



San Diego Unified Port District
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NOTICE OF PUBLIC REVIEW

MAY 6, 2019

PROJECT TITLE: Best Management Practices and Environmental Standards for Overwater Structural Repair and Maintenance Activities for Existing Port Facilities Conducted by the San Diego Unified Port District

APPLICANT: San Diego Unified Port District


LOCATION: Chula Vista, Coronado, Imperial Beach, National City, and San Diego

The San Diego Unified Port District (District) has developed the proposed guidance document to establish standard administrative procedures, best management practices, and environmental standards (Standards) for activities authorized by the U.S. Army Corps of Engineers (ACOE) Regional General Permit (RGP) No. 72 (Permit No. SPL-2006-01690-RRS), to enable the District to perform routine maintenance of existing in and overwater structures within the jurisdictional boundaries of the District including docks, wharves, piers, and piles. The Standards would not be applicable to new facilities. Establishing these Standards precedes the District's efforts to renew RGP No. 72, which is scheduled to occur prior to the current authorization expiring on November 21, 2019. Subsequent work that is, and will continue to be, covered under RGP 72 include, as well as the Standards: routine maintenance of docks, wharves, piers, and piles on tidelands both in San Diego Bay and in the Pacific Ocean at the Imperial Beach Pier; like-for-like repair or replacement of damaged and broken wooden, concrete, and/or plastic pier and fender piles, as needed; and like-for-like repair or replacement of blocks, camel logs, installation of marine fenders, and other ancillary items, as needed. The Standards address how to conduct and monitor in-water construction activities that may increase turbidity, such as pile removal and installation via jetting, impact hammer and various vibratory methods, to ensure water quality standards are not exceeded. Implementation of the Standards are intended to protect natural resources and the environment, in particular, water quality of San Diego Bay and the Pacific Ocean during the in-water construction performed by the District that is, and will continue to be, identified and authorized as part of the ACOE RGP No. 72.

The proposed Standards are available for a 30-day public review period that starts on Monday, May 6, 2019 and ends on Tuesday, June 4, 2019, and may be reviewed on the District's website: www.portofsandiego.org/public-records/port-updates/notices-disclosures. The proposed Standards are also available for public review at the Office of the District Clerk, 3165 Pacific Highway, San Diego CA 92101. **Comments will be accepted until 5:00 p.m. on Tuesday, June 4, 2019**, and should be mailed to: San Diego Unified Port District, Environmental Conservation Department, 3165 Pacific Highway, San Diego, CA 92101 or emailed to: hkramp@portofsandiego.org.

The Board of Port Commissioners is scheduled to hold a public hearing to take action on the proposed Standards on Tuesday, June 18, 2019 at 1:00 p.m. at the San Diego Unified Port District, Don L. Nay Port Administration Board Room, 3165 Pacific Highway, San Diego, CA 92101.

For questions on the proposed Standards, please contact Heather Kramp, Assistant Planner, or Maggie Weber, Senior Planner at 619-686-6254.

Signature:  _____
Eileen Maher,
Director, Environmental Conservation

Date: 5/16/19

**Best Management Practices and Environmental Standards
for Overwater Structural Repair and Maintenance Activities for Existing Port Facilities
Conducted by the San Diego Unified Port District**

The following are the San Diego Unified Port District's (District or Port) Best Management Practices (BMPs) and Environmental Standards (collectively, "Standards") for any and all routine repairs and maintenance activities conducted by the District that involve existing overwater structures, such as piers, docks, and wharves with the potential to increase turbidity. The Standards were made available for a 30-day public review period that began on Monday, May 6, 2019 and ended on Tuesday, June 4, 2019.

The Standards address how to conduct and monitor in-water construction activities that may increase turbidity, including, without limitation, pile removal and installation via jetting, impact hammer and various vibratory methods, to ensure water quality standards are not exceeded. Implementation of the Standards are intended to protect the environment, and the water quality of the San Diego Bay and the Pacific Ocean (collectively, "Bay") during in-water construction as specified herein. The Standards apply to in-water repair and maintenance activities for existing facilities conducted by the District under its U.S. Army Corps of Engineers Regional General Permit No. 72. The Standards shall not be applicable for the construction of new facilities.

