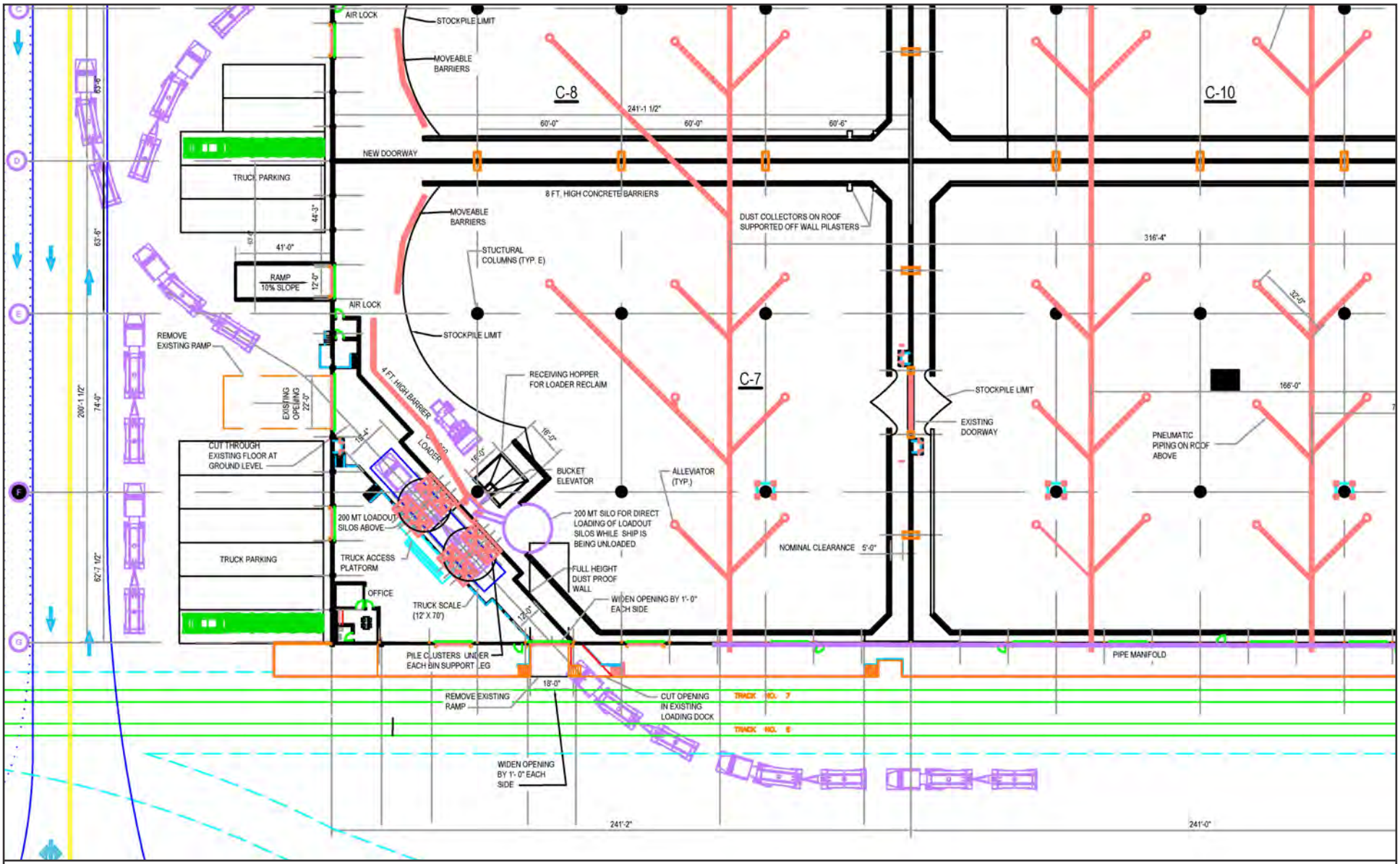


Source: Source: Environmental Audit, Inc. 2017

0 50 100 200 Feet

Figure 7

Option B - Truck Loading Racks with 200MT Silos with Dust Collection

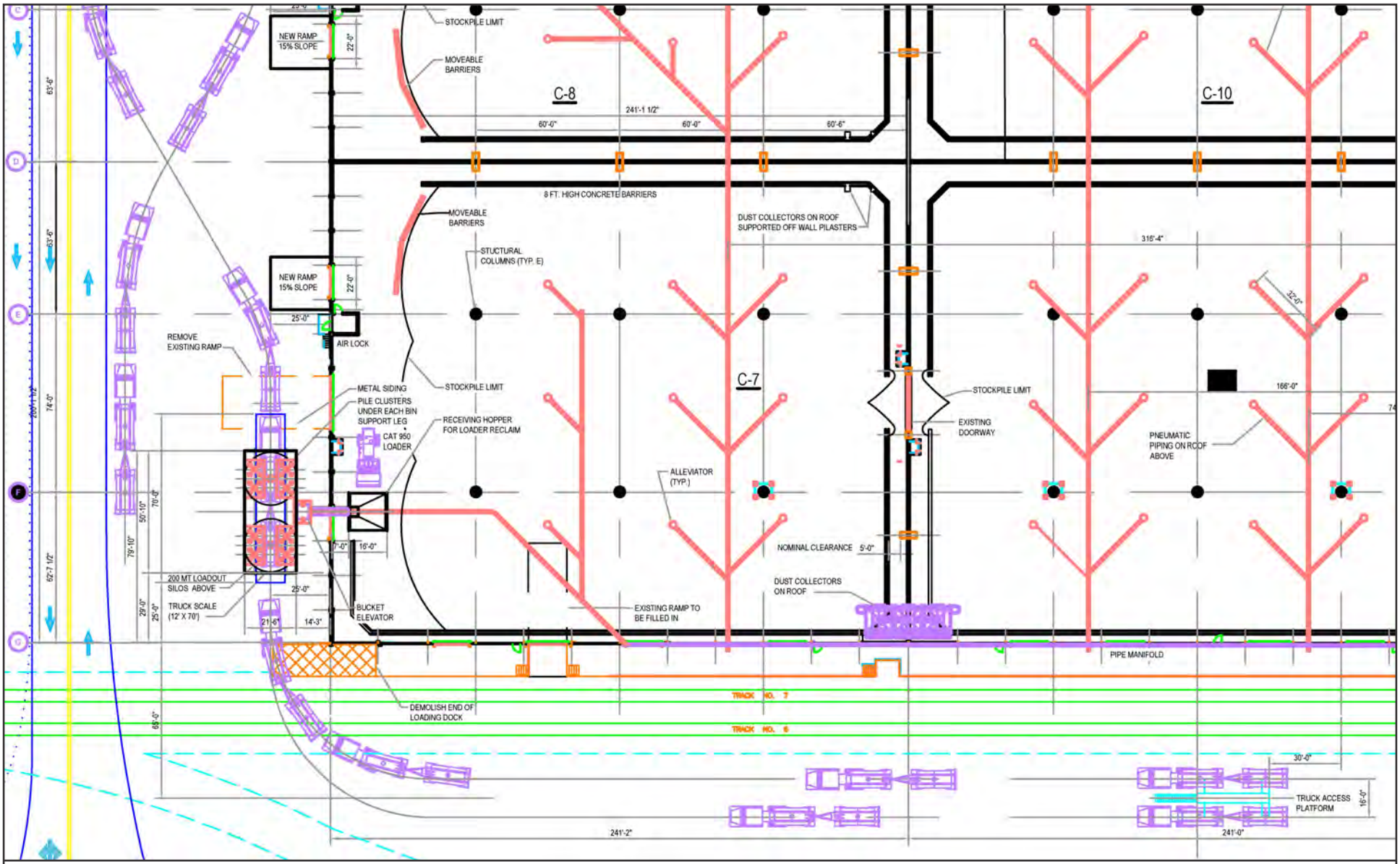


Source: Source: Environmental Audit, Inc. 2017

0 30 60 120 Feet

Figure 8

Option A - Truck Loading Facility at Bay C-7

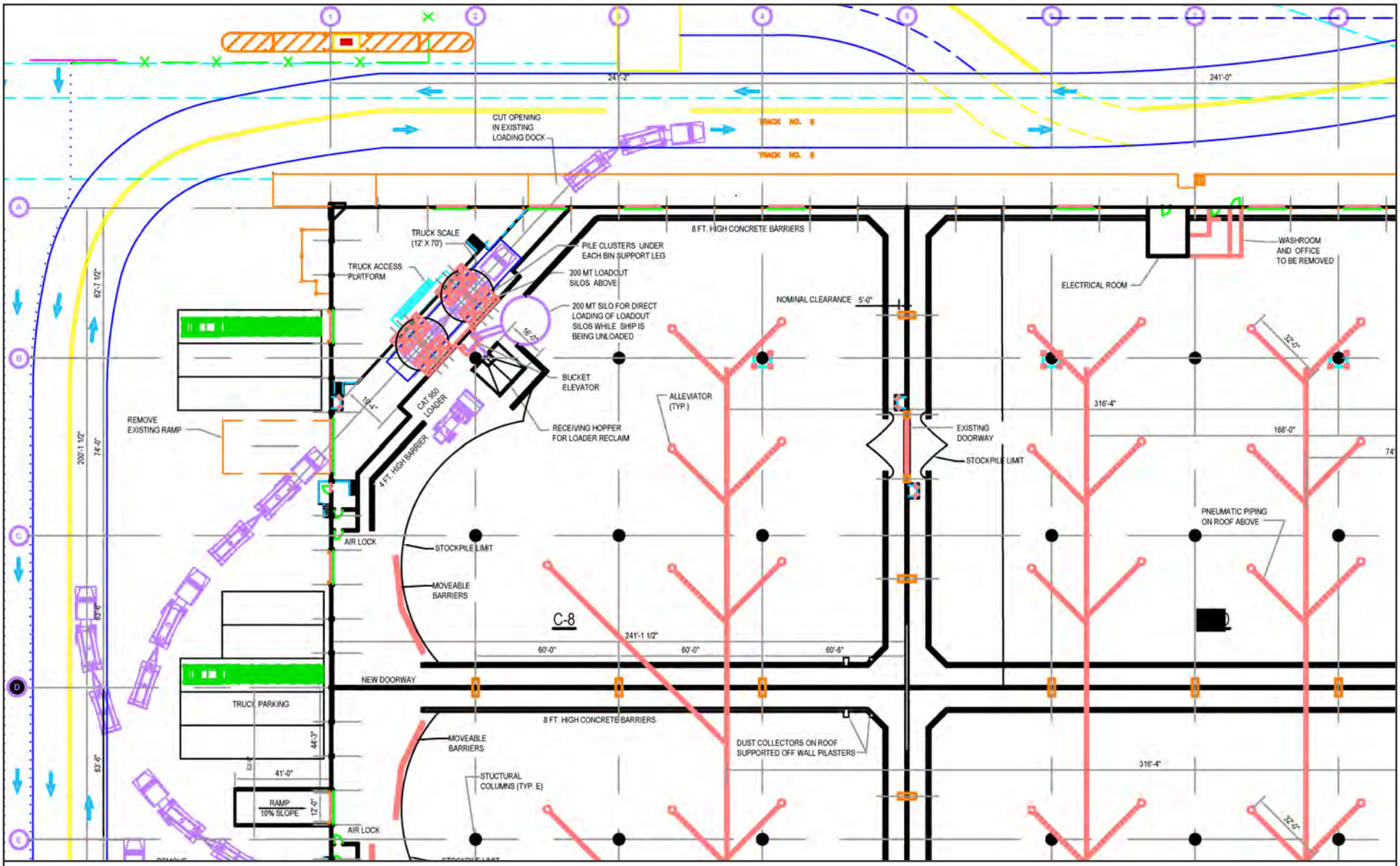


Source: Source: Environmental Audit, Inc. 2017

0 30 60 120 Feet

Figure 9

Option B - Truck Loading Facility at Bay C-7

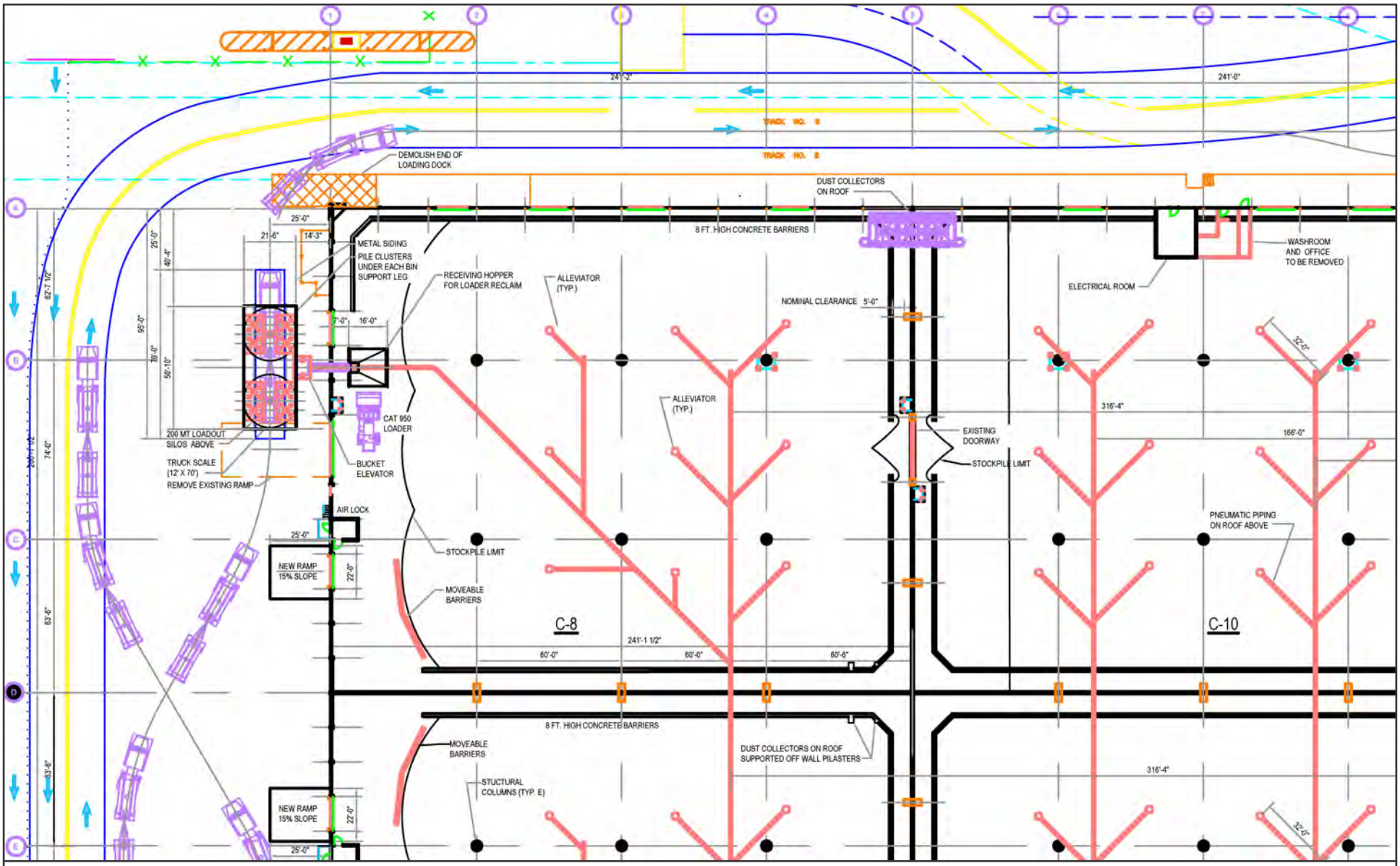


Source: Source: Environmental Audit, Inc. 2017

0 30 60 120 Feet

Figure 10

Option A - Truck Loading Facility at Bay C-8



Source: Source: Environmental Audit, Inc. 2017

0 30 60 120 Feet

Figure 11

Option B - Truck Loading Facility at Bay C-8

Initial Study/Environmental Checklist

for the

Mitsubishi Cement Corporation at Warehouse C – Bulk Cement Warehouse and Loading Facility Project

Prepared for
San Diego Unified Port District

Technical Support Provided by
Aspen Environmental Group

September 2017

Contents

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Appendices

Acronyms and Abbreviations

ACM	Asbestos-Containing Materials
ADT	Average Daily Traffic
ALUCP	Airport Land Use Compatibility Plan
ASTM	American Society for Testing and Materials
CARB	California Air Resources Board
CBC	California Building Code
CDFW	California Department of Fish and Wildlife
CDP	Coastal Development Permit
CEQA	California Environmental Quality Act
CHRIS	California Historical Resources Information System
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CRHR	California Register of Historical Resources
CW10	Condition Waver Number 10
DEH	Department of Environmental Health
DOC	(California) Department of Conservation
EI	Expansion Index
EIR	Environmental Impact Report
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
GHG	Greenhouse Gas
HBMS	Hazardous Building Materials Survey
HU	Hydrologic Unit
LCS	Lead-Containing Surfaces
LOS	Level of Service
MBTA	Migratory Bird Treaty Act
MHPA	Multi-Habitat Planning Area
MLLW	Mean low lower water
MSCP	Multiple Species Conservation Program
NAAQS	National Ambient Air Quality Standards
NOAA	National Oceanic and Atmospheric Administration
NRHP	National Register of Historic Places
OCP	Organochloride Pesticide
OES	Office of Emergency Services
OPP	Organophosphorus Pesticide
PAH	Polycyclic aromatic hydrocarbon
PCB	Polychlorinated Biphenyl
PCE	Passenger Car Equivalent
PMP	Port Master Plan
RAQS	Regional Air Quality Strategy
SAM	Site Assessment and Mitigation
SANDAG	Emission projections and San Diego Association of Governments
SANTEC	San Diego Traffic Engineers' Council
SDAPCD	San Diego Air Pollution Control District
SDIA	San Diego International Airport
SIP	State Implementation Plan
SLR	Sea Level Rise
SVOC	Semi-Volatile Organic Compound
SWPPP	Stormwater Pollution Prevention Plan
SWQMP	Storm Water Quality Management Plan
TCR	Tribal Cultural Resource
TPH	Total Petroleum Hydrocarbon
USGS	United States Geological Survey
V/C	Volume to Capacity Ratio
VOC	Volatile Organic Compound

Initial Study/Environmental Checklist

1. Project Title:	Mitsubishi Cement Corporation at Warehouse C: Bulk Cement Warehouse and Loading Facility Project
2. Lead Agency Name and Address:	San Diego Unified Port District Post Office Box 120488 San Diego, CA 92112-0488
3. Contact Person and Phone Number:	Kelly Czechowski (619) 686-7213
4. Project Location:	645 Switzer Street (Warehouse C) San Diego, CA 92127
5. Project Sponsor's Name and Address:	Mitsubishi Cement Corporation 151 Cassia Way Henderson, NV 89014
6. General Plan Designation:	Marine Terminal (Port Master Plan, Planning District 4)
7. Zoning:	Marine Terminal (Port Master Plan, Planning District 4)
8. Description of Project:	Mitsubishi Cement Corporation proposes to construct and operate a cement and cementitious material import, storage and distribution facility within the Tenth Avenue Marine Terminal (TAMT) of the San Diego Unified Port District. The proposed facility would be able to import, store and distribute up to 600,000 metric tons of cement and cementitious material annually. The proposed facility would be constructed in two phases within Bays C-7 though C-10 of Warehouse C, which is located at 645 Switzer Street, San Diego, California. Vessels serving the proposed facility would use TAMT Berths 10-7 and 10-8. At maximum operation, the proposed facility would generate an estimated 24,000 round-trip truck trips per year. Based on a 600,000 MT/yr throughput and using trucks with a carrying capacity of 25MT over 365 days, an annual average of 66 round-trip truck trips per day is anticipated. Based on maximum loading capabilities, the maximum number of round-trip truck trips from the Proposed Project site would be 176 per day on a peak day, but no more than 145 trucks per day on a 30-day rolling average.
9. Tiering from PEIR and Incorporation by Reference	This Initial Study and the SEIR for the Proposed Project will tier-off of the TAMT Redevelopment Plan and Demolition and Initial Rail Component (Redevelopment Plan) and the Final Program EIR (Final PEIR) for the Redevelopment Plan (State Clearinghouse Number 2015031046; Clerk Document Number 65901), certified and adopted by the Board of Port Commissioners in December 2016, by Resolution Numbers 2016-199 and 2016-200, respectively. The Draft PEIR, Final PEIR, associated Mitigation, Monitoring and Reporting Program (MMRP), CEQA findings, including a Statement of Overriding Consideration, are incorporated herein by reference and are available at https://www.portofsandiego.org/environment/environmental-downloads/land-use-planning.html and at the Office of the District Clerk located at 3165 Pacific Highway, San Diego, CA 92101. The applicable portions of the Final PEIR are also summarized in the appropriate area discussions, below.

Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" and requiring implementation of mitigation as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture & Forestry Resources	☒ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Geology/Soils
☒ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials	☐ Hydrology/Water Quality
☐ Land Use/Planning	☐ Mineral Resources	☒ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☒ Transportation/Traffic	☐ Tribal Cultural Resources	☐ Utilities/Service Systems
☒ Mandatory Findings of Significance		

Determination

On the basis of this initial evaluation:

☐ I find that the Proposed Project **COULD NOT** have a significant effect on the environment, and a **NEGATIVE DECLARATION** will be prepared.

☐ I find that although the Proposed Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A **MITIGATED NEGATIVE DECLARATION** will be prepared.

☐ I find that the Proposed Project MAY have a significant effect on the environment, and an **ENVIRONMENTAL IMPACT REPORT** is required.

☒ I find that the Proposed Project may have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An **ENVIRONMENTAL IMPACT REPORT** is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the Proposed Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the Proposed Project, nothing further is required.

Signature: Wileen C Manaois Date: 9/14/17

Wileen Manaois
Director, Development Services

Evaluation of Environmental Impacts

The following discussion addresses impacts to various environmental resources, per the Environmental Checklist Form contained in Appendix G of the State CEQA Guidelines.

1. A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects such as the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained if it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2. All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3. Once the lead agency has determined that a particular physical impact may occur, the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an environmental impact report (EIR) is required.

4. "Negative Declaration: Less-than-Significant Impact with Mitigation Incorporated" applies when the incorporation of mitigation measures has reduced an effect from a "Potentially Significant Impact" to a "Less-than-Significant Impact." The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less-than-significant level.

5. Earlier analyses may be used if, pursuant to tiering, program EIR, or other California Environmental Quality Act (CEQA) process, an effect has been adequately analyzed in an earlier EIR or negative declaration (Section 15063(c)(3)(D)). In this case, a brief discussion should identify the following:

    a. Earlier Analysis Used. Identify and state where earlier analyses are available for review.

    b. Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards and state whether such effects were addressed by mitigation measures based on the earlier analysis.

    c. Mitigation Measures. For effects that are "Less than Significant with Mitigation Incorporated," describe the mitigation measures that were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6. Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, when appropriate, include a reference to the page or pages where the statement is substantiated.

7. Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8. This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9. The explanation of each issue should identify:

    a. The significance criteria or threshold, if any, used to evaluate each question; and

    b. The mitigation measure identified, if any, to reduce the impact to a less-than-significant level.

I. Aesthetics

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	☐	☐	☒	☐
c. Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Significance criteria established by CEQA Guidelines, Appendix G.

Would the project:

a. Have a substantial adverse effect on a scenic vista?

Less Than Significant Impact. The Port Master Plan (PMP) identifies vista areas within the San Diego Unified Port District (District), which are defined as points of natural beauty, photo vantage points, and other panoramas (SDUPD, 2015). The Proposed Project would be located in the District's Planning District 4, within which no vista areas have been identified. The nearest designated vistas are located in Planning District 3 (Centre City/Embarcadero), located approximately 0.3 mile northwest of Warehouse C on the same (east) side of the San Diego Bay, and Planning District 6 (Coronado Bayfront), located an estimated 0.6 mile west of Warehouse C across on the west side of San Diego Bay. Impacts to the surrounding vista areas as a result of development within the Tenth Avenue Marine Terminal (TAMT) was fully analyzed in the TAMT Redevelopment Plan and Demolition and Initial Rail Component Final Program Environmental Impact Report (TAMT Final PEIR), which concluded that none of the views from adjacent Planning Districts would be significantly affected by proposed construction and operation activities within the TAMT.

The Proposed Project's warehouse modifications would include dust collectors, truck loading racks (either inside the warehouse as shown in Figures 6 and 8 (Option A), or outside the warehouse as shown in Figures 7 and 9 (Option B), and ship unloading pipelines (either underground (Sub-Option 1, Figure 4) or overhead (Sub-Option 2, Figure 5)). The extent to which the unloading pipelines and loading racks would be visible would depend on which construction component is implemented. Figure I-1, Simulation A, is an example of the Proposed Project incorporating the most visible components including the outside loading racks and over-head pipelines, while Figure I-2, Simulation B, depicts the Proposed Project incorporating loading racks inside the warehouse with overhead (outside) pipelines. Figure I-2, Simulation C, depicts the Proposed Project with the truck loading racks outside the warehouse with underground pipelines. Although the proposed components are most visible in Simulation A, all three simulations demonstrate that components of the Proposed Project would be consistent with the existing industrial infrastructure within the TAMT, and would not substantially change the characteristics of the views from the nearest scenic vistas. Construction and operation of the Proposed Project would not substantially affect views from a scenic vista. Impacts would be less than significant, and no further discussion within the context of a Subsequent Environmental Impact Report (SEIR) is warranted.

Existing Conditions at Project Site

Simulation A: Truck Loading Racks outside Warehouse, Over-Head Pipelines

Source: Allen Picasa, 2017.

Figure I-1

Project Simulation A

Simulation B: Truck Loading Racks inside Warehouse, Over-Head Pipelines

Simulation C: Truck Loading Racks outside Warehouse, Underground Pipelines

Source: Allen Picasa, 2017.

Figure I-2

Project Simulations B and C

b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?

Less Than Significant Impact. The Proposed Project would be constructed entirely within the TAMT, which does not contain scenic resources such as trees, rock outcroppings, and historic buildings. The San Diego-Coronado Bay Bridge (State Route 75), a California State-designated scenic highway, is located approximately 0.4 mile southeast of the Proposed Project site (DOT, 2017). As discussed in the TAMT Final PEIR, existing views of the TAMT from the San Diego-Coronado Bay Bridge include maritime industrial facilities such as transit sheds, warehouses, and cargo. Proposed Project components would be similar in color, size, and scale to existing structures at the TAMT, as illustrated in Simulations A though C of Figures I-1 and I-2. None of the Proposed Project structures would noticeably alter existing views from the San Diego-Coronado Bay Bridge. The Proposed Project would not damage scenic resources and would have a less than significant impact to scenic resources. No further discussion within the context of a SEIR is warranted.

c. Substantially degrade the existing visual character or quality of the site and its surroundings?

Less Than Significant Impact. The Proposed Project would be constructed entirely within the TAMT and located within an area of the District that is developed with industrial and maritime uses. The Proposed Project's improvements to Warehouse C, as well as the vessel unloading and truck loading activities, would be consistent with the site's existing industrial and shipping-related visual character, as illustrated in Simulations A through C of Figures I-1 and I-2. All Project components would be similar in color, size, and scale to existing structures at the TAMT. Construction and operation of the Proposed Project would have less than significant impacts to the visual character and quality of the surrounding area, and no further discussion within the context of a SEIR is warranted.

d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Less Than Significant Impact. The Proposed Project would not require the installation of new outdoor lighting that could affect nighttime views. The Proposed Project would augment existing exterior lighting with lighting on the proposed equipment necessary to provide adequate illumination to safely access the equipment and provide security. All new lighting would be aimed toward the facility with the necessary shrouds to limit spill light. New equipment would be matte finished to eliminate glare. Further, the Proposed Project includes only a few new visible components, as illustrated in Simulations A through C of Figures I-1 and I-2. The potential for new structures within the TAMT to become a source of glare was fully analyzed in the TAMT Final PEIR, which concluded that new structures would not be designed with reflective surfaces and would not contribute to a substantial increase in glare. Consistent with this conclusion, the Proposed Project would be developed with reflective surfaces or material that causes substantial glare. Any external Proposed Project components (i.e., truck loading racks, pipelines, dust collectors) would not contribute to a significant impact attributable to glare.

Increased motor vehicle traffic associated with Project operations at the TAMT would potentially produce glare from light reflecting off vehicle windshields. This potential impact was fully discussed in the TAMT Final PEIR, which described the surrounding roadways as highly traveled routes that currently experience moderate levels of daytime glare from light reflecting off vehicle windshields. The TAMT Final PEIR concluded that additional vehicle activity associated with TAMT operations would not create a substantial new source of daytime glare that would adversely affect daytime views. Glare-related impacts from the Proposed Project would be less than significant, and no further discussion within the context of a SEIR is warranted.

II. Agriculture and Forestry Resources

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Would the project:	**Potentially Significant Impact**	**Less than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Significance criteria established by CEQA Guidelines, Appendix G.

Would the project:

a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. The Proposed Project site is located entirely within the District. According to Important Farmland maps prepared by the California Department of Conservation (DOC), no designated Farmland is located within the Project site or within the surrounding vicinity (DOC, 2015). Neither construction nor operation of the Proposed Project would impact Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. No impacts would occur, and no further discussion within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The Proposed Project is not designated for agricultural use nor is there a Williamson Act contract for the Project Site. No impacts would occur, and no further discussion within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. The Proposed Project site is located within the TAMT, which has a land use designation as Marine Terminal (SDUPD, 2015). Neither the Project site nor the surrounding vicinity is zoned for forest land or timberland. No impacts to forest land or timberland would occur, and no further discussion within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

d. Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. No forest land is located within the Proposed Project site or the vicinity of the TAMT. The Proposed Project would not result in the loss of forest land or convert forest land to non-forest use. No impacts would occur, and no further discussion within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact. The Proposed Project would be located entirely within the TAMT. The area surrounding the District is characterized by urban development that does not include existing agriculture or forest land. No impacts to Farmland or forest land would occur and no further discussion within the context of a SEIR is warranted**.** This conclusion is consistent with the findings of the TAMT Final PEIR.

III. Air Quality

Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. **Would the project:**	**Potentially Significant Impact**	**Less Than Significant with Mitigation Incorporated**	**Less Than Significant Impact**	**No Impact**
a. Conflict with or obstruct implementation of the applicable air quality plan?	☒	☐	☐	☐
b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☒	☐	☐	☐
c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☒	☐	☐	☐
d. Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐
e. Create objectionable odors affecting a substantial number of people?	☒	☐	☐	☐

Significance criteria established by CEQA Guidelines, Appendix G.

Would the project:

a. Conflict with or obstruct implementation of the applicable air quality plan?

Potentially Significant Impact. The San Diego Air Pollution Control District (SDAPCD) is required, pursuant to the federal and State Clean Air Acts, to reduce emissions of criteria pollutants for which the County of San Diego (County) is in nonattainment (i.e., ozone, particulate matter of 10 microns in diameter or smaller (PM10), and particulate matter of 2.5 microns in diameter or smaller (PM2.5)). The most recent SDAPCD air quality attainment plans are the State 2016 Regional Air Quality Strategy (RAQS), and the federal 2002 and 2012 Ozone Maintenance Plans and 2016 Ozone Attainment Plan (SDAPCD, 2017). The RAQS outlines SDAPCD's plans and control measures designed to attain State air quality standards for ozone. The 2002 and 2012 Ozone Maintenance Plans include the SDAPCD's plans and control measures for maintaining the 1-hour and 1997 8-hour National Ambient Air Quality Standards (NAAQS) for ozone and the 2016 Attainment Plan includes the SDAPCD's plans and control measures for attaining the 2008 8-hour NAAQS for ozone.

The RAQS projects future emissions and determines the strategies necessary for the reduction of stationary source emissions through regulatory controls. The federal Clean Air Act also mandates that the State submit and implement a State Implementation Plan (SIP) for local areas not meeting those standards. The California Air Resources Board (CARB) mobile source emission projections and San Diego Association of Governments (SANDAG) growth projections are based on population and vehicle trends and land use plans developed by local agencies. As such, projects that propose development that is consistent with the growth anticipated by the relevant land use plans that were used in the formulation of the RAQS and SIP would be consistent with them. The PMP is the governing land use document for physical development under the jurisdiction of the District. Therefore, projects that propose development consistent with growth anticipated by the current PMP are considered consistent with the RAQS and SIP.

In the event that a project proposes development that is less dense than anticipated within a General Plan (or other governing land use document such as the PMP), the project would likewise be consistent with the RAQS and SIP because emissions would be less than estimated for the existing PMP. If a project proposes

development that is greater than that anticipated in the PMP and SANDAG's growth projections, the project would be in conflict with the RAQS and SIP, and might have a potentially significant impact on air quality because emissions would exceed those estimated for the existing PMP. This potential warrants further analysis to determine if the Proposed Project would exceed the growth projections used in the RAQS for a specific subregional area. Consequently, further discussion is warranted within the context of a SEIR, including a determination of consistency with the TAMT Final PEIR's analysis and conclusions.

b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Potentially Significant Impact. Construction of the Proposed Project has the potential to create air quality impacts through the use of heavy-duty construction equipment, construction worker vehicle trips, truck haul and material delivery trips, paving activities, architectural coating use, and fugitive dust from demolition and grading activities. Mobile-source criteria pollutant emissions would result from the use of construction equipment and vehicles, and paving operations would result in emissions of volatile organic compounds (VOCs) from asphalt and pavement striping. Operation of the Proposed Project has the potential to create air quality impacts primarily associated with truck trips, marine vessel activity, worker commute, cement fugitive dust from vessel offloading and truck loading, and potential minor increases in area sources associated with periodic painting of paved surfaces and structures. As such, the Proposed Project has the potential to significantly contribute to the violation of an air quality standard or significantly contribute to an existing or projected air quality violation. Further analysis within the context of a SEIR is warranted, including a determination of consistency with the TAMT Final PEIR's analysis and conclusions.

c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Potentially Significant Impact. The San Diego Air Basin is in nonattainment status for ozone (8-hour standard) at the federal and State level, and nonattainment status for ozone (1-hour standard), PM10, and PM2.5 at the State level. The Proposed Project could result in a cumulatively considerable net increase in these criteria pollutants. Further discussion is warranted within the context of a SEIR, including a determination of consistency with the TAMT Final PEIR's analysis and conclusions.

d. Expose sensitive receptors to substantial pollutant concentrations?

Potentially Significant Impact. Sensitive receptors in proximity to the Proposed Project site are primarily residential areas in the Barrio Logan neighborhood. Technical air quality analyses will be prepared and summarized within an air quality technical study to evaluate short-, medium-, and long-term pollutant emissions and concentrations. Further analysis within the context of a SEIR is warranted, including a determination of consistency with the TAMT Final PEIR's analysis and conclusions.

e. Create objectionable odors affecting a substantial number of people?

Potentially Significant Impact. According to the CARB's Air Quality and Land Use Handbook (CARB, 2005), land uses associated with odor complaints typically include auto body shops and other coating operations, sewage treatment plants, rendering plants, biomass operations, petroleum refineries, landfills and waste transfer stations, recycling facilities, livestock operations, foundries, and fiberglass manufacturing facilities. The Proposed Project does not include any uses identified by the CARB as being associated with odors. However, potential odor emitters during construction activities may include diesel exhaust, asphalt paving, and the use of architectural coatings. Potential odor emitters during operations would include diesel exhaust from trucks and marine vessel engine exhaust and the maintenance use of architectural coatings. Further analysis within the context of a SEIR is warranted, including a determination of consistency with the TAMT Final PEIR's analysis and conclusions.

IV. Biological Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c. Have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?	☐	☐	☐	☒

Significance criteria established by CEQA Guidelines, Appendix G.

Would the project:

a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Less Than Significant with Mitigation Incorporated. Special-status species with the potential to occur in the Proposed Project area were identified and analyzed in the TAMT Final PEIR. Potential impacts from the Project on special-status wildlife and plants would be consistent with those analyzed in the TAMT Final PEIR.

The California Natural Diversity Database (CNDDB) was reviewed to identify special-status species reported within vicinity of the Project site (CDFW, 2017). The CNDDB was queried for the Point Loma United States Geological Survey (USGS) 7.5-minute quadrangle, and reported records of 34 special-status animal species and 41 special-status plant species. Of these, many are historic records that have been reported

as extirpated or presumed extirpated, as much of the habitat that once supported biological resources in the area has been developed.

The Proposed Project site is fully developed and no special-status plants have the potential to occur on it. The Project site is industrial in character and most special-status birds would not use it due to a lack of habitat; however, some species, such as the California brown pelican (*Pelecanus occidentalis californicus*) may pass through the site during foraging. The Project site contains no natural nesting habitat for special-status birds. However, some common urban-adapted birds such as mourning dove (*Zenaida macroura*), rock dove (*Columba livia*), black phoebe (*Sayornis nigricans*), and house finch (*Carpodacus mexicanus*), have the potential to nest within Warehouse C and other structures in the Project area. Although these species do not have any special conservation status, their nests are protected under the Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code. Construction activities at Warehouse C and the proposed loading/unloading facilities could result in direct impacts to active nests or indirect impacts from construction noise, dust, or nighttime lighting. Active nests are those that contain eggs, nestlings, or fledglings that are still dependent on the nest. The MBTA regulates the needless destruction of an active bird nest, and any destruction of active nests or activities that cause an active nest to fail (such as through parental abandonment of an active nest from project-related disturbance) would be considered a significant impact and a violation of the MBTA and Sections 3503, 3503.5, 3505, 3800, and 3801.6 of the California Fish and Game Code.

The TAMT Final PEIR identified mitigation to minimize or avoid impacts to nesting birds. TAMT Final PEIR MM-BIO-1 (Avoid Nesting Season for Birds or Conduct Preconstruction Nesting Survey) requires a preconstruction nesting survey prior to any construction activities that would occur during the bird breeding season (February 1 through August 31) and avoidance of structures supporting active nests until a qualified biologist determines that the nest is no longer active or the young have fledged, as follows:

MM-BIO-1: Avoid Nesting Season for Birds or Conduct Preconstruction Nesting Survey. To ensure compliance with the MBTA and similar provisions under the California Fish and Game Code, the project proponent in direct coordination with the general contractor shall conduct demolition of Transit Shed #1, Transit Shed #2, Warehouse C, the molasses tanks, and other existing structures during the non-breeding season (between September 1 and January 31) or shall implement the following.

- If demolition of a structure is scheduled to occur between February 1 and August 31, the project proponent shall retain a qualified biologist (with knowledge of the species to be surveyed) who shall conduct a focused nesting survey prior to demolition of any structures within 1 week of scheduled demolition. A qualified biologist is a person who, by reason of his or her knowledge of the natural sciences and the principles of wildlife biology, acquired by wildlife biology education and experience, performs services including, but not limited to, consultation investigation, surveying, evaluation, planning, or responsible supervision of wildlife biology activities when those professional services require the application of biology principles and techniques.

- The survey to look for active nests shall be conducted and results reported in writing to the District for review and approval prior to the commencement of any demolition or construction activities on the project site. The survey shall occur between sunrise and 12:00 p.m., when birds are most active. If no active nests are detected during these surveys, the biologist will prepare a letter report to the District documenting the results of the survey. If there is a delay of more than 7 days between when the nesting bird survey is performed and demolition begins, the qualified biologist shall confirm in writing to the District that he/she has resurveyed the structure proposed for demolition and that no new nests have been established.

- If the survey confirms an active nest on any of the structures to be demolished, demolition of the structure shall not occur until after a qualified biologist determines that the nest is no longer active or that the young have fledged.

Implementation of TAMT Final PEIR MM-BIO-1 would reduce Project impacts to nesting birds to a less-than-significant level, and would be implemented by the Project.[3] No additional Project-specific mitigation would be required.

Three special-status mammals may occur within the Proposed Project site: the western yellow bat (*Lasiurus xanthinus*); pocketed free-tailed bat (*Nyctinomops femorosaccus*); and, big free-tailed bat (*Nyctinomops macrotis*). The TAMT Final PEIR notes that although suitable habitat for the western yellow bat is absent from the Project site, big free-tailed bat, pocketed free-tailed bat, and other non-special-status bats including Yuma myotis (*Myotis yumanensis*) are colonial roosters and are known to roost in man-made structures. These species are known to occur within the vicinity of the Project and have potential to roost in large numbers during the maternity season (April 15 to August 31) within Warehouse C and other structures on the Project site. Colonial maternity roosts of special-status and non-special-status bat species are highly sensitive to disturbance and are considered a sensitive resource by the CDFW. Construction activities at Warehouse C may result in the destruction of active maternity roosts, resulting in the loss of many individuals; these effects would be considered significant if the subsequent population decline was large and affected the viability of the local populations of bats. The TAMT Final PEIR identified mitigation (MM-BIO-2 (Avoid Bat Maternity Roosts or Conduct Preconstruction Maternity Bat Roost Survey) to minimize or avoid impacts to roosting bats, as follows:

MM-BIO-2: Avoid Bat Maternity Roosts or Conduct Preconstruction Maternity Bat Roost Survey. If demolition of any structures is scheduled during the bat maternity season when reproductively active females and dependent young could be present (between April 15 and August 31), a qualified biologist (as defined under MM-BIO-1 and with knowledge of the species to be surveyed) shall conduct a preconstruction survey to determine whether bats are present. The survey shall examine potential suitable roost sites for evidence of bat presence (presence of bats, guano, or urine stains), and it shall be conducted no more than 7 days prior to demolition of the structures. If no active maternity roosts are detected during these surveys, the biologist will prepare a letter report to the District documenting the results of the survey. The survey shall be submitted in writing to the District for review and approval prior to the commencement of any demolition activities on the project site. If the biologist determines that the area surveyed does not contain any active maternity roosts, demolition may commence. If active maternity roosts are found, demolition of the structure shall be postponed and roosting structures shall be retained until a qualified biologist has determined that the maternity roost is no longer active and the young can take care of themselves. The need for a construction buffer shall be determined through consultation among the qualified biologist, the District, and CDFW.

Implementation of TAMT Final PEIR MM-BIO-2 (Avoid Bat Maternity Roosts or Conduct Preconstruction Maternity Bat Roost Survey) would reduce the Proposed Project's potentially significant impacts associated with maternity roosting bats to a less-than-significant level by ensuring that they are not present prior to construction activities. The Proposed Project would be required to implement MM-BIO-2.

Operational activities would be consistent with the types and magnitude of activities that currently occur within the TAMT, and would not result in significant impacts to birds or special-status bats. Bird and bat species that currently use the Proposed Project site for foraging could continue to do so because the Project would not appreciably change the industrial character of the area or cause a loss of habitat for those species. Moreover, operations associated with the Proposed Project would not measurably change the numbers or species of common birds and bats in the area. Impacts associated with increased cargo throughput, including potential vessel strikes, vessel noise, propeller wash, ballast water discharge, and biofouling would be consistent with those analyzed in the TAMT Final PEIR, and would be less than significant.

Both the above- and underground Project piping options, as well as the Project's truck loading options would have similar construction and operational impacts to special-status species.

[3] All mitigation measures that will apply to the Proposed Project will be conditions of its Coastal Development Permit and compliance and implementation of said mitigation measures shall be an obligation in any proposed lease or similarly binding agreement.

TAMT Final PEIR MM-BIO-1 and MM-BIO-2 would effectively reduce the Project's significant impacts to special-status species, and no further discussion within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

No Impact. The Proposed Project site consists entirely of developed land; there are no sensitive vegetation communities or areas of riparian habitat on-site. Eelgrass beds are not known to occur in the area of the berths that the Proposed Project would access, and the depth of the Bay at the Project site limits the potential for growth. As such, no riparian or other sensitive natural community would be affected by Project activities, and no further discussion in the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

c. Have a substantial adverse effect on Federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

No Impact. The Proposed Project site consists entirely of developed land. No federally protected wetlands, as identified under Sections 401 and 404 of the Clean Water Act or the California Coastal Act, are located within or immediately adjacent to the Project site. Project construction and operations at the TAMT would adhere to Stormwater Pollution Prevention Plans (SWPPPs) and Urban Stormwater Management Programs, as required, and no dredging, fill, or other waterside construction would occur. As such, no federally protected wetlands would be affected by Project activities and no further discussion within context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

No Impact. The Project site consists entirely of developed land. Native species present on-site are limited to those that commonly occur in heavily developed areas. Such species would not be substantially affected by the Proposed Project. Additionally, the industrial character of the Proposed Project site is not a wildlife corridor or nursery site. No further discussion within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

No Impact. The Proposed Project site is within the jurisdiction of the District, and is located in PMP Planning District 4. The PMP's conservation policies focus on protecting and restoring functional areas of high ecological value, none of which occur within or near the Project site. Therefore, the Proposed Project would not conflict with any local policies or ordinances to protect biological resources. No impact would occur and no further discussion within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?

No Impact. The Project site is shown within the City of San Diego Multiple Species Conservation Program (MSCP) boundaries. It is several miles outside of the boundary of the City of San Diego Multi-Habitat Planning Area (MHPA), which is the planned habitat preserve within the MSCP Subarea. However, the MSCP and MHPA do not apply to projects within the jurisdiction of the District, including the Proposed Project. Further, the Proposed Project site is not inside the jurisdiction of any other adopted Habitat Conservation Plan. As such, no conflict would occur, and no further discussion within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

V. Cultural Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☒	☐	☐
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☒	☐	☐
c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐
d. Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

Significance criteria established by CEQA Guidelines, Appendix G.

Would the project:

a. Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?

Less Than Significant with Mitigation Incorporated. A cultural resources record search was conducted at the South Coast Information Center, the local repository for the California Historical Resources Information System (CHRIS), located at San Diego State University. To identify any cultural resources on or near the Proposed Project site, a half-mile search radius was utilized. The records search identified 10 previously completed archaeological surveys within portions of the Proposed Project area, and 136 total surveys within a half-mile of the Project site. Fifty-four previously recorded cultural resources were identified within a half-mile of the Project area. Of these, one is a prehistoric archaeological resource (CA-SDI-5931, discussed below) and 53 are historic-era resources. Portions of two previously recorded historic-era cultural resources are within the Project area.

Ten historic-era resources were identified during a built environment pedestrian survey of the Project area (ICF, 2016). These included an evaluation of the TAMT, as well as individual resources consisting of: transit sheds 1 and 2; a bunker fuel shed; molasses tanks; truck scale building; bulk loader; Warehouse B; Warehouse C; railroad tracks; and silos. The identified historic-era built environment resources within the study area were evaluated individually and collectively as a District for California Register of Historical Resources (CRHR) eligibility and were found to be ineligible for listing in the CRHR either as individual resources or as a District. None of the historic-era built environment resources within the study area appear to qualify as historical resources for the purposes of the California Environmental Quality Act (CEQA). Therefore, the Proposed Project would not result in a significant impact on a historical resource as defined by CEQA.

Historic maps and aerial photographs indicate that one previously recorded cultural resource, CA-SDI-16385, the historic-period Santa Fe Railway line (constructed in 1882 and 1883), was close to the eastern boundary of the Proposed Project site. That segment of the Santa Fe Railway line was part of a larger 5.9-mile segment surveyed and evaluated for National Register of Historic Places (NRHP) eligibility in 2002. The railway line was found to have insufficient historical integrity to convey any significance attributable to it.

One previously recorded prehistoric resource, CA-SDI-5931, is located within 125 to 180 feet of the Proposed Project site and may be subject to direct and indirect impacts associated with Project implementation. The recorded portions of CA-SDI-5931 are east of the Project site boundary, as depicted in TAMT Final PEIR Figure 4.4-1 (ICF, 2016). CA-SDI-5931 consists of an extensive artifact scatter and included one Native American burial found during grading activities within the rail yard adjacent to the terminal. The site was tested in 1993, and the record suggests the possibility of intact buried deposits and possible other

prehistoric human remains beyond the areas tested. Thus, the exact boundaries of site CA-SDI-5931 are not known, and while the site is not directly adjacent to the Project site, it is possible that the site extends into the eastern portion of the Project area. Any ground-disturbing activities within this area could potentially encounter a significant archaeological resource, and damage to such a resource may occur absent the use of TAMT Final PEIR MM-CUL-1 (Archaeological Monitoring in Areas of Sensitivity), as follows:

MM-CUL-1: Archaeological Monitoring in Areas of Sensitivity. To reduce potential impacts on CA-SDI-5931, all proposed grading and, excavating, and geotechnical testing for the proposed project in the area of potential archaeological sensitivity shall be monitored by a qualified archaeologist(s), who meets the Secretary of the Interior's Professional Qualifications Standards, as promulgated in 36 CFR 61, and a Native American cultural monitor, the latter of which has been requested by the Viejas Band of Kumeyaay Indians. The sensitive portion of the project area, where it is possible that artifacts associated with CA-SDI-5931 could be buried, is immediately east of Warehouse C and south and east of the silo complex and the rail car unloading building, as indicated on [TAMT Final PEIR] Figure 4.4-1. The sensitive area includes the molasses tanks, truck scale building, spur lines north, east, and south of the molasses tanks, and paved and unpaved parking areas near the Crosby Road entrance. The following additional conditions shall only apply to the sensitive portion of the project area indicated on [TAMT Final PEIR] Figure 4.4.-1 during earthwork activities, including grading and trenching.

- The Qualified Archaeologist shall participate in a preconstruction meeting to inform all personnel of the potential for historical archaeological materials to be encountered during ground-disturbing If an isolated artifact or historic period deposit is discovered that requires salvaging, the Qualified Archaeologist shall have the authority to temporarily halt construction activities within 100 feet of the find and shall be given sufficient time to recover the item(s) and map its location with a global positioning system (GPS) device.
- If a potentially eligible Native American archaeological resource is discovered, the Qualified Archaeologist shall have the authority to temporarily halt construction activities within 100 feet of the find until a Qualified Archaeologist Principal Investigator (PI) makes a determination regarding the significance of the resource.
- The PI will notify the District to discuss the significance determination and shall also submit a letter indicating whether additional mitigation is required. If the resource is determined to be not significant, the PI shall submit a letter to the District indicating that artifacts will be collected, curated, and documented in the Final Monitoring Report. The letter shall also indicate that no further work is required.
- If the resource is determined to be significant, the PI shall submit an Archaeological Data Recovery Plan that has been reviewed by the Native American consultant/monitor, and obtain written approval from the Port to complete data recovery. Impacts on significant resources must be mitigated before ground-disturbing activities in the area of discovery will be allowed to resume.
- The Qualified Archaeologist shall treat recovered items in accordance with current professional standards by properly determining provenance, cleaning, analyzing, researching, reporting, and Secretary of the Interior's Standards, as promulgated in 36 CFR 79, such as the San Diego Archaeological Center.
- Within 60 days after completion of the ground disturbing activity, the Qualified Archaeologist shall prepare and submit a final report to the District for review and approval, which shall discuss the monitoring program and its results, and provide interpretations about the recovered materials, noting to the extent feasible each item's class, material, function, and origin.

The Proposed Project would implement MM-CUL-1. With implementation of TAMT Final PEIR MM-CUL-1 impacts to sensitive historic resources would be less than significant, and no further evaluation within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?

Less Than Significant with Mitigation Incorporated. No known unique archaeological resources are present within the Proposed Project area. However, it is possible that previously unknown unique archaeological resources could be discovered, and damaged or destroyed during ground disturbing work, which would constitute a significant impact absent mitigation. Therefore, TAMT Final PEIR MM-CUL-1 (Archaeological Monitoring in Areas of Sensitivity) is would apply to the Project to reduce impacts to unique archaeological resources to a less-than-significant level. No further evaluation within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

c. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact. The Project area rests on the Bay Point Formation, which is a nearshore marine sedimentary deposit that dates from the late to middle Pleistocene, roughly 10,000 to 600,000 years ago. A tremendous variety of invertebrate and vertebrate fossils have been found in this deposit, including both marine and terrestrial animals, with mammoth and whale remains being some of the most significant. The formation is assigned high resource sensitivity by the City of San Diego; however, the City of San Diego's CEQA Significance Determination Thresholds state that potential significant impacts on the Bay Point Formation could occur if Project-related activities reach depths greater than 10 feet and remove more than 1,000 cy of soil. Utility work near the transit sheds would occur between five and 10 feet below the ground; no other Project-related activities would affect areas beneath the terminal surface. Digging and trenching activities at the Project site are not anticipated to go deeper than 10 feet, which is the depth at which high sensitivity begins. The Proposed Project would involve excavation of up to 10,460 cy per Phase under a worst case scenario for Option A with underground piping. However, most of the Project area consists of non-native fill soil. Therefore, the Proposed Project would not directly destroy a unique paleontological resource, site, or unique geologic feature. Impacts would be less than significant, and no further evaluation within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

d. Disturb any human remains, including those interred outside of dedicated cemeteries?

Less Than Significant with Mitigation Incorporated. No human remains are known to be located within the Project area. However, the eastern portion of the study area for cultural resources is potentially sensitive for archaeological deposits and prehistoric human remains because of its proximity to CA-SDI-5931, as discussed under Initial Study Section V (a), above. Any ground-disturbing activities that would occur within this area would be monitored by a qualified archaeologist and a Native American monitor pursuant to TAMT Final PEIR MM-CUL-1 (Archaeological Monitoring in Areas of Sensitivity).

Outside of this area of sensitivity, most ground-disturbing activities would be situated within an area that was once bay waters prior to the year 1900. The majority of the Project site was filled using non-native soils during the first five decades of the twentieth century. Therefore, there is a very low potential for human remains to be located within project areas outside of the area of high sensitivity near CA-SDI-5931. Should an unexpected discovery be made, however, California Health and Safety Code Section 7050.5 and Public Resources Code Section 5097.98 would apply. Because existing laws preclude the potential to affect possible buried prehistoric human remains and TAMT Final PEIR MM-CUL-1 would require monitoring in the area that may contain buried human remains, impacts would be less than significant. No further evaluation within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

VI. Geology and Soils

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
b. i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
c. ii. Strong seismic groundshaking?	☐	☐	☒	☐
d. iii. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
e. iv. Landslides?	☐	☐	☐	☒
f. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
g. Be located on geologic units or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐
h. Be located on expansive soil, as defined in Section 1803.5.3 of the California Building Code (2010), creating substantial risks to life or property?*	☐	☐	☒	☐
i. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒

*Geology and Soils question (d) reflects the current 2013 California Building Code (CBC), effective January 1, 2014, which is based on the International Building Code (2009).
Significance criteria established by CEQA Guidelines, Appendix G.

Would the project:

a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less Than Significant Impact. The City of San Diego Safety Study, Geologic Hazards and Faults, Sheet 17, defines the eastern portion of the Proposed Project site, including Warehouse C, as being within Hazard Category 11, which is defined as the active, Alquist-Priolo Earthquake Fault Zone. According to the California Geological Survey Earthquake Fault Zone Map for the Point Loma Quadrangle, the Silver Strand Segment of the Rose Canyon Fault Zone is mapped as crossing Warehouse C. The Silver Strand Segment of the Rose Canyon Fault Zone is considered active, and there is a potential for ground rupture associated

with onsite faulting. In addition, a Geotechnical Investigation prepared for the Proposed Project notes that ground rupture due to active ground faulting is possible at Warehouse C (Group Delta Consultants, Inc., 2017a). The Project's Geotechnical Investigation concludes that the thickness and characteristics of the soils overlaying these faults should attenuate surface manifestations from fault ruptures; however, it also concludes that surface deformations associated with faulting could be on the same order of magnitude as those estimated for liquefaction and dynamic settlement (See Initial Study Sections VI (a) (III) and (c) (Group Delta Consultants, Inc., 2017a). Although impacts associated with potential faulting could be significant, implementation of the Proposed Project includes incorporation of all of the project features contained in the Project's Geotechnical Investigation (see Appendix A). Therefore, these impacts would be less than significant, and no further analysis of fault rupture within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

ii) Strong seismic groundshaking?

Less Than Significant Impact. As discussed in Initial Study Section VI (a) (i), according to the City of San Diego Safety Study, Geologic Hazards and Faults, Sheet 17 identifies the eastern portion of the Proposed Project site, including Warehouse C, as being within Hazard Category 11, which is defined as the active, Alquist-Priolo Earthquake Fault Zone. According to the California Geological Survey Earthquake Fault Zone Map for the Point Loma Quadrangle, the Silver Strand Segment of the Rose Canyon Fault Zone is mapped as crossing Warehouse C. The Silver Strand Segment of the Rose Canyon Fault Zone is considered active, and there is a potential for ground shaking.

The Geotechnical Investigation prepared for the Proposed Project (see Appendix A) contains design features for the Project in Table 2 (2016 CBC [California Building Code] Acceleration Response Spectra (Site Specific)) and Chapter 6 (Group Delta Consultants, 2017a). These recommendations are proposed as part of the Proposed Project's design and construction. With implementation of these project features impacts would be less than significant, and no further analysis of seismic groundshaking within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

iii) Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. The Proposed Project site is underlain by relatively loose, unconsolidated bay deposits and fill materials. The potential for liquefaction at the Proposed Project site is high due to the area's shallow groundwater table and the low density of the underlying sandy subsurface materials. Additionally, the City of San Diego Safety Study, Geologic Hazards and Faults, Sheet 17, maps the Proposed Project site as being in an area with a high potential for liquefaction.

Three simultaneous conditions are required for liquefaction: (1) historic high groundwater within 50 feet of the ground surface; (2) liquefiable soils such as loose to medium dense sands; and, (3) strong groundshaking, such as that caused by an earthquake (Group Delta Consultants, Inc., 2017a). The Geotechnical Investigation prepared for the Proposed Project estimates that post-liquefaction differential settlement of the soil underlying Warehouse C could be between 3.5 to 4 inches at 40 feet (Group Delta Consultants, Inc., 2017a). This could cause substantial distress to the existing warehouse, and potential impacts from liquefaction could range from moderate to severe (Group Delta Consultants, Inc., 2017a). However, implementation of the Proposed Project includes the features contained in the Geotechnical Investigation, including supporting piles within those areas of Warehouse C that are proposed for renovation to prevent or lessen these types of effects (see Appendix A). As such, potentially adverse impacts associated with liquefaction would be less than significant, and no further analysis with the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

iv) Landslides?

No Impact. According to the Landslide Hazards map for the Point Loma Quadrangle, the Proposed Project site is within an area mapped as being least susceptible to landslides. Additionally, based on the relatively flat topography of the Proposed Project site, landslides would not be anticipated to occur. Therefore, no impacts would occur and no further evaluation within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

b. Result in substantial soil erosion or the loss of topsoil?

No Impact. The Proposed Project site is fully paved and does not contain any naturally occurring soils, including topsoils. Therefore, the Proposed Project would not affect or increase the potential for either soil erosion or the loss of topsoil. No impacts would occur, and no further evaluation within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

c. Be located on geologic units or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Less Than Significant Impact. Please refer to Initial Study Sections VI (a) (iii) and (iv), respectively, for a discussion of potential impacts associated with liquefaction and landslides. The Proposed Project site is underlain by relatively loose, unconsolidated bay deposits and fill materials, and is located on an active fault segment (the Silver Strand Segment of the Rose Canyon Fault Zone). The Project site additionally has a relatively shallow groundwater table (approximately 4.6 feet above the mean Lower low water level) (Group Delta Consultants, Inc., 2017a). Therefore, the potential for lateral spreading, subsidence, and collapse are considered high.

Lateral spreading occurs when there is liquefiable soil in the immediate vicinity of a free face, such as a slope. The Proposed Project site is relatively flat with no exposed slopes. The closest surface slope with the potential for lateral spreading during an earthquake is the TAMT's San Diego Bay quay wall. Due to the quay wall's distance from the Proposed Project site, which is greater than 500 feet, it is expected that those portions of the TAMT located south of Warehouse C would primarily be affected by lateral spreading in the event of a strong seismic event, and that impacts to Warehouse C itself would be relatively low (Group Delta Consultants, Inc., 2017a). Therefore impacts due to lateral spreading would be considered to be less than significant or no impact, and no further evaluation within the context of a SEIR is warranted.

Subsidence is the gradual settling or sudden sinking (e.g., collapse) of an area's ground surface primarily due to such processes as aquifer compaction, the drainage of organic soils, hydrocompaction, natural compaction, as well as underground mining and oil and gas extraction. The Proposed Project's Geotechnical Report notes a continuous bed of soft, compressible fat clay at depths between approximately 23 and 28 feet below the interior floor grades of Warehouse C (Group Delta Consultants, Inc., 2017a). As a result, conventional consolidated settlement and secondary compression of soils underlying Warehouse C has occurred and is expected to continue (Group Delta Consultants, Inc., 2017a). The Proposed Project's Geotechnical Investigation provides design features in Chapter 6 to lessen the effects of compressible soils and potential distress to the structural integrity of Warehouse C; these Proposed Project features would be implemented during final design and construction. Therefore, impacts associated with subsidence and collapse would be less than significant, and no further evaluation within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

d. Be located on expansive soil, as defined in Section 1803.5.3 of the California Building Code (2010), creating substantial risks to life or property?

Less Than Significant Impact. The Proposed Project site is underlain by bay deposits and fill materials. These materials are anticipated to be sandy in nature and possess a low Expansion Index (EI). However, the Proposed Project's Geotechnical Report concludes that although the clayey sands underlining Option A's track lane have a low expansion potential (e.g., an EI of less than 50), these soils may not fully support truck loads, and that more highly expansive clays may occur in other portions of the Project site (Group Delta Consultants, Inc., 2017a). Project features, as identified in the Geotechnical Report (see Appendix A) would minimize the expansive soil heave. Specifically the Proposed Project would place two feet of imported low expansion sand and aggregate base directly below the Option A truck lane. Therefore, impacts associated with expansive soils would be less than significant, and no further evaluation within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. The Proposed Project does not include the construction and operation of septic tanks or alternative wastewater disposal systems. No impacts would occur, and no further evaluation within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

VII. Greenhouse Gas Emissions

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☒	☐	☐	☐
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☒	☐	☐	☐

Significance criteria established by CEQA Guidelines, Appendix G.

Would the project:

a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Potentially Significant Impact. The Proposed Project's construction-phase activities would temporarily increase greenhouse gas (GHG) emissions associated with off- and on-road equipment use. Increased terminal operations would increase GHG emissions associated with vessel calls, truck trips, worker trips, and energy and water use. These increases in GHG emissions could potentially, either directly or indirectly, have a significant impact on the environment by exceeding established thresholds for GHG emissions. Therefore, further analysis within the context of a SEIR is warranted, including a determination of consistency with the TAMT Final PEIR's analysis and conclusions.

b. Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

Potentially Significant Impact. The District has enacted a variety of policies and plans to reduce GHG emissions as part of its Climate Action Plan (SDUPD, 2013), including the implementation of shore power, equipment and truck replacement/retrofits, vessel speed reductions, and the Clean Truck Program. The Proposed Project would increase GHG emissions because of the marine and truck transportation associated with the cement and cementitious materials throughput that is proposed, and therefore may conflict with or impede implementation of plans, policies, or regulations that were adopted to reduce the emissions of GHG. Therefore, further analyses of these issues within the context of a SEIR is warranted, including a determination of consistency with the TAMT Final PEIR's analysis and conclusions.

VIII. Hazards and Hazardous Materials

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☒	☐	☐
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☒

Significance criteria established by CEQA Guidelines, Appendix G.

Would the project:

a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less Than Significant Impact. The potential for the Proposed Project to create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials during construction and operation was analyzed in the TAMT Final PEIR. Full buildout of the TAMT Redevelopment Plan includes additional throughput of dry bulk storage (cement, bauxite, or soda ash), which is sufficient to cover the estimated 600,000 MT/yr of cementitious material that the Proposed Project would involve.

Although the Proposed Project would result in increases in the amounts of common types of hazardous materials typical for the terminal (e.g., fuel, cleaning products and solvents, paints, oils, and grease associated with equipment operation and maintenance), such transport, use, and disposal would be required to comply with applicable local, State, and federal regulations. As a consequence, the TAMT Final PEIR concludes that impacts associated with the Proposed Project's construction and operation would be less than significant, and no further discussion of this subject within the context of a SEIR is required. This conclusion is consistent with the findings of the TAMT Final PEIR.

b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less Than Significant Impact with Mitigation. A site screening for hazardous materials was conducted in February 2016 for proposed construction activities associated with Bay C-7, and its findings and conclusions are provided in an Environmental Test Results Report dated February 28, 2017 (Group Delta Consultants, Inc., 2017b). The screening was not intended to serve as a Phase II Environmental Site Assessment per the requirements of the San Diego Department of Environmental Health (DEH) (Group Delta Consultants, Inc., 2017b). Eight soils samples were collected and analyzed. VOCs, Polychlorinated Biphenyls (PCBs), Organochloride Pesticides (OCPs), Organophosphorus Pesticides (OPPs) and chlorinated herbicides were not detected in any of the samples taken (Group Delta Consultants, Inc., 2017b). Thirteen Title 22 metals were detected, all of which were found to be below federal and State hazardous waste thresholds (Group Delta Consultants, Inc., 2017b). In each sample taken, arsenic concentrations did not exceed 4.01 milligrams per kilogram (mg/kg), all of which fall under the Department of Toxic Substance Control's (DTSC's) 12 mg/kg upper bound background level for arsenic concentrations; however, these concentrations do exceed the California Human Health Screening Level CHHSL) for commercial land uses (0.24 mg/kg) (Group Delta Consultants, Inc., 2017b). The TAMT Final PEIR identifies two mitigation measures MM-HAZ-1 (Compliance with the Soil Management Plan) and MM-HAZ-2 (Implement Engineering Controls and Best Management Practices during Construction), as follows:

MM-HAZ-1: **Compliance with Soil Management Plan.** Prior to approval of the project grading plans and the commencement of any construction activities that would disturb the soil, the District or tenant, whichever is appropriate, and the contractor (collectively "Contractor") shall demonstrate compliance with the 10th Avenue Marine Terminal, San Diego, CA, Soil Management Plan, prepared by Tetra Tech EM, Inc., November 24, 2010 (Appendix J-1 of the [TAMT] Draft [P]EIR) and consider the existing presence of the permitted underground storage tank on site (shown on [TAMT Final PEIR] Figure 4.7-1). Specifically, the Contractor shall demonstrate compliance with the following specific requirements of the plan including, but not limited to, the following.

Conduct Soil Testing. The Contractor shall comply with the excavated soil management techniques specified in the plan. The Contractor shall follow the soil sampling protocol and soil sampling objectives, and shall comply with the soil characterization methodology identified within the plan.

Prepare and Implement a Community Health and Safety Program. The Contractor shall develop and implement a site-specific Community Health and Safety Program (Program) that addresses the chemical constituents of concern for the project site. The guidelines of the Program shall be in accordance with the County of San Diego's Department of Environmental Health's Site Assessment and Mitigation Manual (2009) and Environmental Protection Agency. Program shall include detailed plans on air monitoring and other appropriate construction means and methods to minimize the public's and site workers' exposure to the chemical constituents. The contractor shall utilize a Certified Industrial Hygienist with significant experience with chemicals of concern on the project site to approve the Program and actively monitor compliance with the Program during construction activities.

Complete Soil Disposal. Any soil disturbed by construction activities shall be profiled and disposed of in accordance with California Administrative Code, Title 22, Division 4.5 requirements. If soils are determined to be appropriate for reuse, they may be exported to Chula

Vista Bayfront Harbor District area for use as fill material, provided the area is not previously developed and not classified as an environmentally sensitive area. Several Chula Vista Bayfront Harbor District parcels that have been cleared through the environmental review process to be used as streets and surface parking and to support subsequent development have been identified as appropriate locations to receive soils deemed suitable for reuse in [TAMT Final PEIR] Appendix J-3.

If soils are determined to be hazardous and not suitable for reuse, they shall be disposed of at a regulated Class I landfill. Soils shall be transported in accordance with the Soil Management Plan. Soils to be loaded into trucks for offsite disposal at a Class I landfill shall be moistened with a water spray or mist for dust control in accordance with [TAMT Final PEIR] Section 4.7, Dust Control, of the Soil Management Plan. If dust is visible, positive means shall be applied immediately to prevent airborne dust. Care shall be used to minimize the amount of water applied to soils that may contain elevated concentrations of contaminants.

Loaded truck beds shall be covered with a tarp or similar covering device during transportation to the disposal facility. The truck shall be decontaminated after the soil has been removed. The Contractor shall minimize excess water generated during truck decontamination to the extent possible and shall be responsible for proper disposal of any contaminated water generated during truck cleanout.

MM-HAZ-2: Implement Engineering Controls and Best Management Practices during Construction. Prior to construction, a site-specific Health and Safety Plan shall be prepared by the contractor and approved by a licensed California Certified Industrial Hygienist. The Health and Safety Plan shall be prepared per the requirements of 29 Code of Regulations 1910.120 and California Code of Regulations, Title 8, along with applicable federal, state, and local regulations and statutes. During construction, the contractor shall employ engineering controls and BMPs to minimize human exposure to potential contaminants, if encountered. Engineering controls and construction BMPs shall include but not be limited to the following.

Where required by the Health and Safety Plan, the contractor employees working on site shall be certified in the Occupational Health and Safety Administration's 40-hour Hazardous Waste Operations and Emergency Response training.

- Contractor shall monitor the area around the construction site for fugitive vapor emissions with appropriate field screening instrumentation.
- Contractor shall monitor excavation through visual observation by a qualified hazardous materials specialist to look for readily noticeable evidence of contamination, such as staining or odor.
- Contractor shall water/mist soil as it is being excavated and loaded onto transportation trucks.
- Contractor shall place any stockpiled soil in areas shielded from prevailing winds and shall cover all stockpiles to prevent soil from eroding.
- Contactor shall thoroughly decontaminate all construction equipment that has encountered and/or handled lead-impacted soil prior to leaving the work site.

Implementation of MM-HAZ-1 and MM-HAZ-2 is warranted due to the identified CHHSL exceedances of arsenic.

Total Petroleum Hydrocarbon (TPH) was detected in the two samples collected at a depth of 20 feet; in one sample diesel and motor oil were detected at concentrations of 97 mg/kg and 270 mg/kg, respectively, and in the other sample diesel was detected at a concentration of 6.5 mg/kg (Group Delta Consultants, Inc., 2017b). TPH concentrations have not been assigned State or federal hazardous waste thresholds.

