

**STATE OF CALIFORNIA  
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LOS ANGELES REGION**

**ORDER NO. R4-2014-XXXX**

**WASTE DISCHARGE REQUIREMENTS  
FOR  
PORT OF LONG BEACH  
(MIDDLE HARBOR REDEVELOPMENT PROJECT)  
(FILE NO. 09-204)**

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) finds:

1. The Port of Long Beach (POLB) filed an application for renewal of Waste Discharge Requirements contained in Order No. R4-2010-0020, adopted on February 4, 2010, for dredging, disposal and construction activities within the Middle Harbor area of Long Beach Harbor (Figure 1).
2. Order No. R4-2010-0020 authorized POLB to dredge approximately 290,000 cubic yards of sediment from Slip 3 and the East Basin, to dredge and excavate approximately 1,500,000 cubic yards of material from Piers D and E, and to dredge and excavate approximately 500,000 cubic yards of material from Berth F210. The dredged and excavated material was authorized for disposal within the Middle Harbor fill site, located in the Slip 1 and East Basin fill areas. This confined disposal facility would create approximately 65 acres of new land and would require approximately 4.8 million cubic yards of fill material for completion. Consequently, POLB was authorized to accept suitable fill material from third-party sources for disposal within the Middle Harbor confined disposal facility.
3. Dredge and fill activities commenced in May 2011. POLB has dredged and excavated approximately 1.5 million cubic yards of material from Slip 3 and Piers D and E. All of this material was disposed of within the Middle Harbor confined disposal facility. In addition, 1,366,000 cubic yards of dredged material from 11 individual projects conducted by third parties (Los Angeles Beaches and Harbors, City of Newport Beach, City of Long Beach, United States Army Corps of Engineers and Eagle Rock Aggregates) throughout southern California was accepted by POLB for disposal within the Middle Harbor confined disposal facility.
4. Water quality monitoring began on May 21, 2011, and has been conducted weekly during active periods of dredging and disposal operations. No exceedances of water quality objectives occurred.

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August 13, 2014

5. Renewal of the waste discharge requirements is necessary to allow POLB to conduct the dredging and excavation of approximately 830,000 cubic yards to complete the Middle Harbor Redevelopment Project. This will include minor dredging of Slip 3 to achieve final grade, minor dredging and excavation of Pier D, minor dredging in Slip 1 and the East Basin to prepare the sites and create the toe for the containment dike for the next portion of the Middle Harbor fill site, dredging and excavation of a portion of Pier F (near Berth F10) needed for final wharf configuration, and dredging from approved borrow sites to provide additional suitable fill material required for the Middle Harbor fill site (Figures 2 and 3).

Dredging at approved borrow sites within the port will be needed to provide clean, geotechnically suitable fill material for each section of the fill. Approved borrow sites may include the Pier T, Pier J and West Basin borrow areas, the Western Anchorage Temporary Sediment Storage Site, or other borrow sites throughout the port. Prior to dredging at borrow sites other than the Western Anchorage Temporary Sediment Storage Site, POLB shall submit a request, including appropriate supporting documentation, and obtain written approval from the Executive Officer of the Los Angeles Regional Water Quality Control Board.

All dredged and excavated material will be disposed of as fill in the Middle Harbor confined disposal facility. Placement of contaminated and uncontaminated dredged materials into an authorized Port-constructed fill site is defined as “beneficial reuse” by the Los Angeles Contaminated Sediments Task Force’s Longterm Management Strategy. Material will be placed at the fill site by bottom dump scows, mechanical or hydraulic placement methods, or brought to the fill site by trucks. The project also will include wharf demolition and construction activities at Pier E and Pier F, and rock dike construction at Slip 1, the East Basin and Slip 3.