1.0 Definitions

The following list of definitions and descriptions are intended to provide clear understanding of the terms used as they specifically apply to the Standards for in-water repair and maintenance activities conducted by the District under its U.S. Army Corps of Engineers Regional General Permit No. 72.

Biological Monitor – An on-site qualified biologist designated to monitor construction activities to ensure compliance with BMPs and permit conditions that has previous experience with acoustic zone of influence (ZOI) (see Section 4.5.1). A qualified Biological Monitor's primary responsibility is to actively observe (e.g. using binoculars) and identify marine mammal and turtle species passing through the ZOI.

Compliance Station – A sampling and/or monitoring area located near the construction activities to measure water quality standards (dissolved oxygen, pH, and turbidity). Compliance station measurements are compared to measurements at a reference station to determine if construction activities are within water quality standards (see Section 3.1.1.a).

Construction Activities with the Potential to Increase Turbidity – Construction activities with the potential to disturb or suspend bottom sediment into the water column and decrease visibility (increase turbidity) include pile installation and removal via jetting, impact hammer, and/or vibratory hammer pile driving. Other activities include any construction activities that would come into contact with the Bay sediment, causing resuspension of the sediments.

Contractor – A person, firm, entity, or corporation which is contracted by the Port to perform in-water work as defined by the contract documents.

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Pile Driving – Construction activities which remove or install pilings at piers, docks, and wharves. Pile driving activities can cause short-term, localized, and temporary increases in suspended sediment and turbidity during installation and removal. In order to support piers, docks, and wharves, piles are required to be driven to a depth ranging from 30 to 100 feet below the mud line. To place the piles at the appropriate depth, construction would include the use of deep foundation installation methods by mechanical equipment capable of applying repeated blows to piles with sufficient energy to advance piles to final position or required depth. The three main types of pile driving methods are summarized below:

- Vibratory hammer –The process involves attaching a vibratory hammer to the pile which uses a push and pull action of counter-rotating weights to create a vibratory oscillation. The oscillation breaks the seal between the pile and the sediment, reduces friction, and results in the pile slipping below mud line.
- Impact hammer –The process involves attaching an impact hammer to the top of the pile and uses a large weight dropped from a given height to push the pile downward and below the mud line.
- Jetting – The process involves pumping high pressure water through a nozzle located at the pile tip. The water loosens the sediment in front of the pile, thus allowing the pile to advance into the mud with very few or no impact or vibratory hammer blows.

Performance Standard – A quantitative measurement of an environmental variable comparing outside of the in-water construction activity area (e.g. outside of the silt curtain) to a measurement that regulatory agencies have established as acceptable (e.g. outside of the in-water construction area's influence) to evaluate the performance of BMPs and whether response actions are necessary (see Section 3.1). Quantitative Performance Standards typically reflect ambient levels that would be present if no construction activity occurred.

Project – Any in-water routine repairs and maintenance activities of piers, docks, and wharves in the Bay conducted by the District with the potential to increase turbidity.

Receiving Waters – All Bay waters outside of a silt curtain surrounding in-water construction activity.

Reference Station – An in-water area in the direction of the mouth of the Bay and beyond the influence of the construction activities. The reference station is used to measure ambient water quality conditions for comparison to compliance station measurements. The RWQCB establishes the distance of the reference site from the construction activities (see Section 3.1.1.a and RWQCB, 2016).

Routine Maintenance – Maintenance of in-water structures includes the removal, rehabilitation, repair, and/or replacement of any previously authorized, currently serviceable structure or fill, provided that the structure or fill is like-for-like replacement and the original use is maintained.

Silt Curtain – A floating, geotextile material which contains suspended sediment within a disturbed area long enough for the suspended sediment particles to fall out of suspension and not be transported to other areas (USACE 1997). This material is also known as a turbidity curtain.

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Silt Curtain Installation Procedures – Specifications related to the design, installation, use, performance, and/or modification of a silt curtain and its related equipment (see Section 4.2.1).