Based upon laboratory testing results of the site screening, exported soil may be suitable for disposal at a Class III municipal solid waste facility (Group Delta Consultants, Inc., 2017b). TPH, lead and mercury levels detected at 20-feet below grade exceed Tier I Screening Levels for residential reuse as stipulated by the

San Diego Regional Water Quality Control Board (RWQCB) in Condition Waver Number 10 (CW10), of Resolution R9-2014-0041 and the DEH in its Site Assessment and Mitigation (SAM) Manual and thus are not suitable for reuse, although lead and mercury concentrations of the samples taken do not exceeds the Tier 2 Soil Screening Levels for commercial use (Group Delta Consultants, Inc., 2017b). As a consequence, soil excavated from depths greater than 15 feet below grade, if any, should be disposed of as a non-hazardous waste at a Class III municipal solid waste landfill, or stockpiled on-site and resampled and retested to determine the eligibility of reuse under the oversight of the San Diego RWQCB (Group Delta Consultants, Inc., 2017b).

In addition to the above, previous assessments have found petroleum hydrocarbons, VOCs, semi-VOCs (SVOCs), polycyclic aromatic hydrocarbons (PAHs), and metals (copper, zinc, and lead) as a result of hydraulic fill material used for the reclaimed tidelands, historical uses (creosote wood treatment facility, former burn dump, metal scrap yard), and from unauthorized petroleum hydrocarbon releases in the vicinity of the Proposed Project site. The presence of these hazardous materials could create a significant hazard to the public or the environment during soil disturbance activities associate with the Project.

Implementation of the Proposed Project could result in the potential to encounter soil contamination during construction that could result in a significant hazard to the public or the environment if not managed properly. Implementation of MM-HAZ-1 and MM-HAZ-2 may reduce impacts to less than significant; however, further analysis and discussion is warranted within the context of a SEIR to evaluate previous environmental assessments conducted at Warehouse C, as well as potential impacts associated with several of the Proposed Project's options: truck loading inside or outside Warehouse C (Options A and B); and, under- or above-ground ship unloading pipelines (Options 1 and 2).

Implementation of the Proposed Project also has the potential to create a significant hazard to the public or the environment through the disturbance of hazardous building material present within Warehouse C. In 2013, a Hazardous Building Materials Survey (HBMS) of Bays C-8, C-10, C-12, C-13 and C-14 of Warehouse C was conducted, and several building components with asbestos-containing materials (ACM) and lead-containing surfaces (LCS) were identified (Ninyo and Moore, 2013). As stated in the TAMT Final PEIR, any demolition or grading activities shall comply with California Code of Regulations, Title 8, Industrial Relations, which provides specific guidance for the removal and disposal of ACM and LCS. With implementation of MM-HAZ-1, MM-HAZ-2 and Title 8 of the California Code of Regulations impacts would be less than significant and no further discussion within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. No existing or proposed schools are located within 0.25 mile of the Project site boundaries (Warehouse C and Berths10-7/10-8). The closest school to the Proposed Project's boundaries is the Perkins Elementary School, which is an estimated 1,700 feet, or 0.32 mile, northeast of the Proposed Project site; therefore, Proposed Project activities would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or wastes within 0.25 mile of an existing or proposed school, and no further discussion within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. The TAMT Final PEIR indicates one site immediately east of the Project Site (Site 15, Freight Handlers, Inc.) as being listed on the State Water Resources Control Board's (SWRCB's) Geotracker database; however, this site has been closed (ICF, 2016). The TAMT Final PEIR also notes a second site, (Site 35, Water Street Site) located an estimated 445 feet southeast of the southeast side of Warehouse C, as a being a Geotracker clean-up site for diesel contamination that is currently open (ICF, 2016). No areas of Warehouse C itself, or the areas associated with the Proposed Project's outside truck loading racks (Option B) or subterranean pipelines (Sub-Option 1) are on a list of hazardous materials sites compiled pursuant to Cortese List Data resources (Governmental Code 65962.5). Therefore, no impacts would occur,

and no further discussion of this subject is warranted within the context of a SEIR. This conclusion is consistent with the findings of the TAMT Final PEIR.

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

No Impact. The Proposed Project site is located approximately two miles south of San Diego International Airport (SDIA). As discussed in the TAMT Final PEIR, the Project site is within Review Area 2 of the Airport Influence Area, per the SDIA Airport Land Use Compatibility Plan (ALUCP) (SDIA, 2014). The tallest feature associated with the Proposed Project would be the dust collectors placed on the warehouse's existing roof, which would have a maximum height of 75 feet above ground level. This height would not conflict with the Federal Aviation Administration's (FAA's) height threshold requiring submittal of a Notice of Proposed Construction or Alternation; the FAA's threshold for such constructed or altered structures is 200 feet in height above a site's ground level (FAA, 2017). There are no other airports or ALUCPs in the vicinity of the Proposed Project site. Based upon the above, no impacts would occur, and no further discussion of this subject is warranted within the context of a SEIR. This conclusion is consistent with the findings of the TAMT Final PEIR.

f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

No Impact. The Proposed Project site is not located in the vicinity of a private airstrip; therefore, implementation of the Proposed Project would not result in a safety hazard for people residing or working in the Project area. No impact would occur, and no further discussion of this subject is warranted within the EIR. This conclusion is consistent with the findings of the TAMT Final PEIR.

g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact. Emergency response and excavation is the responsibility of police and fire service providers as detailed in Initial Study Section XIV (Public Services). As discussed in the TAMT Final PEIR, the receipt, storage and distribution of cement and cementitious materials would not introduce any operational activities that would generate new or increased demands on police and fire protection services. The Proposed Project's throughput, use (dry bulk) and employee count are all within the confines of what was analyzed in the PEIR and hence, would not create the need for additional police and fire services. Transport of cargo to and from the Proposed Project site would continue in a planned and controlled manner that would not impair implementation of the approved emergency response plan.

The proposed project would be required to comply with applicable requirements set forth by the County of San Diego Office of Emergency Services (OES) Operational Area Emergency Plan, the City of San Diego Police Department, and the City of San Diego Fire Department. OES coordinates emergency response at the local level in the event of a disaster, including fires. This emergency response coordination is facilitated by the Operational Area Emergency Operations Center and responding agencies to the proposed project site, the City of San Diego Police and Fire Departments and San Diego Harbor Police Department. Impacts would be less than significant, and no further discussion of this subject within the context of a SEIR is warranted.

h. Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

No Impact. The Proposed Project site is located within the TAMT, near downtown San Diego and adjacent to San Diego Bay. There are no wildlands or heavily vegetated areas in the vicinity of the Proposed Project site, and implementation of the Project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. As such, no impacts would occur, and no further discussion of wildlands or wildland fires is warranted within the context of a SEIR. This conclusion is consistent with the findings of the TAMT Final PEIR.

IX. Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Violate Regional Water Quality Control Board water quality standards or waste discharge requirements?	☐	☐	☒	☐
b. Substantially deplete groundwater supplies or interfere substantially with groundwater discharge such that there would be a net deficit in the aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion or siltation on or off site?	☐	☐	☐	☒
d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site?	☐	☐	☐	☒
e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☒
f. Otherwise substantially degrade water quality?	☐	☐	☒	☐
g. Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other hazard delineation map?	☐	☐	☐	☒
h. h. Place within 100-year flood hazard area structures that would impede or redirect flood flows?	☐	☐	☐	☒
i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam.	☐	☐	☐	☒
j. Cause inundation by seiche, tsunami, or mudflow?	☐	☐	☒	☐

Significance criteria established by CEQA Guidelines, Appendix G.

Would the project:

a. Violate Regional Water Quality Control Board water quality standards or waste discharge requirements?

Less Than Significant Impact. The Proposed Project site is located within the jurisdiction of the San Diego RWQCB, and falls within the Pueblo San Diego hydrologic unit (HU). The San Diego Bay is the receiving water body for surface water runoff from the Project site, which occurs either directly from sheet flows, or indirectly via storm drains. The principal constituents of concern for surface water quality in the project area include coliform bacteria, sediment, salinity, toxic inorganics, and toxic organics (ICF, 2016).

The Proposed Project site is fully developed and surfaced with concrete and asphalt; no surface water bodies or natural drainages occur. No changes to the Project site's existing drainage system are proposed, and only domestic waste would be discharged into the existing sewer system. Additionally, no changes to the existing piles at Berths 10-7/10-8 are proposed, and no in-water activity, such as dredging or fill, would be required.

Construction of the Project would require a maximum of 10,460 cy of excavation per Phase (Option A and Sub-Option 1). Surface and subsurface disturbances that could affect water quality include trenching, grading, concrete removal and repaving, and improvements within the Project Site. Potential impacts due to construction activities on water quality primarily concern sediments, turbidity, and pollutants associated with runoff. Construction could increase the amount of suspended solids contained in storm water flows resulting from erosion of exposed soil. Increased sediment loads could also result in reduced storm flow capacity, resulting in localized ponding or flooding during storm events.

Other pollutants of concern that may be present during Project construction are toxic chemicals from heavy equipment, such as fuels and lubricants, or construction-related materials. These pollutants can be transported with sediment loads or through accidental spills. Other contaminants that could enter runoff from the construction site include metals, petroleum products, and trash. Wash water from equipment and tools and other waste could also be accidentally spilled, potentially leading to the runoff of pollutants into the site's existing drainage or the San Diego Bay. All of these contaminants could contribute to the degradation of water quality.

During Project operation, cementitious materials would be pneumatically transferred from vessels using either above or below-ground piping to Bays C-7 though C-10 of Warehouse C, which would be sealed to minimize the loss of material during handling. The materials would then be loaded into trucks using two silos. No heavy equipment would be required, thereby minimizing the potential for accidental spills or releases of fuels and lubricants. However, accidental releases or spills of truck fuels, greases, oils or lubricants could occur, which could potentially contribute to water quality degradation if not properly contained and cleaned up. Containment and clean-up efforts would be required to comply with established source controls, pollutant control BMPs, and the Project's SWPPP and District-approved Storm Water Quality Management Plan (SWQMP).

Increased vessel throughput at Berths 10-7/10-8 could also affect the Bay's water quality from propeller wash, ballast water, or a vessel rupture. Propeller wash increases the potential for scour and erosion of the slopes and bottoms of navigation channels, thereby increasing turbidity. Ballast water can occasionally contain materials that can harm surface waters. Primary contaminants include invasive marine plants and animals, bacteria, and pathogens that can harm or displace native aquatic species. Vessel groundings or collisions could result in the discharge of fuels or other toxic chemicals into the Bay. It is noted, however, that the potential for a vessel rupture incident is low (ICF, 2016).

Implementation of the Proposed Project would require compliance with the source controls, site design, and pollutant control BMPs specified by the Project's SWPPP, and the Project would also be required to comply with a District-approved SWQMP which would include good housekeeping practices (including practices regarding heavy equipment), non-stormwater management, proper waste handling, secondary containment for hazardous materials and waste, and education and training. Additionally, the Project would be required to comply with the BMPs identified in the San Diego Harbor Safety Plan to avoid or mitigate unsafe vessel conditions. Therefore, the Proposed Project would not violate RWQCB water quality standards

or waste discharge requirements. Impacts would be less than significant, and no further evaluation of the subject is warranted within the context of a SEIR. This conclusion is consistent with the findings of the TAMT Final PEIR.

b. Substantially deplete groundwater supplies or interfere substantially with groundwater discharge such that there would be a net deficit in the aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Less Than Significant Impact. The Proposed Project would involve improvements to Warehouse C, as well as the excavation and repaving of existing impervious surfaces. It would not, however, result any change to the amount of impervious surface area associated with the TAMT. Given the depth of grading and trenching that is anticipated, dewatering would not be expected to be necessary.

Because of the Project's proximity to the San Diego Bay, groundwater at the Project site is saline from saltwater intrusion, and, therefore, it is not used as a potable water source; consequently, the Proposed Project would not impact drinking water. Impacts related to lowering a groundwater table and interfering with groundwater recharge would be less than significant, and no further evaluation of this subject is warranted within the context of a SEIR. This conclusion is consistent with the findings of the TAMT Final PEIR.

c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion or siltation on or off site?

No Impact. The topography of the Proposed Project site is flat or sloping slightly downward from east to west. The existing storm drain system includes catch basins that have been equipped with filter inserts and a water treatment system on the main 36-inch diameter storm drain discharge lines. The Proposed Project would not require any modifications to the existing storm drain system. Consequently, no impacts related to changes in existing drainage patterns, including erosion and/or siltation would occur, and no further evaluation of this subject within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on or off site?

No Impact. As noted in Initial Study Section XIV (a), the Proposed Project site does not contain any naturally occurring watercourses and is completely surfaced with asphalt and concrete. Additionally, the site includes an existing drainage system that would not be affected by implementation of the Proposed Project. As a result, no substantial changes in drainage patterns would occur, and the Project would not cause surface runoff to result in flooding on- or off-site. No impacts would occur, and no further evaluation of this subject within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

No Impact. The Proposed Project does not involve any modifications to the TAMT's existing stormwater drainage system, and would not increase the existing site's surface water runoff. Therefore, the Proposed Project would not exceed the capacity of the TAMT's existing stormwater drainage system, and would not cause an additional source of polluted runoff. No impacts would occur, and no further evaluation of this subject within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

f. Otherwise substantially degrade water quality?

Less Than Significant Impact. As addressed in Initial Study Section XIV (a), construction and operation of the Proposed Project would be require compliance with the source controls, site design, and pollutant control BMPs specified by the Project's SWPPP, as well as a District-approved SWQMP, which would include good housekeeping practices (including practices regarding heavy equipment), non-stormwater management, proper waste handling, secondary containment for hazardous materials and waste, and education and training. Additionally, the Proposed Project would be required to comply with the Best Maritime Practices identified in the San Diego Harbor Safety Plan to avoid or mitigate unsafe vessel conditions. With these implementation of these measures, potential impacts to water quality would be less than significant, and no further analysis of this subject within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

g. Place housing within a 100-year flood hazard area as mapped on a Federal Flood Hazard Boundary or Flood Insurance Rate Map or other hazard delineation map?

No Impact. The Proposed Project does not involve the construction of any housing or other type of structure suitable for human habitation. Additionally, the Proposed Project site is located within an area of the TAMT that is designated as "500 Year Floodplain" by the Federal Emergency Management Agency (FEMA) (ICF, 2016). Therefore, no impacts related to housing within a 100-year flood hazard area would occur, and no further evaluation of the subject within the context of a SEIR would occur. This conclusion is consistent with the findings of the TAMT Final PEIR.

h. Place within 100-year flood hazard area structures that would impede or redirect flood flows?

No Impact. As addressed in Initial Study Section XIV (g), the Proposed Project site in not located within a FEMA designated 100-year flood hazard area. Additionally, as noted in Initial Study Section XIV (c), the Proposed Project would not involve any modifications to the TAMT's existing stormwater drainage system. No impacts related to structures placed with a 100-year floodplain would occur, and no impacts related to the impediment or redirection of flood flow would occur. As such, no further evaluation of the subject is warranted within the context of a SEIR. This conclusion is consistent with the findings of the TAMT Final PEIR.

i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

No Impact. The Proposed Project site is located within the TAMT, and is not within the immediate vicinity of any dam or flood control levee. The closest dam is the Sweetwater Reservoir Dam, which is located an estimated 8.7 miles east/southeast of the Project site, and the closest lined water course to the Project site is the Switzer Creek Drainage, which drains into San Diego Bay near Water Street, approximately 1,132 feet north/northwest of Bays C-7 though C-10 (Google Earth, 2016; ICF 2016). Additionally, the Proposed Project is not within a 100-year floodplain and does not involve any modifications to the TAMT's existing stormwater drainage system. Consequently, no impacts to people or structures due to flooding would occur, and no further analysis of the subject within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

j. Cause inundation by seiche, tsunami, or mudflow?

Less Than Significant Impact. The TAMT, including the Proposed Project site, is within a designated high-risk zone for tsunami (ICF, 2016). The Proposed Project site is located on the Bayfront, approximately two miles from the Pacific Ocean. Additionally, the Project site is located at an elevation of approximately 10 feet mean low lower water (MLLW) line (ICF, 2016). As such, considering the Project site's distance from the ocean, the buffering from it provided by landmass, and its height above sea level, the potential for hazards associated with direct wave action in the event of a storm surge, tsunami, or seiche is low.

Conditions under the Proposed Project would be similar to the existing conditions, and would not increase the potential of site inundation. Further, although inundation from a tsunami or seiche is possible, if it were to occur, damage would most likely be limited to ground-floor water damage. Workers would be given

sufficient warning to evacuate the Proposed Project site by the West Coast and Alaska Tsunami Warning Center, which monitors earthquakes and issues tsunami warnings when a tsunami is forecast to occur. Consequently, potential impacts would be less than significant.

As noted in Initial Study Section XIV (c), the topography of the Proposed Project site is flat, and the potential for large-scale slope instability that could lead to mudflow is not present. No impacts due to mudflow would occur.

Based upon the above, impacts associated with inundation due to seiche, tsunami, or mudflow would be less than significant or none, and no further evaluation of the subject within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

X. Land Use and Planning

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Physically divide an established community?	☐	☐	☐	☒
b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c. Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☒

Significance criteria established by CEQA Guidelines, Appendix G.

Would the project:

a. Physically divide an established community?

No Impact. The Proposed Project would not expand the physical boundaries of the TAMT or develop areas outside of its current boundaries. Neither construction nor operation of the Proposed Project would physically divide an established community. No impacts would occur, and no further discussion within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

b. Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Less Than Significant Impact. The PMP is the guiding land use policy document for all areas under the District's jurisdiction. The Proposed Project site is located in Planning District 4, the TAMT, which is delineated on Precise Plan Map Figure 13 of the PMP. The PMP land use designation within the limits of the Proposed Project site is Marine Terminal. As defined in the PMP, marine terminals provide the facilities necessary for the handling, marshalling and unloading/loading of cargo. Cargo storage space includes long and short-term dry storage, warehouses, silos, cooler and freezer space, and open public storage areas. Marine Terminal warehouses have railroad connections and all are accessible to arterial highways.

The Proposed Project's improvements to Warehouse C, as well as the vessel unloading and truck loading activities that would occur during Project operation, would be consistent with the site's designated Marine Terminal use, as summarized above. The PMP's "Precise Plan Concept" for the TAMT specifies that it is to be maintained for marine oriented industrial activities, and implementation of the Proposed Project would be consistent with that concept.

The Proposed Project is considered an interim use of Warehouse C prior to its demolition, as proposed in the TAMT Final PEIR. The Proposed Project's 600,000 MT annual throughput would be considered new throughput, over and above the dry bulk throughput of 289,864 MT/yr identified in the TAMT Final PEIR as part of existing baseline conditions. It is noted, however, that the previously approved and certified TAMT Final PEIR contemplated 1,987,500 MT/yr of dry bulk throughput for the ultimate buildout of TAMT. Additionally, based on maximum loading capabilities, the maximum number of round-trip truck trips caused by the Proposed Project site would be 176 per day on a peak day, and no more than 145 trucks per day on a 30-day rolling average, which both fall below the threshold established by the TAMT Final PEIR. As such, the Proposed Project is consistent with the analysis contained in the TAMT Final PEIR.

The Proposed Project would require issuance of a Coastal Development Permit (CDP). The Board of Port Commissioners is authorized to grant CDPs for projects under the District's jurisdiction, with a few exceptions identified in the PMP (SDUPD, 2015). None of these exceptions apply to the Proposed Project; consequently, its implementation would not require a permit from the California Coastal Commission. Further, none of the Proposed Project's activities would present new barriers or obstacles related to coastal access. As described in the TAMT Final PEIR, the TAMT is located in an area of the District that is not available for public access (SDUPD, 2016).

The current general rule under CEQA is that an analysis of how existing environmental conditions would affect a project's future users or residents is not required unless the proposed project would exacerbate the condition (see *California Building Industry Assoc. v. Bay Area Air Quality Management District* [Dec. 17, 2015] Cal.4th). However, the proposed project site is within the Coastal Zone and, pursuant to Executive Order S-13-08, the California Coastal Commission considers this issue in determining consistency with the California Coastal Act of 1976, as amended. Therefore, the extent to which existing environmental conditions would affect a project's future users and infrastructure, particularly in terms of sea level rise (SLR), is provided herein.

According to the National Oceanic and Atmospheric Administration's (NOAA) Sea Level Rise and Coastal Flooding Impacts Viewer (NOAA, 2014), portions of the Proposed Project site would be inundated at five and six feet of SLR. Historically in San Diego, the mean sea level trend was 2.08 millimeters/year with a 95 percent confidence interval of +/- 0.18 millimeters per year based on monthly mean sea level data from 1906 to 2014, which is equivalent to a change of 0.68 foot in 100 years. SLR is anticipated to accelerate over the next century. According to NOAA, there is very high confidence (greater than 90 percent chance) that global mean sea level will rise at least 8 inches (0.2 meter) and no more than 6.6 feet (2.0 meters) by 2100 (NOAA, 2014). Furthermore, the June 2012 National Research Council's report titled "Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future," which was used in the California Coastal Commission's Sea Level Rise Policy Guidance (California Coastal Commission, 2015), projects SLR south of Cape Mendocino to be 0.13 to 0.98 foot (4 to 30 centimeters) by 2030, and 0.39 to 2.0 feet (12 to 61 centimeters) by 2050. Therefore, as the operational lifetime of the Proposed Project would be anticipated to be 15 years following District approval, the Project site is sufficiently above sea level (approximately 7 to 9 feet above existing mean sea level) to prevent any adverse effects from SLR.

No conflicts or inconsistencies with applicable land use plans, policies, or regulations would occur from construction or operation of the Proposed Project. Therefore, no impacts would occur and no further discussion within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

c. Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. The Proposed Project site is within the City of San Diego's MSCP boundaries, but several miles outside of the boundary of its MHPA, which is a planned habitat preserve within the MSCP. However, as described in Initial Study Section IV (f), the MSCP and MHPA do not apply to projects within the jurisdiction of the District. Therefore, the Proposed Project would not be in conflict with a Habitat Conservation Plan or Natural Community Conservation Plan. No impacts would occur, and no further discussion within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

XI. Mineral Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	☐	☐	☐	☒
b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Significance criteria established by CEQA Guidelines, Appendix G.

Would the project:

a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?

No Impact. The Proposed Project site is located within the TAMT, an area characterized by industrial marine related activities, which does not contain any know mineral resources. The Proposed Project site is additionally underlain by artificial fill. The Project site and its surrounding areas are not designated or zoned as land with the availability of mineral resources (City of San Diego, 2016; City of San Diego, 2017; SDUPD, 2015). In addition, the Project site does not contain aggregate resources, and is not located in a mineral resource zone that contains important resources, as designated by the California DOC, Division of Mines and Geology (ICF, 2016). Therefore, the Proposed Project would not result in any loss of known mineral resources that would be of value regionally or to the State. To the contrary, the primary purpose and need of the Project is to import cement and cementitious materials that are in short supply at local and regional scales. No impact would occur, and no further evaluation of mineral resources is warranted within the context of a SEIR. This conclusion is consistent with the findings of the TAMT Final PEIR.

b. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. The Proposed Project site does not contain any known aggregate or other mineral resources, and no mining or mineral excavation occurs either within or in close proximity to it. As indicated in Initial Study Section XI (a), the Project site is underlain by artificial fill. Neither the PMP nor the City of San Diego General Plan (and its related Community Plans) identify any mineral resources in the Project area; similarly none of these land use plans designate the Project site for mineral resource extraction (City of San Diego, 2016; SDUPD, 2015). The Proposed Project site and its surrounding areas do not contain locally important mineral resources (ICF, 2016). Therefore, no impacts to locally important mineral resource recovery would occur, and no further evaluation of the subject is warranted within the context of a SEIR. This conclusion is consistent with the findings of the TAMT Final PEIR.

XII. Noise

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☒	☐	☐	☐
b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	☒	☐	☐	☐
c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☒	☐	☐	☐
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Significance criteria established by CEQA Guidelines, Appendix G.

Would the project:

a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Potentially Significant Impact. Construction and operation of the Proposed Project has the potential to result in the generation of noise levels in excess of established standards established by the City of San Diego. Therefore, further evaluation of construction and operational noise levels warrants further evaluation within the context of a SEIR, including a determination of consistency with the TAMT Final PEIR's analysis and conclusions.

b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Potentially Significant Impact. Ground disturbance during construction would include excavation activities, which could generate groundborne vibration or noise. Operation of the Project would involve approximately 24,000 round-trip truck trips per year, which could also generate groundborne vibration and noise. Although ground-borne vibration or noise generated by Project activities would not likely extend to surrounding residential uses or other sensitive receptors, vibration levels during Project construction and operation warrants further evaluation within the context of a SEIR, including a determination of consistency with the TAMT Final PEIR's analysis and conclusions.

c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Potentially Significant Impact. The Proposed Project would involve the operation of Bays C-7 through C-10 in Warehouse C, including offloading activities and off-site trucking for the distribution of cement and cementitious materials. These ongoing activities over the course of the 15-year operational life of the Proposed Project would have the potential to substantially increase the ambient noise levels in the Project vicinity above existing levels, resulting in a potentially significant impact. Operational noise levels warrant further evaluation within the context of a SEIR, including a determination of consistency with the TAMT Final PEIR's analysis and conclusions.

d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Potentially Significant Impact. Construction-related activities have the potential to result in a substantial temporary or periodic increase in ambient noise levels in the Project vicinity. An evaluation of existing ambient noise conditions and the Proposed Project's potential to increase them warrant further evaluation within the context of a SEIR, including a determination of consistency with the TAMT Final PEIR's analysis and conclusions.

e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The Proposed Project would not construct any habitable structures and would not attract large numbers of people to the Project area. In addition, the Proposed Project site is not located within the Forecast Noise Exposure areas identified in Exhibit 2-1 (Noise Contour Map) of the SDIA Airport Land Use Compatibility Plan (SDIA, 2014). Therefore, the Proposed Project would not expose people residing or working in the Project area to excessive airport noise. No impacts would occur, and no further discussion within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The Proposed Project is not located within the vicinity of a private airstrip. Therefore, no impacts related to private airstrips would occur, and no further discussion within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

XIII. Population and Housing

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c. Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Significance criteria established by CEQA Guidelines, Appendix G.

Would the project:

a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. The Proposed Project does not involve the construction of new housing. Construction activities would require a small temporary workforce drawn from the local San Diego area. During operation, the Proposed Project would be expected to employ up to 24 workers per shift when vessel unloading and tuck loading occur simultaneously. Both permanent and temporary operational employees would be drawn from the local San Diego workforce. As such, the Proposed Project would not induce in-migration or population growth locally or regionally. Therefore, no impacts would occur, and no further analysis within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

The Proposed Project would result in the receipt, storage and distribution of cement and cementitious materials to the greater San Diego region market area, including materials needed for construction of new public infrastructure projects and other private development projects. However, the Proposed Project would be responding only to existing market demand and would not directly or indirectly cause additional development or population growth in and of itself. Therefore, no impacts would occur, and no further analysis within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. The Proposed Project is located on the TAMT. There are no residential uses associated with the site or its surroundings. Therefore, construction of the Project would not directly or indirectly cause the displacement of housing or people. The properties surrounding the Proposed Project would remain fully operational during construction and operation; no businesses would be temporarily or permanently displaced by the Project either directly or indirectly. As such, no impacts would occur, and no further analysis within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

c. Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?

No Impact. The Proposed Project is located within existing Bays C-7 through C-10 of Warehouse C. There are no residential uses associated with the site or its surroundings. Therefore, construction of the Project would not directly or indirectly cause the displacement of housing or people. As such, no impacts would occur, and no further analysis within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

XIV. Public Services

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Fire protection?	☐	☐	☒	☐
b. Police protection?	☐	☐	☒	☐
c. Schools?	☐	☐	☒	☐
d. Parks?	☐	☐	☒	☐
e. Other public facilities?	☐	☐	☒	☐

Significance criteria established by CEQA Guidelines, Appendix G.

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

a. Fire protection?

Less Than Significant Impact. The receipt, storage, and distribution of cement and cementitious materials would not introduce any operational activities that would generate new or increased demands on fire protection. Operation of the project would result in a maximum of 24,000 round-trips annually, which could potentially affect overall traffic congestion of the San Diego Region and the emergency response times of fire protection services. However, truck trips associated with the District and overall traffic volume growth within the San Diego Region has likely already been factored into local emergency fire response services. Consequently, direct Project-related impacts to fire protection services would be anticipated to be less than significant and would not require the provision of new or altered fire stations. No further evaluation within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

b. Police protection?

Less Than Significant Impact. The receipt, storage and distribution of cement and cementitious materials would not introduce any operational activities that would generate new or increased demands on police protection. As discussed under Initial Study Section XIV (a), truck trips could potentially affect overall traffic congestion and the emergency response times of police and Port security. However, truck trips associated with the District and overall traffic volume growth within the San Diego Region has likely already been factored into local emergency police response services. Consequently, direct Project-related impacts to police protection services are anticipated to be less than significant. No further analysis within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

c. Schools?

Less Than Significant Impact. No school facilities are located within or immediately adjacent to the Project site that would be physically impacted. As discussed in Initial Study Section XIII (a), the Proposed Project would not increase population. Jobs generated during construction and operation of the Proposed Project would be drawn from the local workforce already served under existing school capacities. Therefore, the Proposed Project would not increase demand for new schools. Less than significant impacts or no impacts would occur, and no further analysis within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

d. Parks?

Less Than Significant Impact. No park facilities are located within or immediately adjacent to the Proposed Project site that would be physically impacted. As discussed in Initial Study Section XIII (a), the Proposed Project would not increase population. Jobs generated during construction and operation of the Proposed Project would be drawn from the local workforce already served by existing park facilities. Therefore, the Proposed Project would not increase demand for new parks. Less than significant impacts or no impacts would occur, and no further evaluation within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

e. Other public facilities?

Less Than Significant Impact. No other public facilities (libraries, community centers, etc.) are located within or immediately adjacent to the Project site that would be physically impacted. As discussed in Initial Study Section XIII (a), the Proposed Project would not increase population. Jobs generated during construction and operation of the Proposed Project would be drawn from the local workforce already served by existing public facilities. Therefore, the Proposed Project would not increase demand for new public facilities of this type. Less than significant impacts or no impacts would occur, and no further analysis within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

XV. Recreation

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Significance criteria established by CEQA Guidelines, Appendix G.

a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. An increase in the use of existing parks and recreational facilities typically results from an increase in the number of housing units or residents in an area. The Proposed Project would not result in an increase in local housing. During construction of the Proposed Project approximately 50 employees would be on site, and up to 24 employees during Project operations. As noted in Initial Study Section XIII (a), the workforce would be drawn from the local region. As the Proposed Project would not contribute to an increase in local housing or residences, no impacts to existing parks or recreational facilities would occur. No further evaluation within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?

No Impact. The Proposed Project would involve improvements to Warehouse C and adjacent areas within the TAMT. As such, no proposed activities would include the development of a recreational facility. All proposed construction and operational activities would occur within the TAMT. The Proposed Project would not require the construction or expansion of recreational facilities, and no impact associated with recreational facilities would occur. No further analysis within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

XVI. Transportation and Traffic

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?	☒	☐	☐	☐
b. Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?	☐	☐	☒	☐
c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☐	☒
d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
e. Result in inadequate emergency access?	☐	☐	☐	☒
f. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

Significance criteria established by CEQA Guidelines, Appendix G.

Would the project:

a. Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume-to-capacity ratio on roads, or congestion at intersections)?

Potentially Significant Impact. Proposed Project operations would increase truck and automobile traffic, and could conflict with local policies that measure the effectiveness of the circulation system. A Transportation Impact Analysis (TIA) will therefore be prepared and summarized in the SEIR, including a determination of consistency with the TAMT Final PEIR's analysis and conclusions.

c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No Impact. The Proposed Project would not include any facilities (such as tall buildings or structures, air plumes, etc.) or activities that would either require a change to existing air traffic patterns, or result in any air safety risks. The Proposed Project is limited to the receipt, storage and distribution of cement and cementitious materials. No impact to airspace safety would occur, and no further analysis within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact. The Proposed Project does not involve any design modifications to existing street segments or intersections within either the TAMT or the jurisdiction of the City of San Diego. The ingress/egress from Harbor Drive into Warehouse C is designed for large trucks, and is currently used for such purposes. The

Proposed Project involves two options for truck loading: placing the loaders inside Warehouse C (Option A); and, placing the loaders outside of Warehouse C (Option B). Both options have been designed for the safe ingress/egress of trucks receiving cement and cementitious materials. Additionally, as noted in Initial Study Section XVI (a), existing on-site parking design and capacity is sufficient to accommodate construction and operation of the Proposed Project without the need for any modifications. Therefore, the Proposed Project does not have the potential to increase traffic hazards to motorists or create an incompatible traffic-related use. No impacts would occur, and no further analysis within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

e. Result in inadequate emergency access?

No Impact. Construction and operation of the Proposed Project would not require any temporary closures of public roadways or driveways that could impede emergency access either within the TAMT or along streets under the jurisdiction of the City of San Diego. Access to the site from Harbor Drive would be available throughout the life of the Project. No impacts to emergency access would occur, and no further analysis within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

f. Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

No Impact. Construction of the Proposed Project would not require any temporary closures of public roadways, including bikeways, bus lanes, bus stops, and sidewalks. Once operational, while the Proposed Project would result in daily trips from worker commutes and truck trips distributing cement and cementitious materials to the greater San Diego region, these trips would not conflict with any adopted policies, plans, or programs supporting alternative transportation. No impacts would occur, and no further evaluation within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

XVII. Tribal Cultural Resources

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☒	☐	☐
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or

Less Than Significant Impact with Mitigation Incorporated. Pursuant to Assembly Bill 52, tribes can request to be notified of projects in particular geographies. However, at present, no Native American tribes have requested consultation for environmental review projects under CEQA within the District's jurisdiction. Tribal Cultural Resources (TCRs) are a defined class of resources under Section 1 of Assembly Bill 52. TCRs include sites, features, places, cultural landscapes, and sacred places or objects that have cultural value or significance to a Tribe. A search of the Native American Heritage Commission's (NAHC) Sacred Lands File conducted in June 2014 for the TAMT Final PEIR revealed that there are no known TCRs that are listed in, or are known to be eligible for listing in the CRHR or local register of historical resources within the TAMT or the half-mile surrounding area. The NAHC also provided a list of 19 Native American individuals and organizations that may have knowledge of cultural resources within the TAMT study area. On May 14, 2015, outreach letters were sent to all 19 individuals and organizations identified by the NAHC. On May 26, 2015, a letter was received from the Viejas Band of Kumeyaay Indians stating that the TAMT study area has cultural significance or ties to Viejas. The letter requested the presence of a Kumeyaay Cultural Monitor on site for all ground-disturbing activities. The TAMT Final PEIR incorporated the request of a Native American Cultural Monitor in MM-CUL-1 (Archaeological Monitoring in Areas of Sensitivity).

Although there is a low probability of encountering TCRs within the Project site, the Proposed Project would still be required to adhere to MM-CUL-1 (Archaeological Monitoring in Areas of Sensitivity) as noted in Initial Study Section V (a-d) which requires monitoring of ground-disturbing activities within identified sensitive areas by a qualified archaeologist and a Native American monitor. With implementation of MM-CUL-1, a less than significant impact would occur. No further analysis within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less Than Significant Impact with Mitigation Incorporated. As noted in Initial Study Section XVII (a), no known TCRs were identified during Native American outreach conducted for the TAMT Final PEIR, or that the District, acting as lead agency, determined to be significant pursuant to Public Resource Code Section 5024.1. Although there is a low probability of encountering TCRs within the Project site, the Proposed Project would still be required to adhere to MM-CUL-1 (Archaeological Monitoring in Areas of Sensitivity) as noted in Initial Study Section V (a-d) which requires monitoring of ground-disturbing activities within identified sensitive areas by a qualified archaeologist and a Native American monitor. With implementation of MM-CUL-1, a less than significant impact would occur. No further analysis within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

XVIII. Utilities and Service Systems

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☒	☐
d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g. Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

Significance criteria established by CEQA Guidelines, Appendix G.

Would the project:

a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Less Than Significant Impact. As discussed in Initial Study Section XIII (a), the Proposed Project would not increase population; the jobs generated during construction and operation of the Proposed Project would be drawn from the local workforce that is currently served by existing wastewater treatment plant capacities. Wastewater requiring treatment would be limited to on-site construction and operational personnel and activities. These activities, primarily limited to personal wastewater and water used for cleaning, would not generate a significant amount of new wastewater requiring treatment. Such minimal wastewater generated would not exceed the requirements of any wastewater treatment facilities. Furthermore, wastewater generated would not have special treatment requirements. Less than significant impacts to wastewater treatment requirements would occur, and no further analysis within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less Than Significant Impact. As discussed in Initial Study Section XVIII (a), the Project would generate minimal wastewater from construction and operation. Therefore, the Proposed Project would not substantially increase the amount of wastewater requiring treatment, and would not require the need for new or improved wastewater treatment facilities. Less than significant impacts to wastewater providers would occur, and no further evaluation within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

c. Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less Than Significant Impact. As discussed in Initial Study Sections XIV (a),(c),(d), and (e), the Proposed Project would not result in a change to existing storm water flows, drainage patterns, or result in other storm water discharges during construction and operation that require new or upgraded stormwater drainage facilities. Project construction and operations at the TAMT would adhere to applicable SWPPPs and Urban Stormwater Management Programs, as required. The Proposed Project would not increase the TAMT's existing impervious surface area, and would be designed to utilize existing stormwater drainage facilities, which provide sufficient capacity for the Proposed Project site. As such, no impacts or less than significant impacts to drainage patterns and surface runoff would occur, and no further discussion within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

Less Than Significant Impact. The Proposed Project would require minimal water for dust control during construction, as well as minimal amounts of water during other construction and operational activities (primarily for personal use and cleaning). All necessary potable water would be provided through existing water supplies serving Bays C-7 through C-10 of Warehouse C. Project-related water demand would be accommodated within existing infrastructure and entitlements. The Proposed Project would result in the receipt, storage and distribution of cement and cementitious materials to the greater San Diego region market area, which would require water for concrete uses. However, the Proposed Project would be responding only to existing and forecasted market demand, and would not directly or indirectly cause additional use of water in and of itself. Therefore, less than significant impacts to water supplies would occur, and no further analysis within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Less Than Significant Impact. As discussed in Initial Study Sections XVIII (a) and (b), the Project would not generate a significant amount of new wastewater from construction or operational personnel and activities. Therefore, the Proposed Project would not substantially increase the amount of wastewater requiring treatment and would not require the need for new or improved wastewater treatment facilities. Less than significant impacts to wastewater providers would occur, and no further evaluation within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less Than Significant Impact. Construction of the Proposed Project would generate minimal amounts of waste requiring disposal at a landfill. As noted in Initial Study Section VIII (b), based upon laboratory testing results of the site, any exported soil during construction would be suitable for disposal at a Class III municipal solid waste facility Once operational, the Proposed Project would generate minimal waste (primarily from workers and maintenance activities). District occupants usually contract with private waste haulers for solid waste disposal. Landfill demands would be minimized by recycling all possible materials during construction and operation. Because the Proposed Project would generate negligible waste during operation,

any solid waste generation is considered well within the permitted capacities of landfills providing solid waste disposal needs. Less than significant impacts to landfills would occur, and no further analysis within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

g. Comply with federal, state, and local statutes and regulations related to solid waste?

Less Than Significant Impact. As discussed in Initial Study Section XVIII (f), the Proposed Project would generate minimal waste during construction and operation, with any solid waste generation considered well within the permitted capacities of all landfills providing solid waste disposal needs. Landfill demands would also be minimized by recycling all possible materials during construction and operation. Therefore, the Project would be considered consistent with procedures and policies related to solid waste disposal. Less than significant impacts related to solid waste disposal would occur, and no further evaluation within the context of a SEIR is warranted. This conclusion is consistent with the findings of the TAMT Final PEIR.

XIX. Mandatory Findings of Significance

	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b. Does the project have impacts that are individually limited, but cumulatively considerable? (*Cumulatively considerable* means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☒	☐	☐	☐
c. Does the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	☒	☐	☐	☐

Significance criteria established by CEQA Guidelines, Appendix G.

a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

Less Than Significant with Mitigation Incorporated. The Project site does not support any special-status plants, but impacts to nesting birds covered by the MBTA and California Fish and Game Code and special-status bats could occur during construction, if active bird nests or large bat roosts are present. TAMT MM-BIO-1 (Avoid Nesting Season for Birds or Conduct Preconstruction Nesting Survey) and TAMT MM-BIO-2 (Avoid Bat Maternity Roosts or Conduct Preconstruction Maternity Bat Roost Survey) would require surveys for active bird nests and bat roosts, respectively, and avoidance of any nests or roosts present within Warehouse C or other project structures. No in-water work would occur in the Bay, which would avoid any impacts on fish and marine mammal species. Operational impacts would be consistent with current activities in the industrial TAMT, and would not adversely affect biological resources.

Ten historic-era resources were identified during a built environment pedestrian survey of the Project area (ICF, 2016). However, as described in Initial Study Section V (a), they were found to be ineligible for listing in the CRHR either as individual resources or as a District. None of the historic-era built environment resources within the study area appear to qualify as historical resources for the purposes of CEQA. Therefore, demolition of any of the buildings or structures within the Project site's boundaries would not result in a significant impact on a historical resource. One previously recorded prehistoric resource, CA-SDI-5931, is located within 125 to 180 feet of the Proposed Project site and may be subject to direct and indirect impacts associated with Project implementation. The exact boundaries of site CA-SDI-5931 are not known, and while the site is not directly adjacent to the Project site, it is possible that the site extends into the eastern portion of the Project area. Any ground-disturbing activities within this area could potentially encounter a significant archaeological resource, and damage to such a resource may occur absent the use of TAMT Final PEIR MM-CUL-1 (Archaeological Monitoring in Areas of Sensitivity). With implementation of

TAMT Final PEIR MM-CUL-1 impacts to sensitive historic resources would be less than significant and the Project would not eliminate important examples of the major periods of California history or prehistory.

b. Does the project have impacts that are individually limited, but cumulatively considerable? (Cumulatively considerable means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

Potentially Significant Impact. A cumulative impact could occur for a given resource area if the Proposed Project were to result in an incrementally considerable contribution to a significant cumulative impact resulting from past, present, and reasonably foreseeable future projects. The Project could result in potentially significant impacts in the following issue areas: Air Quality; Greenhouse Gas Emissions; Noise; and, Transportation and Traffic. As such, the Project's incremental contribution to cumulative impacts for these issues could potentially be considerable. Therefore, the potential cumulative impacts for these issue areas will be evaluated in the SEIR.

c. Does the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?

Potentially Significant Impact. As described in the analyses presented in Initial Study Sections III (Air Quality), VII (Greenhouse Gas Emissions), XII (Noise), and XVI (Transportation and Traffic), the Proposed Project may result in potentially significant impacts that could cause substantial adverse effects on human beings, either directly or indirectly. Therefore, these issues will be evaluated in the SEIR.

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Document Preparation

Consistent with State CEQA Guidelines Section 15063 (d) (6), Table IS-1 provides a listing of the persons who prepared this Initial Study, and Table IS-2 provides a listing of those persons who participated in its review.

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Appendix A

Report of Geotechnical Investigation

REPORT OF GEOTECHNICAL INVESTIGATION
10TH AVENUE MARINE TERMINAL (WAREHOUSE C)
CEMENT UNLOADING FACILITY
SAN DIEGO, CALIFORNIA

Prepared for

MITSUBISHI CEMENT CORPORATION
151 Cassia Way
Henderson, Nevada 89014

Prepared by

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9245 Activity Road, Suite 103
San Diego, California 92126

Project No. SD458
February 28, 2017

GROUP DELTA

February 28, 2017

Mitsubishi Cement Corporation
151 Cassia Way
Henderson, Nevada 89014-6616

Attention: Mr. Michael Jasberg

SUBJECT: REPORT OF GEOTECHNICAL INVESTIGATION
10th Avenue Marine Terminal (Warehouse C)
Cement Unloading Facility
San Diego, California

Mr. Jasberg:

This document provides the results of our geotechnical investigation for the proposed Cement Unloading Facility addition to Warehouse C within the 10th Avenue Marine Terminal in San Diego, California. Our subsurface investigation indicates that the proposed pile foundations for the new Cement Unloading Facility addition will need to extend through about 35 feet of loose soil in order to derive axial capacity from embedment within the underlying dense paralic deposits. Specific conclusions regarding the geotechnical constraints at the site, and preliminary geotechnical recommendations for piles, retaining walls, and pavements are provided in the following report.

We appreciate this opportunity to be of continued professional service. Feel free to contact the office with any questions or comments, or if you need anything else.

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1.0 INTRODUCTION

The following report presents the results of our geotechnical investigation for the new Cement Unloading Facility addition to Warehouse C (Units C-7 and C-9) at the 10th Avenue Marine Terminal in San Diego, California. Two alternative locations (inside or outside) are currently being considered for the cement load out structures, as shown in Figures 1A and 1B. In addition, an underground or overhead cement feed pipe will cross the access road and rail lines between the bay and Warehouse C at the approximate location shown in Figures 1A and 1B. Note that a future Phase 2 expansion may also ultimately include cement stockpile storage within Units C-8 and C-10, as shown in Figures 1A and 1B. Photographs of the site are provided in Figures 1C through 1F.

The purpose of this investigation was to characterize the general geotechnical constraints to site development, and provide preliminary geotechnical recommendations to aid in design of the proposed pile foundations, pavements, retaining walls and surface improvements. The recommendations provided herein are based on our recent subsurface explorations, laboratory tests, engineering and geologic analyses, and our previous experience with similar conditions.

1.1 Scope of Services

This report was prepared in general accordance with the provisions of the referenced proposal (GDC, 2015). In summary, we provided the following scope of services.

- A geologic reconnaissance of the site and a review of relevant geologic reports referenced in Section 8.0.

- A subsurface exploration of the site including one exploratory boring and three cone penetrometer test (CPT) soundings within Unit C-7. The approximate locations of the explorations are shown on the Exploration Plan, Figure 2D. Logs describing the conditions we encountered in the explorations are provided in Appendix A. We also documented the existing distress to Warehouse C-7 (see Section 1.4).

- Laboratory testing of selected samples collected from the exploratory boring. The geotechnical laboratory test results are presented in Appendix B. Additional soil samples were collected from the CPT soundings and sent to CalScience Eurofins for contaminant testing. The environmental test results are presented in Appendix C.

- Engineering analysis of the field and laboratory data to help develop geotechnical recommendations for site preparation, earthwork, pile foundation, pavement and retaining wall design, soil reactivity, and site drainage and moisture protection. The results of our liquefaction analyses are summarized in Appendix D.

- Preparation of this report summarizing our findings, conclusions and preliminary geotechnical recommendations for the planned additions.

1.2 Site Description

The 10th Avenue Marine Terminal (TAMT) was constructed in the 1960s, shortly after formation of the San Diego Unified Port District in 1962. Warehouse C is located northeast of the intersection between Terminal and Switzer Streets, as shown on the Site Location Map, Figure 1. The planned additions to Warehouse C will be located within Units C-7 and C-9 in the southwest corner of the structure, as shown in Figures 1A and 1B. Note that a future Phase 2 expansion may also include portions of Units C-8 and C-10. Photographs of Warehouse C are presented in Figures 1C to 1F.

Each of the Warehouse C units includes roughly 48,000 ft^2 of storage space for dry goods shipped into the Port of San Diego. Surveyed elevations for the asphalt concrete floor within the warehouse vary from about 16.4 to 16.9 feet above mean Lower Low Water (MLLW), whereas surface grades along the southern edge of the structure vary from about 12.1 to 12.2 feet MLLW. The warehouse floor is therefore situated about 4 feet higher than surface grades outside the building. The grade separation is accomplished using a concrete retaining wall located several feet beyond the perimeter of the structure, as shown in Figure 1C. Trucks may load goods from Warehouse C using several paved loading ramps located along the perimeter of the structure.

The inside of the warehouse is surfaced with about 3-inches of asphalt concrete placed directly over compacted fill soil (see Figure 1D). The existing pavements outside of the warehouse also consist of asphalt concrete, although these pavements include two embedded sets of steel rail tracks (see Figure 1C). The rails are underlain by gravel or ballast to depths of roughly 4 to 10 feet below grade. Existing subsurface utilities around the warehouse include storm drain, water, electric and telephone. We understand that most of these utilities cross overhead within the building.

1.3 Proposed Development

New cement load out structures are proposed at one of the two alternative locations shown in Figures 1A and 1B. Option A would include interior cement load out silos, as shown in Figure 2A. Two steel holding bins would be added over the roof of Unit C-7 for Option A. Option A is proposed to include reconstruction of the two loading docks located near the southwest corner of Unit C-7 (including Door 25). In addition, grades would be lowered roughly 4 feet within the building in order to accommodate through truck traffic, as shown in Figure 2A. Two 4-foot high retaining walls would be constructed on either side of the truck lane and scale, as shown in Figure 2A.

Option B would also include two steel cement load out silos. However, these silos would be located outside of Warehouse C, centered about 25 feet west of the building wall for Unit C-7. Option B would not require demolition of the warehouse ceiling, and would better permit the use of driven piles for support of the eight silo column foundations. Option B would also provide more cement storage space within Unit C-7. Note that for both Options A and B, numerous 8-foot high concrete retaining walls will be added inside Units C-7 and C-9 in order to keep the cement from loading the existing building walls. The concrete barrier configuration for Option B is shown in Figure 2B.

For both options, the two cement load out silo additions will each be supported by steel towers with four columns on a center to center spacing of 12 to 14 feet. Each of the columns will be founded on either a single Cast-in-Drilled-Hole (CIDH) pile, or a group of four precast, prestressed concrete driven piles. The structural designer has provided anticipated service loads on the order of 135 kips per support, with seismic loads on the order of 550 kips per support in compression, and 300 kips in tension. Preliminary pile design parameters are provided in Section 6.4.

In addition to the improvements to Warehouse C described above, the cement will need to be moved northwest from ships docked within the bay to the cement stockpiles within Warehouse C. The pneumatic cement feed pipes will cross the main access road for the Marine Terminal at the approximate location shown in Figures 1A and 1B. Two options are also being considered for the pneumatic feed pipe crossing. Option 1 would include new underground pipes beneath the road and rail lines. Option 2 would include an overhead pipe bridge with three isolated bridge support structures. Cross sections of the two Feed Pipe Crossing options are shown in Figure 2C.

1.4 Distress Evaluation

Warehouse C is a reinforced concrete structure supported by continuous perimeter grade beams, with isolated columns spaced at 60 to 74 feet within the structure (see Figure 1D). As shown in the referenced as-built drawings, the pile caps are supported by groups of 2 or 3 driven piles (Ferver-Dorland, 1962). The piles tip elevations are not shown on the plans. The piles appear to consist of 12-inch square precast concrete. The roof of the building is supported by steel beams and trusses.

Various signs of distress to the existing structure were noted during our site reconnaissance. Figure 1E shows the existing condition of the concrete loading ramp and retaining walls at Door 25 along the southern edge of Warehouse C-7. This photograph provides a clear indication of differential movement between the perimeter foundations supporting the structure and the surrounding surface improvements. The pattern of distress suggests that the ground surfaces both within and outside of the structure have settled relative to the building foundations, which are pile supported. The retaining wall appears to have rotated out, as indicated by the ½ inch wide crack that widens to 1½ inches at the top of the wall (see Figure 1E). The inside of the structure also appears to have settled down about ¾-inch relative to the pile supported wall at Door 25.

The asphalt concrete pavements within the building are in relatively good condition. The as-built drawings indicate that the inside of the structure was surfaced with a 3-inch thick asphalt concrete pavement, as encountered in Boring B-1. There are indications of differential settlement along the entire southern building wall inside Warehouse C-7, both east and west of Door 25. In each case, the asphalt concrete surfaced floor of the warehouse appears to have moved down relative to the pile supported building wall. In some areas, asphalt oil stains are present along the concrete building wall well above the current pavement surface. In other areas, the asphalt surface appears to have settled down relative to various minor foundations that are attached to the building wall.

Signs of differential settlement are also evident at Door 11, which separates Warehouse Unit C-7 from Unit C-9 (see Figures 1F and 2A). The asphalt concrete over the grade beam that supports the interior building wall between Warehouses C-7 and C-9 is about ¾-inch higher than the asphalt concrete pavement surface on either side. This pattern of distress also suggests that the interior of the structure has settled down relative to the pile supported building foundations.

2.0 FIELD AND LABORATORY INVESTIGATION

The field exploration included a visual reconnaissance of the site, a distress evaluation, the drilling of one exploratory boring, and the advancement of three cone penetrometer (CPT) soundings within Unit C-7. These field explorations were completed between February 24th and March 4th, 2016. The maximum depth of exploration was about 85 feet. The approximate locations of the boring and three CPT soundings are shown on the Exploration Plan, Figure 2D. Logs describing the subsurface conditions we encountered within these explorations are presented in Appendix A.

At the location of CPT-2, shear wave velocity measurements were taken at 5 foot depth intervals using an air actuated hammer located inside the front jack of the CPT rig. The interval shear wave velocity measurements are provided immediately after Figure A-3c. The average shear wave velocity measured within the upper 85 feet (Vs_d) at the location of CPT-2 was 744 ft/s (or 227 m/s). Based on a commonly used extrapolation method, Vs_{30} is estimated at 240 m/s (Boore, 2004).

Soil samples were collected from the boring for laboratory testing and analysis. The testing program included gradation analysis to aid in material classification using the Unified Soil Classification System (USCS). The moisture content and dry density of selected samples was determined, along with the specific gravity for use in volumetric analysis. Index tests were conducted to help evaluate the soil plasticity and expansion potential. Chemical extractions were conducted to determine the soluble sulfate and chloride contents, and the soil corrosion potential. A direct shear test was conducted to aid in strength and skin friction characterization for pile design. A consolidation test was conducted to help characterize the compressibility of the soft fat clay bed observed within the hydraulic fill. An R-Value test was conducted on a bulk sample to aid in preliminary pavement section design. The laboratory test results are summarized in Appendix B.

Soil samples were also collected from soundings CPT-1 and CPT-3 at depths of 5, 10, 15 and 20 feet for environmental testing. The environmental samples were sealed in glass containers with Teflon lids and stored in an ice chest until delivery to a certified testing laboratory. The samples were then tested by Eurofins CalScience for environmental contaminants using EPA methods. Each sample was tested for Total Petroleum Hydrocarbons (EPA 8015M), Volatile Organic Compounds (EPA 8260B), Title 22 Metals (EPA 8270C), Polychlorinated Biphenyls (EPA 8082), Organochloride Pesticides (EPA 8081A), Organophosphorus Pesticides (EPA 8141A) and Chlorinated Herbicides (EPA 8151A). Samples that were analyzed for volatile constituents were preserved in the field using EPA 5035 methods (Encore). The environmental test results are presented in Appendix C.

3.0 GEOLOGY AND SUBSURFACE CONDITIONS

The site is located within the coastal plain section of the Peninsular Ranges geomorphic province of southern California, and is underlain at depth by Pleistocene-age paralic deposits (Map Unit Qop_6), as shown on the Local Geologic Map, Figures 3A. These materials typically consist of medium dense to dense sand and very stiff to hard clay that should provide good support for the new pile foundations. The Old Paralic Deposits are covered with 30 to 35 feet of loose fill, hydraulic fill, and bay deposits as shown on the Geologic Hazard Map, Figure 3B. A geologic cross section of the site is provided in Figure 3C. Groundwater was encountered at about 4.6 feet above mean lower low water (MLLW) in our explorations. Existing grades at the site vary from about 12 to 16 feet (MLLW). The various geologic units we encountered at the site are described in more detail below.

3.1 Old Paralic Deposits

The site is underlain by Pleistocene-age Old Paralic Deposits to the maximum depth we explored. As observed in the explorations, the old paralic deposits primarily consist of medium dense to dense silty or clayey sand (SM or SC), sandy silt (ML), and sandy lean to fay clay (CL to CH), with occasional beds of gravel. The old paralic deposits have a high shear strength and low compressibility. The corrected Standard Penetration Test (SPT) blow counts (N_{60}) within the sandy paralic deposits at depths of 45 and 50 feet ranged from 25 to 29, indicating a medium dense apparent density. However, the CPT tip resistance at depths of more than 60 feet below grade generally exceeded 200 TSF, indicating a very dense apparent density at that depth.

Two separate units were defined within the old paralic deposits for the purpose of this study. These units are labeled as Old Paralic Deposits (A) and Old Paralic Deposits (B) on the geologic cross section, Figure 3A. The upper Unit A of the old paralic deposits is primarily composed of sandy silt (ML) and lean clay (CL) with frequent thin, discontinuous beds of silty and clayey sand (SM and SC). The silty and clayey sand beds within Unit A are typically 3 to 5 feet thick, with CPT tip resistance on the order of 150 to 200 tons per square foot (TSF), indicating a dense apparent density.

Unit B of the old paralic deposits is characterized by a distinct sequence of massive sandstone and claystone beds, as shown on the geologic cross section. The upper sandstone bed within Unit B is 10 to 15 feet thick, and is very dense with CPT tip resistance above 300 TSF. This sandstone bed is directly underlain by a 4 to 5 foot thick bed of claystone. The claystone bed is located roughly 60 to 70 feet below the Warehouse C-7 interior grades.

The CPT data indicates that the claystone bed in Unit B of the old paralic deposits has an undrained shear strength of about 2,000 to 2,500 lb/ft^2, with a CPT tip resistance of about 20 TSF, indicating a very stiff consistency for a clay, as shown in Appendix A. The distinct claystone bed is underlain by an additional bed of sandstone. Note CPT-2 met with refusal (tip resistance in excess of 600 TSF) within Unit B of the Old Paralic Deposits, at a depth of about 85 feet below grade.

As discussed in Section 2.0, the average shear wave velocity in the upper 100-feet of the soil profile (Vs_{30}) was estimated at 240 m/s (790 ft/s). The site would therefore classify as 2013 California Building Code (CBC) Site Class D (Stiff Soil) in the absence of soil liquefaction (or Site Class F with liquefaction). However, the interval shear wave velocities collected within the Old Paralic Deposits at depths of more than 35 feet below grade varied from 940 to 1,370 ft/s, and averaged 1,215 ft/s. The Old Paralic Deposits would therefore classify as 2013 CBC Site Class C (soft rock or sandstone).

3.2 Hydraulic Fill

About 20 feet of hydraulic fill was encountered above the Old Paralic Deposits, between depths of about 12 to 33 feet below building slab elevations. The hydraulic fill is believed to have been generated from previous dredging operations in the San Diego Bay. Consequently, the hydraulic fill primarily consists of poorly graded sand with silt (SP-SM) or silty sand (SM). Corrected SPT blow counts (N_{60}) within the sandy hydraulic fill ranged 6 to 14, indicating a loose to medium dense apparent density. Direct shear testing indicates a drained friction angle of 34^o for the sandy soils.

A distinct, continuous horizontal bed of fat clay (CH) was encountered within the hydraulic fill at depths of between 23 and 28 feet below the ground surface. The undrained shear strength of this fat clay (CH) is estimated at about 500 lb/ft^2, indicating a soft consistency. The fat clay within the hydraulic fill is considered to be highly compressible. A consolidation test on the fat clay is presented in Figure B-6 of Appendix B. Note that long-term settlement of this continuous fat clay bed is likely to have contributed to the observed distress at the site (see Section 1.4).

It should be noted that the fat clay bed within the hydraulic fill likely marks the old bay floor. The as-built drawings indicate that soft mud existed at about -6 feet elevation along the southern edge of Warehouse C prior to construction. However, the fat clay is underlain by about 5 feet of loose silty sand (SM) with a similar gradation and SPT blow count (N_{60}~6) to the overlying hydraulic fill. Therefore, the bay deposits were not differentiated from the hydraulic fill for this investigation.

3.3 Fill

Roughly 8 to 12 feet of fill was observed in our explorations, directly overlying the hydraulic fill. This fill was likely placed after the hydraulic fill operations were completed in order to raise grades above the water surface elevation, and is noticeably different in composition. The undocumented fill we encountered consisted of clayey sand (SC) and lean clay (CL) with up to about 19 percent subangular gravel. Laboratory tests conducted on shallow sample of the clayey fill indicated a low plasticity (Liquid Limit of 35), and a low expansion potential (Expansion Index of 32). However, R-Value tests indicate that the clayey soil directly beneath the building slab will provide poor support for truck loads (an R-Value of 6). The surficial clayey fill soils are considered to be unsuitable for the direct support of the planned improvements due to their low strength and poor R-Value.

3.4 Groundwater

Groundwater was encountered in Boring B-1 at a depth of 12 feet below grade (corresponding to an elevation of about 4.6 feet MLLW). The local groundwater table is strongly influenced by water surface elevations within the San Diego Bay.

4.0 GEOLOGIC HAZARDS

The subject site is located within an area previously known for significant geologic hazards, including soil liquefaction and active faulting, as shown on the Geologic Hazard Map, Figure 3B. Note that the Geologic Hazard Map was based on Tiles 13 and 17 from the City of San Diego's 2008 Seismic Safety Study. The site is also located within an Alquist-Priolo Earthquake Fault Zone for the Rose Canyon fault zone, as shown in Figures 4A through 4C. The primary geologic hazards at the site will be associated with strong ground shaking, liquefaction, and dynamic settlement due to an earthquake on the Rose Canyon fault zone. However, ground rupture due to active faulting is also possible within Warehouse C. Each potential geologic hazard is discussed below.

4.1 Ground Rupture

Ground rupture is considered to be a potential geologic hazard since the site is located within an Alquist-Priolo Earthquake Fault Zone. However, we understand the proposed improvements to the warehouse may be exempt from the Alquist-Priolo Earthquake Fault Zoning Act (Act), which places restrictions on the construction of certain new structure for human occupancy along active fault lines. Note that fault rupture would occur within the Old Paralic Deposits that are covered with 30 to 35 feet of loose fill, hydraulic fill, and bay deposits. In our opinion, the thickness and loose physical characteristics of these overlying soils should attenuate surface manifestations from fault rupture. Surface deformations associated with faulting may be on the same order of magnitude as those estimated from liquefaction and dynamic settlement, as discussed in Section 4.3 below.

4.2 Seismicity

The planned improvements are located at latitude 32.6991° north and longitude 117.1558° west. The locations of known active faults within a 100 km radius of the site are shown on the Regional Fault Map, Figure 4A. The nearest known active fault is associated within the Silver Strand segment of the Rose Canyon fault zone, as shown in Figures 4B and 4C.

The United States Geologic Survey has developed an interactive website that provides Next Generation Attenuation (NGA) probabilistic seismic analyses based on the site location and average shear wave velocity (USGS, 2009). Using an average shear wave velocity (Vs_{30}) of 240 m/s from the CPT measurements, we estimate that the peak ground accelerations (PGA) with a 2, 5 and 10 percent probability of being exceeded in a 50 year period at the site are approximately 0.49, 0.33g and 0.24g, respectively. These risk levels are often referred to as Maximum Considered (MCE), Upper Bound (UBE) and Design Basis Earthquakes (DBE), respectively.

Structures should be designed in general accordance with the seismic provisions of the 2016 California Building Code (CBC) for a Seismic Design Category D. The USGS General Procedure mapped spectral ordinates S_S and S_1 equal 1.241 and 0.447, respectively. For a Site Class D corresponding to a Vs_{30} of 240 m/s, the Site Coefficients F_a and F_v equal 1.004 and 1.523, respectively. Note that per Section 20.3.1 of ASCE 7-10, a Site Class D may be assumed for liquefiable sites, provided that the fundamental period of vibration of the structure is 0.5 seconds or less. The 2016 CBC General Procedure Design and MCE spectra are shown in Table 1.

A site-specific seismic hazard analyses was also conducted as described in Section 6.4.5. The results of the analyses are shown in Figures 5A through 5C. Based on the site-specific analyses, the design level spectral ordinates S_{DS} and S_{D1} equal 0.665 and 0.642, respectively. The MCE level spectral ordinates S_{MS} and S_{M1} equal 0.998 and 0.963, respectively. The recommended 2016 CBC Site Specific Design and MCE Spectra for a Site Class D are provided in Table 2.

4.3 Liquefaction and Dynamic Settlement

The site is located within an area previously identified as highly susceptible to liquefaction, as shown in Figure 3B. Liquefaction involves the sudden loss in strength of a saturated, cohesionless soil (sand and non-plastic silts) caused by the build-up of pore water pressure during cyclic loading, such as that produced by an earthquake. Typically, liquefaction occurs in areas where there are loose to medium dense sands and silts, and where the depth to groundwater is less than 50 feet from the ground surface. In summary, three simultaneous conditions are required for liquefaction:

- Historic high groundwater within 50 feet of the ground surface
- Liquefiable soils such as loose to medium dense sands
- Strong shaking, such as that caused by an earthquake

The groundwater level at the site is approximately 4.6 feet above mean lower low water (MLLW). The site contains deep deposits of loose to medium dense sands and silts, and is located in close proximity to the active Rose Canyon fault zone. Our analyses indicate that the loose to medium dense sands and silts within the hydraulic fill may liquefy during the Maximum Considered Earthquake (MCE). The medium dense Old Paralic Deposits between 35 and 45 feet may also experience minor seismic settlement. However, the Old Paralic Deposits become dense to very dense at depths of more than 50 feet below grade, and these soils are not considered to be liquefiable or prone to seismic settlement.

The results of our liquefaction analyses are summarized in Appendix D. We performed the liquefaction calculations using the Cone Penetration Test (CPT) data. The triggering evaluation was based on the CPT method developed in the NCEER Workshops (Youd, 2001). The calculations were extended down to a depth of 50 feet below grade. We used a moment magnitude of 7.2 and a Peak Ground Acceleration (PGA_M) of 0.559g, corresponding to the geometric mean MCE seismic event for the nearby Rose Canyon fault zone, as required by the 2016 CBC. The static groundwater level was assumed to be 4.6 feet MLLW for all of the liquefaction analyses.

For our liquefaction analyses, fine-grained soils with an Ic value greater than 2.6 were considered to be too clayey to liquefy (the Ic values are shown in Appendix A). Similarly, granular soils with a normalized clean sand equivalent tip resistance ($Q_{c1N(CS)}$) greater than 160 were considered too dense to liquefy, although settlement was included for sand beds with $Q_{c1N(CS)}$ up to 200. Only those soil zones that are both loose enough and sandy enough to liquefy contribute to the estimated seismic settlement. Dry sand settlement was also included above the groundwater.

The analyses indicate that the site may experience 7 to 8 inches of post-liquefaction settlement. A differential settlement equal to about one-half of the anticipated total liquefaction settlement is often assumed for structural design (SCEC, 1999). Consequently, we estimate that the post-liquefaction differential settlement of the soil underlying the existing Warehouse C structure may vary from about 3½ to 4 inches in 40 feet. Settlement of this magnitude may result in substantial distress to the existing warehouse facilities, and should be evaluated by the project structural engineer. However, if the existing building and/or proposed additions are supported by piles that extend at least 45 feet below interior warehouse surface grades, our analyses also indicate that these piles will experience less than ½-inch total settlement due to the MCE earthquake.

Potential impacts of liquefaction at the site may be moderate to severe. Liquefaction settlement may result in a down drag load on both the existing and proposed piles. Liquefaction also creates the potential for loss of near-surface soil strength resulting in a reduced lateral pile capacity. Note that most of the post-liquefaction settlement typically occurs after the strong ground shaking associated with an earthquake has ended. Consequently, the down drag load should not be superposed with the seismic loads on the piles. Instead, the down drag load should be added to the service loads to check for post-liquefaction pile capacity and settlement.

4.4 Lateral Spreads

The immediate site vicinity is relatively flat (other than the 4-foot high retaining wall around the perimeter of the building). Due to the large distance between the site and the San Diego Bay (more than 500 feet), it is our opinion that damage associated with a potential lateral spread of the quay wall along the bay due to a strong earthquake will primarily be limited to the areas within the TAMT that are located south of Warehouse C. The potential for a lateral spread to adversely affect Warehouse C is considered to be low by comparison.

4.5 Tsunamis, Seiches and Flooding

The site is located about 500 feet from the San Diego Bay, and is situated about 12 to 16 feet above mean lower low water (MLLW) elevations. The relatively close proximity to the bay suggests that the potential may exist for flooding in the event that an earthquake induced tsunami or seiche were to impact the San Diego Bay. However, the existence of the offshore barrier islands and the configuration of the continental shelf in the San Diego vicinity have historically provided relief from tsunamis. The ten largest tsunamis that occurred within the Pacific Ocean over the last 100 years did not significantly impact the San Diego Bay area.

The California Emergency Management Agency's Tsunami Inundation Map indicates that the entire 10th Avenue Marine Terminal site is located slightly above the estimated tsunami inundation area. However, previous studies by the Army Corps of Engineers suggest that a 100-year and 500-year tsunami within the Pacific Ocean may result in a water surface runup of about 5 to 8 feet above the existing bay surface elevations in the site vicinity (U.S. Army, 1974). We understand that the highest recorded water surface elevation within the San Diego Bay was about 8 feet MLLW in 1983. Therefore, some flooding of the Warehouse C facilities could occur in the event that a relatively high water surface elevation within the San Diego Bay were to coincide with the arrival of an earthquake induced tsunami or seiche within the bay.

4.6 Consolidation Settlement

A distinct, continuous bed of soft, compressible fat clay (CH) was observed at depths of between approximately 23 and 28 feet below the interior floor grades. Our analyses indicate that the fat clay bed may experience considerable long-term settlement if subjected to new fill or foundation loads. The sandy hydraulic fill soils will also settle, but relatively rapidly by comparison. The fat clay may settle for many years due the effects of secondary compression. To aid in analyses, a one-dimensional drained consolidation test was conducted using a sample of the fat clay collected from Boring B-1, as shown in Figure B-6 of Appendix B. The test data indicates that the fat clay has a virgin compression index of about 0.25, and a coefficient of consolidation of about 0.01 ft^2/day.

