California Regional Water Quality Control Board
Los Angeles Region

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: http://www.waterboards.ca.gov/losangeles

Linda S. Adams
Cal/EPA Secretary

Arnold Schwarzenegger
Governor

August 20, 2008

Captain Charles B. Conners
Commanding Officer
Naval Base Ventura County
311 Main Road, Suite 1
Point Mugu, CA 93042-5033

WASTE DISCHARGE REQUIREMENTS
PORT HUENEME MAINTENANCE DREDGING (FILE NO. 08-066)

Dear Captain Conners:

Reference is made to our letter of June 24, 2008, which transmitted copies of tentative waste discharge requirements (WDRs) and a receiving water monitoring program for dredging and disposal of dredged material from the Port Hueneme Maintenance Dredging program within the County of Ventura.

In accordance with the California Water Code, this Board, at a public meeting held on August 14, 2008, reviewed the tentative requirements, considered all factors in the case and adopted Order No. R4-2008-0053 relative to this waste discharge (copy enclosed). The Standard Provisions, which were sent to you with the tentative requirements, were adopted without change and are part of this order.

All monitoring reports should be sent to the Regional Board, Attention: Information Technology Unit. Reference all technical monitoring reports required by this Order to our Compliance File No. 9447. We would appreciate it if you would not combine other reports, such as progress or technical reports, with your monitoring reports, but would submit each type of report as a separate document.

Should you have any questions, please telephone me at (213) 576-6718.

J. MICHAEL LYONS
Environmental Specialist IV

Enclosures

Cc: See attached mailing list

MAILING LIST

Bill Orme, Non-point Source Unit, SWRCB
Jennifer Fordyce, Office of Chief Counsel, SWRCB
Larry Simon, California Coastal Commission (San Francisco)
Bill Paznokas, California Department of Fish and Game (San Diego)
Kenneth Wong, U.S. Army Corps of Engineers (Los Angeles)
Allan Ota, U.S. Environmental Protection Agency (San Francisco)
John Hanlon, U.S. Fish and Wildlife Service (Carlsbad)
Robert Hoffman, National Marine Fisheries Service (Long Beach)
Mark Gold, Heal the Bay
Steve Granade, Naval Base Ventura County
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Linda S. Adams
Cal/EPA Secretary

Arnold Schwarzenegger
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August 20, 2008

Mr. Anthony J. Taormina
Executive Director
Oxnard Harbor District
333 Pomona Street
Port Hueneme, CA 93041

WASTE DISCHARGE REQUIREMENTS
PORT HUENEME MAINTENANCE DREDGING (FILE NO. 08-066)

Dear Mr. Taormina:

Reference is made to our letter of June 24, 2008, which transmitted copies of tentative waste discharge requirements (WDRs) and a receiving water monitoring program for dredging and disposal of dredged material from the Port Hueneme Maintenance Dredging program within the County of Ventura.

In accordance with the California Water Code, this Board, at a public meeting held on August 14, 2008, reviewed the tentative requirements, considered all factors in the case and adopted Order No. R4-2008-0053 relative to this waste discharge (copy enclosed). The Standard Provisions, which were sent to you with the tentative requirements, were adopted without change and are part of this order.

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

ORDER NO. R4-2008-0053

WASTE DISCHARGE REQUIREMENTS
FOR
OXNARD HARBOR DISTRICT AND NAVAL BASE VENTURA COUNTY
(PORT HUENEME MAINTENANCE DREDGING)
(FILE NO. 08-066)

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

1. The Oxnard Harbor District (OHD) and the Naval Base Ventura County (NBVC) are acting as co-applicants and have jointly filed an application for Waste Discharge Requirements for routine maintenance dredging operations within Port Hueneme, an industrial harbor located in Ventura County near the City of Oxnard.

2. Port Hueneme is located approximately 60 miles northwest of Los Angeles along the California coast at approximately 34.150117° latitude and 119.208000° longitude (Figure 1, Site Location Map, Port of Hueneme). Commercial shipping within the port is managed by OHD. The port is the only deepwater harbor between Los Angeles and the San Francisco Bay area. It also serves as one of the military ports on the West Coast, containing the NBVC facility. The port is a constructed, landlocked harbor connected to the sea by a jetty-protected entrance channel. The outer part of the entrance channel terminates at the head of a submarine canyon, which offers an excellent deep water approach to the Harbor for large ocean-going vessels. OHD and NBVC are responsible for maintaining water depths along their wharves and berths, while the United States Army Corps of Engineers (COE) is responsible for maintaining safe navigation depths in the approach channel, entrance channel and turning basin. All three agencies will be working cooperatively to accomplish the proposed dredging project.