Visual Water Quality Monitoring – A qualitative, visual observation of the conditions of the area outside of the in-water construction activities (e.g. outside of the silt curtain) to evaluate the performance of the Standards and whether response actions are necessary (see Section 4.2.2).

2.0 Design Review by District Engineering, Planning, & Environmental

- The District’s engineering, planning and environmental departments (collectively, “design team”) shall consider project design concepts (such as material choice, structural spacing, etc.) as well as feasible construction practices and procedures that reduce and/or avoid the potential for turbidity during construction.
- The design team shall review current Section 303(d) maps of the federal Clean Water Act (CWA) (33 U.S.C. Sec. 1313(d)) identifying state waters that do not meet water quality standards pursuant to the CWA and California Water Code (CWC) Section 13191.3(a) (CWC, 2004; RWQCB, 2015) and other data in the District’s possession or available after reasonable research to determine the presence or absence of contaminated sediment within the proposed project work area.
- The design team shall coordinate the project construction schedule to avoid large tidal fluctuations to the maximum extent practicable in order to minimize turbidity.

3.0 Water Quality Monitoring, Performance, and Environmental Standards

3.1 Receiving Water Quality Monitoring for Construction Activities with the Potential to Increase Turbidity

The following water quality monitoring standards are required for all instances of jetting, pile driving and other construction work that has the potential to increase turbidity:

- Receiving water quality monitoring shall be conducted a minimum of once per week by District staff with expertise or through a District consultant with expertise during construction activities at the project site to verify that applicable water quality standards for pH, dissolved oxygen, and turbidity as specified in Section 3.1.3 are not exceeded and the monitoring shall include the following performance standards:

1. **Monitoring Stations** – During weekly monitoring, water quality parameters including turbidity, dissolved oxygen, and pH will be measured at the construction site after pile driving activities have been underway for at least one hour and at a reference site. Monitored water quality measurements will be compared to ambient San Diego Bay reference measurements located outside of the construction area (outside silt curtain) that are not impacted by the construction.
 - a. Project Compliance Stations – A minimum of three locations will be established as compliance stations for the collection of water quality monitoring data. Compliance station data will be compared to reference

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station data to determine if the construction activities are impacting water quality based on the performance standards in Section 3.1.3. Compliance stations will be located evenly along an arc located 200 feet from the edge of the construction area to capture all tidal and current conditions. The locations may be adjusted in the field to better target a visible turbidity plume, if a visible plume is observed.

- b. Reference Station – A minimum of one station will be established as a reference station to measure ambient San Diego Bay water quality conditions and will be located in the direction of the mouth of the Bay and 1,000 feet beyond the influence of construction activities. Natural turbidity, dissolved oxygen, and pH shall be determined through measurements at the reference station in order to compare the reference station measurements to compliance stations measurements. The location of the reference station will remain the same for each project for all monitoring events.
 - c. Global Position System – Monitoring station positions will be located using a Global Position System (GPS) accurate to within ± 3 meters.
2. **Water Quality Measurement Procedures** – Water quality measurements for turbidity, dissolved oxygen, and pH will be collected at the compliance stations so they can be compared to reference station measurements to ensure they meet the performance standards (see Section 3.1.3 below).
- a. Water quality measurements will be collected approximately mid-depth (i.e. at the mid-point in the water column, for example, at 15 feet if the water depth is 30 feet) at each of the stations.
 - b. Monitoring depths will be determined using a depth finder with an accuracy of ± 0.5 feet.
 - c. Water quality will be monitored using instrumentation capable of measuring dissolved oxygen, pH, and turbidity (in nephelometric turbidity units (NTU's)), such as a handheld turbidity meter.
3. **Performance Standards** – The following water quality standards are based on recent Regional Water Quality Control Board permit requirements (e.g. RWQCB, 2016; RWQCB, 2017) and are required to meet performance standards¹:
- a. Hydrogen Ion Concentration (pH) – The pH shall not fall below 7.0 or rise above 9.0.
 - b. Turbidity – If reference station turbidity is between 0 to 50 NTUs, the maximum increase from construction activities must not exceed 20 percent of the measured turbidity at the reference station. If reference station turbidity is between 51 to 100 NTUs, the maximum increase from construction activities must not exceed 10 NTUs. If reference turbidity is

¹ Note these standards may be updated by District staff based on the most recent Regional Water Quality Control Board permit requirements.