It is our opinion that the patterns of distress to the warehouse that we observed as described in Section 1.4 are most likely associated with settlement of the fat clay bed discussed above. Conventional one-dimensional consolidation theory was used to estimate the magnitude and duration of settlement of the fat clay bed due to the placement of about 11 feet of additional hydraulic fill, as well as 12 feet of conventional fill above the groundwater level. The additional fill load on the fat clay is estimated at about 2,150 lb/ft^2. Our analyses suggest that the fat clay bed may have experienced about 18 inches of total consolidation settlement due to the subsequently placed fill loads. Much of this settlement would have occurred prior to construction of the warehouse in 1962. However, our time rate analyses indicate that settlement of the fat clay would likely take about 6 years to reach 90 percent completion. Warehouse C is believed to have been constructed within about 6 years of the fill placement. The remaining secondary compression would be roughly 2 inches, and could have taken many more years to complete.

In summary, the patterns of distress we observed within Warehouse C-7 are believed to be associated with conventional consolidation settlement and secondary compression, as described above. The most likely explanation for the distress is that Warehouse C-7 was founded on piles that were embedded into the dense old paralic deposits, whereas the floor slab within the building was not pile supported. Therefore, the warehouse structure experienced little or no settlement over the years. On the other hand, the warehouse floor experienced the effects of consolidation and secondary compression over many years. This resulted in several inches of differential settlement between the building foundations and the interior asphalt concrete surface.

5.0 CONCLUSIONS

The planned improvements are feasible from a geotechnical perspective. Provided below is a list of pertinent conclusions followed by recommendations for design and construction.

- The TAMT site is underlain by deep, compressible hydraulic fill soils. These materials appear to have already experienced several inches of settlement since Warehouse C was constructed, as indicted by the various patterns of distress we have observed at the site. Our tests indicate that the distinct fat clay bed within the undifferentiated hydraulic fill is soft in consistency, with a dry unit weight on the order of 70 lb/ft^3 (which is an extremely low density), and a moisture content of 50 percent or more. Therefore, it appears likely that secondary compression of the fat clay may continue for many years at this site. Settlement sensitive improvements should be founded on piles to mitigate the potential for distress.

- The pile foundations for the two new cement silos will need to extend through about 35 feet of loose soil in order to derive adequate axial capacity from the underlying dense old paralic deposits. However, 7 or 8-inches of total dynamic settlement is estimated due to liquefaction of the sandy hydraulic fill under a strong earthquake (see Appendix D). This settlement would result in substantial drag loads on the new piles. Consequently, we have neglected all skin friction contribution to the axial pile capacity for the upper 35 feet of the soil profile. The structural designer should also account for the drag load in the pile design.

- Laboratory tests suggest that the fill soils that will be exposed by the planned excavations for the Option A truck lane may consist of clayey sand (SC) with gravel. These soils appear to have a low expansion potential (EI<50), but will still provide poor support for truck loads based on an R-Value of 6. More highly expansive clays may also exist in other portions of the site. In order to reduce the potential for distress associated with expansive soil heave, two feet of imported low expansion sand or aggregate base (EI<50) should be placed directly beneath the new concrete truck lane for Option A.

- A new 7-inch thick concrete slab may be placed within the building for support of the cement stockpiles and Cat 950 Loader traffic. This concrete slab may be placed directly on top of the existing 3-inch thick asphalt concrete surface. However, it should be noted that continued long-term settlement of the underlying paralic deposits (on the order of ½ inch in 15 years), expansive soil heave, or post-liquefaction settlement may result in cracking and distress to the rigid concrete slab. To reduce the potential for movement and cracking, the slab may be isolated from the pile supported building foundations, and underlain directly by at least 2-feet of low expansion sandy soil (EI<50). However, we understand that the slab may only be used for 15 years, and that the potential for cracking may be tolerable.

- Other geologic hazards that may impact the site include the potential for ground rupture, strong ground shaking, liquefaction and dynamic settlement, and possible flood inundation due to a tsunami or seiche within the San Diego Bay.

6.0 RECOMMENDATIONS

The remainder of this report provides preliminary recommendations regarding earthwork construction and design the proposed improvements and foundations. These recommendations are based on empirical and analytical methods typical of the standards of practice in southern California. If these recommendations do not to appear to cover a specific feature of the project, please feel free to contact our office for additions or revisions.

6.1 Plan Review

We recommend that the demolition, shoring, grading and foundation plans be reviewed by Group Delta Consultants prior to construction. We anticipate that substantial changes in the development will occur from the design concepts used for this investigation. Such changes will require additional geotechnical evaluation, which may result in substantial modifications to the remedial grading and foundation recommendations provided in this report.

6.2 Excavation and Grading Observation

Foundation and grading excavations should be observed by Group Delta Consultants. During construction, Group Delta Consultants should provide observation and testing services continuously. Such observations are considered essential to identify field conditions that differ from those anticipated by this investigation, to adjust designs to the actual field conditions, and to determine that earthwork construction is accomplished in general accordance with the recommendations presented in this report. Our recommendations are contingent upon Group Delta Consultants providing these services. Our personnel should perform sufficient testing of fill and backfill during grading and improvement operations to support our professional opinion as to compliance with the compaction recommendations.

6.3 Earthwork

Grading and earthwork should be conducted in general accordance with the grading ordinance of the City of San Diego and the requirements of the current California Building Code. The following recommendations are provided regarding specific aspects of the proposed earthwork construction. These recommendations should be considered preliminary and subject to revision based on the conditions observed by Group Delta Consultants in the supplemental subsurface investigation.

6.3.1 Site Preparation

General site preparation should begin with the removal of deleterious materials from the site. Deleterious materials include existing structures, foundations, pavements and slabs that are to be demolished, as well as any other demolition debris. Existing utilities that will be abandoned should be removed and any excavations backfilled with proper compaction as described in Section 6.3.3. Alternatively, the abandoned underground pipes may be grouted with a two-sack sand-cement slurry under the observation of Group Delta Consultants.

6.3.2 Improvement Areas

A minimum of two feet of compacted fill with an Expansion Index of 50 or less is recommended beneath the new concrete truck lane for Option A, and beneath all of the new retaining wall foundations. Two feet of low expansion fill (EI<50) may also be placed beneath the new concrete slab-on-grade throughout the warehouse in order to help reduce the potential for cracking and distress. Some of the on-site soils may meet this criterion, although imported fill soil will also likely be needed. In order to accomplish this objective, the upper 12-inches of soil below the slab or wall foundation subgrade elevations should be excavated and stockpiled on site. The exposed subgrade soil should be scarified 12 inches, and then observed and tested by Group Delta. If clayey soil with an Expansion Index above 50 is encountered, the expansive soil should be excavated and replaced with low expansion material. The stockpiled or imported low expansion soil should then be brought to above optimum moisture content, and compacted as described in Section 6.3.3. Subgrade compaction for pavements should be conducted immediately prior to placing concrete or base.

All excavation bottoms should be firm and unyielding prior to placing fill. In areas of saturated or "pumping" subgrade, a geogrid such as Tensar BX-1200 or Terragrid RX1200 may be placed directly on the excavation bottom, and then covered with at least 12 inches of minus ¾-inch aggregate base. Once the excavation is firm enough to attain the required compaction within the base, the remainder of the excavation may be backfilled using either compacted soil or aggregate base.

6.3.3 Fill Compaction

All fill and backfill should be placed at slightly above optimum moisture content using equipment that is capable of producing a uniformly compacted product. The minimum recommended relative compaction is 90 percent of the maximum dry density based on ASTM D1557. Sufficient observation and testing should be performed by Group Delta Consultants so that an opinion can be rendered as to the compaction achieved. Rocks or concrete fragments greater than 6 inches in maximum dimension should not be used in structural fill.

Imported fill sources should be observed prior to hauling onto the site to determine the suitability for use. In general, imported fill materials should consist of granular soil with less than 35 percent passing the No. 200 sieve based on ASTM C136 and an Expansion Index less than 20 based on ASTM D4829. Samples of the proposed import should be tested by Group Delta in order to evaluate the suitability of these soils for their proposed use. During grading operations, soil types may be encountered by the contractor that do not appear to conform to those discussed within this report. Group Delta should be notified to evaluate the suitability of these soils for their proposed use.

A two-sack sand and cement slurry may also be used for structural fill as an alternative to compacted soil. It has been our experience that slurry is often useful in confined areas which may be difficult to access with typical compaction equipment. Samples of the slurry should be fabricated and tested for compressive strength during construction. A minimum 28-day compressive strength of 100 psi is recommended for the two-sack sand and cement slurry.

6.3.4 Temporary Excavations

Temporary excavations are anticipated for the construction of the proposed improvements. All excavations should conform to Cal-OSHA guidelines. Vertical temporary excavations up to 4-feet in height may be conducted (where permitted), but deeper temporary slopes should be inclined no steeper than 1:1 for heights up to 10 feet. Any excavations which encounter seepage should be evaluated by the geotechnical consultant on a case-by-case basis. Any existing shallow foundations located within 10 feet of the planned excavations should be underpinned, if the planned excavations extend below the bottom of the existing footing.

6.4 Preliminary Foundation Recommendations

For preliminary foundation design, the structural engineer has provided anticipated service level loads on the order of 135 kips per support, with maximum loads on the order of 550 kips per support in compression, and 300 kips in tension. All piles should be embedded at least 10-feet into the old paralic deposits, and at least 45-feet below interior pad grades of about 16½ feet MLLW, corresponding to a recommended pile tip elevation of -29½ feet MLLW or lower. For our analyses, the tops of the piles were assumed to be cut off at 5 feet below interior grades (11½ feet MLLW). We have provided recommendations for single 3, 4 or 5-foot diameter CIDH piles ranging from 40 to 90 feet in length, as well as a group of 14-inch square precast concrete driven piles.

6.4.1 Axial Capacity

Either auger-cast or cast-in-drilled-hole (CIDH) piles deriving their capacity from the dense old paralic deposits may be used to support the new silos. Driven piles may also be feasible, provided that the roof of the structure may be removed to accommodate the pile driving equipment in Option A. Preliminary axial pile capacities were estimated using a Factor of Safety of 2.0 for skin friction, and 3.0 for end bearing. However, skin friction was ignored in the upper 35-feet of the soil profile due to the potential for liquefaction, settlement, and the associated drag load on the piles.

The allowable gross axial capacity (Q_{ag}) of each individual pile will be the sum of the pile tip resistance (Q_p) and skin friction (Q_s). Estimated axial pile capacities for 40 and 90-foot long piles are provided in the table below. Note that depending upon the ultimate pile configuration, a group reduction factor (η_T) may apply. Provided that the piles are spaced at least 3 pile diameters in all directions, η_T may be taken as 1.0.

$$Q_{an} = Q_{ag} * \eta_T = (Q_p + Q_s) * \eta_T$$

PILE LENGTH (Z)	14" SQUARE DRIVEN PILE CAPACITY	3' DIAMETER DRILLED PILE CAPACITY	4' DIAMETER DRILLED PILE CAPACITY	5' DIAMETER DRILLED PILE CAPACITY
40 Feet	51 Kips	140 Kips	210 Kips	262 Kips
90 Feet	261 Kips	510 Kips	710 Kips	887 Kips

The allowable gross axial pile capacities presented in the table above may also be used to linearly interpolate pile capacities for intermediate lengths. The allowable gross axial capacities of the various individual piles are given by the following equations.

$$Q_{ag} \sim 4.2 * (Z - 40) + 51 \text{ Kips (for a 14-inch square driven pile)}$$
$$Q_{ag} \sim 7.4 * (Z - 40) + 140 \text{ Kips (for a 3-foot diameter drilled pile)}$$
$$Q_{ag} \sim 10.0 * (Z - 40) + 210 \text{ Kips (for a 4-foot diameter drilled pile)}$$
$$Q_{ag} \sim 12.5 * (Z - 40) + 262 \text{ Kips (for a 5-foot diameter drilled pile)}$$

In the equations above, Z should be taken as the total length of the pile measured from the bottom of the pile cap, which is assumed to be 5 feet below the interior pad grades (11½ feet MLLW). A one-third increase in the pile capacity may be used when considering short-term wind and seismic loads. Note that ultimate drag loads of approximately 113, 258, 344 and 432 kips are estimated for the 14-inch, 3-foot, 4-foot and 5-foot diameter piles, respectively. The compressive strength of the pile sections should be verified by the project structural engineer, including both the service level loads plus the anticipated drag loads on each of the piles due to soil liquefaction.

The allowable axial capacities assume that the piles will be spaced at least 3 pile diameters center to center, such that group effects may be neglected ($\eta_T \sim 1.00$). However, we understand that the actual pile spacing may vary from 12 to 14 feet, center to center. For 14-inch, 3-foot and 4-foot diameter piles spaced at 12-feet or more, the three diameter spacing criterion will be satisfied and group effects may be neglected. However, if 5-foot diameter piles are used at the site with a 12-foot center to center spacing (2.4 pile diameters), a reduction factor (η_T) of 0.67 should be applied to the individual axial capacities to account for group effects per Table 10.8.3.6.3 of the 2014 California Amendments to the AASHTO LRFD code.

6.4.2 Uplift Capacity

The net allowable uplift capacity (T_{an}) of each individual pile will be controlled by skin friction developed along the length of the pile. The gross uplift capacity (T_{ag}) of the pile will equal the uplift capacity plus the weight of the pile and tributary weight of the pile cap (W_{p+c}). Estimated net uplift capacities for 40 and 90-foot long piles are presented below. Note that depending upon the ultimate pile configuration, a group reduction factor (η_T) may apply, as discussed previously.

$$T_{ag} = T_{an} * \eta_T + W_{p+c}$$

PILE LENGTH (Z)	14" SQUARE DRIVEN PILE CAPACITY	3' DIAMETER DRILLED PILE CAPACITY	4' DIAMETER DRILLED PILE CAPACITY	5' DIAMETER DRILLED PILE CAPACITY
40 Feet	27 Kips	82 Kips	108 Kips	136 Kips
90 Feet	167 Kips	437 Kips	578 Kips	716 Kips

The net allowable uplift capacities presented in the table above may be used to linearly interpolate pile capacities for intermediate lengths. The net allowable uplift capacities of the various individual piles are given by the following equations. The allowable net uplift capacities incorporate a Safety Factor of 2.0. The tensile strength of the pile should be verified by the structural engineer.

T_{an} ~ 2.8 * (Z – 40) + 27 Kips (for a 14-inch square driven pile)
T_{an} ~ 7.1 * (Z – 40) + 82 Kips (for a 3-foot diameter drilled pile)
T_{an} ~ 9.4 * (Z – 40) + 108 Kips (for a 4-foot diameter drilled pile)
T_{an} ~ 11.6 * (Z – 40) + 136 Kips (for a 5-foot diameter drilled pile)

6.4.3 Lateral Capacity

Lateral loads may be resisted by passive pressure from the vertical portion of the pile caps that are embedded into fill. A coefficient of friction of 0.30 and a passive pressure of 300 psf per foot of depth may be assumed. Lateral capacity will be obtained directly from pile bending. Preliminary lateral pile analyses were conducted using the program LPILE, assuming elastic pile conditions. The following soil profile was used. Note that for Layer 4, the friction angle and modulus were assumed to increase linearly from the top to the bottom of the layer.

LAYER NO.	TOP OF LAYER [IN]	BOTTOM OF LAYER [IN]	EFFECTIVE UNIT WEIGHT [PCI]	FRICTION ANGLE OR COHESION	MODULUS OR E_{50}
1 (Sand)	-60	84	0.0694	30°	40 PCI
2 (Sand)	84	216	0.0333	34°	60 PCI
3 (Clay)	216	276	0.0300	3.4 PSI	E_{50} ~ 0.018
4 (Sand)	276	1000	0.0333	34° to 38°	80 to 200 PCI

The piles were assumed to be loaded at the maximum allowable axial capacities provided in Section 6.4.1. For these analyses, we evaluated the response of a single 40-foot long pile, assuming both free-head (zero moment) and fixed-head (zero rotation) conditions. Minimum 28-day compressive strengths of 3,000 psi and 7,000 psi were assumed for the drilled and driven piles, respectively. The results of the LPILE analyses are summarized in the table below. This table shows the maximum shear loads at the tops of the piles corresponding to a pile head displacement of ½ and 1 inch. Note that fixed-head piles will require larger lateral loads to produce the same displacement as compared to free-head conditions. However, the true pile head fixity is generally located somewhere between these two assumptions, as determined by the structural designer.

PILE TYPE	PILE HEAD FIXITY	½-INCH DEFLECTION	1-INCH DEFLECTION
14-Inch Driven	Free-Head (Fixed-Head)	36 Kips (84 Kips)	58 Kips (134 Kips)
3-Foot Drilled	Free-Head (Fixed-Head)	110 Kips (235 Kips)	170 Kips (373 Kips)
4-Foot Drilled	Free-Head (Fixed-Head)	170 Kips (392 Kips)	290 Kips (592 Kips)
5-Foot Drilled	Free-Head (Fixed-Head)	264 Kips (602 Kips)	486 Kips (930 Kips)

6.4.4 Settlement

Our analyses indicate that the pile settlement under the allowable axial loads provided above will typically be less than ½ inch. For the liquefied condition, we checked the pile capacity and settlement under the service loads including post-liquefaction down drag loads. Provided that the new pile foundations are deepened to bear at least 10-feet within the old paralic deposits as recommended, we estimate that the total settlement of the new pile foundations (including down drag) will be less than 1 inch. Differential settlement is estimated at less than ¾ inch in 40 feet.

6.4.5 Pile Installation

If cast-in-drilled-hole (CIDH) piles are used, a temporary casing may be needed to reduce caving in the upper 35 feet of loose hydraulic fill soils. Since skin friction was neglected in this zone, the casing may be left in place (if desired) without reduction to the allowable capacities. However, any temporary casing placed below 35 feet in depth should be removed prior to concrete placement. Once the casings have been extended sufficiently into dense paralic deposits, the excavations may be able to proceed using drilling mud (wet methods). The pile capacities include end bearing, and efforts should be made to thoroughly clean the excavation bottoms prior to concrete placement.

Auger-cast piles may also be used to help reduce the potential for caving. The use of displacement auger cast piles will also help to reduce the amount of soil that will need to be exported from the site (compared to CIDH piles), which may be beneficial in the event that contaminated soils are encountered. However, it should be noted that consistently high quality piles may be more difficult to construct using the auger-cast method, since the on-site soil and groundwater will get mixed into the pile in that case. It has been our experience that auger cast pile concrete may end up with a relatively high water to cement ratio during construction, which may reduce the 28-day compressive strength of the auger cast pile concrete lower than anticipated. Samples of the actual concrete used to construct each pile should be fabricated and tested for compressive strength during construction to confirm the strength assumed for design.

Pile installation quality control should include monitoring of the construction of each pile with full time observation by Group Delta Consultants. Pile load tests are not recommended since a Factor of Safety of 2.0 was applied to shaft resistance, and a Factor of Safety of 3.0 was applied to end bearing. However, integrity tests should be performed on any drilled piles using sonic echo, cross-hole sonic, single-hole sonic, or gamma-gamma test methods. For driven piles, the axial capacity and drivability should be evaluated with indicator piles using a Pile Driving Analyzer (PDA).

6.4.6 Seismic Design

The shear wave velocity was measured at 5-foot depth intervals in CPT-2 using a geophone located in the tip of the cone penetrometer, as discussed in Section 2.0. The average shear wave velocity in the upper 100 feet of the soil profile at the site (Vs_{30}) was estimated at 240 m/s based on this data. The interval shear wave velocity data is presented in Appendix A.

Site specific spectra were developed using Next Generation Attenuation (NGA) relationships to approximate site effects, based on the average shear wave velocity of 240 m/s. Based on the findings of our investigation, it is our opinion that a 2016 CBC Site Class D will be most applicable to the general site conditions. The 2016 CBC Seismic Design Category is D. For a Seismic Design Category D, the MCE geometric mean (MCE_G) peak ground acceleration (PGA_M) is 0.559g, and the probabilistic MCE scaling factors (C_{RS} and C_{R1}) are 0.842 and 0.867, respectively.

Deterministic Spectra: The median deterministic response spectra for the ten closest known active faults are shown in Figure 5A. These spectra were developed using the Caltrans ARS Online tool and the associated spreadsheet (Caltrans, 2016). The deterministic response spectra incorporate Caltrans near source factors where applicable. Note that the upper bound of the deterministic site response is controlled by a Magnitude 7.2 (M_w) earthquake on either the Silver Strand or the Downtown Graben segments the Rose Canyon fault zone. The 84th percentile (MCE) spectrum shown in green in Figure 5A was obtained by multiplying the upper bound of the median deterministic response spectra by the scaling factors provided in Table C21.2-1 of the 2009 NEHRP Recommended Seismic Provisions. These scaling factors are used to estimate both the 84th percentile and the maximum rotated component of the deterministic spectra. The lower limit of the site specific 2016 CBC Deterministic MCE Response Spectrum for Site Class D is shown in blue in Figure 5A, along with selected ordinates from the MCE spectrum.

Probabilistic Spectra: A probabilistic seismic hazard analyses was conducted using the USGS seismic model (USGS, 2016). The uniform hazard response spectra associated with the *Design Basis, Upper Bound*, and *Maximum Considered Earthquakes* (MCE) are shown in Figure 5B. The recurrence intervals for these three spectra are about 475, 975 and 2,475 years, respectively. The probabilistic spectra have also been modified using the scaling factors from Table C21.2-1 of the 2009 NEHRP Recommended Seismic Provisions in order to determine the maximum rotated component of the spectral response. As required by the CBC, the probabilistic scaling factors (C_{RS} and C_{R1}) were also applied to the MCE spectrum per Section 21.2.1.1 of ASCE 7-10. These scaling factors are used to estimate the risk-targeted MCE_R spectrum which reflects a one percent probability of collapse in 50 years. The Maximum Considered Earthquake (MCE_R) spectrum shown with a dashed blue line in Figure 5B defines the 2016 CBC Probabilistic MCE Response Spectrum for Site Class D.

Design Spectra: Our site-specific hazard evaluation was conducted in general accordance with Section 21.2 of ASCE 7-10, which involves a comparison of the deterministic and probabilistic MCE response spectra described previously. The 2016 CBC Deterministic MCE Response Spectrum for Site Class D is shown in light blue in Figure 5C. The 2016 CBC Probabilistic MCE Response Spectrum for Site Class D is shown in dark blue in Figure 5C. The 2016 CBC Site Specific MCE Response Spectrum for Site Class D is the lower limit of the deterministic and probabilistic MCE spectra, as shown in dashed green in Figure 5C. The 2016 CBC Site Specific Design Spectrum for Site Class D is shown using a dashed black line in Figure 5C. Note that the design spectrum generally represents two-thirds of the 2016 CBC Site Specific MCE Response Spectrum shown in green, although it may not be taken as less than 80 percent of the USGS mapped spectrum shown in gray in Figure 5C.

The recommended 2016 CBC Site Specific Design Spectrum for Site Class D is shown in black in Figure 5C. This code shaped design spectrum is completely defined by the site specific short-period and one-second spectral design ordinates (S_{DS} and S_{D1}). The site specific spectral design ordinates S_{DS} and S_{D1} equal 0.665 and 0.642, respectively. The peak ground acceleration associated with the site specific design spectrum may be taken as 40 percent of S_{DS} or 0.266g. The site specific MCE parameters S_{MS} and S_{M1} are equal to 1½ times the site specific design values or 0.998 and 0.963, respectively. The recommended site specific MCE and design spectra are also shown in Table 2.

6.5 On-Grade Slabs

On-grade slabs should be designed by the project structural engineer. Building slabs should be at least 6 inches thick, and should be reinforced with at least No. 3 bars on 18-inch centers, each way. Slab thickness, control joints, and reinforcement should be designed by the structural engineer and should conform to the requirements of the current CBC. The bearing soils are anticipated to be predominately granular with a low expansion potential (EI<50). However, samples of the slab subgrade soils should be collected tested during construction to determine the Expansion Index. If moderately or highly expansive soils are encountered during grading at slab subgrade elevations, the clayey subgrade soil should be over-excavated two feet, and two feet of low expansion soils (EI<50) should be placed directly beneath the heave sensitive concrete slabs on-grade.

We understand that a 7-inch thick concrete slab is being considered for use within the warehouse to support the cement stockpiles and loader traffic. To help reduce the potential for cracking of the rigid slab due to continued soil settlement or heave, the 7-inch thick slab may be underlain by two feet of low expansion fill soil (EI<50), as discussed in Section 6.3.2. The concrete slab should also be isolated from the pile supported building foundations. However, based on our conversations with the property owner, we understand that the concrete slab may have a relatively short design life on the order to 10 to 20 years, and that the potential for some cracking and distress during that time period may be tolerable. In that case, the concrete slab-on-grade may be placed directly over the existing 3-inch thick asphalt concrete surface within the warehouse.

6.5.1 Moisture Protection for Slabs

During our site reconnaissance, we noted areas where the existing asphalt concrete surface within the warehouse appeared to be wet due to capillary rise from the underlying soil. Consequently, we understand that a true vapor barrier such as 15-mil StegoWrap is being considered beneath the new concrete pavement within the warehouse in order to help reduce the potential for moisture transmission that may adversely impact the cement stockpiles. Note that the addition of the 7-inch thick concrete slab should in itself help reduce moisture transmission. Some product manufacturers indicate that a properly installed and sealed vapor barrier such as 15-mil StegoWrap will transmit almost no moisture (less than 0.01 perms). It is our opinion that this vapor barrier will be equally effective if placed directly on soil beneath the new slab, or directly on the existing 3-inch thick asphalt concrete surface within the warehouse.

Concrete slabs constructed on grade ultimately cause the moisture content to rise in the underlying soil. This results from continued capillary rise and the termination of normal evapotranspiration. Because normal concrete is permeable, the moisture will eventually penetrate the slab. Excessive moisture may cause mildewed carpets, lifting or discoloration of floor tiles, or similar problems. To decrease the likelihood of problems related to damp slabs, suitable moisture protection measures should be used where moisture sensitive floor coverings, equipment, or other factors warrant.

The most common moisture barriers consist of two to four inches of clean sand covered by 'visqueen' plastic sheeting. Two inches of sand are placed over the plastic to decrease concrete curing problems. It has been our experience that such systems will transmit approximately 6 to 12 pounds of moisture per 1000 square feet per day. The design team should review the estimated moisture transmission rates, since these values may be excessive for some applications. The design team should specify an appropriate moisture barrier based on the allowable moisture transmission rate for the flooring. This may require a “vapor barrier” or a “vapor retarder”.

The American Concrete Institute provides detailed recommendations for moisture protection systems (ACI 302.1R-04). ACI defines a “vapor retarder” as having a minimum thickness of 10-mil, and a water transmission rate of less than 0.3 perms when tested per ASTM E96. ACI defines a “vapor barrier” as having a water transmission rate of 0.01 perms or less (such as a 15 mil StegoWrap). The vapor membrane should be constructed in accordance with ASTM E1643 and E1745 guidelines. All laps or seams should be overlapped at least 6 inches or per the manufacturer recommendations. Joints and penetrations should be sealed with pressure sensitive tape, or the manufacturer’s adhesive. The vapor membrane should be protected from puncture, and repaired per the manufacturer’s recommendations if damaged.

The vapor membrane is typically placed over 4 inches of granular material, although we understand that the membrane may be placed directly over the existing asphalt concrete surface in this case. If base is used, it should consist of a clean, fine graded sandy soil with roughly 10 to 30 percent passing the No. 100 sieve. The sand should not be contaminated with clay, silt, or organic material. The sand should be proof-rolled prior to placing the vapor membrane.

Based on current ACI recommendations, the concrete slab should be placed directly over the vapor membrane. The common practice of placing sand over the vapor membrane may increase moisture transmission through the slab, because it provides a reservoir for bleed water from the concrete to collect. The sand placed over the vapor membrane may also move during placement, resulting in an irregular slab thickness. When placing concrete directly on an impervious membrane, it should be noted that finishing delays may occur. Care should be taken to assure that a low water to cement ratio is used, and that the concrete is moist cured in accordance with ACI guidelines.

6.5.2 Exterior Slabs

Exterior slabs should be at least 4 inches thick. Crack control joints should be placed on a maximum spacing of 10-foot centers, each way. The potential for differential movements across the control joints may be reduced by using steel reinforcement. Typical reinforcement for exterior slabs would consist of 6x6 W2.9/W2.9 welded wire fabric placed securely at mid-height of the slab.

6.5.3 Expansive Soils

Based on the conditions in Boring B-1, we anticipate that the proposed excavations will generate clayey sand (SC) with a considerable amount of gravel. Laboratory tests indicate that these soils have a low expansion potential based on common criteria (EI<50). However, more expansive clays may also be encountered during construction, and may require mitigation measures on a case-by-case basis. The Expansion Index (EI) test results are shown in Figure B-2 in Appendix B.

6.5.4 Reactive Soils

In order to assess the sulfate exposure of concrete in contact with the site soils, a sample was tested for water-soluble sulfate content, as shown in Figure B-3. The test results indicate that the on-site soils have a *negligible* potential for sulfate attack based on commonly accepted criteria. The sulfate content of the finish grade soils should be determined during fine grading.

In order to assess the reactivity of the site soils with buried metals, the pH, resistivity and chloride contents were also determined (see Figure B-3). These tests suggest that the on-site soils are *severely corrosive* to buried metals, in large part due to a high chloride content. Typical corrosion control measures should be incorporated into design, such as providing minimum clearances between reinforcing steel and soil, or sacrificial anodes for buried metal structures. A corrosion consultant may be contacted for specific corrosion control recommendations.

6.6 Earth-Retaining Structures

Backfilling retaining walls with expansive soil can increase lateral pressures well beyond normal active or at-rest pressures. We recommend that new retaining walls be backfilled with soil that has an Expansion Index of 20 or less. The surficial on-site soil does not meet this criterion. Retaining wall backfill should be compacted to at least 90 percent relative compaction based on ASTM D1557. Backfill should not be placed until the retaining walls have achieved adequate strength. Heavy compaction equipment, which could cause distress to the walls, should not be used. For general wall design, an allowable bearing capacity of 2,000 lbs/ft^2, a coefficient of friction of 0.30, and a passive pressure of 300 psf per foot of depth is recommended.

6.6.1 Cantilever Walls

Cantilever retaining walls with level granular backfill (EI<20) may be designed using an active earth pressure approximated by an equivalent fluid pressure of 35 lbs/ft^3. The active pressure should be used for walls free to yield at the top at least ½ percent of the wall height. Any walls that are restrained so that such movement is not permitted should be designed for an at-rest earth pressure of 60 lbs/ft^3 (assuming level backfill). These pressures do not include seepage forces or surcharges. Surcharges within a 1:1 plane extending back and up from the base of the wall should be accounted for in the wall design. All retaining walls should contain adequate backdrains to relieve hydrostatic pressures. Typical wall drain details are shown in Figure 6A.

6.6.2 Seismic Wall Design

Per Section 1803.5.12 of the 2013 California Building Code (CBC), seismic design is required for all earth retaining structures over 6 feet in height. If a seismic wall design is conducted, we recommend using the Mononabe-Okabe solution which incorporates a pseudo-static horizontal load. According to the provisions of the 2016 CBC, the design level peak ground acceleration (PGA) may be taken as 40 percent of the site specific short period spectral ordinate (S_{DS} ~ 0.665) as shown in Table 1. One-half of the estimated peak ground acceleration is typically used for pseudo-static seismic wall design. We have provided seismic wall design parameters for a pseudo-static load of 0.28g in Figure 6B. The seismic load increment may be idealized as an inverted triangular pressure distribution with the resultant acting at a height of 0.6H above the base of the wall.

Note that the Mononabe-Okabe solution is based on the active earth pressure of 35 lb/ft^3, and requires that the retaining walls are free to yield. For restrained walls, we have recommended that static wall design be based on the at-rest earth pressure, which we have approximated by a fluid with an equivalent unit weight of 60 lb/ft^3 (assuming level backfill). We recommend that the equivalent seismic pressure increment shown in Figure 6B (γ_e ~26 PCF) be added to the at-rest earth pressure for seismic design of any restrained retaining walls at the site which are not free to yield at least ½ percent of the wall height.

6.7 Preliminary Pavement Design

Alternatives are provided for new asphalt concrete and Portland cement concrete pavements. In both cases, the upper 12 inches of pavement subgrade be scarified immediately prior to constructing the pavements, brought to optimum moisture, and compacted to at least 95 percent of the maximum dry density per ASTM D1557. All aggregate base should also be compacted to 95 percent of the maximum dry density. Aggregate base should conform to the Standard Specifications for Public Works Construction (*SSPWC),* Section 200-2. Asphalt concrete should conform to Section 400-4 of the *SSPWC* and should be compacted to at least 95 percent relative compaction based on the Hveem unit weight, or alternatively to between 91 and 97 percent relative compaction based on the Maximum Theoretical (Rice) unit weight.

6.7.1 Asphalt Concrete

Asphalt concrete pavement design was conducted in general accordance with the Caltrans Design Method (Topic 608.4). R-Value tests were conducted on a sample of the subgrade soil collected during the investigation in general accordance with CTM 301. The test results are presented in Figure B-7.1 and B-7.2 in Appendix B. The tests indicated a subgrade R-Value of 6, which is considered to be very poor subgrade support. The actual pavement section design may vary based on the actual subgrade R-Values determined during grading in the new pavement subgrade areas.

Traffic Indices (TI) of between 7.5 and 9.5 were assumed for preliminary design purposes. The associated Equivalent Single Axle Loads (ESAL) and Allowable Daily Truck Traffic (ADTT) are also shown in the table below for reference. A 20-year pavement design life was assumed. The project civil engineer should review the assumed TI, ESAL and ADTT to determine which pavement section would apply to the new improvements. Additional pavement section recommendations may be provided upon request.

TRAFFIC INDEX	EQUIVALENT SINGLE AXLE LOADS (ESAL)	ALLOWABLE DAILY TRUCK TRAFFIC (ADTT)	ASPHALT SECTION	BASE SECTION
7.5	216,080	30 Trucks/Day	4 Inches	18 Inches
8.0	371,660	50 Trucks/Day	5 Inches	18 Inches
8.5	618,580	85 Trucks/Day	5 Inches	20 Inches
9.0	1,000,000	137 Trucks/Day	6 Inches	20 Inches
9.5	1,575,140	215 Trucks/Day	6 Inches	22 Inches

6.7.2 Portland Cement Concrete

Concrete pavement design was also conducted in general accordance with the simplified design procedure of the Portland Cement Association. This methodology is also based on a 20-year design life. For design, it was assumed that the concrete pavements would be reinforced, and that the steel would provide positive load transfer across the control joints. The subgrade materials were assumed to provide "low" support based on the R-Value tests. Based on the assumptions described above, and using the same traffic indices presented previously, we recommend that the PCC pavement sections at the site consist of at least 6½ inches of concrete placed over 6 inches of compacted aggregate base. For heavier traffic volumes (Traffic Index of 8.5 to 9.5), 7 inches of concrete over 6 inches of aggregate base is recommended. For the new concrete slab beneath the cement stockpiles, 7 inches of concrete may be placed directly over the existing asphalt concrete.

Crack control joints should be constructed for PCC pavements on a maximum spacing of 10 feet. Concrete pavements for the truck lane in Option A should be reinforced using number 4 bars on 18-inch centers, each way. Note that crack control joints may be omitted if the slab is post-tensioned.

6.8 Pipelines

We anticipate that the development may include a variety of new pipelines or subsurface utilities located outside of the structure such as new water, electrical or communication systems. Geotechnical aspects of pipeline design include lateral earth pressures for thrust blocks, modulus of soil reaction, and pipe bedding. Each of these parameters is discussed separately below.

6.8.1 Thrust Blocks

Lateral resistance for thrust blocks may be determined by a passive pressure value of 300 lbs/ft^2 per foot of embedment, assuming a triangular distribution.

6.8.2 Modulus of Soil Reaction

The modulus of soil reaction (E') is used to characterize the stiffness of soil backfill placed along the sides of buried flexible pipelines. For the purpose of evaluating deflection due to the load associated with trench backfill over the pipe, a value of 2,000 lbs/in^2 is recommended for the general conditions, assuming granular bedding material is placed around the pipe.

6.8.3 Pipe Bedding

Typical pipe bedding as specified in the *Standard Specifications for Public Works Construction* may be used. As a minimum, we recommend that pipes be supported on at least 4 inches of granular bedding material such as minus ¾-inch crushed rock or disintegrated granite. Where pipeline or trench excavations exceed a 15 percent gradient, we do not recommend that open graded rock be used for bedding or backfill because of the potential for piping and internal erosion. For sloping utilities, we recommend that coarse sand or sand-cement slurry be used for the bedding and pipe zone. The slurry should consist of a 2-sack mix having a slump no greater than 5 inches.

6.9 Additional Field Work and Laboratory Testing

Additional field investigation and laboratory testing should be conducted for final design, once the location of the cement load out structures is finalized, and the nature of the feed pipe crossing at the access road is determined. The field work should include the drilling of one additional boring and one CPT sounding at the location of the load out structure if Option B is chosen (Option A has already been investigated). In addition, several explorations should be conducted at the location of the feed pipe crossing. If underground piping is used (Option 1), two shallow borings should be conducted, one on either end of the crossing. If an overhead pipe bridge will be used (Option 2), one additional boring and two CPT soundings should be conducted at the three proposed bridge support locations. The borings should extend to a minimum depth of 20 feet, or at least 20 feet below the anticipated pile tip levels. All of the CPT soundings should be advanced to refusal. Additional environmental and geotechnical laboratory testing should be conducted on samples collected from the borings, as needed. The results of the supplemental field investigation and laboratory tests should be presented in an updated Geotechnical Investigation Report.

7.0 LIMITATIONS

This report was prepared using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable geotechnical consultants practicing in similar localities. No warranty, express or implied, is made as to the conclusions and professional opinions included in this report.

The findings of this report are valid as of the present date. However, changes in the condition of a property can occur with the passage of time, whether due to natural processes or the work of man on this or adjacent properties. In addition, changes in applicable or appropriate standards of practice may occur 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.

8.0 REFERENCES

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TABLE 1 - 2016 CBC ACCELERATION RESPONSE SPECTRA (GENERAL PROCEDURE)

INPUT	S_S=	1.245	g = short period (0.2 sec) mapped spectral response acceleration MCE Site Class B (**CBC 2010 Fig. 1613.5(3) or USGS Ground Motion Calculator**)	**Site Latitude:**	32.6991
	S_1=	0.480	g = 1.0 sec period mapped spectral response acceleration MCE Site Class B (**CBC 2010 Fig. 1613.5(4) or USGS Ground Motion Calculator**)	**Site Longitude:**	-117.1558
	Site Class=	D	= Site Class definition based on **CBC 2010 Table 1613.5.2**	**Seismic Design Category:**	D
	F_a=	1.002	= Site Coefficient applied to S_s to account for soil type (**CBC 2010 Table 1613.5.3(1)**)	**PGA_M:**	0.559
	F_v=	1.520	= Site Coefficient applied to S_1 to account for soil type (**CBC 2010 Table 1613.5.3(2)**)	**C_{RS}:**	0.842
	T_L=	8.00	sec = Long Period Transition Period (**ASCE 7-05 Figure 22-16**)	**C_{R1}:**	0.867
OUTPUT	S_{MS}=	1.248	= site class modified short period (0.2 sec) MCE spectral response acceleration = F_a x S_s (**CBC 2010 Eqn. 16-36**)		
	S_{M1}=	0.730	= site class modified 1.0 sec period MCE spectral response acceleration = F_v x S_1 (**CBC 2010 Eqn. 16-37**)		
	S_{DS}=	0.832	= site class modified short period (0.2 sec) Design spectral response acceleration = 2/3 x S_{MS} (**CBC 2007 Eqn. 16-38**)		
	S_{D1}=	0.486	= site class modified 1.0 sec period Design spectral response acceleration = 2/3 x S_{M1} (**CBC 2007 Eqn. 16-39**)		
	T_0=	0.117	sec = 0.2 S_{D1}/S_{DS} = Control Period (left end of peak) for ARS Curve (Section 11.4.5 ASCE 7-05)		
	T_S=	0.585	sec = S_{D1}/S_{DS} = Control Period (right end of peak) for ARS Curve (Section 11.4.5 ASCE 7-05)		

SPECTRUM CALCULATION

T (seconds)	Design Sa (g)	MCE Sa (g)
0.000	0.333	0.499
0.117	0.832	1.248
0.585	0.832	1.248
0.600	0.811	1.216
0.700	0.695	1.042
0.800	0.608	0.912
0.900	0.540	0.811
1.000	0.486	0.730
1.100	0.442	0.663
1.200	0.405	0.608
1.300	0.374	0.561
1.400	0.347	0.521
1.500	0.324	0.486
1.600	0.304	0.456
1.700	0.286	0.429
1.800	0.270	0.405
1.900	0.256	0.384
2.000	0.243	0.365
2.100	0.232	0.347
2.200	0.221	0.332
2.300	0.211	0.317
2.400	0.203	0.304
2.500	0.195	0.292
2.600	0.187	0.281
2.700	0.180	0.270
2.800	0.174	0.261
2.900	0.168	0.252
3.000	0.162	0.243
3.100	0.157	0.235
3.200	0.152	0.228
3.300	0.147	0.221
3.400	0.143	0.215
3.500	0.139	0.208
3.600	0.135	0.203
3.700	0.131	0.197
3.800	0.128	0.192
3.900	0.125	0.187
4.000	0.122	0.182
5.000	0.097	0.146

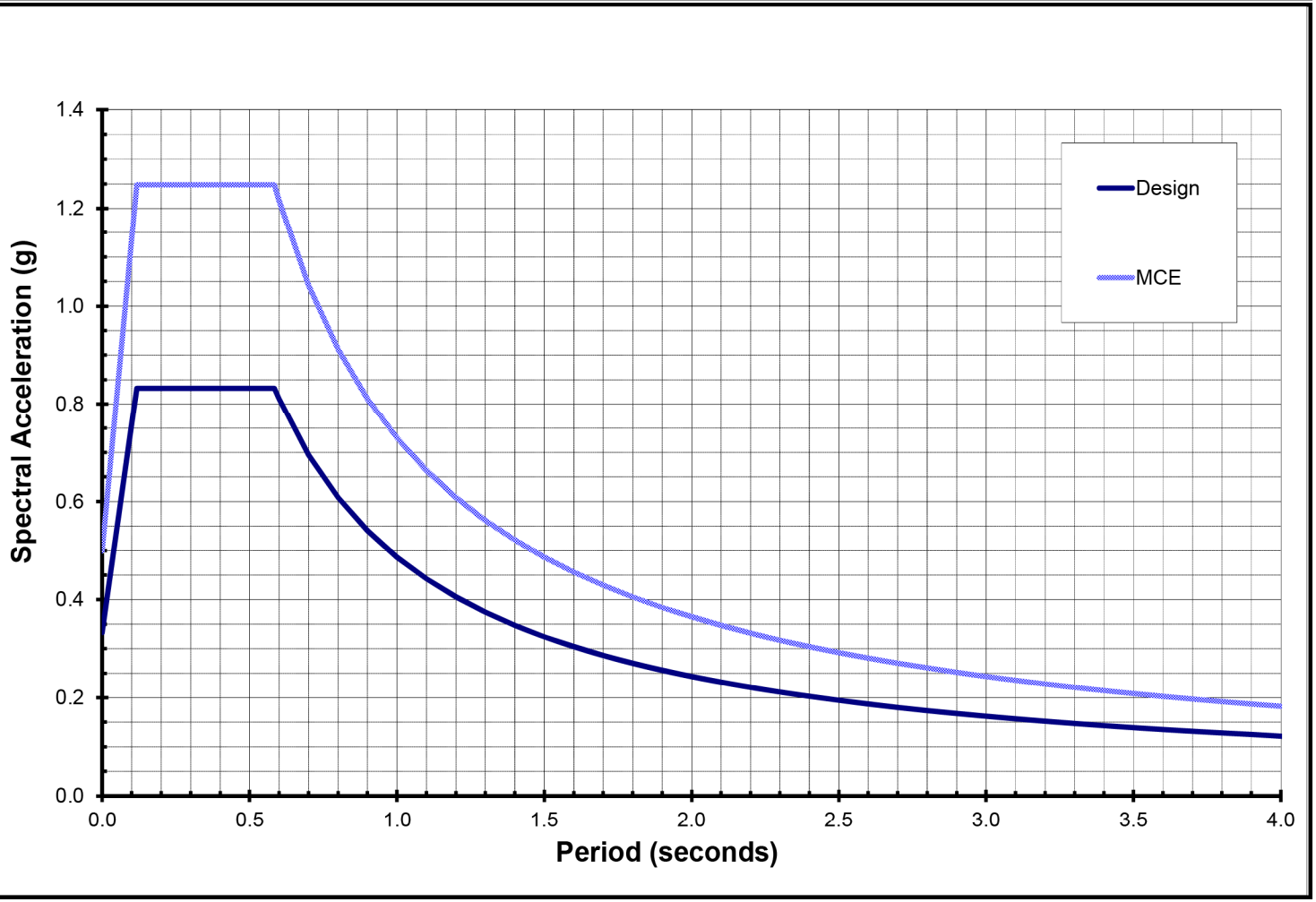
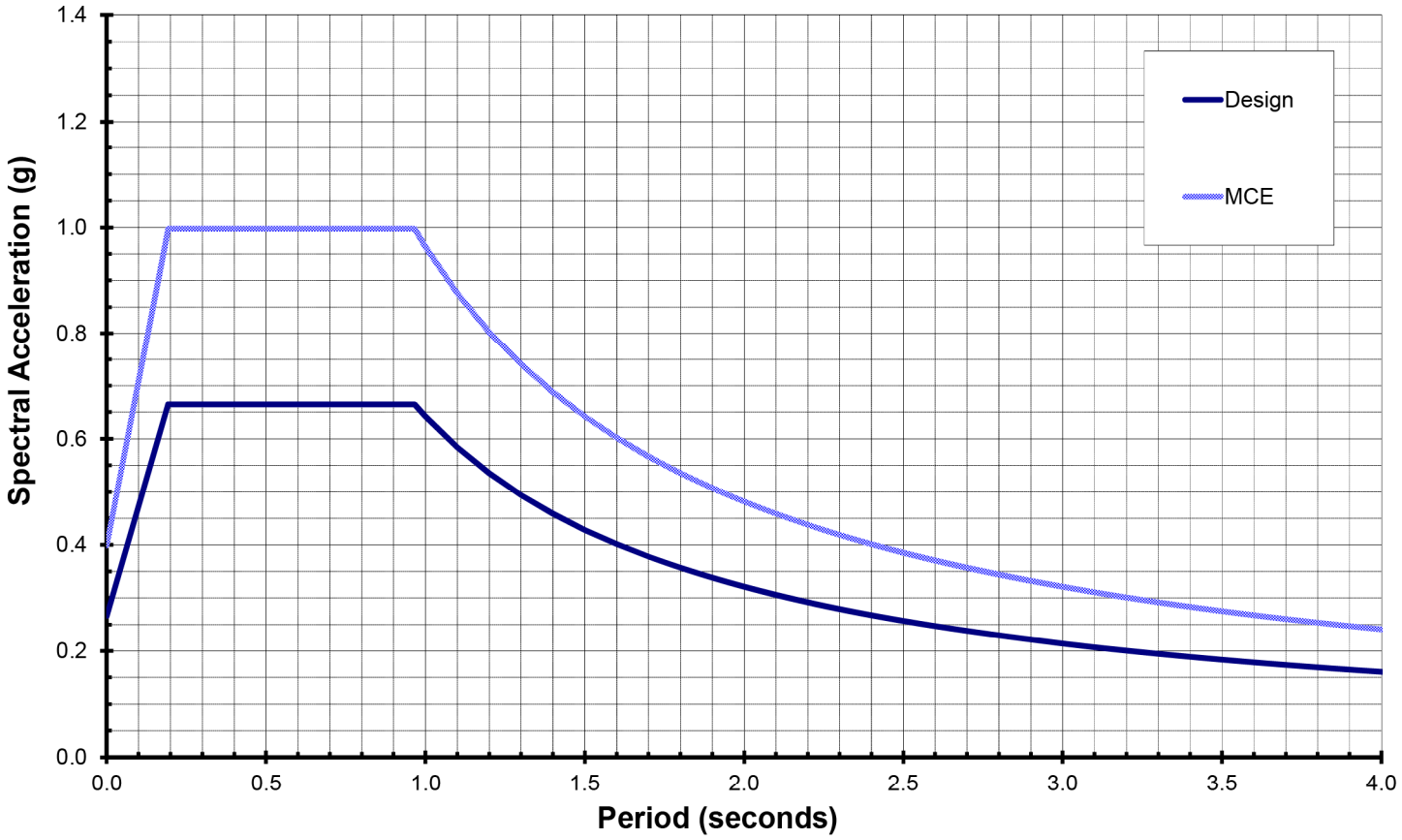


TABLE 2 - 2016 CBC ACCELERATION RESPONSE SPECTRA (SITE SPECIFIC)

INPUT	S_S=	1.245	g = short period (0.2 sec) mapped spectral response acceleration MCE Site Class B (**CBC 2010 Fig. 1613.5(3) or USGS Ground Motion Calculator**)	**Site Latitude:**	32.6991
	S_1=	0.480	g = 1.0 sec period mapped spectral response acceleration MCE Site Class B (**CBC 2010 Fig. 1613.5(4) or USGS Ground Motion Calculator)**	**Site Longitude:**	-117.1558
	Site Class=	D	= Site Class definition based on **CBC 2010 Table 1613.5.2**	**Seismic Design Category:**	D
	F_a=	1.002	= Site Coefficient applied to S_s to account for soil type (**CBC 2010 Table 1613.5.3(1)**)	**PGA_M:**	0.559
	F_v=	1.520	= Site Coefficient applied to S_1 to account for soil type (**CBC 2010 Table 1613.5.3(2)**)	**C_{RS}:**	0.842
	T_L=	8.00	sec = Long Period Transition Period (**ASCE 7-05 Figure 22-16**)	**C_{R1}:**	0.867
OUTPUT	S_{MS}=	0.998	= site class modified short period (0.2 sec) MCE spectral response acceleration = F_a x S_s (**CBC 2010 Eqn. 16-36**)		
	S_{M1}=	0.963	= site class modified 1.0 sec period MCE spectral response acceleration = F_v x S_1 (**CBC 2010 Eqn. 16-37**)		
	S_{DS}=	0.665	= site class modified short period (0.2 sec) Design spectral response acceleration = 2/3 x S_{MS} (**CBC 2007 Eqn. 16-38**)		
	S_{D1}=	0.642	= site class modified 1.0 sec period Design spectral response acceleration = 2/3 x S_{M1} (**CBC 2007 Eqn. 16-39**)		
	T_0=	0.193	sec = 0.2 S_{D1}/S_{DS} = Control Period (left end of peak) for ARS Curve (Section 11.4.5 ASCE 7-05)		
	T_S=	0.965	sec = S_{D1}/S_{DS} = Control Period (right end of peak) for ARS Curve (Section 11.4.5 ASCE 7-05)		

SPECTRUM CALCULATION

T (seconds)	Design Sa (g)	MCE Sa (g)
0.000	0.266	0.399
0.193	0.665	0.998
0.965	0.665	0.998
1.000	0.642	0.963
1.100	0.584	0.875
1.200	0.535	0.803
1.300	0.494	0.741
1.400	0.459	0.688
1.500	0.428	0.642
1.600	0.401	0.602
1.700	0.378	0.566
1.800	0.357	0.535
1.900	0.338	0.507
2.000	0.321	0.482
2.100	0.306	0.459
2.200	0.292	0.438
2.300	0.279	0.419
2.400	0.268	0.401
2.500	0.257	0.385
2.600	0.247	0.370
2.700	0.238	0.357
2.800	0.229	0.344
2.900	0.221	0.332
3.000	0.214	0.321
3.100	0.207	0.311
3.200	0.201	0.301
3.300	0.195	0.292
3.400	0.189	0.283
3.500	0.183	0.275
3.600	0.178	0.268
3.700	0.174	0.260
3.800	0.169	0.253
3.900	0.165	0.247
4.000	0.161	0.241
4.100	0.157	0.235
4.200	0.153	0.229
4.300	0.149	0.224
4.400	0.146	0.219
5.000	0.128	0.193



FIGURES

NO SCALE

GROUP DELTA

GROUP DELTA CONSULTANTS, INC.
ENGINEERS AND GEOLOGISTS
9245 ACTIVITY ROAD. SUITE 103
SAN DIEGO, CA 92126 (858) 536-1000

PROJECT NUMBER
SD458

DOCUMENT NUMBER
16-0033

PROJECT NAME
10th Avenue Terminal, Building C
Mitsubishi Cement Corporation

FIGURE NUMBER
1

SITE LOCATION MAP

NO SCALE

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ENGINEERS AND GEOLOGISTS
9245 ACTIVITY ROAD, SUITE 103
SAN DIEGO, CA 92126 (858) 536-1000

PROJECT NAME
10th Avenue Terminal, Building C
Mitsubishi Cement Corporation

PROJECT NUMBER
SD458

DOCUMENT NUMBER
16-0033

FIGURE NUMBER
1A

SITE LOCATION (OPTION A)

N

NO SCALE

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SAN DIEGO, CA 92126 (858) 536-1000

PROJECT NAME
10th Avenue Terminal, Building C
Mitsubishi Cement Corporation

PROJECT NUMBER
SD458

DOCUMENT NUMBER
16-0033

FIGURE NUMBER
1B

SITE LOCATION (OPTION B)

GROUP DELTA

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SAN DIEGO, CA 92126 (858) 536-1000

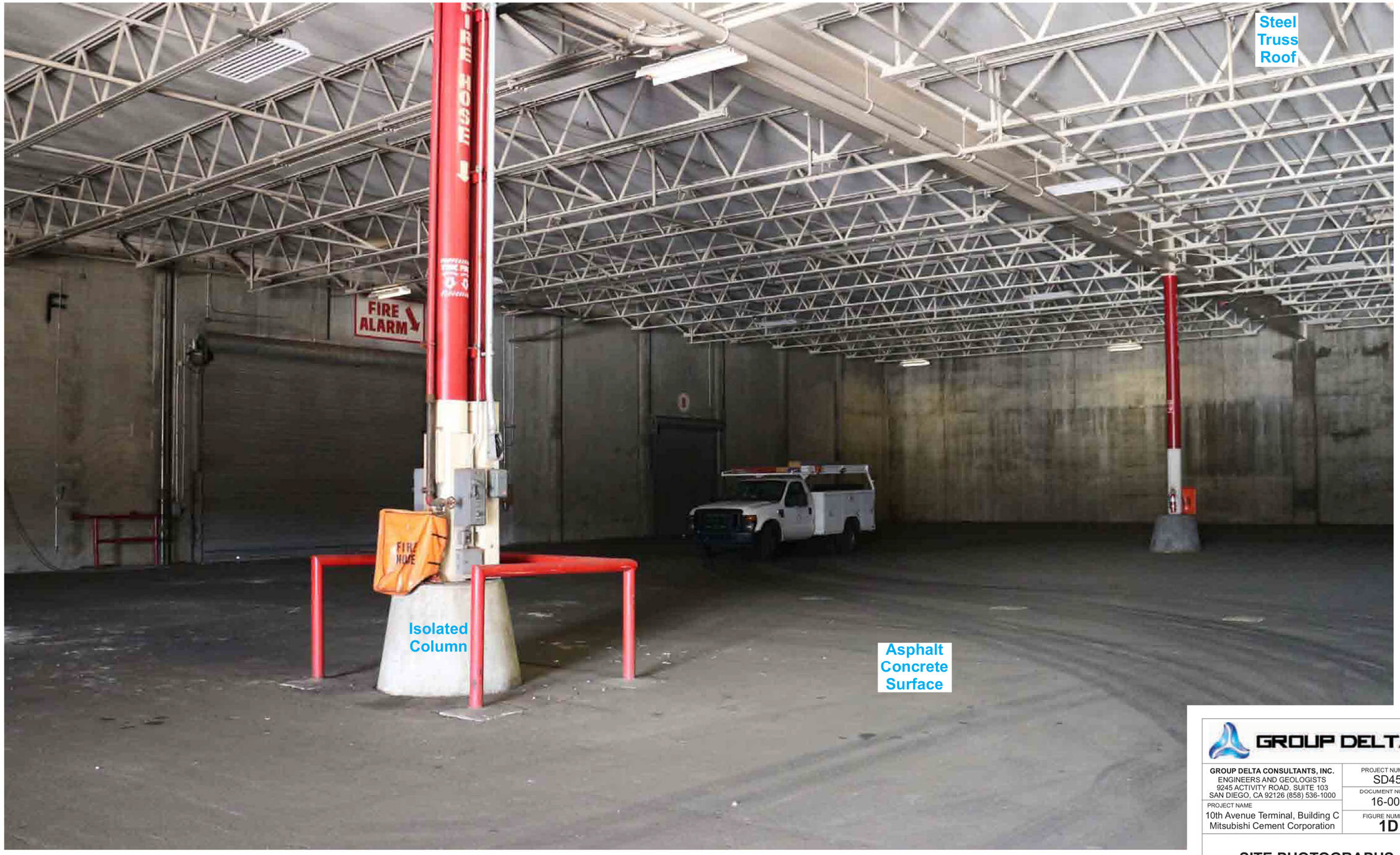
PROJECT NUMBER
SD458

DOCUMENT NUMBER
16-0033

PROJECT NAME
10th Avenue Terminal, Building C
Mitsubishi Cement Corporation

FIGURE NUMBER
1C

SITE PHOTOGRAPHS



GROUP DELTA

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9245 ACTIVITY ROAD, SUITE 103
SAN DIEGO, CA 92126 (858) 536-1000

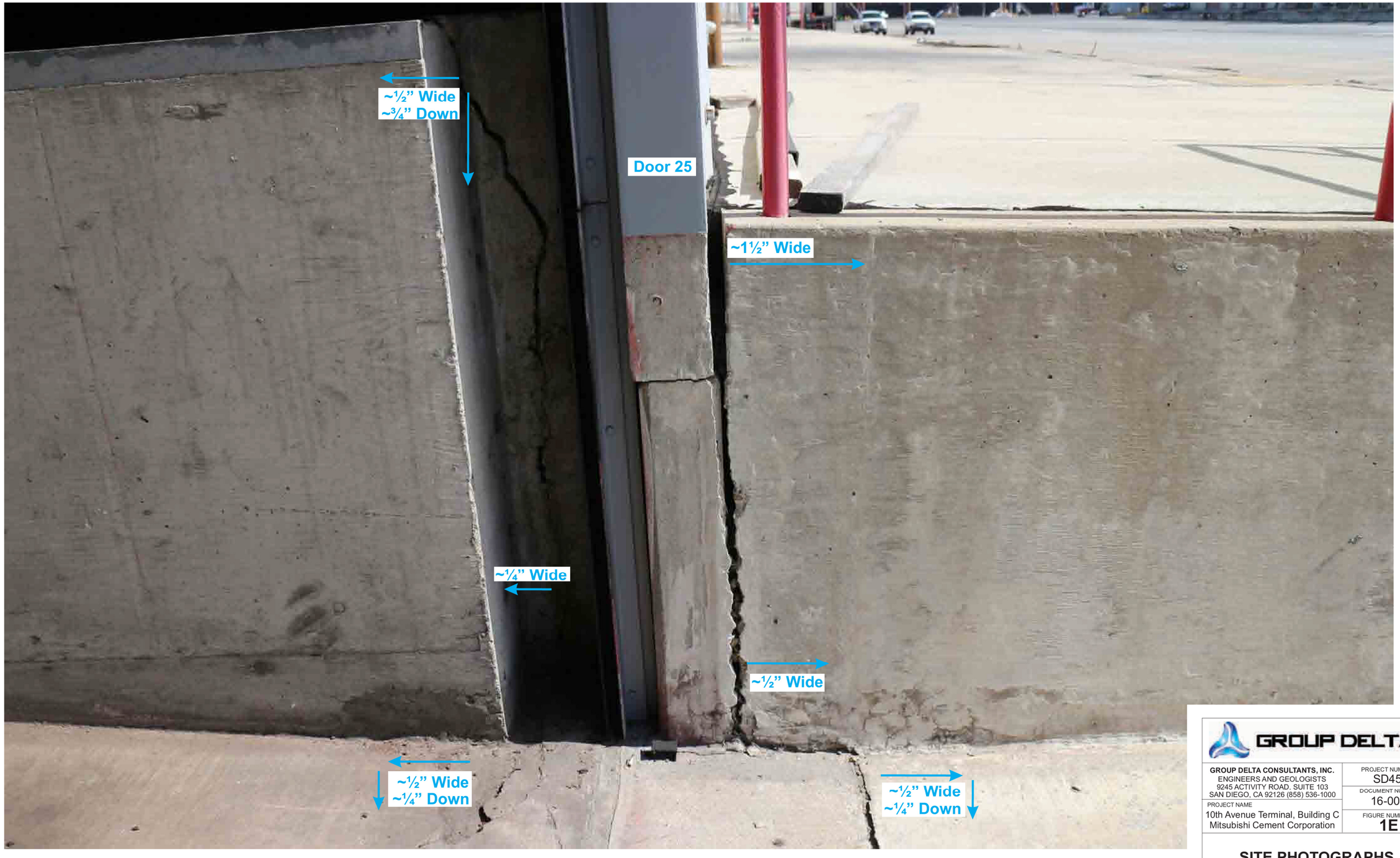
PROJECT NUMBER
SD458

DOCUMENT NUMBER
16-0033

PROJECT NAME
10th Avenue Terminal, Building C
Mitsubishi Cement Corporation

FIGURE NUMBER
1D

SITE PHOTOGRAPHS



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9245 ACTIVITY ROAD, SUITE 103
SAN DIEGO, CA 92126 (858) 536-1000

PROJECT NAME
10th Avenue Terminal, Building C
Mitsubishi Cement Corporation

PROJECT NUMBER
SD458

DOCUMENT NUMBER
16-0033

FIGURE NUMBER
1E

SITE PHOTOGRAPHS

GROUP DELTA

GROUP DELTA CONSULTANTS, INC.
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SAN DIEGO, CA 92126 (858) 536-1000

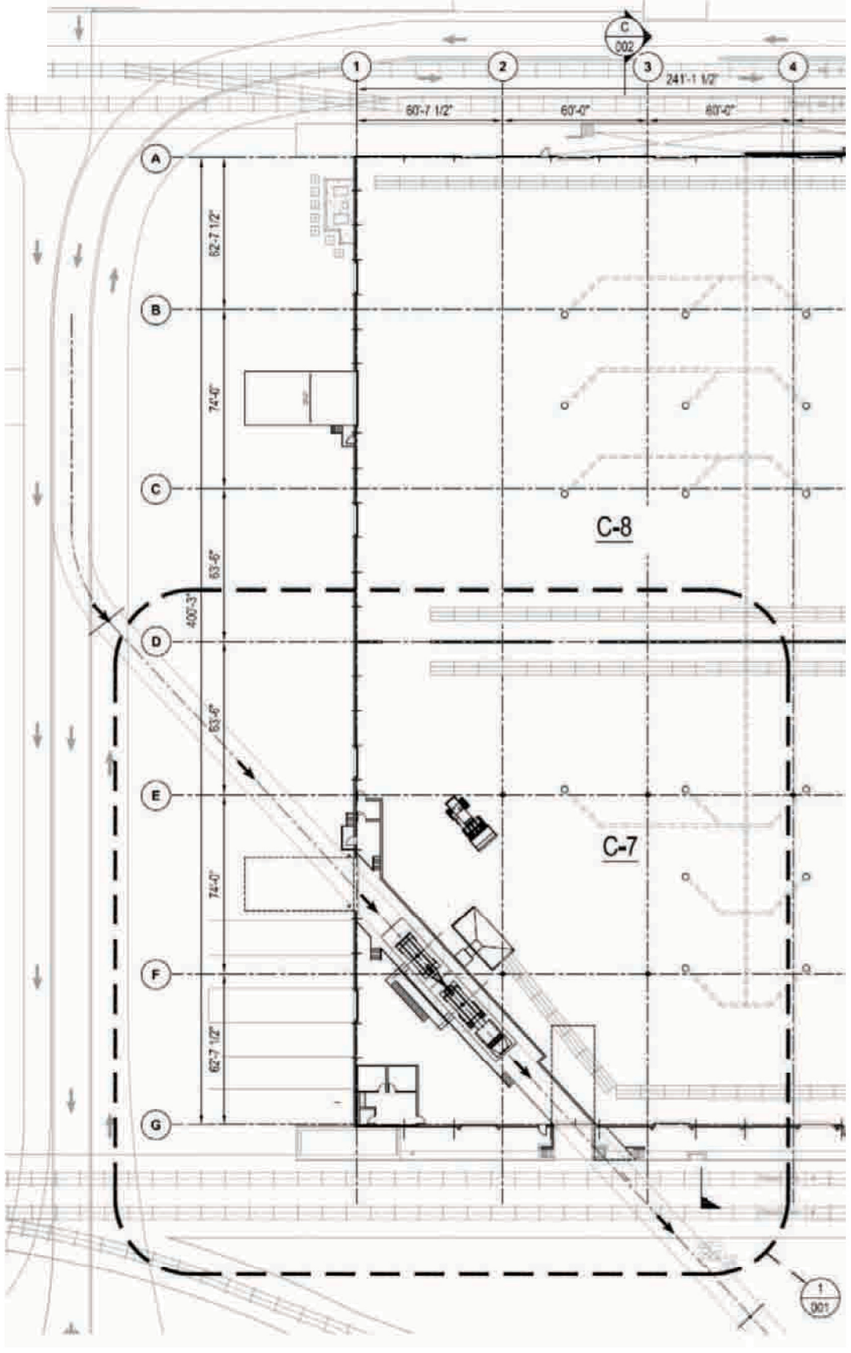
PROJECT NAME
10th Avenue Terminal, Building C
Mitsubishi Cement Corporation

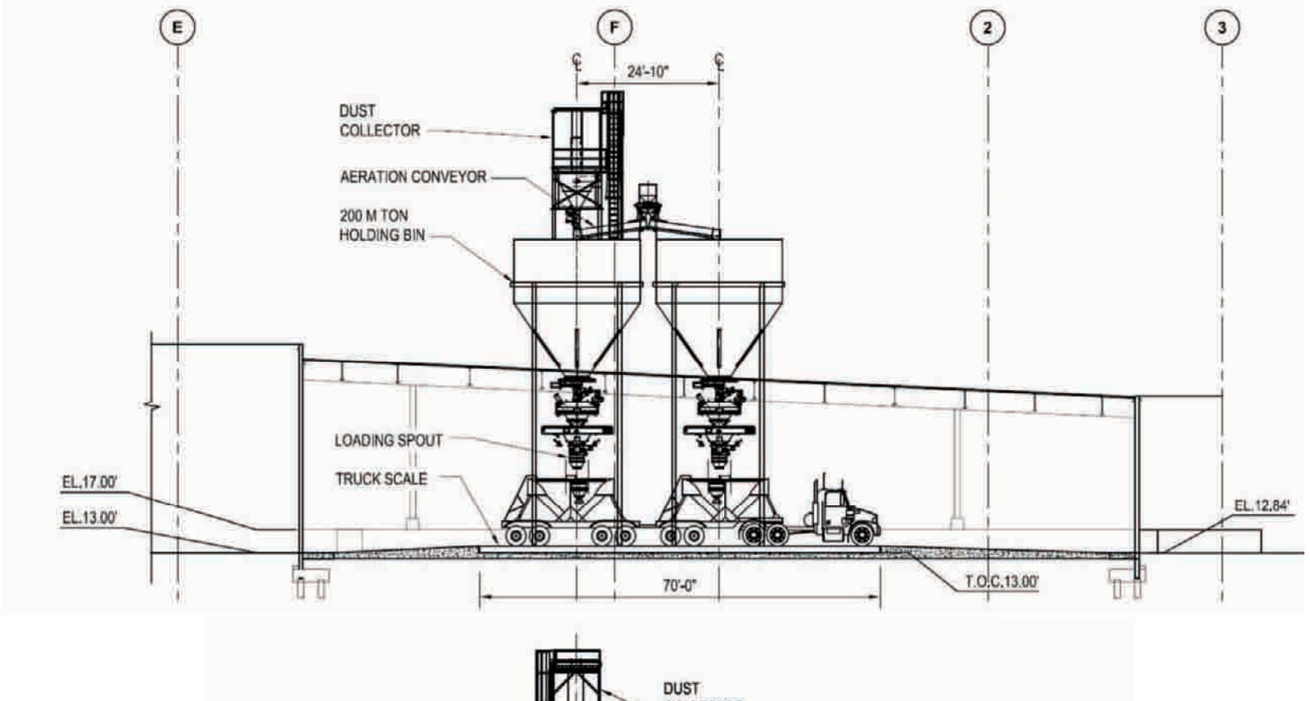
PROJECT NUMBER
SD458

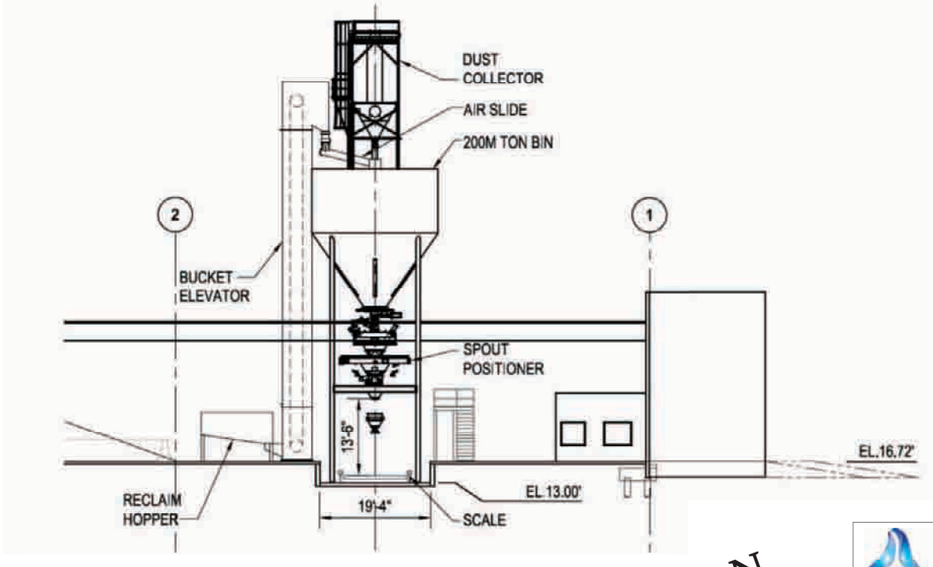
DOCUMENT NUMBER
16-0033

FIGURE NUMBER
1F

SITE PHOTOGRAPHS







REFERENCE: Mitsubishi Cement Corporation (2015). *San Diego Terminal Cement Unloading Facility - C7, General Arrangement Plan View*, 000-GA-002, August 31.