6. A sediment characterization study was conducted in 2006 within the area to be dredged within the Slip 3 and East Basin areas (as described in finding 5). The dredge footprint was divided into two sampling areas (Area PE 1 and Area PE 2), each containing six different sediment core locations, respectively (Figure 4). The top layers of sediment from Areas PE 1 and PE 2 are comprised largely of clay and silt (86 and 61 percent fine-grained materials, respectively); the bottom layers have high proportions of sand and gravel (48 and 67 percent coarse-grained materials, respectively). In the top layers of Slip 3 sediments, several constituents were present at concentrations exceeding effects range low (ERL) levels (metals, DDTs, PCBs, and PAHs). All of those constituents, however, were below effects range median (ERM) values. Other chemicals analyzed were found at concentrations below ERL levels. No phenols and no chlorinated pesticides, except DDT derivatives, were detected, and organotins were detected below concentrations

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shown to cause toxicity to aquatic organisms. In the bottom layers of sediment, organochlorine pesticides and organotins were below the detection limits, and no other chemicals (metals, PCBs, and PAHs) exceeded ERL values (Table 1).

7. A soil characterization study was conducted in 2006 within the area to be excavated in the vicinity of Piers D and E (as described in finding 5). Samples were collected and analyzed from 45 locations within this area (figure 5). Chemical concentrations in soil samples exceeded one or more ERL values for metals, organochlorine pesticides, and PAHs. All chemicals measured in sediment samples were below ERM values, except copper exceeded the ERM in one sample and p'p-DDT exceeded the ERM value in four samples (Table 2).

**Table 1. Sediment Concentrations in Cores Collected from Slip 3 and East Basin.**

Analyte	ERL	ERM	TTLC	Composite Range
Physical Analyses (%)				
Gravel	-	-	-	0.003 – 6.56
Sand	-	-	-	12.4 – 66.7
Silt	-	-	-	27.4 – 57.8
Clay	-	-	-	5.91 – 28.3
Solids, Total	-	-	-	66.3 – 74.6
Chemical Analyses (mg/kg ,or parts per million)				
Arsenic (As)	8.2	70	500	3.7 – 10.6
Cadmium (Cd)	1.2	9.6	1200	0.08 – 0.77
Chromium (Cr)	81	370	-	17.9 – 44.3
Copper (Cu)	34	270	2500	19.4 – 63.8
Lead (Pb)	46.7	218	1000	5.04 – 38.1
Mercury (Hg)	0.15	0.71	20	0.06 – 0.31
Nickel (Ni)	20.9	51.6	2000	14.7 – 25.3
Selenium (Se)	-	-	100	<0.025 – 0.48
Silver (Ag)	1	3.7	500	<0.025 – 0.15
Zinc (Zn)	150	410	5000	45.1 – 118
Organics (µg/kg, or parts per billion)				
4,4'-DDD	2	20	1000	<1 – 2.3
4,4'-DDE	2.2	27	1000	<1 – 15
4'4' DDT	1.0	7.0	1000	<1

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Analyte	ERL	ERM	TTLC	Composite Range
Total Detectable DDTs	1.6	46.1		0 – 22.9
Total PCB	22.7	180	50000	0 – 47.1
Total PAH	4022	44792	-	171.4 – 4235.4
Total Detectable Chlordane	0.5	6	2500	0

ERL = Effects Range – Low; ERM = Effects Range – Median  
 TTLC = total threshold limit concentration  
 DDD = 1,1-dichloro-2,2-bis(p-chlorophenyl)ethane  
 DDE = 1,1-dichloro-2,2-bis(p-chlorophenyl)ethylene  
 DDT = 1,1,1-trichloro-2,2-bis(p-chlorophenyl)ethane  
 PCB = polychlorinated biphenyls  
 PAH = polynuclear aromatic hydrocarbons

**Table 2. Soil Concentrations in Samples Collected from Pier D and E.**

Analyte	ERL	ERM	TTLC	Composite Range
<b>Metals (mg/kg)</b>				
Arsenic (As)	8.2	70	500	3.7 – 5.53
Cadmium (Cd)	1.2	9.6	1200	0.08 – <0.05
Chromium (Cr)	81	370	-	17.9 - 34.8
Copper (Cu)	34	270	2500	19.4 – 1600
Lead (Pb)	46.7	218	1000	5.04 – 41.8
Mercury (Hg)	0.15	0.71	20	0.06 – 0.3
Nickel (Ni)	20.9	51.6	2000	14.7 – 21.4
Selenium (Se)	-	-	100	<0.025 – 1.13
Silver (Ag)	1	3.7	500	<0.025 – 0.73
Zinc (Zn)	150	410	5000	45.1 – 102.0
<b>Organics (µg/kg)</b>				
4,4'-DDD	2	20	1000	<1 – 1.94
4,4'-DDE	2.2	27	1000	<1 – 4.48
4'4' DDT	1.0	7.0	1000	<1 – 36.1
Total Detectable DDTs	1.6	46.1		0 – 42.52
Total PCB	22.7	180	50000	0 – <4.2

