3.14

WATER QUALITY, SEDIMENTS, AND OCEANOGRAPHY

3.14.1 Introduction

3.14.1.1 Relationship to 1992 Deep Draft Final EIS/EIR

The 1992 Deep Draft Final Environmental Impact Statement/Environmental Impact Report (FEIS/FEIR) evaluated at a project-specific level, and recommended mitigation to the extent feasible for, all significant impacts on water quality, sedimentation, and oceanography related to navigation and landfill improvements required to construct Pier 400. This includes those portions of the current proposed Project that are located on Pier 400. The Deep Draft FEIS/FEIR also assessed at a general or programmatic level the projected impacts of development and operation of terminal facilities planned for location on Pier 400, including a marine oil terminal and associated infrastructure. The Deep Draft FEIS/FEIR concluded that the primary water quality, sedimentation, and ~~oceanography~~ oceanographic impacts of terminal development and operation would result from the potential for: 1) an increase in toxic spills and surface runoff into the harbor during terminal construction and operation; 2) increased turbidity and oxygen demand during construction caused by dredging activities; and 3) the release of toxic levels of trace metals and hydrocarbon contaminants by disturbance to contaminated sediments during construction activities. The Deep Draft FEIS/FEIR concluded that water quality, sedimentation, and oceanography impacts associated with the development of terminal facilities planned on Pier 400 due to increased turbidity and the potential release of toxic levels of trace metals and hydrocarbon contaminants during sediment disturbing construction were significant and unavoidable. The Deep Draft FEIS/FEIR recommended one programmatic mitigation measure to address the significant and unavoidable impacts. This mitigation measure recommended an increase in the staffing of the California Department of Fish and Game (CDFG) Office of Oil Spill Prevention and Response (OSPR).

The approved Deep Draft FEIS/FEIR incorporated the Mitigation Measures (MMs) listed below to address the significant impacts on oceanographic resources and water quality. One of these mitigation measures is still applicable to the proposed Project, while others have already been implemented or are not applicable to the proposed Project. New project-specific mitigation measures developed as part of this Supplemental document, as well as those that are applicable from the Deep Draft FEIS/FEIR, would be enforced by inclusion in an MMRP.

Mitigation Measures from the 1992 Deep Draft Final EIS/EIR that are Applicable to the Proposed Project

The following MM was developed in the Deep Draft FEIS/FEIR to reduce the significant impacts to oceanographic resources and water quality. This measure remains applicable to the proposed Project:

MM 4B-7 required the Los Angeles Harbor Department (LAHD) to petition the state for increased local staffing of OSPR to reduce the level of accidental spills at ship fuel docks.

Mitigation Measures from the 1992 Deep Draft Final EIS/EIR that are No Longer Applicable or are Not Applicable to the Proposed Project

The following MMs were developed in the Deep Draft FEIS/FEIR to reduce the significant impacts to oceanographic resources and water quality during construction of the Deep Draft program. These measures are not applicable to the proposed Project for the reasons as stated:

MM 4B-1 stated that the construction contractor shall use a silt curtain or other means that meet LARWQCB standards if necessary to localize the dredging plume.

Reason No Longer Applicable: *The proposed Project does not include dredging. This mitigation was incorporated with the Deep Draft program and has already been carried out.*

MM 4B-2 stated that the return water flow from disposal of dredged materials behind dikes shall meet the LARWQCB requirements for settleable solids.

Reason No Longer Applicable: *The proposed Project does not include use of dredged material for land fill construction. This mitigation was incorporated with the Deep Draft program and has already been carried out.*

MM 4B-3 stated that surface and near-surface contaminated sediments shall be placed and confined in in-harbor disposal sites, at least 200 ft from the containment dike wall.

Reason No Longer Applicable: *The proposed Project does not include the disposal of contaminated sediments in in-harbor landfill sites nor construction of containment dikes for such landfills. This mitigation was incorporated with the Deep Draft program and has already been carried out.*

MM 4B-4 stated that turbidity in harbor waters associated with erosion from Pier 400 surface runoff shall be controlled.

Reason No Longer Applicable: *This mitigation was incorporated with the Deep Draft program and has already been carried out. Runoff from the proposed Project will be controlled through implementation of a Stormwater Pollution Prevention Plan (SWPPP), Standard Urban Stormwater Mitigation Plan (SUSMP), and best management practices (BMP) requirements.*

MM 4B-5 stated that a spill contingency plan shall be developed for use during the construction of Pier 400.

Reason No Longer Applicable: *This mitigation was incorporated with the Deep Draft program and has already been carried out.*

MM 4B-6 stated that a 3-D numerical tidal circulation model shall be developed and implemented prior to the final design stage.

Reason No Longer Applicable: *This mitigation was incorporated with the Deep Draft program and has already been carried out.*

3.14.2 Environmental Setting

This section addresses the water quality, sediments, and oceanography in the vicinity of the proposed Project and its alternatives. Existing water quality conditions in the Los Angeles Harbor (Harbor) and proposed Project areas have been summarized from the 2000 baseline study for the Ports (MEC and Associates 2002) and other sources. Water quality sampling on a harbor-wide basis recurs at a frequency of several years, with the most recent surveys completed in 2000. Use of 2000 (and earlier for some parameters) data to characterize conditions in 2004, which represents the CEQA Baseline for the proposed Project, is appropriate because water and sediment quality in the Harbor have remained about the same from 2000 to 2004, except where sediment conditions have been altered by dredging operations. This is reflected by monthly water quality measurements performed by the Port of Los Angeles (Port) that indicate considerable variability (scatter), but no consistent trends during the period from 2000 to 2004. Therefore, use of earlier (2000) data for characterizing the baseline (2004) water quality conditions is appropriate.

3.14.2.1 Regional Setting

The proposed Project area is located in the Los Angeles Drainage Basin, which drains approximately 832 square miles (2,155 square km). The Harbor has been physically modified through past dredging and filling projects as well as by construction of breakwaters and other structures. The Harbor consists of the Inner Harbor (channels, basins, and slips north of the Vincent Thomas Bridge), Outer Harbor (south of Reservation Point to the San Pedro and Middle breakwaters), and Main Channel (between the Vincent Thomas Bridge and Reservation Point). The Harbor is adjacent to Long Beach Harbor, and oceanographically they function as one unit due to an inland connection via Cerritos Channel and because they share Outer Harbors behind the San Pedro, Middle, and Long Beach breakwaters.

Pier 400, where the proposed Marine Terminal facility would be located, is a recent landfill in the Outer Harbor. Potential tank farm areas for the proposed Project are on Pier 400 and on Terminal Island to the north of Pier 400. Proposed pipeline routes extend from Pier 400, Terminal Island, and Mormon Island to the Valero Refinery (see Figure 2-1).

The combined Los Angeles/Long Beach Harbor oceanographic unit has two major hydrologic divisions, including marine and freshwater. The Harbor is marine and primarily influenced by the southern California coastal marine environment known as the Southern California Bight. The main freshwater influx into the Harbor is through Dominguez Channel, which drains approximately 80 square miles (207 square km) of urban and industrial areas. Other sources of freshwater to the Harbor include discharges of treated sewage from the Terminal Island Treatment Plant (TITP) into the Outer Harbor and discharges of runoff from storm drains located throughout the Harbor. The existing beneficial uses of coastal and tidal waters in the Inner Harbor, as identified in the *Water Quality Control Plan: Los Angeles Region Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* [Basin Plan], include industrial service supply, navigation, non-contact water recreation, commercial and sport fishing, preservation of rare and endangered species, and marine habitat (LARWQCB 1994). Beneficial uses in the Outer Harbor are navigation, water contact and non-contact recreation, commercial and sport fishing, marine habitat, and preservation of rare and endangered species. Several areas within the Harbor, and particularly in the Inner Harbor, are listed as impaired waters under Section 303(d) of the Clean Water Act (*Proposed 2006 CWA Section 303(d) List of Water Quality Limited Segments, Los Angeles Regional Board*; list approved by USEPA October 25, 2006). These include Consolidated Slip, Cabrillo Marina, Fish Harbor, Inner Cabrillo Beach Area, Los Angeles/Long Beach Outer Harbor (inside breakwater), Los Angeles/Long Beach Inner Harbor, Dominguez Channel, and Los Cerritos Channel (SWRCB 2006). The reasons for impairment are summarized in Table 3.14-1. Total Maximum Daily Loads (TMDLs) have not been developed for pollutants at any of these areas and are not planned until 2019. The LARWQCB amended the Basin Plan (Resolution No. 2004-011) to incorporate a TMDL for bacteria at the Harbor, including Inner Cabrillo Beach and the Main Ship Channel. However, this site is not listed for this stressor on the current Clean Water Act 303(d) list.

The Port of Los Angeles is currently developing a Water Resources Action Plan (WRAP) in conjunction with the Port of Long Beach and involving stakeholder participation from a number of regulatory agencies and environmental groups. The WRAP would develop monitoring and management plans for the entire San Pedro Bay that are designed, in part, to ensure that non-native (i.e., invasive) species are detected and eradicated as soon as possible.

Table 3.14-1. Section 303(d) Listed Waters in LA Harbor

Listed Waters/Reaches	*Impairments*
Los Angeles Harbor, Cabrillo Marina (77 acres; 31 ha)	DDT, PCBs
Los Angeles Harbor, Inner Cabrillo Beach Area (82 acres; 33 ha)	Cu, DDT*, PCBs*
Los Angeles/Long Beach Outer Harbor, inside breakwater (4042 acres; 1636 ha)	DDT, PCBs
Los Angeles Harbor, Fish Harbor (34 acres; 14 ha)	DDT, PAHs, PCBs, benzo[a]anthracene, chlordane, chrysene (C1-C4), Cu, dibenz[a,h]anthracene, Pb, Hg, phenanthrene, pyrene, sediment toxicity, Zn
Los Angeles/Long Beach Inner Harbor (3003 acres; 1215 ha)	Beach closures, benthic community effects, DDT, PCBs, sediment toxicity
Los Cerritos Channel (31 acres; 13 ha)	Ammonia, bis(2ethylhexyl)phthalate/DEHP, coliform bacteria, Cu, Pb, Zn, trash Sediment: chlordane
Los Angeles Harbor, Consolidated Slip (36 acres; 15 ha)	Benthic community effects, sediment toxicity, dieldrin Sediment: Cd, Cr, Cu, Pb, Hg, Zn Sediment & tissue: chlordane, DDT*, PCBs* Tissue: toxaphene
Domínguez Channel, from Vermont to Estuary (8.3 miles; 13.4 km)	Benthic community effects, Cr, Pb, Zn, pesticides, DDT, PAHs, ammonia, bacteria
Note: * Fish consumption advisory. *Source*: SWRCB 2006.	

The water and sediment quality parameters that could be affected directly by the proposed Project and its alternatives include dissolved oxygen, hydrogen ion concentration (pH), turbidity/transparency, nutrients, and contaminants. Other parameters commonly used to describe marine water quality include salinity and temperature. While the proposed Project and its alternatives would not directly affect salinity and temperature, they are addressed because stormwater runoff from the Project site could affect these conditions in the receiving waters of the Harbor. Oceanographic conditions that could be affected by the proposed Project include circulation (current patterns) as it may affect mixing and water exchange in the Harbor.

3.14.2.2 Water Quality

3.14.2.2.6 Transparency/Turbidity

Transparency is a measure of the ability of water to transmit light, or water clarity. Transparency is measured by the distance a black and white disk (i.e., a secchi disk) can be seen through the water and by a transmissometer that measures percent light transmission through water. Turbidity is the amount (mass) of suspended solids in the water column and can be measured as a concentration (e.g., mg/l) or in nephelometric turbidity units (NTUs) using a turbidimeter that measures the intensity of light scattered by the water sample. Increased turbidity usually results in decreased water clarity or transparency. Turbidity generally increases as a result of one or a combination of the following conditions: fine sediment from terrestrial runoff or resuspension of fine bottom sediments; plankton~~ic~~ blooms; and dredging activities. In addition, propeller wash from ships moving in and out of the Harbor is a source of mixing in the water column, including disturbance of superficial bottom sediments, which likely affects transparency, especially in narrower channels in the Inner Harbor.

Historically, water clarity in the Harbor has varied tremendously, with secchi disk readings ranging from 0.0 to 40 ft (0 to 12 m). Water clarity generally increased from 1967 to 1986-1987 (USACE and LAHD 1992), although individual readings still vary greatly (MEC and Associates 2002). Suspended solids concentrations in surface waters of the Outer Harbor range from less than 1.0 to 22.4 mg/l (USACE and LAHD 1992). (Environmental studies of the Harbor have not reported turbidity in NTUs.) Transmissivity values measured in 2000 in the Outer Harbor near the proposed Project site ranged from 34 to 67 percent, and transmissivity values measured near LAHD Berth 238 and Port of Long Beach Berths 86 and 76 ranged from 42 to 69 percent, 30 to 74 percent, and 58 to 76 percent, respectively (MEC and Associates 2002). Although present water clarity levels in the Harbor have increased relative to levels in the 1960s, the values measured in 2000 are expected to be representative of levels in 2004 (i.e., CEQA Baseline).

3.14.2.2.7 Contaminants

Contaminants in Harbor waters can originate from a number of sources within and outside of the Port. Potential sources of trace metals and organics include municipal and industrial wastewater discharges, stormwater runoff, dry weather flows, ~~leaching~~ leachate from ship/boat hull anti-fouling paints and other incidental vessel discharges, petroleum or waste spills, atmospheric deposition, and resuspension of bottom sediments containing legacy (i.e., historically deposited) contaminants such as dichlorodiphenyltrichloroethane (DDT) and polychlorinated biphenyls (PCBs). Most of the metal, pesticide, and hydrocarbon contaminants that enter the Harbor have a low solubility in water and adsorb onto particulate matter that eventually settles to the bottom and accumulates in bottom sediments. Dredging projects in both the Inner and Outer Harbor areas, including the Los Angeles Harbor Deepening Project, have removed contaminated sediments from the Harbor. In addition, some contaminated sediment areas have been covered by less contaminated sediments as part of construction of landfills or shallow water habitat, thereby sealing them from exchange with the overlying water. Controls on other discharge sources have also contributed to decreases over time in the input of contaminants. Nevertheless, some localized areas of contaminated sediments still remain, and resuspension of these sediments by dredging or propeller wash from vessels can represent a source of contaminants to Harbor waters.

Concentrations of trace-level contaminants in Harbor waters are not monitored routinely. Therefore, information to characterize the spatial and temporal patterns in baseline concentrations of individual chemical contaminants in Harbor waters is not available (AMEC 2007). Nevertheless, concentrations of metals, polycyclic aromatic hydrocarbons (PAHs), and legacy contaminants such as DDTs and PCBs are expected to vary spatially and over time in response to the magnitude of the numerous source inputs. In particular, concentrations of metals and PAHs in Harbor waters are expected to be considerably higher following a storm event due to the higher mass loadings associated with storm water runoff. Following a large storm event, contaminant concentrations decrease as loadings decline, storm water mixes with harbor waters, and contaminants associated with particles settle out of the water column to the bottom sediments. The Port has developed numerical models that predict the effects of storm flows from selected watersheds, such as the Dominguez Channel watershed, on inputs and fate of chemical contaminants to the Harbor (LAHD 2007).

The Port's Monthly Monitoring Program has measured water quality monthly at specific locations within the Port since 1969. From May 2005 until March 2006 the Port conducted the quarterly Enhanced Water Quality Monitoring program that sampled trace-level contaminants at multiple locations throughout the Harbor, including one site~~a location~~ (Station LA03) near Pier 400 (AMEC 2007). Results from the Enhanced Water Quality Monitoring program are listed in Table 3.14-2. Sites within the Harbor where measured metal and tributyltin (TBT) concentrations exceeded the applicable water quality criteria are shown in Figure 3.14-1. None of the quarterly water samples collected at Station LA03~~this location~~ contained detectable concentrations of PAHs, PCBs, pesticides, or ~~tributyltin (~~TBT~~)~~. Concentrations of dissolved and total metals, including copper, at Station LA03 were ~~present at concentrations~~ below water quality standards. By comparison, water samples from seven locations, primarily within inner portions of the Harbor typified by limited water circulation, contained concentrations of TBT that equaled or exceeded the water quality criterion, and one location contained copper concentrations that exceeded the water quality criterion, during one of the four quarterly surveys.

Recent studies have linked the atmospheric deposition of pollutants such as particulates, metals, and PAHs to pollutant loads in water bodies in the Chesapeake Bay and Great Lakes. In response to such research, California air and water regulators have also begun to examine the role of atmospheric deposition in California waters. One way to regulate potential deposition is through the TMDL program (established and regulated as part of the CWA), which sets daily load allocations on a pollutant-by-pollutant basis, and by doing so focuses on preventing pollutants at their source from entering the water bodies. TMDLs are under development in California, and therefore this model could be used to develop a similar program for pollutants deposited via air transport. Impaired water body listings in the Los Angeles/ Long Beach harbor complex include constituents that may be affected by aerial deposition. Presentations at a public workshop on 9 February 2006 indicated that the primary sources of some pollutants, such as zinc, in aerial deposition are paved and unpaved road dust, tire wear, and construction dust (Stolzenbach 2006; Sabin et al. 2007). Heavy metals tend to adsorb on particulates greater than 10 microns in diameter that settle in the watershed and then are washed into water bodies in storm runoff (Bishop 2006). By comparison, direct aerial deposition of metals onto the water surface is a minor source of pollutants in the water. Regionally, major transportation corridors, including those utilized for Ports' goods movement purposes, contribute atmospheric deposition of PAHs in the watershed. The PAH contribution comes from on-road trucks and off-road construction equipment, and is supplemented by diesel fuel combustion products from cargo-handling equipment, Harbor craft, and other marine vessels.