N

NO SCALE

GROUP DELTA

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PROJECT NUMBER
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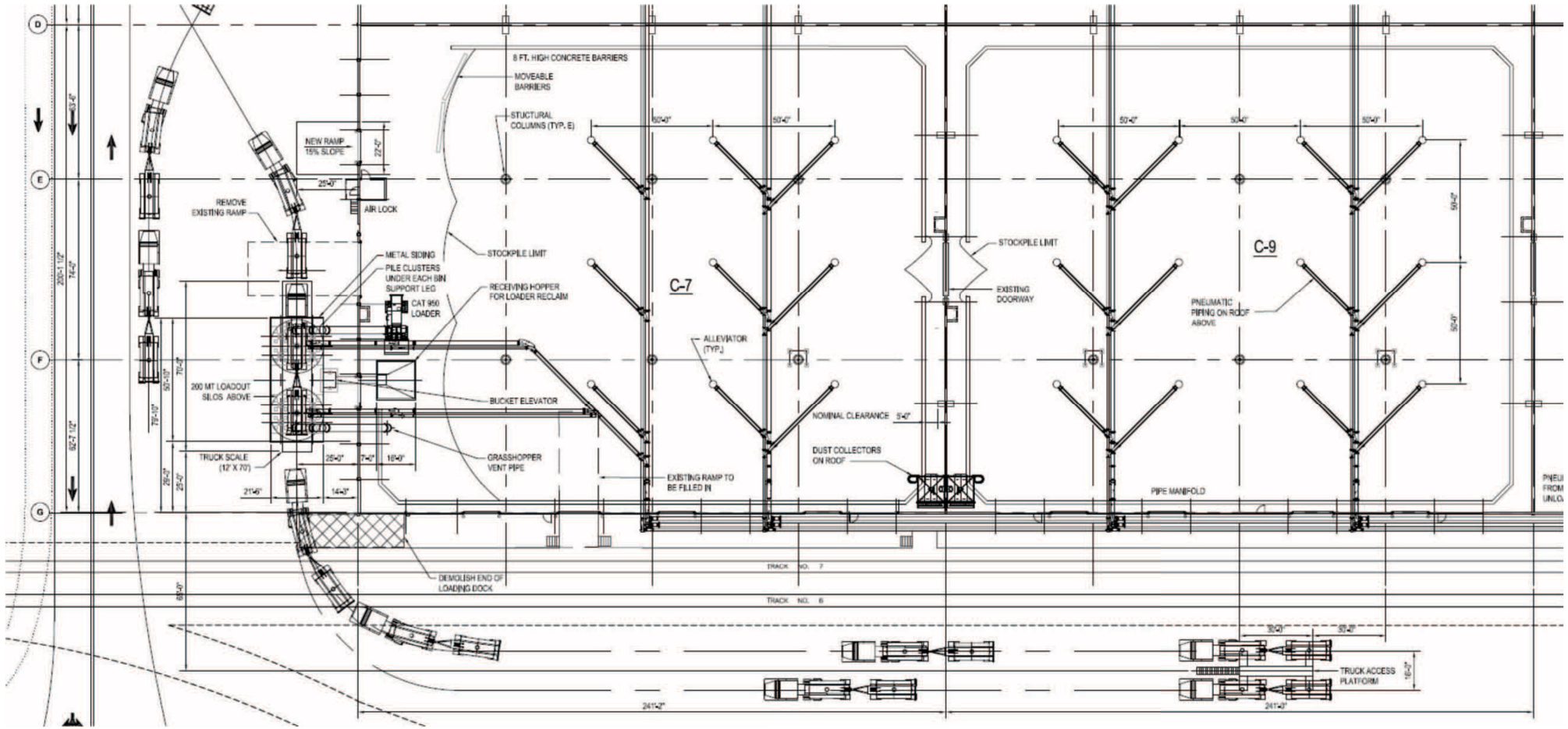
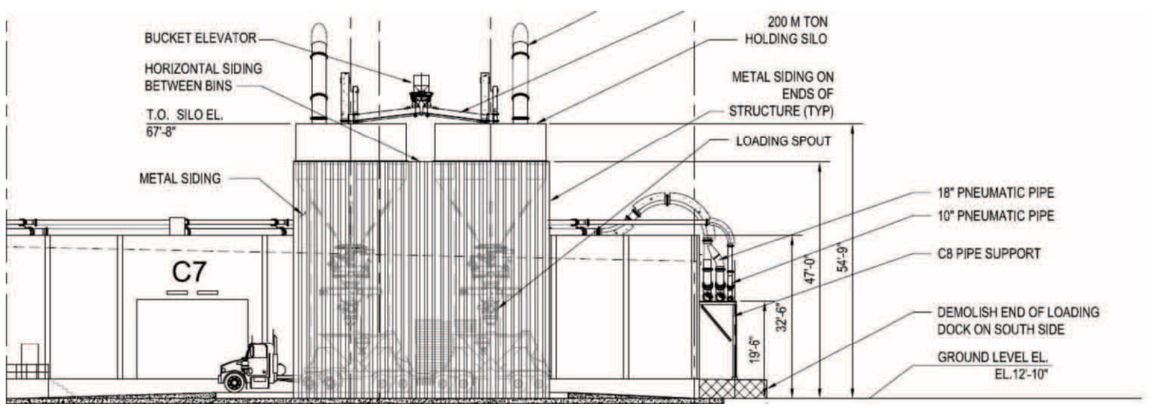
DOCUMENT NUMBER
16-0033

PROJECT NAME
10th Avenue Terminal, Building C
Mitsubishi Cement Corporation

FIGURE NUMBER
2A

DEVELOPMENT (OPTION A)





REFERENCE: Mitsubishi Cement Corporation (2017). *San Diego Terminal Cement Unloading Facility, General Arrangement, Plan View Stage 1 C7 & C9*, 000-GA-012, January 30.

NO SCALE

GROUP DELTA

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SAN DIEGO, CA 92126 (858) 536-1000

PROJECT NUMBER SD458

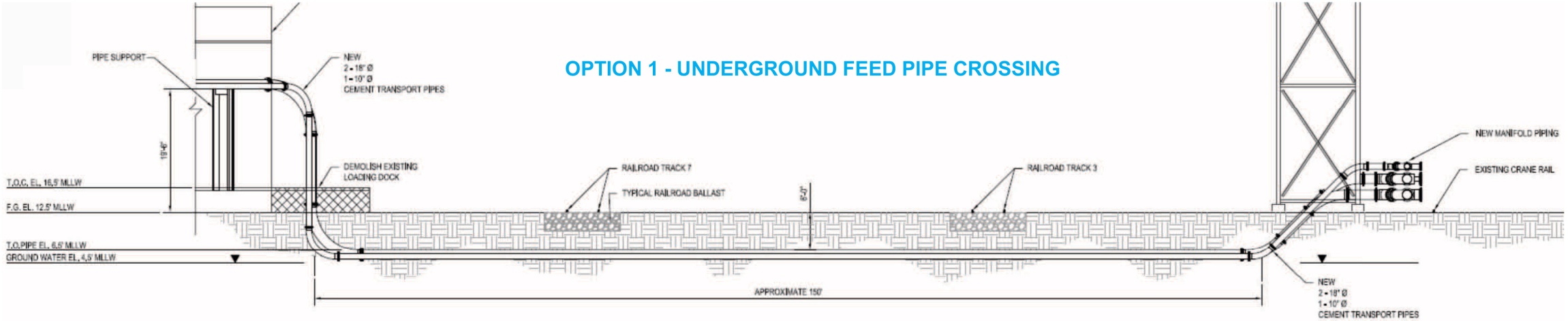
DOCUMENT NUMBER 16-0033

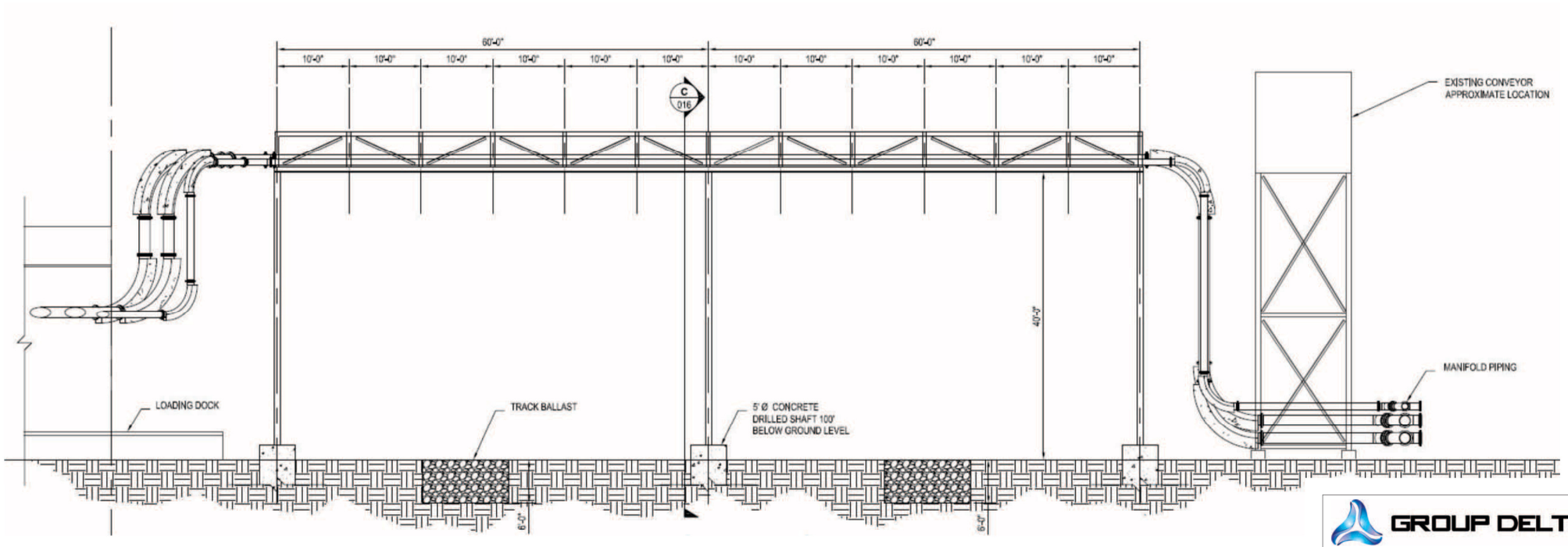
PROJECT NAME
10th Avenue Terminal, Building C
Mitsubishi Cement Corporation

FIGURE NUMBER **2B**

DEVELOPMENT (OPTION B)

OPTION 1 - UNDERGROUND FEED PIPE CROSSING





OPTION 2 - OVERHEAD FEED PIPE BRIDGE

REFERENCE: Mitsubishi Cement Corporation (2017). *San Diego Terminal Cement Unloading Facility, General Arrangement,* Drawing Nos. 000-GA-016 and 017, January 30.

NO SCALE

GROUP DELTA

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ENGINEERS AND GEOLOGISTS
9245 ACTIVITY ROAD, SUITE 103
SAN DIEGO, CA 92126 (858) 536-1000

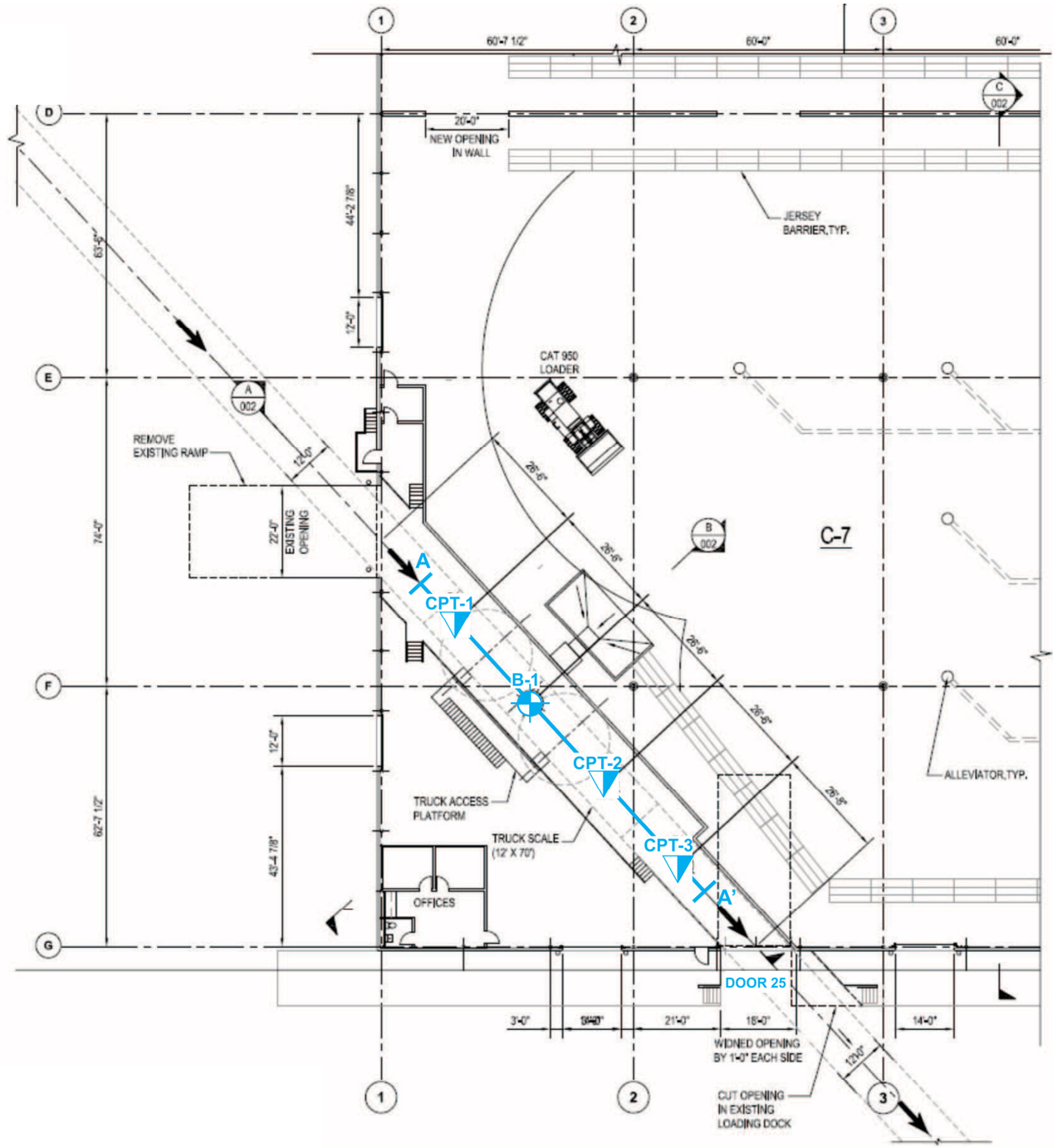
PROJECT NUMBER
SD458

DOCUMENT NUMBER
16-0033

PROJECT NAME
10th Avenue Terminal, Building C
Mitsubishi Cement Corporation

FIGURE NUMBER
2C

FEED PIPE CROSSING



EXPLANATION:

CPT-3 — Approximate locations of the 3 cone penetration test (CPT) soundings we conducted at the site (GDC, 2016).

B-1 — Approximate location of the one hollow stem auger boring we conducted within Warehouse C-7 (Group Delta, 2016).

Approximate location of geologic cross section (see Figure 3C).

REFERENCE: Mitsubishi Cement Corporation (2015). *San Diego Terminal Cement Unloading Facility - C7, General Arrangement Plan View*, SK00-GA-001.

N

NO SCALE

GROUP DELTA

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SAN DIEGO, CA 92126 (858) 536-1000

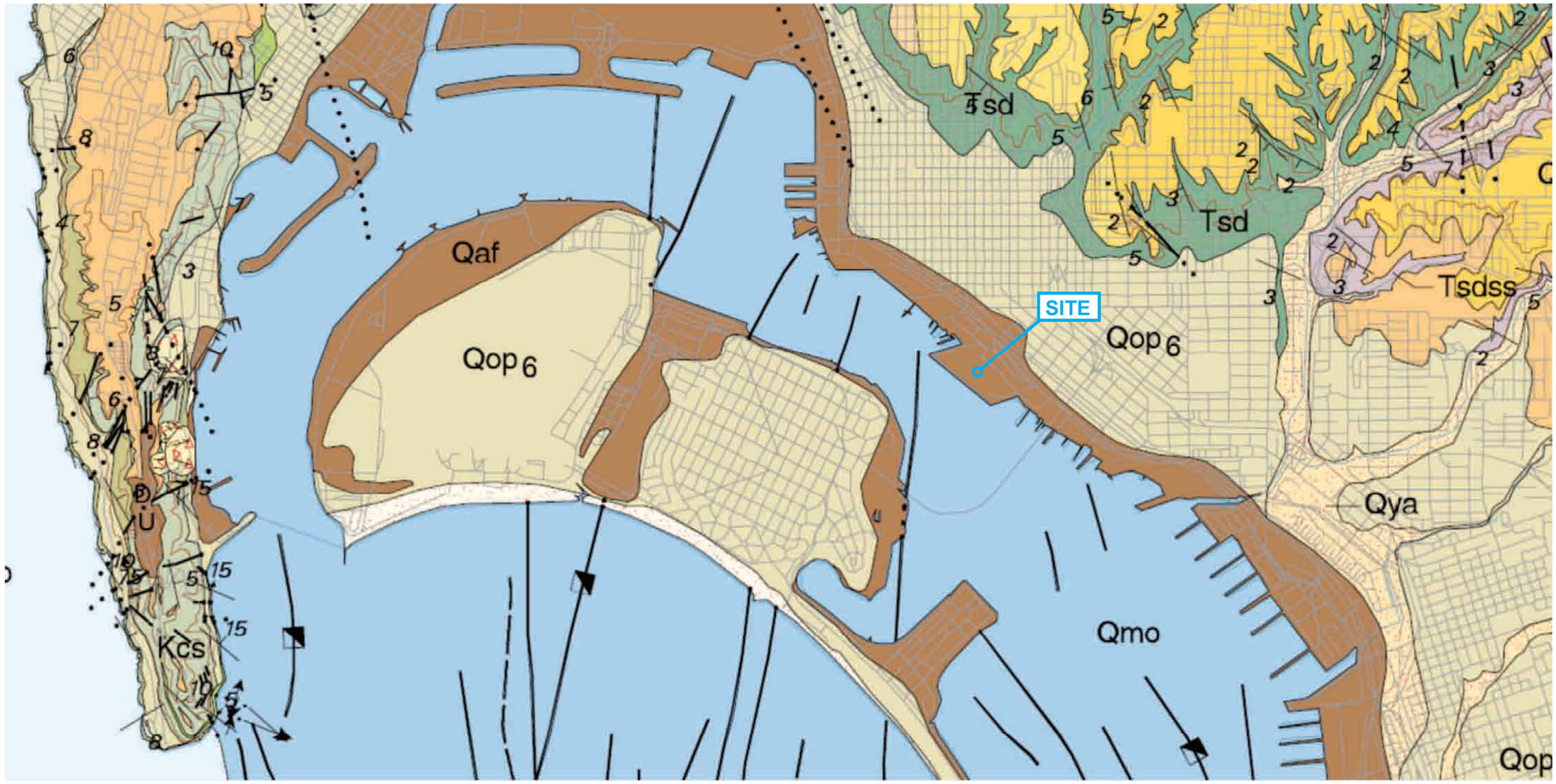
PROJECT NUMBER: SD458

DOCUMENT NUMBER: 16-0033

PROJECT NAME: 10th Avenue Terminal, Building C
Mitsubishi Cement Corporation

FIGURE NUMBER: 2D

EXPLORATION PLAN



EXPLANATION:

Qaf — **Artificial fill (late Holocene)**—Deposits of fill resulting from human construction, mining, or quarrying activities; includes compacted engineered and non compacted non engineered fill. Some large deposits are mapped, but in some areas no deposits are shown

Qop6 — **Old paralic deposits, Unit 6 (late to middle Pleistocene)**—Mostly poorly sorted, moderately permeable, reddish-brown, interfingered strandline, beach, estuarine and colluvial deposits composed of siltstone, sandstone and conglomerate.

REFERENCE: Kennedy et al. (2005). *Geologic Map of the San Diego 30'x60' Quadrangle, California*, California Geological Survey.

N

NO SCALE

GROUP DELTA

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9245 ACTIVITY ROAD, SUITE 103
SAN DIEGO, CA 92126 (858) 536-1000

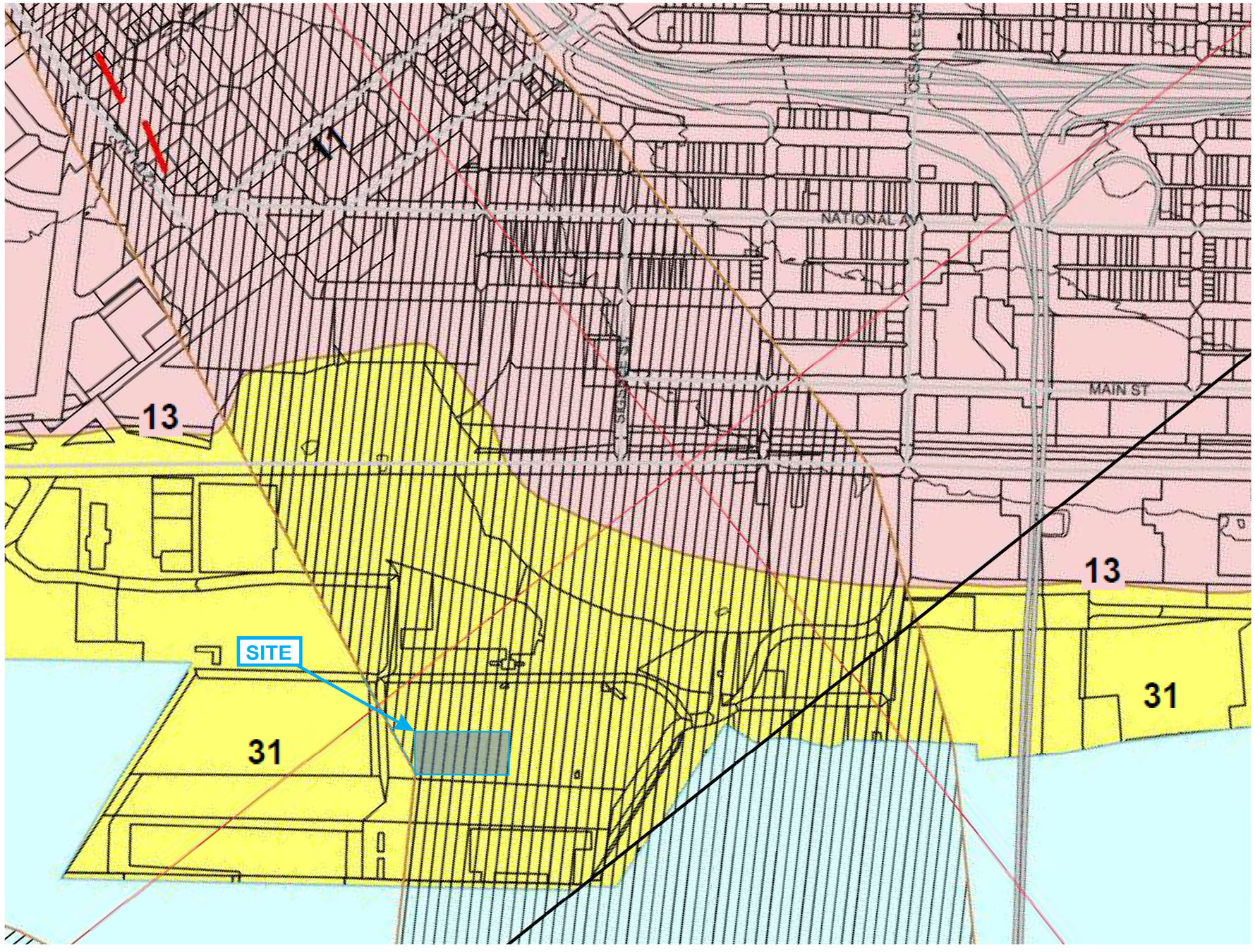
PROJECT NUMBER: SD458

DOCUMENT NUMBER: 16-0033

PROJECT NAME: 10th Avenue Terminal, Building C
Mitsubishi Cement Corporation

FIGURE NUMBER: **3A**

LOCAL GEOLOGIC MAP



LEGEND

Geologic Hazard Categories

FAULT ZONES

- 11 Active, Alquist-Priolo Earthquake Fault Zone
- 12 Potentially Active, Inactive, Presumed Inactive, or Activity Unknown
- 13 Downtown special fault zone

LIQUEFACTION

- 31 High Potential -- shallow groundwater major drainages, hydraulic fills
- 32 Low Potential -- fluctuating groundwater minor drainages

FAULTS

- Fault
- Inferred Fault
- Concealed Fault
- Shear Zone

N

NO SCALE

REFERENCE: City of San Diego (2008). *Seismic Safety Study, Geologic Hazards and Faults*, Grid Tiles 13 and 17, April 3.

GROUP DELTA

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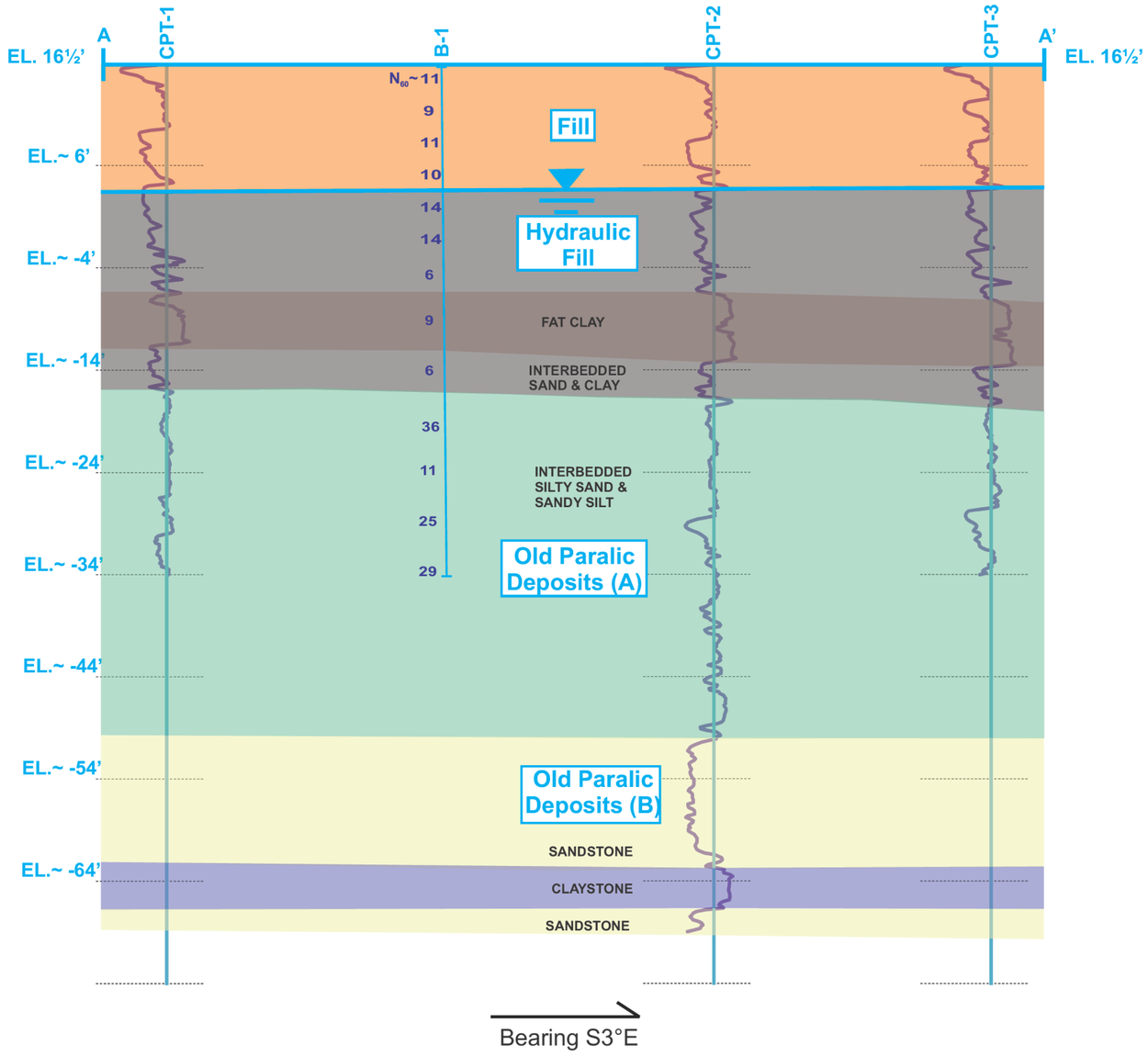
PROJECT NUMBER: SD458

DOCUMENT NUMBER: 16-0033

PROJECT NAME: 10th Avenue Terminal, Building C
Mitsubishi Cement Corporation

FIGURE NUMBER: **3B**

GEOLOGIC HAZARD MAP



EXPLANATION:

CPT-3 Approximate locations of the CPT soundings, with cone tip resistance (Qc) in purple (see Appendix A).

B-1 Approximate locations of the exploratory boring, with SPT blow counts (N_{60}) in purple (see Appendix A).

GROUP DELTA

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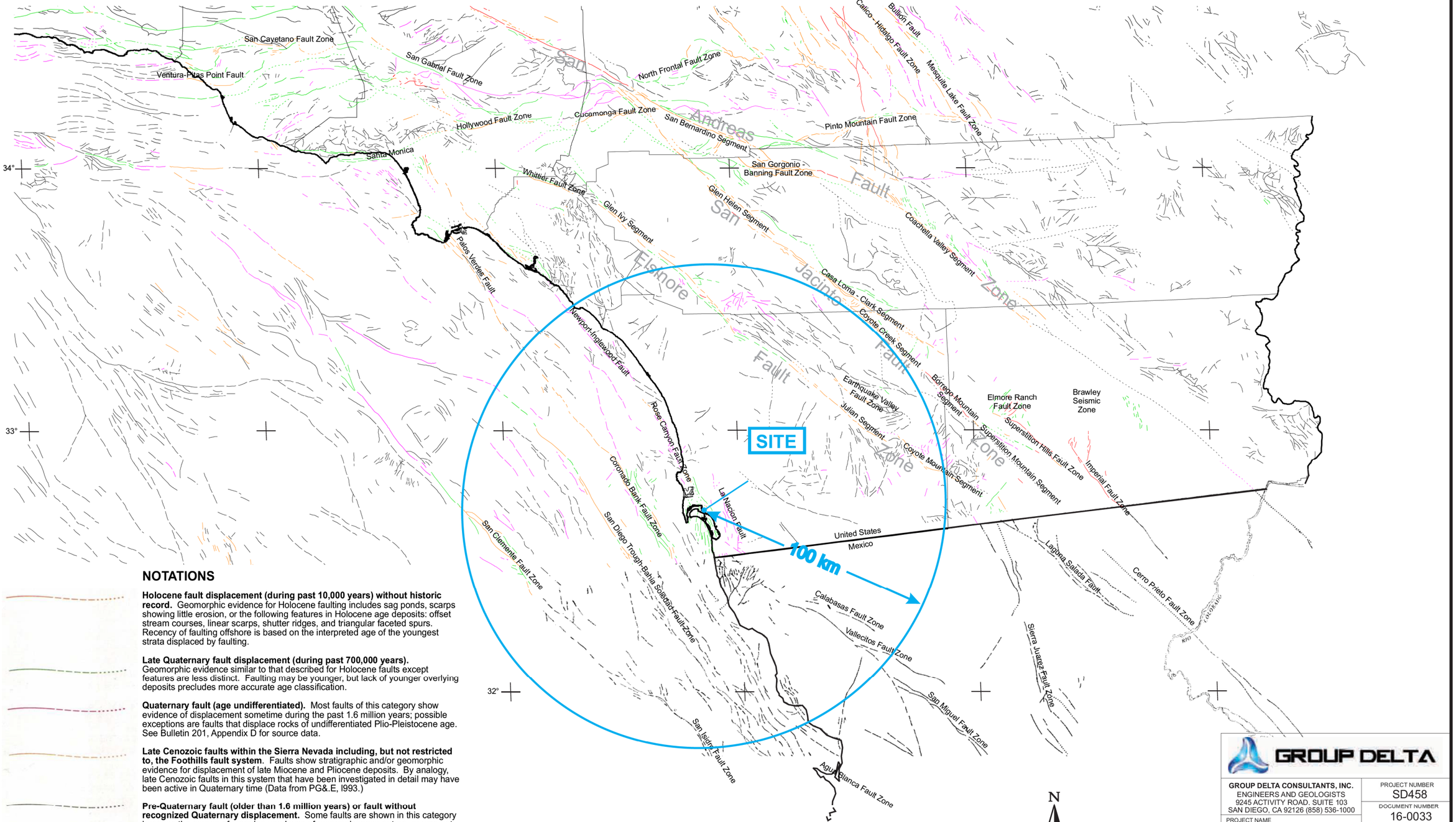
PROJECT NUMBER: SD458

DOCUMENT NUMBER: 16-0033

PROJECT NAME: 10th Avenue Terminal, Building C
Mitsubishi Cement Corporation

FIGURE NUMBER: 3C

CROSS SECTION A-A'



NOTATIONS

Holocene fault displacement (during past 10,000 years) without historic record. Geomorphic evidence for Holocene faulting includes sag ponds, scarps showing little erosion, or the following features in Holocene age deposits: offset stream courses, linear scarps, shutter ridges, and triangular faceted spurs. Recency of faulting offshore is based on the interpreted age of the youngest strata displaced by faulting.

Late Quaternary fault displacement (during past 700,000 years). Geomorphic evidence similar to that described for Holocene faults except features are less distinct. Faulting may be younger, but lack of younger overlying deposits precludes more accurate age classification.

Quaternary fault (age undifferentiated). Most faults of this category show evidence of displacement sometime during the past 1.6 million years; possible exceptions are faults that displace rocks of undifferentiated Plio-Pleistocene age. See Bulletin 201, Appendix D for source data.

Late Cenozoic faults within the Sierra Nevada including, but not restricted to, the Foothills fault system. Faults show stratigraphic and/or geomorphic evidence for displacement of late Miocene and Pliocene deposits. By analogy, late Cenozoic faults in this system that have been investigated in detail may have been active in Quaternary time (Data from PG&.E, l993.)

Pre-Quaternary fault (older than 1.6 million years) or fault without recognized Quaternary displacement. Some faults are shown in this category because the source of mapping used was of reconnaissance nature, or was not done with the object of dating fault displacements. Faults in this category are not necessarily inactive.

REFERENCE: Jennings, C.W. (1994). *Fault Activity Map of California and Adjacent Areas with Locations and Ages of Recent Volcanic Eruptions*, Map No. 6

N

0 10 20 30 40 50 60
SCALE (KM)

GROUP DELTA

GROUP DELTA CONSULTANTS, INC.
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9245 ACTIVITY ROAD. SUITE 103
SAN DIEGO, CA 92126 (858) 536-1000

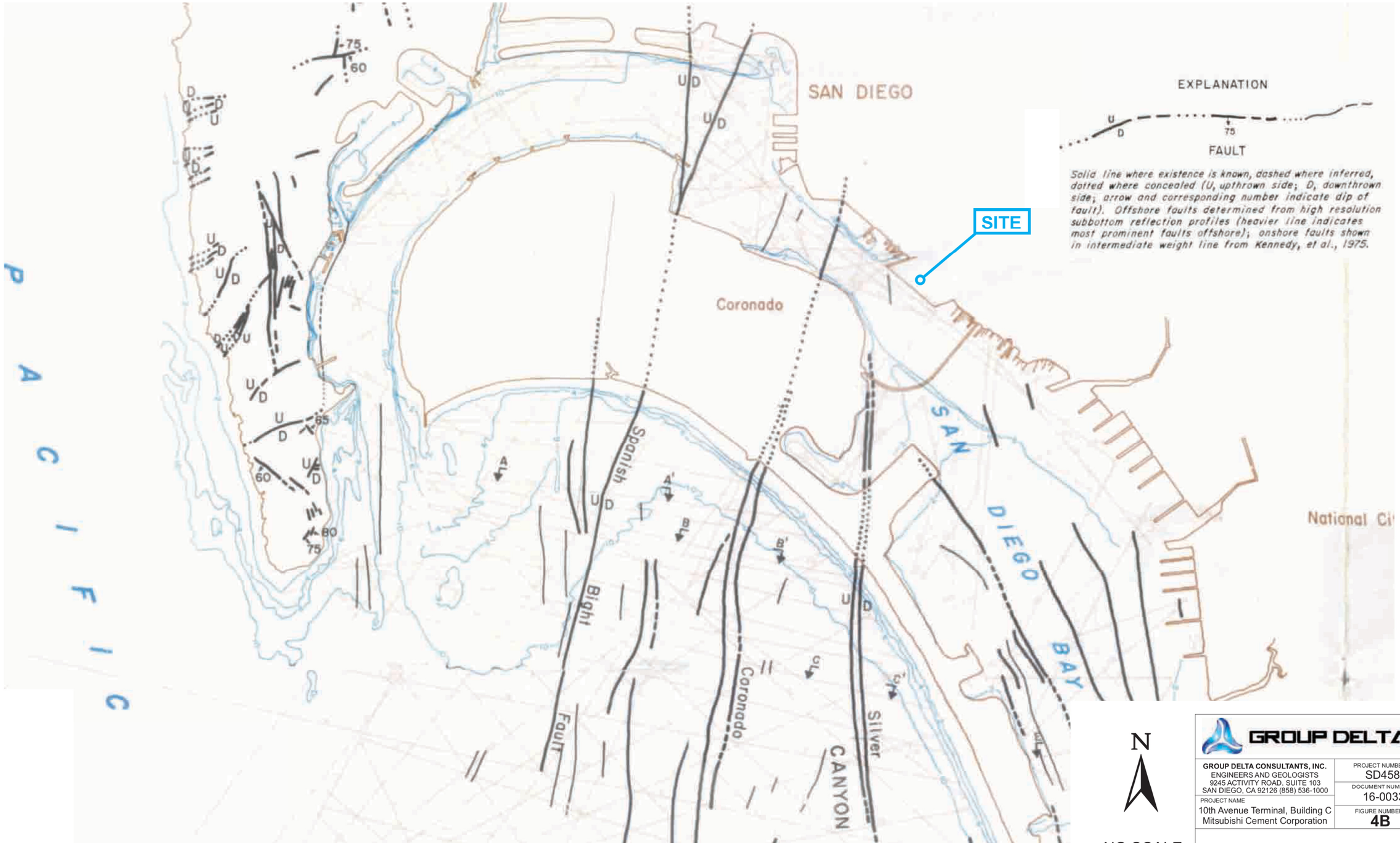
PROJECT NUMBER
SD458

DOCUMENT NUMBER
16-0033

PROJECT NAME
10th Avenue Terminal, Building C
Mitsubishi Cement Corporation

FIGURE NUMBER
4A

REGIONAL FAULT MAP



REFERENCE: Kennedy and Peterson (1980). *Recency and Character of Faulting, Offshore Metropolitan San Diego, California, CDMG Special Report 123, Map Sheet 40.*

N

NO SCALE

GROUP DELTA

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9245 ACTIVITY ROAD. SUITE 103
SAN DIEGO, CA 92126 (858) 536-1000

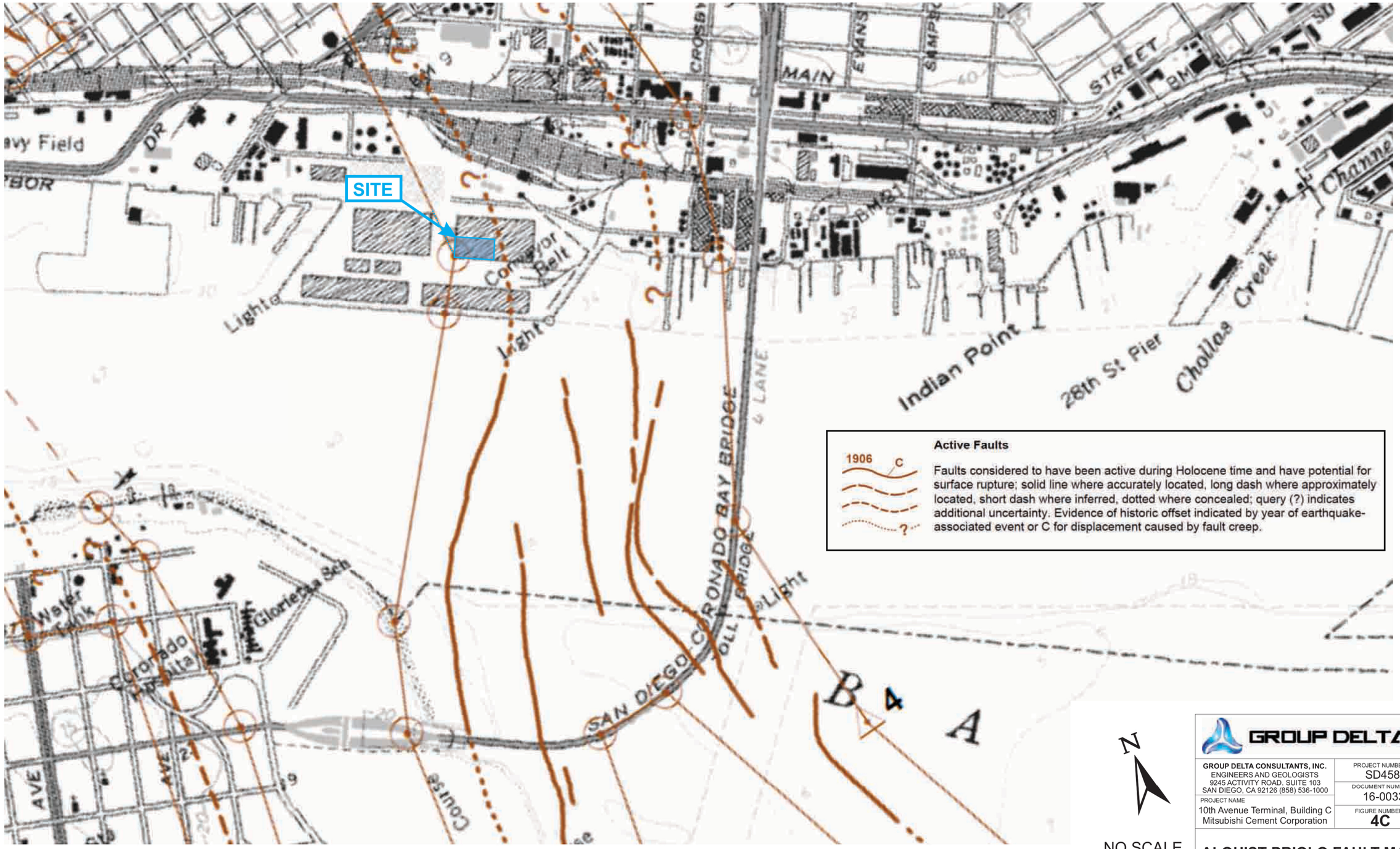
PROJECT NUMBER: SD458

DOCUMENT NUMBER: 16-0033

PROJECT NAME: 10th Avenue Terminal, Building C
Mitsubishi Cement Corporation

FIGURE NUMBER: **4B**

LOCAL FAULT MAP

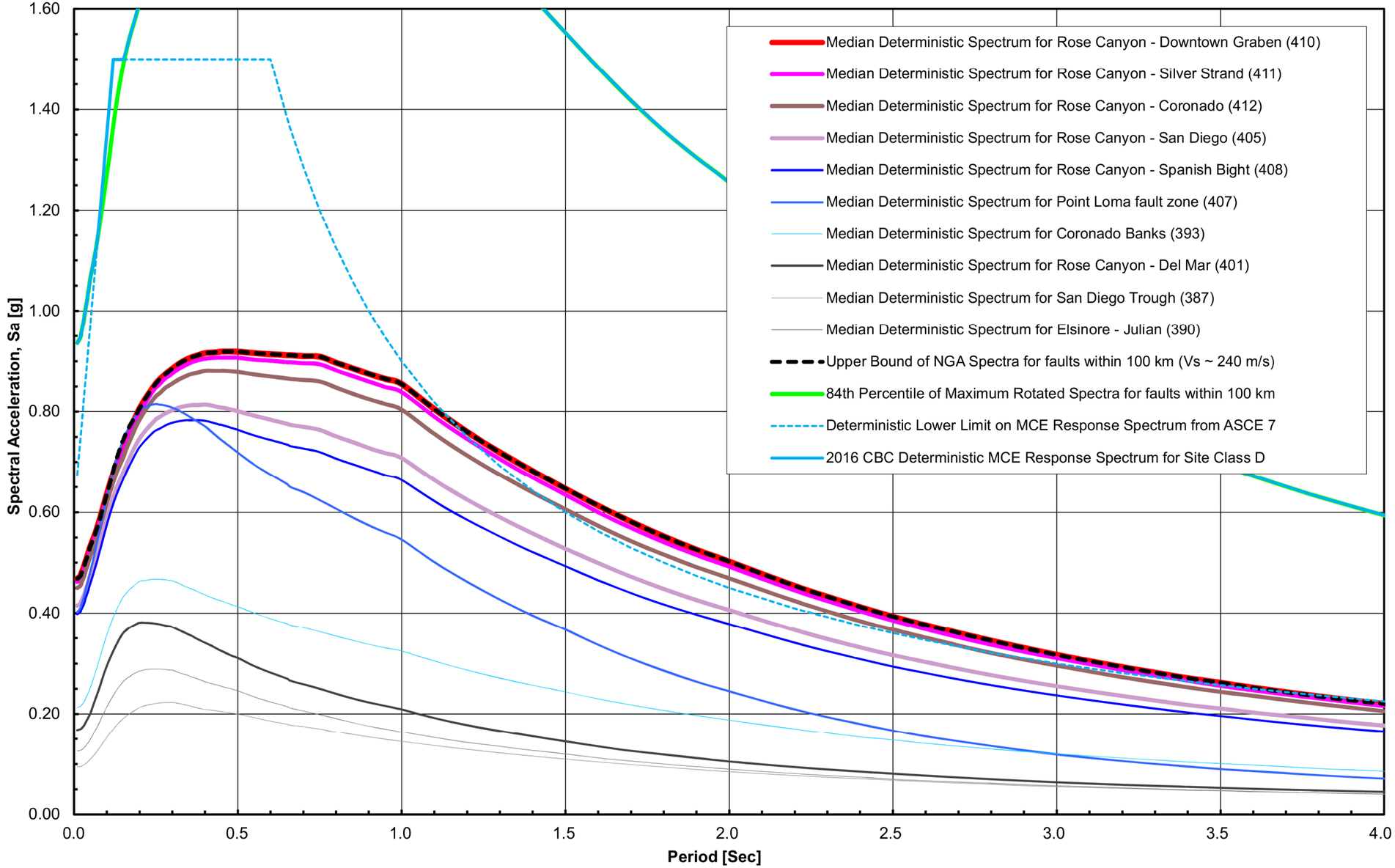


REFERENCE: State of California (2003). *Earthquake Fault Zones, Point Loma Quadrangle*, May 1

GROUP DELTA

GROUP DELTA CONSULTANTS, INC. ENGINEERS AND GEOLOGISTS 9245 ACTIVITY ROAD, SUITE 103 SAN DIEGO, CA 92126 (858) 536-1000	PROJECT NUMBER SD458
	DOCUMENT NUMBER 16-0033
PROJECT NAME 10th Avenue Terminal, Building C Mitsubishi Cement Corporation	FIGURE NUMBER **4C**

ALQUIST-PRIOLO FAULT MAP



2016 CBC MCE Spectrum

Period [Sec]	Sa [g]
0.00	0.936
0.05	1.066
0.10	1.350
0.15	1.500
0.20	1.612
0.25	1.712
0.30	1.770
0.40	1.878
0.50	1.930
0.75	2.008
1.00	1.967
1.50	1.553
2.00	1.255
2.50	1.002
3.00	0.824
3.50	0.694
4.00	0.594
4.50	0.512
5.00	0.446

GROUP DELTA

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ENGINEERS AND GEOLOGISTS
9245 ACTIVITY ROAD. SUITE 103
SAN DIEGO, CA 92126 (858) 536-1000

PROJECT NUMBER: SD458

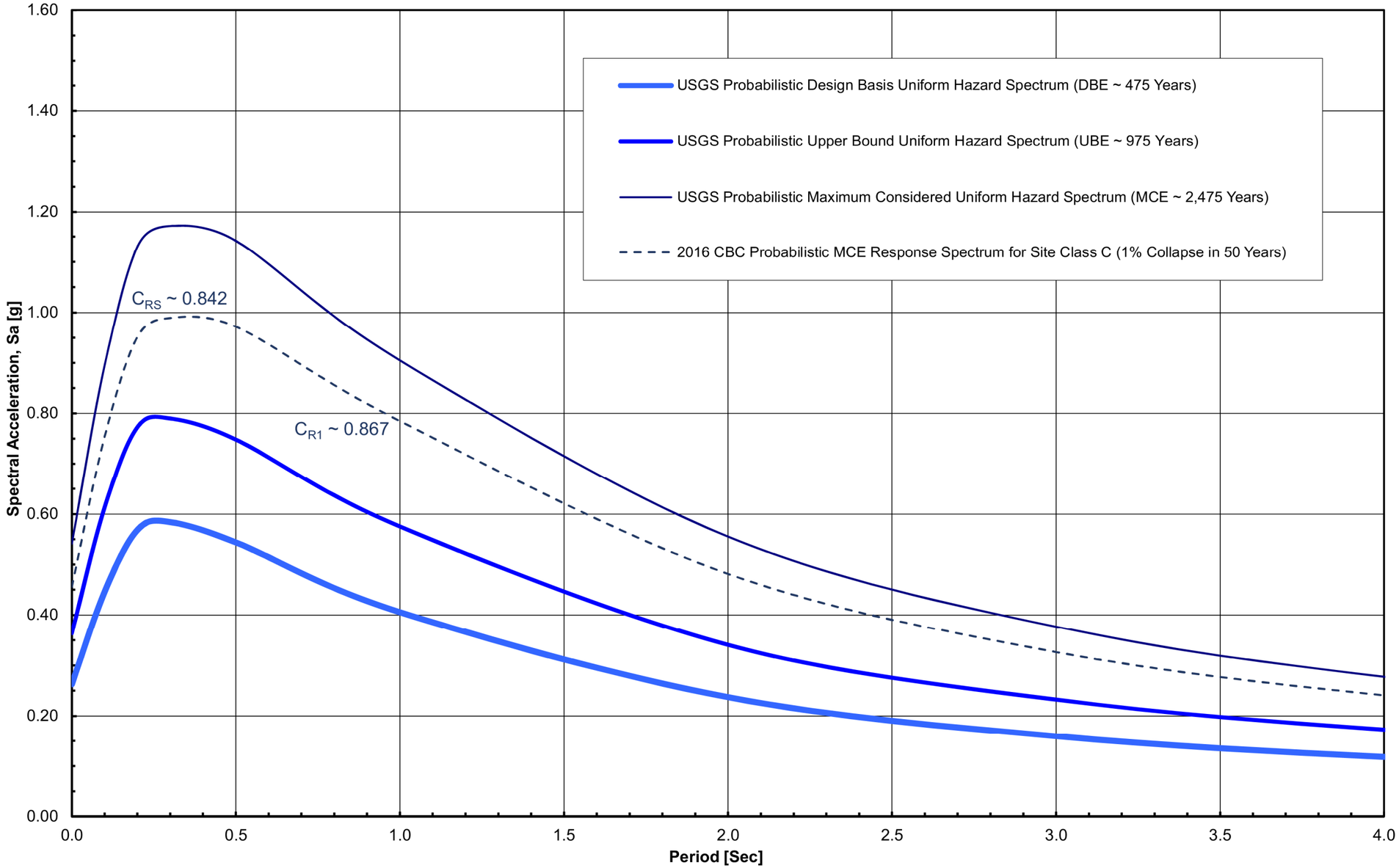
DOCUMENT NUMBER: 16-0033

PROJECT NAME: 10th Avenue Terminal, Building C
Mitsubishi Cement Corporation

FIGURE NUMBER: **5A**

DETERMINISTIC SPECTRA

REFERENCE: CALTRANS (2016). *ARS Online, Version 2.3.06,* http://dap3.dot.ca.gov/ARS_Online/, March 2.



2016 CBC MCE Spectrum

Period [Sec]	Sa [g]
0.00	0.456
0.05	0.613
0.10	0.753
0.15	0.869
0.20	0.951
0.25	0.986
0.30	0.989
0.40	0.986
0.50	0.972
0.75	0.876
1.00	0.785
1.50	0.618
2.00	0.481
2.50	0.393
3.00	0.327
3.50	0.277
4.00	0.241
4.50	0.214
5.00	0.193

REFERENCE: USGS (2016). *Earthquake Hazards Program,* http://geohazards.usgs.gov/deaggint/2008/, March 2.

GROUP DELTA

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9245 ACTIVITY ROAD, SUITE 103
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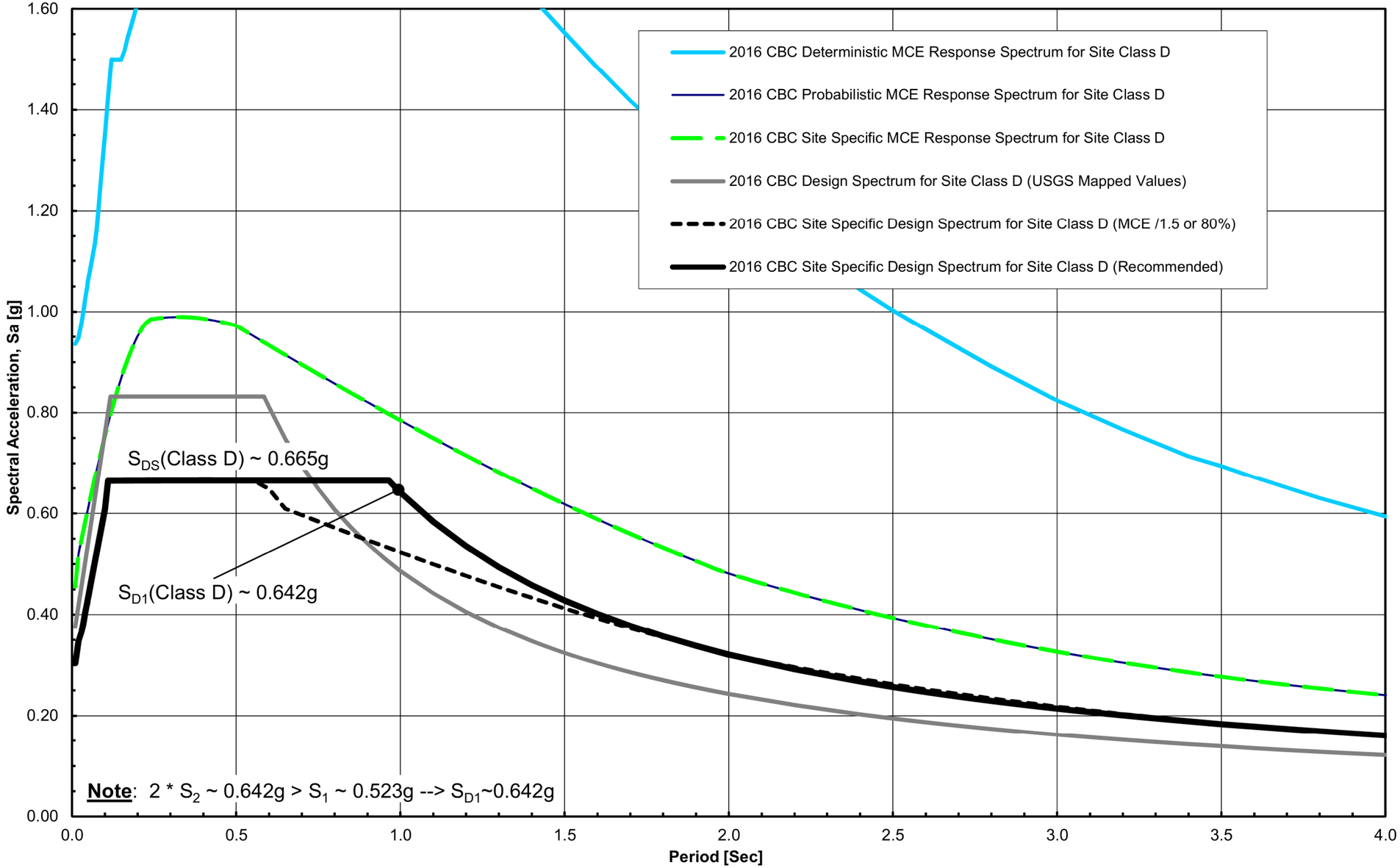
PROJECT NUMBER: SD458
DOCUMENT NUMBER: 16-0033
PROJECT NAME: 10th Avenue Terminal, Building C
Mitsubishi Cement Corporation
FIGURE NUMBER: **5B**

PROBABILISTIC SPECTRA



Design Spectrum

Period [Sec]	Sa [g]
0.00	0.266
0.05	0.437
0.10	0.608
0.15	0.665
0.20	0.665
0.25	0.665
0.30	0.665
0.40	0.665
0.50	0.665
0.75	0.665
1.00	0.642
1.50	0.428
2.00	0.321
2.50	0.257
3.00	0.214
3.50	0.183
4.00	0.161
4.50	0.143
5.00	0.128

GROUP DELTA

GROUP DELTA CONSULTANTS, INC.
ENGINEERS AND GEOLOGISTS
9245 ACTIVITY ROAD. SUITE 103
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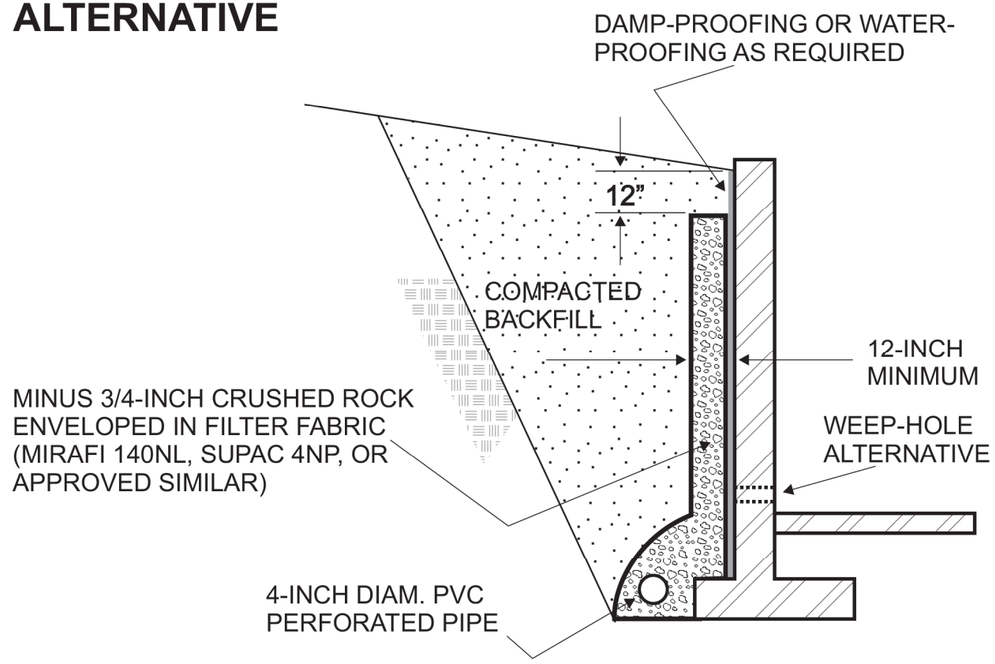
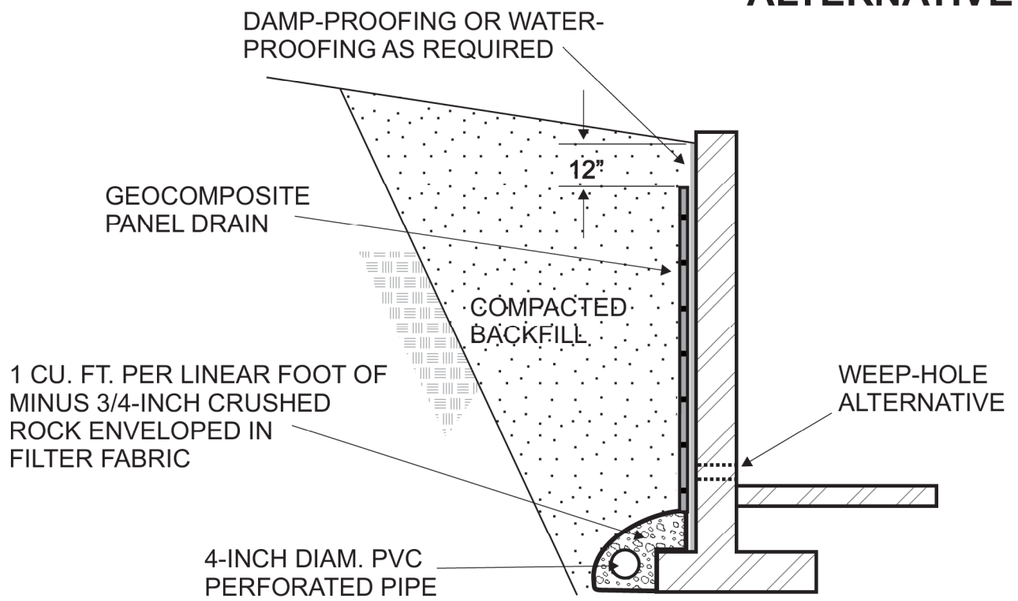
PROJECT NUMBER: SD458
DOCUMENT NUMBER: 16-0033
PROJECT NAME: 10th Avenue Terminal, Building C
Mitsubishi Cement Corporation
FIGURE NUMBER: 5C

DESIGN SPECTRA

ROCK AND FABRIC ALTERNATIVE



PANEL DRAIN ALTERNATIVE



NOTES

1) Perforated pipe should outlet through a solid pipe to a free gravity outfall. Perforated pipe and outlet pipe should have a fall of at least 1%.

2) As an alternative to the perforated pipe and outlet, weep-holes may be constructed. Weep-holes should be at least 2 inches in diameter, spaced no greater than 8 feet, and be located just above grade at the bottom of wall.

3) Filter fabric should consist of Mirafi 140N, Supac 5NP, Amoco 4599, or similar approved fabric. Filter fabric should be overlapped at least 6-inches.

4) Geocomposite panel drain should consist of Miradrain 6000, J-DRain 400, Supac DS-15, or approved similar product.

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DOCUMENT NUMBER
16-0033

PROJECT NAME
10th Avenue Terminal, Building C
Mitsubishi Cement Corporation

FIGURE NUMBER
6A

WALL DRAINAGE DETAILS

INPUT PARAMETERS

Unit Weight of Soil [PCF]	115
Backfill Soil Friction Angle (ϕ) [°]:	34
Wall Friction Angle (δ) [°]:	23
Soil Backfill Angle (α) [°]:	0
Wall Batter Angle (β) [°]:	90
Horizontal Acceleration (K_h) [g's]:	0.28
Vertical Acceleration (K_v) [g's]:	0.00

Active Pressure Resultant: $F_a = 1/2\ \gamma_a H^2$

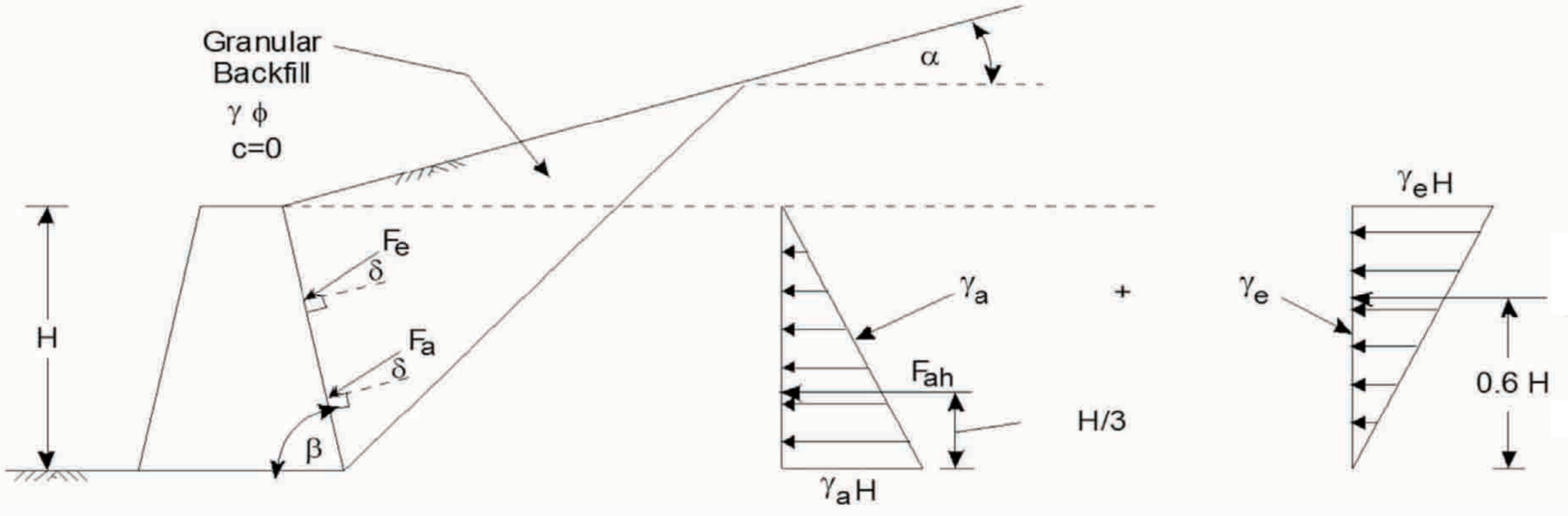
Earthquake Pressure Resultant: $F_e = 1/2\ \gamma_e H^2$

CALCULATED PARAMETERS

Active Pressure Coefficient (K_a):	0.254
Equivalent Fluid Pressure (γ_a):	29.2
Seismic Pressure Coefficient (K_{ae}):	0.478
Equivalent Fluid Pressure (γ_{ae}):	55.0
Equivalent Seismic Pressure (γ_e):	25.7

Horizontal Component of Active Pressure Resultant $F_{ah} = F_a \cos(\delta+90-\beta)$

Horizontal Component of Seismic Pressure Resultant $F_{eh} = F_e \cos(\delta+90-\beta)$



Seismic Increment (γ_e ~ 26 PCF)

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PROJECT NUMBER: SD458

DOCUMENT NUMBER: 16-0033

PROJECT NAME: 10th Avenue Terminal, Building C
Mitsubishi Cement Corporation

FIGURE NUMBER: **6B**

SEISMIC WALL LOADS

APPENDIX A
FIELD EXPLORATION

APPENDIX A

FIELD EXPLORATION

The field exploration program included a visual and geologic reconnaissance of the site, the drilling of one exploratory boring, and the advancement of three cone penetrometer (CPT) soundings throughout the site. The field explorations were completed between February 24th and March 4th, 2016. The maximum depth of exploration was about 85 feet. The approximate locations of the boring and CPT soundings are shown in Figure 2D. Logs describing the subsurface conditions encountered within the boring and three CPT soundings are shown in Figures A-1 through A-4.

The exploratory boring was completed by Pacific Drilling Company using the Fraste LAR track mounted drill rig (Boring B-1). Drive samples were collected from the boring using an automatic hammer with an average Energy Transfer Ratio (ETR) of about 83 percent for the Fraste rig. Disturbed samples were collected from the boring using a 2-inch outside diameter Standard Penetration Test (SPT) sampler. Less disturbed samples were collected using a 3-inch outside diameter ring lined sampler (a modified California sampler). These samples were sealed in plastic bags, labeled, and returned to the laboratory for testing. For each sample, the number of blows needed to drive the sampler 12 inches was recorded on the logs. The field blow counts (N) were normalized to approximate a standard 60 percent ETR, as shown on the logs (N_{60}). Bulk samples were also collected from the boring at selected intervals. The boring log is presented in Figure A-1. Note that the lines designating the interface between differing soil materials on the boring log may be abrupt or gradational. Furthermore, soil conditions at locations between the explorations may be substantially different from those at the specific locations we explored.

The 3 cone penetrometer (CPT) soundings were advanced by Kehoe Testing and Engineering in general accordance with ASTM D5778. The CPT data is presented in Figures A-2 through A-4. The CPT soundings were advanced using a 30-ton truck mounted rig with a 15 cm^2 cone. Integrated electronic circuitry was used to measure the tip resistance (Qc) and skin friction (Fs) at 2.5 cm (1 inch) intervals while the CPT was advanced into the soil using hydraulic down pressure. A piezometer located behind the cone tip also measured transient pore pressure (u). Figure A for each CPT sounding presents the raw data. The interpreted soil profile is shown in a color-coded log in Figure B. The CPT data may also be used to estimate soil parameters such as undrained shear strength, as shown Figure C for each CPT sounding. Note that the soil interpretations are generally a function of the normalized cone resistance and friction ratio (Robertson, 1988, 1990).

At the location of CPT-2, shear wave velocity measurements were taken at 5 foot depth intervals using an air actuated hammer located inside the front jack of the CPT rig. The interval shear wave velocity measurements are provided immediately after Figure A-3c. The average shear wave velocity measured within the upper 85 feet (Vs_d) at the location of CPT-2 was 744 ft/s (or 227 m/s). Based on a commonly used extrapolation method, Vs_{30} is estimated at 240 m/s (Boore, 2004).