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greater than 100 NTUs, the maximum increase from construction activities must not exceed 10 percent above the reference levels.

- c. Dissolved Oxygen – The dissolved oxygen concentration shall not decrease more than 10 percent from the reference station.

4.0 Construction BMPs and Standards

The following Standards shall be required for any and all routine repairs and maintenance activities conducted by the District that involve overwater structures, such as piers, docks, and wharves with the potential to increase turbidity. The Standards apply to all instances of jetting, impact hammer and vibratory pile driving. Silt curtains shall be used to minimize and contain turbidity and visual water quality monitoring shall be conducted by the contractor to ensure BMPs are in place and minimizing impacts. The Standards also include use of a Biological Monitor, if specified below, to minimize impacts to marine mammals, turtles, and fish. Pile removal and installation parameters shall be included in the project specifications. These Standards shall be supplied to bidders, if bidding is required under the California Public Contracts Code, or directly to a contractor if no bidding is required. Whenever the District requires a contractor to conduct an activity as specified in this Section 4.0, the District shall do so by including such requirements on all construction bids and plans, and conduct periodic inspections to ensure the construction BMPs and standards are being implemented during construction.

4.1 Pile Jetting

- The objective of pile jetting is to loosen sediment in front of the pile to allow the pile to advance with reduced impact hammer blows or vibration or by gravity. The District shall require the contractor to control sediment displacement by reducing the jetting volume and/or velocity where feasible.
- Prior to pile jetting, the contractor shall first “stab” the pile into the bottom substrate to advance it through the upper layer of soft sediment and then jet the pile to reduce sediment disturbance during jetting operations.

4.2 Silt Curtains

A silt curtain is a “floating geotextile material which minimizes sediment transport from a disturbed area adjacent to or within a body of water” (USACE, 1997). The principle behind the use of silt curtains is “to enclose or contain turbid water” (USACE, 1997).

- Silt curtains shall be installed for all construction activities involving pile driving, pile removal and additional activities with the potential to increase turbidity (see Section 1.0).
- Silt curtain(s) shall be installed as specified in Section 4.2.1 and shall minimize, to the extent feasible, turbidity affecting the surrounding tidal waters.
- The District shall require the contractor to furnish all necessary tools, materials, and labor for design and construction activities pertaining to the installation of the silt curtain and related equipment prior to in-water construction including, but not limited

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to, pile removal, pile driving and jetting, and removal of the silt curtain and all related equipment at the completion of all in-water work.

4.2.1. Silt Curtain Installation Procedures

- The contractor shall design and install the silt curtain and related equipment (e.g. anchor lines) in accordance with the following procedures:
 1. The bottom of the silt curtain must be weighted with ballast weights or rods affixed to the base of the fabric to resist the natural buoyancy of the silt curtain fabric and lessen the tendency to move in response to currents. The silt curtain and anchoring system shall be designed to withstand expected hydraulic forces (e.g. waves, currents, vessel wakes, tidal changes) for the duration construction activities with the potential to increase turbidity.
 2. The silt curtain must be anchored and deployed from the surface of the water and shall be fitted with a tidal compensating device to maintain a minimum 3-foot clearance from the Bay floor under all tidal conditions and wave oscillation. The silt curtain shall not touch the Bay bottom.
 3. Silt curtains shall be deployed and maintain a continuous length of curtain, to fully surround the active in-water construction activity that has the potential to increase turbidity (see Section 1.0). The silt curtain must restrict the surface visible turbidity plume within the area of construction and must control and contain the migration of re-suspended sediments.