The USEPA and LARWQCB are currently developing TMDLs to address harbor impairments, and they have explicitly stated that they will address aerial deposition as a component in their TMDL process. However, a number of issues related to atmospheric deposition still remain, primarily in regards to research and legality. Deposition mechanisms are not understood for all potential pollutants, and research on actual concentrations of such pollutants is still not complete. Additionally, there is controversy in regards to legal authority of the California Water Boards in regulating sources that are traditionally regulated by the Air Boards. Air pollutants can also travel long distances and identifying true sources can be complicated. The California Air Resource Board (CARB) and California Water Resources Control Board are in the process of examining the need to regulate atmospheric deposition for the purpose of protecting both fresh and salt water bodies from pollution.

Aerial deposition of particles from sources related to the goods movement industry occurs in both local waterways and regional land areas. Since the watershed contains several major transportation corridors, it is not feasible to separate localized project contributions from regional contributions to surface and marine water quality impacts. Emission sources from the proposed Project and other alternatives would produce diesel particulate matter (DPM) that contains trace amounts of toxic chemicals.

Air quality mitigation measures, as described in Section 3.2, will substantially reduce the atmospheric deposition-related pollutant burden. In addition, regional benefits will occur over time with implementation of the San Pedro Ports Clean Air Action Plan (CAAP), the CARB diesel risk reduction measures, the CARB memorandum of understanding with the railroads to implement low sulfur fuels and new engines in locomotives, and regional transportation improvement plans implemented as part of the projects funded by Proposition 1-B. The Port, through its CAAP will actively reduce air pollutant loads related to Port operations. While Port-related operations are not the only source of pollutants deposited in waterways, reducing Port-related emissions will have the effect of reducing potential air deposition by a measurable amount. The CAAP is focused primarily on PM, NO_x, and SO_x reduction, but also aims to reduce emissions of all criteria pollutants, thereby reducing total pollutants available for deposition. Additionally, the Port will comply with any future regulation to control water pollution from air depositional sources.

Passenger vehicles represent the largest contribution of copper to the atmosphere and subsequently to surfaces in watershed areas. Copper from brake wear is primarily found in the fine particle fraction from 1 to 5 microns ~~in~~ (µm) in diameter. This particle fraction is likely to be dispersed over a much broader area than coarse fractions ~~>~~ greater than 10 µm.

Antifouling coatings used on vessel hulls are another source of metals, especially copper and zinc, to Harbor waters. Antifouling paints are designed to slowly release biocides that prevent settling and growth of fouling organisms on ship hulls, which otherwise would reduce vessel speeds and increase fuel consumption. Elevated concentrations of dissolved copper are a particular concern in enclosed marinas with high densities of recreational vessels and limited water circulation (Schiff et al.

Table 3.14-2. Results from the Enhanced Water Quality Monitoring Program for Metals and Organotins in Port Waters – May 2005 through March 2006. All values in µg/L. Source: AMEC (2007).

Analyte	RL	Screening Criteria		LA 01	LA 03	LA 05	LA 06	LA 10	LA 11A	LA 14	LA 18	LA 19	LA 22A	LA 23	LA 24	LA 26	LA 30	LA 32B	LA 33	LA 35	LA 39	LA 41	LA 44	LA 46	LA 47	LA 49	LA 50	LA 51	LA 55	LA 62
		CMC	CCC																											
May 12, 2005																														
Arsenic	0.015			1.31	1.18	1.18	1.15	1.28	1.17	1.1	1.1	1.25	*	1.21	*	1.2	1.2	1.44	1.31	1.28	1.28	1.18	1.16	1.26	1.22	1.14	1.2	1.18	1.17	1.27
Cadmium	0.01	40	8.8	0.05	0.052	0.049	0.05	0.049	0.045	0.047	0.04	0.05	*	0.046	*	0.044	0.044	0.03	0.04	0.04	0.07	0.062	0.054	0.053	0.048	0.055	0.049	0.055	0.048	0.045
Chromium	0.01	1100	50	0.38	0.33	0.32	0.33	0.29	0.29	0.29	0.31	0.33	*	0.28	*	0.27	0.29	0.24	0.37	0.28	0.51	0.28	0.29	0.28	0.26	0.25	0.27	0.27	0.28	0.29
Copper	0.01	4.8	3.1	0.31	0.72	1.5	0.996	0.37	1.33	1.89	0.54	0.4	*	0.61	*	0.96	1.08	0.82	1.28	0.98	2.93	1.28	1.3	1.29	1.11	1.18	1.09	1.22	1.48	0.48
Lead	0.01	210	8.1	0.033	0.028	0.035	0.07	0.047	0.54	0.22	0.025	0.32	*	0.027	*	0.11	0.071	0.12	0.08	0.06	0.27	0.089	0.085	0.15	0.14	0.088	0.07	0.32	0.037	0.02
Mercury	0.0005	1.8	0.94	ND	ND	ND	ND	ND	ND	ND	ND	ND	*	ND	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	0.01	74	8.2	0.22	0.33	0.407	0.41	0.28	0.32	0.33	0.32	0.31	*	0.31	*	0.37	0.4	0.66	0.59	0.48	0.71	0.37	0.37	0.38	0.34	0.33	0.35	0.43	0.31	0.27
Silver	0.01	1.9		ND	0.085	ND	0.07	ND	ND	ND	ND	0.007	*	ND	*	ND	ND	0.06	0.05	ND	0.11	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	0.01	90	81	6.17	7.47	8.88	8.35	5.65	7.14	10.3	7.64	5.57	*	9.18	*	8.63	7.7	7.21	9.89	15	23.2	8.87	9.77	7.67	6.34	8.2	8.33	7.66	8.78	5.28
Monobutyltin	0.003			ND	ND	ND	ND	ND	ND	ND	ND	ND	*	ND	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibutyltin	0.003			ND	ND	ND	ND	ND	ND	ND	ND	ND	*	ND	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tributyltin	0.003	0.42	0.0074	ND	ND	ND	ND	ND	ND	0.0102	ND	ND	*	ND	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0095	ND
Tetrabutyltin	0.003			ND	ND	ND	ND	ND	ND	ND	ND	ND	*	ND	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
September 15, 2005																														
Arsenic	0.015			1.18	1.17	1.17	1.19	*	1.15	1.16	1.17	1.11	1.22	1.18	*	1.2	1.23	1.24	1.28	1.35	1.25	1.17	1.13	1.21	1.13	1.18	1.26	1.25	1.79	1.17
Cadmium	0.01	40	8.8	2.85	0.026	0.03	0.026	*	0.036	0.043	0.018	0.018	0.03	0.025	*	0.023	0.026	0.047	0.067	0.037	0.096	0.024	0.019	0.022	0.015	0.019	0.104	0.032	0.017	0.022
Chromium	0.01	1100	50	0.33	0.33	0.33	0.31	*	0.32	0.29	0.34	0.33	0.3	0.32	*	0.41	0.3	0.3	0.33	0.28	0.3	0.3	0.3	0.3	0.3	0.29	0.31	0.36	0.33	0.4
Copper	0.01	4.8	3.1	0.146	0.746	1.03	0.927	*	3.16	2.19	0.372	0.378	1.04	1.03	*	0.682	0.96	1.69	1.3	1.32	2.06	1.13	1.11	1.15	1.07	0.97	1.25	1.18	1.33	0.633
Lead	0.01	210	8.1	0.255	0.389	0.224	0.208	*	0.768	0.457	0.409	0.098	0.142	0.08	*	0.057	0.083	0.441	0.209	0.834	0.479	0.097	0.194	0.337	0.053	0.165	0.496	0.456	0.145	0.222
Mercury	0.0005	1.8	0.94	0.0036	0.0046	0.004	0.003	*	0.0013	0.0023	0.0018	0.001	0.0016	0.0005	*	0.0012	0.0021	0.0032	0.003	0.0032	0.004	0.0023	0.0019	0.0019	0.0018	0.001	ND	0.0026	0.0025	0.0024
Nickel	0.01	74	8.2	0.2	0.313	0.4	0.376	*	0.376	0.46	0.338	0.335	0.344	0.361	*	0.308	0.343	0.464	0.434	0.383	0.517	0.429	0.34	0.351	0.27	0.364	0.575	0.459	0.331	0.367
Silver	0.01	1.9		ND	ND	ND	ND	*	ND	ND	ND	ND	ND	ND	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	0.01	90	81	2.78	4.06	4.77	6.66	*	8.7	7.77	3.28	3.49	5.34	5.34	*	4.55	4.86	13.6	33.6	8.58	58.9	5.2	6.34	7.14	5.6	6.29	6.77	9.48	6.54	4.26
Monobutyltin	0.003			ND	ND	ND	ND	*	ND	ND	ND	ND	ND	ND	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibutyltin	0.003			ND	ND	ND	ND	*	ND	ND	ND	ND	ND	ND	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tributyltin	0.003	0.42	0.0074	ND	ND	ND	ND	*	ND	ND	ND	ND	ND	ND	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrabutyltin	0.003			ND	ND	ND	ND	*	ND	ND	ND	ND	ND	ND	*	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
January 12, 2006																														
Arsenic	0.015			1.23	1.31	1.32	1.26	1.32	1.33	1.25	1.31	1.22	1.3	1.31	1.34	1.31	1.33	1.43	1.33	1.35	1.36	1.39	1.36	1.35	1.43	1.28	1.3	1.27	1.3	0.08
Cadmium	0.01	40	8.8	0.023	0.014	0.022	0.041	0.016	0.037	0.059	0.021	0.019	0.021	0.028	0.027	0.025	0.028	0.044	0.031	0.111	0.17	0.027	0.029	0.047	0.043	0.032	0.03	0.033	0.041	ND
Chromium	0.01	1100	50	0.37	0.33	0.34	0.31	0.31	0.3	0.28	0.34	0.32	0.35	0.3	0.33	0.27	0.29	0.32	0.34	0.33	0.35	0.28	0.27	0.26	0.26	0.29	0.28	0.3	0.3	0.39
Copper	0.01	4.8	3.1	0.47	0.434	1.3	0.838	0.539	1.53	2.04	0.679	0.558	0.861	0.785	1.21	1.02	1.08	1.61	1.27	1.25	1.78	1.18	1.21	1.19	1.02	1.03	1.27	1.01	1.23	0.62
Lead	0.01	210	8.1	0.3	0.033	ND	ND	ND	0.03	0.124	0.234	0.779	0.014	0.06	0.102	0.064	0.054	0.013	ND	0.051	0.434	0.189	0.093	0.102	0.523	0.051	0.158	0.186	0.083	0.046
Mercury	0.0005	1.8	0.94	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	0.01	74	8.2	0.244	0.265	0.492	0.41	0.314	0.361	0.474	0.295	0.313	0.396	0.369	0.488	0.445	0.427	0.616	0.57	0.75	1.3	0.504	0.459	0.482	0.475	0.474	0.661	0.632	0.437	0.2
Silver	0.01	1.9		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	0.01	90	81	2	3.45	5.86	4.94	4.25	9.18	11.2	2.62	3.43	4.03	4.4	5.79	5.88	5.37	6.12	4.78	5.56	9.1	8.52	8.51	9.16	8.34	7.83	11.9	13.1	41.3	4.09
Monobutyltin	0.003			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibutyltin	0.003			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0019	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tributyltin	0.003	0.42	0.0074	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0094	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrabutyltin	0.003			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
March 1, 2006																														
Arsenic	0.015			1.3	1.18	1.17	1.2	1.16	1.12	1.12	1.05	1.12	1.21	1.21	1.29	1.23	1.22	1.21	1.25	1.26	1.25	1.24	1.21	1.21	1.23	1.24	1.18	1.2	1.22	1.12
Cadmium	0.01	40	8.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.029	ND	ND	ND	0.011	ND	0.018	ND	ND	ND	ND	ND	ND	ND	0.006	ND
Chromium	0.01	1100	50	0.315	0.295	0.305	0.305	0.285	0.285	0.265	0.305	0.295	0.305	0.285	0.365	0.255	0.305	0.275	0.265	0.295	0.325	0.275	0.275	0.285	0.295	0.275	0.275	0.305	0.265	0.265
Copper	0.01	4.8	3.1	0.212	0.531	0.936	1.63	0.541	1.34	1.96	0.537	0.439	0.612	0.553	1.17	0.909	1.02	1.11	1.13	1.22	1.25	1.33	1.83	1.32	1.25	1.23	1.48	1.53	1.07	0.7
Lead	0.01	210	8.1	0.242	0.129	0.416	0.453	0.036	0.177	0.25	0.351	0.106	0.208	0.128	0.543	0.495	0.222	0.095	0.064	0.054	0.119	0.21	0.59	0.232	0.276	0.551	0.833	0.334	0.294	0.25
Mercury	0.0005	1.8	0.94	0.025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	0.01	74	8.2	0.225	0.33	0.46	0.6	0.299	0.32	0.373	0.283	0.344	0.455	0.278	0.637	0.403	0.35	0.634	0.557	0.439	0.544	0.363	0.407	0.392	0.39	0.378	0.467	0.499	0.372	0.373
Silver	0.01	1.9		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	0.01	90	81	1.33	2.01	5.92	9.04	2.76	9.44	12.9	3.43	2.2	4.11	5.37	7.24	7.29	7.92	7.49	6.38	6.47	8.74	6.84	13.6	10.6	8.09	10.7	15.1	15.3	8.38	2.94
Monobutyltin	0.003			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibutyltin	0.003			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tributyltin	0.003	0.42	0.0074	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0033	0.0074	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrabutyltin	0.003	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:
- * samples not collected at this station
- CMC Criteria Maximum Concentration
- CCC Criteria Continuous Concentration
- ND not detected
- RL reporting limit

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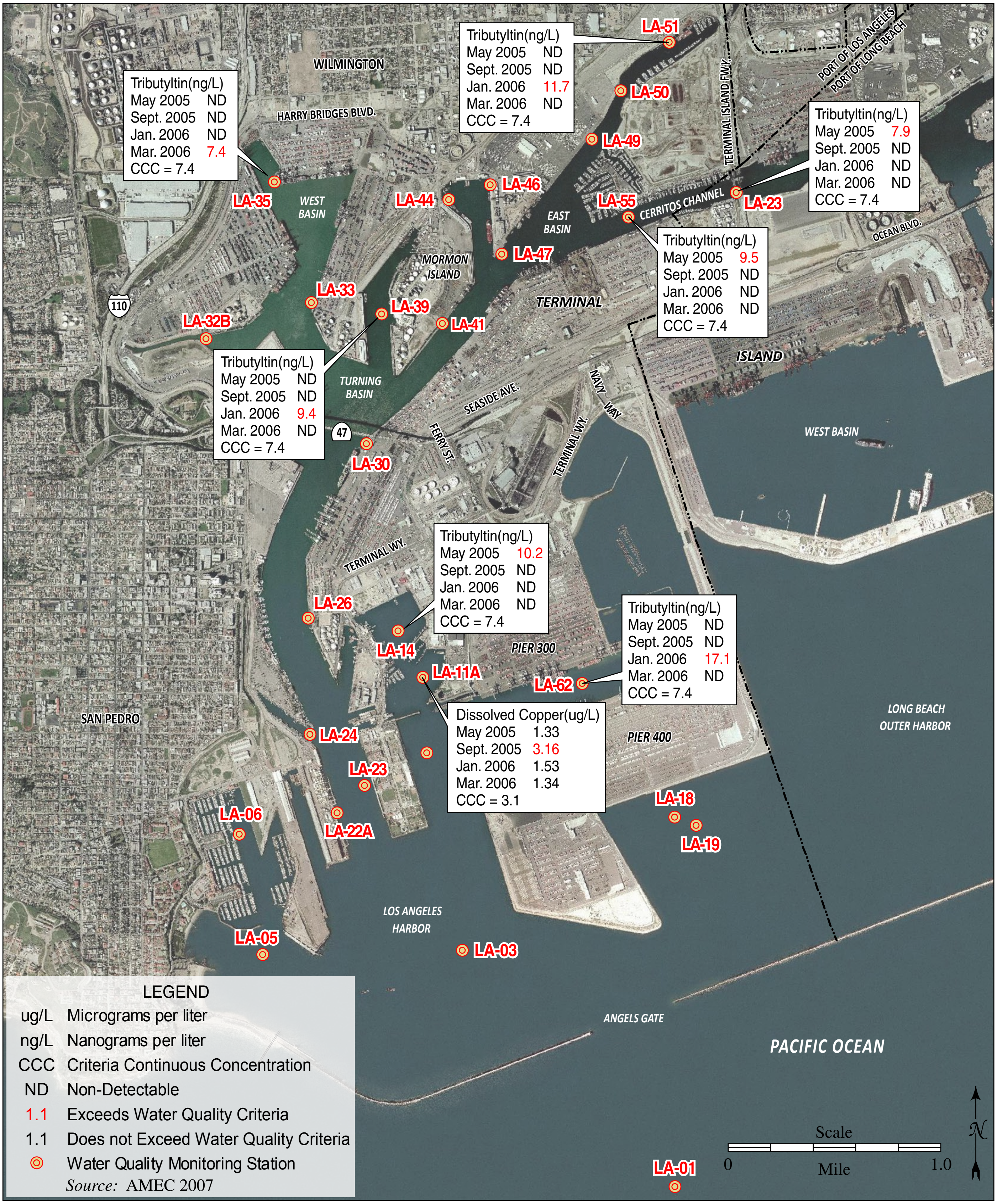