APPENDIX A

FIELD EXPLORATION (Continued)

The boring and CPT locations were surveyed by Nasland Engineering on February 12th, 2016. The survey data is tabulated below. All of these explorations were conducted at the planned location.

Exploration ID	Northing	Easting	Latitude	Longitude	Offset	Elevation MLLW [FT]
B-1	1835343.20	6282996.52	32.6990651	-117.1558266	None	16.62
CPT-1	1835369.66	6282995.31	32.6991378	-117.1558313	None	16.64
CPT-2	1835316.71	6282997.75	32.6989924	-117.1558219	None	16.42
CPT-3	1835290.25	6282998.98	32.6989197	-117.1558171	None	16.40

SOIL IDENTIFICATION AND DESCRIPTION SEQUENCE

Sequence	Identification Components	Refer to Section: Field	Refer to Section: Lab	Required	Optional
1	Group Name	2.5.2	3.2.2	●	
2	Group Symbol	2.5.2	3.2.2	●	
	Description Components				
3	Consistency of Cohesive Soil	2.5.3	3.2.3	●	
4	Apparent Density of Cohesionless Soil	2.5.4		●	
5	Color	2.5.5		●	
6	Moisture	2.5.6		●	
7	Percent or Proportion of Soil	2.5.7	3.2.4	●	○
	Particle Size	2.5.8	2.5.8	●	○
	Particle Angularity	2.5.9			○
	Particle Shape	2.5.10			○
8	Plasticity (for fine-grained soil)	2.5.11	3.2.5		○
9	Dry Strength (for fine-grained soil)	2.5.12			○
10	Dilatency (for fine-grained soil)	2.5.13			○
11	Toughness (for fine-grained soil)	2.5.14			○
12	Structure	2.5.15			○
13	Cementation	2.5.16		●	
14	Percent of Cobbles and Boulders	2.5.17		●	
	Description of Cobbles and Boulders	2.5.18		●	
15	Consistency Field Test Result	2.5.3		●	
16	Additional Comments	2.5.19			○

Describe the soil using descriptive terms in the order shown

Minimum Required Sequence:

USCS Group Name (Group Symbol); Consistency or Density; Color; Moisture; Percent or Proportion of Soil; Particle Size; Plasticity (optional).

○ = optional for non-Caltrans projects

Where applicable:

Cementation; % cobbles & boulders; Description of cobbles & boulders; Consistency field test result

REFERENCE: Caltrans Soil and Rock Logging, Classification, and Presentation Manual (2010).

HOLE IDENTIFICATION

Holes are identified using the following convention:

H – YY – NNN

Where:

H: Hole Type Code

YY: 2-digit year

NNN: 3-digit number (001-999)

Hole Type Code and Description

Hole Type Code	Description
A	Auger boring (hollow or solid stem, bucket)
R	Rotary drilled boring (conventional)
RC	Rotary core (self-cased wire-line, continuously-sampled)
RW	Rotary core (self-cased wire-line, not continuously sampled)
P	Rotary percussion boring (Air)
HD	Hand driven (1-inch soil tube)
HA	Hand auger
D	Driven (dynamic cone penetrometer)
CPT	Cone Penetration Test
O	Other (note on LOTB)

Description Sequence Examples:

SANDY lean CLAY (CL); very stiff; yellowish brown; moist; mostly fines; some SAND, from fine to medium; few gravels; medium plasticity; PP=2.75.

Well-graded SAND with SILT and GRAVEL and COBBLES (SW-SM); dense; brown; moist; mostly SAND, from fine to coarse; some fine GRAVEL; few fines; weak cementation; 10% GRANITE COBBLES; 3 to 6 inches; hard; subrounded.

Clayey SAND (SC); medium dense, light brown; wet; mostly fine sand,; little fines; low plasticity.

GROUP DELTA

Project No. SD458

Cement Unloading Facility
Mitsubishi Cement Corporation

BORING RECORD LEGEND #1

GROUP SYMBOLS AND NAMES

Graphic / Symbol	Group Names	Graphic / Symbol	Group Names
GW	Well-graded GRAVEL Well-graded GRAVEL with SAND	CL	Lean CLAY Lean CLAY with SAND Lean CLAY with GRAVEL SANDY lean CLAY SANDY lean CLAY with GRAVEL GRAVELLY lean CLAY GRAVELLY lean CLAY with SAND
GP	Poorly graded GRAVEL Poorly graded GRAVEL with SAND		
GW-GM	Well-graded GRAVEL with SILT Well-graded GRAVEL with SILT and SAND	CL-ML	SILTY CLAY SILTY CLAY with SAND SILTY CLAY with GRAVEL SANDY SILTY CLAY SANDY SILTY CLAY with GRAVEL GRAVELLY SILTY CLAY GRAVELLY SILTY CLAY with SAND
GW-GC	Well-graded GRAVEL with CLAY (or SILTY CLAY) Well-graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GP-GM	Poorly graded GRAVEL with SILT Poorly graded GRAVEL with SILT and SAND	ML	SILT SILT with SAND SILT with GRAVEL SANDY SILT SANDY SILT with GRAVEL GRAVELLY SILT GRAVELLY SILT with SAND
GP-GC	Poorly graded GRAVEL with CLAY (or SILTY CLAY) Poorly graded GRAVEL with CLAY and SAND (or SILTY CLAY and SAND)		
GM	SILTY GRAVEL SILTY GRAVEL with SAND	OL	ORGANIC lean CLAY ORGANIC lean CLAY with SAND ORGANIC lean CLAY with GRAVEL SANDY ORGANIC lean CLAY SANDY ORGANIC lean CLAY with GRAVEL GRAVELLY ORGANIC lean CLAY GRAVELLY ORGANIC lean CLAY with SAND
GC	CLAYEY GRAVEL CLAYEY GRAVEL with SAND		
GC-GM	SILTY, CLAYEY GRAVEL SILTY, CLAYEY GRAVEL with SAND	OL	ORGANIC SILT ORGANIC SILT with SAND ORGANIC SILT with GRAVEL SANDY ORGANIC SILT SANDY ORGANIC SILT with GRAVEL GRAVELLY ORGANIC SILT GRAVELLY ORGANIC SILT with SAND
SW	Well-graded SAND Well-graded SAND with GRAVEL		
SP	Poorly graded SAND Poorly graded SAND with GRAVEL	CH	Fat CLAY Fat CLAY with SAND Fat CLAY with GRAVEL SANDY fat CLAY SANDY fat CLAY with GRAVEL GRAVELLY fat CLAY GRAVELLY fat CLAY with SAND
SW-SM	Well-graded SAND with SILT Well-graded SAND with SILT and GRAVEL		
SW-SC	Well-graded SAND with CLAY (or SILTY CLAY) Well-graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	MH	Elastic SILT Elastic SILT with SAND Elastic SILT with GRAVEL SANDY elastic SILT SANDY elastic SILT with GRAVEL GRAVELLY elastic SILT GRAVELLY elastic SILT with SAND
SP-SM	Poorly graded SAND with SILT Poorly graded SAND with SILT and GRAVEL		
SP-SC	Poorly graded SAND with CLAY (or SILTY CLAY) Poorly graded SAND with CLAY and GRAVEL (or SILTY CLAY and GRAVEL)	OH	ORGANIC fat CLAY ORGANIC fat CLAY with SAND ORGANIC fat CLAY with GRAVEL SANDY ORGANIC fat CLAY SANDY ORGANIC fat CLAY with GRAVEL GRAVELLY ORGANIC fat CLAY GRAVELLY ORGANIC fat CLAY with SAND
SM	SILTY SAND SILTY SAND with GRAVEL		
SC	CLAYEY SAND CLAYEY SAND with GRAVEL	OH	ORGANIC elastic SILT ORGANIC elastic SILT with SAND ORGANIC elastic SILT with GRAVEL SANDY elastic ELASTIC SILT SANDY ORGANIC elastic SILT with GRAVEL GRAVELLY ORGANIC elastic SILT GRAVELLY ORGANIC elastic SILT with SAND
SC-SM	SILTY, CLAYEY SAND SILTY, CLAYEY SAND with GRAVEL		
PT	PEAT	OL/OH	ORGANIC SOIL ORGANIC SOIL with SAND ORGANIC SOIL with GRAVEL SANDY ORGANIC SOIL SANDY ORGANIC SOIL with GRAVEL GRAVELLY ORGANIC SOIL GRAVELLY ORGANIC SOIL with SAND
	COBBLES COBBLES and BOULDERS BOULDERS		

FIELD AND LABORATORY TESTING

C	Consolidation (ASTM D 2435)
CL	Collapse Potential (ASTM D 5333)
CP	Compaction Curve (CTM 216)
CR	Corrosion, Sulfates, Chlorides (CTM 643; CTM 417; CTM 422)
CU	Consolidated Undrained Triaxial (ASTM D 4767)
DS	Direct Shear (ASTM D 3080)
EI	Expansion Index (ASTM D 4829)
M	Moisture Content (ASTM D 2216)
OC	Organic Content (ASTM D 2974)
P	Permeability (CTM 220)
PA	Particle Size Analysis (ASTM D 422)
PI	Liquid Limit, Plastic Limit, Plasticity Index (AASHTO T 89, AASHTO T 90)
PL	Point Load Index (ASTM D 5731)
PM	Pressure Meter
R	R-Value (CTM 301)
SE	Sand Equivalent (CTM 217)
SG	Specific Gravity (AASHTO T 100)
SL	Shrinkage Limit (ASTM D 427)
SW	Swell Potential (ASTM D 4546)
UC	Unconfined Compression - Soil (ASTM D 2166) Unconfined Compression - Rock (ASTM D 2938)
UU	Unconsolidated Undrained Triaxial (ASTM D 2850)
UW	Unit Weight (ASTM D 4767)

SAMPLER GRAPHIC SYMBOLS

- Standard Penetration Test (SPT)
- Standard California Sampler
- Modified California Sampler (2.4" ID, 3" OD)
- Shelby Tube
- Piston Sampler
- NX Rock Core
- HQ Rock Core
- Bulk Sample
- Other (see remarks)

DRILLING METHOD SYMBOLS

- Auger Drilling
- Rotary Drilling
- Dynamic Cone or Hand Driven
- Diamond Core

WATER LEVEL SYMBOLS

- First Water Level Reading (during drilling)
- Static Water Level Reading (after drilling, date)

Definitions for Change in Material

Term	Definition	Symbol
Material Change	Change in material is observed in the sample or core and the location of change can be accurately located.	———
Estimated Material Change	Change in material cannot be accurately located either because the change is gradational or because of limitations of the drilling and sampling methods.	– – – – –
Soil / Rock Boundary	Material changes from soil characteristics to rock characteristics.	~~~

REFERENCE: Caltrans Soil and Rock Logging, Classification, and Presentation Manual (2010).

GROUP DELTA

Project No. SD458

Cement Unloading Facility
Mitsubishi Cement Corporation

BORING RECORD LEGEND #2

CONSISTENCY OF COHESIVE SOILS				
Description	**Shear Strength (tsf)**	**Pocket Penetrometer, PP, Measurement (tsf)**	**Torvane, TV, Measurement (tsf)**	**Vane Shear, VS, Measurement (tsf)**
Very Soft	Less than 0.12	Less than 0.25	Less than 0.12	Less than 0.12
Soft	0.12 - 0.25	0.25 - 0.5	0.12 - 0.25	0.12 - 0.25
Medium Stiff	0.25 - 0.5	0.5 - 1	0.25 - 0.5	0.25 - 0.5
Stiff	0.5 - 1	1 - 2	0.5 - 1	0.5 - 1
Very Stiff	1 - 2	2 - 4	1 - 2	1 - 2
Hard	Greater than 2	Greater than 4	Greater than 2	Greater than 2

APPARENT DENSITY OF COHESIONLESS SOILS	
Description	**SPT N_{60} (blows / 12 inches)**
Very Loose	0 - 5
Loose	5 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	Greater than 50

MOISTURE	
Description	**Criteria**
Dry	No discernable moisture
Moist	Moisture present, but no free water
Wet	Visible free water

PERCENT OR PROPORTION OF SOILS	
Description	**Criteria**
Trace	Particles are present but estimated to be less than 5%
Few	5 - 10%
Little	15 - 25%
Some	30 - 45%
Mostly	50 - 100%

PARTICLE SIZE		
Description		**Size (in)**
Boulder		Greater than 12
Cobble		3 - 12
Gravel	Coarse	3/4 - 3
	Fine	1/5 - 3/4
Sand	Coarse	1/16 - 1/5
	Medium	1/64 - 1/16
	Fine	1/300 - 1/64
Silt and Clay		Less than 1/300

CEMENTATION	
Description	**Criteria**
Weak	Crumbles or breaks with handling or little finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

REFERENCE: Caltrans Soil and Rock Logging, Classification, and Presentation Manual (2010), with the exception of consistency of cohesive soils vs. N_{60}.

Plasticity

Description	**Criteria**
Nonplastic	A 1/8-in. thread cannot be rolled at any water content.
Low	The thread can barely be rolled and the lump cannot be formed when drier than the plastic limit.
Medium	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 crumbles when drier than the plastic limit.
High	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 can be formed without crumbling when drier than the plastic limit.

CONSISTENCY OF COHESIVE SOILS	
Description	SPT N_{60} (blows/12 inches)
Very Soft	0 - 2
Soft	2 - 4
Medium Stiff	4 - 8
Stiff	8 - 15
Very Stiff	15 - 30
Hard	Greater than 30

Ref: Peck, Hansen, and Thornburn, 1974, "Foundation Engineering," Second Edition.

Note: Only to be used (with caution) when pocket penetrometer or other data on undrained shear strength are unavailable. Not allowed by Caltrans Soil and Rock Logging and Classification Manual, 2010.

GROUP DELTA

Project No. SD458

Cement Unloading Facility
Mitsubishi Cement Corporation

BORING RECORD LEGEND #3

BORING RECORD

PROJECT NAME	PROJECT NUMBER	BORING
Mitsubishi Cement Unloading Facility	SD458	**B-01**

SITE LOCATION	START	FINISH	SHEET NO.
10th Avenue Marine Terminal, Warehouse C (C-7)	2/24/2016	2/24/2016	1 of 3

DRILLING COMPANY	DRILLING METHOD	LOGGED BY	CHECKED BY
Pacific Drilling Company	Hollow Stem Auger	RCF	MAF

DRILLING EQUIPMENT	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV (ft)	DEPTH/*ELEV.* GROUND WATER (ft)
Fraste (LAR) Track Mounted Rig	8	51.5	16.6	▼ 12.0 / *4.6*

SAMPLING METHOD
Hammer: 140 lbs., Drop: 30 in. (Automatic)

NOTES
ETR ~ 83%, N_{60} ~ 83/60 * N ~ 1.38 * N

DEPTH (feet)	ELEVATION (feet)	SAMPLE TYPE	SAMPLE NO.	PENETRATION RESISTANCE (BLOWS / 6 IN)	BLOW/FT "N"	N_{60}	MOISTURE (%)	DRY DENSITY (pcf)	OTHER TESTS	DEPTH (feet)	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION
												PAVEMENT: 3 inches asphalt concrete (no base).
	15		B-1						PA PI CR EI~23 R~6			**FILL:** Clayey SAND with gravel (SC); medium dense; gray brown; moist; low plasticity. Pocket Penetrometer (PP~3½ TSF). Photoionization detector (PID~1.8 PPM).
												19% Gravel; 46% Sand; 36% Fines
			S-2	2 4 4	8	11						LL~35, PL~13, PI~22
5										5		Lean CLAY (CL); stiff; brown to reddish brown; moist; low plasticity. Contains few shells.
			R-3	3 5 5	10	9	14.5	97				PP~3½ TSF, PID~1.6 PPM
	10											
			S-4	6 4 4	8	11						Clayey SAND (SC); medium dense; reddish brown; moist; low plasticity.
												PP~1 TSF, PID~3.2 PPM
10										10		
			R-5	3 7 4	11	10	19.6	99				PP~1¼ TSF, PID~1.1 PPM
	5											
			S-6	3 6 4	10	14			PA			**HYDRAULIC FILL:** Poorly graded SAND with silt (SP-SM); medium dense; dark gray brown; saturated; nonplastic. PID~1.0 PPM
												0% Gravel; 89% Sand; 11% Fines
15										15		
			R-7	6 7 8	15	14	26.3	100	DS			PID~0.6 PPM
	0											
												Silty SAND (SM); loose; dark gray brown; saturated; nonplastic.

GDC_LOG_BORING_MMX_SOIL_SD_SD458 LOGS.GPJ GDCLOG.GDT 4/21/16

GROUP DELTA CONSULTANTS, INC.
9245 Activity Road, Suite 103
San Diego, CA 92126

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED.

FIGURE
A-1 a

BORING RECORD

PROJECT NAME	PROJECT NUMBER	BORING
Mitsubishi Cement Unloading Facility	SD458	**B-01**

SITE LOCATION	START	FINISH	SHEET NO.
10th Avenue Marine Terminal, Warehouse C (C-7)	2/24/2016	2/24/2016	2 of 3

DRILLING COMPANY	DRILLING METHOD	LOGGED BY	CHECKED BY
Pacific Drilling Company	Hollow Stem Auger	RCF	MAF

DRILLING EQUIPMENT	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV (ft)	DEPTH/*ELEV.* GROUND WATER (ft)
Fraste (LAR) Track Mounted Rig	8	51.5	16.6	▼ 12.0 / *4.6*

SAMPLING METHOD
Hammer: 140 lbs., Drop: 30 in. (Automatic)

NOTES
ETR ~ 83%, N_{60} ~ 83/60 * N ~ 1.38 * N

DEPTH (feet)	ELEVATION (feet)	SAMPLE TYPE	SAMPLE NO.	PENETRATION RESISTANCE (BLOWS / 6 IN)	BLOW/FT "N"	N_{60}	MOISTURE (%)	DRY DENSITY (pcf)	OTHER TESTS	DEPTH (feet)	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION
	-5		S-8	1 1 3	4	6			PA			**HYDRAULIC FILL:** Silty SAND (SM); loose; dark gray; saturated; nonplastic. PID~1.6 PPM 0% Gravel; 73% Sand; 27% Fines
25	-10		R-9	2 4 6	10	9	50.0	70	C	25		Fat CLAY (CH); soft; black; saturated; high plasticity. PP~¼ TSF, PID~2.2 PPM
30	-15		S-10	2 2 2	4	6			PA	30		Silty SAND (SM); loose; dark gray brown; saturated; nonplastic. 2% Gravel; 57% Sand; 41% Fines PID~1.6 PPM
35	-20		R-11	13 18 21	39	36	14.3	115		35		**OLD PARALIC DEPOSITS:** Fat CLAY (CH); hard; brown; saturated; high plasticity. PP>4½ TSF, PID~1.0 PPM
												Lean CLAY (CL); very stiff; brown; saturated; low plasticity.

GDC_LOG_BORING_MMX_SOIL_SD_SD458 LOGS.GPJ GDCLOG.GDT 4/21/16

GROUP DELTA CONSULTANTS, INC.
9245 Activity Road, Suite 103
San Diego, CA 92126

THIS SUMMARY APPLIES ONLY AT THE LOCATION OF THIS BORING AND AT THE TIME OF DRILLING. SUBSURFACE CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH THE PASSAGE OF TIME. THE DATA PRESENTED IS A SIMPLIFICATION OF THE ACTUAL CONDITIONS ENCOUNTERED.

FIGURE
A-1 b

BORING RECORD

PROJECT NAME	PROJECT NUMBER	BORING
Mitsubishi Cement Unloading Facility	SD458	**B-01**

SITE LOCATION	START	FINISH	SHEET NO.
10th Avenue Marine Terminal, Warehouse C (C-7)	2/24/2016	2/24/2016	3 of 3

DRILLING COMPANY	DRILLING METHOD	LOGGED BY	CHECKED BY
Pacific Drilling Company	Hollow Stem Auger	RCF	MAF

DRILLING EQUIPMENT	BORING DIA. (in)	TOTAL DEPTH (ft)	GROUND ELEV (ft)	DEPTH/*ELEV.* GROUND WATER (ft)
Fraste (LAR) Track Mounted Rig	8	51.5	16.6	▼ 12.0 / *4.6*

SAMPLING METHOD
Hammer: 140 lbs., Drop: 30 in. (Automatic)

NOTES
ETR ~ 83%, N_{60} ~ 83/60 * N ~ 1.38 * N

DEPTH (feet)	ELEVATION (feet)	SAMPLE TYPE	SAMPLE NO.	PENETRATION RESISTANCE (BLOWS / 6 IN)	BLOW/FT "N"	N_{60}	MOISTURE (%)	DRY DENSITY (pcf)	OTHER TESTS	DEPTH (feet)	GRAPHIC LOG	DESCRIPTION AND CLASSIFICATION
	-25		S-12	2 3 5	8	11			PA			**OLD PARALIC DEPOSITS:** Sandy lean CLAY (CL); very stiff; brown; saturated; low plasticity. 0% Gravel; 44% Sand; 56% Fines PP~2 TSF, PID~0.8 PPM
45										45		Clayey SAND (SC); medium dense to dense; brown; saturated; low plasticity. PID~0.8 PPM
	-30		S-13	6 8 10	18	25						
50										50		0% Gravel; 57% Sand; 43% Fines LL~25, PL~17, PI~8 PID~0.8 PPM
	-35		S-14	6 8 13	21	29			PA PI			
55										55		Total Depth ~ 51½ Feet Groundwater Encountered @ 12 Feet
	-40											

GDC_LOG_BORING_MMX_SOIL_SD_SD458 LOGS.GPJ GDCLOG.GDT 4/21/16

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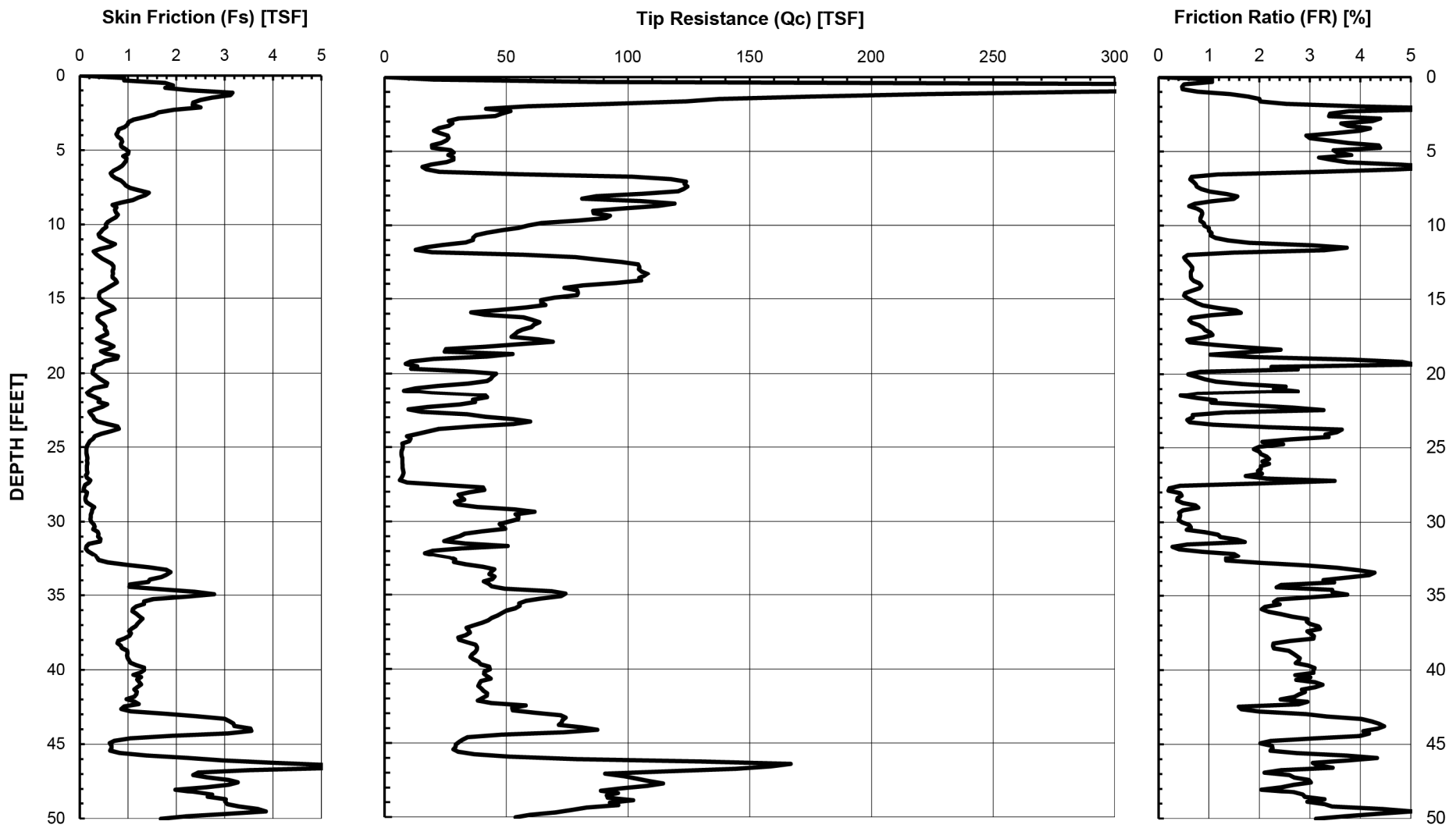
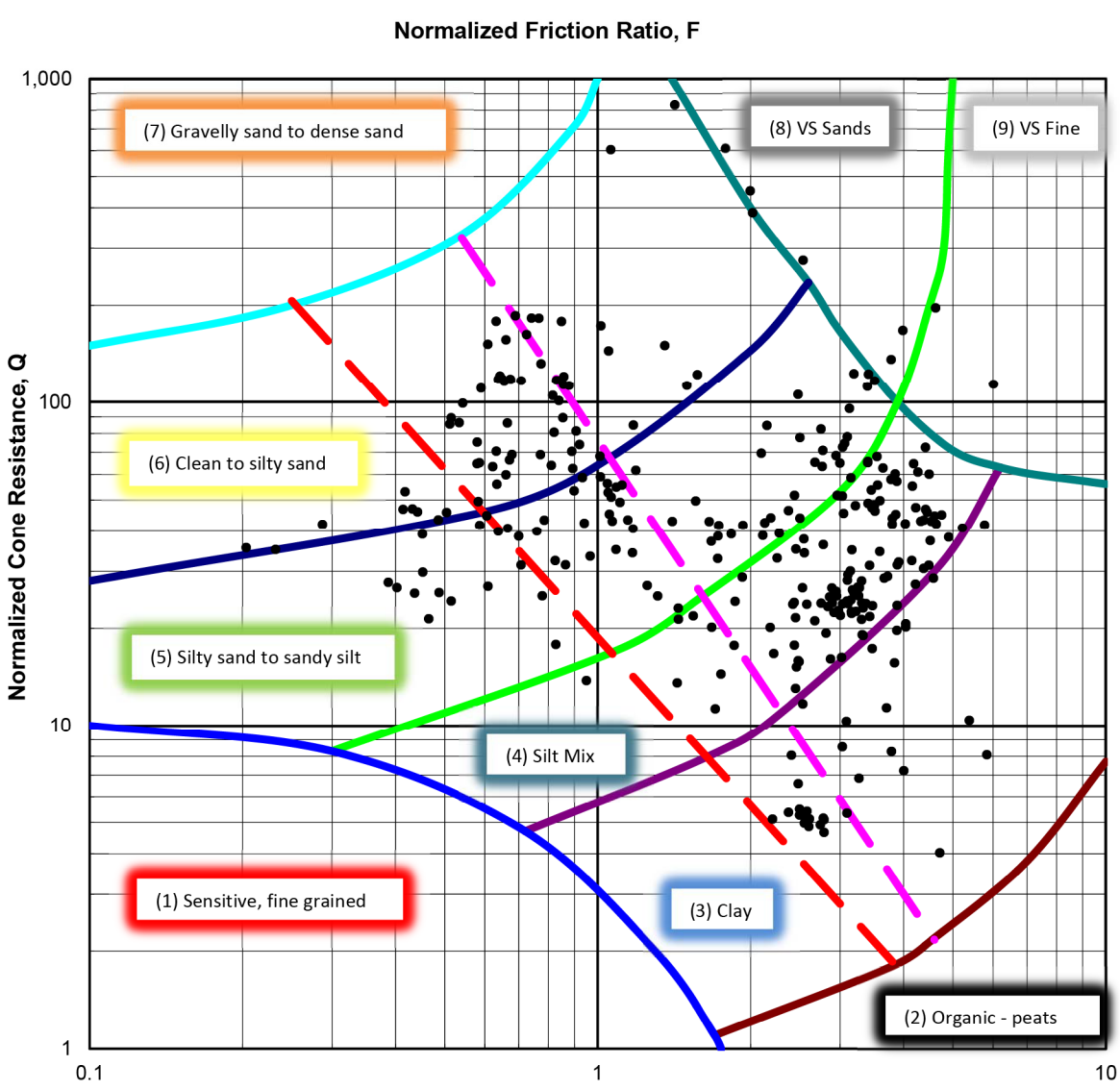
FIGURE
A-1 c

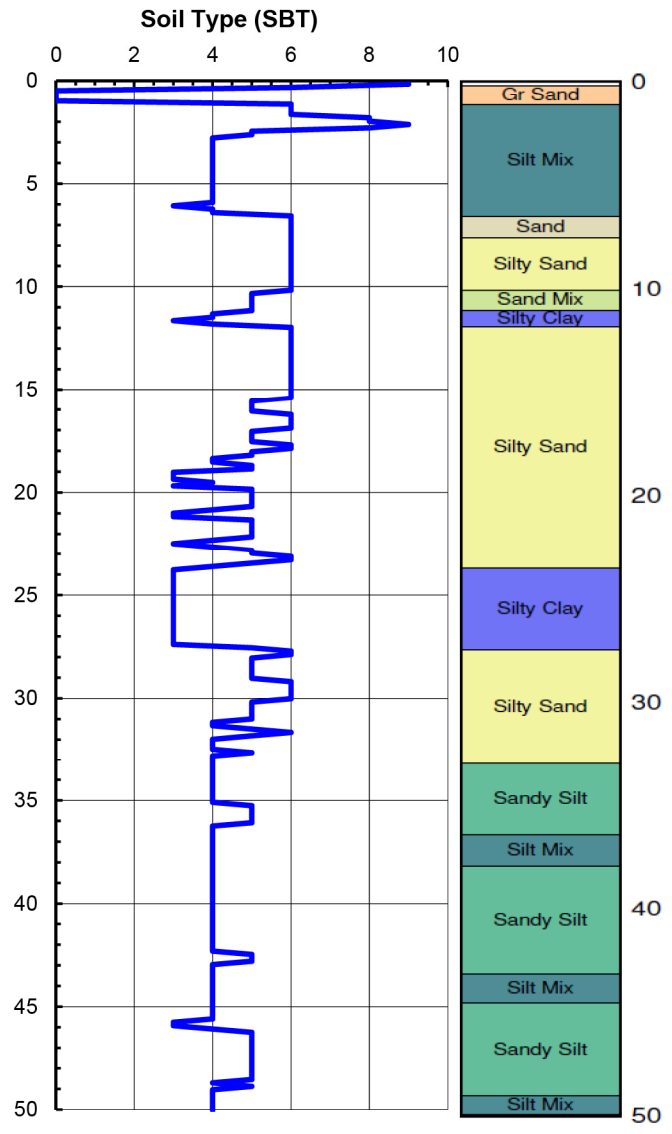


GROUP DELTA

CONE PENETOMETER DATA (CPT-1)

Document No. 16-0033
Project No. SD458
FIGURE A-2a

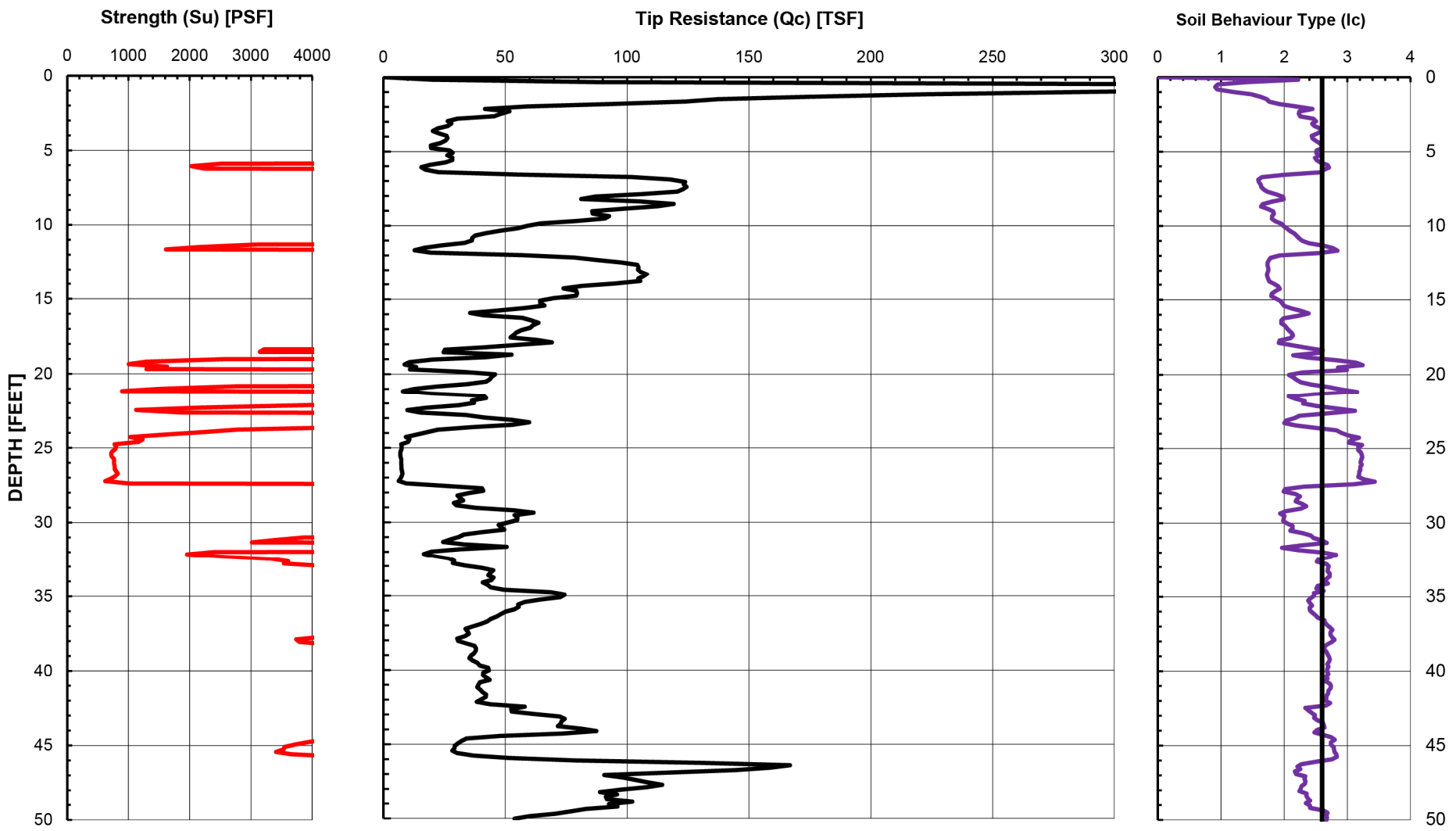




GROUP DELTA

SOIL CLASSIFICATION (CPT-1)

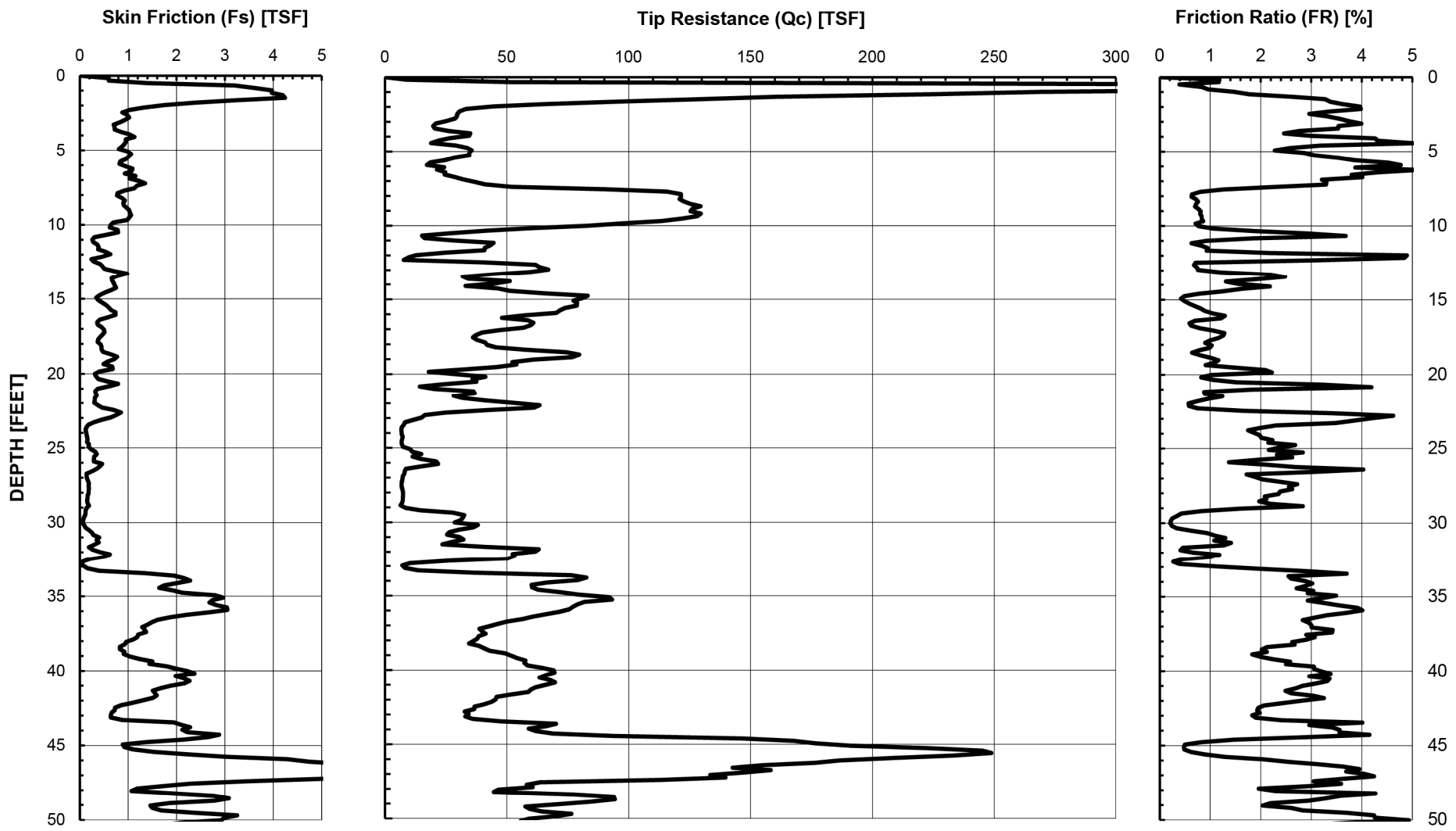
Document No. 16-0033
Project No. SD458
FIGURE A-2b



GROUP DELTA

INTERPRETED SOIL DATA (CPT-1)

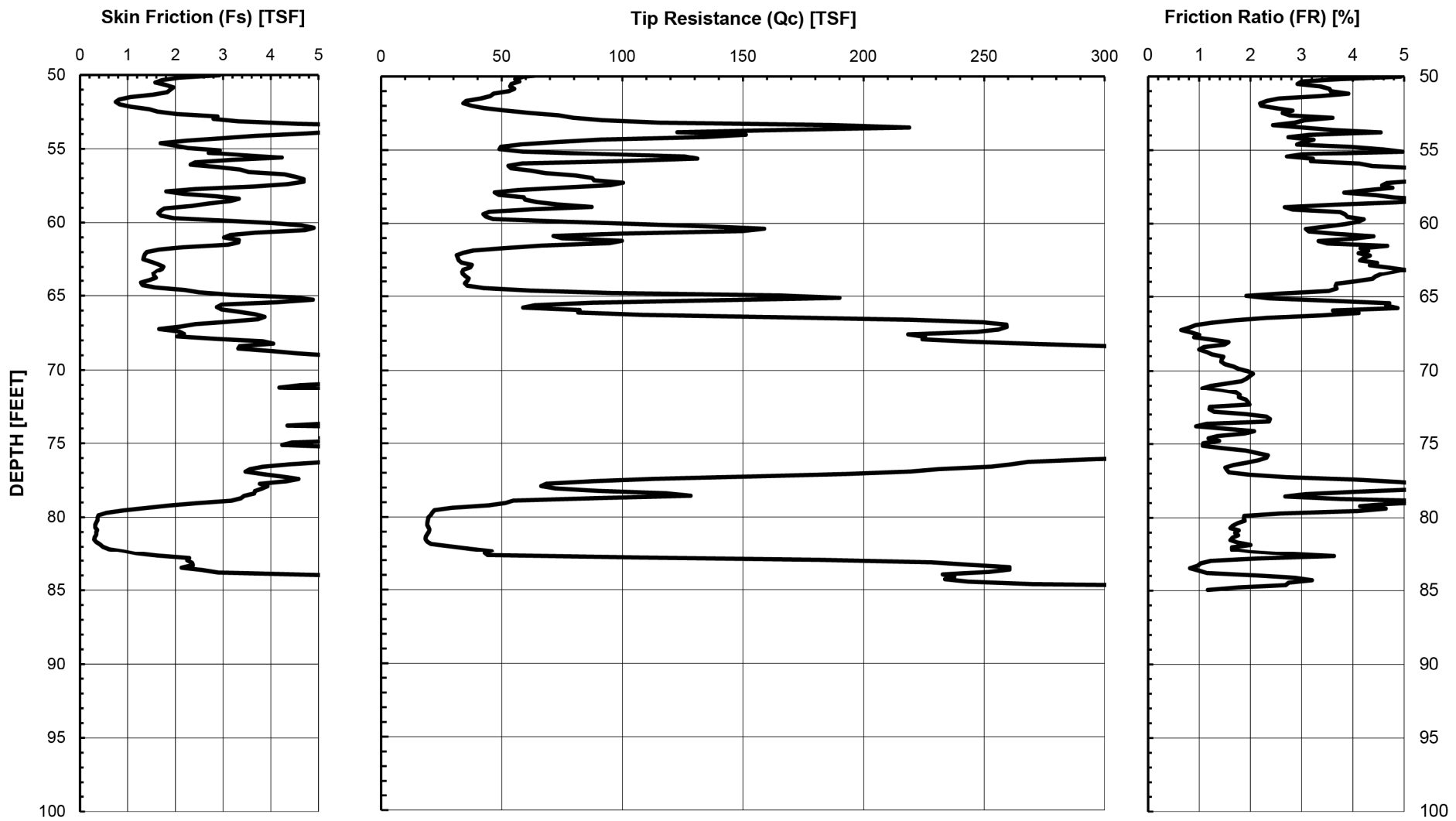
Document No. 16-0033
Project No. SD458
FIGURE A-2c



GROUP DELTA

CONE PENETOMETER DATA (CPT-2)

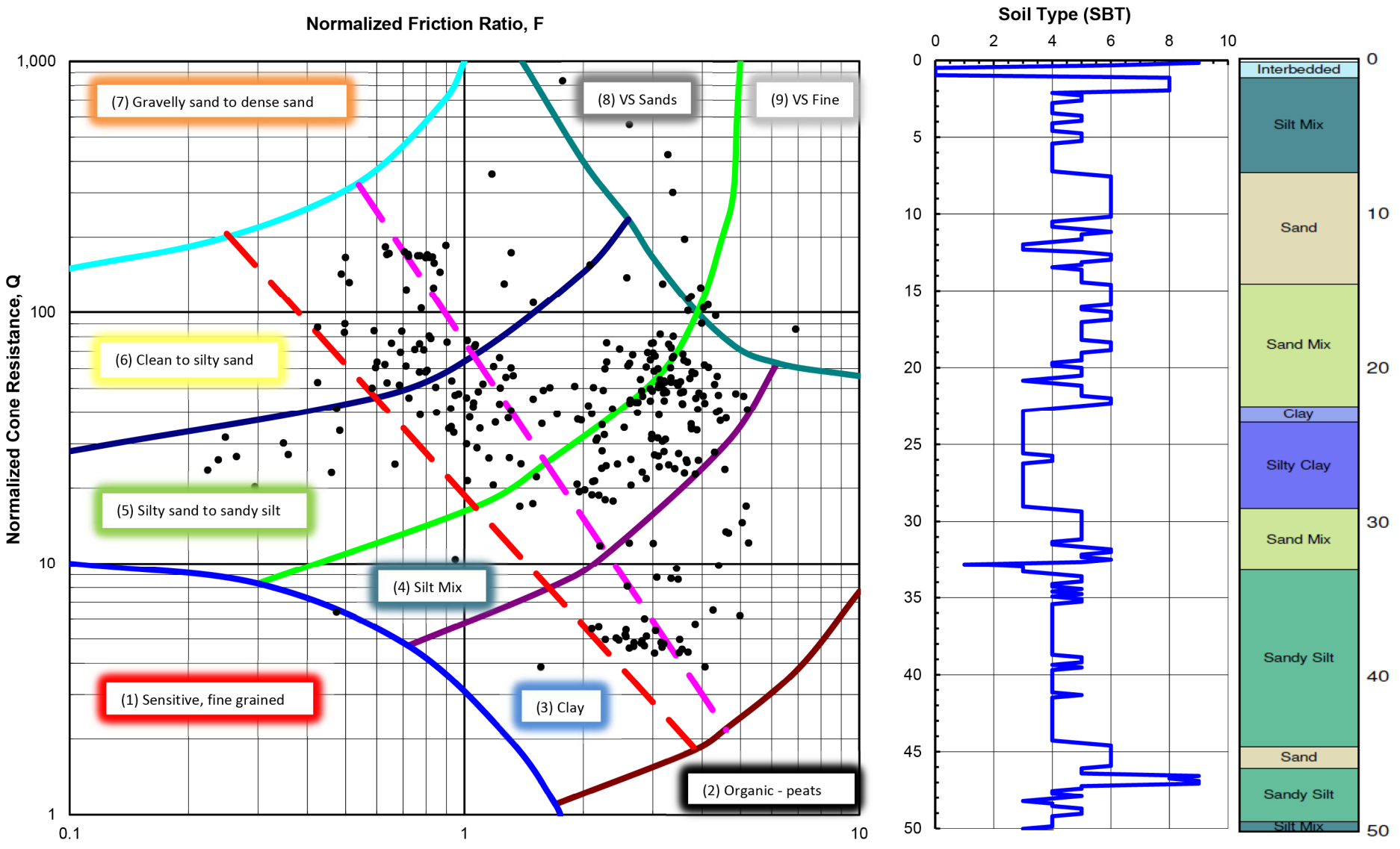
Document No. 16-0033
Project No. SD458
FIGURE A-3a



GROUP DELTA

CONE PENETOMETER DATA (CPT-2)

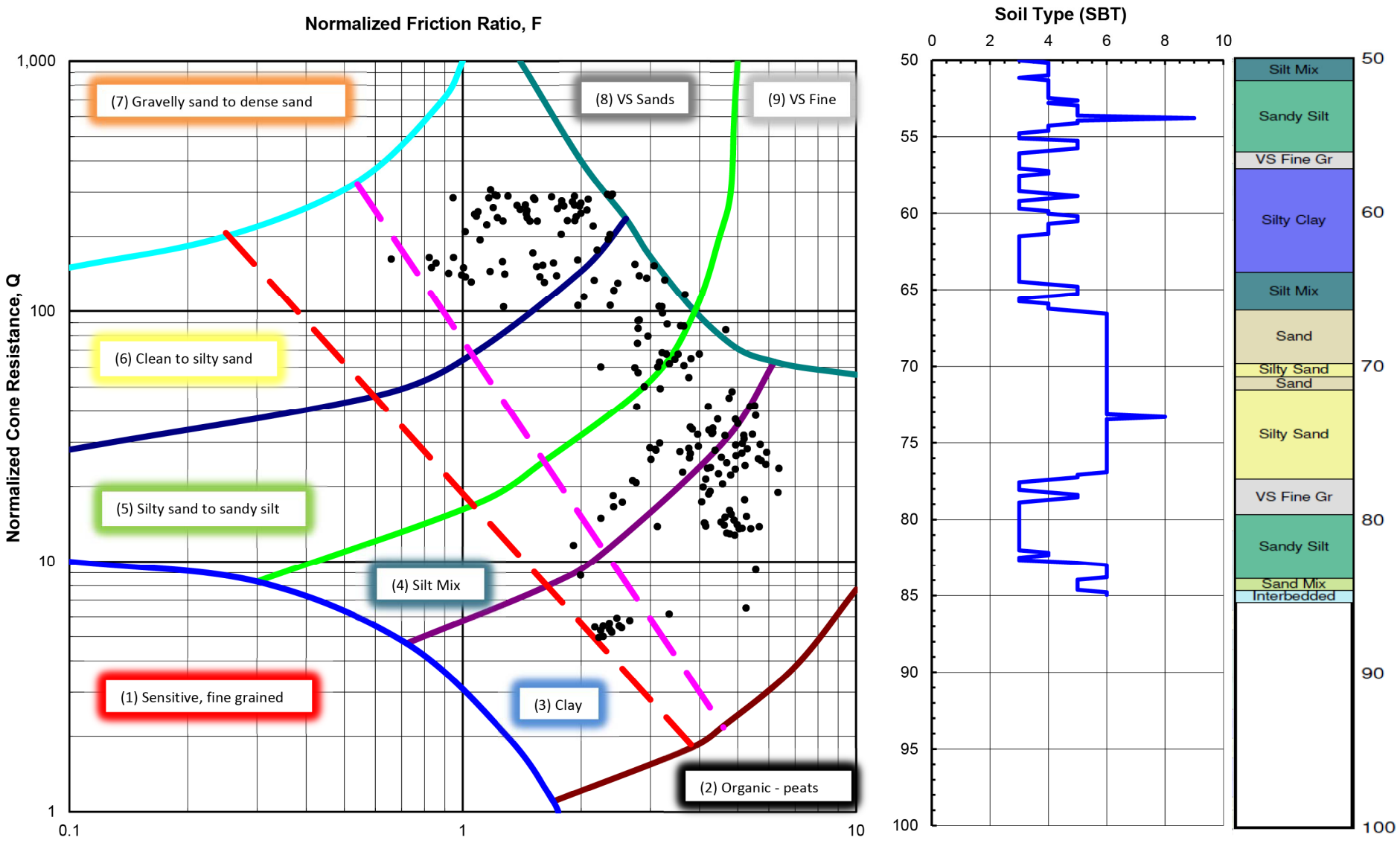
Document No. 16-0033
Project No. SD458
FIGURE A-3a



GROUP DELTA

SOIL CLASSIFICATION (CPT-2)

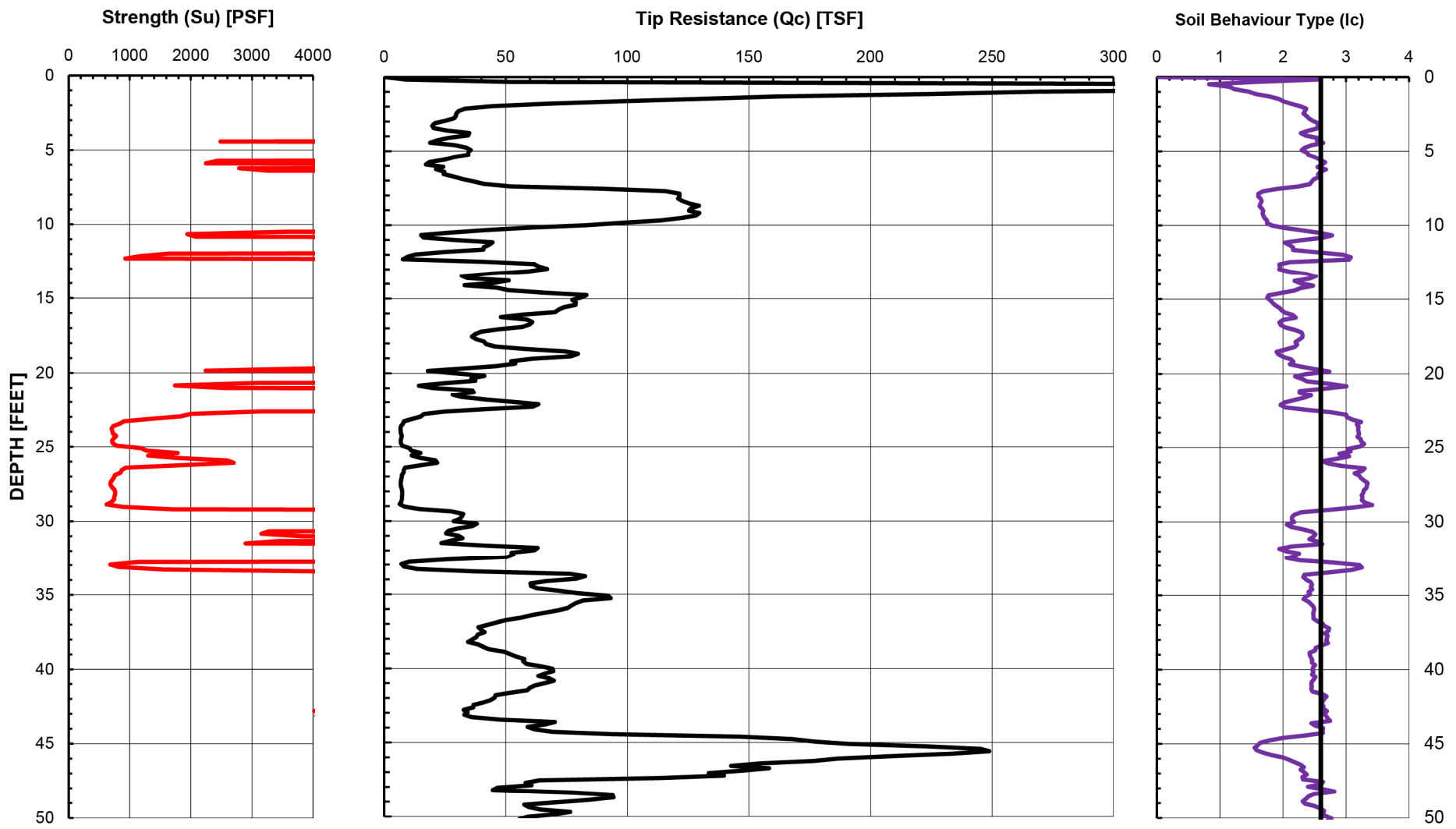
Document No. 16-0033
Project No. SD458
FIGURE A-3b



GROUP DELTA

SOIL CLASSIFICATION (CPT-2)

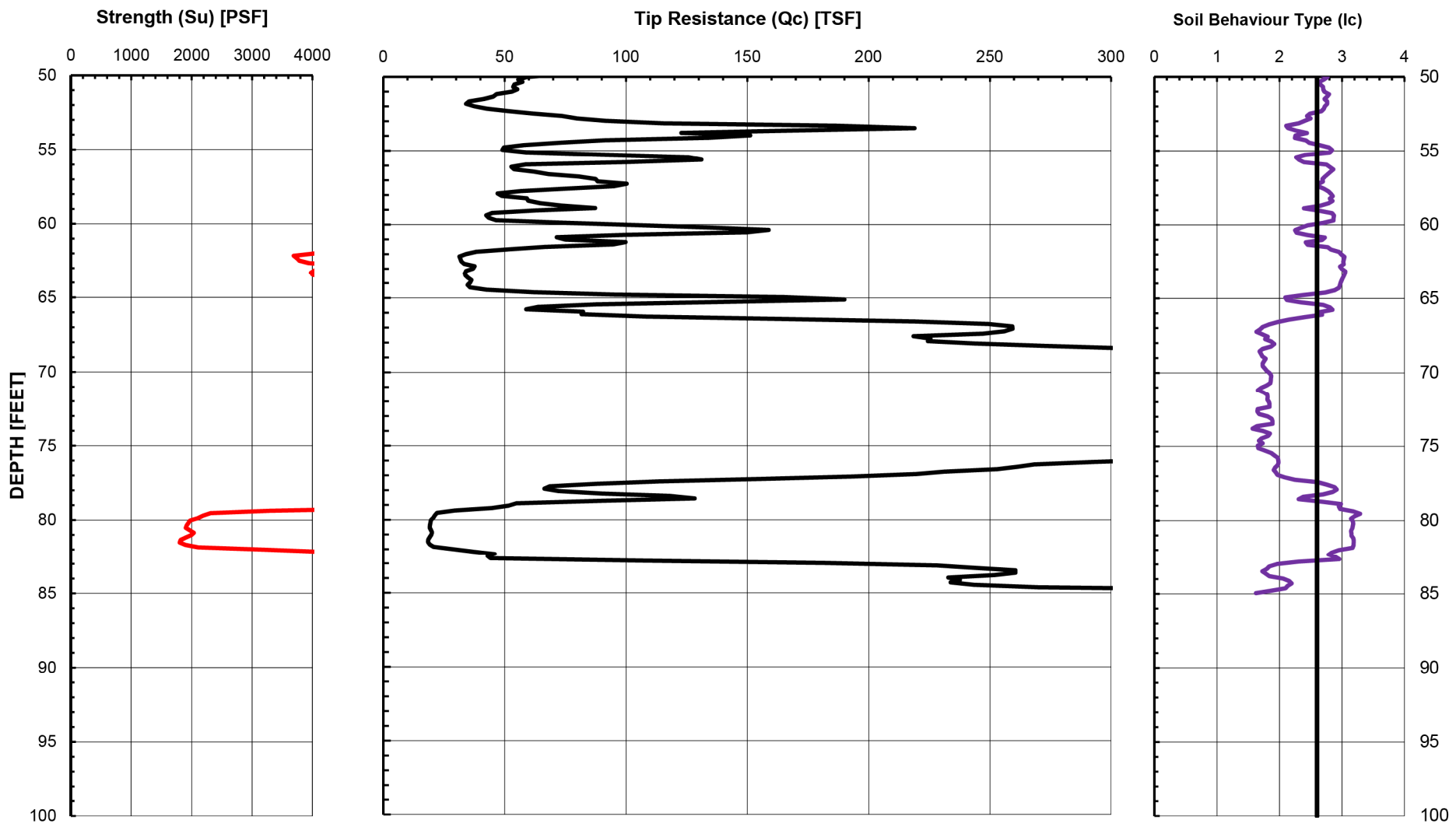
Document No. 16-0033
Project No. SD458
FIGURE A-3b



GROUP DELTA

INTERPRETED SOIL DATA (CPT-2)

Document No. 16-0033
Project No. SD458
FIGURE A-3c



GROUP DELTA

INTERPRETED SOIL DATA (CPT-2)

Document No. 16-0033
Project No. SD458
FIGURE A-3c

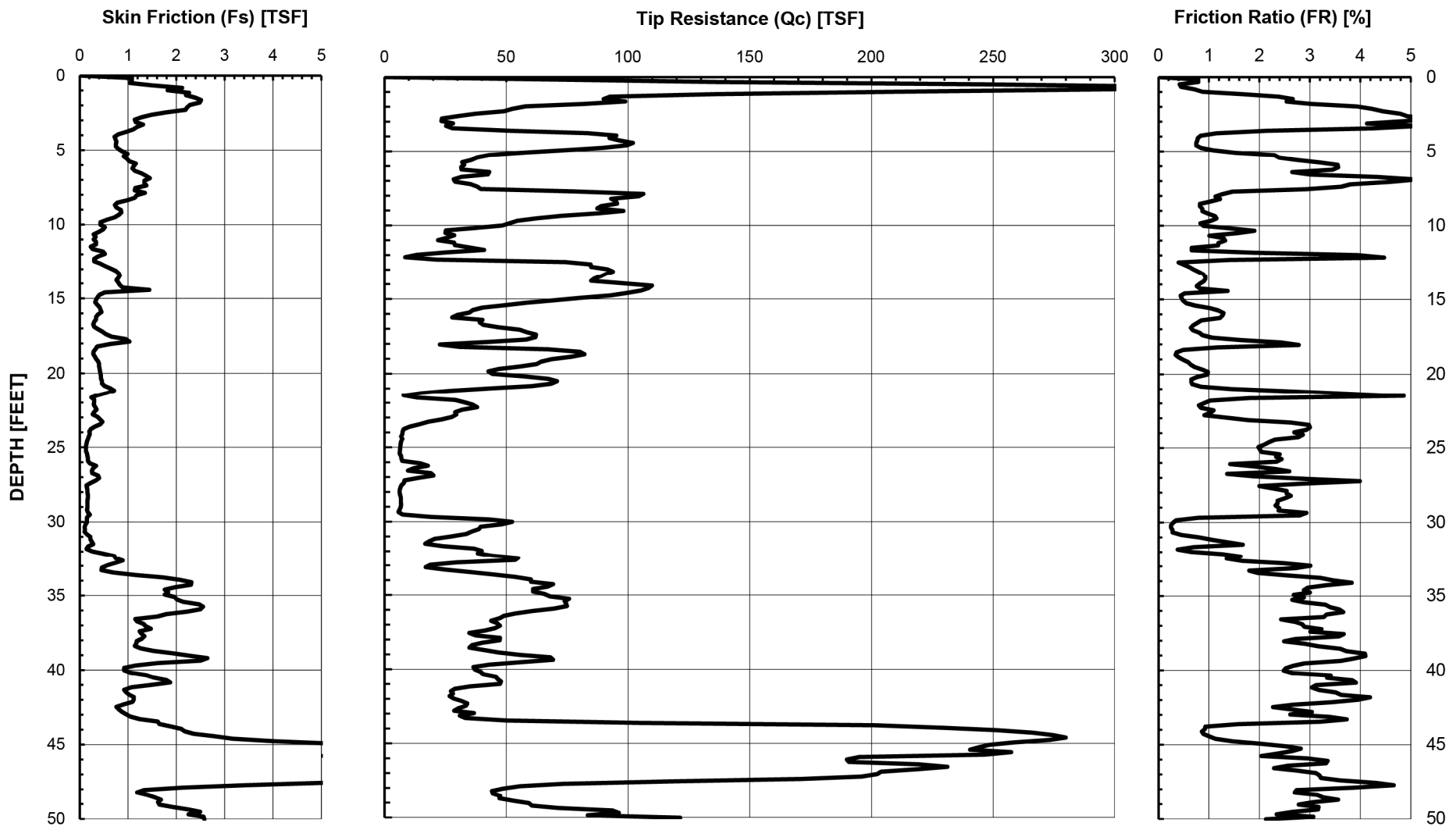
1170 Water St
San Diego, CA

CPT Shear Wave Measurements

CPT-2	Tip Depth (ft)	Geophone Depth (ft)	Travel Distance (ft)	S-Wave Arrival (msec)	S-Wave Velocity from Surface (ft/sec)	Interval S-Wave Velocity (ft/sec)
	5.10	4.10	6.47	6.03	1072.32	
	10.07	9.07	10.36	13.91	744.56	493.76
	15.11	14.11	14.97	22.10	677.36	563.23
	20.04	19.04	19.69	31.22	630.54	517.09
	25.01	24.01	24.53	42.21	581.03	440.36
	30.09	29.09	29.52	53.73	549.35	433.29
	35.09	34.09	34.45	60.20	572.34	763.24
	40.16	39.16	39.48	63.89	617.90	1361.30
	45.03	44.03	44.31	67.41	657.37	1373.60
	50.14	49.14	49.39	71.21	693.63	1337.03
	55.03	54.03	54.26	74.84	725.02	1340.81
	60.00	59.00	59.21	78.84	751.03	1237.66
	65.05	64.05	64.24	84.14	763.55	949.69
	70.10	69.10	69.28	88.90	779.31	1057.94
	75.06	74.06	74.23	92.56	801.95	1351.89
	80.15	79.15	79.31	100.32	790.55	654.53
	85.03	84.03	84.18	105.52	797.75	936.70

Shear Wave Source Offset = 5 ft

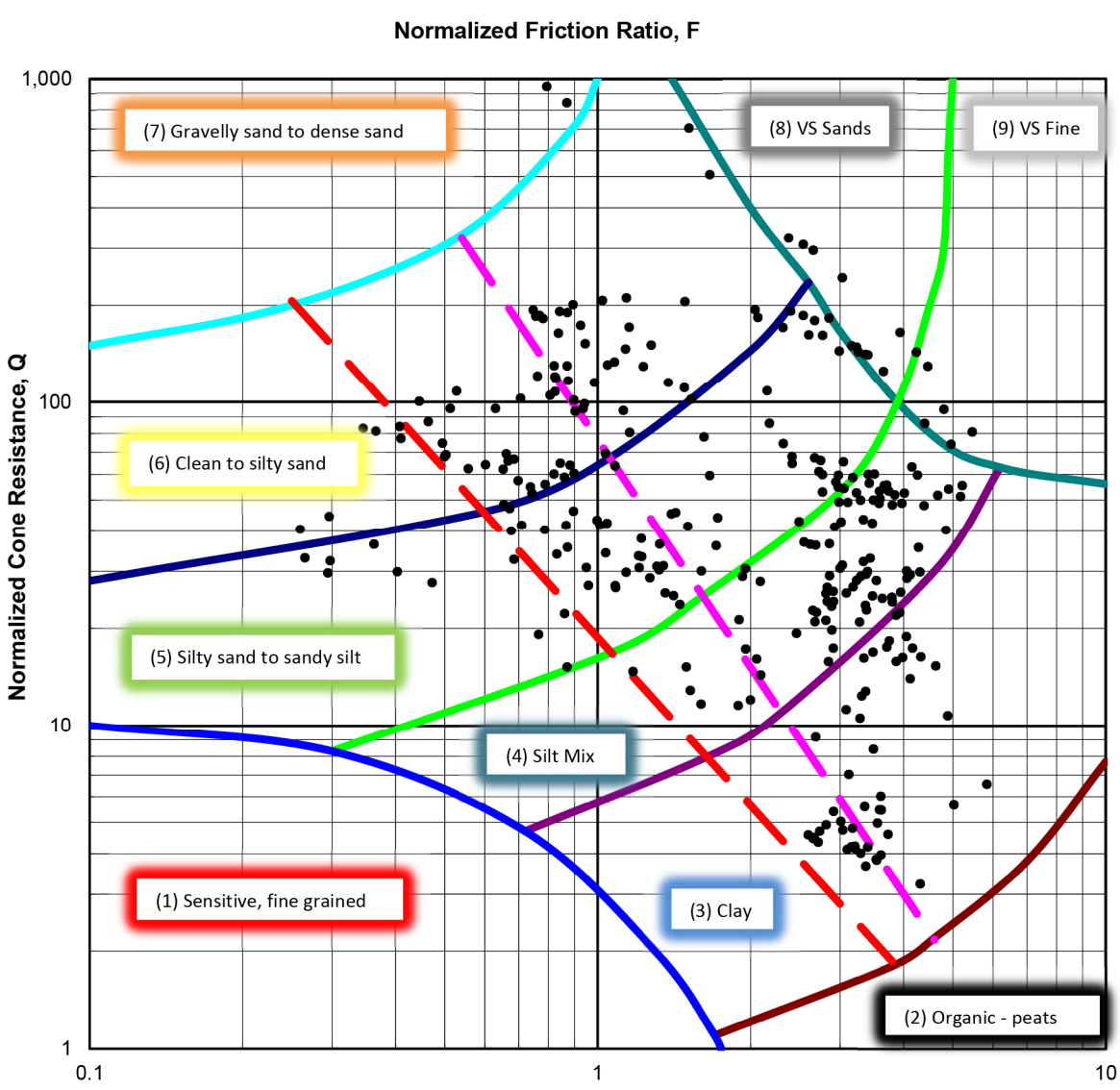
S-Wave Velocity from Surface = Travel Distance/S-Wave Arrival
Interval S-Wave Velocity = (Travel Dist2-Travel Dist1)/(Time2-Time1)

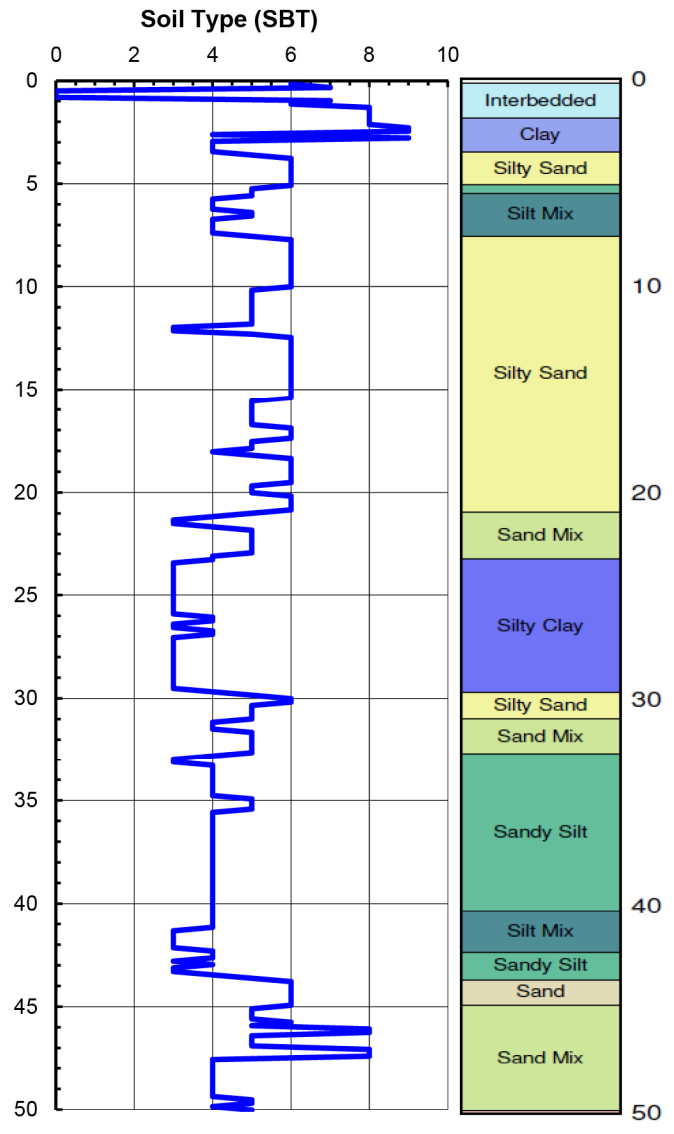


GROUP DELTA

CONE PENETOMETER DATA (CPT-3)

Document No. 16-0033
Project No. SD458
FIGURE A-4a

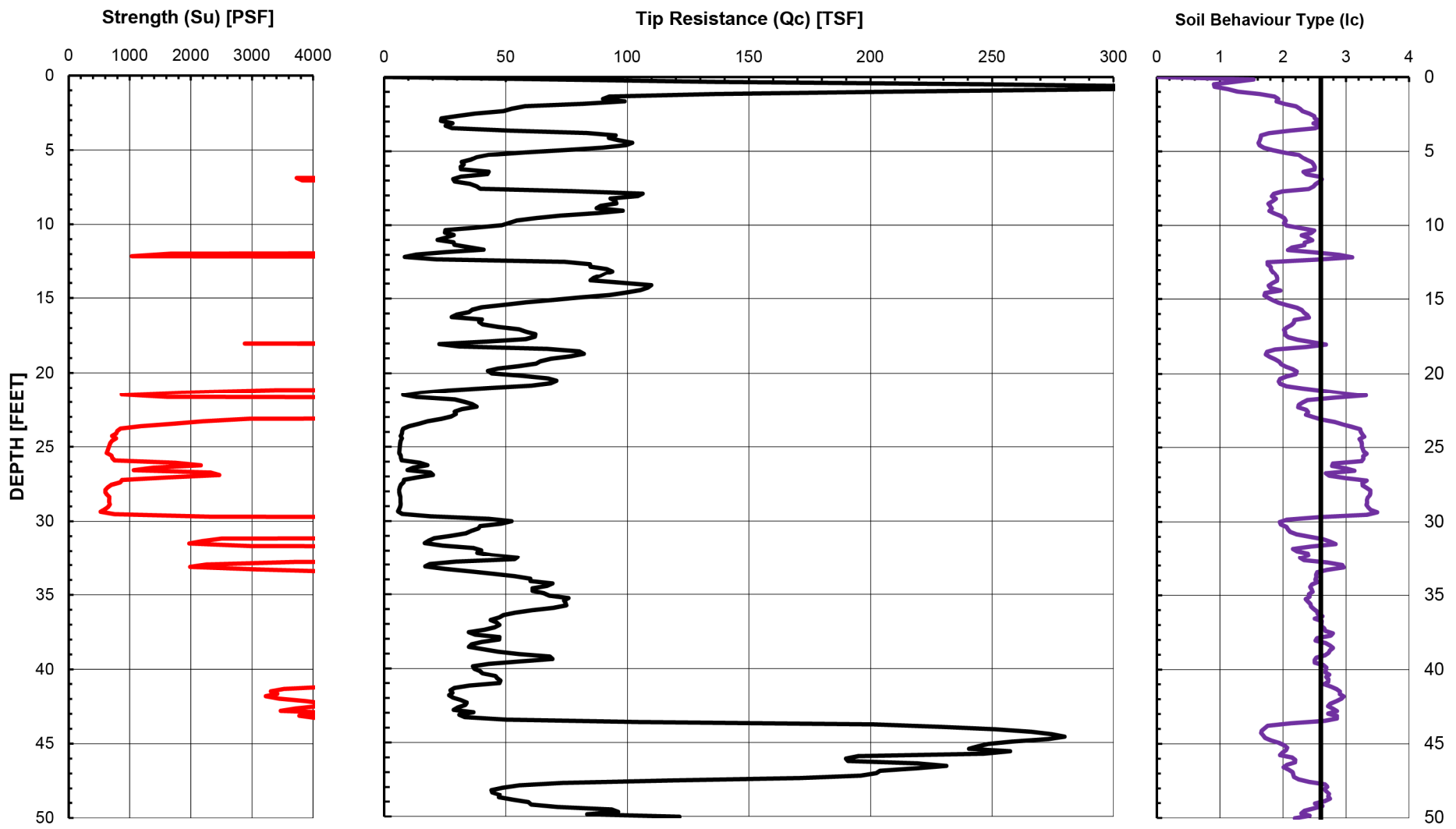




GROUP DELTA

SOIL CLASSIFICATION (CPT-3)

Document No. 16-0033
Project No. SD458
FIGURE A-4b



GROUP DELTA

INTERPRETED SOIL DATA (CPT-3)

Document No. 16-0033
Project No. SD458
FIGURE A-4c

APPENDIX B
LABORATORY TESTING

APPENDIX B

LABORATORY TESTING

Laboratory testing was conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions and in the same locality. No warranty, express or implied, is made as to the correctness or serviceability of the test results, or the conclusions derived from these tests. Where a specific laboratory test method has been referenced, such as ASTM or Caltrans, the reference only applies to the specified laboratory test method, which has been used only as a guidance document for the general performance of the test and not as a "Test Standard". A brief description of the various tests performed for this project follows.