4.2.2. Silt Curtain Specifications

- The contractor will provide the District information for the silt curtain including, but not be limited to, the following:
 1. A description of the proposed silt curtain alignment, the silt curtain anchoring the system, and attachment points for the ends of the curtain.
 2. The manufacturer's data that indicates the type and material of the silt curtain to be used.
 3. How the contractor will ensure the proposed silt curtain system is installed to prevent turbidity from escaping the silt curtain and that the performance standards in Section 3.1.3 are not exceeded.
 4. Contingency measures if a single silt curtain system is inadequate to contain turbidity. Contingency measures may include modification to construction practices (e.g., jetting piles) or modifications of the silt curtain system, such as fixing, adjusting, maintaining, or upgrading the silt curtain.
 5. Identify installation plans for a second silt curtain, if required, to ensure performance standards in Section 3.1.3 are met.
 6. Methods for monitoring the integrity of the silt curtain system during construction activities to ensure turbidity is contained within the silt curtain system and performance standards in Section 3.1.3 are met.

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7. The method of removal of the silt curtain after in-water construction activities are complete to minimize turbidity.

4.2.3. *Visual Water Quality Monitoring and Other Requirements for Construction Activities with the Potential to Increase Turbidity*

- The District shall require the contractor to conduct daily visual water quality monitoring for any visible turbidity plumes, oil or sheens, floating debris, or water discoloration associated with project construction activities. Daily visual monitoring will be conducted a minimum of one hour after commencement of construction activities with the potential to cause sediment disturbance. A monthly report of the monitoring shall be compiled and submitted to the District's Engineering and Construction Management Department. If a turbidity plume is observed, response actions shall be immediately taken (see Section 4.3).
- At least one additional inspection shall be conducted without notice by a representative of the design team or its consultant. Additional inspections may be required based on noticeable turbidity increases within or outside the silt curtain, unexpected curtain position or behavior, construction equipment contacting the curtain, after the weekly water quality monitoring, or at the District's discretion.
- Silt curtains will be maintained in proper working order as specified by the manufacture's specifications during all in-water work. Any torn, damaged, loosened, dislocated, gaping, or otherwise ineffectively functioning sections of the silt curtain identified during daily routine inspections shall be promptly repaired or replaced by the contractor and in-water construction shall cease until such repair or replacement occurs.
- Contractor, or its subcontractor, personnel handling the silt curtain shall be proficient in all aspects of proper silt curtain handling, installation, maintenance, repair, deployment, relocation, storage, and removal. Written evidence of such proficiency shall be submitted to the District design team.

4.3 Response Actions to Visual Plumes Observed Outside of the Silt Curtain

- If the condition of the silt curtain is observed to be damaged, no longer positioned around the in-water construction area, or has gaps where a visible turbidity plume is forming outside of the silt curtain, the contractor shall act immediately to correct the silt curtain to prevent any turbidity outside the silt curtain.
- Actions to ensure the silt curtain is meeting performance standards in Section 3.1.3 shall include, but are not limited to, work stoppage to inspect the silt curtain; repair the silt curtain; position or reposition the silt curtain around the active work area; ensure the silt curtain has no gaps; implementation of operational modifications (e.g. fixing, adjusting, maintaining, and/or upgrading silt curtains); and/or, implementation of a second silt curtain.
- If receiving water quality monitoring indicates an exceedance of the performance standards set forth in Section 3.1.3, construction activities shall be halted until measured turbidity has decreased to levels below performance standards.

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- All response actions shall be documented and reported to the District in writing and by phone immediately.

4.4 Response Actions to Water Quality Monitoring Exceedance

- In the event that visual observations or the water quality monitoring described above in Section 3.1.3, indicate an exceedance of an applicable receiving water performance standard, the following actions shall be implemented:
 1. Immediately re-take water measurements at reference and compliance stations in accordance with the procedures in Section 3.0.
 2. Evaluate the measurements at background and compliance monitoring stations and use visual observations to determine whether the exceedance is caused by construction activities or by other ambient conditions in San Diego Bay such as wind waves, boat wakes, barge/ship traffic, and storm inflow.
 3. If the exceedance is confirmed to be a result of the project construction, Staff conducting the water quality monitoring will coordinate with the District's Engineering and Construction Management Department to immediately notify the contractor to modify or cease operations related to in-water construction activities and/or inspect the BMP's to ensure they are working properly to mitigate the exceedance. Operational modifications may include fixing, adjusting, maintaining, and/or upgrading silt curtains or use of a second silt curtain.
 4. Re-evaluate water measurements at all relevant stations no more than 30 minutes later, after additional BMPs or operational modifications are implemented.
 5. If the receiving water performance standards exceedance continues to persist, even with additional BMPs, determine and implement operational modifications including modifying the rate of jetting, waiting longer to initiate pile driving, or perform more start-stops until the exceedance levels comply with the performance standards. If necessary, corresponding construction activities shall be stopped until performance standards are met. Typically, turbidity is reduced within one hour.