Figure 3.14-1. Port of Los Angeles Water Quality Criteria Exceedances for Metals and Tributyltin (TBT)

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2006). As noted above, water sampling near Pier 400 (Station LA03) conducted in 2005-2006 as part of the Port's Enhanced Water Quality Monitoring measured copper concentrations below 1 microgram per liter (µg/L), which is below the standard of 3.1 µg/L. Antifouling paints containing TBT as a biocide were also used historically, but they were banned in 1988 for use on ships less than 25 m in length and non-aluminum hulls by the Organotin Anti-fouling Paint Control Act (OAPCA). The International Convention on the control of Harmful Anti-fouling Systems on Ships (AFS Convention) prohibits the use of organotin in anti-fouling paints. Under the AFS Convention, parties to the Convention are required to prohibit the use of harmful anti-fouling systems on ships flying their flag, as well as ships not entitled to fly their flag but which operate under their authority, and all ships that enter a port, shipyard, or offshore terminal. The AFS Convention was scheduled to enter into force on September, 17, 2008. Because of the restrictions on the use of TBT-based coatings, ships docking at the Port's terminal facilities in the future will not represent an ongoing source for TBT to Port waters. ~~Because of the restrictions on the use of TBT-based coatings, and because many ships greater than 25 m in length do not have aluminum hulls, most of the ships docking at the Port's terminal facilities likely contain copper-based hull coatings.~~ Out of the 116 water samples collected at 29 locations throughout the Harbor complex during 2005-2006 as part of the Port's Enhanced Water Quality Monitoring program, only 8 samples (7%) contained measurable concentrations of TBT; whereas TBT was undetectable in all other samples. The locations where TBT was detected were mostly adjacent to marinas and/or boatyards. TBT was not detected in any of the water samples collected near Pier 400 (~~AMEC 2007~~see Figure 3.14-1).

Aquatic nuisance (i.e., non-native or invasive) species are another type of environmental contaminant that can be associated with shipping activities, such as ballast water discharges and underwater hull husbandry. Existing conditions for non-native aquatic species are discussed in Section 3.3 (Biological Resources).

3.14.2.3 Marine Sediments

Sediments in the vicinity of Pier 400 vary considerably in grain size composition (MEC and Associates 2002). Sediments on the southeast side of Pier 400 have 29 percent sand and 71 percent silt and clay while sediments in the ship channel to the west of Pier 400 have 7 percent sand and 93 percent silt and clay. The channel between Pier 400 and Pier 300 has 16 percent sand and 84 percent silt and clay. Shallow mitigation areas to the east, southwest, and north of Pier 400 have sediments that ranged from 37 to 80 percent sand and 20 to 63 ~~to 20~~ percent silt and clay with less than one percent gravel (MEC and Associates 2002). Proposed Project pipelines would be installed from Pier 400 to Terminal Island and cross the Dominguez Channel on existing bridges. No sediment data were collected at these specific locations (adjacent to Pier 400 Causeway and Dominguez Channel) during the 2000 Baseline surveys. Data from Consolidated Slip indicate that sediments in that area contained 9 percent sand and 91 percent silt and clay. Sediments in the Pier 300 Shallow Water Habitat on the west side of the pipeline route between Pier 400 and Terminal Island (on the causeway) ranged from 0.1 to 0.4 percent gravel, 50 to 79 percent sand, and 21 to 50 percent silt and clay. Bottom sediments near Berths LA-238, LB-86, and LB-76 contained silt plus clay proportions of 25 percent, 94 percent, and 69 percent, respectively. These differences between locations in sediment texture did not appear to be related to habitat type or dates of last dredging activities (MEC and Associates 2002).

Data in the Contaminated Sediment Task Force (CSTF) database that were compiled from multiple dredged sediment testing projects throughout the Los Angeles/Long Beach harbor complex demonstrate that concentrations of individual organic and inorganic contaminants can vary by up to several orders of magnitude (USACE 2004). At present, no numerical sediment quality objectives exist; however, sediment quality objectives are being developed by the State Water Resources Control Board (SWRCB). ~~Therefore, ~~S~~s~~ediment quality typically is characterized by comparing measured bulk concentrations to published guidelines (Long et al. 1995; USEPA and ~~/~~USACE 1991; USEPA 2000) such as:

- Effects Range-~~–~~Low (ERL) = concentrations in bulk sediments below which adverse biological effects are not expected
- Effects Range-~~–~~Median~~um~~ (ERM) = concentrations in bulk sediments above which adverse biological effects are expected.

The Section 303(d) list of water quality impaired segments in Table 3.14-1 includes the Outer Harbor (SWRCB 2006). Approximately 4,042 acres (1,636 ha) have DDT and PCBs in the sediments that have accumulated from nonpoint sources. Other impaired waters are located at Cabrillo Beach, Cabrillo Marina, Fish Harbor, and in the Inner Harbor over 3,500 feet (about 1,070 m) from the site of the proposed Project Marine Terminal. The Port conducted sediment sampling in 2006 (Weston Solutions 2007) at locations throughout the San Pedro Bay Ports, including two locations near Pier 400 (LAO-8 and LAO-9). Based on these results, bottom sediments near the proposed Project site consist of 4 to 7 percent sands, 61 to 66 percent silts, and 30 to 32 percent clays. The sediments contain elevated concentrations (i.e., above the corresponding ERL but below the ERM levels) of arsenic, copper, mercury, and nickel, while concentrations of the DDT residue, DDE, exceed the ERM value (Weston Solutions 2007).

3.14.2.4 Oceanography

3.14.2.4.4 Flooding

Pier 400, including the Marine Terminal site and Tank Farm Site 1 for the proposed Project, has not been mapped for flood risk by the Federal Emergency Management Agency (FEMA). (FEMA has identified and mapped flood hazards to support the National Flood Insurance Program. The 100-year flood zone is defined as the land that would be inundated by a flood having a one percent chance of occurring in a given year.) However, waters of the Harbor near land, plus some of the landfill margins in other areas of the Harbor, are mapped within the 100-year flood zone. Adjacent areas on the landfills are generally within the 500-year flood zone (0.2 percent chance of flooding in a given year). The proposed Project area was formerly open water, which has been modified by filling, resulting in an elevation of 16 ft (4.8 m) above MSL where Tank Farm Site 1 would be located. The containment dike for Pier 400 is higher than Tank Farm Site 1, while the proposed Marine Terminal (berth and administrative building locations) would be at the top of the dike. The developed areas on Pier 400 are predominantly paved, so minimal surface water infiltration would occur during flooding, whereas Tank Farm Site 1 is currently unpaved. Harbor waters surround Pier 400, but no freshwater drainages flow on or near Pier 400. Tank Farm Site 2 on Terminal Island is outside the mapped 500-year flood zone ~~(0.2 percent chance of flooding in a given year)~~.

The only sources of flooding at the proposed Project facility sites within the 100-year and 500-year flood zones would be storm surge, tsunami, or seiche. The latter two sources are discussed in Section 3.5, Geology. Rainfall events that result in runoff volumes exceeding the capacity of the storm drains could also cause temporary, localized ponding until the runoff drains away.

3.14.3 Applicable Regulations

3.14.3.1 Clean Water Act (CWA)

The CWA provides for the restoration and maintenance of the physical, chemical, and biological integrity of the nation's waters. The act sets up a system of water quality standards, discharge limitations, and permit requirements. Activities that have the potential to discharge dredge or fill materials into waters of the U.S. are regulated under Section 404 of the CWA, as administered by the U.S. Army Corps of Engineers (USACE). A Section 401 Water Quality Certification or waiver from the governing LARWQCB is also necessary for issuance of Section 404 permits. Discharges of pollutants must be authorized through either individual or general NPDES permits (Section 402). These permits can include Waste Discharge Requirements (WDRs) and SWPPPs. Under Section 303(d), the State is required to list water segments that do not meet water quality standards and to develop action plans, called TMDLs, to improve water quality. The SWRCB and its regional water quality control boards (RWQCB) implement sections of the CWA through the Water Quality Control Plan, Standard Urban Stormwater Mitigation Plans, and permits for discharges.

The USEPA has proposed requirements for an NPDES permit governing vessel discharges (Vessel General Permit or VGP) that would apply to owners and operators of commercial vessels and large recreational vessels (greater than 74 feet or 24.08 meters) operating in waters of the U.S. Previously, discharges incidental to the normal operation of commercial vessels were excluded from NPDES permitting. However, in response to a District Court decision, effective September 30, 2008, discharges incidental to the normal operation of vessels will become subject to the CWA Section 301(a) prohibition against discharge of a pollutant unless covered under an NPDES permit. Consequently, the USEPA has proposed the VGP authorizing discharges of a specified amount under certain conditions. The VGP specifies technology-based effluent limits for 28 categories of vessel discharges, which are intended to control seven major groups of pollutants: aquatic nuisance species; conventional pollutants (e.g., biochemical oxygen demand; oil and grease, pH, and total suspended solids); metals; nutrients; pathogens; and other toxic and non-conventional pollutants with toxic effects. The VGP also incorporates the Coast Guard mandatory ballast water management and exchange standards and adds some additional requirements for ballast water management. The VGP includes non-numeric effluent limits for discharges because the constituent concentrations in properly controlled discharges vary widely; it is not practical to rely on numerical limits to achieve the appropriate level of control; and developing numerical limits is considered infeasible at this time (USEPA 2008). Consequently, many of the non-numeric discharge limits are based on specific behaviors or best management practices (BMPs). Discharge types covered under the VGP, along with the corresponding effluent limitations, are summarized in Table 3.14-3.

Table 3.14-3. Summary of the Discharge Types and Effluent Limits Covered under the NPDES Vessel General Permit (VGP)

Discharge Type	*Source*	*Contaminants*	*Effluent Limits*	*Basis*
Anti-fouling leachate from hull coatings	Antifouling paints applied to the wetted surface of ship hulls to prevent attachment of aquatic organisms.	Biocides, especially copper, zinc, and tributyltin (TBT).	Zero discharge of TBT (consistent with the 1988 Organotin Anti-Foulant Paint Control Act). For other anti-fouling paints, the operator is required to implement the following BMPs: select hull coatings to minimize effects and apply according to FIFRA instructions; minimize the use of coatings that are more toxic than needed; match the coating's strength to the drydock cycles.	Technology-based effluent limits based on BMPs because numerical limits are infeasible.
Aqueous film forming foam (AFFF)	Firefighting agent that is discharged periodically during equipment maintenance, certification, or training.	Fluorosurfactants and/or fluoroproteins.	Operators must conduct maintenance and training activities as far from shore as possible, and discharges within 1 nautical mile (nm) of shore are prohibited unless for emergency purposes. Operators must use less toxic, non-fluoridated substitutes for training when practicable. No maintenance or training discharges are allowed in port. Requirements do not apply when the discharge occurs during a fire emergency.	Technology-based effluent limits based on BMPs because numerical limits are infeasible.
Ballast water	Water taken on intentionally to assist with vessel draft, buoyancy, and stability.	Rust inhibitors, flocculent materials, epoxy coating materials, metals, and invasive species.	Ballast waters must be managed in accordance with U.S. Coast Guard and other requirements pursuant to CWA Sections 308, 402(a)(2), 402(g), and 40 CFR 122, 43(a). Mandatory exchange or flushing requirements depend on location and distance of travel route.	U.S. Coast Guard requirements in 33 CFR Part 151, Subparts C and D and additional requirements pursuant to CWA Sections 308, 402(a)(2), 402(g), and 40 CFR 122, 43(a), and management practices using BPT, BCT, and BAT levels of control. Numerical treatment standards not required because they are not practicable, achievable, or available at this time.

Table 3.14-3. Summary of the Discharge Types and Effluent Limits Covered under the NPDES Vessel General Permit (VGP) (continued)

Discharge Type	*Source*	*Contaminants*	*Effluent Limits*	*Basis*
Bilge water	Water and other residues that accumulate in a compartment of the vessel's hull.	Oil and grease, volatile and semi-volatile organic compounds, inorganic salts, and metals.	Operators required to minimize discharge volumes by practicing proper maintenance. Discharges must adhere to all requirements under 40 CFR Parts 110, 113, 116, and 117 and 33 CFR 151.10. Vessels larger than 400 gross tons that regularly leave waters of the U.S. cannot discharge bilge waters within 1 nm of shore unless due to safety risk.	Technology-based effluent limits because numerical limits are infeasible.
Bioler/ economizer blowdown	Generated to control anti-corrosion and anti-scaling treatment concentrations and to remove sludge from boiler systems.	Water from the boiler system, which may include metals and phthalates, released below the waterline.	Vessels larger than 400 gross tons that leave the territorial seas at least once per week cannot discharge within 3 nm of shore, except for emergencies.	Minimize discharges to nearshore or port receiving waters.
Cathodic protection	Sacrificial anodes used to prevent corrosion of hull or metal structures.	Metals, typically zinc, magnesium, or aluminum.	When available, impressed current cathodic protection (ICCP) should be used in lieu of sacrificial anodes. For sacrificial anodes, the operator should use the least toxic anode material, anodes should be used in conjunction with corrosion control coatings, and anodes must not be used more than necessary.	Technology-based effluent limits based on BMPs because numerical limits are infeasible.
Chain locker effluent	Water that collects in the below-deck storage area during anchor retrieval.	Rust, paint chips, grease, and other residues, zinc, and invasive species.	Operators should implement the following BMPs: routinely and properly clean the anchor when it is brought out of the water; ocean-going vessels are required to clean out chain lockers in open waters (more than 50 nm from shore).	Numerical limits are infeasible. BMPs are considered reasonable for the general permit.

Table 3.14-3. Summary of the Discharge Types and Effluent Limits Covered under the NPDES Vessel General Permit (VGP) (continued)

Discharge Type	*Source*	*Contaminants*	*Effluent Limits*	*Basis*
Controllable pitch propeller hydraulic fluid	Hydraulic oil leaked from the controllable pitch propeller.	Hydraulic oil	Operators should implement the following BMPs: maintain the propeller seals; perform maintenance when the vessel is in drydock. If propeller maintenance is required while waterborne, an oil boom should be deployed and spill cleanup materials available.	Numerical limits are infeasible. BMPs are considered reasonable for the general permit.
Deck washdown and runoff	Precipitation, deck cleaning, and wave wash.	Detergent, soap, and on-deck residues.	Operators required to minimize discharges from deck drainage and implement BMPs such as: maintain deck and bulkhead areas from corrosion; use environmentally safe cleaning products; collect deck drainage following fueling operations or a spill.	Technology-based effluent limits because numerical limits are infeasible.
Distillation and reverse osmosis brine	Distillation effluent from reverse osmosis system.	Brine solution with anti-scaling and acidic cleaning compounds; metals, nitrogen, and phosphorus.	Operators required to keep the reject water from contacting materials, products, or wastes which may contaminate the brine discharge with environmentally harmful substances.	Returning concentrated seawater to receiving waters should not cause environmental harm if done in areas where brine can be diluted by receiving water.
Elevator pit effluent	Liquids and debris that collects in a pit at the bottom of the elevator shaft.	Lubricants, oil, cleaning solvents, metal residues and other debris.	Discharges are not permitted except in emergency situations and only if treated by an oily water separator to meet the treatment level of 15 ppm (EPA Method 1664).	Discharges of elevator pit effluent not essential to safe operation of a vessel, and the effluent can be held for proper disposal.

Table 3.14-3. Summary of the Discharge Types and Effluent Limits Covered under the NPDES Vessel General Permit (VGP) (continued)

Discharge Type	*Source*	*Contaminants*	*Effluent Limits*	*Basis*
Exhaust gas scrubber (EGS) washwater discharge	Washwater effluent from operating or cleaning the exhaust gas cleaning systems for marine diesel engines.	Residues of nitrous oxides, sulfur oxides, and particulate matter emissions, with traces of oil, PAHs, metals, and nitrogen.	To reduce the volumes of EGS washwater discharges, operators are required to follow all current EPA standards to control emissions from Category 3 marine engines. Discharges of sludge from EGS washwater are prohibited.	These requirements are considered reasonable because the current volume of EGS washwater discharges is low due to the limited number of vessels using exhaust gas cleaning systems.
Firemain systems	Wash waters from secondary uses of the firemain systems.	Metals from corrosion and erosion of the firemain piping system and other debris.	Operators should implement the following BMPs: minimize or reduce discharge volumes while in port, with the exception of use for washing anchor chain and anchor in accordance with the anchor washdown requirements of the permit.	Minimize discharges to nearshore or port receiving waters.
Freshwater layup	Freshwater that is used to replace seawater in the propulsion plant or generator cooling system.	Residual saltwater, tap water, and disinfectants like chlorine or chloramine.	Operators should implement the following BMPs: minimize use of treatment chemicals to the lowest effective level by following application rates provided by the treatment manufacturer.	Minimize discharge volumes.
Gas turbine wash water	Waste waters from cleaning gas turbines.	Cleaning solvents, naphthalene and other hydrocarbons.	Discharges of gas turbine wash water are not allowed, unless it is not possible to collect the wash water separately or perform washes outside of 3 nm from shore. If wash water cannot be collected separately, it must be treated with an oily water separator before discharge.	Under most circumstances, it should be possible to collect and hold this discharge for onshore disposal or dispose in waters not subject to the permit.