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**Table 2. Soil Concentrations in Samples Collected from Pier D and E.**

Analyte	ERL	ERM	TTLC	Composite Range
Total PAH	4022	44792	-	Not detected – 4926.5
Total Detectable Chlordane	0.5	6	2500	0 - <0.62

ERL = Effects Range – Low; ERM = Effects Range – Median  
 TTLC = total threshold limit concentration  
 DDD = 1,1-dichloro-2,2-bis(p-chlorophenyl)ethane  
 DDE = 1,1-dichloro-2,2-bis(p-chlorophenyl)ethylene  
 DDT = 1,1,1-trichloro-2,2-bis(p-chlorophenyl)ethane  
 PCB = polychlorinated biphenyls  
 PAH = polynuclear aromatic hydrocarbons

8. The U.S. Army Corps of Engineers (COE) issued Permit No. SPL-2004-01053-AOA to POLB for the Middle Harbor Redevelopment Project. The COE permit has an expiration date of February 28, 2020.
9. On April 13, 2009, the Long Beach Board of Harbor Commissioners certified the Middle Harbor Redevelopment Project Environmental Impact Report (Resolution Number HD-2498) in compliance with the California Environmental Quality Act.
10. The Regional Board adopted a revised Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties on June 13, 1994. The Water Quality Control Plan contains water quality objectives for Long Beach Harbor. The requirements contained in this Order as they are met will be in conformance with the goals of the Water Quality Control Plan.
11. The beneficial uses of the Los Angeles-Long Beach inner harbor and marina waters are: industrial service supply, navigation, water contact recreation (potential), non-contact water recreation, commercial and sport fishing, marine habitat, preservation of rare, threatened and endangered species, and shellfish harvesting (potential). The beneficial uses of the outer harbor waters are: navigation, water contact recreation, non-contact water recreation, commercial and sport fishing, marine habitat, preservation of rare, threatened and endangered species, and shellfish harvesting (potential).

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12. With proper management of the dredging and disposal operations, the project is not expected to release significant levels of contaminants to the Harbor waters or other State waters nor adversely impact beneficial uses.
13. Dredging and disposal operations will be accomplished through the use of temporary equipment. The Waste Discharge Requirements imposed below will not result in any significant increase in energy consumption.

The Regional Board has notified the Port of Long Beach and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for this discharge and has provided them with an opportunity to submit their written views and recommendations.

The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge and to the tentative requirements.

IT IS HEREBY ORDERED that the Port of Long Beach, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act as amended, and regulations and guidelines adopted thereunder, shall comply with the following:

A. Discharge Requirements

1. The removal and placement of dredged/excavated material shall be managed such that the concentrations of toxic pollutants in the water column, sediments or biota shall not adversely affect beneficial uses, in particular those identified in Finding number 15 above.
2. Enclosed bay and estuarine communities and populations, including vertebrate, invertebrate and plant species, shall not be degraded as a result of the discharge of waste.
3. The natural taste and odor of fish, shellfish or other enclosed bay and estuarine resources used for human consumption shall not be impaired as a result of the discharge of waste.
4. Toxic pollutants shall not be discharged at levels that will bioaccumulate in aquatic resources to levels which are harmful to human health.
5. There shall be no acute toxicity or chronic toxicity in ambient waters as a result of the discharge of waste.

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6. POLB shall conduct the monitoring required and comply with the reporting requirements outlined in the attached Monitoring and Reporting Program, which is incorporated by reference as part of these Waste Discharge Requirements.
7. Dredging, excavation or disposal of dredge spoils shall not cause any of the following conditions in the receiving waters:
  - a. The formation of sludge banks or deposits of waste origin that would adversely affect the composition of the bottom fauna and flora, interfere with the fish propagation or deleteriously affect their habitat, or adversely change the physical or chemical nature of the bottom.
  - b. Turbidity that would cause substantial visible contrast with the natural appearance of the water outside the construction project boundary.
  - c. Discoloration outside the construction project boundary.
  - d. Visible material, including oil and grease, either floating on or suspended in the water or deposited on beaches, shores, or channel structures outside the construction project boundary.
  - e. Objectionable odors emanating from the water surface.
  - f. Depression of dissolved oxygen concentrations below 5.0 mg/l at any time outside the construction project boundary.
  - g. Any condition of pollution or nuisance.