4.5 Soft Start Methodology for Vibratory and Impact Hammer Pile Driving

The District shall require the contractor to initiate all vibratory and impact hammer pile driving techniques with a soft start methodology in conformance with the following requirements:

- Vibratory hammer – By initiating three rounds of noise from vibratory hammers for 15 seconds at reduced energy followed by a 30-second waiting period before commencing full use of equipment.
- Impact hammer – Using an initial three sets of three low energy strikes followed by a 30-second waiting period to initiate impact driving before ramping up to full hammer energy.

4.5.1 *Acoustic Zone of Influence*

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- The acoustic ZOI is the linear horizontal distance from the pile driving activity at which the 180-decibel root mean squared (dBrms) sound level threshold for marine life injury for level B is not exceeded.
- Acoustic ZOIs have been determined for a variety of in-water construction equipment, materials, and methods within the Bay (e.g. see NAVFAC SW, 2018). Hydroacoustic data collection is not required for a project if the ZOI, using similar construction materials and methods, has been previously determined in the Bay (see NAVFAC SW, 2018).
- If the ZOI has not been previously determined for a project site, the District and/or a Biological Monitor hired by the District will conduct monitoring of sound pressure levels during vibratory and impact hammer pile driving to verify the ZOI.
- The ZOI is based on the following factors:
 1. Construction materials and installation equipment (e.g. pile type, composition, size; type and size of hammer).
 2. Construction methods, such as vibratory or impact hammer.
 3. Environmental conditions, such as depth, bottom composition, sound speed gradients, and scattering.
 4. The linear horizontal distance in all directions from the acoustic source to the point where the sound threshold of 180 dBrms is no longer exceeded.
- Once the ZOI is determined, a qualified Biological Monitor will continuously monitor the ZOI during pile driving activities to observe any marine mammals or turtles that approach or enter the ZOI. The qualified Biological Monitor shall be given the authority to stop all work on-site and shall do so if a marine mammal or sea turtle enters the ZOI or could be impacted by construction noise.
- The Biological Monitor shall submit monthly reports to the District discussing U.S. Army Corps of Engineers and Regional Water Quality Control Board permit compliance, and biological monitoring activities. The reports shall include the following:
 1. Recorded daily visual observations throughout construction activities.
 2. Records of water and biological monitoring information shall include:
 - a. The date, exact place, and time of sampling or measurements;
 - b. The individual(s) who performed the sampling or measurements; and
 - c. The results of monitoring; and a summary of biological observations of sensitive biological resources, water quality observations noting any sheen, color, odor, floating particulates, and surface visible turbidity plume, weather conditions, such as wind speed/direction and cloud cover.

5.0 Disposal Requirements for Creosote Treated Piles

There may be some creosote piles still in service at District facilities, however they are rare to encounter. Any creosote piles at a project site are identified during the design phase and review by the District design team. The methodology for removal of creosote-treated piles is the same as non-treated piles with the exception that should any pile cutting be required, all creosote pile chips, splinters, and debris resulting from pile cutting shall be hand-collected and/or screened

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from the water for disposal at an appropriate waste facility per (for creosote-treated wood guidelines, please see NOAA Fisheries Guidelines (NOAA Fisheries SW 2009) and the Environmental Protection Agency's Ecological Risk Assessment for Creosote (EPA 2008)). Creosote pile handling and disposal follows typical contaminated material methods with the manifest documented and the licensed landfill recorded.