Table 3.14-3. Summary of the Discharge Types and Effluent Limits Covered under the NPDES Vessel General Permit (VGP) (continued)

Discharge Type	*Source*	*Contaminants*	*Effluent Limits*	*Basis*
Graywater	Waste waters from showers, baths, sinks, and laundry facilities.	Nutrients, pathogens, soaps, detergents, metals, and organics.	Operators should implement the following BMPs: minimize the production of graywater; discharge graywater at distances greater than 1 nm from shore while the vessel is underway; use soaps and detergents that are non-toxic and biodegradable.	Non-toxic soaps are those that do not exhibit potentially harmful characteristics as defined by the Consumer Product Safety Commission regulations at 16 CFR Chapter II, Subchapter C, Part 1500.
Graywater mixed with sewage from vessels	Graywater mixed with sewage into one effluent stream.	Pathogens, nutrients, detergents.	All graywater discharges containing sewage must meet the requirements for graywater discharges, in addition to discharge minimization requirements, prohibitions, and standards.	Must meet the discharge limitation requirements under Part 2 of VGP as well as requirements applicable to sewage (i.e., CWA Section 312).
Motor gasoline and compensating discharge	Ambient waters added to fuel tanks to compensate for weight loss; discharged when the vessel refills the tanks.	Petroleum hydrocarbons from gasoline residues.	Operators should implement the following BMPs: discharges should be minimized when the vessel is in port by disposing the wastewater onshore.	BMP limitations are based on the vessel's ability to treat the wastewater using an oily water separator to oil limitations of less than 15 ppm.
Non-oily machinery wastewater	Wastewaters from non-oily machinery.	Conventional pollutants, metals, and organics.	Non-oily machinery wastewater can be discharged if control measures are implemented to keep waste stream free of oil and additives that are toxic and bioaccumulative. Alternatively, wastewaters can drain to the bilge.	Numerical limits are infeasible. BMPs are considered reasonable for the general permit.

Table 3.14-3. Summary of the Discharge Types and Effluent Limits Covered under the NPDES Vessel General Permit (VGP) (continued)

Discharge Type	*Source*	*Contaminants*	*Effluent Limits*	*Basis*
Refrigeration and air-condensate discharge	Condensate from cold refrigeration or evaporator coils collected in a drainage system.	Detergents, seawater, food residue, and metals.	This waste stream must be kept segregated from oily wastes and safely discharged, channeled, and collected for temporary holding until disposed onshore or drained to the bilge.	BMPs eliminate the need for discharging wastes.
Rudder bearing lubrication discharge	Discharges due to leaks around the rudder mechanism.	Oil and grease.	This discharge is prohibited.	BMPs (proper seals and maintenance) eliminate the need for discharging wastes.
Seawater cooling overboard discharge	Ambient water circulated through the cooling system to absorb heat.	Hydraulic or lubricating oils and metals leached or eroded from pipes.	Operators should implement the following BMPs: use shore power when in port; clean piping (strainer plates) while at sea (more than 50 nm from shore) to remove fouling organisms.	It is infeasible with existing vessel design to prohibit discharge. However, discharge volumes can be reduced by using shore power when vessel is in port.
Seawater piping biofouling protection	Anti-fouling compounds added to the seawater cooling systems.	Anti-fouling compounds such as sodium hypochlorite and other free chlorine and reaction products.	Biofouling compounds must be used according to FIFRA label; discharges of other compounds that are banned for use in the U.S. are prohibited. Also, operators should implement the following BMPs: use minimum amounts of biocide needed to control fouling, and, if an oxidizing biocide is used, periodically monitor residual oxidant concentrations in effluent to ensure discharge amounts are not excessive.	Environmental regulations established under FIFRA and appropriate BMPs.
Small boat engine wet exhaust	Cooling waters from small engines on vessel launches.	Hydrocarbons and metals, nitrogen oxides, particulates.	Operators should implement the following BMPs: ensure engines are maintained in proper working order; and use low sulfur or alternative fuels.	BMPs are considered reasonable for the general permit.

Table 3.14-3. Summary of the Discharge Types and Effluent Limits Covered under the NPDES Vessel General Permit (VGP) (continued)

Discharge Type	*Source*	*Contaminants*	*Effluent Limits*	*Basis*
Stern tube oily discharge	Discharges from the protective seals or bearings in the propeller shaft.	Lubricating oil.	Operators should implement the following BMPs: maintain seals or fittings to prevent leakage; except in emergencies, repairs should be performed only in dry dock. If emergency repairs must occur in water, an oil boom and spill equipment must be used to contain potential discharge.	BMPs are considered reasonable for the general permit.
Sonor dome discharge	Water drained from the housing for the sonar and navigation equipment.	Metals, anti-fouling agents, rubber, and plastic leaching from components.	Discharges of water from inside the sonar dome are prohibited, and bioaccumulative biocides should not be used on the exterior of the domes when other viable alternatives are available.	No BMPs or feasible treatment technologies are available.
Underwater ship husbandry discharges	Incidental loss of fouling organisms and paint residues from in-water grooming, maintenance, and repair activities.	Metals from hull coatings, invasive species.	Extensive hull repairs should be done in dry dock when feasible. Operators must take all precautions to minimize discharges of raw, toxic, or oily materials while performing underwater vessel repairs, and discharges must comply with all applicable federal laws. Operators should implement the following BMPs: use soft brushes when cleaning hulls; when available, use vacuum cleaning technologies in conjunction with mechanical scrubbing to collect removed materials for onshore disposal; minimize the transport of attached living organisms by preventing attachment using appropriate anti-fouling paint and frequently removing fouling organisms from the hull.	No alternatives to underwater ship husbandry, viable treatment technologies, or specific practices exist.

Table 3.14-3. Summary of the Discharge Types and Effluent Limits Covered under the NPDES Vessel General Permit (VGP) (continued)

Discharge Type	*Source*	*Contaminants*	*Effluent Limits*	*Basis*
Welldeck discharges	Waters from precipitation, washdowns, and leaks or spills from the floodable platform used for launching small vessels or cargo.	Residues, graywater, oil and grease, metals, organic debris, and marine organisms.	Operators are required to practice good housekeeping to ensure no garbage or wastes that can cause a visible sheen are discharged. If these wastes are present, they must be retained for onshore disposal.	Control measures can reduce some of the potential impacts from welldeck discharges. The permit distinguishes what type of waste may be discharged as welldeck discharges.

3.14.4 Impacts and Mitigations

3.14.4.3 Project Impacts and Mitigation

The assessment of impacts for the proposed Project and each of the alternatives includes the assumptions, based on regulatory controls, that the project would include the following:

- A Section 404 (of the CWA) and Section 10 (of the River and Harbor Act) permit from the USACE for wharf construction activities in waters of the Harbor;
- A Section 401 (of the CWA) Water Quality Certification from the LARWQCB for wharf construction that contains conditions including standard WDRs;
- An individual NPDES permit for storm water discharges or coverage under the General Construction Activity Storm Water Permit will be obtained by the tenant for the proposed Project. This permit will include preparation of a project-specific SWPPP with BMPs to prevent runoff of pollutants to Harbor waters as described in Section 3.14.3. The SWPPP would contain the following measures:
    - Equipment shall be inspected regularly (daily) during construction, and any leaks found shall be repaired immediately;
    - Refueling of vehicles and equipment shall be in a designated, contained area;
    - Drip pans shall be used under stationary equipment (e.g., diesel fuel generators), during refueling, and when equipment is maintained;
    - Drip pans that are in use shall be covered during rainfall to prevent washout of pollutants;
    - Construction and maintenance of appropriate containment structures to prevent offsite transport of pollutants from spills and construction debris; and
    - Monitoring to verify that the BMPs are implemented and kept in good working order.
- Other standard operating procedures and BMPs for Port construction projects would be followed, such as: basic site materials and methods (02050); earthworks (02300); excavating, stockpiling, and disposing of chemically impacted soils (02111); temporary sediment basin (ESC 56); material delivery and storage (CA010); material use (CA011); spill prevention and control (CA012); solid waste management (CA020); contaminated soil management (CA022); concrete waste management (CA023); sanitary-septic waste management (CA024); and employee-subcontractor training (CA040);
- A Debris Management Plan and SPCC Plan would be prepared and implemented prior to the start of construction activities associated with the proposed Project;

- The tenant will obtain and implement the appropriate stormwater discharge permits for operation of the sites; and
- The tenant will comply with Port Marine Oil Terminal lease conditions that include provisions for the inspection, control, and cleanup of leaks from aboveground tank and pipeline sources (see Appendix E).

Other assumptions are included in the impact analysis below where applicable.

3.14.4.3.1 Proposed Project

3.14.4.3.1.1 Construction Impacts

Impact WQ-1.1: Construction of proposed Project facilities would not result in discharges which would create pollution, contamination, or nuisance as defined in section 13050 of the CWC, or cause regulatory standards to be violated in harbor waters.

Construction of the proposed Project facilities would not require dredge or fill operations or direct waste discharges to Harbor waters other than episodic discharges of stormwater and hydrostatic test waters under a NPDES permit. In-water construction activities for the proposed Project would require installation of pier pilings at Berth 408 (~~150 or 258 depending on the composition of the mooring~~92 steel pilings and 44 concrete pilings ~~dolphin piles~~), with placement of new rock around the base on the pilings, using a barge-mounted crane and pile driver. Wharf construction would occur over a period of about 16 months (Figure 2-11). Although it would not result in any waste discharges, piling installation and rock placement would suspend bottom sediments into the water column, causing localized and temporary turbidity in near-bottom waters. Permits for in-water construction activities for the proposed Project (e.g., Section 401 and Section 404) could require placement of a silt curtain around the pile driving operation. If a silt curtain is deployed, horizontal dispersion of suspended sediments would be limited to the area enclosed by the silt curtain. If a silt curtain is not used, a portion of the suspended particles could be transported horizontally by tidal currents and eventually deposited in adjacent areas of the Harbor. Regardless, resuspended sediments would settle rapidly (within hours) and turbidity levels would decrease to ambient conditions once activities were completed. The amount of sediment disturbed by pile installation and rock placement, and the potential for subsequent sediment accumulation in other areas of the Harbor, would be negligible. DO levels in near-bottom waters could be reduced in the immediate vicinity of the pile installation activities due to the introduction of suspended sediments and associated oxygen demand on the surrounding waters. Reductions in DO concentrations, however, would be short-term and localized and not expected to persist or cause detrimental effects to biological resources. Therefore, reductions in DO levels associated with Project construction activities would not create nuisance or cause regulatory standards to be violated in Harbor waters. Pier pilings would be pre-stressed concrete or steel and would not contain chemical preservatives (e.g., creosote) or other soluble materials that could leach into Harbor waters. Therefore, Berth 408 pilings would not represent a source of contaminants to Harbor waters during the construction or operation phases of the proposed Project. In-water construction activities associated with installation of pier pilings and rock placement around the pilings would not promote erosion of the shoreline or bottom sediment because the pilings would be installed using pile driving, which would cause minimal disturbances to bottom sediments.

A support vessel, pile-driving barge, barges for materials, and tugs, as well as equipment on the barges (pile-driver, cranes, generators) that would be used to assist with construction of the wharf, would contain fuel tanks, lube oils, and hydraulic fluids that have the potential to leak or spill into the Harbor. Leaks or spills from equipment working in or over the water during construction of proposed Berth 408 would have a very low probability of occurring based on experience from similar work in the past. Implementation of normal construction standards, including NPDES BMPs, and all other above mentioned regulations and practices, would minimize the potential for an accidental release of fuels during construction activities. Also, support vessel construction activity would not involve the handling of hazardous materials, and refueling of the vessel would be done according to the Port's policies. Maximum potential spill volumes would also be considered negligible (see Section 3.12.4.3.1.1).

Accidents or spills from in-water construction equipment could result in direct releases of petroleum materials or other contaminants to Harbor waters. The magnitude of impacts to water quality would depend on the spill volume, characteristics of the spilled materials, and effectiveness of containment and cleanup measures. Construction contractors are responsible and liable for any accidental spills (e.g., hydraulic fluid leaks and fuel spills) during operations, including spills from the barge, tugs, etc. Equipment is generally available onsite to respond to such accidental spills, and the general spill response practice is to deploy floating booms (by chase boats) made of material that would contain and absorb the spill. Depending on the size of the spill, vacuums/pumps may be required to assist in the cleanup.

Spill prevention and cleanup procedures for the proposed Project would be addressed in a SPCC plan that would be prepared in accordance with Port guidelines and implemented by the construction contractor prior to the notice to proceed with construction operations. The plan would define actions to minimize potentials for spills and provide efficient responses to spill events to minimize the magnitude of the spill and extent of impacts. Upland construction activities associated with the proposed Project could result in temporary impacts on surface water quality through runoff of eroded soils, asphalt leachate, concrete washwater, and other construction materials. No upland surface water bodies exist within the proposed Project boundaries. Thus, project-related impacts to surface water quality would be limited to storm water runoff and, eventually, waters of the Harbor that receive runoff from the watershed. Runoff from onshore construction sites would enter the Harbor primarily through storm drains. Runoff would occur during storm events, although some runoff could occur from water use as part of construction activities, such as dust control.

Portions of the proposed Project area have been used historically for industrial purposes, including petroleum production and storage, and surface soils disturbed by pipeline installation could be contaminated with petroleum hydrocarbons, volatile organic hydrocarbons, PAHs, and metals (Tetra Tech 2007). The magnitude and distribution of soil contaminants are discussed in Section 3.7 (Groundwater and Soils). As discussed in Section 3.14.4.3, BMPs for handling and management of contaminated soils, such as Excavating, Stockpiling, and Disposing of Chemically Impacted Soils (02111) and Contaminated Soil Management (CA022), would be implemented to prevent erosion or offsite transport of stockpiled soils. Therefore, pipeline installation using trenching would not represent a risk for loss of any contaminated soils directly to the Harbor.

Horizontal directional drilling (HDD) would be used for installing some upland portions of the pipeline segments. HDD would not be used to install pipelines beneath any of the surface waters, such as Dominguez Channel or the Pier 400 Causeway; instead, at these locations the pipeline would be routed to existing bridge structures. However, some portions of the proposed pipeline route are immediately adjacent to waterways (Morman Island and the upper end of Consolidated Slip), and pipeline installation operations using HDD would represent a potential risk from loss of drilling wastes to the Harbor.

HDD would require use of drilling muds to lubricate the drill bit, stabilize the drill hole, and circulate the cuttings. The boring operation would generate drilling mud and cuttings wastes, which would be collected, contained, and transported to an approved off-site disposal area. The drilling equipment is a closed system, which minimizes potentials for spills or leaks of drilling fluids and wastes to the environment. However, it is possible for drilling fluids to escape (i.e., "frac-out") from the bore hole through small fractures in the formation. If the fractures extend from bore holes to the adjacent waterway, it would be possible for drilling fluids to leak from the bore hole into the Harbor. Conditions leading to a potential frac-out would be minimized or avoided by careful monitoring of returns of the drilling fluid to the entry point or changes in the pressure of the drilling fluid. If a loss of fluid volume or pressure is detected, drilling may be stopped or slowed to allow close observation for any evidence of a surface release in the Harbor. If a release is discovered, the driller would take measures to reduce the quantity of fluid released by lowering drilling fluid pressures and/or thickening the drilling fluid. However, both would depend on geologic conditions. **MM GW-5** (Frac-Out Prevention; Section 3.7, Groundwater) would require geotechnical investigations in the areas of HDD boreholes to assess the potential for frac-outs and preparation of a Frac-Out Contingency Plan, which is expected to reduce the residual impacts from a frac-out to less than significant.

The water-based drilling fluid that would be used during the HDD operation would contain an inert, natural clay, bentonite (sodium montmorillinite). Bentonite is a major ingredient of most water-based drilling muds used for offshore oil and gas development drilling operations (Neff 1987). It is considered inert and non-toxic, and has been approved for use by USEPA. Bentonite may contain elevated concentrations (i.e., relative to natural marine sediments) of barium and other metals that are present as trace impurities in the clay. However, these metals are in the form of insoluble salts and, therefore, do not readily dissolve in seawater and are not biologically available. The acute toxicity of bentonite is very low (96-hour LC_{50} greater than 7,000 mg/L; Neff 1987). However, at high concentrations bentonite can cause some impacts on organisms by physical abrasion or clogging.