B. Provisions

1. The Discharge Requirements specified above are valid only for excavation and dredging of a maximum volume of 830,000 cubic yards of soil and sediment from Slip 3, Pier D, Slip 1, East Basin, Pier F, and approved borrow sites, and for disposal within the Middle Harbor fill site.
2. Approved borrow sites may include the Pier T, Pier J and West Basin borrow areas, the Western Anchorage Temporary Sediment Storage Site, or other borrow sites throughout the port. Prior to dredging at borrow sites other than the Western Anchorage Temporary Sediment Storage Site, POLB shall submit a request, including appropriate supporting

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documentation, and obtain written approval from the Executive Officer of the Los Angeles Regional Water Quality Control Board.

3. POLB shall manage the Middle Harbor confined fill site to effectively contain chemically contaminated materials and to prevent migration of contaminants from the disposal sites into State waters.
4. POLB shall notify the Regional Board immediately by telephone of any adverse conditions in receiving waters or adjacent areas resulting from the removal of dredge materials; written confirmation by POLB to the Regional Board shall follow within one week.
5. A copy of this Order shall be made available at all times to project construction personnel.
6. POLB shall provide the following information to the Regional Board:
  - a. A copy of the final permit issued by the Department of the Army for the dredge and disposal operations.
  - b. The scheduled date of commencement of each dredging operation and an engineering plan and profile of the excavation and the disposal site at least two weeks prior to commencement.
  - c. Notice of termination of the operation, within one week following the termination date.
7. POLB shall submit, under penalty of perjury, technical reports to the Regional Board in accordance with specifications prepared by the Executive Officer.
8. In accordance with section 13260(c) of the Water Code, POLB shall file a report of any material change or proposed change in the character, location, or volume of the waste.
9. These requirements do not exempt POLB from compliance with any other laws, regulations, or ordinances which may be applicable: they do not legalize this waste discharge, and they leave unaffected any further restraint on the disposal of wastes at this site which may be contained in other statutes or required by other agencies.
10. In accordance with Water Code section 13263(g), these requirements shall not create a vested right to continue to discharge and are subject to

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rescission or modification. All discharges of waste into waters of the State are privileges, not rights.

11. This Order includes Attachment N: "Standard Provisions, General Monitoring and Reporting Requirements" ("Standard Provisions") and the attached Monitoring and Reporting Requirements, both of which are incorporated herein by reference. If there is any conflict between provisions stated hereinbefore and said "Standard Provisions", those provisions stated hereinbefore prevail. If there is any conflict between requirements stated in the attached Monitoring and Reporting Program and said "Standard Provisions", the former shall prevail.
12. This Order fulfills the requirements for a Clean Water Act Section 401 Water Quality Certification for the proposed project. Pursuant to section 3860 of title 23 of the California Code of Regulations (23 CCR), the following three standard conditions shall apply to this project:
  - a. this certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to section 13330 of the California Water Code and Article 6 (commencing with 23 CCR section 3867);
  - b. this certification action is not intended and shall not be construed to apply to any activity involving a hydroelectric facility and requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to 23 CCR subsection 3855(b) and the application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought;
  - c. this certification is conditioned upon total payment of any fee required pursuant to 23 CCR division 3, chapter 28, and owed by the applicant.
13. This Order shall expire on February 28, 2020.
14. This Order terminates the requirements and provisions of Regional Board Order No. R4-2010-0020, except for enforcement purposes.

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Port of Long Beach  
Middle Harbor Redevelopment Project

Order No. R4-2014-xxxx

I, Samuel Unger, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Los Angeles Region, on October 9, 2014.