6.0 References

California Department of Transportation (CALTRANS). 2015. Overview of the Evaluation of Pile Driving Impacts on Fish for the Permitting Process: Technical Advisory, Hydroacoustic Analysis. October 2015. Available from: <http://www.dot.ca.gov/env/bio/docs/bio-hydroacoustic-impact-assessment-overview.pdf>

Clean Water Act, Section 401(a) Certification (CWA). 33 U.S.C. §1341. Available from: <https://www.law.cornell.edu/uscode/text/33/1341>

Clean Water Act, Section 1313(d) (CWA). 33 U.S.C. §1313(d). Available from: <http://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title33-section1313&num=0&edition=prelim>

California Water Code, Section 13191.3(a) (CWC). Water Code, Cal. §13191.3(a). (2004). Available from: http://leginfo.legislature.ca.gov/faces/codes_displayText.xhtml?lawCode=WAT&division=7.&title=&part=&chapter=3.&article=4.

Environmental Protection Agency (EPA) 2008. Memorandum: Updated Ecological Risk Assessment for Creosote. United States Environmental Protection Agency, Office of Prevention, Pesticides and Toxic Substances. March 7, 2008. 56 p. Available from: <https://archive.epa.gov/pesticides/reregistration/web/html/status.html>

Naval Facilities Engineering Command Southwest (NAVFAC SW). 2018. Compendium of Underwater and Airborne Sound Data from Pile Driving and Removal in San Diego Bay. August 2018.

National Oceanic and Atmospheric Administration Fisheries – Southwest Region (NOAA Fisheries SW) 2009. The Use of Treated Wood Products in Aquatic Environments: Guidelines to West Coast NOAA Fisheries Staff for Endangered Species Act and Essential Fish Habitat Consultations in the Alaska, Northwest and Southwest Regions. October 12, 2009, 58 p. Available from: https://www.westcoast.fisheries.noaa.gov/publications/habitat/treated_wood_guidelines-finalclean_2010.pdf

Regional Water Quality Control Board (RWQCB). 2015. Water Quality Control Policy for Developing California's Clean Water Act Section 303(d) List. Division of Water Quality. State Water Resources Control Board, Sacramento, CA. February 2015. Available from:

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https://www.waterboards.ca.gov/sandiego/water_issues/programs/303d_list/docs/Updated Listing Policy 020315 amendment clean version.pdf

- Regional Water Quality Control Board (RWQCB). 2016. Clean Water Act Section 401 Water Quality Certification No. R9-2015-0152 for the Shelter Island Boat Launch Facility Improvements Project, issued by the Regional Water Quality Control Board on October 6, 2016.
- Regional Water Quality Control Board (RWQCB). 2017. Clean Water Act Section 401 Water Quality Certification No. R9-2016-0174 for the Portside Pier Restaurant Redevelopment Project, issued by the Regional Water Quality Control Board on October 13, 2017.
- United States Army Corps of Engineers (USACE). 1997. Engineering and Design – Handbook for the preparation of Storm Water Pollution prevention plans for construction activities. EP 1110-1-16 Appendix C BMP-27.
- United States Army Corps of Engineers (USACE). 2010. Final Section 404(b)(1) Alternatives Analysis Port of Long Beach Middle Harbor Redevelopment Project. Appendix G.
- United States Army Corps of Engineers (USACE). 2012. Department of the Army Regional General Permit No. 72 (SPL-2006-01690-RRS) Port of San Diego Routine Dock/Wharf/Pier/Pile Maintenance Permit. Issued by the United States Army Corps of Engineers on September 4, 2007, reauthorized August 29, 2012, and amended and reauthorized November 20, 2014.
- United States Army Corps of Engineers (USACE). 2016. Nationwide Permit Verification (SPL-2015-00651-RRS) for the Shelter Island Boat Launch Facility Improvements Project. Issued by the United States Army Corps of Engineers on December 13, 2016 and reissued on March 2, 2018.
- United States Army Corps of Engineers (USACE). 2017. Letter of Permission (SPL-2016-00559) for the Portside Pier Restaurant Redevelopment Project. Issued by the United States Army Corps of Engineers on November 6, 2017.