Drilling fluids released to the Harbor via frac-out would be dispersed by tidal currents. The clay component of the drilling fluids eventually would settle to the bottom. The effect on the chemical and grain size properties of the bottom sediments, or potential harm to marine organisms, is expected to be negligible. Even though the likelihood of a drilling fluid release is low, monitoring during HDD operations would be conducted to avoid or minimize potential impacts.

The WDRs for storm water runoff in the County of Los Angeles and incorporated cities covered under NPDES Permit No. CAS004001 (13 December 2001) require implementation of runoff control from all construction sites. Prior to the start of construction activities for the proposed Project, the tenant would prepare a pollutant control plan that specifies logistics and schedule for construction activities that will minimize the potential for erosion and standard practices that include monitoring and maintenance of control measures. Control measures would be installed at the construction sites prior to ground disturbance and staging areas, and these measures would be maintained throughout the Project construction phase. Implementation of all conditions of proposed Project permits would minimize project-related runoff into the Harbor and potential impacts to water quality.

Standard stormwater BMPs, such as erosion controls, soil barriers, sedimentation basins, site contouring, and others would be used during construction activities to minimize runoff of soils and associated contaminants. Erosion controls are used during construction to reduce the amount of soils disturbed and to prevent disturbed soils from entering runoff. Erosion controls can include both logistical practices, such as scheduling construction during seasons with the least potential for erosion (e.g., non-storm seasons), and sediment control practices. Typically, erosion control programs consist of a system of practices that are tailored to site-specific conditions. The combined effectiveness of the erosion and sediment control systems is not easily predicted or quantified (USEPA 1993).

Sediment basins and sediment traps are engineered impoundments that allow soils to settle out of runoff prior to discharge to receiving waters. Filter fabric fences and straw bale barriers are used under different site conditions to filter soils from runoff. Inlet protection consists of a barrier placed around a storm drain drop inlet to trap soils before they enter a storm drain. One or more of these types of runoff control structures would be placed and maintained around the construction area to minimize loss of site soils to the storm drain system. As another standard measure, concrete truck wash water and runoff of any water that has come in contact with wet cement would be contained on site so that it does not runoff into the harbor.

Most BMPs used to treat urban runoff are designed to remove or reduce trash, nutrients, or contaminants associated with suspended particles (Brown and Bay 2007). Studies by Caltrans (2004) determined that BMPs that used infiltration or sand filtration methods were most effective at reducing levels of suspended solids, nutrients, and metals in runoff. USEPA (1993) reported that measures such as sedimentation basins, sediment traps, straw bale barriers, and filter fabric fences were about 60 to 70 percent effective at removing soils from runoff. Although the specific BMPs that would be used at the proposed Project site have not yet been designed, it is reasonable to estimate that erosion and runoff control BMPs would be 60 percent effective or more at removing soils from runoff that occurred during construction. Additionally, the amount of soils subject to erosion would be limited because the site is flat and runoff patterns can be easily controlled by grading and temporary berms and the duration and intensity of rainfall events in southern California typically are limited. Therefore, the amount of soil loading to the Harbor from runoff during the construction phase of the proposed Project would be minimal.

In addition to soils, runoff from a construction site could contain a variety of contaminants, including metals and PAHs, associated with construction materials, stockpiled soils, and spills of oil or other petroleum products. Specific concentrations and mass loadings of contaminants in runoff would vary greatly depending on the amounts and composition of soils and debris carried by the runoff. Also, the phase of the storm event and period of time since the previous storm event would affect storm water quality because contaminant loadings typically are relatively higher during the initial phases (first flush) of a storm.

Spills associated with construction equipment, such as oil/fluid drips or gasoline/diesel spills during fueling, typically involve small volumes that can be effectively contained in the work area and cleaned up immediately (Port of Los Angeles Spill Prevention and Control Procedures [CA012]). Other spills of fuels and lubricants from construction equipment on land would have a very low potential to occur and enter storm drains, including the rainy season, due to implementation of BMPs in the project-specific SWPPP and assuming the following are included in the SWPPP:

- Equipment shall be inspected regularly (daily) during construction, and any leaks found shall be repaired immediately;
- Refueling of vehicles and equipment shall be in a designated, contained area;
- Drip pans shall be used under stationary equipment (e.g., diesel fuel generators), during refueling, and when equipment is maintained;
- Drip pans that are in use shall be covered during rainfall to prevent washout of pollutants; and
- Monitoring to verify that the BMPs are implemented and kept in good working order.

In addition to stormwater discharges, the other construction-related discharge associated with the proposed Project would be from hydrostatic waters. Once the proposed Project pipelines are installed, they will be hydrostatically tested. The test waters would be collected, treated to remove contaminants, and then discharged under a Project NPDES permit. Discharges of treated test waters would not exceed water quality standards or objectives.

CEQA Impact Determination

Construction activities associated with the proposed Project would not result in discharges that create pollution, contamination, or nuisance, or cause regulatory standards to be violated. Some minor changes to water quality would occur as a result of installing pilings, but these changes would not affect beneficial uses. Therefore, construction activities would have less than significant impacts on water quality under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Less than significant impact.

NEPA Impact Determination

Construction of the proposed Project would have less than significant impacts on water quality under NEPA because in-water and upland activities would not result in discharges that create pollution, contamination, or nuisance, or cause regulatory standards to be violated in harbor waters. The areas of Tank Farm Site 1 and Tank Farm Site 2 would be paved as part of the NEPA Baseline; thus, under NEPA this paving would not contribute to water quality impacts from the proposed Project. This represents a minor difference in the impact determinations relative to those under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Less than significant impact.

Impact WQ-3.1: Construction of the Marine Terminal berth would not cause a substantial loss of surface water in the Harbor.

Berth construction would involve installation of piles in the water to support the breasting dolphins, mooring dolphins, and unloading platform. A small amount (up to ~~2.4~~1.7 acres or 0.~~99~~ 67 ha) of surface water equal to the combined cross-sectional area of the support pilings in the water would be lost. This loss of surface waters would be negligible in relation to the total surface area of the Los Angeles/Long Beach harbor complex, and it would be replaced by hard substrate habitat as described in **Impact BIO-2.1** (Section 3.3, Biological Resources). No surface waters are present where onshore facilities (e.g., tank farms and buildings) would be constructed. Installation of new pipeline sections at the Pier 400 causeway and Dominguez Channel would not cause a loss of surface water at these locations because the pipes would be routed to existing bridge structures and not placed in the water.

CEQA Impact Determination

Construction operations for the proposed Project would not result in a substantial loss of surface water in the Harbor. Therefore, impacts related to loss of surface water in the Harbor would be less than significant under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Less than significant impact.

NEPA Impact Determination

Construction of the proposed Project would not result in a substantial loss of surface water in the Harbor. Therefore, impacts from loss of surface water in the Harbor would be less than significant under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Less than significant impact.

Impact WQ-4.1: Construction of proposed Project facilities would not cause permanent changes in the movement of surface water that could produce a substantial change in the current or direction of water flow.

Berth construction for the proposed Project would install up to ~~258~~ 136 pilings in the water on the southwest side (Face C) of Pier 400. Installation of these pilings would have a negligible effect on water movement in the Harbor. Once installed, the pilings would reduce flows beneath the berth, but would not impede the movement of surface waters within the Harbor because water would be able to move between the pilings. Movement of water between the pilings also would prevent stagnation beneath the berth. Similarly, berth construction would not affect tidal currents or waves or result in substantial changes in flow patterns or speed beyond the footprint of the wharf. Thus, construction activities would not substantially alter surface water movement or result in shoreline erosion or sedimentation in the Harbor.

As mentioned, there are no freshwater features on or near the proposed Project site, and the only surface water flows are related to stormwater runoff. Construction of the Marine Terminal and tank farms would require grading, berm construction, and installation of drainage systems to collect stormwater, equipment wash water, leaks and spills, and firewater. While grading and construction would alter the existing upland drainage patterns, construction activities would not substantially impede water movement on the Marine Terminal and tank farm sites. Installation of new pipeline sections at the Pier 400 causeway and Dominguez Channel would not affect water movement at these locations because the pipes would be routed to existing bridge structures and not placed in the water.

CEQA Impact Determination

Construction of the proposed Project facilities would not cause permanent changes in the movement of surface waters or produce substantial changes in current or water flow within the Harbor. Installation of pier pilings would reduce current velocities within the footprint of the berth, but the distance between the pilings and the continual tidal action would not limit water exchange or cause stagnation. Therefore, impacts related to changes in surface water movement would be less than significant under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Less than significant impact.

NEPA Impact Determination

Construction of facilities for the proposed Project would not produce substantial changes in water flow, other than reduced velocities within the footprint of the berth (but the distance between the pilings and the continual tidal action would not limit water exchange or cause stagnation). Therefore, impacts would be less than significant under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Less than significant impact.

3.14.4.3.1.2 Operational Impacts

Impact WQ-1.2: Runoff, vessel operations, and oil spills during operation of proposed Project facilities have the potential to result in discharges which create pollution, contamination, or nuisance as defined in section 13050 of the CWC, or could cause regulatory standards to be violated in harbor waters.

Runoff

Episodic stormwater runoff represents the primary operational discharge associated with the proposed Project. Stormwater discharges would be a potential source for contaminants associated with on-site aerial deposition of particulates, fertilizers and pesticides, and other equipment residues, such as from tire wear, brake pad linings, or leaks and spills of petroleum and cleaning agents, which are subject to offsite transport via runoff. Small amounts of fertilizers and pesticides could be used for landscaping at the tank farm sites and at the administration building on Pier 400. Runoff of fertilizer and pesticide residues could add a small amount of pollutants to Harbor waters during storm events. The concentrations of these residues reaching the Harbor are not expected to exceed water quality standards or objectives because the amount of these materials applied onsite and susceptible to runoff would be small, soil particles transporting these pollutants would be intercepted using stormwater

BMPs, and any remaining residues would be rapidly diluted by Harbor waters. Industrial maintenance chemicals, such as cleaners, paints, coatings, and lubricants, would be brought on site as needed and removed when maintenance is completed. Runoff of maintenance chemicals would not be expected to occur as a result of Project operations.

Airborne pollutants, such as exhaust particles from Project-related, non-electric equipment and vehicle and vessel operation would be deposited on upland portions of the site, where they would be subject to stormwater runoff into the Harbor. However, the facilities associated with the proposed Project would be operated in accordance with the industrial SWPPP that contains monitoring requirements to ensure that the quality of the stormwater runoff complies with the permit conditions. These discharges would contribute small and episodic loadings of pollutants to the Harbor but would not cause concentrations to exceed water quality standards or objectives.

Stormwater from non-process areas such as parking lots, roads, and buildings would be collected by storm drains and routed to drainage systems. Stormwater from process areas such as tank farms, manifold and equipment areas, and equipment wash-down areas would be collected in a tank and then routed to an oil/water separator to remove oils. The collected oil would be returned to the oil storage system. The water effluent would be discharged to the Harbor under the approved NPDES permit (i.e., industrial stormwater permit). Facilities would operate in accordance with an industrial SWPPP that contains monitoring requirements to ensure the quality of the stormwater runoff complies with the permit conditions. Terminal operations would also be governed by SUSMP requirements to incorporate BMPs that minimize loading of pollutants of concern from site runoff to the harbor. Existing regulatory controls for runoff and storm drain discharges are designed to reduce impacts to water quality and would be fully implemented. The tenant would be responsible for all conditions of the stormwater discharge permits, including compliance monitoring and reporting, as well as all Port pollution control requirements.

The stormwater system would be designed to handle runoff volumes corresponding to a 50-year storm event at the Marine Terminal and Tank Farm Site 1, and a 10-year event at Tank Farm Site 2 on Terminal Island. Larger storm events would exceed the system capacity which could result in localized ponding. If the treatment system failed to operate under these beyond-design flood conditions, some pollutants could be released to the Harbor due to the lack of complete treatment. However, the largest proportion of stormwater-related pollutants are associated with the “first flush”, which is expected to occur well before the stormwater system capacity is exceeded. Thus, given the expectation that the first flush would be captured by the stormwater system, combined with the low probability that the capacity of the system would be exceeded, stormwater discharges from the Project operations are not expected to cause exceedences of water quality standards.

Stormwater sampling in the Port of Long Beach in 2005 (MBC 2005) showed that pollutants such as metals and semivolatile organic compounds were present in runoff from the Port facilities. At a few locations, copper, lead, mercury, nickel, and zinc occurred in stormwater samples at concentrations that exceeded the standards for marine waters. However, the study concluded that mixing with the receiving waters would rapidly dilute the pollutants so that the receiving water standards would not be exceeded. It is reasonable to expect that these findings would also apply to stormwater runoff from the proposed Project site, and runoff would not cause exceedances of receiving water quality objectives, assuming that constituents in the stormwater were in compliance with the permit limits.

Vessel Operations

Vessel traffic near Pier 400 would increase as a result of the proposed Project compared to the CEQA Baseline. Conversely, the projected number of vessel calls associated with the proposed Project would be lower than the incremental increase in vessel calls associated with the NEPA Baseline. Another important difference between the proposed Project and the NEPA Baseline relative to operational impacts to water quality is that vessel traffic for the proposed Project would be concentrated in the vicinity of Berth 408, whereas the incremental vessel traffic associated with NEPA Baseline would be distributed throughout the San Pedro Bay Ports Harbor complex.

Under the proposed VGP, discharges incidental to normal vessel operations, including anti-fouling leachate from hull coatings and underwater hull husbandry, would be governed by technology-based effluent limitations as specified in the permit. The effluent limits in the VGP are designed to minimize the discharge of pollutants from a vessel. According to USPEA (2008), compliance with permit conditions is expected to "…result in discharges that are controlled as necessary to meet applicable water quality standards."

Portions of the Harbor (Inner Cabrillo Beach and Fish Harbor; see Table 3.14-1) are impaired with respect to copper, but not in the vicinity of Berth 408. As noted in Section 3.14.2.2.7, recent data from the Port's Enhanced Monthly Water Quality Study (AMEC 2007) indicate that copper concentrations in waters adjacent to Pier 400 are below the water quality criterion (3.1 µg/L). While increased vessel traffic associated with the proposed Project would increase copper loading in the immediate vicinity of Berth 408 due to leachate from vessel hulls, this source would not be expected to increase concentrations in site waters to levels above the criterion. However, because there would not be any physical barriers to prevent transport and mixing of waters between the proposed Project site and areas of the inner Harbor, inputs of copper or other pollutants at Berth 408 could affect water quality in other areas of the Port (see Chapter 4, Cumulative Analysis). Increased vessel traffic associated with the proposed Project would not affect TBT concentrations in Harbor waters because the VGP has a zero discharge standard for TBT and vessels using the proposed Project facilities are prohibited from using TBT-based hull paints.

Inadvertent or illegal discharges from vessels~~, ballast water discharges, and releases of chemicals from antifouling vessel hull paints and sacrificial anodes~~ represent potential sources of contaminants to Harbor waters from the proposed Project operations. Discharges of polluted water or refuse directly to the Harbor are prohibited, and the Port Police are authorized to cite any vessel that is in violation of Port tariffs, including illegal discharges. The number or severity of illegal discharges, and corresponding changes to water and sediment quality, from increased vessel traffic cannot be quantified because the rate and chemical composition of illegal discharges from commercial vessels are unknown. There is no evidence that illegal discharges from ships presently are causing widespread problems in the Harbor.

Based on results from the National Mussel Watch Program (O'Connor and Lauenstein 2006), Also, over the past several decades, there has been an improvement in water qualitycontaminant levels in the Harbor have generally improved, as indicated by trends of decreasing concentrations of several metals (cadmium, selenium, mercury, and zinc) and TBT in sentinel mussels over the period from 1986 to 2003. These improvements occurred despite an overall increase in ship traffic. Thus, while it is reasonable to assume that increases in the frequency of illegal discharges would be proportional to the change in numbers of ship visits, there is no evidence to support this relationship. Further, it is reasonable to expect that vessel operators will comply with existing laws, regulations, and permit conditions designed to prevent illegal discharges. As discussed in Section 3.3, ballast water discharges from vessels at Berth 408 are expected to be minimal because the vessels would be unloading cargo and taking on water for ballast rather than discharging ballast water. Additionally, ballast water discharges are governed by specific ballast water management practices that went into effect on March 22, 2006. These practices are intended, in part, to prevent discharges of contaminants. Regardless, assuming that any illegal discharges from vessels at Berth 408 would occur, as a worst case scenario, the discharges would result in pollution or would be considered a nuisance, and this potential for water quality impacts would be increased relative to CEQA and NEPA Baseline conditions at the proposed Project site.

Increases in tanker vessel traffic could also result in higher mass loadings of contaminants, such as copper released from vessel hull anti-fouling paints. Portions of the Harbor (Inner Cabrillo Beach and Fish Harbor; see Table 3.14-1) are impaired with respect to copper, but not in the vicinity of Berth 408. As noted in Section 3.14.2.2.7, recent data from the Port's Enhanced Monthly Water Quality Study (AMEC 2007) indicate that copper concentrations in waters adjacent to Pier 400 are below the criterion (3.1 µg/L). While increased vessel traffic associated with the proposed Project would increase copper loading in the immediate vicinity of Berth 408, copper leaching from vessel hulls would not be expected to increase concentrations in site to levels above the criterion. However, because there would not be any physical barriers to prevent transport and mixing of waters between the proposed Project site and areas of the inner Harbor, inputs of copper or other pollutants at Berth 408 could affect water quality in other areas of the Port.