Classification: Soils were visually classified according to the Unified Soil Classification System as established by the American Society of Civil Engineers per ASTM D2487. The soil classifications are shown on the boring logs in Appendix A.

Particle Size Analysis: Particle size analyses were performed in accordance with ASTM D422, and were used to supplement visual classifications. The test results are shown in Figures B-1.1 to B-1.6.

Atterberg Limits: ASTM D4318 was used to determine the liquid limit and plasticity index of selected samples. The results are shown in Figures B-1.1 and B-1.6.

Expansion Index: The expansion potential of selected soil samples was estimated in general accordance with ASTM D4829. The test results are summarized in Figure B-2, along with a summary of previous expansion index tests conducted by others. Figure B-2 also presents common criteria for evaluating the expansion potential based on the expansion index.

pH and Resistivity: To assess the potential for reactivity with buried metals, selected soil samples were tested for pH and minimum resistivity using Caltrans test method 643. The corrosivity test results are summarized in Figure B-3, along with previous corrosion tests conducted by others.

Sulfate Content: To assess the potential for reactivity with concrete, selected soil samples were tested for water soluble sulfate. The sulfate was extracted from the soil under vacuum using a 10:1 (water to dry soil) dilution ratio. The extracted solution was tested for water soluble sulfate in general accordance with ASTM D516. The test results are also presented in Figure B-3, along with common criteria for evaluating soluble sulfate content.

Chloride Content: Soil samples were also tested for water soluble chloride. The chloride was extracted from the soil under vacuum using a 10:1 (water to dry soil) dilution ratio. The extracted solution was then tested for water soluble chloride using a calibrated ion specific electronic probe. The test results are also shown in Figure B-3.

APPENDIX B

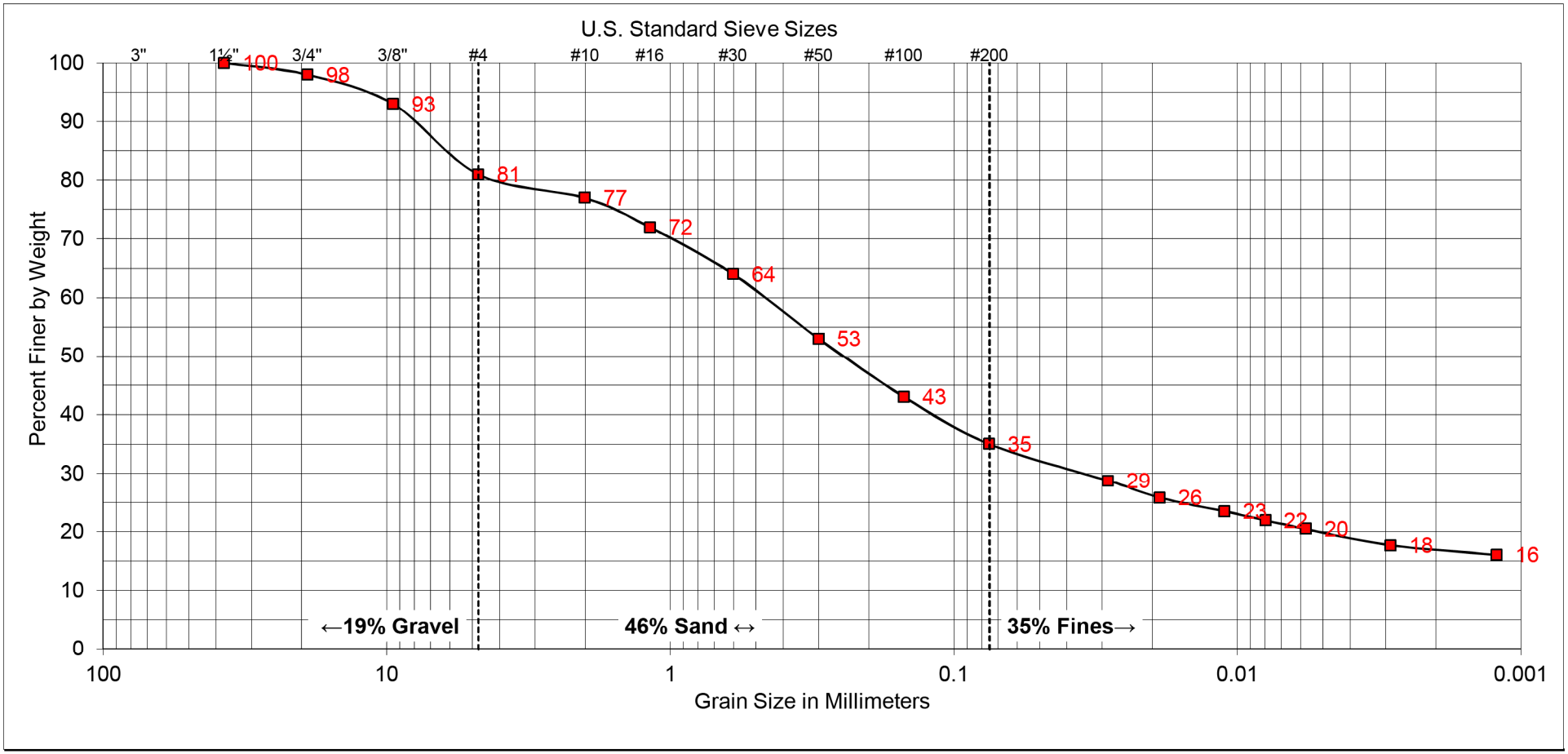
LABORATORY TESTING (Continued)

Specific Gravity: The bulk specific gravity of a selected sample of the on-site soil was assessed in general accordance with ASTM D854. The test results are provided in Figure B-4.

Direct Shear: The shear strength of the on-site soil was assessed using direct shear testing performed in general accordance with ASTM D3080. The test results are shown in Figure B-5.

Consolidation: The one-dimensional consolidation properties of a selected sample of the hydraulic fill were evaluated in general accordance with ASTM D2435. The sample was inundated with water under a nominal seating load, allowed to swell, and then subjected to controlled stress increments while restrained laterally and drained axially. The test results are presented in Figure B-6.

R-Value: An R-Value test was performed on a selected sample of the on-site soils in general accordance with CTM 301. The test results are shown in Figures B-7.1 and B-7.2.



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND
GRAVEL		SAND			CLAY

SAMPLE	
BORING NUMBER:	B-1
SAMPLE DEPTH:	1' - 4'

UNIFIED SOIL CLASSIFICATION: SC

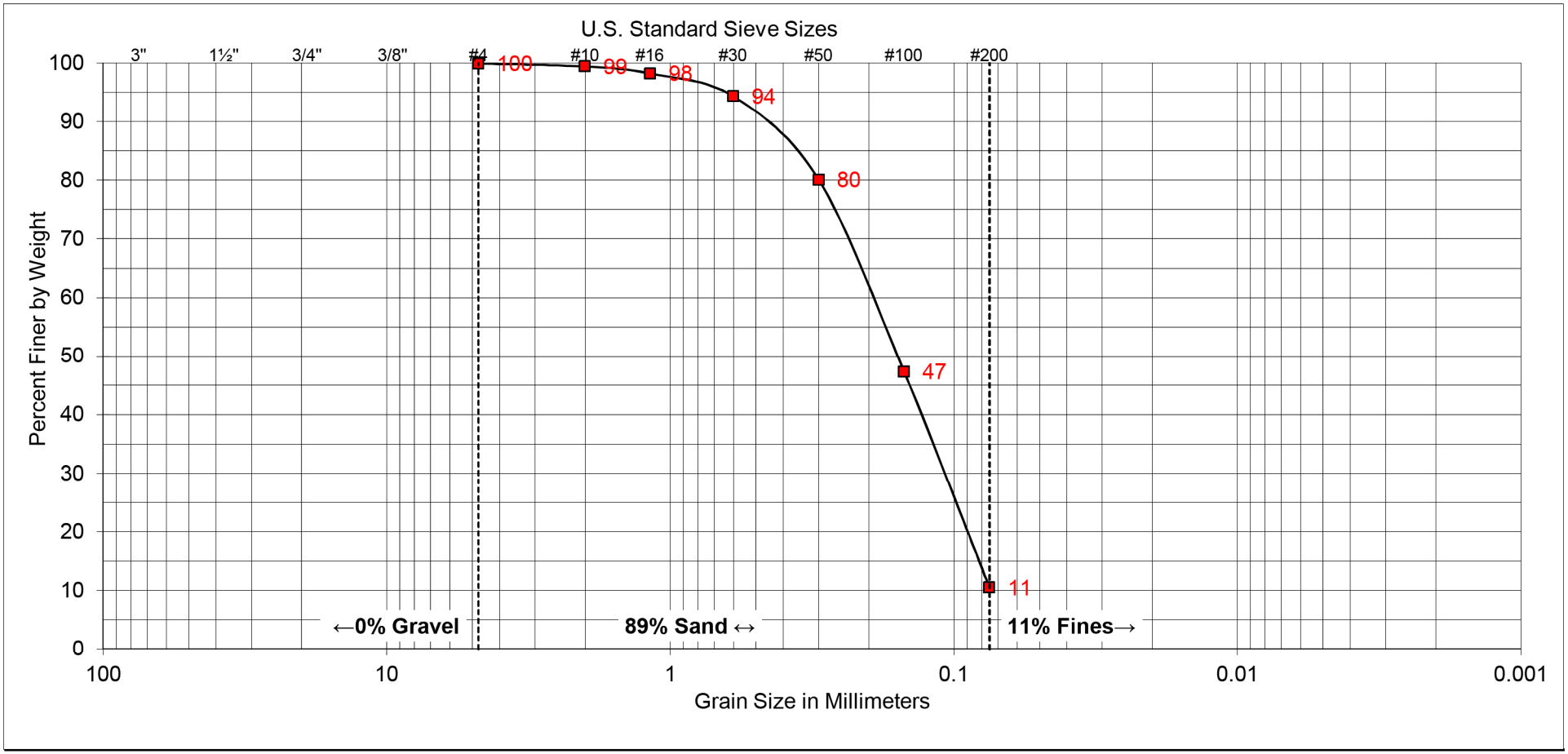
DESCRIPTION: CLAYEY SAND WITH GRAVEL

ATTERBERG LIMITS	
LIQUID LIMIT:	35
PLASTIC LIMIT:	13
PLASTICITY INDEX:	22

GROUP DELTA

SOIL CLASSIFICATION

Document No. 16-0033
Project No. SD458
FIGURE B-1.1



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND
GRAVEL		SAND			CLAY

SAMPLE	
BORING NUMBER:	B-1
SAMPLE DEPTH:	12½' - 14'

UNIFIED SOIL CLASSIFICATION: SP-SM

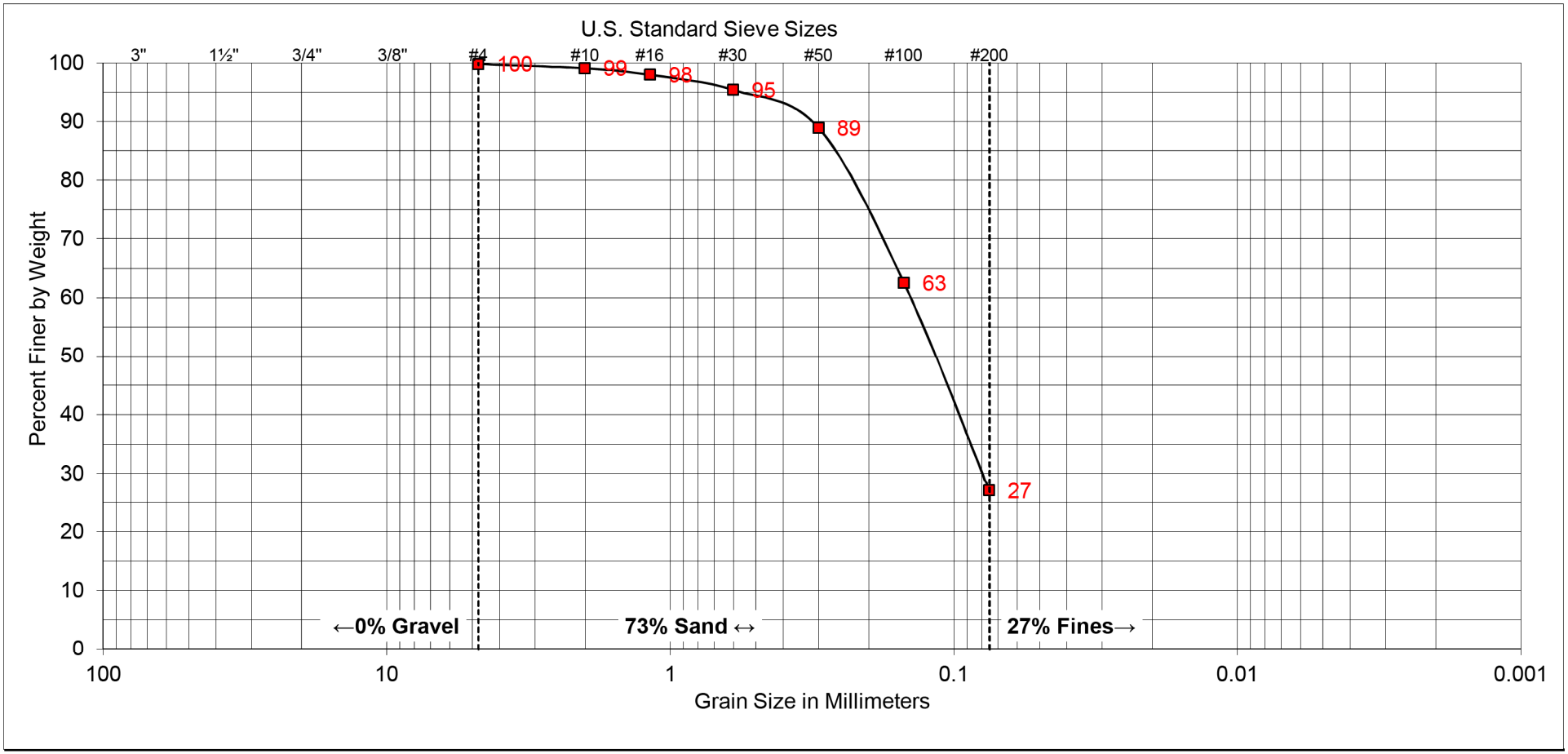
DESCRIPTION: POORLY GRADED SAND WITH SILT

ATTERBERG LIMITS	
LIQUID LIMIT:	---
PLASTIC LIMIT:	---
PLASTICITY INDEX:	---

GROUP DELTA

SOIL CLASSIFICATION

Document No. 16-0033
Project No. SD458
FIGURE B-1.2



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND
GRAVEL		SAND			CLAY

SAMPLE	
BORING NUMBER:	B-1
SAMPLE DEPTH:	20' - 21½'

UNIFIED SOIL CLASSIFICATION: SM

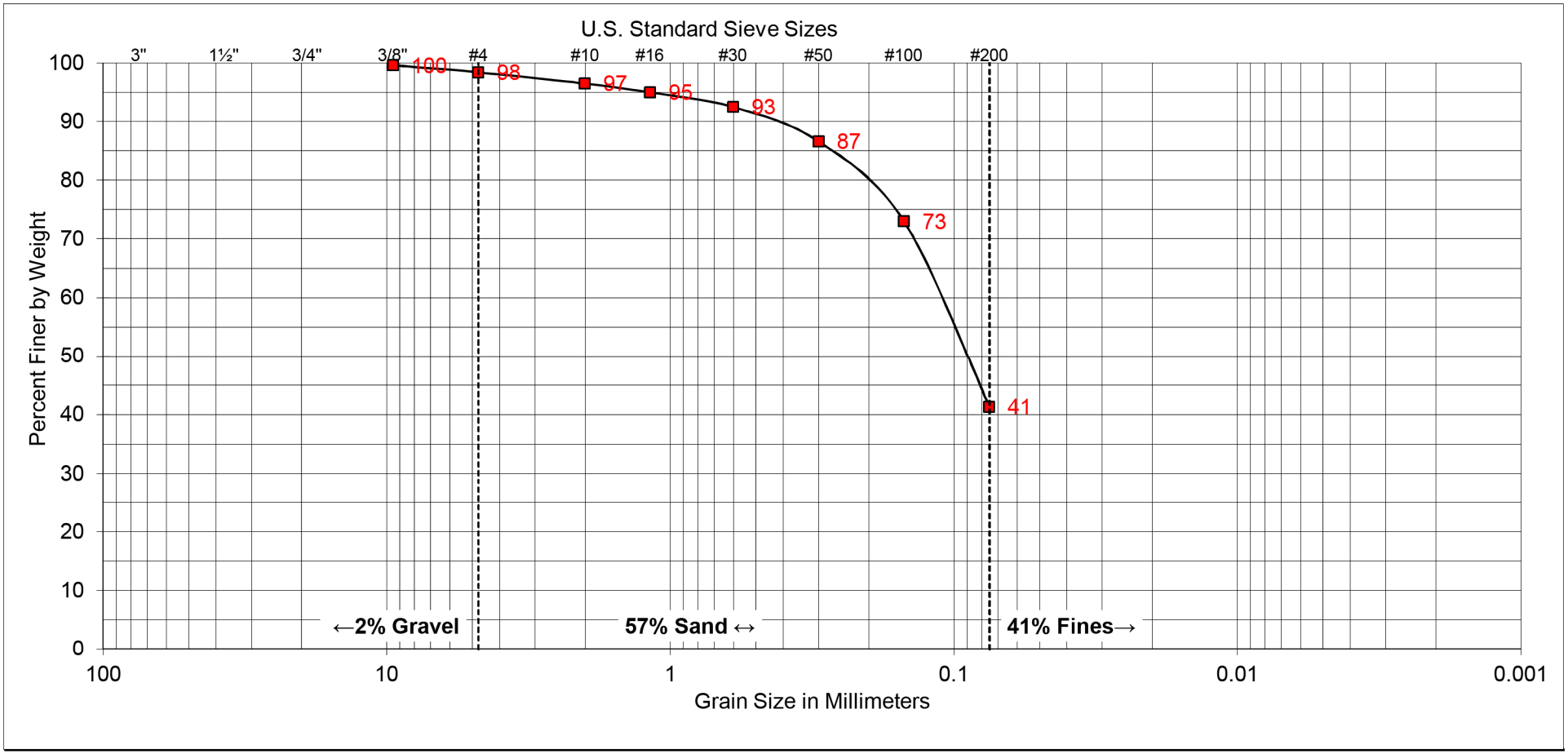
DESCRIPTION: SILTY SAND

ATTERBERG LIMITS	
LIQUID LIMIT:	---
PLASTIC LIMIT:	---
PLASTICITY INDEX:	---

GROUP DELTA

SOIL CLASSIFICATION

Document No. 16-0033
Project No. SD458
FIGURE B-1.3



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND
GRAVEL		SAND			CLAY

SAMPLE	
BORING NUMBER:	B-1
SAMPLE DEPTH:	30' - 31½'

UNIFIED SOIL CLASSIFICATION: SM

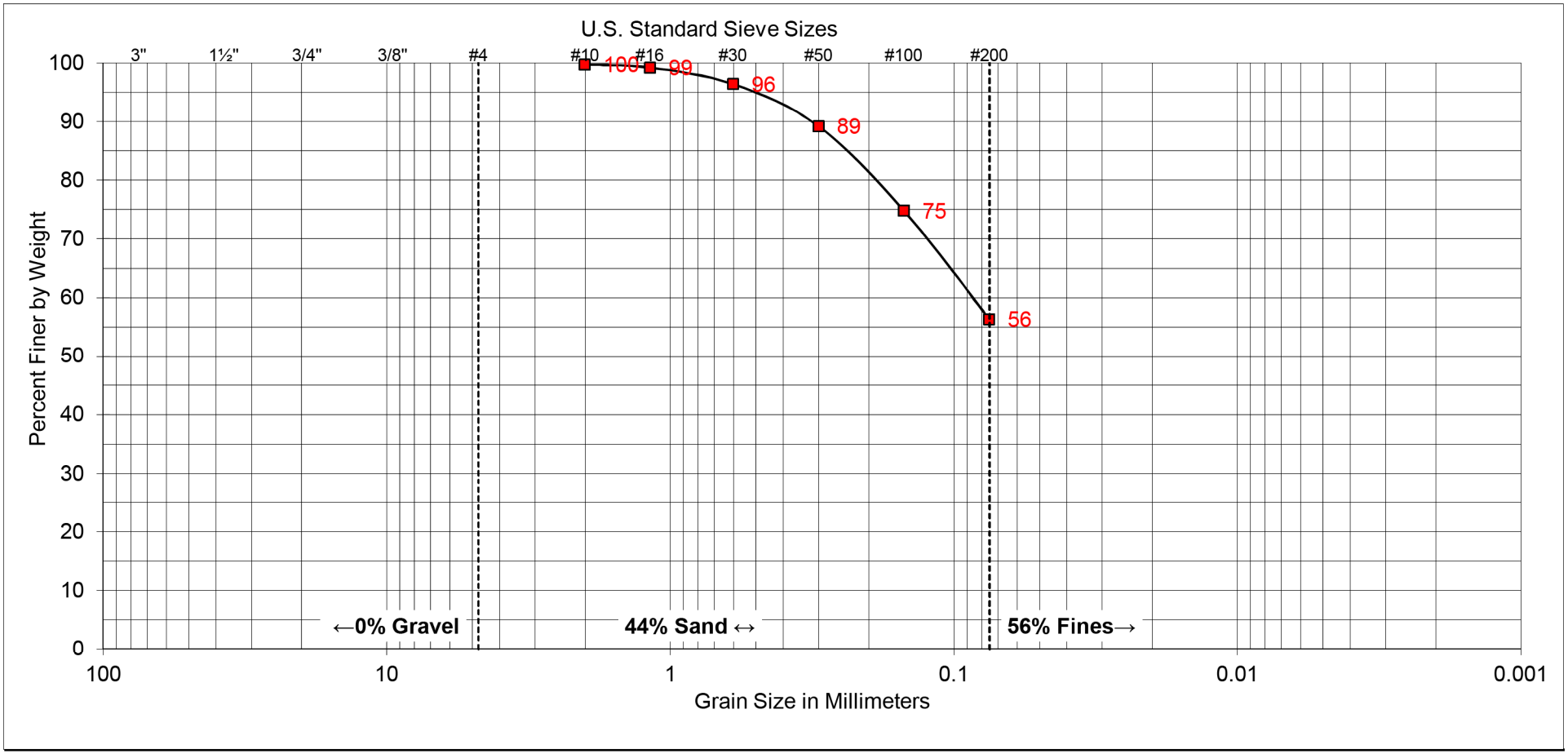
DESCRIPTION: SILTY SAND

ATTERBERG LIMITS	
LIQUID LIMIT:	---
PLASTIC LIMIT:	---
PLASTICITY INDEX:	---

GROUP DELTA

SOIL CLASSIFICATION

Document No. 16-0033
Project No. SD458
FIGURE B-1.4



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND
GRAVEL		SAND			CLAY

SAMPLE	
BORING NUMBER:	B-1
SAMPLE DEPTH:	40' - 41½'

UNIFIED SOIL CLASSIFICATION: CL

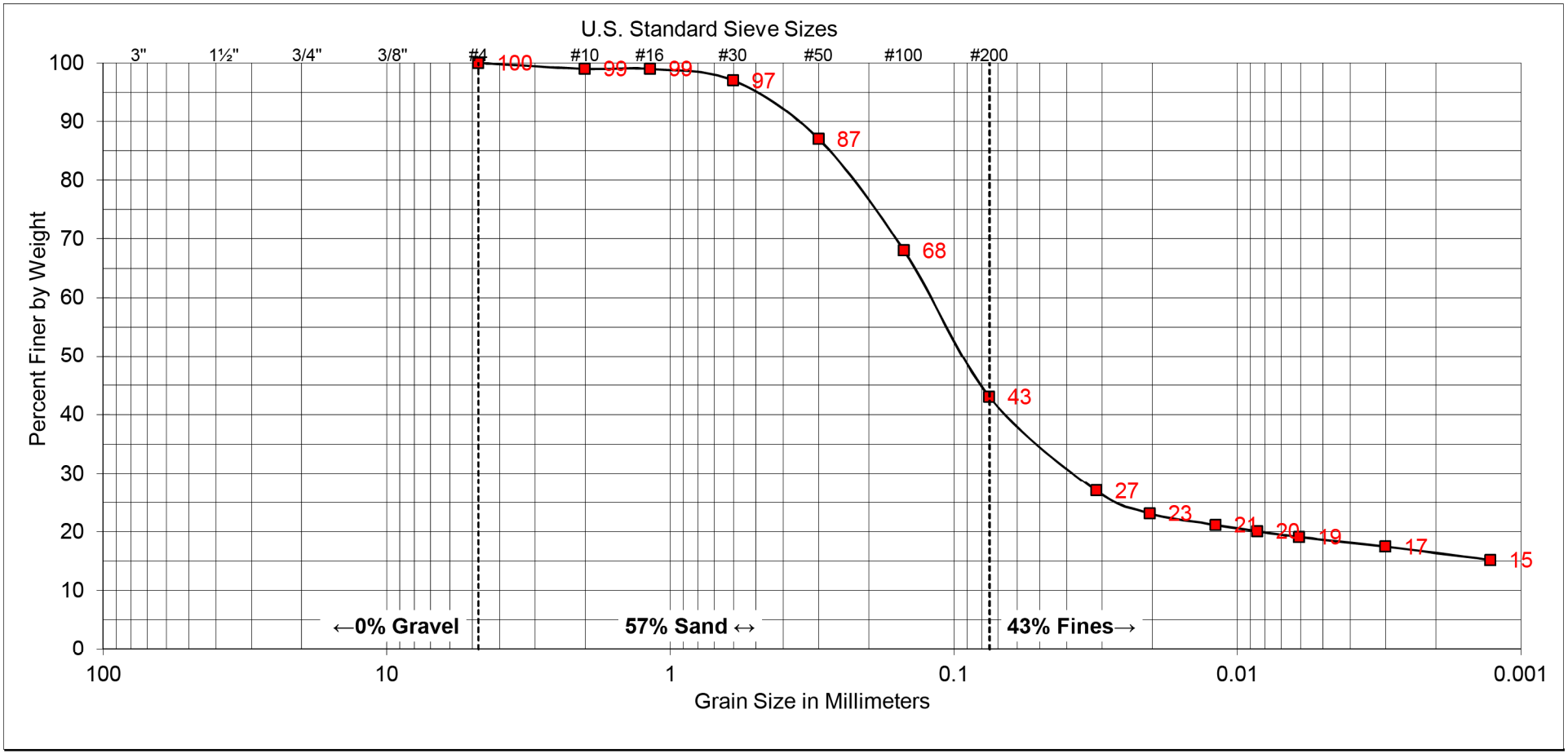
DESCRIPTION: SANDY LEAN CLAY

ATTERBERG LIMITS	
LIQUID LIMIT:	---
PLASTIC LIMIT:	---
PLASTICITY INDEX:	---

GROUP DELTA

SOIL CLASSIFICATION

Document No. 16-0033
Project No. SD458
FIGURE B-1.5



COARSE	FINE	COARSE	MEDIUM	FINE	SILT AND
GRAVEL		SAND			CLAY

SAMPLE	
BORING NUMBER:	B-1
SAMPLE DEPTH:	50' - 51½'

UNIFIED SOIL CLASSIFICATION: SC

DESCRIPTION: CLAYEY SAND

ATTERBERG LIMITS	
LIQUID LIMIT:	25
PLASTIC LIMIT:	17
PLASTICITY INDEX:	8

GROUP DELTA

SOIL CLASSIFICATION

Document No. 16-0033
Project No. SD458
FIGURE B-1.6

EXPANSION TEST RESULTS
(ASTM D4829)

SAMPLE NO.	DESCRIPTION	EXPANSION INDEX
B-1 @ 1' – 4'	**FILL**: Dark yellow brown clayey sand with gravel (SC).	32

EXPANSION INDEX	POTENTIAL EXPANSION
0 to 20	Very low
21 to 50	Low
51 to 90	Medium
91 to 130	High
Above 130	Very High

CORROSIVITY TEST RESULTS
(ASTM D516, CTM 643)

SAMPLE NO.	pH	RESISTIVITY [OHM-CM]	SULFATE CONTENT [%]	CHLORIDE CONTENT [%]
B-1 @ 1' – 4'	9.0	150	0.01	0.30

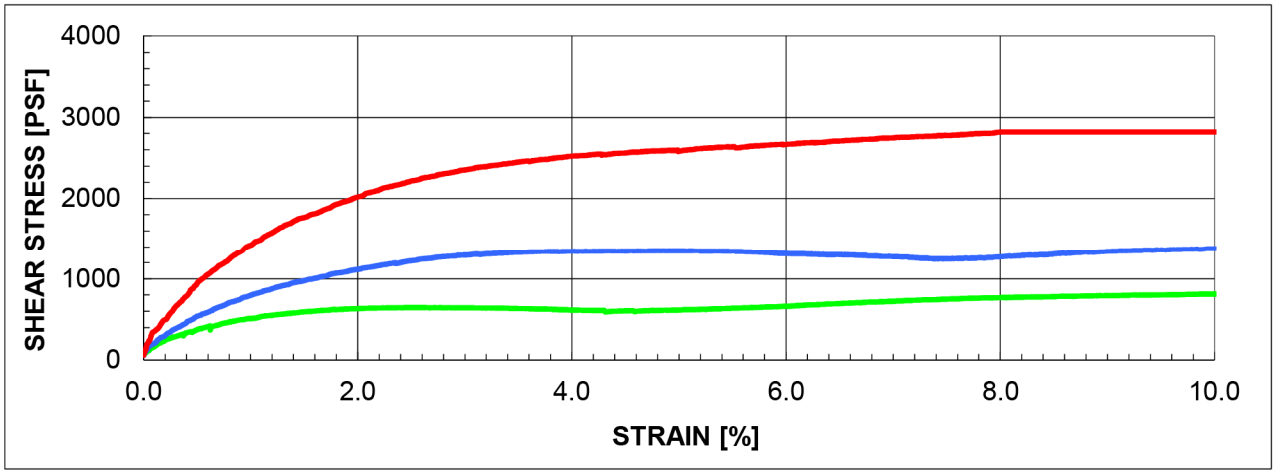
SULFATE CONTENT [%]	SULFATE EXPOSURE	CEMENT TYPE
0.00 to 0.10	Negligible	-
0.10 to 0.20	Moderate	II, IP(MS), IS(MS)
0.20 to 2.00	Severe	V
Above 2.00	Very Severe	V plus pozzolan

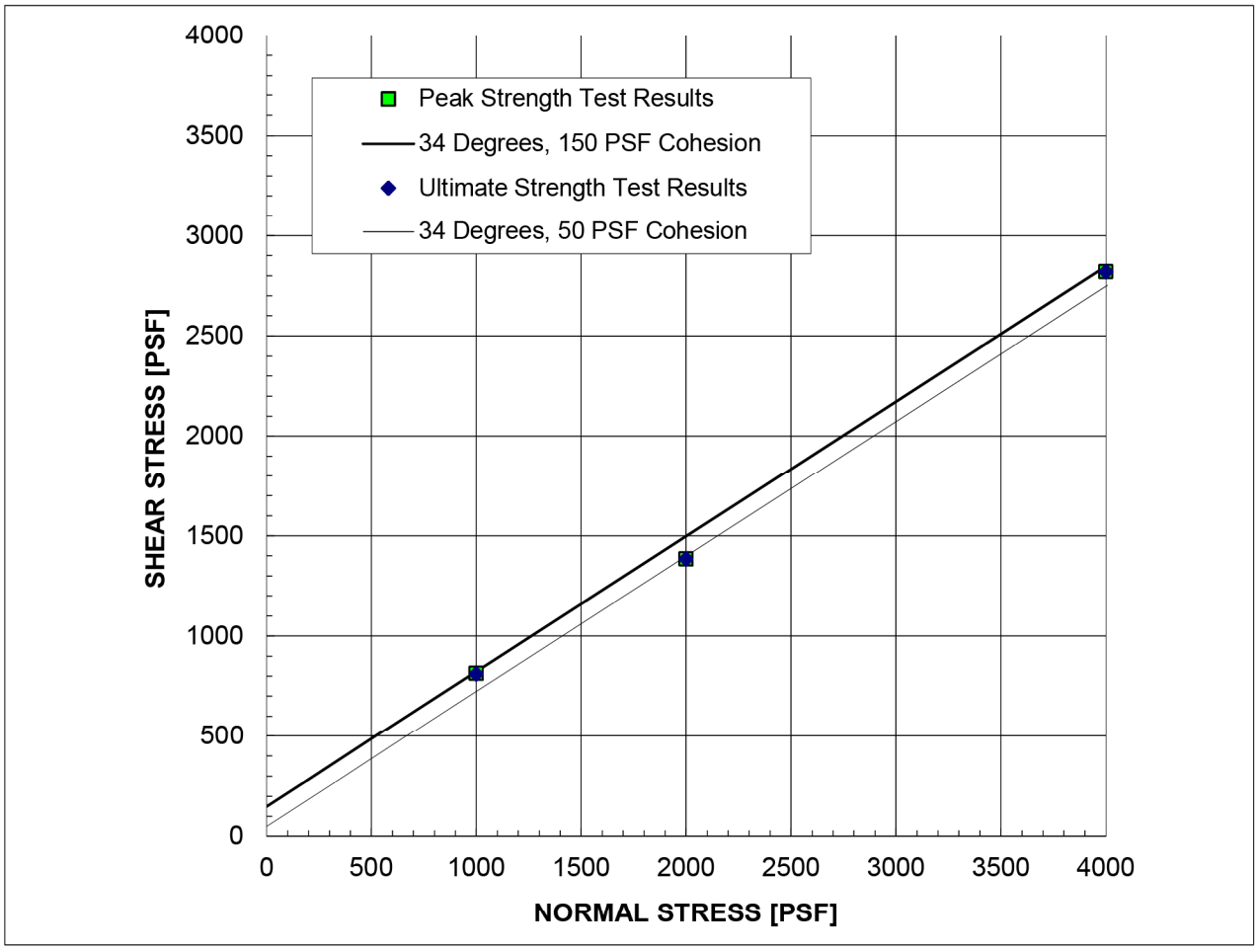
SOIL RESISTIVITY	GENERAL DEGREE OF CORROSIVITY TO FERROUS
0 to 1,000	Very Corrosive
1,000 to 2,000	Corrosive
2,000 to 5,000	Moderately Corrosive
5,000 to 10,000	Mildly Corrosive
Above 10,000	Slightly Corrosive

CHLORIDE (Cl) CONTENT	GENERAL DEGREE OF
0.00 to 0.03	Negligible
0.03 to 0.15	Corrosive
Above 0.15	Severely Corrosive

SPECIFIC GRAVITY TEST RESULTS
(ASTM D854)

SAMPLE NO.	DESCRIPTION	SPECIFIC GRAVITY
B-1 @ 1' – 4'	**FILL**: Dark yellow brown clayey sand with gravel (SC).	2.675





SAMPLE: B-1 @ 15' - 16½'

	PEAK	ULTIMATE
HYDRAULIC FILL: Gray poorly graded sand with silt (SP-SM)	ϕ'	34 °	34 °
	C'	150 PSF	50 PSF

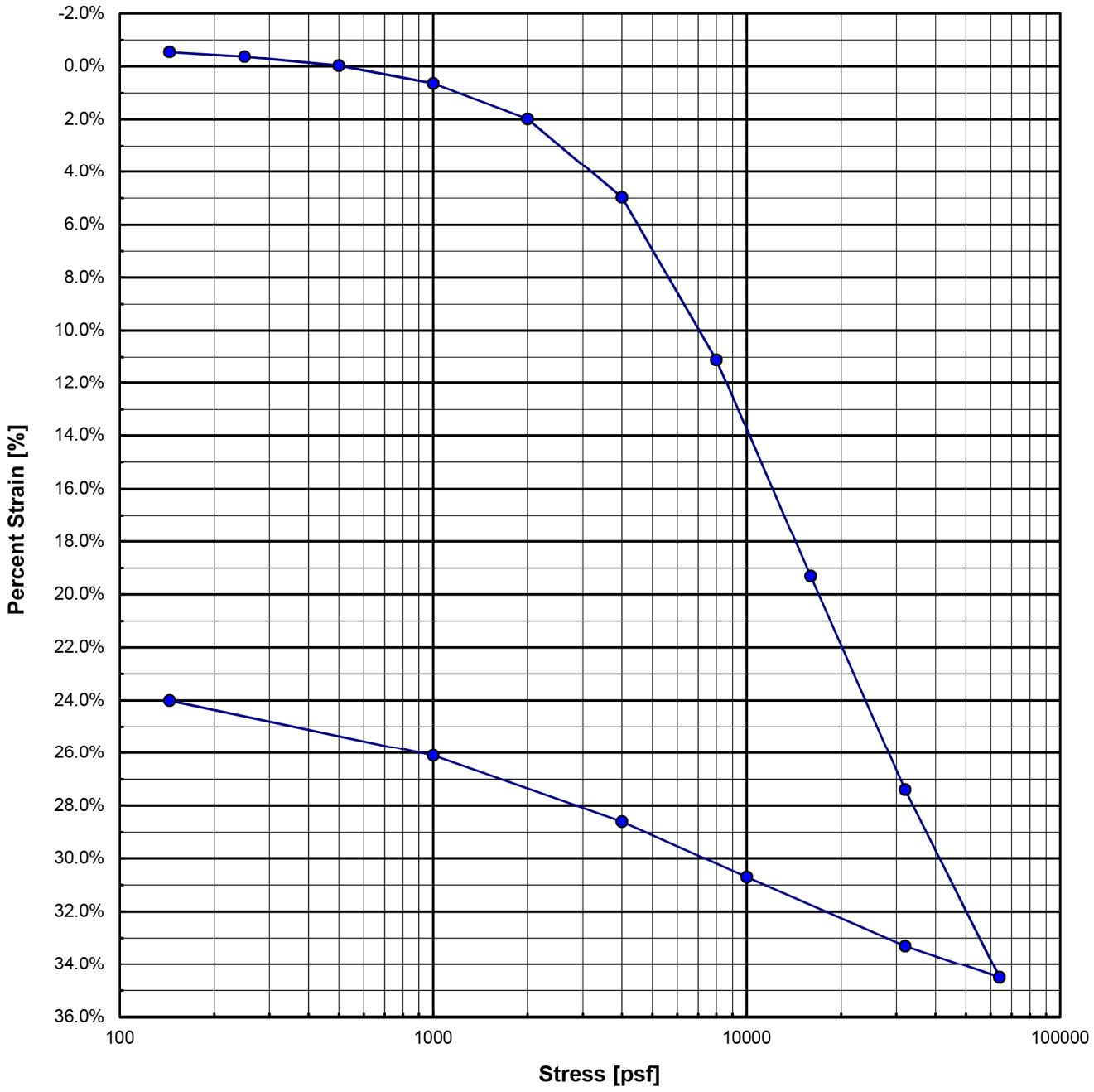
STRAIN RATE: 0.0040 IN/MIN
(Sample was consolidated and drained)

	IN-SITU	AS-TESTED
γ_d	99.6 PCF	99.6 PCF
w_c	26.3 %	26.3 %

GROUP DELTA

DIRECT SHEAR TEST RESULTS

Document No. 16-0033
Project No. SD458
FIGURE B-5



B-1 @ 25' - 26'

INITIAL	FINAL	
1.0000	0.7600	SAMPLE HEIGHT [IN]
65.6	86.3	DRY DENSITY [PCF]
2.76	2.76	SPECIFIC GRAVITY (ASSUMED)
1.64	0.99	VOID RATIO (e)
57.7	36.0	WATER CONTENT [%]
97.1	100.0	DEGREE OF SATURATION [%]

GROUP DELTA

CONSOLIDATION RESULTS

Document No. 16-0033
Project No. SD458
FIGURE B-6

BORING NO.: B-1 **SAMPLE DATE:** 02/24/16

BORING DEPTH: 1' - 4' **TEST DATE:** 03/03/16

SAMPLE DESCRIPTION: Dark yellow brown clayey sand (SC)

LABORATORY TEST DATA

	TEST SPECIMEN	1	2	3	4	5	
A	COMPACTOR PRESSURE	90	75	130			[PSI]
B	INITIAL MOISTURE	1.4	1.4	1.4			[%]
C	BATCH SOIL WEIGHT	1200	1200	1200			[G]
D	WATER ADDED	125	136	105			[ML]
E	WATER ADDED (D*(100+B)/C)	10.6	11.5	8.9			[%]
F	COMPACTION MOISTURE (B+E)	12.0	12.9	10.3			[%]
G	MOLD WEIGHT	2011.0	2010.0	2005.3			[G]
H	TOTAL BRIQUETTE WEIGHT	3210.1	3161.8	3184.1			[G]
I	NET BRIQUETTE WEIGHT (H-G)	1199.1	1151.8	1178.8			[G]
J	BRIQUETTE HEIGHT	2.66	2.58	2.55			[IN]
K	DRY DENSITY (30.3*I/((100+F)*J))	122.0	119.8	127.0			[PCF]
L	EXUDATION LOAD	3799	2561	5390			[LB]
M	EXUDATION PRESSURE (L/12.54)	303	204	430			[PSI]
N	STABILOMETER AT 1000 LBS	60	62	46			[PSI]
O	STABILOMETER AT 2000 LBS	137	141	114			[PSI]
P	DISPLACEMENT FOR 100 PSI	5.43	5.77	4.60			[Turns]
Q	R VALUE BY STABILOMETER	7	6	18			
R	CORRECTED R-VALUE (See Fig. 14)	7	6	18			
S	EXPANSION DIAL READING	0.0000	0.0000	0.0006			[IN]
T	EXPANSION PRESSURE (S*43,300)	0	0	26			[PSF]
U	COVER BY STABILOMETER	0.93	0.94	0.82			[FT]
V	COVER BY EXPANSION	0.00	0.00	0.20			[FT]

TRAFFIC INDEX:	5.0
GRAVEL FACTOR:	1.60
UNIT WEIGHT OF COVER [PCF]:	130
R-VALUE BY EXUDATION:	6
R-VALUE BY EXPANSION:	18
R-VALUE AT EQUILIBRIUM:	6

*Note: Gravel factor estimated from pavement section using CTM 301, Section C, Part b.

REV. 2, DATED 1/31/15

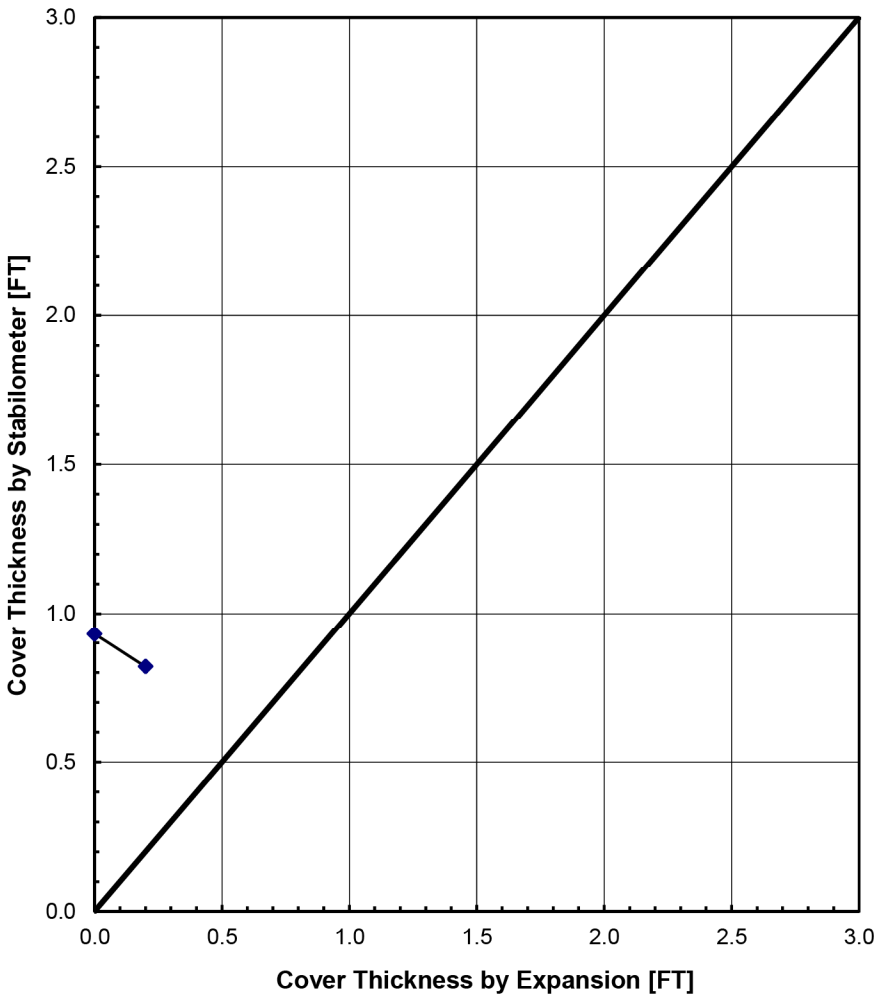
GROUP DELTA

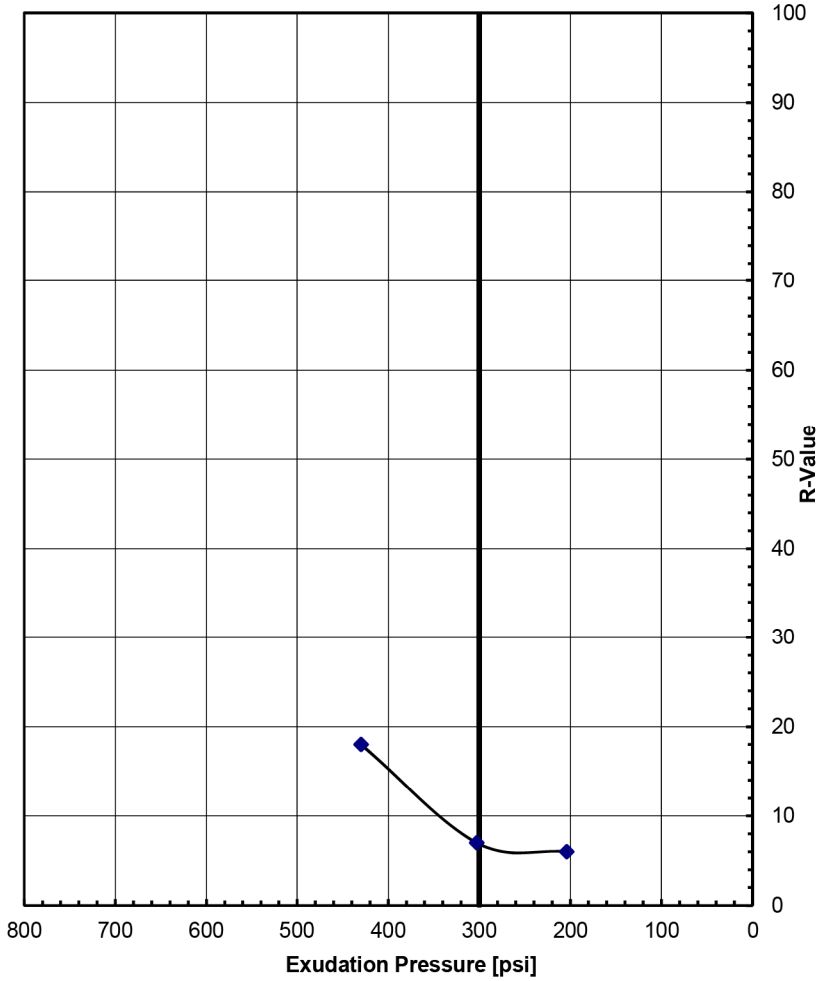
R-VALUE TEST RESULTS

Document No. 16-0033
Project No. SD458
FIGURE B-7.1

Sample: B-1 @ 1' - 4'

R-Value at Equilibrium: 6





GROUP DELTA

COVER AND EXUDATION CHARTS

Document No. 16-0033
Project No. SD458
FIGURE B-7.2

APPENDIX C
ENVIRONMENTAL TESTING

APPENDIX C

ENVIRONMENTAL TESTING

Samples were collected from soundings CPT-1 and CPT-3 for environmental testing (in addition to the geotechnical samples described in Appendix B). Environmental test samples were collected from depths of 5, 10, 15 and 20 feet in both CPT soundings. The approximate CPT locations are shown on the Exploration Plan, Figure 2D. Logs of the explorations were provided in Appendix A.

The environmental test samples were collected in stainless steel containers, and then capped using Teflon lids and sealed with tape. The multiple samples from each test depth were individually labeled, and then sealed as a group in a second plastic bag, and tagged again. These groups of samples were then cooled within an ice chest during storage and transportation. Trip blanks were also stored within the ice chest to check for incidental contamination until the samples were delivered to a certified testing laboratory (Eurofins CalScience) under Chain of Custody.

The groups of samples collected from each depth were tested for environmental contaminants using EPA methods. Each group of samples was tested for Total Petroleum Hydrocarbons (EPA 8015M), Volatile Organic Compounds (EPA 8260B), Title 22 Metals (EPA 8270C), Polychlorinated biphenyls (EPA 8082), Organochloride pesticides (EPA 8081A), Organophosphorus pesticides (EPA 8141A) and Chlorinated Herbicides (EPA 8151A). Samples that were analyzed for volatile constituents were preserved in the field using EPA 5035 methods (Encore). The environmental test results are presented in the following figures of Appendix C.

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WORK ORDER NUMBER: 16-03-0104

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: Group Delta Consultants, Inc.

Client Project Name: SD458 Mitsubishi Cement Facility

Attention: Ray Frigillana
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Approved for release on 03/09/2016 by:
Virendra Patel
Project Manager

ResultLink

Email your PM

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Contents

Client Project Name: SD458 Mitsubishi Cement Facility
Work Order Number: 16-03-0104

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Work Order Narrative

Work Order: 16-03-0104 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 03/01/16. They were assigned to Work Order 16-03-0104.

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.

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Sample Summary

Client:	Group Delta Consultants, Inc. 9245 Activity Road, Suite 103 San Diego, CA 92126-4442	Work Order:	16-03-0104
		Project Name:	SD458 Mitsubishi Cement Facility
		PO Number:	
		Date/Time Received:	03/01/16 18:40
		Number of Containers:	56
Attn:	Ray Frigillana		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
CPT-1 @ 5'	16-03-0104-1	02/25/16 10:25	7	Solid
CPT 1 @ 10'	16-03-0104-2	02/25/16 10:36	7	Solid
CPT 1 @ 15'	16-03-0104-3	02/25/16 10:57	7	Solid
CPT 1 @ 20'	16-03-0104-4	02/25/16 11:20	7	Solid
CPT-3 @ 5'	16-03-0104-5	02/25/16 11:50	7	Solid
CPT 3 @ 10'	16-03-0104-6	02/25/16 12:03	6	Solid
CPT 3 @ 15'	16-03-0104-7	02/26/16 10:10	7	Solid
CPT 3 @ 20'	16-03-0104-8	02/26/16 10:28	7	Solid
CPT 3 @ 10'	16-03-0104-9	02/26/16 09:55	1	Solid

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Detections Summary

Client:	Group Delta Consultants, Inc. 9245 Activity Road, Suite 103 San Diego, CA 92126-4442	Work Order:	16-03-0104
		Project Name:	SD458 Mitsubishi Cement Facility
		Received:	03/01/16
Attn:	Ray Frigillana		

Client SampleID / Analyte	Result	Qualifiers	RL	Units	Method	Extraction
CPT-1 @ 5' (16-03-0104-1)						
Arsenic	1.74		0.754	mg/kg	EPA 6010B	EPA 3050B
Barium	23.5		0.503	mg/kg	EPA 6010B	EPA 3050B
Chromium	4.60		0.251	mg/kg	EPA 6010B	EPA 3050B
Cobalt	3.06		0.251	mg/kg	EPA 6010B	EPA 3050B
Copper	4.86		0.503	mg/kg	EPA 6010B	EPA 3050B
Lead	2.06		0.503	mg/kg	EPA 6010B	EPA 3050B
Nickel	1.65		0.251	mg/kg	EPA 6010B	EPA 3050B
Vanadium	11.9		0.251	mg/kg	EPA 6010B	EPA 3050B
Zinc	9.61		1.01	mg/kg	EPA 6010B	EPA 3050B
CPT 1 @ 10' (16-03-0104-2)						
Arsenic	2.30		0.769	mg/kg	EPA 6010B	EPA 3050B
Barium	45.0		0.513	mg/kg	EPA 6010B	EPA 3050B
Chromium	7.07		0.256	mg/kg	EPA 6010B	EPA 3050B
Cobalt	3.99		0.256	mg/kg	EPA 6010B	EPA 3050B
Copper	4.81		0.513	mg/kg	EPA 6010B	EPA 3050B
Lead	3.52		0.513	mg/kg	EPA 6010B	EPA 3050B
Nickel	3.17		0.256	mg/kg	EPA 6010B	EPA 3050B
Vanadium	23.2		0.256	mg/kg	EPA 6010B	EPA 3050B
Zinc	22.2		1.03	mg/kg	EPA 6010B	EPA 3050B
CPT 1 @ 15' (16-03-0104-3)						
Arsenic	0.805		0.761	mg/kg	EPA 6010B	EPA 3050B
Barium	25.9		0.508	mg/kg	EPA 6010B	EPA 3050B
Chromium	5.08		0.254	mg/kg	EPA 6010B	EPA 3050B
Cobalt	2.39		0.254	mg/kg	EPA 6010B	EPA 3050B
Copper	2.40		0.508	mg/kg	EPA 6010B	EPA 3050B
Lead	1.53		0.508	mg/kg	EPA 6010B	EPA 3050B
Nickel	1.91		0.254	mg/kg	EPA 6010B	EPA 3050B
Vanadium	15.2		0.254	mg/kg	EPA 6010B	EPA 3050B
Zinc	18.2		1.02	mg/kg	EPA 6010B	EPA 3050B

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* MDL is shown

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Detections Summary

Client:	Group Delta Consultants, Inc. 9245 Activity Road, Suite 103 San Diego, CA 92126-4442	Work Order:	16-03-0104
		Project Name:	SD458 Mitsubishi Cement Facility
		Received:	03/01/16
Attn:	Ray Frigillana		Page 2 of 3

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
CPT 1 @ 20' (16-03-0104-4)						
Arsenic	2.24		0.721	mg/kg	EPA 6010B	EPA 3050B
Barium	47.7		0.481	mg/kg	EPA 6010B	EPA 3050B
Cadmium	0.691		0.481	mg/kg	EPA 6010B	EPA 3050B
Chromium	11.2		0.240	mg/kg	EPA 6010B	EPA 3050B
Cobalt	3.38		0.240	mg/kg	EPA 6010B	EPA 3050B
Copper	23.2		0.481	mg/kg	EPA 6010B	EPA 3050B
Lead	35.4		0.481	mg/kg	EPA 6010B	EPA 3050B
Molybdenum	1.19		0.240	mg/kg	EPA 6010B	EPA 3050B
Nickel	5.37		0.240	mg/kg	EPA 6010B	EPA 3050B
Silver	0.444		0.240	mg/kg	EPA 6010B	EPA 3050B
Vanadium	24.2		0.240	mg/kg	EPA 6010B	EPA 3050B
Zinc	99.3		0.962	mg/kg	EPA 6010B	EPA 3050B
Mercury	0.413		0.0862	mg/kg	EPA 7471A	EPA 7471A Total
TPH as Motor Oil	270	HD	26	mg/kg	EPA 8015B (M)	EPA 3550B
TPH as Diesel	97	HD	5.1	mg/kg	EPA 8015B (M)	EPA 3550B
CPT-3 @ 5' (16-03-0104-5)						
Arsenic	4.01		0.750	mg/kg	EPA 6010B	EPA 3050B
Barium	23.4		0.500	mg/kg	EPA 6010B	EPA 3050B
Chromium	8.24		0.250	mg/kg	EPA 6010B	EPA 3050B
Cobalt	2.69		0.250	mg/kg	EPA 6010B	EPA 3050B
Copper	3.94		0.500	mg/kg	EPA 6010B	EPA 3050B
Lead	0.639		0.500	mg/kg	EPA 6010B	EPA 3050B
Nickel	2.63		0.250	mg/kg	EPA 6010B	EPA 3050B
Vanadium	17.7		0.250	mg/kg	EPA 6010B	EPA 3050B
Zinc	14.3		1.00	mg/kg	EPA 6010B	EPA 3050B
CPT 3 @ 10' (16-03-0104-6)						
Arsenic	1.91		0.781	mg/kg	EPA 6010B	EPA 3050B
Barium	39.0		0.521	mg/kg	EPA 6010B	EPA 3050B
Chromium	5.26		0.260	mg/kg	EPA 6010B	EPA 3050B
Cobalt	3.40		0.260	mg/kg	EPA 6010B	EPA 3050B
Copper	2.89		0.521	mg/kg	EPA 6010B	EPA 3050B
Lead	1.66		0.521	mg/kg	EPA 6010B	EPA 3050B
Nickel	2.45		0.260	mg/kg	EPA 6010B	EPA 3050B
Vanadium	18.0		0.260	mg/kg	EPA 6010B	EPA 3050B
Zinc	15.5		1.04	mg/kg	EPA 6010B	EPA 3050B

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Detections Summary

Client:	Group Delta Consultants, Inc. 9245 Activity Road, Suite 103 San Diego, CA 92126-4442	Work Order:	16-03-0104
		Project Name:	SD458 Mitsubishi Cement Facility
		Received:	03/01/16
Attn:	Ray Frigillana		Page 3 of 3

Client SampleID

Analyte	Result	Qualifiers	RL	Units	Method	Extraction
CPT 3 @ 15' (16-03-0104-7)						
Barium	7.20		0.495	mg/kg	EPA 6010B	EPA 3050B
Chromium	1.96		0.248	mg/kg	EPA 6010B	EPA 3050B
Cobalt	0.753		0.248	mg/kg	EPA 6010B	EPA 3050B
Copper	0.751		0.495	mg/kg	EPA 6010B	EPA 3050B
Lead	0.653		0.495	mg/kg	EPA 6010B	EPA 3050B
Nickel	0.620		0.248	mg/kg	EPA 6010B	EPA 3050B
Vanadium	6.26		0.248	mg/kg	EPA 6010B	EPA 3050B
Zinc	4.39		0.990	mg/kg	EPA 6010B	EPA 3050B
CPT 3 @ 20' (16-03-0104-8)						
Barium	22.2		0.505	mg/kg	EPA 6010B	EPA 3050B
Chromium	5.15		0.253	mg/kg	EPA 6010B	EPA 3050B
Cobalt	2.28		0.253	mg/kg	EPA 6010B	EPA 3050B
Copper	1.80		0.505	mg/kg	EPA 6010B	EPA 3050B
Lead	0.893		0.505	mg/kg	EPA 6010B	EPA 3050B
Nickel	1.73		0.253	mg/kg	EPA 6010B	EPA 3050B
Vanadium	12.3		0.253	mg/kg	EPA 6010B	EPA 3050B
Zinc	11.8		1.01	mg/kg	EPA 6010B	EPA 3050B
TPH as Diesel	6.5		5.0	mg/kg	EPA 8015B (M)	EPA 3550B

Subcontracted analyses, if any, are not included in this summary.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT-1 @ 5'	**16-03-0104-1-B**	**02/25/16 10:25**	**Solid**	**GC 48**	**03/02/16**	**03/02/16 20:45**	**160302B06**

Parameter	Result	RL	DF	Qualifiers
TPH as Motor Oil	ND	25	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	100	61-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 10'	**16-03-0104-2-B**	**02/25/16 10:36**	**Solid**	**GC 48**	**03/02/16**	**03/02/16 21:02**	**160302B06**

Parameter	Result	RL	DF	Qualifiers
TPH as Motor Oil	ND	26	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	88	61-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 15'	**16-03-0104-3-B**	**02/25/16 10:57**	**Solid**	**GC 48**	**03/02/16**	**03/02/16 21:17**	**160302B06**

Parameter	Result	RL	DF	Qualifiers
TPH as Motor Oil	ND	25	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	85	61-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 20'	**16-03-0104-4-B**	**02/25/16 11:20**	**Solid**	**GC 48**	**03/02/16**	**03/02/16 22:37**	**160302B06**

Parameter	Result	RL	DF	Qualifiers
TPH as Motor Oil	270	26	1.00	HD

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	94	61-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT-3 @ 5'	**16-03-0104-5-B**	**02/25/16 11:50**	**Solid**	**GC 48**	**03/02/16**	**03/02/16 21:33**	**160302B06**

Parameter	Result	RL	DF	Qualifiers
TPH as Motor Oil	ND	25	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	84	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Project: SD458 Mitsubishi Cement Facility

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 10'	**16-03-0104-6-B**	**02/25/16 12:03**	**Solid**	**GC 48**	**03/02/16**	**03/02/16 21:49**	**160302B06**

Parameter	Result	RL	DF	Qualifiers
TPH as Motor Oil	ND	25	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	93	61-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 15'	**16-03-0104-7-B**	**02/26/16 10:10**	**Solid**	**GC 48**	**03/02/16**	**03/02/16 22:05**	**160302B06**

Parameter	Result	RL	DF	Qualifiers
TPH as Motor Oil	ND	25	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	95	61-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 20'	**16-03-0104-8-B**	**02/26/16 10:28**	**Solid**	**GC 48**	**03/02/16**	**03/02/16 22:21**	**160302B06**

Parameter	Result	RL	DF	Qualifiers
TPH as Motor Oil	ND	25	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	98	61-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-15-420-1709**	**N/A**	**Solid**	**GC 48**	**03/02/16**	**03/02/16 19:58**	**160302B06**

Parameter	Result	RL	DF	Qualifiers
TPH as Motor Oil	ND	25	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	82	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Project: SD458 Mitsubishi Cement Facility

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT-1 @ 5'	**16-03-0104-1-B**	**02/25/16 10:25**	**Solid**	**GC 48**	**03/02/16**	**03/02/16 20:45**	**160302B05**

Parameter	Result	RL	DF	Qualifiers
TPH as Diesel	ND	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	100	61-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 10'	**16-03-0104-2-B**	**02/25/16 10:36**	**Solid**	**GC 48**	**03/02/16**	**03/02/16 21:02**	**160302B05**

Parameter	Result	RL	DF	Qualifiers
TPH as Diesel	ND	5.1	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	88	61-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 15'	**16-03-0104-3-B**	**02/25/16 10:57**	**Solid**	**GC 48**	**03/02/16**	**03/02/16 21:17**	**160302B05**

Parameter	Result	RL	DF	Qualifiers
TPH as Diesel	ND	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	85	61-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 20'	**16-03-0104-4-B**	**02/25/16 11:20**	**Solid**	**GC 48**	**03/02/16**	**03/02/16 22:37**	**160302B05**

Parameter	Result	RL	DF	Qualifiers
TPH as Diesel	97	5.1	1.00	HD

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	94	61-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT-3 @ 5'	**16-03-0104-5-B**	**02/25/16 11:50**	**Solid**	**GC 48**	**03/02/16**	**03/02/16 21:33**	**160302B05**

Parameter	Result	RL	DF	Qualifiers
TPH as Diesel	ND	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	84	61-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Project: SD458 Mitsubishi Cement Facility

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3550B
Method: EPA 8015B (M)
Units: mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 10'	**16-03-0104-6-B**	**02/25/16 12:03**	**Solid**	**GC 48**	**03/02/16**	**03/02/16 21:49**	**160302B05**

Parameter	Result	RL	DF	Qualifiers
TPH as Diesel	ND	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	93	61-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 15'	**16-03-0104-7-B**	**02/26/16 10:10**	**Solid**	**GC 48**	**03/02/16**	**03/02/16 22:05**	**160302B05**

Parameter	Result	RL	DF	Qualifiers
TPH as Diesel	ND	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	95	61-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 20'	**16-03-0104-8-B**	**02/26/16 10:28**	**Solid**	**GC 48**	**03/02/16**	**03/02/16 22:21**	**160302B05**

Parameter	Result	RL	DF	Qualifiers
TPH as Diesel	6.5	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	98	61-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-15-422-2313**	**N/A**	**Solid**	**GC 48**	**03/02/16**	**03/02/16 19:58**	**160302B05**

Parameter	Result	RL	DF	Qualifiers
TPH as Diesel	ND	5.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
n-Octacosane	82	61-145	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 5035
Method: EPA 8015B (M)
Units: mg/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT-1 @ 5'	**16-03-0104-1-G**	**02/25/16 10:25**	**Solid**	**GC 25**	**03/02/16**	**03/04/16 10:28**	**160303L050**

Parameter	Result	RL	DF	Qualifiers
TPH as Gasoline	ND	0.29	1.00	BV,ET

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	96	60-126	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 10'	**16-03-0104-2-G**	**02/25/16 10:36**	**Solid**	**GC 25**	**03/02/16**	**03/03/16 04:21**	**160302L063**

Parameter	Result	RL	DF	Qualifiers
TPH as Gasoline	ND	0.32	1.00	BV,ET

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	91	60-126	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 15'	**16-03-0104-3-G**	**02/25/16 10:57**	**Solid**	**GC 25**	**03/02/16**	**03/04/16 11:38**	**160303L050**