3. Maintaining active commercial operations in Port Hueneme requires full use of the berthing areas along OHD Wharf 1 and Wharf 2 (Figure 2, Project Area Site Plan, Port of Hueneme). The berths at these two wharves were last dredged in 1988 and have accumulated between 3 and 13 feet (1 to 4 meters) of sediment along the wharf faces. The NBVC facility is experiencing similar issues in terms of sedimentation along its wharf faces, which impedes navigation and affects military vessel operations (Figure 2). The NBVC berths were last dredged in 1965 and have accumulated between 3 and 10 feet (1 to 3 meters) of sediment. Although the COE dredged portions of the navigation channels and the turning basin in 1983, 1989,

and between 2000 and 2005, three areas of contaminated sediments remain within the navigation channels and clean, sandy materials have accumulated in parts of the approach channel, entrance channel and turning basin. Dredging is required to restore these areas to design depths for safe navigation (Figure 2).

OHD and NBVC propose to dredge a total of approximately 1,081,600 cubic yards of sediments within Port Hueneme. The proposed dredging and disposal would occur in three stages: 1) dredging of clean sediments to create a confined aquatic disposal (CAD) cell and disposal of the clean material at Hueneme Beach for beach nourishment; 2) dredging of contaminated sediments and disposal of the contaminated material within the CAD cell; 3) dredging of clean sediments and disposal of the clean material within the CAD cell to cap the contaminated material. More than half (52%) of the dredged material will be beneficially re-used for beach replenishment. Another 17% of the material to be dredged will be used to create the clean cap for the CAD cell, which also constitutes beneficial re-use.

The first stage of dredging would involve hydraulic dredging to remove approximately 571,600 cubic yards (437,000 cubic meters) of clean sediments from within the Turning Basin of the Port of Hueneme to create the CAD cell that would later be used to hold contaminated sediments dredged from other areas within the port plus a cap of clean material (Figure 2). The proposed CAD cell would measure approximately 690 feet by 800 feet (210 meters by 250 meters) at the top elevation of -39 feet (-12 meters) mean lower low water (MLLW) and up to 460 feet by 590 feet (140 meters by 180 meters) at the bottom elevation of -85 feet (-26 meters) MLLW. The clean sand (approximately 571,600 cubic yards) excavated from the CAD cell site would be utilized for beneficial re-use as beach replenishment at Hueneme Beach, which has lost large amounts of sand through severe erosion of the beach face. The sand would be pumped hydraulically into the littoral zone just south of the harbor entrance channel and east jetty, where waves and currents will move the sand onto Hueneme Beach.

The second phase of dredging would involve mechanical dredging (e.g., clamshell dredging) to remove approximately 327,000 cubic yards (250,000 cubic meters) of contaminated sediments from the vicinity of the OHD berths, the NBVC berth and portions of the entrance channel. These contaminated sediments would be placed at the bottom of the Confined Aquatic Disposal (CAD) cell using bottom-dump barges (Figure 3, Typical Cross-Section Through CAD Facility, Port of Hueneme).

The third phase of dredging would involve mechanical dredging (or possibly hydraulic dredging) to remove approximately 183,000 cubic yards (143,000 cubic meters) of clean sediments from the remainder of the entrance channel. This clean

material would be placed into the CAD on top of the previously disposed contaminated sediments using bottom-dump barges (or via hydraulic pumping if hydraulic dredging occurs), creating a 10 to 13 foot (3 to 4 meter) thick cap of clean material (Figure 3). To prevent possible scouring of the fine-grained sediments comprising the cap which could be produced through the operations of large Navy vessels, a 1 to 3 foot (0.3 to 1 meter) thick layer of gravel will be placed over the portions of the cap which could be subjected to high levels of propeller wash.

Dredging and disposal is scheduled to begin in October 2008 and the project is scheduled to be completed by September 2009. Dredging and disposal operations likely would occur on a 24 hours per day, 7 days per week basis to allow for efficient use of the dredging equipment and to complete the project as quickly as possible.