As a condition of their lease, the project tenant would be required to conform to applicable requirements of the Non-Point Source (NPS) Pollution Control Program. The tenant also would be required to design all terminal facilities whose operations could result in the accidental release of toxic or hazardous substances (including sewage and liquid waste facilities, solid and hazardous waste disposal facilities) in accordance with the state Non-Point Source Pollution Control Program administered by the SWRCB. As a performance standard, the measures selected and implemented would use the Best Available Technology that is economically achievable such that, at a minimum, relevant water quality criteria as outlined by the California Toxics Rule and the Basin Plan are maintained, or in cases where ambient water quality exceeds these criteria, maintained at or below ambient levels. The applicable measures would include:

- Solid Waste Control - Properly dispose of solid wastes to limit entry of these wastes to surface waters;

- Liquid Material Control - Provide and maintain the appropriate storage, transfer, containment, and disposal facilities for liquid materials; and
- Petroleum Control - Reduce the amount of fuel and oil that leaks from container and support vessels.

The presence of pier pilings would cause some localized deposition of sediments beneath the wharf, and some bottom sediments in the vicinity of Berth 408 may be disturbed by turbulence from propeller wash. Resuspended sediments would settle back to the bottom, although some horizontal displacement by currents could occur. However, this would not promote erosion of the harbor bottom or excessive sedimentation near the proposed Project site.

Oil Spills

The other potential operational source of pollutants that could affect water quality in the vicinity of Pier 400 is accidental oil spills on land that enter storm drains and accidental spills from vessels (tankers and MGO barges) while transiting or offloading at Berth 408. Spill-related impacts to water and sediment quality would depend on the characteristics of the material spilled, such as volatility, solubility in water, and sedimentation rate, and the speed and effectiveness of the spill response and cleanup efforts. Activities that involve hazardous liquid bulk cargoes at the Port are governed by the Los Angeles Harbor Department Risk Management Plan (RMP) (LAHD 1983). This plan provides for a methodology for assessing and considering risk during the siting process for facilities that handle substantial amounts of dangerous cargo, such as liquid bulk facilities. The Release Response Plan prepared in accordance with the Hazardous Material Release Response Plans and Inventory Law (California Health and Safety Code, Chapter 6.95), which is administered by the City of Los Angeles Fire Department (LAFD), also regulates hazardous material activities within the Port. These activities are conducted under the review of a number of agencies and regulations including the RMP, U.S. Coast Guard (USCG), fire department, and state and federal departments of transportation (49 CFR Part 176). The Oil Pollution Prevention regulations at Title 40 of the Code of Federal Regulations, Part 112 (40 CFR 112) describe the requirements for certain facilities to prepare, amend, and implement SPCC Plans. These plans ensure that facilities include containment and other countermeasures to prevent oil spills that could reach navigable waters. In addition, an OSCP is required to address spill cleanup measures after a spill has occurred. For the proposed Project, a SPCC Plan and an OSCP would be prepared and then reviewed and approved by the California Department of Fish and Game Office of Spill Prevention and Response, in consultation with other responsible agencies. The SPCC Plan would detail and implement spill prevention and control measures to prevent oil spills from reaching navigable waters. The OSCP would identify and plan as necessary for contingency measures that would minimize damage to water quality and provide for restoration to pre-spill conditions. Additionally, **MM 4B-7** from the Deep Draft FEIS/FEIR requires that the Port petition the state for increased local staffing of the California Department of Fish and Game Office of OSPR to reduce the level of accidental spills at ship fuel docks.

As discussed in Section 2.4.4, the proposed Project facility would operate under an OSCP prepared by the applicant. The OSCP would provide a finalized list of emergency service providers. Commercial contractors handle most oil spills in the Harbor and have a variety of response services and equipment (e.g., boats, skimmers, booms, and pumps) to handle all types of spills. In addition, LAHD has established conditions that are applied to all new and renewed Marine Oil Terminal leases (see Appendix E). These include provisions for the inspection, control, and cleanup of leaks from aboveground tank and pipeline sources that would minimize the potential for impacts from a spill to biological resources.

Potential releases of pollutants from a large spill on land to Harbor waters and sediments would be minimized through existing regulatory controls. The probability of a spill during the life of the proposed Project is low. Oil spilled on the berth platform structure would be retained on the platform by the 6-inch concrete dike, and oil would drain to containment sumps. The sumps would be equipped with sensors to detect fluid levels, pumps to transfer the contents into the terminal oil water treatment system, and alarms that could trigger operational responses (e.g., shut down pumping and inspections). These features would reduce the potential for any spilled oil on the berth platform to reach the Harbor. Similarly, spills from the tanks and process areas would be retained within the containment dikes, which would minimize the potential for spreading and transport off-site and maximize the efficiency of the recovery and cleanup process. Residual oil, or oil mixed with stormwater, within the containment dikes would be collected in a tank that would feed a treatment system to remove sufficient oil from the water to meet requirements for discharge of treated stormwater under an NPDES permit. The collected oil would be returned to the oil storage system.

Spills or leaks of oil from buried pipelines are unlikely to occur, and the potential risk of oil from a pipeline to reach Harbor waters before detection and cleanup is remote (Section 3.12.4.1, Risk of Upsets/Hazardous Materials, Upset Scenarios). Additionally, a number of design features and monitoring procedures, described in Section 3.7.4.3.1.2, have been incorporated into the proposed Project to prevent spills from the pipeline. These include regular visual inspections, internal inspections (using "smart pigs"), hydrostatic testing, cathodic protection and external pipe coatings, and automatic safety and control systems. Section 3.12 (Risk of Upset and Hazardous Materials) considers the probability of a spill from the proposed Project pipelines to be "Extraordinary" and less than significant due to the low probability of a spill in any appreciable volume to reach Harbor waters (Section 3.12.4.3.1.2).

Spill protection would not be in-place at the Pier 400 Causeway and at the Dominguez Channel. The extent of water quality impacts would depend on the specific location and size of the spill, as well as local conditions at the time of the spill. However, even if the spilled oil were contained by booms in the water, soluble components of the oil would enter the water and affect water quality in the immediate vicinity of the spill. The proposed Project applicant has a contractual agreement with a regional spill response cooperative that would serve as the emergency response contractor with primary responsibility for containment, cleanup, and health and safety. These contractors are located in the regional area. In addition, operations personnel are trained in the Incident Command System and oil spill containment and cleanup procedures.

Accidental oil spills directly to the Harbor could occur during vessel transit through the Harbor and/or during unloading at Berth 408 (See Section 3.12.4.1). It is reasonable to assume that an incremental increase in the probability of an oil spill from a tanker to the Harbor would be proportional to the increase in vessel calls associated with the proposed Project. Oil spills are more likely to occur during unloading than during transit to Berth 408; however, the volumes of spills that occur during unloading typically are less than 50 barrels (bbl). Spill prevention and cleanup procedures for the proposed Project would be addressed by the OSCP that defines actions to minimize the magnitude of the spill and extent of impacts. If any oil is observed in the water, unloading operations would be stopped and the facility's OSCP would be activated. The regional spill response cooperative would serve as the emergency response contractor and they would be responsible for containment, cleanup, and health and safety at the Marine Terminal.

Vessels moored to Berth 408 would be surrounded by a spill containment boom prior to initiating unloading operations. Thus, any oil lost from the vessel or the unloading arms to the Harbor would be contained within the boom, preventing the spread of spilled oil to other areas of the Harbor. Oil spilled at the berth could contaminate the berth pilings near the water surface as well as the intertidal zone of the Pier 400 shoreline within the area defined by the ends of the containment boom. Oil spilled in the immediate Berth 408 area that contacts rip rap in the shoreline dike or pier pilings could be difficult to recover completely, and residual oil could represent a source for hydrocarbons to Harbor waters for periods of weeks to months depending on the rate of oil degradation (i.e., weathering).

The probability of an oil spill from a vessel transiting the Harbor is lower than the probability of a spill associated with unloading operations. Nevertheless, a spill in open water would affect water quality at the site of the spill and potentially in other areas of the Harbor depending on the spill volume, transport speed and direction related to tides and winds, and the speed and efficiency of containment and cleanup. Although unlikely, a large spill that could not be contained and cleaned quickly has the potential to impact the shoreline and sensitive biological habitats.

The Basin Plan (LARWQCB 1994) water quality objective for oil and grease is "[w]aters shall not contain oils, greases, waxes or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect beneficial uses." These conditions could be exceeded with relatively small volumes of spilled oil. Fresh (unweathered) oil spilled in the Harbor could also represent a source for soluble and potentially toxic hydrocarbon components to the water at the oil-water interface that are subject to transport by currents to adjacent areas.

As a condition of their lease, the project tenant would be required to develop an approved Source Control Program (SCP) with the intent of preventing and remediating accidental fuel releases. Prior to construction, the tenant would develop an approved SCP in accordance with Port guidelines established in the General Marine Oil Terminal Lease Renewal Program (Appendix E). The SCP would address immediate leak detection, tank inspection, and tank repair. The tenant also would be required to submit to the Port an annual compliance/performance audit in conformance with the Port's standard compliance plan audit procedures. This audit would identify compliance with regulations and BMPs recommended and implemented to ensure minimizing of spills that might affect water quality, or soil and groundwater.

CEQA Impact Determination

Operations associated with the proposed Project would not result in direct discharges of ~~wastes~~pollutants, other than those associated with episodic stormwater discharges and incidental discharges associated with normal vessel operations in compliance with the NPDES discharge permit limits. Stormwater discharges that complied with permit limits would not exceed water quality standards. Therefore, impacts to water quality from stormwater discharges and operations on upland portions of the proposed Project site would be considered less than significant under CEQA.

~~While ships would release copper to Harbor waters while at Berth 408, the resulting copper concentrations would not exceed the water quality standard due to mixing and dilution. However, illegal discharges would result in pollution or contamination, as defined in Section 13050 of the CWC, and impacts to water quality would be considered significant.~~ Vessel discharges incidental to normal operations would be covered under the VGP. Discharges, including hull paint leachate and underwater hull husbandry, in compliance with permit conditions would not violate applicable water quality standards. Thus, impacts from vessel operations associated with the proposed Project would be considered less than significant under CEQA.

Spills or leaks that occur on land are expected to be contained and cleaned up before any impacts to surface water quality can occur. Spills from the pipeline are considered highly unlikely (Section 3.12.4.1) and thus less than significant due to the very low likelihood of a pipeline failure occurring in a location where the oil could reach surface waters. Spills from vessels at Berth 408 would likely occur during offloading operations, but spill volumes would be small. However, any amount of oil spilled from project operations that reaches Harbor waters is likely to exceed the Basin Plan objective for oil and grease. Thus, oil spills directly to Harbor waters as a result of proposed Project operations would have a significant and unavoidable impact on water quality.

Mitigation Measures

Beyond legal requirements, there are no feasible mitigation measures to eliminate completely impacts to water quality from spills and illegal discharges from vessels.

As discussed in Section 3.14.4.4, **MM 4B-7** from the Deep Draft FEIS/FEIR has been implemented by the Port to ensure that oil spill impacts are minimized to the greatest extent feasible. The Port is petitioning the state for increased staffing of OSPR to reduce the level of accidental spills at ship fuel docks. These efforts are documented and kept on file in the Port's administration offices.

To reduce the potential for significant impacts to marine water quality from illegal or inadvertent discharges from vessels during product offloading at Berth 408, the following mitigation measure is proposed.

MM WQ-1.2: Cleanup of Floating Materials Retained by Containment Boom. All vessels at Berth 408 shall be surrounded by a spill containment boom prior to initiating unloading operations. Following unloading and before releasing the boom, the project tenant shall visually inspect the water surface or the area encircled by the containment boom and recover and dispose any floating materials (e.g., trash) or petroleum sheen.

Residual Impacts

Residual impacts would be less than significant for operational discharges but would remain significant and unavoidable for oil spills directly to the Harbor. For most small oil spills (less than 238 bbl) during unloading of oil at the berth and for spills at the tank farms, standard measures proposed as part of the proposed Project to prevent, contain, and clean up the spill would reduce the residual impact to less than significant. If larger volumes of oil are spilled in the immediate Berth 408 area and not recovered before contacting rip rap in the shoreline dike or pier pilings, complete removal could be difficult, and residual oil could represent a source for hydrocarbons to Harbor waters, and residual impacts to water quality, for periods of weeks to months depending on the rate of oil degradation (i.e., weathering). Residual impacts from oil spills in open areas of the Harbor (i.e., during vessel transit to the berth) also could remain significant under conditions of large spill volumes, incomplete containment and recovery, and wide dispersion by tides and wind.

Also, while the presence of an oil boom around vessels unloading at Berth 408 would prevent floating materials and surface oils from spreading to adjacent areas of the Harbor, it would not restrict the movement of soluble components of an oil spill or prevent negatively buoyant materials from sinking to the bottom. Therefore, some operational impacts to water quality would remain significant.

NEPA Impact Determination

Similar to the CEQA impact determination for **Impact WQ-1.2**, impacts to water quality from stormwater discharges during operations associated with the proposed Project would be less than significant under NEPA. Similarly, under the proposed Project, ~~contaminant loadings to the Harbor from tanker hull paints~~impacts from normal vessel operations associated with the proposed Project would be less than significant under NEPA. However, spill-related impacts to marine water quality at the proposed Berth 408 location would be higher than for the NEPA Baseline because vessel calls for the proposed Project would be concentrated at the Project site. Spills from vessels at Berth 408 would likely occur during offloading operations, but spill volumes would be small. Regardless, any amount of oil spilled from project operations that reaches Harbor waters would exceed the Basin Plan objective for oil and grease. Thus, oil spills directly to Harbor waters as a result of proposed Project operations would have a significant and unavoidable impact on water quality under NEPA. Also, similar to impacts under CEQA, illegal discharges from vessels would result in pollution and would be considered a nuisance. These impacts to marine water quality would be considered significant.

Mitigation Measures

Beyond legal requirements, there are no feasible mitigation measures to eliminate impacts to water quality from spills or~~,~~ illegal discharges from vessels~~, or leaching of contaminants from vessel hull paints~~.

However, **MM 4B-7** from the Deep Draft FEIS/FEIR has been implemented by the Port to ensure that oil spill impacts are minimized to the greatest extent feasible.

Additionally, **MM WQ-1.2** would reduce the potential for floating materials and surface oil slicks/sheens to spread to adjacent areas of the Harbor.

Residual Impacts

Residual impacts would remain significant and unavoidable for oil spills directly to the Harbor. For most small oil spills (less than 50 bbl) during unloading of oil at the berth and for spills at the tank farms, standard measures proposed as part of the proposed Project to prevent, contain, and clean up the spill would reduce the residual impact to less than significant. However, larger volumes of oil spilled in the immediate Berth 408 area and not recovered before contacting rip rap in the shoreline dike or pier pilings, could be difficult to remove completely, and residual oil could represent a source for hydrocarbons to Harbor waters, and residual impacts to water quality, for periods of weeks to months depending on the rate of oil degradation (i.e., weathering). Residual impacts from oil spills in open areas of the Harbor (i.e., during vessel transit to the berth) could remain significant under conditions of large spill volumes, incomplete containment and recovery, and wide dispersion by tides and wind. Also, the presence of an oil boom around vessels unloading at Berth 408 would prevent floating materials and surface oils from spreading to adjacent areas of the Harbor, but it would not restrict the movement of soluble components of an oil spill or prevent negatively buoyant materials from sinking to the bottom. Therefore, some operational impacts to water quality would remain significant.

Impact WQ-3.2: Project operations would not cause a substantial loss of surface water in the harbor.

Proposed Project facilities would occur mostly on land, and no in-water structures other than the Berth 408 pier pilings would be required for the proposed Project. No other operational losses or obstructions to surface waters are anticipated as a result of the proposed Project.

CEQA Impact Determination

Impacts to water quality would be less than significant under CEQA because no substantial loss of surface water would occur as a result of the proposed Project operations.

Mitigation Measures

No mitigation is required.

Residual Impacts

Less than significant impact.

NEPA Impact Determination

Impacts to water quality would be less than significant under NEPA because no substantial loss of surface water would occur as a result of the proposed Project operations.

Mitigation Measures

No mitigation is required.

Residual Impacts

Less than significant impact.

3.14.4.3.2 No Federal Action/No Project Alternative

3.14.4.3.2.2 Operational Impacts

Impact WQ-1.2: Runoff, vessel operations, and oil spills during operation of facilities have the potential to result in discharges which create pollution, contamination, or nuisance as defined in section 13050 of the CWC, or could cause regulatory standards to be violated in harbor waters.