Parameter	Result	RL	DF	Qualifiers
TPH as Gasoline	ND	0.26	1.00	BV,ET

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	20	60-126	2,6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 20'	**16-03-0104-4-G**	**02/25/16 11:20**	**Solid**	**GC 25**	**03/02/16**	**03/04/16 11:03**	**160303L050**

Parameter	Result	RL	DF	Qualifiers
TPH as Gasoline	ND	0.23	1.00	BV,ET

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	5	60-126	2,6

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT-3 @ 5'	**16-03-0104-5-H**	**02/25/16 11:50**	**Solid**	**GC 25**	**03/02/16**	**03/03/16 05:31**	**160302L063**

Parameter	Result	RL	DF	Qualifiers
TPH as Gasoline	ND	0.38	1.00	BV,ET

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	89	60-126	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 5035
Method: EPA 8015B (M)
Units: mg/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 10'	**16-03-0104-6-G**	**02/25/16 12:03**	**Solid**	**GC 25**	**03/02/16**	**03/03/16 06:06**	**160302L063**

Parameter	Result	RL	DF	Qualifiers
TPH as Gasoline	ND	0.44	1.00	BV,ET

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	92	60-126	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 15'	**16-03-0104-7-H**	**02/26/16 10:10**	**Solid**	**GC 25**	**03/02/16**	**03/03/16 07:16**	**160302L063**

Parameter	Result	RL	DF	Qualifiers
TPH as Gasoline	ND	0.22	1.00	BV,ET

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	94	60-126	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 20'	**16-03-0104-8-H**	**02/26/16 10:28**	**Solid**	**GC 25**	**03/02/16**	**03/03/16 06:41**	**160302L063**

Parameter	Result	RL	DF	Qualifiers
TPH as Gasoline	ND	0.62	1.00	BV,ET

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	89	60-126	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-285-5776**	**N/A**	**Solid**	**GC 25**	**03/02/16**	**03/03/16 02:00**	**160302L063**

Parameter	Result	RL	DF	Qualifiers
TPH as Gasoline	ND	0.25	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	85	60-126	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-285-5777**	**N/A**	**Solid**	**GC 25**	**03/03/16**	**03/03/16 21:36**	**160303L050**

Parameter	Result	RL	DF	Qualifiers
TPH as Gasoline	ND	0.25	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	89	60-126	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT-1 @ 5'	**16-03-0104-1-B**	**02/25/16 10:25**	**Solid**	**ICP 7300**	**03/02/16**	**03/02/16 22:09**	**160302L03**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.754	1.01	
Arsenic	1.74	0.754	1.01	
Barium	23.5	0.503	1.01	
Beryllium	ND	0.251	1.01	
Cadmium	ND	0.503	1.01	
Chromium	4.60	0.251	1.01	
Cobalt	3.06	0.251	1.01	
Copper	4.86	0.503	1.01	
Lead	2.06	0.503	1.01	
Molybdenum	ND	0.251	1.01	
Nickel	1.65	0.251	1.01	
Selenium	ND	0.754	1.01	
Silver	ND	0.251	1.01	
Thallium	ND	0.754	1.01	
Vanadium	11.9	0.251	1.01	
Zinc	9.61	1.01	1.01	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.		Date Received:	03/01/16
9245 Activity Road, Suite 103		Work Order:	16-03-0104
San Diego, CA 92126-4442		Preparation:	EPA 3050B
		Method:	EPA 6010B
		Units:	mg/kg
Project: SD458 Mitsubishi Cement Facility			Page 2 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 10'	**16-03-0104-2-B**	**02/25/16 10:36**	**Solid**	**ICP 7300**	**03/02/16**	**03/02/16 22:10**	**160302L03**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.769	1.03	
Arsenic	2.30	0.769	1.03	
Barium	45.0	0.513	1.03	
Beryllium	ND	0.256	1.03	
Cadmium	ND	0.513	1.03	
Chromium	7.07	0.256	1.03	
Cobalt	3.99	0.256	1.03	
Copper	4.81	0.513	1.03	
Lead	3.52	0.513	1.03	
Molybdenum	ND	0.256	1.03	
Nickel	3.17	0.256	1.03	
Selenium	ND	0.769	1.03	
Silver	ND	0.256	1.03	
Thallium	ND	0.769	1.03	
Vanadium	23.2	0.256	1.03	
Zinc	22.2	1.03	1.03	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 15'	**16-03-0104-3-B**	**02/25/16 10:57**	**Solid**	**ICP 7300**	**03/02/16**	**03/02/16 22:12**	**160302L03**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.761	1.02	
Arsenic	0.805	0.761	1.02	
Barium	25.9	0.508	1.02	
Beryllium	ND	0.254	1.02	
Cadmium	ND	0.508	1.02	
Chromium	5.08	0.254	1.02	
Cobalt	2.39	0.254	1.02	
Copper	2.40	0.508	1.02	
Lead	1.53	0.508	1.02	
Molybdenum	ND	0.254	1.02	
Nickel	1.91	0.254	1.02	
Selenium	ND	0.761	1.02	
Silver	ND	0.254	1.02	
Thallium	ND	0.761	1.02	
Vanadium	15.2	0.254	1.02	
Zinc	18.2	1.02	1.02	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 20'	**16-03-0104-4-B**	**02/25/16 11:20**	**Solid**	**ICP 7300**	**03/02/16**	**03/02/16 22:13**	**160302L03**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.721	0.962	
Arsenic	2.24	0.721	0.962	
Barium	47.7	0.481	0.962	
Beryllium	ND	0.240	0.962	
Cadmium	0.691	0.481	0.962	
Chromium	11.2	0.240	0.962	
Cobalt	3.38	0.240	0.962	
Copper	23.2	0.481	0.962	
Lead	35.4	0.481	0.962	
Molybdenum	1.19	0.240	0.962	
Nickel	5.37	0.240	0.962	
Selenium	ND	0.721	0.962	
Silver	0.444	0.240	0.962	
Thallium	ND	0.721	0.962	
Vanadium	24.2	0.240	0.962	
Zinc	99.3	0.962	0.962	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT-3 @ 5'	**16-03-0104-5-B**	**02/25/16 11:50**	**Solid**	**ICP 7300**	**03/02/16**	**03/02/16 22:28**	**160302L03**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.750	1.00	
Arsenic	4.01	0.750	1.00	
Barium	23.4	0.500	1.00	
Beryllium	ND	0.250	1.00	
Cadmium	ND	0.500	1.00	
Chromium	8.24	0.250	1.00	
Cobalt	2.69	0.250	1.00	
Copper	3.94	0.500	1.00	
Lead	0.639	0.500	1.00	
Molybdenum	ND	0.250	1.00	
Nickel	2.63	0.250	1.00	
Selenium	ND	0.750	1.00	
Silver	ND	0.250	1.00	
Thallium	ND	0.750	1.00	
Vanadium	17.7	0.250	1.00	
Zinc	14.3	1.00	1.00	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.		Date Received:	03/01/16
9245 Activity Road, Suite 103		Work Order:	16-03-0104
San Diego, CA 92126-4442		Preparation:	EPA 3050B
		Method:	EPA 6010B
		Units:	mg/kg
Project: SD458 Mitsubishi Cement Facility			Page 6 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 10'	**16-03-0104-6-B**	**02/25/16 12:03**	**Solid**	**ICP 7300**	**03/02/16**	**03/02/16 22:29**	**160302L03**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.781	1.04	
Arsenic	1.91	0.781	1.04	
Barium	39.0	0.521	1.04	
Beryllium	ND	0.260	1.04	
Cadmium	ND	0.521	1.04	
Chromium	5.26	0.260	1.04	
Cobalt	3.40	0.260	1.04	
Copper	2.89	0.521	1.04	
Lead	1.66	0.521	1.04	
Molybdenum	ND	0.260	1.04	
Nickel	2.45	0.260	1.04	
Selenium	ND	0.781	1.04	
Silver	ND	0.260	1.04	
Thallium	ND	0.781	1.04	
Vanadium	18.0	0.260	1.04	
Zinc	15.5	1.04	1.04	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 15'	**16-03-0104-7-B**	**02/26/16 10:10**	**Solid**	**ICP 7300**	**03/02/16**	**03/02/16 22:30**	**160302L03**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.743	0.990	
Arsenic	ND	0.743	0.990	
Barium	7.20	0.495	0.990	
Beryllium	ND	0.248	0.990	
Cadmium	ND	0.495	0.990	
Chromium	1.96	0.248	0.990	
Cobalt	0.753	0.248	0.990	
Copper	0.751	0.495	0.990	
Lead	0.653	0.495	0.990	
Molybdenum	ND	0.248	0.990	
Nickel	0.620	0.248	0.990	
Selenium	ND	0.743	0.990	
Silver	ND	0.248	0.990	
Thallium	ND	0.743	0.990	
Vanadium	6.26	0.248	0.990	
Zinc	4.39	0.990	0.990	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3050B
Method: EPA 6010B
Units: mg/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 20'	**16-03-0104-8-B**	**02/26/16 10:28**	**Solid**	**ICP 7300**	**03/02/16**	**03/02/16 22:31**	**160302L03**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.758	1.01	
Arsenic	ND	0.758	1.01	
Barium	22.2	0.505	1.01	
Beryllium	ND	0.253	1.01	
Cadmium	ND	0.505	1.01	
Chromium	5.15	0.253	1.01	
Cobalt	2.28	0.253	1.01	
Copper	1.80	0.505	1.01	
Lead	0.893	0.505	1.01	
Molybdenum	ND	0.253	1.01	
Nickel	1.73	0.253	1.01	
Selenium	ND	0.758	1.01	
Silver	ND	0.253	1.01	
Thallium	ND	0.758	1.01	
Vanadium	12.3	0.253	1.01	
Zinc	11.8	1.01	1.01	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.		Date Received:	03/01/16
9245 Activity Road, Suite 103		Work Order:	16-03-0104
San Diego, CA 92126-4442		Preparation:	EPA 3050B
		Method:	EPA 6010B
		Units:	mg/kg
Project: SD458 Mitsubishi Cement Facility			Page 9 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**097-01-002-22402**	**N/A**	**Solid**	**ICP 7300**	**03/02/16**	**03/02/16 21:39**	**160302L03**

Parameter	Result	RL	DF	Qualifiers
Antimony	ND	0.750	1.00	
Arsenic	ND	0.750	1.00	
Barium	ND	0.500	1.00	
Beryllium	ND	0.250	1.00	
Cadmium	ND	0.500	1.00	
Chromium	ND	0.250	1.00	
Cobalt	ND	0.250	1.00	
Copper	ND	0.500	1.00	
Lead	ND	0.500	1.00	
Molybdenum	ND	0.250	1.00	
Nickel	ND	0.250	1.00	
Selenium	ND	0.750	1.00	
Silver	ND	0.250	1.00	
Thallium	ND	0.750	1.00	
Vanadium	ND	0.250	1.00	
Zinc	ND	1.00	1.00	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Project: SD458 Mitsubishi Cement Facility

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 7471A Total
Method: EPA 7471A
Units: mg/kg

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT-1 @ 5'	**16-03-0104-1-B**	**02/25/16 10:25**	**Solid**	**Mercury 05**	**03/04/16**	**03/04/16 19:59**	**160304L03**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0794	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 10'	**16-03-0104-2-B**	**02/25/16 10:36**	**Solid**	**Mercury 05**	**03/04/16**	**03/04/16 20:01**	**160304L03**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0806	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 15'	**16-03-0104-3-B**	**02/25/16 10:57**	**Solid**	**Mercury 05**	**03/04/16**	**03/04/16 20:03**	**160304L03**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0847	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 20'	**16-03-0104-4-B**	**02/25/16 11:20**	**Solid**	**Mercury 05**	**03/04/16**	**03/04/16 20:10**	**160304L03**

Parameter	Result	RL	DF	Qualifiers
Mercury	0.413	0.0862	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT-3 @ 5'	**16-03-0104-5-B**	**02/25/16 11:50**	**Solid**	**Mercury 05**	**03/04/16**	**03/04/16 20:12**	**160304L03**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0847	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 10'	**16-03-0104-6-B**	**02/25/16 12:03**	**Solid**	**Mercury 05**	**03/04/16**	**03/04/16 20:15**	**160304L03**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0806	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 15'	**16-03-0104-7-B**	**02/26/16 10:10**	**Solid**	**Mercury 05**	**03/04/16**	**03/04/16 20:19**	**160304L03**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0847	1.00	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 20'	**16-03-0104-8-B**	**02/26/16 10:28**	**Solid**	**Mercury 05**	**03/04/16**	**03/04/16 20:21**	**160304L03**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0862	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.		Date Received:	03/01/16
9245 Activity Road, Suite 103		Work Order:	16-03-0104
San Diego, CA 92126-4442		Preparation:	EPA 7471A Total
		Method:	EPA 7471A
		Units:	mg/kg
Project: SD458 Mitsubishi Cement Facility			Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-16-272-1969**	**N/A**	**Solid**	**Mercury 05**	**03/04/16**	**03/04/16 19:23**	**160304L03**

Parameter	Result	RL	DF	Qualifiers
Mercury	ND	0.0833	1.00	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3545
Method: EPA 8081A
Units: ug/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT-1 @ 5'	**16-03-0104-1-A**	**02/25/16 10:25**	**Solid**	**GC 51**	**03/02/16**	**03/03/16 11:59**	**160302L05**

Parameter	Result	RL	DF	Qualifiers
Aldrin	ND	5.0	1.00	
Alpha-BHC	ND	10	1.00	
Beta-BHC	ND	5.0	1.00	
Chlordane	ND	50	1.00	
4,4'-DDD	ND	5.0	1.00	
4,4'-DDE	ND	5.0	1.00	
4,4'-DDT	ND	5.0	1.00	
Delta-BHC	ND	10	1.00	
Dieldrin	ND	5.0	1.00	
Endosulfan I	ND	5.0	1.00	
Endosulfan II	ND	5.0	1.00	
Endosulfan Sulfate	ND	5.0	1.00	
Endrin	ND	5.0	1.00	
Endrin Aldehyde	ND	5.0	1.00	
Endrin Ketone	ND	5.0	1.00	
Gamma-BHC	ND	5.0	1.00	
Heptachlor	ND	5.0	1.00	
Heptachlor Epoxide	ND	10	1.00	
Methoxychlor	ND	5.0	1.00	
Toxaphene	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	81	24-168	
2,4,5,6-Tetrachloro-m-Xylene	82	25-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3545
Method: EPA 8081A
Units: ug/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 10'	**16-03-0104-2-A**	**02/25/16 10:36**	**Solid**	**GC 51**	**03/02/16**	**03/03/16 12:13**	**160302L05**

Parameter	Result	RL	DF	Qualifiers
Aldrin	ND	5.0	1.00	
Alpha-BHC	ND	10	1.00	
Beta-BHC	ND	5.0	1.00	
Chlordane	ND	50	1.00	
4,4'-DDD	ND	5.0	1.00	
4,4'-DDE	ND	5.0	1.00	
4,4'-DDT	ND	5.0	1.00	
Delta-BHC	ND	10	1.00	
Dieldrin	ND	5.0	1.00	
Endosulfan I	ND	5.0	1.00	
Endosulfan II	ND	5.0	1.00	
Endosulfan Sulfate	ND	5.0	1.00	
Endrin	ND	5.0	1.00	
Endrin Aldehyde	ND	5.0	1.00	
Endrin Ketone	ND	5.0	1.00	
Gamma-BHC	ND	5.0	1.00	
Heptachlor	ND	5.0	1.00	
Heptachlor Epoxide	ND	10	1.00	
Methoxychlor	ND	5.0	1.00	
Toxaphene	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	100	24-168	
2,4,5,6-Tetrachloro-m-Xylene	108	25-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3545
Method: EPA 8081A
Units: ug/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 15'	**16-03-0104-3-A**	**02/25/16 10:57**	**Solid**	**GC 51**	**03/02/16**	**03/03/16 12:28**	**160302L05**

Parameter	Result	RL	DF	Qualifiers
Aldrin	ND	5.0	1.00	
Alpha-BHC	ND	10	1.00	
Beta-BHC	ND	5.0	1.00	
Chlordane	ND	50	1.00	
4,4'-DDD	ND	5.0	1.00	
4,4'-DDE	ND	5.0	1.00	
4,4'-DDT	ND	5.0	1.00	
Delta-BHC	ND	10	1.00	
Dieldrin	ND	5.0	1.00	
Endosulfan I	ND	5.0	1.00	
Endosulfan II	ND	5.0	1.00	
Endosulfan Sulfate	ND	5.0	1.00	
Endrin	ND	5.0	1.00	
Endrin Aldehyde	ND	5.0	1.00	
Endrin Ketone	ND	5.0	1.00	
Gamma-BHC	ND	5.0	1.00	
Heptachlor	ND	5.0	1.00	
Heptachlor Epoxide	ND	10	1.00	
Methoxychlor	ND	5.0	1.00	
Toxaphene	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	99	24-168	
2,4,5,6-Tetrachloro-m-Xylene	102	25-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3545
Method: EPA 8081A
Units: ug/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 20'	**16-03-0104-4-A**	**02/25/16 11:20**	**Solid**	**GC 51**	**03/02/16**	**03/03/16 12:42**	**160302L05**

Parameter	Result	RL	DF	Qualifiers
Aldrin	ND	5.0	1.00	
Alpha-BHC	ND	9.9	1.00	
Beta-BHC	ND	5.0	1.00	
Chlordane	ND	50	1.00	
4,4'-DDD	ND	5.0	1.00	
4,4'-DDE	ND	5.0	1.00	
4,4'-DDT	ND	5.0	1.00	
Delta-BHC	ND	9.9	1.00	
Dieldrin	ND	5.0	1.00	
Endosulfan I	ND	5.0	1.00	
Endosulfan II	ND	5.0	1.00	
Endosulfan Sulfate	ND	5.0	1.00	
Endrin	ND	5.0	1.00	
Endrin Aldehyde	ND	5.0	1.00	
Endrin Ketone	ND	5.0	1.00	
Gamma-BHC	ND	5.0	1.00	
Heptachlor	ND	5.0	1.00	
Heptachlor Epoxide	ND	9.9	1.00	
Methoxychlor	ND	5.0	1.00	
Toxaphene	ND	99	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	81	24-168	
2,4,5,6-Tetrachloro-m-Xylene	89	25-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.		Date Received:	03/01/16
9245 Activity Road, Suite 103		Work Order:	16-03-0104
San Diego, CA 92126-4442		Preparation:	EPA 3545
		Method:	EPA 8081A
		Units:	ug/kg
Project: SD458 Mitsubishi Cement Facility			Page 5 of 9

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT-3 @ 5'	**16-03-0104-5-A**	**02/25/16 11:50**	**Solid**	**GC 51**	**03/02/16**	**03/03/16 12:56**	**160302L05**

Parameter	Result	RL	DF	Qualifiers
Aldrin	ND	5.0	1.00	
Alpha-BHC	ND	10	1.00	
Beta-BHC	ND	5.0	1.00	
Chlordane	ND	50	1.00	
4,4'-DDD	ND	5.0	1.00	
4,4'-DDE	ND	5.0	1.00	
4,4'-DDT	ND	5.0	1.00	
Delta-BHC	ND	10	1.00	
Dieldrin	ND	5.0	1.00	
Endosulfan I	ND	5.0	1.00	
Endosulfan II	ND	5.0	1.00	
Endosulfan Sulfate	ND	5.0	1.00	
Endrin	ND	5.0	1.00	
Endrin Aldehyde	ND	5.0	1.00	
Endrin Ketone	ND	5.0	1.00	
Gamma-BHC	ND	5.0	1.00	
Heptachlor	ND	5.0	1.00	
Heptachlor Epoxide	ND	10	1.00	
Methoxychlor	ND	5.0	1.00	
Toxaphene	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	95	24-168	
2,4,5,6-Tetrachloro-m-Xylene	98	25-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3545
Method: EPA 8081A
Units: ug/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 10'	**16-03-0104-6-A**	**02/25/16 12:03**	**Solid**	**GC 51**	**03/02/16**	**03/03/16 14:37**	**160302L05**

Parameter	Result	RL	DF	Qualifiers
Aldrin	ND	5.0	1.00	
Alpha-BHC	ND	10	1.00	
Beta-BHC	ND	5.0	1.00	
Chlordane	ND	50	1.00	
4,4'-DDD	ND	5.0	1.00	
4,4'-DDE	ND	5.0	1.00	
4,4'-DDT	ND	5.0	1.00	
Delta-BHC	ND	10	1.00	
Dieldrin	ND	5.0	1.00	
Endosulfan I	ND	5.0	1.00	
Endosulfan II	ND	5.0	1.00	
Endosulfan Sulfate	ND	5.0	1.00	
Endrin	ND	5.0	1.00	
Endrin Aldehyde	ND	5.0	1.00	
Endrin Ketone	ND	5.0	1.00	
Gamma-BHC	ND	5.0	1.00	
Heptachlor	ND	5.0	1.00	
Heptachlor Epoxide	ND	10	1.00	
Methoxychlor	ND	5.0	1.00	
Toxaphene	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	106	24-168	
2,4,5,6-Tetrachloro-m-Xylene	97	25-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3545
Method: EPA 8081A
Units: ug/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 15'	**16-03-0104-7-A**	**02/26/16 10:10**	**Solid**	**GC 51**	**03/02/16**	**03/03/16 14:51**	**160302L05**

Parameter	Result	RL	DF	Qualifiers
Aldrin	ND	5.0	1.00	
Alpha-BHC	ND	10	1.00	
Beta-BHC	ND	5.0	1.00	
Chlordane	ND	50	1.00	
4,4'-DDD	ND	5.0	1.00	
4,4'-DDE	ND	5.0	1.00	
4,4'-DDT	ND	5.0	1.00	
Delta-BHC	ND	10	1.00	
Dieldrin	ND	5.0	1.00	
Endosulfan I	ND	5.0	1.00	
Endosulfan II	ND	5.0	1.00	
Endosulfan Sulfate	ND	5.0	1.00	
Endrin	ND	5.0	1.00	
Endrin Aldehyde	ND	5.0	1.00	
Endrin Ketone	ND	5.0	1.00	
Gamma-BHC	ND	5.0	1.00	
Heptachlor	ND	5.0	1.00	
Heptachlor Epoxide	ND	10	1.00	
Methoxychlor	ND	5.0	1.00	
Toxaphene	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	70	24-168	
2,4,5,6-Tetrachloro-m-Xylene	61	25-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3545
Method: EPA 8081A
Units: ug/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 20'	**16-03-0104-8-A**	**02/26/16 10:28**	**Solid**	**GC 51**	**03/02/16**	**03/03/16 15:05**	**160302L05**

Parameter	Result	RL	DF	Qualifiers
Aldrin	ND	5.0	1.00	
Alpha-BHC	ND	10	1.00	
Beta-BHC	ND	5.0	1.00	
Chlordane	ND	50	1.00	
4,4'-DDD	ND	5.0	1.00	
4,4'-DDE	ND	5.0	1.00	
4,4'-DDT	ND	5.0	1.00	
Delta-BHC	ND	10	1.00	
Dieldrin	ND	5.0	1.00	
Endosulfan I	ND	5.0	1.00	
Endosulfan II	ND	5.0	1.00	
Endosulfan Sulfate	ND	5.0	1.00	
Endrin	ND	5.0	1.00	
Endrin Aldehyde	ND	5.0	1.00	
Endrin Ketone	ND	5.0	1.00	
Gamma-BHC	ND	5.0	1.00	
Heptachlor	ND	5.0	1.00	
Heptachlor Epoxide	ND	10	1.00	
Methoxychlor	ND	5.0	1.00	
Toxaphene	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	109	24-168	
2,4,5,6-Tetrachloro-m-Xylene	101	25-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3545
Method: EPA 8081A
Units: ug/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-537-2362**	**N/A**	**Solid**	**GC 51**	**03/02/16**	**03/03/16 11:16**	**160302L05**

Parameter	Result	RL	DF	Qualifiers
Aldrin	ND	5.0	1.00	
Alpha-BHC	ND	10	1.00	
Beta-BHC	ND	5.0	1.00	
Chlordane	ND	50	1.00	
4,4'-DDD	ND	5.0	1.00	
4,4'-DDE	ND	5.0	1.00	
4,4'-DDT	ND	5.0	1.00	
Delta-BHC	ND	10	1.00	
Dieldrin	ND	5.0	1.00	
Endosulfan I	ND	5.0	1.00	
Endosulfan II	ND	5.0	1.00	
Endosulfan Sulfate	ND	5.0	1.00	
Endrin	ND	5.0	1.00	
Endrin Aldehyde	ND	5.0	1.00	
Endrin Ketone	ND	5.0	1.00	
Gamma-BHC	ND	5.0	1.00	
Heptachlor	ND	5.0	1.00	
Heptachlor Epoxide	ND	10	1.00	
Methoxychlor	ND	5.0	1.00	
Toxaphene	ND	100	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	96	24-168	
2,4,5,6-Tetrachloro-m-Xylene	96	25-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3545
Method: EPA 8082
Units: ug/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT-1 @ 5'	**16-03-0104-1-A**	**02/25/16 10:25**	**Solid**	**GC 58**	**03/02/16**	**03/02/16 18:35**	**160302L02**

Parameter	Result	RL	DF	Qualifiers
Aroclor-1016	ND	50	1.00	
Aroclor-1221	ND	50	1.00	
Aroclor-1232	ND	50	1.00	
Aroclor-1242	ND	50	1.00	
Aroclor-1248	ND	50	1.00	
Aroclor-1254	ND	50	1.00	
Aroclor-1260	ND	50	1.00	
Aroclor-1262	ND	50	1.00	
Aroclor-1268	ND	50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	67	24-168	
2,4,5,6-Tetrachloro-m-Xylene	60	25-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 10'	**16-03-0104-2-A**	**02/25/16 10:36**	**Solid**	**GC 58**	**03/02/16**	**03/02/16 19:22**	**160302L02**

Parameter	Result	RL	DF	Qualifiers
Aroclor-1016	ND	50	1.00	
Aroclor-1221	ND	50	1.00	
Aroclor-1232	ND	50	1.00	
Aroclor-1242	ND	50	1.00	
Aroclor-1248	ND	50	1.00	
Aroclor-1254	ND	50	1.00	
Aroclor-1260	ND	50	1.00	
Aroclor-1262	ND	50	1.00	
Aroclor-1268	ND	50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	85	24-168	
2,4,5,6-Tetrachloro-m-Xylene	82	25-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3545
Method: EPA 8082
Units: ug/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 15'	**16-03-0104-3-A**	**02/25/16 10:57**	**Solid**	**GC 58**	**03/02/16**	**03/02/16 19:40**	**160302L02**

Parameter	Result	RL	DF	Qualifiers
Aroclor-1016	ND	50	1.00	
Aroclor-1221	ND	50	1.00	
Aroclor-1232	ND	50	1.00	
Aroclor-1242	ND	50	1.00	
Aroclor-1248	ND	50	1.00	
Aroclor-1254	ND	50	1.00	
Aroclor-1260	ND	50	1.00	
Aroclor-1262	ND	50	1.00	
Aroclor-1268	ND	50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	85	24-168	
2,4,5,6-Tetrachloro-m-Xylene	83	25-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 20'	**16-03-0104-4-A**	**02/25/16 11:20**	**Solid**	**GC 58**	**03/02/16**	**03/03/16 20:54**	**160302L02**

Parameter	Result	RL	DF	Qualifiers
Aroclor-1016	ND	50	1.00	
Aroclor-1221	ND	50	1.00	
Aroclor-1232	ND	50	1.00	
Aroclor-1242	ND	50	1.00	
Aroclor-1248	ND	50	1.00	
Aroclor-1254	ND	50	1.00	
Aroclor-1260	ND	50	1.00	
Aroclor-1262	ND	50	1.00	
Aroclor-1268	ND	50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	73	24-168	
2,4,5,6-Tetrachloro-m-Xylene	66	25-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3545
Method: EPA 8082
Units: ug/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT-3 @ 5'	**16-03-0104-5-A**	**02/25/16 11:50**	**Solid**	**GC 58**	**03/02/16**	**03/02/16 20:15**	**160302L02**

Parameter	Result	RL	DF	Qualifiers
Aroclor-1016	ND	50	1.00	
Aroclor-1221	ND	50	1.00	
Aroclor-1232	ND	50	1.00	
Aroclor-1242	ND	50	1.00	
Aroclor-1248	ND	50	1.00	
Aroclor-1254	ND	50	1.00	
Aroclor-1260	ND	50	1.00	
Aroclor-1262	ND	50	1.00	
Aroclor-1268	ND	50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	80	24-168	
2,4,5,6-Tetrachloro-m-Xylene	74	25-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 10'	**16-03-0104-6-A**	**02/25/16 12:03**	**Solid**	**GC 58**	**03/02/16**	**03/02/16 20:33**	**160302L02**

Parameter	Result	RL	DF	Qualifiers
Aroclor-1016	ND	50	1.00	
Aroclor-1221	ND	50	1.00	
Aroclor-1232	ND	50	1.00	
Aroclor-1242	ND	50	1.00	
Aroclor-1248	ND	50	1.00	
Aroclor-1254	ND	50	1.00	
Aroclor-1260	ND	50	1.00	
Aroclor-1262	ND	50	1.00	
Aroclor-1268	ND	50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	97	24-168	
2,4,5,6-Tetrachloro-m-Xylene	90	25-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3545
Method: EPA 8082
Units: ug/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 15'	**16-03-0104-7-A**	**02/26/16 10:10**	**Solid**	**GC 58**	**03/02/16**	**03/02/16 20:51**	**160302L02**

Parameter	Result	RL	DF	Qualifiers
Aroclor-1016	ND	50	1.00	
Aroclor-1221	ND	50	1.00	
Aroclor-1232	ND	50	1.00	
Aroclor-1242	ND	50	1.00	
Aroclor-1248	ND	50	1.00	
Aroclor-1254	ND	50	1.00	
Aroclor-1260	ND	50	1.00	
Aroclor-1262	ND	50	1.00	
Aroclor-1268	ND	50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	63	24-168	
2,4,5,6-Tetrachloro-m-Xylene	55	25-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 20'	**16-03-0104-8-A**	**02/26/16 10:28**	**Solid**	**GC 58**	**03/02/16**	**03/03/16 21:12**	**160302L02**

Parameter	Result	RL	DF	Qualifiers
Aroclor-1016	ND	50	1.00	
Aroclor-1221	ND	50	1.00	
Aroclor-1232	ND	50	1.00	
Aroclor-1242	ND	50	1.00	
Aroclor-1248	ND	50	1.00	
Aroclor-1254	ND	50	1.00	
Aroclor-1260	ND	50	1.00	
Aroclor-1262	ND	50	1.00	
Aroclor-1268	ND	50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	97	24-168	
2,4,5,6-Tetrachloro-m-Xylene	90	25-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3545
Method: EPA 8082
Units: ug/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-535-3643**	**N/A**	**Solid**	**GC 58**	**03/02/16**	**03/02/16 17:23**	**160302L02**

Parameter	Result	RL	DF	Qualifiers
Aroclor-1016	ND	50	1.00	
Aroclor-1221	ND	50	1.00	
Aroclor-1232	ND	50	1.00	
Aroclor-1242	ND	50	1.00	
Aroclor-1248	ND	50	1.00	
Aroclor-1254	ND	50	1.00	
Aroclor-1260	ND	50	1.00	
Aroclor-1262	ND	50	1.00	
Aroclor-1268	ND	50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Decachlorobiphenyl	79	24-168	
2,4,5,6-Tetrachloro-m-Xylene	72	25-145	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3545
Method: EPA 8141A
Units: mg/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT-1 @ 5'	**16-03-0104-1-A**	**02/25/16 10:25**	**Solid**	**GC 26**	**03/04/16**	**03/09/16 00:13**	**160304L03**

Parameter	Result	RL	DF	Qualifiers
Demeton-o/s	ND	0.50	1.00	
Azinphos Methyl	ND	0.50	1.00	
Bolstar	ND	0.50	1.00	
Chlorpyrifos	ND	0.50	1.00	
Coumaphos	ND	0.50	1.00	
Diazinon	ND	0.50	1.00	
Dichlorvos	ND	0.50	1.00	
Disulfoton	ND	0.50	1.00	
Ethoprop	ND	0.50	1.00	
Fensulfothion	ND	0.50	1.00	
Fenthion	ND	0.50	1.00	
Merphos	ND	0.50	1.00	
Methyl Parathion	ND	0.50	1.00	
Mevinphos	ND	0.50	1.00	
Naled	ND	4.0	1.00	
Phorate	ND	0.50	1.00	
Ronnel	ND	0.50	1.00	
Stirophos	ND	2.0	1.00	
Tokuthion	ND	0.50	1.00	
Trichloronate	ND	0.50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tributylphosphate	32	30-130	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3545
Method: EPA 8141A
Units: mg/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 10'	**16-03-0104-2-A**	**02/25/16 10:36**	**Solid**	**GC 26**	**03/04/16**	**03/09/16 00:58**	**160304L03**

Parameter	Result	RL	DF	Qualifiers
Demeton-o/s	ND	0.50	1.00	
Azinphos Methyl	ND	0.50	1.00	
Bolstar	ND	0.50	1.00	
Chlorpyrifos	ND	0.50	1.00	
Coumaphos	ND	0.50	1.00	
Diazinon	ND	0.50	1.00	
Dichlorvos	ND	0.50	1.00	
Disulfoton	ND	0.50	1.00	
Ethoprop	ND	0.50	1.00	
Fensulfothion	ND	0.50	1.00	
Fenthion	ND	0.50	1.00	
Merphos	ND	0.50	1.00	
Methyl Parathion	ND	0.50	1.00	
Mevinphos	ND	0.50	1.00	
Naled	ND	4.0	1.00	
Phorate	ND	0.50	1.00	
Ronnel	ND	0.50	1.00	
Stirophos	ND	2.0	1.00	
Tokuthion	ND	0.50	1.00	
Trichloronate	ND	0.50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tributylphosphate	43	30-130	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3545
Method: EPA 8141A
Units: mg/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 15'	**16-03-0104-3-A**	**02/25/16 10:57**	**Solid**	**GC 26**	**03/04/16**	**03/09/16 01:42**	**160304L03**

Parameter	Result	RL	DF	Qualifiers
Demeton-o/s	ND	0.50	1.00	
Azinphos Methyl	ND	0.50	1.00	
Bolstar	ND	0.50	1.00	
Chlorpyrifos	ND	0.50	1.00	
Coumaphos	ND	0.50	1.00	
Diazinon	ND	0.50	1.00	
Dichlorvos	ND	0.50	1.00	
Disulfoton	ND	0.50	1.00	
Ethoprop	ND	0.50	1.00	
Fensulfothion	ND	0.50	1.00	
Fenthion	ND	0.50	1.00	
Merphos	ND	0.50	1.00	
Methyl Parathion	ND	0.50	1.00	
Mevinphos	ND	0.50	1.00	
Naled	ND	4.0	1.00	
Phorate	ND	0.50	1.00	
Ronnel	ND	0.50	1.00	
Stirophos	ND	2.0	1.00	
Tokuthion	ND	0.50	1.00	
Trichloronate	ND	0.50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tributylphosphate	42	30-130	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3545
Method: EPA 8141A
Units: mg/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 20'	**16-03-0104-4-A**	**02/25/16 11:20**	**Solid**	**GC 26**	**03/04/16**	**03/09/16 02:26**	**160304L03**

Parameter	Result	RL	DF	Qualifiers
Demeton-o/s	ND	0.50	1.00	
Azinphos Methyl	ND	0.50	1.00	
Bolstar	ND	0.50	1.00	
Chlorpyrifos	ND	0.50	1.00	
Coumaphos	ND	0.50	1.00	
Diazinon	ND	0.50	1.00	
Dichlorvos	ND	0.50	1.00	
Disulfoton	ND	0.50	1.00	
Ethoprop	ND	0.50	1.00	
Fensulfothion	ND	0.50	1.00	
Fenthion	ND	0.50	1.00	
Merphos	ND	0.50	1.00	
Methyl Parathion	ND	0.50	1.00	
Mevinphos	ND	0.50	1.00	
Naled	ND	4.0	1.00	
Phorate	ND	0.50	1.00	
Ronnel	ND	0.50	1.00	
Stirophos	ND	2.0	1.00	
Tokuthion	ND	0.50	1.00	
Trichloronate	ND	0.50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tributylphosphate	43	30-130	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3545
Method: EPA 8141A
Units: mg/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT-3 @ 5'	**16-03-0104-5-A**	**02/25/16 11:50**	**Solid**	**GC 26**	**03/04/16**	**03/09/16 03:10**	**160304L03**

Parameter	Result	RL	DF	Qualifiers
Demeton-o/s	ND	0.50	1.00	
Azinphos Methyl	ND	0.50	1.00	
Bolstar	ND	0.50	1.00	
Chlorpyrifos	ND	0.50	1.00	
Coumaphos	ND	0.50	1.00	
Diazinon	ND	0.50	1.00	
Dichlorvos	ND	0.50	1.00	
Disulfoton	ND	0.50	1.00	
Ethoprop	ND	0.50	1.00	
Fensulfothion	ND	0.50	1.00	
Fenthion	ND	0.50	1.00	
Merphos	ND	0.50	1.00	
Methyl Parathion	ND	0.50	1.00	
Mevinphos	ND	0.50	1.00	
Naled	ND	4.0	1.00	
Phorate	ND	0.50	1.00	
Ronnel	ND	0.50	1.00	
Stirophos	ND	2.0	1.00	
Tokuthion	ND	0.50	1.00	
Trichloronate	ND	0.50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tributylphosphate	44	30-130	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3545
Method: EPA 8141A
Units: mg/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 10'	**16-03-0104-6-A**	**02/25/16 12:03**	**Solid**	**GC 26**	**03/04/16**	**03/09/16 03:54**	**160304L03**

Parameter	Result	RL	DF	Qualifiers
Demeton-o/s	ND	0.50	1.00	
Azinphos Methyl	ND	0.50	1.00	
Bolstar	ND	0.50	1.00	
Chlorpyrifos	ND	0.50	1.00	
Coumaphos	ND	0.50	1.00	
Diazinon	ND	0.50	1.00	
Dichlorvos	ND	0.50	1.00	
Disulfoton	ND	0.50	1.00	
Ethoprop	ND	0.50	1.00	
Fensulfothion	ND	0.50	1.00	
Fenthion	ND	0.50	1.00	
Merphos	ND	0.50	1.00	
Methyl Parathion	ND	0.50	1.00	
Mevinphos	ND	0.50	1.00	
Naled	ND	4.0	1.00	
Phorate	ND	0.50	1.00	
Ronnel	ND	0.50	1.00	
Stirophos	ND	2.0	1.00	
Tokuthion	ND	0.50	1.00	
Trichloronate	ND	0.50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tributylphosphate	48	30-130	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3545
Method: EPA 8141A
Units: mg/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 15'	**16-03-0104-7-A**	**02/26/16 10:10**	**Solid**	**GC 26**	**03/04/16**	**03/09/16 04:38**	**160304L03**

Parameter	Result	RL	DF	Qualifiers
Demeton-o/s	ND	0.50	1.00	
Azinphos Methyl	ND	0.50	1.00	
Bolstar	ND	0.50	1.00	
Chlorpyrifos	ND	0.50	1.00	
Coumaphos	ND	0.50	1.00	
Diazinon	ND	0.50	1.00	
Dichlorvos	ND	0.50	1.00	
Disulfoton	ND	0.50	1.00	
Ethoprop	ND	0.50	1.00	
Fensulfothion	ND	0.50	1.00	
Fenthion	ND	0.50	1.00	
Merphos	ND	0.50	1.00	
Methyl Parathion	ND	0.50	1.00	
Mevinphos	ND	0.50	1.00	
Naled	ND	4.0	1.00	
Phorate	ND	0.50	1.00	
Ronnel	ND	0.50	1.00	
Stirophos	ND	2.0	1.00	
Tokuthion	ND	0.50	1.00	
Trichloronate	ND	0.50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tributylphosphate	41	30-130	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3545
Method: EPA 8141A
Units: mg/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 20'	**16-03-0104-8-A**	**02/26/16 10:28**	**Solid**	**GC 26**	**03/04/16**	**03/09/16 11:04**	**160304L03**

Parameter	Result	RL	DF	Qualifiers
Demeton-o/s	ND	0.50	1.00	
Azinphos Methyl	ND	0.50	1.00	
Bolstar	ND	0.50	1.00	
Chlorpyrifos	ND	0.50	1.00	
Coumaphos	ND	0.50	1.00	
Diazinon	ND	0.50	1.00	
Dichlorvos	ND	0.50	1.00	
Disulfoton	ND	0.50	1.00	
Ethoprop	ND	0.50	1.00	
Fensulfothion	ND	0.50	1.00	
Fenthion	ND	0.50	1.00	
Merphos	ND	0.50	1.00	
Methyl Parathion	ND	0.50	1.00	
Mevinphos	ND	0.50	1.00	
Naled	ND	4.0	1.00	
Phorate	ND	0.50	1.00	
Ronnel	ND	0.50	1.00	
Stirophos	ND	2.0	1.00	
Tokuthion	ND	0.50	1.00	
Trichloronate	ND	0.50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tributylphosphate	52	30-130	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 3545
Method: EPA 8141A
Units: mg/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-15-973-246**	**N/A**	**Solid**	**GC 26**	**03/04/16**	**03/07/16 09:35**	**160304L03**

Parameter	Result	RL	DF	Qualifiers
Demeton-o/s	ND	0.50	1.00	
Azinphos Methyl	ND	0.50	1.00	
Bolstar	ND	0.50	1.00	
Chlorpyrifos	ND	0.50	1.00	
Coumaphos	ND	0.50	1.00	
Diazinon	ND	0.50	1.00	
Dichlorvos	ND	0.50	1.00	
Disulfoton	ND	0.50	1.00	
Ethoprop	ND	0.50	1.00	
Fensulfothion	ND	0.50	1.00	
Fenthion	ND	0.50	1.00	
Merphos	ND	0.50	1.00	
Methyl Parathion	ND	0.50	1.00	
Mevinphos	ND	0.50	1.00	
Naled	ND	4.0	1.00	
Phorate	ND	0.50	1.00	
Ronnel	ND	0.50	1.00	
Stirophos	ND	2.0	1.00	
Tokuthion	ND	0.50	1.00	
Trichloronate	ND	0.50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tributylphosphate	68	30-130	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 8151A
Method: EPA 8151A
Units: ug/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT-1 @ 5'	**16-03-0104-1-A**	**02/25/16 10:25**	**Solid**	**GC 40**	**03/04/16**	**03/08/16 23:04**	**160304L11**

Parameter	Result	RL	DF	Qualifiers
Dalapon	ND	250	1.00	
Dicamba	ND	10	1.00	
MCPP	ND	10000	1.00	
MCPA	ND	10000	1.00	
Dichlorprop	ND	100	1.00	
2,4-D	ND	100	1.00	
2,4,5-TP (Silvex)	ND	10	1.00	
2,4,5-T	ND	10	1.00	
2,4-DB	ND	100	1.00	
Dinoseb	ND	50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4-Dichlorophenylacetic acid	85	30-130	

CPT 1 @ 10'	16-03-0104-2-A	02/25/16 10:36	Solid	GC 40	03/04/16	03/08/16 23:27	160304L11

Parameter	Result	RL	DF	Qualifiers
Dalapon	ND	250	1.00	
Dicamba	ND	10	1.00	
MCPP	ND	10000	1.00	
MCPA	ND	10000	1.00	
Dichlorprop	ND	100	1.00	
2,4-D	ND	100	1.00	
2,4,5-TP (Silvex)	ND	10	1.00	
2,4,5-T	ND	10	1.00	
2,4-DB	ND	100	1.00	
Dinoseb	ND	50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4-Dichlorophenylacetic acid	90	30-130	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 8151A
Method: EPA 8151A
Units: ug/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 15'	**16-03-0104-3-A**	**02/25/16 10:57**	**Solid**	**GC 40**	**03/04/16**	**03/08/16 23:51**	**160304L11**

Parameter	Result	RL	DF	Qualifiers
Dalapon	ND	250	1.00	
Dicamba	ND	10	1.00	
MCPP	ND	10000	1.00	
MCPA	ND	10000	1.00	
Dichlorprop	ND	100	1.00	
2,4-D	ND	100	1.00	
2,4,5-TP (Silvex)	ND	10	1.00	
2,4,5-T	ND	10	1.00	
2,4-DB	ND	100	1.00	
Dinoseb	ND	50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4-Dichlorophenylacetic acid	47	30-130	

CPT 1 @ 20'	16-03-0104-4-A	02/25/16 11:20	Solid	GC 40	03/04/16	03/08/16 12:14	160304L11

Parameter	Result	RL	DF	Qualifiers
Dalapon	ND	250	1.00	
Dicamba	ND	10	1.00	
MCPP	ND	10000	1.00	
MCPA	ND	10000	1.00	
Dichlorprop	ND	100	1.00	
2,4-D	ND	100	1.00	
2,4,5-TP (Silvex)	ND	10	1.00	
2,4,5-T	ND	10	1.00	
2,4-DB	ND	100	1.00	
Dinoseb	ND	50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4-Dichlorophenylacetic acid	83	30-130	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 8151A
Method: EPA 8151A
Units: ug/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT-3 @ 5'	**16-03-0104-5-A**	**02/25/16 11:50**	**Solid**	**GC 40**	**03/04/16**	**03/09/16 00:14**	**160304L11**

Parameter	Result	RL	DF	Qualifiers
Dalapon	ND	250	1.00	
Dicamba	ND	10	1.00	
MCPP	ND	10000	1.00	
MCPA	ND	10000	1.00	
Dichlorprop	ND	100	1.00	
2,4-D	ND	100	1.00	
2,4,5-TP (Silvex)	ND	10	1.00	
2,4,5-T	ND	10	1.00	
2,4-DB	ND	100	1.00	
Dinoseb	ND	50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4-Dichlorophenylacetic acid	72	30-130	

CPT 3 @ 10'	16-03-0104-6-A	02/25/16 12:03	Solid	GC 40	03/04/16	03/09/16 00:37	160304L11

Parameter	Result	RL	DF	Qualifiers
Dalapon	ND	250	1.00	
Dicamba	ND	10	1.00	
MCPP	ND	10000	1.00	
MCPA	ND	10000	1.00	
Dichlorprop	ND	100	1.00	
2,4-D	ND	100	1.00	
2,4,5-TP (Silvex)	ND	10	1.00	
2,4,5-T	ND	10	1.00	
2,4-DB	ND	100	1.00	
Dinoseb	ND	50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4-Dichlorophenylacetic acid	87	30-130	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 8151A
Method: EPA 8151A
Units: ug/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 15'	**16-03-0104-7-A**	**02/26/16 10:10**	**Solid**	**GC 40**	**03/04/16**	**03/09/16 01:00**	**160304L11**

Parameter	Result	RL	DF	Qualifiers
Dalapon	ND	250	1.00	
Dicamba	ND	10	1.00	
MCPP	ND	10000	1.00	
MCPA	ND	10000	1.00	
Dichlorprop	ND	100	1.00	
2,4-D	ND	100	1.00	
2,4,5-TP (Silvex)	ND	10	1.00	
2,4,5-T	ND	10	1.00	
2,4-DB	ND	100	1.00	
Dinoseb	ND	50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4-Dichlorophenylacetic acid	68	30-130	

CPT 3 @ 20'	16-03-0104-8-A	02/26/16 10:28	Solid	GC 40	03/04/16	03/09/16 01:23	160304L11

Parameter	Result	RL	DF	Qualifiers
Dalapon	ND	250	1.00	
Dicamba	ND	10	1.00	
MCPP	ND	10000	1.00	
MCPA	ND	10000	1.00	
Dichlorprop	ND	100	1.00	
2,4-D	ND	100	1.00	
2,4,5-TP (Silvex)	ND	10	1.00	
2,4,5-T	ND	10	1.00	
2,4-DB	ND	100	1.00	
Dinoseb	ND	50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4-Dichlorophenylacetic acid	78	30-130	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.		Date Received:	03/01/16
9245 Activity Road, Suite 103		Work Order:	16-03-0104
San Diego, CA 92126-4442		Preparation:	EPA 8151A
		Method:	EPA 8151A
		Units:	ug/kg
Project: SD458 Mitsubishi Cement Facility			Page 5 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-033-1348**	**N/A**	**Solid**	**GC 40**	**03/04/16**	**03/07/16 11:50**	**160304L11**

Parameter	Result	RL	DF	Qualifiers
Dalapon	ND	250	1.00	
Dicamba	ND	10	1.00	
MCPP	ND	10000	1.00	
MCPA	ND	10000	1.00	
Dichlorprop	ND	100	1.00	
2,4-D	ND	100	1.00	
2,4,5-TP (Silvex)	ND	10	1.00	
2,4,5-T	ND	10	1.00	
2,4-DB	ND	100	1.00	
Dinoseb	ND	50	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
2,4-Dichlorophenylacetic acid	86	30-130	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT-1 @ 5'	**16-03-0104-1-D**	**02/25/16 10:25**	**Solid**	**GC/MS BB**	**03/02/16**	**03/02/16 14:15**	**160302L015**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	43	1.00	BV,ET
Benzene	ND	0.86	1.00	BV,ET
Bromobenzene	ND	0.86	1.00	BV,ET
Bromochloromethane	ND	1.7	1.00	BV,ET
Bromodichloromethane	ND	0.86	1.00	BV,ET
Bromoform	ND	4.3	1.00	BV,ET
Bromomethane	ND	17	1.00	BV,ET
2-Butanone	ND	17	1.00	BV,ET
n-Butylbenzene	ND	0.86	1.00	BV,ET
sec-Butylbenzene	ND	0.86	1.00	BV,ET
tert-Butylbenzene	ND	0.86	1.00	BV,ET
Carbon Disulfide	ND	8.6	1.00	BV,ET
Carbon Tetrachloride	ND	0.86	1.00	BV,ET
Chlorobenzene	ND	0.86	1.00	BV,ET
Chloroethane	ND	1.7	1.00	BV,ET
Chloroform	ND	0.86	1.00	BV,ET
Chloromethane	ND	17	1.00	BV,ET
2-Chlorotoluene	ND	0.86	1.00	BV,ET
4-Chlorotoluene	ND	0.86	1.00	BV,ET
Dibromochloromethane	ND	1.7	1.00	BV,ET
1,2-Dibromo-3-Chloropropane	ND	4.3	1.00	BV,ET
1,2-Dibromoethane	ND	0.86	1.00	BV,ET
Dibromomethane	ND	0.86	1.00	BV,ET
1,2-Dichlorobenzene	ND	0.86	1.00	BV,ET
1,3-Dichlorobenzene	ND	0.86	1.00	BV,ET
1,4-Dichlorobenzene	ND	0.86	1.00	BV,ET
Dichlorodifluoromethane	ND	1.7	1.00	BV,ET
1,1-Dichloroethane	ND	0.86	1.00	BV,ET
1,2-Dichloroethane	ND	0.86	1.00	BV,ET
1,1-Dichloroethene	ND	0.86	1.00	BV,ET
c-1,2-Dichloroethene	ND	0.86	1.00	BV,ET
t-1,2-Dichloroethene	ND	0.86	1.00	BV,ET
1,2-Dichloropropane	ND	0.86	1.00	BV,ET
1,3-Dichloropropane	ND	0.86	1.00	BV,ET
2,2-Dichloropropane	ND	4.3	1.00	BV,ET

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: SD458 Mitsubishi Cement Facility		Page 2 of 30

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.7	1.00	BV,ET
c-1,3-Dichloropropene	ND	0.86	1.00	BV,ET
t-1,3-Dichloropropene	ND	1.7	1.00	BV,ET
Ethylbenzene	ND	0.86	1.00	BV,ET
2-Hexanone	ND	17	1.00	BV,ET
Isopropylbenzene	ND	0.86	1.00	BV,ET
p-Isopropyltoluene	ND	0.86	1.00	BV,ET
Methylene Chloride	ND	8.6	1.00	BV,ET
4-Methyl-2-Pentanone	ND	17	1.00	BV,ET
Naphthalene	ND	8.6	1.00	BV,ET
n-Propylbenzene	ND	1.7	1.00	BV,ET
Styrene	ND	0.86	1.00	BV,ET
1,1,1,2-Tetrachloroethane	ND	0.86	1.00	BV,ET
1,1,2,2-Tetrachloroethane	ND	1.7	1.00	BV,ET
Tetrachloroethene	ND	0.86	1.00	BV,ET
Toluene	ND	0.86	1.00	BV,ET
1,2,3-Trichlorobenzene	ND	1.7	1.00	BV,ET
1,2,4-Trichlorobenzene	ND	1.7	1.00	BV,ET
1,1,1-Trichloroethane	ND	0.86	1.00	BV,ET
1,1,2-Trichloroethane	ND	0.86	1.00	BV,ET
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	8.6	1.00	BV,ET
Trichloroethene	ND	1.7	1.00	BV,ET
Trichlorofluoromethane	ND	8.6	1.00	BV,ET
1,2,3-Trichloropropane	ND	1.7	1.00	BV,ET
1,2,4-Trimethylbenzene	ND	1.7	1.00	BV,ET
1,3,5-Trimethylbenzene	ND	1.7	1.00	BV,ET
Vinyl Acetate	ND	8.6	1.00	BV,ET
Vinyl Chloride	ND	0.86	1.00	BV,ET
p/m-Xylene	ND	1.7	1.00	BV,ET
o-Xylene	ND	0.86	1.00	BV,ET
Methyl-t-Butyl Ether (MTBE)	ND	1.7	1.00	BV,ET
Tert-Butyl Alcohol (TBA)	ND	17	1.00	BV,ET
Diisopropyl Ether (DIPE)	ND	0.86	1.00	BV,ET
Ethyl-t-Butyl Ether (ETBE)	ND	0.86	1.00	BV,ET
Tert-Amyl-Methyl Ether (TAME)	ND	0.86	1.00	BV,ET
Ethanol	ND	430	1.00	BV,ET

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	88	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: SD458 Mitsubishi Cement Facility		Page 3 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	116	79-133	
1,2-Dichloroethane-d4	135	71-155	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.		Date Received:	03/01/16
9245 Activity Road, Suite 103		Work Order:	16-03-0104
San Diego, CA 92126-4442		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: SD458 Mitsubishi Cement Facility			Page 4 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 10'	**16-03-0104-2-D**	**02/25/16 10:36**	**Solid**	**GC/MS BB**	**03/02/16**	**03/02/16 14:43**	**160302L015**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	55	1.00	BV,ET
Benzene	ND	1.1	1.00	BV,ET
Bromobenzene	ND	1.1	1.00	BV,ET
Bromochloromethane	ND	2.2	1.00	BV,ET
Bromodichloromethane	ND	1.1	1.00	BV,ET
Bromoform	ND	5.5	1.00	BV,ET
Bromomethane	ND	22	1.00	BV,ET
2-Butanone	ND	22	1.00	BV,ET
n-Butylbenzene	ND	1.1	1.00	BV,ET
sec-Butylbenzene	ND	1.1	1.00	BV,ET
tert-Butylbenzene	ND	1.1	1.00	BV,ET
Carbon Disulfide	ND	11	1.00	BV,ET
Carbon Tetrachloride	ND	1.1	1.00	BV,ET
Chlorobenzene	ND	1.1	1.00	BV,ET
Chloroethane	ND	2.2	1.00	BV,ET
Chloroform	ND	1.1	1.00	BV,ET
Chloromethane	ND	22	1.00	BV,ET
2-Chlorotoluene	ND	1.1	1.00	BV,ET
4-Chlorotoluene	ND	1.1	1.00	BV,ET
Dibromochloromethane	ND	2.2	1.00	BV,ET
1,2-Dibromo-3-Chloropropane	ND	5.5	1.00	BV,ET
1,2-Dibromoethane	ND	1.1	1.00	BV,ET
Dibromomethane	ND	1.1	1.00	BV,ET
1,2-Dichlorobenzene	ND	1.1	1.00	BV,ET
1,3-Dichlorobenzene	ND	1.1	1.00	BV,ET
1,4-Dichlorobenzene	ND	1.1	1.00	BV,ET
Dichlorodifluoromethane	ND	2.2	1.00	BV,ET
1,1-Dichloroethane	ND	1.1	1.00	BV,ET
1,2-Dichloroethane	ND	1.1	1.00	BV,ET
1,1-Dichloroethene	ND	1.1	1.00	BV,ET
c-1,2-Dichloroethene	ND	1.1	1.00	BV,ET
t-1,2-Dichloroethene	ND	1.1	1.00	BV,ET
1,2-Dichloropropane	ND	1.1	1.00	BV,ET
1,3-Dichloropropane	ND	1.1	1.00	BV,ET
2,2-Dichloropropane	ND	5.5	1.00	BV,ET

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: SD458 Mitsubishi Cement Facility		Page 5 of 30

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.2	1.00	BV,ET
c-1,3-Dichloropropene	ND	1.1	1.00	BV,ET
t-1,3-Dichloropropene	ND	2.2	1.00	BV,ET
Ethylbenzene	ND	1.1	1.00	BV,ET
2-Hexanone	ND	22	1.00	BV,ET
Isopropylbenzene	ND	1.1	1.00	BV,ET
p-Isopropyltoluene	ND	1.1	1.00	BV,ET
Methylene Chloride	ND	11	1.00	BV,ET
4-Methyl-2-Pentanone	ND	22	1.00	BV,ET
Naphthalene	ND	11	1.00	BV,ET
n-Propylbenzene	ND	2.2	1.00	BV,ET
Styrene	ND	1.1	1.00	BV,ET
1,1,1,2-Tetrachloroethane	ND	1.1	1.00	BV,ET
1,1,2,2-Tetrachloroethane	ND	2.2	1.00	BV,ET
Tetrachloroethene	ND	1.1	1.00	BV,ET
Toluene	ND	1.1	1.00	BV,ET
1,2,3-Trichlorobenzene	ND	2.2	1.00	BV,ET
1,2,4-Trichlorobenzene	ND	2.2	1.00	BV,ET
1,1,1-Trichloroethane	ND	1.1	1.00	BV,ET
1,1,2-Trichloroethane	ND	1.1	1.00	BV,ET
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	11	1.00	BV,ET
Trichloroethene	ND	2.2	1.00	BV,ET
Trichlorofluoromethane	ND	11	1.00	BV,ET
1,2,3-Trichloropropane	ND	2.2	1.00	BV,ET
1,2,4-Trimethylbenzene	ND	2.2	1.00	BV,ET
1,3,5-Trimethylbenzene	ND	2.2	1.00	BV,ET
Vinyl Acetate	ND	11	1.00	BV,ET
Vinyl Chloride	ND	1.1	1.00	BV,ET
p/m-Xylene	ND	2.2	1.00	BV,ET
o-Xylene	ND	1.1	1.00	BV,ET
Methyl-t-Butyl Ether (MTBE)	ND	2.2	1.00	BV,ET
Tert-Butyl Alcohol (TBA)	ND	22	1.00	BV,ET
Diisopropyl Ether (DIPE)	ND	1.1	1.00	BV,ET
Ethyl-t-Butyl Ether (ETBE)	ND	1.1	1.00	BV,ET
Tert-Amyl-Methyl Ether (TAME)	ND	1.1	1.00	BV,ET
Ethanol	ND	550	1.00	BV,ET

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	87	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: SD458 Mitsubishi Cement Facility		Page 6 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	116	79-133	
1,2-Dichloroethane-d4	129	71-155	
Toluene-d8	98	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 15'	**16-03-0104-3-E**	**02/25/16 10:57**	**Solid**	**GC/MS Q**	**03/02/16**	**03/04/16 14:04**	**160304L009**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	45	1.00	BV,ET
Benzene	ND	0.90	1.00	BV,ET
Bromobenzene	ND	0.90	1.00	BV,ET
Bromochloromethane	ND	1.8	1.00	BV,ET
Bromodichloromethane	ND	0.90	1.00	BV,ET
Bromoform	ND	4.5	1.00	BV,ET
Bromomethane	ND	18	1.00	BV,ET
2-Butanone	ND	18	1.00	BV,ET
n-Butylbenzene	ND	0.90	1.00	BV,ET
sec-Butylbenzene	ND	0.90	1.00	BV,ET
tert-Butylbenzene	ND	0.90	1.00	BV,ET
Carbon Disulfide	ND	9.0	1.00	BV,ET
Carbon Tetrachloride	ND	0.90	1.00	BV,ET
Chlorobenzene	ND	0.90	1.00	BV,ET
Chloroethane	ND	1.8	1.00	BV,ET
Chloroform	ND	0.90	1.00	BV,ET
Chloromethane	ND	18	1.00	BV,ET
2-Chlorotoluene	ND	0.90	1.00	BV,ET
4-Chlorotoluene	ND	0.90	1.00	BV,ET
Dibromochloromethane	ND	1.8	1.00	BV,ET
1,2-Dibromo-3-Chloropropane	ND	4.5	1.00	BV,ET
1,2-Dibromoethane	ND	0.90	1.00	BV,ET
Dibromomethane	ND	0.90	1.00	BV,ET
1,2-Dichlorobenzene	ND	0.90	1.00	BV,ET
1,3-Dichlorobenzene	ND	0.90	1.00	BV,ET
1,4-Dichlorobenzene	ND	0.90	1.00	BV,ET
Dichlorodifluoromethane	ND	1.8	1.00	BV,ET
1,1-Dichloroethane	ND	0.90	1.00	BV,ET
1,2-Dichloroethane	ND	0.90	1.00	BV,ET
1,1-Dichloroethene	ND	0.90	1.00	BV,ET
c-1,2-Dichloroethene	ND	0.90	1.00	BV,ET
t-1,2-Dichloroethene	ND	0.90	1.00	BV,ET
1,2-Dichloropropane	ND	0.90	1.00	BV,ET
1,3-Dichloropropane	ND	0.90	1.00	BV,ET
2,2-Dichloropropane	ND	4.5	1.00	BV,ET

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: SD458 Mitsubishi Cement Facility		Page 8 of 30

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.8	1.00	BV,ET
c-1,3-Dichloropropene	ND	0.90	1.00	BV,ET
t-1,3-Dichloropropene	ND	1.8	1.00	BV,ET
Ethylbenzene	ND	0.90	1.00	BV,ET
2-Hexanone	ND	18	1.00	BV,ET
Isopropylbenzene	ND	0.90	1.00	BV,ET
p-Isopropyltoluene	ND	0.90	1.00	BV,ET
Methylene Chloride	ND	9.0	1.00	BV,ET
4-Methyl-2-Pentanone	ND	18	1.00	BV,ET
Naphthalene	ND	9.0	1.00	BV,ET
n-Propylbenzene	ND	1.8	1.00	BV,ET
Styrene	ND	0.90	1.00	BV,ET
1,1,1,2-Tetrachloroethane	ND	0.90	1.00	BV,ET
1,1,2,2-Tetrachloroethane	ND	1.8	1.00	BV,ET
Tetrachloroethene	ND	0.90	1.00	BV,ET
Toluene	ND	0.90	1.00	BV,ET
1,2,3-Trichlorobenzene	ND	1.8	1.00	BV,ET
1,2,4-Trichlorobenzene	ND	1.8	1.00	BV,ET
1,1,1-Trichloroethane	ND	0.90	1.00	BV,ET
1,1,2-Trichloroethane	ND	0.90	1.00	BV,ET
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	9.0	1.00	BV,ET
Trichloroethene	ND	1.8	1.00	BV,ET
Trichlorofluoromethane	ND	9.0	1.00	BV,ET
1,2,3-Trichloropropane	ND	1.8	1.00	BV,ET
1,2,4-Trimethylbenzene	ND	1.8	1.00	BV,ET
1,3,5-Trimethylbenzene	ND	1.8	1.00	BV,ET
Vinyl Acetate	ND	9.0	1.00	BV,ET
Vinyl Chloride	ND	0.90	1.00	BV,ET
p/m-Xylene	ND	1.8	1.00	BV,ET
o-Xylene	ND	0.90	1.00	BV,ET
Methyl-t-Butyl Ether (MTBE)	ND	1.8	1.00	BV,ET
Tert-Butyl Alcohol (TBA)	ND	18	1.00	BV,ET
Diisopropyl Ether (DIPE)	ND	0.90	1.00	BV,ET
Ethyl-t-Butyl Ether (ETBE)	ND	0.90	1.00	BV,ET
Tert-Amyl-Methyl Ether (TAME)	ND	0.90	1.00	BV,ET
Ethanol	ND	450	1.00	BV,ET

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	99	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: SD458 Mitsubishi Cement Facility		Page 9 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	97	79-133	
1,2-Dichloroethane-d4	90	71-155	
Toluene-d8	105	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 1 @ 20'	**16-03-0104-4-D**	**02/25/16 11:20**	**Solid**	**GC/MS BB**	**03/02/16**	**03/02/16 15:41**	**160302L015**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	46	1.00	BV,ET
Benzene	ND	0.92	1.00	BV,ET
Bromobenzene	ND	0.92	1.00	BV,ET
Bromochloromethane	ND	1.8	1.00	BV,ET
Bromodichloromethane	ND	0.92	1.00	BV,ET
Bromoform	ND	4.6	1.00	BV,ET
Bromomethane	ND	18	1.00	BV,ET
2-Butanone	ND	18	1.00	BV,ET
n-Butylbenzene	ND	0.92	1.00	BV,ET
sec-Butylbenzene	ND	0.92	1.00	BV,ET
tert-Butylbenzene	ND	0.92	1.00	BV,ET
Carbon Disulfide	ND	9.2	1.00	BV,ET
Carbon Tetrachloride	ND	0.92	1.00	BV,ET
Chlorobenzene	ND	0.92	1.00	BV,ET
Chloroethane	ND	1.8	1.00	BV,ET
Chloroform	ND	0.92	1.00	BV,ET
Chloromethane	ND	18	1.00	BV,ET
2-Chlorotoluene	ND	0.92	1.00	BV,ET
4-Chlorotoluene	ND	0.92	1.00	BV,ET
Dibromochloromethane	ND	1.8	1.00	BV,ET
1,2-Dibromo-3-Chloropropane	ND	4.6	1.00	BV,ET
1,2-Dibromoethane	ND	0.92	1.00	BV,ET
Dibromomethane	ND	0.92	1.00	BV,ET
1,2-Dichlorobenzene	ND	0.92	1.00	BV,ET
1,3-Dichlorobenzene	ND	0.92	1.00	BV,ET
1,4-Dichlorobenzene	ND	0.92	1.00	BV,ET
Dichlorodifluoromethane	ND	1.8	1.00	BV,ET
1,1-Dichloroethane	ND	0.92	1.00	BV,ET
1,2-Dichloroethane	ND	0.92	1.00	BV,ET
1,1-Dichloroethene	ND	0.92	1.00	BV,ET
c-1,2-Dichloroethene	ND	0.92	1.00	BV,ET
t-1,2-Dichloroethene	ND	0.92	1.00	BV,ET
1,2-Dichloropropane	ND	0.92	1.00	BV,ET
1,3-Dichloropropane	ND	0.92	1.00	BV,ET
2,2-Dichloropropane	ND	4.6	1.00	BV,ET

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: SD458 Mitsubishi Cement Facility		Page 11 of 30

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.8	1.00	BV,ET
c-1,3-Dichloropropene	ND	0.92	1.00	BV,ET
t-1,3-Dichloropropene	ND	1.8	1.00	BV,ET
Ethylbenzene	ND	0.92	1.00	BV,ET
2-Hexanone	ND	18	1.00	BV,ET
Isopropylbenzene	ND	0.92	1.00	BV,ET
p-Isopropyltoluene	ND	0.92	1.00	BV,ET
Methylene Chloride	ND	9.2	1.00	BV,ET
4-Methyl-2-Pentanone	ND	18	1.00	BV,ET
Naphthalene	ND	9.2	1.00	BV,ET
n-Propylbenzene	ND	1.8	1.00	BV,ET
Styrene	ND	0.92	1.00	BV,ET
1,1,1,2-Tetrachloroethane	ND	0.92	1.00	BV,ET
1,1,2,2-Tetrachloroethane	ND	1.8	1.00	BV,ET
Tetrachloroethene	ND	0.92	1.00	BV,ET
Toluene	ND	0.92	1.00	BV,ET
1,2,3-Trichlorobenzene	ND	1.8	1.00	BV,ET
1,2,4-Trichlorobenzene	ND	1.8	1.00	BV,ET
1,1,1-Trichloroethane	ND	0.92	1.00	BV,ET
1,1,2-Trichloroethane	ND	0.92	1.00	BV,ET
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	9.2	1.00	BV,ET
Trichloroethene	ND	1.8	1.00	BV,ET
Trichlorofluoromethane	ND	9.2	1.00	BV,ET
1,2,3-Trichloropropane	ND	1.8	1.00	BV,ET
1,2,4-Trimethylbenzene	ND	1.8	1.00	BV,ET
1,3,5-Trimethylbenzene	ND	1.8	1.00	BV,ET
Vinyl Acetate	ND	9.2	1.00	BV,ET
Vinyl Chloride	ND	0.92	1.00	BV,ET
p/m-Xylene	ND	1.8	1.00	BV,ET
o-Xylene	ND	0.92	1.00	BV,ET
Methyl-t-Butyl Ether (MTBE)	ND	1.8	1.00	BV,ET
Tert-Butyl Alcohol (TBA)	ND	18	1.00	BV,ET
Diisopropyl Ether (DIPE)	ND	0.92	1.00	BV,ET
Ethyl-t-Butyl Ether (ETBE)	ND	0.92	1.00	BV,ET
Tert-Amyl-Methyl Ether (TAME)	ND	0.92	1.00	BV,ET
Ethanol	ND	460	1.00	BV,ET

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	90	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: SD458 Mitsubishi Cement Facility		Page 12 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	127	79-133	
1,2-Dichloroethane-d4	135	71-155	
Toluene-d8	101	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.		Date Received:	03/01/16
9245 Activity Road, Suite 103		Work Order:	16-03-0104
San Diego, CA 92126-4442		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: SD458 Mitsubishi Cement Facility			Page 13 of 30