SAMUEL UNGER, P.E.  
Executive Officer

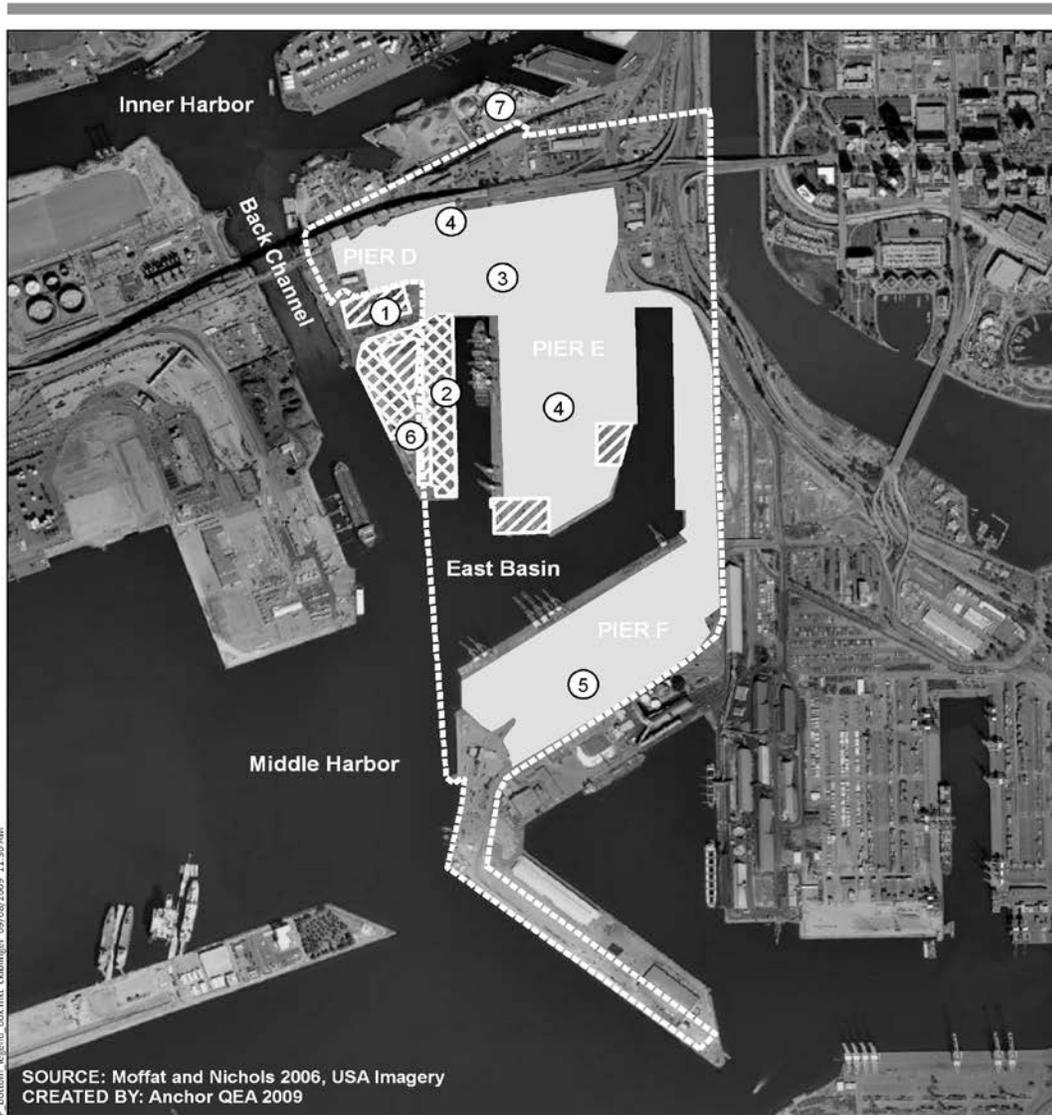
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Figure 1. Site Location

Figure 1. Port of Long Beach and Middle Harbor Redevelopment Project site location.