Runoff

For the No Federal Action/No Project Alternative, future increases in crude oil shipments would be accommodated by existing facilities (Port of Long Beach Berths 76-78 and 84-87, and LAHD Berths 238-240). The only possible alteration associated with operation of the No Federal Action/No Project Alternative would be related to runoff from the Tank Farm 1 and Tank Farm 2 storage areas and access road. Stormwater runoff from these storage areas would be discharged to the Harbor under an approved NPDES permit (i.e., industrial stormwater permit). Conversion of a portion of Pier 400 to a storage area for wheeled containers would not substantially change the composition or quality of stormwater discharges to the Harbor. Further, use of other, existing facilities for offloading crude oil shipments would not be expected to increase the volumes or alter the composition of stormwater discharges at other locations in the Harbor. The rate and composition of aerial deposition of pollutants associated with the No Federal Action/No Project Alternative would be comparable to the proposed Project, with the exception that the absence of emissions control technology at existing facilities could result in relatively higher harbor-wide vessel exhaust and aerial deposition for the No Federal Action/No Project Alternative. Water quality impacts from stormwater runoff would be less than significant assuming that all drainage and treatment systems are maintained and discharges comply with permit conditions.

Vessel Operations

Similar to the proposed Project, incidental vessel discharges would be covered under the VGP. Discharges in compliance with the permit, including those from hull paint leachate and underwater hull husbandry, would be expected to meet applicable water quality standards. Iinadvertent or illegal discharges from vessels and releases of chemicals from antifouling hull paints are potential sources of contaminants to Harbor waters. However, unlike the proposed Project, vessel-related inputs associated with the No Federal Action/No Project Alternative would be distributed throughout the San Pedro Bay Ports Harbor complex. Discharges of polluted water or refuse directly to the Harbor are prohibited, and the Port Police are authorized to cite any vessel that is in violation of Port tariffs, including illegal discharges. The number or severity of illegal discharges, and corresponding changes to water and sediment quality, from increased vessel traffic cannot be quantified because the rate and chemical composition of illegal discharges from commercial vessels is unknown. There is no evidence that illegal discharges from ships presently are causing widespread problems in the Harbor. Also, over the past several decades, there has been an improvement in water quality despite an overall increase in ship traffic. Thus, while it is reasonable to assume that increases in the frequency of illegal discharges would be proportional to the change in numbers of ship visits, there is no evidence to support this relationship. Further, it is reasonable to expect that vessel operators will comply with existing laws, regulations, and permit conditions designed to prevent illegal discharges. Regardless, assuming that illegal discharges from vessels would occur, as a worst case scenario, the discharges would result in pollution or would be considered a nuisance, and this potential for water quality impacts would be increased relative to CEQA Baseline conditions. Consequently, the No Federal Action/No Project Alternative would not necessarily result in increases over CEQA Baseline conditions in contaminant loadings from illegal vessel discharges and contaminant leaching from vessel hull paints.

Oil Spills

Under the No Federal Action/No Project Alternative, terminals receiving crude oil shipments would employ the same safety, security, and spill prevention measures as the proposed Project, with the exception that LAHD Berths 238-240 have components that do not meet current design standards and are potentially deficient (see Section 2.5.2.1). Similar to the proposed Project, accidental oil spills could occur during vessel unloading at the berth, from pipelines, and from the tanks and valves at the tank farms. The number of tanker calls associated with the No Federal Action/No Project Alternative would increase by an estimated 267 tankers per year due to the need to use smaller vessels to meet the throughput demand.

Oil spills on the wharf and within process areas at the tank farms or along the pipelines would be contained and cleaned up using systems and procedures that are consistent with existing OSCPs for the individual berths. Under the most likely spill scenarios, implementation of these plans would prevent significant impacts to water and sediment quality. If such a spill were to occur at the berth and enter harbor waters, it would be contained and cleaned-up immediately with the onsite containment/clean-up equipment. Oil spilled into the Harbor would contaminate the berth pilings at the water surface as well as the shoreline within the containment booms. Even if the oil spilled into the Harbor was contained by booms, soluble compounds would dissolve into surface waters and a surface sheen would form. Thus, while the spill volumes likely would be small and contained at the berth, any amount of oil spilled that reaches Harbor waters is likely to exceed the Basin Plan objective for oil and grease.

Larger spills are not expected to occur. The extent of shoreline and water surface area affected would depend on the amount of oil spilled, location and local conditions (e.g., currents), and response time for containment and cleanup.

CEQA Impact Determination

Runoff of pollutants associated with the No Federal Action/No Project Alternative would have less than significant impacts on water quality under CEQA. However, ~~in-water releases of copper from tanker hull paints and~~ illegal discharges from vessels could constitute pollution or contamination and result in significant impacts to water quality. Oil spills in the Harbor also would have significant impacts on water quality.

Mitigation Measures

Runoff

No mitigation is required.

Vessel Operations and Oil Spills

OSCPs for existing facilities would minimize the potential for spills to reach Harbor waters. Beyond legal requirements, there are no available mitigation measures to eliminate impacts to water quality from spills or~~,~~ illegal discharges from vessels~~, or leaching of contaminants from vessel hull paints.~~

Residual Impacts

Runoff

Less than significant impacts.

Vessel Operations and Oil Spills

Residual impacts would remain significant and unavoidable for illegal discharges and from oil spills directly to the Harbor. For most small oil spills (less than 50 bbl) during unloading of oil at the berth and for spills at the tank farms, standard measures would reduce residual impacts to less than significant. Residual impacts from oil spills in open areas of the Harbor (i.e., during vessel transit to the berth) could remain significant under conditions of large spill volumes, incomplete containment and recovery, and wide dispersion by tides and wind.

NEPA Impact Determination

Operations under the No Federal Action/No Project Alternative would be the same as under the NEPA Baseline. Therefore, no change in the potential for runoff or spills to create pollution or violate regulatory standards would occur, and potential impacts under NEPA would not occur because there would be no net change in the environmental conditions between the No Federal Action/No Project Alternative and the NEPA Baseline.

Mitigation Measures

No mitigation is required.

Residual Impacts

No impact.

3.14.4.3.3 Reduced Project Alternative

Impact WQ-3.1: Reduced Project Alternative construction of the Marine Terminal berth would not cause a substantial loss of surface water in the harbor.

Berth construction under the Reduced Project Alternative would be the same as for the proposed Project, and would involve installation of in-water pilings. Up to ~~2.4~~1.7 acres (0.~~99~~ 67 ha) of surface water, equal to the combined cross-sectional area of the support pilings in the water, would be lost. No surface water features are present where onshore facilities (e.g., two tank farms and Marine Terminal buildings) would be constructed.

CEQA Impact Determination

Construction operations for the Reduced Project Alternative would not result in a substantial loss of surface water in the Harbor. Therefore, impacts related to loss of surface water in the Harbor would be less than significant under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Less than significant impact.

NEPA Impact Determination

Construction operations for the Reduced Project Alternative would not result in a substantial loss of surface water in the Harbor. Therefore, impacts related to loss of surface water in the Harbor would be less than significant under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Less than significant impact.

Impact WQ-4.1: Construction of Reduced Project Alternative facilities would not cause permanent changes in the movement of surface water that would produce a substantial change in the current or direction of water flow.

For the Reduced Project Alternative, Berth 408 would be constructed on the southwest side (Face C) of Pier 400, which is the same as for the proposed Project. Construction activities associated with the Berth 408 would not substantially impede water movement within the Harbor. Tides and waves would not be altered by construction of the wharf. Construction activities associated with development of the Marine Terminal and two tank farms would alter drainage patterns for surface runoff on these sites through grading, berm construction, and installation of drainage systems to collect stormwater, equipment wash water, leaks and spills, and firewater. However, because construction activities would be covered under a construction permit, changes in drainage patterns would not affect the quantity or quality of stormwater discharges to the Harbor. The construction contractor would be responsible for complying with all permit conditions related to stormwater discharges.

CEQA Impact Determination

Construction of facilities for the Reduced Project Alternative would not cause permanent changes in the movement of surface waters producing substantial changes in current or water flow within the Harbor. Installation of pier pilings would reduce current velocities within the footprint of the berth, but the distance between the pilings and the continual tidal action would not limit water exchange or cause stagnation. Therefore, impacts related to changes in surface water movement would be less than significant under CEQA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Less than significant impact.

NEPA Impact Determination

Construction of facilities for the Reduced Project Alternative would not produce substantial changes in water flow, other than reduced velocities within the footprint of the berth (but the distance between the pilings and the continual tidal action would not limit water exchange or cause stagnation). Therefore, impacts would be less than significant under NEPA.

Mitigation Measures

No mitigation is required.

Residual Impacts

Less than significant impact.

3.14.4.3.3.2 Operational Impacts

Impact WQ-1.2: Runoff, vessel operations, and oil spills during Operation of Reduced Project Alternative facilities have the potential to result in discharges which create pollution, contamination, or nuisance as defined in section 13050 of the CWC, or could cause regulatory standards to be violated in harbor waters.

Runoff

The volume and composition of runoff from operation of the Reduced Project Alternative facilities would be comparable to those described for the proposed Project. Aerial deposition of pollutants from project-related operations at Berth 408 also would be comparable to or slightly less than those associated with the proposed Project due to the fewer vessel calls associated with the Reduced Project Alternative. Given that vessel emissions would be reduced by employing the AMP system (**MM AQ-15**), differences between the proposed Project and the Reduced Project Alternative in amounts of aerial deposition from vessel emissions at Berth 408 are expected to be minimal. Increased vessel traffic at the other, currently existing terminals in the San Pedro Bay Ports (LAHD Berths 238-240 and Port of Long Beach Berths 76-78 and 84-87) could result in similar increases in the deposition rate of airborne pollutants at the respective terminals. Stormwater discharges to the Harbor from Berth 408 and other terminal facilities would be governed by stormwater permit conditions that would be identical for both alternatives. Operations at Berth 408 and at LAHD Berths 238-240 and Port of Long Beach Berths 76-78 and 84-87 associated with the Reduced Project Alternative would not alter stormwater discharges or cause concentrations of project-derived contaminants in Harbor waters to exceed any water quality standards or objectives.

Vessel Operations

Similar to the proposed Project, incidental vessel discharges would be controlled by the VGP. Discharges in compliance with the permit conditions are expected to meet applicable water quality standards. ~~increases in tanker vessel traffic could result in increased mass loadings of contaminants, such as copper released from vessel hull anti-fouling paints, and inadvertent or illegal discharges at Berth 408. While portions of the Harbor (Inner Cabrillo Beach and Fish Harbor; see Table 3.14-1) are impaired with respect to copper, concentrations in waters adjacent to Pier 400 are below the criterion (3.1 µg/L) and copper is not a stressor in the vicinity of Berth 408. Therefore, the increased vessel traffic associated with the Reduced Project Alternative would increase copper loading in the immediate vicinity of Berth 408, but~~

~~the dissolved forms of copper would be mixed and diluted in site waters and the resulting concentrations would remain below the criterion.~~

Discharges of polluted water or refuse directly to the Harbor are prohibited, and the Port Police are authorized to cite any vessel that is in violation of Port tariffs, including illegal discharges. The number or severity of illegal discharges, and corresponding changes to water and sediment quality, from increased vessel traffic cannot be quantified because the rate and chemical composition of illegal discharges from commercial vessels are unknown. ~~There is no evidence that illegal discharges from ships presently are causing widespread problems in the Harbor. Also, over the past several decades there has been an improvement in water quality despite an overall increase in ship traffic. Thus,~~ W~~w~~hile it is reasonable to assume that increases in the frequency of illegal discharges would be proportional to the change in numbers of ship visits, there is no evidence to support this relationship. Further, it is reasonable to expect that vessel operators will comply with existing laws, regulations, and permit conditions designed to prevent illegal discharges. Regardless, assuming that illegal discharges from vessels would occur, as a worst case scenario, the discharges would result in pollution or would be considered a nuisance, and this potential for water quality impacts would be increased relative to CEQA and NEPA Baseline conditions. ~~Consequently, the Reduced Project Alternative would not necessarily result in increases over CEQA or NEPA Baseline conditions in contaminant loadings.~~ Vessels moored to Berth 408 would be surrounded by a spill containment boom prior to initiating unloading operations that would retain any floatable materials from the vessel**.** However, soluble materials or negatively buoyant materials would not be retained by the booms. Thus, any discharges, if they occur, could cause pollution and create a nuisance as defined under section 13050 of CWC.

As a condition of their lease, the tenant would be required to conform to applicable requirements of the Non-Point Source (NPS) Pollution Control Program. The tenant also would be required to design all terminal facilities whose operations could result in the accidental release of toxic or hazardous substances (including sewage and liquid waste facilities, solid and hazardous waste disposal facilities) in accordance with the state Non-Point Source Pollution Control Program administered by the SWRCB. As a performance standard, the measures selected and implemented would use the Best Available Technology that is economically achievable such that, at a minimum, relevant water quality criteria as outlined by the California Toxics Rule and the Basin Plan are maintained, or in cases where ambient water quality exceeds these criteria, maintained at or below ambient levels. The applicable measures would include:

- Solid Waste Control - Properly dispose of solid wastes to limit entry of these wastes to surface waters;
- Liquid Material Control - Provide and maintain the appropriate storage, transfer, containment, and disposal facilities for liquid materials; and
- Petroleum Control - Reduce the amount of fuel and oil that leaks from container and support vessels.

Propeller wash from vessels (tankers and tugs) could cause some disturbance of soft bottom sediments in the vicinity of Berth 408. However, this effect would be minimized by the presence of rocks placed around the base of the berth pilings.

Sediments resuspended by propeller wash would settle back to the bottom, although some horizontal displacement by currents could occur. This would not promote erosion of the harbor bottom or sedimentation near the Reduced Alternative Project site.

Oil Spills

Similar to the proposed Project, design features at Berth 408 would reduce the potential for any spilled oil on the berth platform to reach the Harbor. Similarly, spills from the tanks and process areas would be retained within the containment dikes, which would minimize the potential for spreading and transport off-site and maximize the efficiency of the recovery and cleanup process. Residual oil, or oil mixed with stormwater, within the containment dikes would be collected in a tank that would feed a treatment system to remove sufficient oil from the water to meet requirements for discharge of treated stormwater under an NPDES permit. The collected oil would be returned to the oil storage system. Spills or leaks of oil from buried pipelines are unlikely to occur, and the potential risk of oil from a pipeline to reach Harbor waters before detection and cleanup is remote (Section 3.12.4.1, Risk of Upsets/Hazardous Materials, Upset Scenarios).

Accidental oil spills directly to the Harbor could occur during vessel transit through the Harbor and/or during unloading at Berth 408 as well as LAHD Berths 238-240 and Port of Long Beach Berths 76-78 and 84-87. It is reasonable to assume that an incremental increase in the probability of an oil spill from a vessel to the Harbor would be proportional to the increase in number of vessel calls associated with the Reduced Project Alternative. The Reduced Project Alternative would result in an increase in vessel traffic within the Los Angeles/Long Beach harbor complex. Impacts to water quality from oil spills at Berth 408 associated with operation of the Reduced Project Alternative would be the same as described for the proposed Project, although the probability of oil spills at that location would be slightly lower due to the fewer tanker calls. The probability of a spill, and related impacts to water quality, associated with tanker calls at other, existing terminals in the San Pedro Bay Ports would be less than for the NEPA Baseline until 2040.

Similar to the proposed Project, operations of the Berth 408 facility would be governed by an OSCP that specifies spill prevention, containment, and cleanup measures. The OSCP would provide a finalized list of emergency service providers. Commercial contractors handle most oil spills in the Harbor and have a variety of response services and equipment (e.g., boats, skimmers, booms, and pumps) to handle all types of spills. In addition, LAHD has established conditions that are applied to all new and renewed Marine Oil Terminal leases (see Appendix E). These include provisions for the inspection, control, and cleanup of leaks from aboveground tank and pipeline sources that would minimize the potential for impacts from a spill to biological resources. Additionally, **MM 4B-7** from the Deep Draft FEIS/FEIR requires that the Port petition the state for increased local staffing of the OSPR to reduce the level of accidental spills at ship fuel docks.

Vessels moored to Berth 408 would be surrounded by a spill containment boom prior to initiating unloading operations. Thus, any oil lost from the vessel or the unloading arms to the Harbor would be contained within the boom, preventing the spread of floating oil slicks to other areas of the Harbor. Oil spilled at the berth could contaminate the berth pilings near the water surface as well as the intertidal zone of the Pier 400 shoreline within the area defined by the ends of the containment boom. Oil spilled in the immediate Berth 408 area that contacts rip rap in the shoreline dike or pier pilings could be difficult to recover completely, and residual oil could represent a source for hydrocarbons to Harbor waters for periods of weeks to months depending on the rate of oil degradation (i.e., weathering).

A spill in open water would affect water quality at the site of the spill and potentially in other areas of the Harbor, depending on the spill volume, transport speed and direction related to tides and winds, and the speed and efficiency of containment and cleanup. Although unlikely, a large spill that cannot be contained and cleaned quickly has the potential to impact the shoreline and sensitive biological habitats.

The Basin Plan (LARWQCB 1994) water quality objective for oil and grease is "[w]aters shall not contain oils, greases, waxes or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect beneficial uses." These conditions could be exceeded with relatively small volumes of spilled oil. Fresh (unweathered) oil spilled in the Harbor could also represent a source for soluble and potentially toxic hydrocarbon components to the water at the oil-water interface, and which are subject to transport by currents to adjacent areas.