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT-3 @ 5'	**16-03-0104-5-D**	**02/25/16 11:50**	**Solid**	**GC/MS BB**	**03/02/16**	**03/02/16 16:10**	**160302L015**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	52	1.00	BV,ET
Benzene	ND	1.0	1.00	BV,ET
Bromobenzene	ND	1.0	1.00	BV,ET
Bromochloromethane	ND	2.1	1.00	BV,ET
Bromodichloromethane	ND	1.0	1.00	BV,ET
Bromoform	ND	5.2	1.00	BV,ET
Bromomethane	ND	21	1.00	BV,ET
2-Butanone	ND	21	1.00	BV,ET
n-Butylbenzene	ND	1.0	1.00	BV,ET
sec-Butylbenzene	ND	1.0	1.00	BV,ET
tert-Butylbenzene	ND	1.0	1.00	BV,ET
Carbon Disulfide	ND	10	1.00	BV,ET
Carbon Tetrachloride	ND	1.0	1.00	BV,ET
Chlorobenzene	ND	1.0	1.00	BV,ET
Chloroethane	ND	2.1	1.00	BV,ET
Chloroform	ND	1.0	1.00	BV,ET
Chloromethane	ND	21	1.00	BV,ET
2-Chlorotoluene	ND	1.0	1.00	BV,ET
4-Chlorotoluene	ND	1.0	1.00	BV,ET
Dibromochloromethane	ND	2.1	1.00	BV,ET
1,2-Dibromo-3-Chloropropane	ND	5.2	1.00	BV,ET
1,2-Dibromoethane	ND	1.0	1.00	BV,ET
Dibromomethane	ND	1.0	1.00	BV,ET
1,2-Dichlorobenzene	ND	1.0	1.00	BV,ET
1,3-Dichlorobenzene	ND	1.0	1.00	BV,ET
1,4-Dichlorobenzene	ND	1.0	1.00	BV,ET
Dichlorodifluoromethane	ND	2.1	1.00	BV,ET
1,1-Dichloroethane	ND	1.0	1.00	BV,ET
1,2-Dichloroethane	ND	1.0	1.00	BV,ET
1,1-Dichloroethene	ND	1.0	1.00	BV,ET
c-1,2-Dichloroethene	ND	1.0	1.00	BV,ET
t-1,2-Dichloroethene	ND	1.0	1.00	BV,ET
1,2-Dichloropropane	ND	1.0	1.00	BV,ET
1,3-Dichloropropane	ND	1.0	1.00	BV,ET
2,2-Dichloropropane	ND	5.2	1.00	BV,ET

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: SD458 Mitsubishi Cement Facility		Page 14 of 30

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.1	1.00	BV,ET
c-1,3-Dichloropropene	ND	1.0	1.00	BV,ET
t-1,3-Dichloropropene	ND	2.1	1.00	BV,ET
Ethylbenzene	ND	1.0	1.00	BV,ET
2-Hexanone	ND	21	1.00	BV,ET
Isopropylbenzene	ND	1.0	1.00	BV,ET
p-Isopropyltoluene	ND	1.0	1.00	BV,ET
Methylene Chloride	ND	10	1.00	BV,ET
4-Methyl-2-Pentanone	ND	21	1.00	BV,ET
Naphthalene	ND	10	1.00	BV,ET
n-Propylbenzene	ND	2.1	1.00	BV,ET
Styrene	ND	1.0	1.00	BV,ET
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	BV,ET
1,1,2,2-Tetrachloroethane	ND	2.1	1.00	BV,ET
Tetrachloroethene	ND	1.0	1.00	BV,ET
Toluene	ND	1.0	1.00	BV,ET
1,2,3-Trichlorobenzene	ND	2.1	1.00	BV,ET
1,2,4-Trichlorobenzene	ND	2.1	1.00	BV,ET
1,1,1-Trichloroethane	ND	1.0	1.00	BV,ET
1,1,2-Trichloroethane	ND	1.0	1.00	BV,ET
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	BV,ET
Trichloroethene	ND	2.1	1.00	BV,ET
Trichlorofluoromethane	ND	10	1.00	BV,ET
1,2,3-Trichloropropane	ND	2.1	1.00	BV,ET
1,2,4-Trimethylbenzene	ND	2.1	1.00	BV,ET
1,3,5-Trimethylbenzene	ND	2.1	1.00	BV,ET
Vinyl Acetate	ND	10	1.00	BV,ET
Vinyl Chloride	ND	1.0	1.00	BV,ET
p/m-Xylene	ND	2.1	1.00	BV,ET
o-Xylene	ND	1.0	1.00	BV,ET
Methyl-t-Butyl Ether (MTBE)	ND	2.1	1.00	BV,ET
Tert-Butyl Alcohol (TBA)	ND	21	1.00	BV,ET
Diisopropyl Ether (DIPE)	ND	1.0	1.00	BV,ET
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	BV,ET
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	BV,ET
Ethanol	ND	520	1.00	BV,ET

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	90	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: SD458 Mitsubishi Cement Facility		Page 15 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	123	79-133	
1,2-Dichloroethane-d4	134	71-155	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 10'	**16-03-0104-6-D**	**02/25/16 12:03**	**Solid**	**GC/MS BB**	**03/02/16**	**03/02/16 16:38**	**160302L015**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	46	1.00	BV,ET
Benzene	ND	0.93	1.00	BV,ET
Bromobenzene	ND	0.93	1.00	BV,ET
Bromochloromethane	ND	1.9	1.00	BV,ET
Bromodichloromethane	ND	0.93	1.00	BV,ET
Bromoform	ND	4.6	1.00	BV,ET
Bromomethane	ND	19	1.00	BV,ET
2-Butanone	ND	19	1.00	BV,ET
n-Butylbenzene	ND	0.93	1.00	BV,ET
sec-Butylbenzene	ND	0.93	1.00	BV,ET
tert-Butylbenzene	ND	0.93	1.00	BV,ET
Carbon Disulfide	ND	9.3	1.00	BV,ET
Carbon Tetrachloride	ND	0.93	1.00	BV,ET
Chlorobenzene	ND	0.93	1.00	BV,ET
Chloroethane	ND	1.9	1.00	BV,ET
Chloroform	ND	0.93	1.00	BV,ET
Chloromethane	ND	19	1.00	BV,ET
2-Chlorotoluene	ND	0.93	1.00	BV,ET
4-Chlorotoluene	ND	0.93	1.00	BV,ET
Dibromochloromethane	ND	1.9	1.00	BV,ET
1,2-Dibromo-3-Chloropropane	ND	4.6	1.00	BV,ET
1,2-Dibromoethane	ND	0.93	1.00	BV,ET
Dibromomethane	ND	0.93	1.00	BV,ET
1,2-Dichlorobenzene	ND	0.93	1.00	BV,ET
1,3-Dichlorobenzene	ND	0.93	1.00	BV,ET
1,4-Dichlorobenzene	ND	0.93	1.00	BV,ET
Dichlorodifluoromethane	ND	1.9	1.00	BV,ET
1,1-Dichloroethane	ND	0.93	1.00	BV,ET
1,2-Dichloroethane	ND	0.93	1.00	BV,ET
1,1-Dichloroethene	ND	0.93	1.00	BV,ET
c-1,2-Dichloroethene	ND	0.93	1.00	BV,ET
t-1,2-Dichloroethene	ND	0.93	1.00	BV,ET
1,2-Dichloropropane	ND	0.93	1.00	BV,ET
1,3-Dichloropropane	ND	0.93	1.00	BV,ET
2,2-Dichloropropane	ND	4.6	1.00	BV,ET

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: SD458 Mitsubishi Cement Facility		Page 17 of 30

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.9	1.00	BV,ET
c-1,3-Dichloropropene	ND	0.93	1.00	BV,ET
t-1,3-Dichloropropene	ND	1.9	1.00	BV,ET
Ethylbenzene	ND	0.93	1.00	BV,ET
2-Hexanone	ND	19	1.00	BV,ET
Isopropylbenzene	ND	0.93	1.00	BV,ET
p-Isopropyltoluene	ND	0.93	1.00	BV,ET
Methylene Chloride	ND	9.3	1.00	BV,ET
4-Methyl-2-Pentanone	ND	19	1.00	BV,ET
Naphthalene	ND	9.3	1.00	BV,ET
n-Propylbenzene	ND	1.9	1.00	BV,ET
Styrene	ND	0.93	1.00	BV,ET
1,1,1,2-Tetrachloroethane	ND	0.93	1.00	BV,ET
1,1,2,2-Tetrachloroethane	ND	1.9	1.00	BV,ET
Tetrachloroethene	ND	0.93	1.00	BV,ET
Toluene	ND	0.93	1.00	BV,ET
1,2,3-Trichlorobenzene	ND	1.9	1.00	BV,ET
1,2,4-Trichlorobenzene	ND	1.9	1.00	BV,ET
1,1,1-Trichloroethane	ND	0.93	1.00	BV,ET
1,1,2-Trichloroethane	ND	0.93	1.00	BV,ET
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	9.3	1.00	BV,ET
Trichloroethene	ND	1.9	1.00	BV,ET
Trichlorofluoromethane	ND	9.3	1.00	BV,ET
1,2,3-Trichloropropane	ND	1.9	1.00	BV,ET
1,2,4-Trimethylbenzene	ND	1.9	1.00	BV,ET
1,3,5-Trimethylbenzene	ND	1.9	1.00	BV,ET
Vinyl Acetate	ND	9.3	1.00	BV,ET
Vinyl Chloride	ND	0.93	1.00	BV,ET
p/m-Xylene	ND	1.9	1.00	BV,ET
o-Xylene	ND	0.93	1.00	BV,ET
Methyl-t-Butyl Ether (MTBE)	ND	1.9	1.00	BV,ET
Tert-Butyl Alcohol (TBA)	ND	19	1.00	BV,ET
Diisopropyl Ether (DIPE)	ND	0.93	1.00	BV,ET
Ethyl-t-Butyl Ether (ETBE)	ND	0.93	1.00	BV,ET
Tert-Amyl-Methyl Ether (TAME)	ND	0.93	1.00	BV,ET
Ethanol	ND	460	1.00	BV,ET

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	90	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: SD458 Mitsubishi Cement Facility		Page 18 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	120	79-133	
1,2-Dichloroethane-d4	132	71-155	
Toluene-d8	99	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 15'	**16-03-0104-7-D**	**02/26/16 10:10**	**Solid**	**GC/MS BB**	**03/02/16**	**03/02/16 17:06**	**160302L015**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	47	1.00	BV,ET
Benzene	ND	0.94	1.00	BV,ET
Bromobenzene	ND	0.94	1.00	BV,ET
Bromochloromethane	ND	1.9	1.00	BV,ET
Bromodichloromethane	ND	0.94	1.00	BV,ET
Bromoform	ND	4.7	1.00	BV,ET
Bromomethane	ND	19	1.00	BV,ET
2-Butanone	ND	19	1.00	BV,ET
n-Butylbenzene	ND	0.94	1.00	BV,ET
sec-Butylbenzene	ND	0.94	1.00	BV,ET
tert-Butylbenzene	ND	0.94	1.00	BV,ET
Carbon Disulfide	ND	9.4	1.00	BV,ET
Carbon Tetrachloride	ND	0.94	1.00	BV,ET
Chlorobenzene	ND	0.94	1.00	BV,ET
Chloroethane	ND	1.9	1.00	BV,ET
Chloroform	ND	0.94	1.00	BV,ET
Chloromethane	ND	19	1.00	BV,ET
2-Chlorotoluene	ND	0.94	1.00	BV,ET
4-Chlorotoluene	ND	0.94	1.00	BV,ET
Dibromochloromethane	ND	1.9	1.00	BV,ET
1,2-Dibromo-3-Chloropropane	ND	4.7	1.00	BV,ET
1,2-Dibromoethane	ND	0.94	1.00	BV,ET
Dibromomethane	ND	0.94	1.00	BV,ET
1,2-Dichlorobenzene	ND	0.94	1.00	BV,ET
1,3-Dichlorobenzene	ND	0.94	1.00	BV,ET
1,4-Dichlorobenzene	ND	0.94	1.00	BV,ET
Dichlorodifluoromethane	ND	1.9	1.00	BV,ET
1,1-Dichloroethane	ND	0.94	1.00	BV,ET
1,2-Dichloroethane	ND	0.94	1.00	BV,ET
1,1-Dichloroethene	ND	0.94	1.00	BV,ET
c-1,2-Dichloroethene	ND	0.94	1.00	BV,ET
t-1,2-Dichloroethene	ND	0.94	1.00	BV,ET
1,2-Dichloropropane	ND	0.94	1.00	BV,ET
1,3-Dichloropropane	ND	0.94	1.00	BV,ET
2,2-Dichloropropane	ND	4.7	1.00	BV,ET

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: SD458 Mitsubishi Cement Facility		Page 20 of 30

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	1.9	1.00	BV,ET
c-1,3-Dichloropropene	ND	0.94	1.00	BV,ET
t-1,3-Dichloropropene	ND	1.9	1.00	BV,ET
Ethylbenzene	ND	0.94	1.00	BV,ET
2-Hexanone	ND	19	1.00	BV,ET
Isopropylbenzene	ND	0.94	1.00	BV,ET
p-Isopropyltoluene	ND	0.94	1.00	BV,ET
Methylene Chloride	ND	9.4	1.00	BV,ET
4-Methyl-2-Pentanone	ND	19	1.00	BV,ET
Naphthalene	ND	9.4	1.00	BV,ET
n-Propylbenzene	ND	1.9	1.00	BV,ET
Styrene	ND	0.94	1.00	BV,ET
1,1,1,2-Tetrachloroethane	ND	0.94	1.00	BV,ET
1,1,2,2-Tetrachloroethane	ND	1.9	1.00	BV,ET
Tetrachloroethene	ND	0.94	1.00	BV,ET
Toluene	ND	0.94	1.00	BV,ET
1,2,3-Trichlorobenzene	ND	1.9	1.00	BV,ET
1,2,4-Trichlorobenzene	ND	1.9	1.00	BV,ET
1,1,1-Trichloroethane	ND	0.94	1.00	BV,ET
1,1,2-Trichloroethane	ND	0.94	1.00	BV,ET
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	9.4	1.00	BV,ET
Trichloroethene	ND	1.9	1.00	BV,ET
Trichlorofluoromethane	ND	9.4	1.00	BV,ET
1,2,3-Trichloropropane	ND	1.9	1.00	BV,ET
1,2,4-Trimethylbenzene	ND	1.9	1.00	BV,ET
1,3,5-Trimethylbenzene	ND	1.9	1.00	BV,ET
Vinyl Acetate	ND	9.4	1.00	BV,ET
Vinyl Chloride	ND	0.94	1.00	BV,ET
p/m-Xylene	ND	1.9	1.00	BV,ET
o-Xylene	ND	0.94	1.00	BV,ET
Methyl-t-Butyl Ether (MTBE)	ND	1.9	1.00	BV,ET
Tert-Butyl Alcohol (TBA)	ND	19	1.00	BV,ET
Diisopropyl Ether (DIPE)	ND	0.94	1.00	BV,ET
Ethyl-t-Butyl Ether (ETBE)	ND	0.94	1.00	BV,ET
Tert-Amyl-Methyl Ether (TAME)	ND	0.94	1.00	BV,ET
Ethanol	ND	470	1.00	BV,ET

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	85	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: SD458 Mitsubishi Cement Facility		Page 21 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	118	79-133	
1,2-Dichloroethane-d4	127	71-155	
Toluene-d8	97	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
CPT 3 @ 20'	**16-03-0104-8-D**	**02/26/16 10:28**	**Solid**	**GC/MS Q**	**03/02/16**	**03/04/16 14:30**	**160304L009**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	69	1.00	BV,ET
Benzene	ND	1.4	1.00	BV,ET
Bromobenzene	ND	1.4	1.00	BV,ET
Bromochloromethane	ND	2.8	1.00	BV,ET
Bromodichloromethane	ND	1.4	1.00	BV,ET
Bromoform	ND	6.9	1.00	BV,ET
Bromomethane	ND	28	1.00	BV,ET
2-Butanone	ND	28	1.00	BV,ET
n-Butylbenzene	ND	1.4	1.00	BV,ET
sec-Butylbenzene	ND	1.4	1.00	BV,ET
tert-Butylbenzene	ND	1.4	1.00	BV,ET
Carbon Disulfide	ND	14	1.00	BV,ET
Carbon Tetrachloride	ND	1.4	1.00	BV,ET
Chlorobenzene	ND	1.4	1.00	BV,ET
Chloroethane	ND	2.8	1.00	BV,ET
Chloroform	ND	1.4	1.00	BV,ET
Chloromethane	ND	28	1.00	BV,ET
2-Chlorotoluene	ND	1.4	1.00	BV,ET
4-Chlorotoluene	ND	1.4	1.00	BV,ET
Dibromochloromethane	ND	2.8	1.00	BV,ET
1,2-Dibromo-3-Chloropropane	ND	6.9	1.00	BV,ET
1,2-Dibromoethane	ND	1.4	1.00	BV,ET
Dibromomethane	ND	1.4	1.00	BV,ET
1,2-Dichlorobenzene	ND	1.4	1.00	BV,ET
1,3-Dichlorobenzene	ND	1.4	1.00	BV,ET
1,4-Dichlorobenzene	ND	1.4	1.00	BV,ET
Dichlorodifluoromethane	ND	2.8	1.00	BV,ET
1,1-Dichloroethane	ND	1.4	1.00	BV,ET
1,2-Dichloroethane	ND	1.4	1.00	BV,ET
1,1-Dichloroethene	ND	1.4	1.00	BV,ET
c-1,2-Dichloroethene	ND	1.4	1.00	BV,ET
t-1,2-Dichloroethene	ND	1.4	1.00	BV,ET
1,2-Dichloropropane	ND	1.4	1.00	BV,ET
1,3-Dichloropropane	ND	1.4	1.00	BV,ET
2,2-Dichloropropane	ND	6.9	1.00	BV,ET

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: SD458 Mitsubishi Cement Facility		Page 23 of 30

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.8	1.00	BV,ET
c-1,3-Dichloropropene	ND	1.4	1.00	BV,ET
t-1,3-Dichloropropene	ND	2.8	1.00	BV,ET
Ethylbenzene	ND	1.4	1.00	BV,ET
2-Hexanone	ND	28	1.00	BV,ET
Isopropylbenzene	ND	1.4	1.00	BV,ET
p-Isopropyltoluene	ND	1.4	1.00	BV,ET
Methylene Chloride	ND	14	1.00	BV,ET
4-Methyl-2-Pentanone	ND	28	1.00	BV,ET
Naphthalene	ND	14	1.00	BV,ET
n-Propylbenzene	ND	2.8	1.00	BV,ET
Styrene	ND	1.4	1.00	BV,ET
1,1,1,2-Tetrachloroethane	ND	1.4	1.00	BV,ET
1,1,2,2-Tetrachloroethane	ND	2.8	1.00	BV,ET
Tetrachloroethene	ND	1.4	1.00	BV,ET
Toluene	ND	1.4	1.00	BV,ET
1,2,3-Trichlorobenzene	ND	2.8	1.00	BV,ET
1,2,4-Trichlorobenzene	ND	2.8	1.00	BV,ET
1,1,1-Trichloroethane	ND	1.4	1.00	BV,ET
1,1,2-Trichloroethane	ND	1.4	1.00	BV,ET
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	14	1.00	BV,ET
Trichloroethene	ND	2.8	1.00	BV,ET
Trichlorofluoromethane	ND	14	1.00	BV,ET
1,2,3-Trichloropropane	ND	2.8	1.00	BV,ET
1,2,4-Trimethylbenzene	ND	2.8	1.00	BV,ET
1,3,5-Trimethylbenzene	ND	2.8	1.00	BV,ET
Vinyl Acetate	ND	14	1.00	BV,ET
Vinyl Chloride	ND	1.4	1.00	BV,ET
p/m-Xylene	ND	2.8	1.00	BV,ET
o-Xylene	ND	1.4	1.00	BV,ET
Methyl-t-Butyl Ether (MTBE)	ND	2.8	1.00	BV,ET
Tert-Butyl Alcohol (TBA)	ND	28	1.00	BV,ET
Diisopropyl Ether (DIPE)	ND	1.4	1.00	BV,ET
Ethyl-t-Butyl Ether (ETBE)	ND	1.4	1.00	BV,ET
Tert-Amyl-Methyl Ether (TAME)	ND	1.4	1.00	BV,ET
Ethanol	ND	690	1.00	BV,ET

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	101	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: SD458 Mitsubishi Cement Facility		Page 24 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	98	79-133	
1,2-Dichloroethane-d4	98	71-155	
Toluene-d8	105	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-025-27317**	**N/A**	**Solid**	**GC/MS BB**	**03/02/16**	**03/02/16 11:25**	**160302L015**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	50	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	20	1.00	
2-Butanone	ND	20	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	20	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: SD458 Mitsubishi Cement Facility		Page 26 of 30

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.0	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.0	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	20	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	20	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.0	1.00	
1,2,4-Trichlorobenzene	ND	2.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.0	1.00	
1,2,4-Trimethylbenzene	ND	2.0	1.00	
1,3,5-Trimethylbenzene	ND	2.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	20	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	500	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	91	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: SD458 Mitsubishi Cement Facility		Page 27 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	114	79-133	
1,2-Dichloroethane-d4	130	71-155	
Toluene-d8	97	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 5035
Method: EPA 8260B
Units: ug/kg

Project: SD458 Mitsubishi Cement Facility

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-025-27330**	**N/A**	**Solid**	**GC/MS Q**	**03/04/16**	**03/04/16 12:49**	**160304L009**

Parameter	Result	RL	DF	Qualifiers
Acetone	ND	50	1.00	
Benzene	ND	1.0	1.00	
Bromobenzene	ND	1.0	1.00	
Bromochloromethane	ND	2.0	1.00	
Bromodichloromethane	ND	1.0	1.00	
Bromoform	ND	5.0	1.00	
Bromomethane	ND	20	1.00	
2-Butanone	ND	20	1.00	
n-Butylbenzene	ND	1.0	1.00	
sec-Butylbenzene	ND	1.0	1.00	
tert-Butylbenzene	ND	1.0	1.00	
Carbon Disulfide	ND	10	1.00	
Carbon Tetrachloride	ND	1.0	1.00	
Chlorobenzene	ND	1.0	1.00	
Chloroethane	ND	2.0	1.00	
Chloroform	ND	1.0	1.00	
Chloromethane	ND	20	1.00	
2-Chlorotoluene	ND	1.0	1.00	
4-Chlorotoluene	ND	1.0	1.00	
Dibromochloromethane	ND	2.0	1.00	
1,2-Dibromo-3-Chloropropane	ND	5.0	1.00	
1,2-Dibromoethane	ND	1.0	1.00	
Dibromomethane	ND	1.0	1.00	
1,2-Dichlorobenzene	ND	1.0	1.00	
1,3-Dichlorobenzene	ND	1.0	1.00	
1,4-Dichlorobenzene	ND	1.0	1.00	
Dichlorodifluoromethane	ND	2.0	1.00	
1,1-Dichloroethane	ND	1.0	1.00	
1,2-Dichloroethane	ND	1.0	1.00	
1,1-Dichloroethene	ND	1.0	1.00	
c-1,2-Dichloroethene	ND	1.0	1.00	
t-1,2-Dichloroethene	ND	1.0	1.00	
1,2-Dichloropropane	ND	1.0	1.00	
1,3-Dichloropropane	ND	1.0	1.00	
2,2-Dichloropropane	ND	5.0	1.00	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: SD458 Mitsubishi Cement Facility		Page 29 of 30

Parameter	Result	RL	DF	Qualifiers
1,1-Dichloropropene	ND	2.0	1.00	
c-1,3-Dichloropropene	ND	1.0	1.00	
t-1,3-Dichloropropene	ND	2.0	1.00	
Ethylbenzene	ND	1.0	1.00	
2-Hexanone	ND	20	1.00	
Isopropylbenzene	ND	1.0	1.00	
p-Isopropyltoluene	ND	1.0	1.00	
Methylene Chloride	ND	10	1.00	
4-Methyl-2-Pentanone	ND	20	1.00	
Naphthalene	ND	10	1.00	
n-Propylbenzene	ND	2.0	1.00	
Styrene	ND	1.0	1.00	
1,1,1,2-Tetrachloroethane	ND	1.0	1.00	
1,1,2,2-Tetrachloroethane	ND	2.0	1.00	
Tetrachloroethene	ND	1.0	1.00	
Toluene	ND	1.0	1.00	
1,2,3-Trichlorobenzene	ND	2.0	1.00	
1,2,4-Trichlorobenzene	ND	2.0	1.00	
1,1,1-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloroethane	ND	1.0	1.00	
1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1.00	
Trichloroethene	ND	2.0	1.00	
Trichlorofluoromethane	ND	10	1.00	
1,2,3-Trichloropropane	ND	2.0	1.00	
1,2,4-Trimethylbenzene	ND	2.0	1.00	
1,3,5-Trimethylbenzene	ND	2.0	1.00	
Vinyl Acetate	ND	10	1.00	
Vinyl Chloride	ND	1.0	1.00	
p/m-Xylene	ND	2.0	1.00	
o-Xylene	ND	1.0	1.00	
Methyl-t-Butyl Ether (MTBE)	ND	2.0	1.00	
Tert-Butyl Alcohol (TBA)	ND	20	1.00	
Diisopropyl Ether (DIPE)	ND	1.0	1.00	
Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1.00	
Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1.00	
Ethanol	ND	500	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	101	80-120	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 5035
	Method:	EPA 8260B
	Units:	ug/kg
Project: SD458 Mitsubishi Cement Facility		Page 30 of 30

Surrogate	Rec. (%)	Control Limits	Qualifiers
Dibromofluoromethane	98	79-133	
1,2-Dichloroethane-d4	99	71-155	
Toluene-d8	104	80-120	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 3550B
	Method:	EPA 8015B (M)
Project: SD458 Mitsubishi Cement Facility		Page 1 of 8

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
CPT 3 @ 20'	**Sample**	**Solid**	**GC 48**	**03/02/16**	**03/02/16 22:21**	**160302S06**
CPT 3 @ 20'	**Matrix Spike**	**Solid**	**GC 48**	**03/02/16**	**03/02/16 23:25**	**160302S06**
CPT 3 @ 20'	**Matrix Spike Duplicate**	**Solid**	**GC 48**	**03/02/16**	**03/02/16 23:41**	**160302S06**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Motor Oil	ND	400.0	440.4	110	479.1	120	64-130	8	0-15	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.		Date Received:	03/01/16
9245 Activity Road, Suite 103		Work Order:	16-03-0104
San Diego, CA 92126-4442		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
Project: SD458 Mitsubishi Cement Facility			Page 2 of 8

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
CPT 3 @ 20'	**Sample**	**Solid**	**GC 48**	**03/02/16**	**03/02/16 22:21**	**160302S05**
CPT 3 @ 20'	**Matrix Spike**	**Solid**	**GC 48**	**03/02/16**	**03/02/16 22:53**	**160302S05**
CPT 3 @ 20'	**Matrix Spike Duplicate**	**Solid**	**GC 48**	**03/02/16**	**03/02/16 23:09**	**160302S05**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Diesel	6.487	400.0	324.3	79	333.8	82	64-130	3	0-15	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 3050B
	Method:	EPA 6010B
Project: SD458 Mitsubishi Cement Facility		Page 3 of 8

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
16-03-0095-22	**Sample**	**Solid**	**ICP 7300**	**03/02/16**	**03/02/16 22:42**	**160302S03**
16-03-0095-22	**Matrix Spike**	**Solid**	**ICP 7300**	**03/02/16**	**03/02/16 22:44**	**160302S03**
16-03-0095-22	**Matrix Spike Duplicate**	**Solid**	**ICP 7300**	**03/02/16**	**03/02/16 22:45**	**160302S03**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Antimony	ND	25.00	7.223	29	8.125	32	50-115	12	0-20	3
Arsenic	11.03	25.00	36.50	102	39.06	112	75-125	7	0-20	
Barium	31.57	25.00	57.70	105	60.61	116	75-125	5	0-20	
Beryllium	0.3307	25.00	25.62	101	27.89	110	75-125	8	0-20	
Cadmium	1.892	25.00	25.18	93	27.63	103	75-125	9	0-20	
Chromium	20.73	25.00	48.44	111	52.17	126	75-125	7	0-20	3
Cobalt	3.300	25.00	27.73	98	29.58	105	75-125	6	0-20	
Copper	7.508	25.00	31.99	98	34.82	109	75-125	8	0-20	
Lead	2.034	25.00	25.95	96	27.59	102	75-125	6	0-20	
Molybdenum	4.128	25.00	27.69	94	29.67	102	75-125	7	0-20	
Nickel	25.41	25.00	51.30	104	53.59	113	75-125	4	0-20	
Selenium	0.7615	25.00	24.99	97	28.01	109	75-125	11	0-20	
Silver	ND	12.50	12.47	100	13.67	109	75-125	9	0-20	
Thallium	ND	25.00	9.324	37	14.57	58	75-125	44	0-20	3,4
Vanadium	19.68	25.00	47.00	109	51.95	129	75-125	10	0-20	3
Zinc	38.08	25.00	61.55	94	66.10	112	75-125	7	0-20	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 7471A Total
	Method:	EPA 7471A
Project: SD458 Mitsubishi Cement Facility		Page 4 of 8

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
16-03-0098-1	**Sample**	**Solid**	**Mercury 05**	**03/04/16**	**03/04/16 19:28**	**160304S03**
16-03-0098-1	**Matrix Spike**	**Solid**	**Mercury 05**	**03/04/16**	**03/04/16 19:30**	**160304S03**
16-03-0098-1	**Matrix Spike Duplicate**	**Solid**	**Mercury 05**	**03/04/16**	**03/04/16 19:32**	**160304S03**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Mercury	ND	0.8350	0.8521	102	0.8630	103	80-120	1	0-15	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 3545
	Method:	EPA 8081A
Project: SD458 Mitsubishi Cement Facility		Page 5 of 8

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
CPT-1 @ 5'	**Sample**	**Solid**	**GC 51**	**03/02/16**	**03/03/16 11:59**	**160302S05**
CPT-1 @ 5'	**Matrix Spike**	**Solid**	**GC 51**	**03/02/16**	**03/03/16 11:30**	**160302S05**
CPT-1 @ 5'	**Matrix Spike Duplicate**	**Solid**	**GC 51**	**03/02/16**	**03/03/16 11:45**	**160302S05**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Aldrin	ND	25.00	20.50	82	20.03	80	50-135	2	0-25	
Alpha-BHC	ND	25.00	20.43	82	20.18	81	50-135	1	0-25	
Beta-BHC	ND	25.00	21.76	87	21.41	86	50-135	2	0-25	
4,4'-DDD	ND	25.00	23.01	92	22.13	89	50-135	4	0-25	
4,4'-DDE	ND	25.00	24.11	96	23.78	95	50-135	1	0-25	
4,4'-DDT	ND	25.00	26.11	104	25.74	103	50-135	1	0-25	
Delta-BHC	ND	25.00	24.25	97	23.83	95	50-135	2	0-25	
Dieldrin	ND	25.00	22.92	92	22.25	89	50-135	3	0-25	
Endosulfan I	ND	25.00	21.86	87	21.03	84	50-135	4	0-25	
Endosulfan II	ND	25.00	24.09	96	22.92	92	50-135	5	0-25	
Endosulfan Sulfate	ND	25.00	24.19	97	22.63	91	50-135	7	0-25	
Endrin	ND	25.00	23.86	95	23.26	93	50-135	3	0-25	
Endrin Aldehyde	ND	25.00	20.03	80	19.55	78	50-135	2	0-25	
Gamma-BHC	ND	25.00	22.22	89	21.64	87	50-135	3	0-25	
Heptachlor	ND	25.00	20.40	82	19.98	80	50-135	2	0-25	
Heptachlor Epoxide	ND	25.00	21.52	86	20.79	83	50-135	3	0-25	
Methoxychlor	ND	25.00	25.36	101	24.23	97	50-135	5	0-25	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 3545
	Method:	EPA 8082
Project: SD458 Mitsubishi Cement Facility		Page 6 of 8

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
CPT 3 @ 10'	**Sample**	**Solid**	**GC 58**	**03/02/16**	**03/02/16 20:33**	**160302S02**
CPT 3 @ 10'	**Matrix Spike**	**Solid**	**GC 58**	**03/02/16**	**03/02/16 17:59**	**160302S02**
CPT 3 @ 10'	**Matrix Spike Duplicate**	**Solid**	**GC 58**	**03/02/16**	**03/02/16 18:17**	**160302S02**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Aroclor-1016	ND	100.0	94.49	94	89.87	90	50-135	5	0-20	
Aroclor-1260	ND	100.0	88.94	89	83.71	84	50-135	6	0-20	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 3545
	Method:	EPA 8141A
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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
16-03-0215-1	**Sample**	**Solid**	**GC 26**	**03/04/16**	**03/07/16 10:19**	**160304S03**
16-03-0215-1	**Matrix Spike**	**Solid**	**GC 26**	**03/04/16**	**03/07/16 15:28**	**160304S03**
16-03-0215-1	**Matrix Spike Duplicate**	**Solid**	**GC 26**	**03/04/16**	**03/07/16 16:12**	**160304S03**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Azinphos Methyl	ND	4.000	2.939	73	3.238	81	30-130	10	0-30	
Bolstar	ND	4.000	3.437	86	3.767	94	30-130	9	0-30	
Chlorpyrifos	ND	4.000	3.126	78	3.440	86	30-130	10	0-30	
Coumaphos	ND	4.000	2.859	71	3.081	77	30-130	7	0-30	
Diazinon	ND	4.000	4.107	103	3.635	91	30-130	12	0-30	
Disulfoton	ND	4.000	2.774	69	3.007	75	30-130	8	0-30	
Ethoprop	ND	4.000	2.991	75	3.308	83	30-130	10	0-30	
Fensulfothion	ND	4.000	2.755	69	3.058	76	30-130	10	0-30	
Fenthion	ND	4.000	2.382	60	2.589	65	30-130	8	0-30	
Merphos	ND	4.000	4.085	102	4.538	113	30-130	11	0-30	
Methyl Parathion	ND	4.000	3.163	79	3.716	93	30-130	16	0-30	
Phorate	ND	4.000	3.392	85	3.720	93	30-130	9	0-30	
Ronnel	ND	4.000	2.783	70	3.283	82	30-130	16	0-30	
Stirophos	ND	4.000	2.139	53	2.366	59	30-130	10	0-30	
Tokuthion	ND	4.000	2.666	67	2.900	72	30-130	8	0-30	
Trichloronate	ND	4.000	3.074	77	3.416	85	30-130	11	0-30	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - Spike/Spike Duplicate

Group Delta Consultants, Inc.	Date Received:	03/01/16
9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 8151A
	Method:	EPA 8151A
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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
CPT 1 @ 20'	**Sample**	**Solid**	**GC 40**	**03/04/16**	**03/08/16 12:14**	**160304S11**
CPT 1 @ 20'	**Matrix Spike**	**Solid**	**GC 40**	**03/04/16**	**03/08/16 12:37**	**160304S11**
CPT 1 @ 20'	**Matrix Spike Duplicate**	**Solid**	**GC 40**	**03/04/16**	**03/08/16 13:00**	**160304S11**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
2,4-D	ND	400.0	397.5	99	372.2	93	30-130	7	0-30	
2,4,5-T	ND	40.00	40.00	100	33.90	85	30-130	17	0-30	
2,4-DB	ND	400.0	412.7	103	383.2	96	30-130	7	0-30	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

Group Delta Consultants, Inc.		Date Received:	03/01/16
9245 Activity Road, Suite 103		Work Order:	16-03-0104
San Diego, CA 92126-4442		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
Project: SD458 Mitsubishi Cement Facility			Page 1 of 12

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-15-420-1709	**LCS**	**Solid**	**GC 48**	**03/02/16**	**03/02/16 20:29**	**160302B06**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
TPH as Motor Oil	400.0	482.3	121	75-123	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

Group Delta Consultants, Inc.		Date Received:	03/01/16
9245 Activity Road, Suite 103		Work Order:	16-03-0104
San Diego, CA 92126-4442		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)
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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-15-422-2313	**LCS**	**Solid**	**GC 48**	**03/02/16**	**03/02/16 20:13**	**160302B05**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
TPH as Diesel	400.0	372.2	93	75-123	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

Group Delta Consultants, Inc.	Date Received: 03/01/16
9245 Activity Road, Suite 103	Work Order: 16-03-0104
San Diego, CA 92126-4442	Preparation: EPA 5035
	Method: EPA 8015B (M)
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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-285-5776	**LCS**	**Solid**	**GC 25**	**03/02/16**	**03/03/16 00:50**	**160302L063**
099-12-285-5776	**LCSD**	**Solid**	**GC 25**	**03/02/16**	**03/03/16 01:25**	**160302L063**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	2.000	2.086	104	2.054	103	55-139	2	0-18	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

Group Delta Consultants, Inc.	Date Received: 03/01/16
9245 Activity Road, Suite 103	Work Order: 16-03-0104
San Diego, CA 92126-4442	Preparation: EPA 5035
	Method: EPA 8015B (M)
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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-285-5777	**LCS**	**Solid**	**GC 25**	**03/03/16**	**03/03/16 20:26**	**160303L050**
099-12-285-5777	**LCSD**	**Solid**	**GC 25**	**03/03/16**	**03/03/16 21:01**	**160303L050**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	2.000	2.152	108	2.144	107	55-139	0	0-18	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

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9245 Activity Road, Suite 103	Work Order:	16-03-0104
San Diego, CA 92126-4442	Preparation:	EPA 3050B
	Method:	EPA 6010B
Project: SD458 Mitsubishi Cement Facility		Page 5 of 12

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
097-01-002-22402	**LCS**	**Solid**	**ICP 7300**	**03/02/16**	**03/02/16 21:40**	**160302L03**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Antimony	25.00	24.88	100	80-120	73-127	
Arsenic	25.00	25.14	101	80-120	73-127	
Barium	25.00	26.45	106	80-120	73-127	
Beryllium	25.00	24.34	97	80-120	73-127	
Cadmium	25.00	25.84	103	80-120	73-127	
Chromium	25.00	25.80	103	80-120	73-127	
Cobalt	25.00	27.26	109	80-120	73-127	
Copper	25.00	25.68	103	80-120	73-127	
Lead	25.00	27.03	108	80-120	73-127	
Molybdenum	25.00	25.84	103	80-120	73-127	
Nickel	25.00	27.12	108	80-120	73-127	
Selenium	25.00	24.74	99	80-120	73-127	
Silver	12.50	12.34	99	80-120	73-127	
Thallium	25.00	27.28	109	80-120	73-127	
Vanadium	25.00	24.79	99	80-120	73-127	
Zinc	25.00	25.78	103	80-120	73-127	

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

Group Delta Consultants, Inc.		Date Received:	03/01/16
9245 Activity Road, Suite 103		Work Order:	16-03-0104
San Diego, CA 92126-4442		Preparation:	EPA 7471A Total
		Method:	EPA 7471A
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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-16-272-1969	**LCS**	**Solid**	**Mercury 05**	**03/04/16**	**03/04/16 19:26**	**160304L03**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
Mercury	0.8350	0.8709	104	85-121	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

Group Delta Consultants, Inc.		Date Received:	03/01/16
9245 Activity Road, Suite 103		Work Order:	16-03-0104
San Diego, CA 92126-4442		Preparation:	EPA 3545
		Method:	EPA 8081A
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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-537-2362	**LCS**	**Solid**	**GC 51**	**03/02/16**	**03/03/16 11:02**	**160302L05**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Aldrin	25.00	25.49	102	50-135	36-149	
Alpha-BHC	25.00	26.00	104	50-135	36-149	
Beta-BHC	25.00	23.84	95	50-135	36-149	
4,4'-DDD	25.00	22.41	90	50-135	36-149	
4,4'-DDE	25.00	25.41	102	50-135	36-149	
4,4'-DDT	25.00	26.08	104	50-135	36-149	
Delta-BHC	25.00	26.79	107	50-135	36-149	
Dieldrin	25.00	25.24	101	50-135	36-149	
Endosulfan I	25.00	24.32	97	50-135	36-149	
Endosulfan II	25.00	24.40	98	50-135	36-149	
Endosulfan Sulfate	25.00	24.08	96	50-135	36-149	
Endrin	25.00	26.13	105	50-135	36-149	
Endrin Aldehyde	25.00	17.84	71	50-135	36-149	
Gamma-BHC	25.00	27.24	109	50-135	36-149	
Heptachlor	25.00	28.20	113	50-135	36-149	
Heptachlor Epoxide	25.00	24.73	99	50-135	36-149	
Methoxychlor	25.00	24.34	97	50-135	36-149	

Total number of LCS compounds: 17
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

Group Delta Consultants, Inc.		Date Received:	03/01/16
9245 Activity Road, Suite 103		Work Order:	16-03-0104
San Diego, CA 92126-4442		Preparation:	EPA 3545
		Method:	EPA 8082
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Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-12-535-3643	**LCS**	**Solid**	**GC 58**	**03/02/16**	**03/02/16 17:41**	**160302L02**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
Aroclor-1016	100.0	88.82	89	50-135	
Aroclor-1260	100.0	82.34	82	50-135	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

Group Delta Consultants, Inc.		Date Received:	03/01/16
9245 Activity Road, Suite 103		Work Order:	16-03-0104
San Diego, CA 92126-4442		Preparation:	EPA 3545
		Method:	EPA 8141A
Project: SD458 Mitsubishi Cement Facility			Page 9 of 12

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-15-973-246	**LCS**	**Solid**	**GC 26**	**03/04/16**	**03/07/16 16:56**	**160304L03**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	ME CL	Qualifiers
Azinphos Methyl	4.000	3.131	78	30-130	13-147	
Bolstar	4.000	3.740	94	30-130	13-147	
Chlorpyrifos	4.000	3.393	85	30-130	13-147	
Coumaphos	4.000	3.096	77	30-130	13-147	
Diazinon	4.000	3.862	97	30-130	13-147	
Disulfoton	4.000	2.842	71	30-130	13-147	
Ethoprop	4.000	3.357	84	30-130	13-147	
Fensulfothion	4.000	3.202	80	30-130	13-147	
Fenthion	4.000	2.598	65	30-130	13-147	
Merphos	4.000	4.507	113	30-130	13-147	
Methyl Parathion	4.000	4.063	102	30-130	13-147	
Phorate	4.000	3.647	91	30-130	13-147	
Ronnel	4.000	3.266	82	30-130	13-147	
Stirophos	4.000	2.345	59	30-130	13-147	
Tokuthion	4.000	2.810	70	30-130	13-147	
Trichloronate	4.000	3.318	83	30-130	13-147	

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

Group Delta Consultants, Inc.		Date Received:	03/01/16
9245 Activity Road, Suite 103		Work Order:	16-03-0104
San Diego, CA 92126-4442		Preparation:	EPA 8151A
		Method:	EPA 8151A
Project: SD458 Mitsubishi Cement Facility			Page 10 of 12

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
095-01-033-1348	**LCS**	**Solid**	**GC 40**	**03/04/16**	**03/07/16 11:03**	**160304L11**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
2,4-D	400.0	307.9	77	30-130	
2,4,5-T	40.00	33.50	84	30-130	
2,4-DB	400.0	337.2	84	30-130	

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS/LCSD

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 5035
Method: EPA 8260B

Project: SD458 Mitsubishi Cement Facility

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-025-27330	**LCS**	**Solid**	**GC/MS Q**	**03/04/16**	**03/04/16 11:19**	**160304L009**
095-01-025-27330	**LCSD**	**Solid**	**GC/MS Q**	**03/04/16**	**03/04/16 11:45**	**160304L009**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	50.00	45.07	90	45.38	91	80-120	73-127	1	0-20	
Carbon Tetrachloride	50.00	62.53	125	62.84	126	65-137	53-149	0	0-20	
Chlorobenzene	50.00	47.51	95	46.57	93	80-120	73-127	2	0-20	
1,2-Dibromoethane	50.00	45.80	92	49.52	99	80-120	73-127	8	0-20	
1,2-Dichlorobenzene	50.00	49.17	98	49.76	100	80-120	73-127	1	0-20	
1,2-Dichloroethane	50.00	42.88	86	42.30	85	80-120	73-127	1	0-20	
1,1-Dichloroethene	50.00	44.11	88	41.69	83	68-128	58-138	6	0-20	
Ethylbenzene	50.00	48.44	97	46.01	92	80-120	73-127	5	0-20	
Toluene	50.00	47.94	96	45.72	91	80-120	73-127	5	0-20	
Trichloroethene	50.00	46.55	93	46.74	93	80-120	73-127	0	0-20	
Vinyl Chloride	50.00	50.39	101	49.38	99	67-127	57-137	2	0-20	
p/m-Xylene	100.0	95.19	95	89.74	90	75-125	67-133	6	0-25	
o-Xylene	50.00	47.52	95	45.29	91	75-125	67-133	5	0-25	
Methyl-t-Butyl Ether (MTBE)	50.00	42.50	85	46.18	92	70-124	61-133	8	0-20	
Tert-Butyl Alcohol (TBA)	250.0	240.0	96	240.7	96	73-121	65-129	0	0-20	
Diisopropyl Ether (DIPE)	50.00	47.76	96	50.50	101	69-129	59-139	6	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	48.94	98	52.68	105	70-124	61-133	7	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	44.56	89	45.63	91	74-122	66-130	2	0-20	
Ethanol	500.0	342.7	69	312.2	62	51-135	37-149	9	0-27	

Total number of LCS compounds: 19
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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Quality Control - LCS/LCSD

Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126-4442

Date Received: 03/01/16
Work Order: 16-03-0104
Preparation: EPA 5035
Method: EPA 8260B

Project: SD458 Mitsubishi Cement Facility

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-025-27317	**LCS**	**Solid**	**GC/MS BB**	**03/02/16**	**03/02/16 09:39**	**160302L015**
095-01-025-27317	**LCSD**	**Solid**	**GC/MS BB**	**03/02/16**	**03/02/16 10:19**	**160302L015**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	50.00	52.45	105	51.01	102	80-120	73-127	3	0-20	
Carbon Tetrachloride	50.00	68.00	136	64.97	130	65-137	53-149	5	0-20	
Chlorobenzene	50.00	52.48	105	51.23	102	80-120	73-127	2	0-20	
1,2-Dibromoethane	50.00	52.06	104	52.09	104	80-120	73-127	0	0-20	
1,2-Dichlorobenzene	50.00	50.70	101	49.78	100	80-120	73-127	2	0-20	
1,2-Dichloroethane	50.00	56.47	113	55.90	112	80-120	73-127	1	0-20	
1,1-Dichloroethene	50.00	61.18	122	59.45	119	68-128	58-138	3	0-20	
Ethylbenzene	50.00	54.62	109	52.22	104	80-120	73-127	4	0-20	
Toluene	50.00	53.58	107	51.96	104	80-120	73-127	3	0-20	
Trichloroethene	50.00	54.82	110	53.03	106	80-120	73-127	3	0-20	
Vinyl Chloride	50.00	54.53	109	52.70	105	67-127	57-137	3	0-20	
p/m-Xylene	100.0	111.6	112	107.5	108	75-125	67-133	4	0-25	
o-Xylene	50.00	54.51	109	52.67	105	75-125	67-133	3	0-25	
Methyl-t-Butyl Ether (MTBE)	50.00	50.70	101	50.62	101	70-124	61-133	0	0-20	
Tert-Butyl Alcohol (TBA)	250.0	246.4	99	237.1	95	73-121	65-129	4	0-20	
Diisopropyl Ether (DIPE)	50.00	55.69	111	55.04	110	69-129	59-139	1	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	53.15	106	52.66	105	70-124	61-133	1	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	54.66	109	53.96	108	74-122	66-130	1	0-20	
Ethanol	500.0	465.2	93	432.4	86	51-135	37-149	7	0-27	

Total number of LCS compounds: 19
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: 16-03-0104 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA 6010B	EPA 3050B	935	ICP 7300	1
EPA 7471A	EPA 7471A Total	915	Mercury 05	1
EPA 8015B (M)	EPA 5035	1063	GC 25	2
EPA 8015B (M)	EPA 3550B	682	GC 48	1
EPA 8015B (M)	EPA 3550B	974	GC 48	1
EPA 8081A	EPA 3545	669	GC 51	1
EPA 8082	EPA 3545	944	GC 58	1
EPA 8141A	EPA 3545	960	GC 26	1
EPA 8151A	EPA 8151A	944	GC 40	1
EPA 8260B	EPA 5035	884	GC/MS BB	2
EPA 8260B	EPA 5035	1055	GC/MS Q	2

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Glossary of Terms and Qualifiers

Work Order: 16-03-0104 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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Virendra Patel

From: Matt Fagan <mattf@groupdelta.com>
Sent: Wednesday, March 02, 2016 11:21 AM
To: Virendra Patel; Ray Frigillana
Cc: Erick Ovalle
Subject: RE: SD458 Mistubishi Cement Facility - ECI Work order #16-03-0104

Virendra,

Yes, please make all of the changes you note below to our project work order. I confirmed with Ray that the last portion of sample CPT-3 @ 10' was collected on the following day because the CPT rig broke down during sampling. You can place that portion of the sample on hold, and use it only if you need additional material to complete the testing. Also, I've provided an excerpt below from the RFP that describes the required testing for your information. Please let me know if you feel that we missed anything. Feel free to call or email with any questions or comments, or if you need anything else. Thanks again for all of your help with this.

At a California Department of Public Health certified analytical laboratory the samples for environmental testing shall be analyzed. The analysis shall include but not limited to the following analytical program for each sample submitted:

- Total petroleum hydrocarbons as gasoline/diesel/oil range organics (TPH-g/d/o) by EPA Method 8015M
- Volatile organic compounds (VOCs) by EPA Method 8260B
- Title 22 metals by EPA Method 6010B/7471A
- Semi-volatile organic compounds by EPA Method 8270C
- Polychlorinated biphenyls (PCBs) by EPA Method 8082
- Organochlorine pesticides by EPA Method 8081A
- Organophosphorus pesticides by EPA Method 8141A
- Chlorinated herbicides by EPA Method 8151A

Matthew A. Fagan, PE, GE
Senior Geotechnical Engineer
Group Delta Consultants, Inc.
9245 Activity Road, Suite 103
San Diego, CA 92126
mattf@groupdelta.com
Voice (858) 536-1000
Fax (858) 536-8311

From: Virendra Patel [mailto:VirendraPatel@eurofinsUS.com]
Sent: Wednesday, March 02, 2016 11:02 AM
To: Matt Fagan <mattf@groupdelta.com>; Ray Frigillana <rayf@groupdelta.com>
Cc: Erick Ovalle <ErickOvalle@eurofinsUS.com>
Subject: SD458 Mistubishi Cement Facility - ECI Work order #16-03-0104
Importance: High

Matt,

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Hi. Per our conversation, please confirm the following changes for the subject project/ECI work order # (see attached COC):

1. TAT should be standard for all tests.
2. TPH C6-C44/5035 request should be changed to: TPH-g/5035, TPH-d and TPH-motor oil
3. T22 Metals/8270C should be changed to: EPA 6010B/7471A
4. CPT 3 @ 10' collected on 02/26/16 @ 09:55 should be placed on hold.
5. Encore samples for EPA 5035 methods were received outside of 48 hr hold time, these should be extracted and used for analyses. Data will be flagged as received outside holding time.

Your response to this email will placed in the file as record for the changes.

Please call with any questions or concerns.

Best Regards,

Virendra Patel
Project Manager

Eurofins Calscience, Inc.
7440 Lincoln Way
Garden Grove, CA 92841
USA
Phone: +1 714 895 5494
Email: VirendraPatel@eurofinsUS.com
Website: www.calscience.com

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7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494
For courier service / sample drop off information, contact us26_sales@eurofinsus.com or call us.

CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY: **16-03-0104**

DATE: 2/25/16 - 2/26/16

PAGE: 1 OF 1

LABORATORY CLIENT: Group Delta

ADDRESS: 9245 Activity Road, Suite 103

CITY: San Diego STATE: CA ZIP: 92126

TEL: 858-536-1000 E-MAIL: rayf@groupdelta.com

CLIENT PROJECT NAME / NUMBER: SD458 Mitsubishi Cement Facility

P.O. NO.:

PROJECT CONTACT: Ray Frigillana / MATT FAGAN

SAMPLER(S): (PRINT) RAY FRIGILLANA

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):

☐ SAME DAY ☐ 24 HR ☐ 48 HR **X 72 HR** ☐ 5 DAYS ☒ STANDARD

☐ COELT EDF GLOBAL ID: LOG CODE:

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES

Please check box or fill in blank as needed.

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	VOCs (8260B) 5035 Sampling	TPH C6-C44 (8015M) 5035 sampling	T22 Metals (8270C)	PCBs (8082)	OCBs (8081A)	Organophosphorus pesticides (8141A)	Chlorinated Herbicides (8151A)
1	CPT-1 @ 5'	2/25/16	1025	soil	7				/	/	/	/	/	/	/
2	CPT 1 @ 10'		1036	soil	7										
3	CPT 1 @ 15'		1057	soil	7										
4	CPT 1 @ 20'		1120	soil	7										
5	CPT-3 @ 5'	2/25/16	1150	soil	7										
6	CPT 3 @ 10'		1203	soil	6										
7	CPT 3 @ 15'	PU 2/26/16	1010	soil	7										
8	CPT 3 @ 20'		1028	soil	7										
9	CPT 3 @ 10'	2/26/16	0955	SOIL	1										

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Matthew A Fagan	ECI	3/1/16	13:45
	ECI	3/1/16	1840

06/02/14 Revision

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WORK ORDER NUMBER: 16-03- 0104

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: GROUP DELTA

DATE: 03 / 01 / 2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC4B (CF: +0.3°C); Temperature (w/o CF): 2.8 °C (w/ CF): 3.1 °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: 671

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 671

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 1058

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 (F9) ☐ 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 ☐ VOA**h** ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB

☐ 125PB**znna** ☐ 250AGB ☐ 250CGB ☐ 250CGB**s** ☐ 250PB ☐ 250PB**n** ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s**

☐ 500PB ☐ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** ☐ 1PB ☐ 1PB**na** ☐ _____ ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☑ Sleeve (5) ☑ EnCores® (5) ☐ 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, **znna** = $Zn(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: 1058

Reviewed by: 659

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WORK ORDER NUMBER: 16-03- 0164

SAMPLE ANOMALY REPORT

DATE: 03 / 01 / 2016

SAMPLES, CONTAINERS, AND LABELS:

- ☐ Sample(s) NOT RECEIVED but listed on COC
- ☐ Sample(s) received but NOT LISTED on COC
- ☑ Holding time expired (list client or ECI sample ID and analysis)
- ☐ Insufficient sample amount for requested analysis (list analysis)
- ☐ Improper container(s) used (list analysis)
- ☐ Improper preservative used (list analysis)
- ☐ No preservative noted on COC or label (list analysis and notify lab)
- ☐ Sample container(s) not labeled
- ☐ Client sample label(s) illegible (list container type and analysis)
- ☐ Client sample label(s) do not match COC (comment)
  - ☐ Project information
  - ☐ Client sample ID
  - ☐ Sampling date and/or time
  - ☐ Number of container(s)
  - ☐ Requested analysis
- ☐ Sample container(s) compromised (comment)
  - ☐ Broken
  - ☐ Water present in sample container
- ☐ Air sample container(s) compromised (comment)
  - ☐ Flat
  - ☐ Very low in volume
  - ☐ Leaking (not transferred; duplicate bag submitted)
  - ☐ Leaking (transferred into ECI Tedlar™ bags*)
  - ☐ Leaking (transferred into client's Tedlar™ bags*)

* Transferred at client's request.

Comments

(-1) thru (-8) Received Encores for 8260 Expired

MISCELLANEOUS: (Describe)

Comments

HEADSPACE:

(Containers with bubble > 6 mm or ¼ inch for volatile organic or dissolved gas analysis)

ECI Sample ID	ECI Container ID	Total Number**	ECI Sample ID	ECI Container ID	Total Number**

(Containers with bubble for other analysis)

ECI Sample ID	ECI Container ID	Total Number**	Requested Analysis

Comments:

Reported by: 1058

Reviewed by: 689

** Record the total number of containers (i.e., vials or bottles) for the affected sample.

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APPENDIX D
LIQUEFACTION ANALYSIS

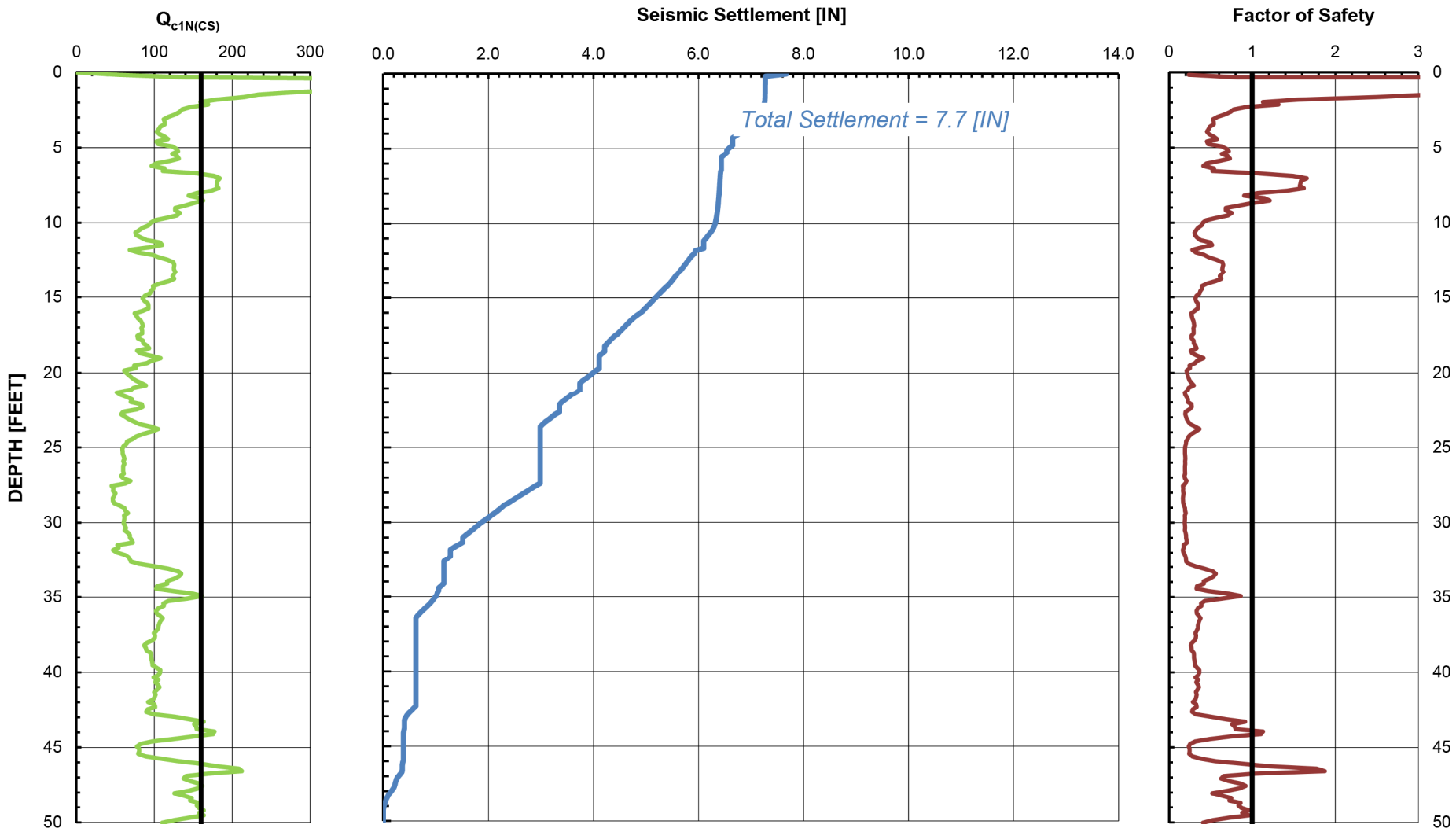
APPENDIX D

LIQUEFACTION ANALYSIS

Liquefaction analyses were performed using the data gathered from the three CPT soundings we conducted at the site. The results of these analyses are summarized in Figures D-1 through D-3. The analyses were based on the simplified procedures originally developed by Seed and Idriss, and were conducted in general accordance with the recommended procedures for implementation of DMG special publication 117 (SCEC, 1999). The tip resistance (Qc) was normalized for overburden pressure and corrected for fines content using the procedures described in the referenced document (Youd et al., 2001). The resulting "Normalized Clean Sand Equivalent Tip Resistance" is designated by the symbol $Q_{c1N(CS)}$ in the following figures. The CPT fines correction was based on the Soil Behavior Type Index (Ic). For each sounding, both the Normalized Tip Resistance and Factor of Safety against liquefaction are plotted versus depth in the upper 50 feet of the soil profile. A static groundwater level of 4.6 feet MLLW was used for all of the liquefaction analyses.

The central chart for each CPT sounding shows the estimated dynamic settlement resulting from a seismic demand equal to the geometric mean MCE Peak Ground Acceleration (PGA_M) of 0.559g, based on the requirements of Section 11.8.3 of ASCE 7-10 for a Seismic Design Category D. At depths where the seismically induced shear stress exceeds the stress required to cause liquefaction, the Factor of Safety is less than 1.0, and the potential may exist for liquefaction. However, fine-grained soils with an Ic value greater than 2.6 are generally considered to be too clayey to liquefy (the Ic values were shown in Appendix A). Similarly, granular soils with a normalized clean sand equivalent tip resistance ($Q_{c1N(CS)}$) greater than 160 are generally considered too dense to liquefy. Only those soil zones that are both loose enough and sandy enough to liquefy contribute to the estimated settlement.

The liquefaction analyses suggest that the existing Warehouse C-7 structure may experience total dynamic settlements ranging from approximately 7 to 8 inches. A differential settlement equal to about one-half of the anticipated total liquefaction settlement is typically assumed for structural design (SCEC, 1999). Consequently, we estimate that the post-liquefaction differential settlement of the existing structure may vary from about 3½ to 4 inches in 40 feet at the site.



GROUP DELTA

DYNAMIC SETTLEMENT (CPT-1)

(Seismic Demand ~ 0.559g)

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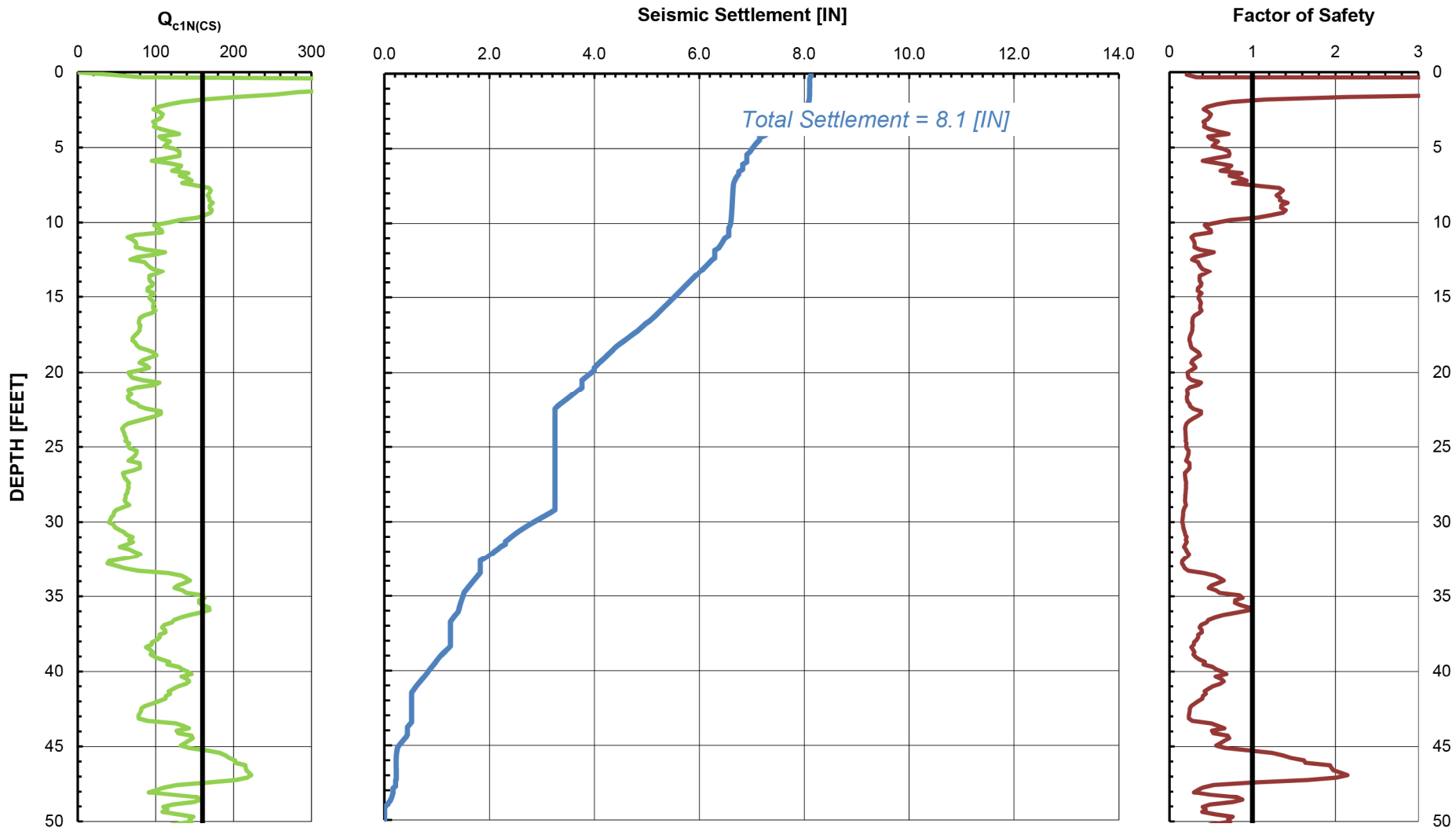
Project No. SD458
FIGURE D-1

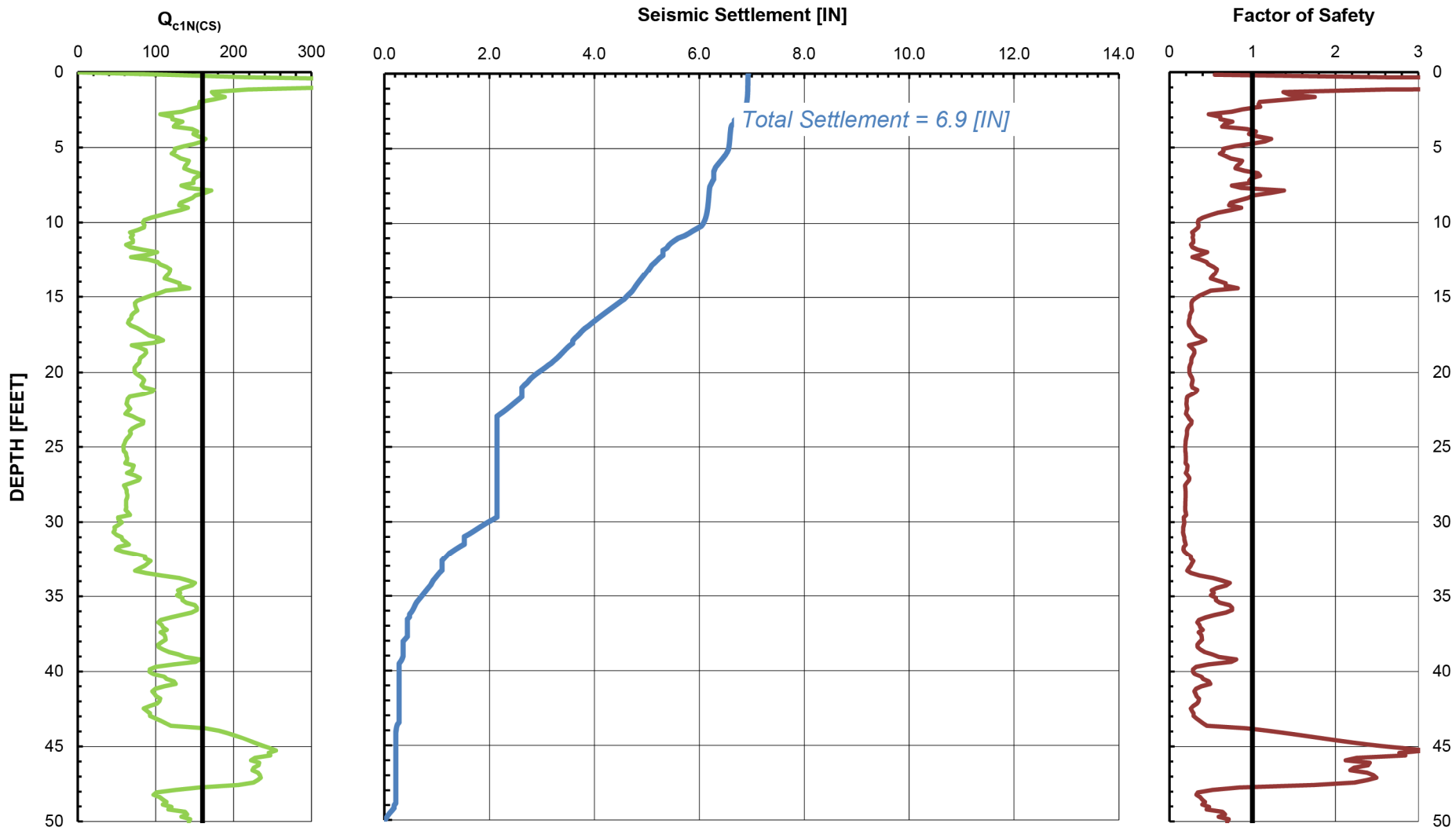


GROUP DELTA

DYNAMIC SETTLEMENT (CPT-2)

(Seismic Demand ~ 0.559g)

Document No. 16-0033
Project No. SD458
FIGURE D-2



GROUP DELTA

DYNAMIC SETTLEMENT (CPT-3)

(Seismic Demand ~ 0.559g)

Document No. 16-0033
Project No. SD458
FIGURE D-3