SOURCE: Moffat and Nichols 2006, USA Imagery  
CREATED BY: Anchor QEA 2009

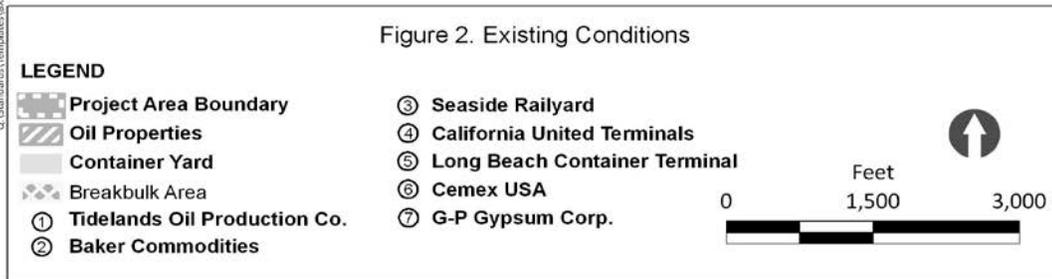


Figure 2. Existing Conditions within Project Area.

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Figure 3. Construction Elements for Middle Harbor Redevelopment Project.

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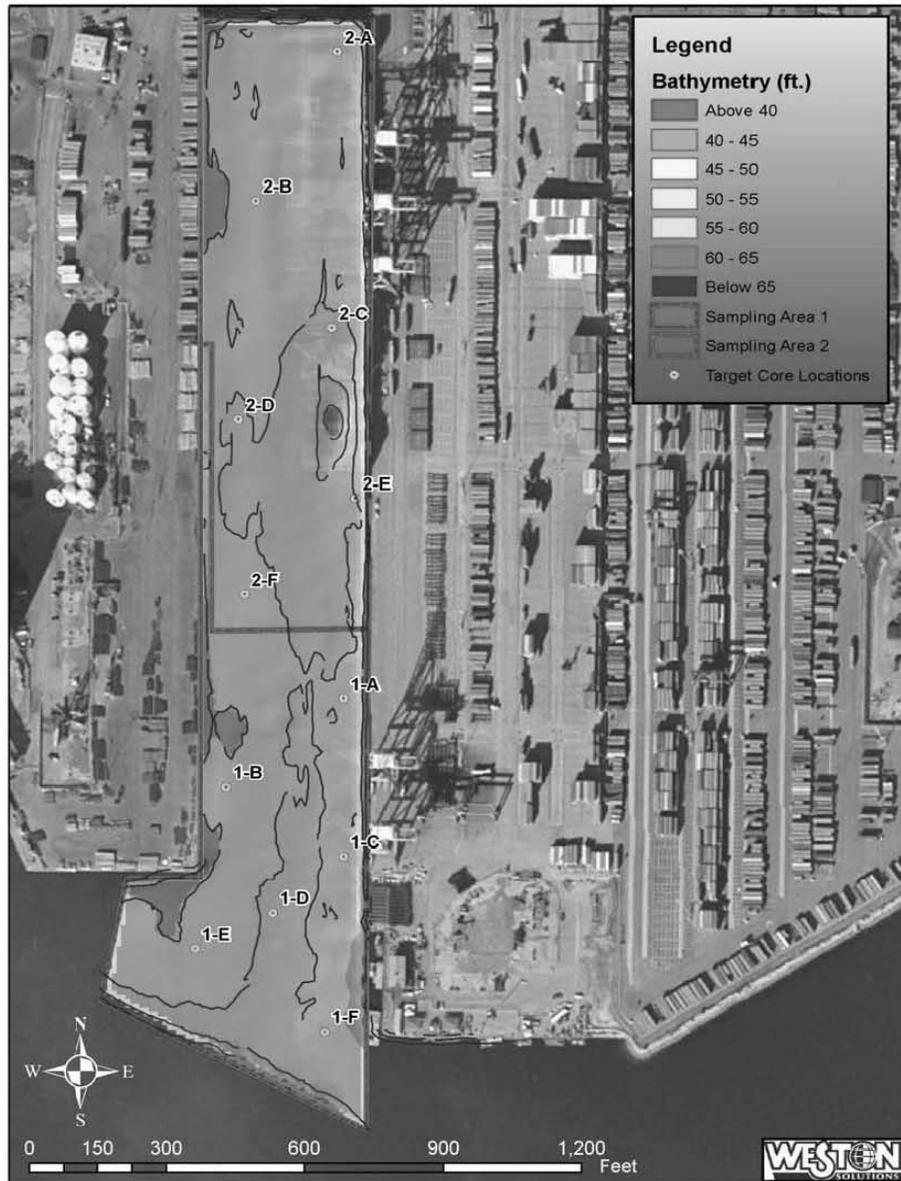