As a condition of their lease, the project tenant would be required to develop an approved Source Control Program (SCP) with the intent of preventing and remediating accidental fuel releases. Prior to construction, the tenant would develop an approved SCP in accordance with Port guidelines established in the General Marine Oil Terminal Lease Renewal Program (Appendix E). The SCP would address immediate leak detection, tank inspection, and tank repair. The tenant also would be required to submit to the Port an annual compliance/performance audit in conformance with the Port's standard compliance plan audit procedures. This audit would identify compliance with regulations and BMPs recommended and implemented to ensure minimizing of spills that might affect water quality, or soil and groundwater.

CEQA Impact Determination

Impacts to water quality from stormwater runoff associated with the Reduced Project Alternative would be less than significant under CEQA. ~~While ships will release copper to Harbor waters while at Berth 408, resulting copper concentrations would not exceed the water quality standard due to mixing and dilution.~~ Incidental discharges from vessels associated with the Reduced Project Alternative would be governed by the VGP, and they would not cause violations of water quality standards. Therefore, impacts associated with vessel operations would be less than significant under CEQA. Floatable materials associated with illegal or inadvertent discharges from vessels while at Berth 408 would be retained by the containment boom surrounding the ship and would be recovered and disposed before the boom was released, thereby minimizing risks for altering water quality or affecting beneficial uses. However, soluble or negatively buoyant materials ~~in waste and ballast water discharges~~ would not be retained by the booms. ~~Therefore, vessel operations could result in pollution or contamination, as defined in Section 13050 of the CWC, and impacts to water quality would be significant under CEQA.~~ The potential magnitude of impacts to water quality from oil spills could vary from less than significant to significant depending on the volume, composition, and location of the spill, and the timeliness and efficiency of the response and cleanup operations. Spills or leaks that occur on land are expected to be contained and cleaned up before any impacts to surface water quality can occur. Spills from the pipeline are considered highly unlikely (Section 3.12.4.1) and thus less than significant due to the very low likelihood of a pipeline failure occurring in a location where the oil could reach surface waters. However, any amount of oil spilled from project operations that reaches Harbor waters is likely to exceed the Basin Plan objective for oil and grease. Thus, oil spills directly to Harbor waters would also have significant impacts on water quality.

Mitigation Measures

Beyond legal requirements, there are no available mitigation measures to eliminate impacts to water quality from spills~~, illegal discharges from vessels, or leaching of contaminants from vessel hull paints~~.

MM 4B-7 from the Deep Draft FEIS/FEIR has been implemented by the Port to ensure that oil spill impacts are minimized to the greatest extent feasible. The Port is petitioning the state for increased staffing of the OSPR to reduce the level of accidental spills at ship fuel docks. These efforts are documented and kept on file in the Port's administration offices. Also, **MM WQ-1.2** would be implemented to reduce potential impacts from illegal or inadvertent discharges of floatable materials.

Residual Impacts

Residual impacts would be less than significant for operational stormwater runoff and incidental vessel discharges. For most small oil spills (less than 50 bbl) during unloading of oil at the berth and for upland spills at the tank farms, standard measures proposed as part of the Reduced Project Alternative to prevent, contain, and clean up the spill would reduce residual impacts to less than significant. If larger volumes of oil are spilled in the immediate Berth 408 area and not recovered before contacting rip rap in the shoreline dike or pier pilings, complete removal could be difficult, and residual oil could represent a source for hydrocarbons to Harbor waters, and residual impacts to water quality, for periods of weeks to months depending on the rate of oil degradation (i.e., weathering). Residual impacts from oil spills in open areas of the Harbor (i.e., during vessel transit to the berth) could remain significant under conditions of large spill volumes, incomplete containment and recovery, and wide dispersion by tides and wind.

NEPA Impact Determination

Similar to the CEQA impact determination for **Impact WQ-1.2**, impacts to water quality from stormwater runoff and standard operations associated with the Reduced Project Alternative would be less than significant under NEPA. Similarly, under the ~~contaminant loadings to the Harbor from tanker hull paints under the~~ Reduced Project Alternative, impacts from normal vessel operations associated with the Reduced Project Alternative would be less than significant under NEPA. However, illegal discharges and spills would result in pollution or contamination, as defined in Section 13050 of the CWC, and impacts to marine water quality would be significant.

At the proposed Berth 408 location, spill-related impacts to marine water quality associated with the Reduced Project Alternative would be higher than for the NEPA Baseline because vessel calls for the proposed Project would be concentrated at the Project site. Spills from vessels at Berth 408 would likely occur during offloading operations, but spill volumes would be small. However, any amount of oil spilled from project operations that reaches Harbor waters is likely to exceed the Basin Plan objective for oil and grease. Thus, oil spills directly to Harbor waters as a result of Reduced Project Alternative operations would have a significant and unavoidable impact on water quality under NEPA.

Mitigation Measures

Beyond legal requirements, there are no feasible mitigation measures to eliminate impacts to water quality from spills~~, illegal discharges from vessels, or leaching of contaminants from vessel hull paints~~. However, **MM 4B-7** from the Deep Draft FEIS/FEIR has been implemented by the Port to ensure that oil spill impacts are minimized to the greatest extent feasible. Also, **MM WQ-1.2** would be implemented to reduce potential impacts from illegal or inadvertent discharges of floatable materials.

Residual Impacts

Residual impacts would remain significant and unavoidable for oil spills directly to the Harbor. For most small oil spills (less than 50 bbl) during unloading of oil at the berth and for spills at the tank farms, standard measures proposed as part of the Reduced Project Alternative to prevent, contain, and clean up the spill would reduce the residual impact to less than significant. However, larger volumes of oil spilled in the immediate Berth 408 area and not recovered before contacting rip rap in the shoreline dike or pier pilings, could be difficult to remove completely, and residual oil could represent a source for hydrocarbons to Harbor waters, and residual impacts to water quality, for periods of weeks to months depending on the rate of oil degradation (i.e., weathering). Residual impacts from oil spills in open areas of the Harbor (i.e., during vessel transit to the berth) could remain significant under conditions of large spill volumes, incomplete containment and recovery, and wide dispersion by tides and wind.

3.14.4.3.4 Summary of Impact Determinations

The following Table 3.14-4~~2~~ summarizes the CEQA and NEPA impact determinations for the proposed Project and its alternatives related to Water Quality, Sediments, Hydrology, and Oceanography, as described in the detailed discussion in Sections 3.14.4.3.1 through 3.14.4.3.3. This table is intended to allow easy comparison between the potential impacts of the proposed Project and its alternatives with respect to this resource. Identified potential impacts may be based on Federal, State, or City of Los Angeles significance criteria, Port criteria, and the scientific judgment of the report preparers.

For each type of potential impact, the table describes the impact, notes the CEQA and NEPA impact determinations, describes any applicable mitigation measures, and notes the residual impacts (i.e. the impact remaining after mitigation). All impacts, whether significant or not, are included in this table. Note that impact descriptions for each of the alternatives are the same as for the proposed Project, unless otherwise noted.

Table 3.14-42. Summary Matrix of Potential Impacts and Mitigation Measures for Water Quality Associated with the Proposed Project and Alternatives

Alternative	*Environmental Impacts*	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
3.14 Water Quality				
Proposed Project	**WQ-1.1:** Construction of proposed Project facilities would not result in discharges which would create pollution, contamination, or nuisance, or cause regulatory standards to be violated in harbor waters.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	WQ-2.1: Construction of Project facilities would not cause or increase the potential for flooding that could harm people or damage property or sensitive biological resources.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	WQ-3.1: Construction of the Marine Terminal berth would not cause a substantial loss of surface water in the harbor.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	WQ-4.1: Construction of proposed Project facilities would not cause permanent changes in the movement of surface water that could produce a substantial change in the current or direction of water flow.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	WQ-5.1: Construction activities would not accelerate natural processes of wind and water erosion and sedimentation, resulting in sediment runoff or deposition which would not be contained or controlled on-site.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact

Table 3.14-42. Summary Matrix of Potential Impacts and Mitigation Measures for Water Quality Associated with the Proposed Project and Alternatives (continued)

Alternative	*Environmental Impacts*	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
		3.14 Water Quality (continued)		
Proposed Project (continued)	**WQ-1.2:** Runoff and oil spills during operation of proposed Project facilities have the potential to result in discharges which create pollution, contamination, or nuisance, or could cause regulatory standards to be violated in harbor waters.	CEQA: **Significant** impact	**MM 4B-7:** Increase Local Staffing of California Department of Fish and Game (CDFG) Office of Oil Spill Prevention and Response (OSPR) **MM WQ-1.2:** Cleanup of Floating Materials Retained by Containment Boom	CEQA: **Significant** and unavoidable impact
		NEPA: **Significant** impact	**MM 4B-7** **MM WQ-1.2**	NEPA: **Significant** and unavoidable impact
	WQ-2.2: Operation of proposed Project facilities would not cause or increase the potential for flooding that could harm people or result in damage to property or sensitive biological resources.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	WQ-3.2: Project operations would not cause a substantial loss of surface water in the harbor.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	WQ-4.2: Operation of the Project would not cause permanent changes in the movement of surface water that could produce a substantial change in the current or direction of water flow.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	WQ-5.2: Proposed Project operations would not accelerate natural processes of wind and water erosion and sedimentation, resulting in sediment runoff or deposition which would not be contained or controlled on-site.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact

Table 3.14-42. Summary Matrix of Potential Impacts and Mitigation Measures for Water Quality Associated with the Proposed Project and Alternatives (continued)

Alternative	*Environmental Impacts*	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
		3.14 Water Quality (continued)		
No Federal Action/No Project Alternative (continued)	**WQ-1.1:** Construction of facilities would not result in discharges which could create pollution, contamination, or nuisance, or cause regulatory standards to be violated in harbor waters.	CEQA: Less than significant impact NEPA: No impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: No impact
	WQ-2.1: Construction of facilities would not cause or increase the potential for flooding that could harm people or damage property or sensitive biological resources.	CEQA: Less than significant impact NEPA: No impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: No impact
	WQ-3.1: Construction of facilities would not cause a substantial loss of surface water in the harbor.	CEQA: No impact NEPA: No impact	Mitigation not required Mitigation not required	CEQA: No impact NEPA: No impact
	WQ-4.1: Construction of facilities would not cause permanent changes in the movement of surface water that would produce a substantial change in the current or direction of water flow.	CEQA: No impact NEPA: No impact	Mitigation not required Mitigation not required	CEQA: No impact NEPA: No impact
	WQ-5.1: Construction activities would not accelerate natural processes of wind and water erosion and sedimentation, resulting in sediment runoff or deposition which would not be contained or controlled on-site.	CEQA: Less than significant impact NEPA: No impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: No impact
	WQ-1.2: Runoff and oil spills during operation of facilities have the potential to result in discharges which create pollution, contamination, or nuisance, or could cause regulatory standards to be violated in harbor waters.	CEQA: **Significant** impact NEPA: No impact	Mitigation not applicable Mitigation not required	CEQA: **Significant** and unavoidable impact NEPA: No impact
	WQ-2.2: Operation of facilities would not cause or increase the potential for flooding that could harm people or result in damage to property or sensitive biological resources.	CEQA: Less than significant impact NEPA: No impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: No impact

Table 3.14-42. Summary Matrix of Potential Impacts and Mitigation Measures for Water Quality Associated with the Proposed Project and Alternatives (continued)

Alternative	*Environmental Impacts*	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
		3.14 Water Quality (continued)		
No Federal Action/No Project Alternative (continued)	**WQ-3.2:** Operations would not cause a substantial loss of surface water in the harbor.	CEQA: No impact NEPA: No impact	Mitigation not required Mitigation not required	CEQA: No impact NEPA: No impact
	WQ-4.2: Operation of the Project would not cause permanent changes in the movement of surface water that would produce a substantial change in the current or direction of water flow.	CEQA: No impact NEPA: No impact	Mitigation not required Mitigation not required	CEQA: No impact NEPA: No impact
	WQ-5.2: Operations would not accelerate natural processes of wind and water erosion and sedimentation, resulting in sediment runoff or deposition which would not be contained or controlled on-site.	CEQA: Less than significant impact NEPA: No impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: No impact
Reduced Project Alternative	**WQ-1.1**: Construction of Reduced Project Alternative facilities would not result in discharges which could create pollution, contamination, or nuisance, or cause regulatory standards to be violated in harbor waters.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	WQ-2.1: Construction of Reduced Project Alternative facilities would not cause or increase the potential for flooding that could harm people or damage property or sensitive biological resources.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	WQ-3.1: Reduced Project Alternative construction of the Marine Terminal berth would not cause a substantial loss of surface water in the harbor.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact

Table 3.14-42. Summary Matrix of Potential Impacts and Mitigation Measures for Water Quality Associated with the Proposed Project and Alternatives (continued)

Alternative	*Environmental Impacts*	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
		3.14 Water Quality (continued)		
Reduced Project Alternative (continued)	**WQ-4.1:** Construction of Reduced Project Alternative facilities would not cause permanent changes in the movement of surface water that would produce a substantial change in the current or direction of water flow.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	WQ-5.1: Construction of Reduced Project Alternative facilities would not accelerate natural processes of wind and water erosion and sedimentation, resulting in sediment runoff or deposition which would not be contained or controlled on-site.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	WQ-1.2: Runoff and oil spills during Operation of Reduced Project Alternative facilities have the potential to result in discharges which create pollution, contamination, or nuisance, or could cause regulatory standards to be violated in harbor waters.	CEQA: **Significant** impact NEPA: **Significant** impact	**MM 4B-7** **MM WQ-1.2** **MM 4B-7** **MM WQ-1.2**	CEQA: **Significant** and unavoidable impact NEPA: **Significant** and unavoidable impact
	WQ-2.2: Operation of Reduced Project Alternative facilities would not cause or increase the potential for flooding that could harm people or damage property or sensitive biological resources.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	WQ-3.2: Reduced Project Alternative operations would not cause a substantial loss of surface water in the harbor.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact

Table 3.14-42. Summary Matrix of Potential Impacts and Mitigation Measures for Water Quality Associated with the Proposed Project and Alternatives (continued)

Alternative	*Environmental Impacts*	*Impact Determination*	*Mitigation Measures*	*Impacts after Mitigation*
		3.14 Water Quality (continued)		
Reduced Project Alternative (continued)	**WQ-4.2:** Operation of the Reduced Project Alternative would not cause permanent changes in the movement of surface water that could produce a substantial change in the current or direction of water flow.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact
	WQ-5.2: Operation of Reduced Project Alternative facilities would not accelerate natural processes of wind and water erosion and sedimentation, resulting in sediment runoff or deposition which would not be contained or controlled on-site.	CEQA: Less than significant impact NEPA: Less than significant impact	Mitigation not required Mitigation not required	CEQA: Less than significant impact NEPA: Less than significant impact

3.14.4.4 Mitigation Monitoring

Less than significant impacts to water and sediment quality and oceanography would occur as a result of construction and operation of the proposed Project with the exception of effects from oil spills directly to Harbor waters and illegal discharges from vessels, which were identified as significant and unavoidable impact with no feasible mitigation measures.

~~No mitigation measures to reduce or avoid impacts were identified.~~ The following measure from the Deep Draft FEIS/FEIR would be implemented by the Port to ensure that oil spill impacts are minimized to the greatest extent feasible.

Mitigation Measures from the 1992 Deep Draft Final EIS/EIR that are Applicable to the Proposed Project:

Impact WQ-1.2: Runoff and oil spills during operation of proposed Project facilities have the potential to result in discharges which create pollution, contamination, or nuisance, or could cause regulatory standards to be violated in harbor waters.	
MM 4B-7: Increase Local Staffing of CDFG OSR Personnel.	
Mitigation Measure	Requires that the Port petition the state for increased local staffing of the OSPR to reduce the level of accidental spills at ship fuel docks.
Timing	Ongoing.
Methodology	The Port shall make a continual (at least once yearly) concerted effort to petition the state for increase staffing of OSPR personnel. These efforts shall be documented and kept on file in the Port's administration offices.
Responsible Parties	LAHD.

Mitigation Measures Developed in this ~~Draft~~ SEIS/SEIR Specific to the Proposed Project:

Impact WQ-1.2: Runoff and oil spills during operation of proposed Project facilities have the potential to result in discharges which create pollution, contamination, or nuisance, or could cause regulatory standards to be violated in harbor waters.	
MM WQ-1.2: Cleanup of Floating Materials Retained by Containment Boom.	
Measure	All vessels at Berth 408 shall be surrounded by a spill containment boom prior to initiating unloading operations. Following unloading and before releasing the boom, the project tenant shall visually inspect the water surface or the area encircled by the containment boom and recover and dispose any floating materials (e.g., trash) or petroleum sheen.
Timing	Ongoing.
Methodology	Trained wharf personnel shall complete and document a visual inspection of surface waters between ship hull and containment boom. Any floating debris shall be retrieved and disposed as solid waste. All debris shall be retrieved before the boom is released and the ship leaves the berth.
Responsible Parties	Tenant.

3.14.5 Significant Unavoidable Impacts

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