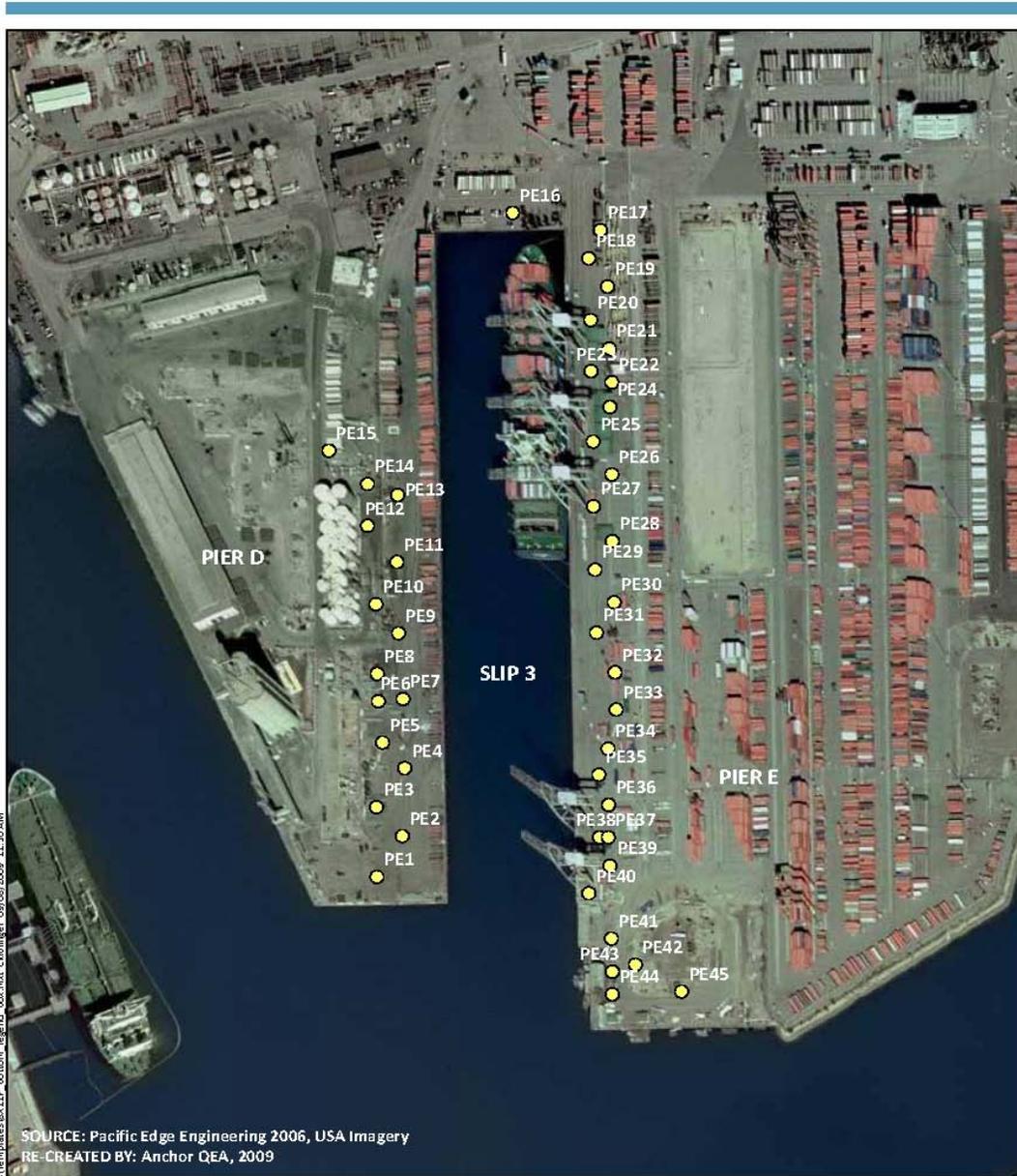


Figure 1. Sampling Locations Within Slip 3 of the Port of Long Beach

Figure 4. Sediment Sampling Locations within Slip 3 and East Basin.

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Figure 5. Soil Sampling Locations within Pier D and Pier E areas.