4. OHD and NBVC evaluated a full range of alternatives for the disposal of the contaminated sediments to be dredged from the Port of Hueneme.
   - Upland disposal at a Class III landfill was not deemed feasible, due to the expenses associated with dewatering of the dredged material, transport to a landfill and tipping fees for disposal, as well as concerns about the suitability of materials with a high chloride content for inland disposal and concerns about the ability of regional landfills to accept such a large quantity of material.
   - Treatment to stabilize the contaminants present in the dredged sediments and allow re-use was not deemed feasible, due to expenses associated with rehandling of the material and construction of large, on-site treatment facilities to process the material, concerns about the effectiveness of unproven treatment processes and uncertainties regarding available options for disposal or re-use of treated sediments.
   - Open ocean disposal at a designated disposal site (e.g., LA-2) was not feasible since contaminated sediments would adversely affect water quality and marine organisms.

   Confined aquatic disposal was selected as the most feasible disposal alternative for contaminated sediments. The California Coastal Commission has determined that the proposed CAD cell is the least damaging feasible alternative for disposal of contaminated sediments. The following characteristics support the consideration of CAD technology to remedy the current sediment shoaling and contamination problems within the Port of Hueneme: moderate levels of contaminants in the harbor sediments; CAD cell design provides a low risk of failure either by fluid migration or physical failure; sediments primarily contain legacy contaminants from past practices that are not expected to recontaminate the harbor in the future; contaminants currently are in equilibrium with aquatic sediment conditions; OHD and NBVC are committed to a monitoring and maintenance plan that will ensure that

the contaminants remain isolated within the CAD cell; and the protected nature of the CAD cell location ensures that it can be maintained adequately by OHD and NBVC.

5. OHD, NBVC and COE have conducted extensive sediment characterization studies throughout Port Hueneme (Figure 4, Surface and Subsurface Sediment Sampling Locations, Port of Hueneme). Some of the areas to be dredged in the harbor have been affected by urban and agricultural runoff, waste from industrial operations at a military base, discharges from a sewage treatment plant and residual bottom paints from commercial and military shipping. These historic activities adversely affected sediments in a flood control channel discharging directly into the harbor, leaving behind sediments in certain areas with elevated concentrations of chemicals including pesticides, tributyltin (TBT) and polychlorinated biphenyls (PCBs).

   OHD tested sediments within the area to be excavated for the proposed CAD cell in 2007 (sampling stations designated by triangles on Figure 4). Five sediment cores were collected and laboratory analysis indicated a sand content of 92 to 93 percent by weight. This material is compatible with the existing sands at Hueneme Beach, where beach material was found to have a sand content of 90% in 2001. Chemical analyses were not conducted on these sediments because it is virgin material that has not been exposed to external sources of pollution that would cause contamination. These clean sediments (Figure 2) are suitable for beneficial re-use for beach replenishment.

   OHD tested sediments in the vicinity of OHD Wharves 1 and 2 in 2006 and 2008 (sampling stations designated by open squares on Figure 4). Copper, TBT, total DDTs, total PCBs and total polycyclic aromatic hydrocarbons (PAHs) exceeded thresholds of concern (Effects Range Low, Effects Range High or Bioaccumulation Trigger levels) in one or more of the wharf composite samples tested. These contaminated sediments (Figure 2) are not suitable for open ocean disposal nor beach replenishment and will be placed within the CAD cell.

   NBVC tested sediments at 46 sampling locations throughout Port Hueneme in 2007 (sampling stations designated by white squares containing a dot on Figure 4). TBT and PAHs exceeded thresholds of concern at several locations. DDT exceeded the Effects Range Low (possibly toxic sediments) and Bioaccumulation Trigger levels in the majority of samples tested, and exceeded the Effect Range High (probably toxic sediments) and Bioaccumulation Trigger levels in almost one-fourth of the samples tested. Cadmium, copper, mercury, lead, nickel and zinc also exceeded Effects Range Low levels at several locations. The contaminated sediments near the wharf and in a portion of the entrance channel, also tested by the COE, (Figure 2) are not

suitable for open ocean disposal nor beach replenishment and will be placed within the CAD cell.

COE tested sediments throughout Port Hueneme at more than 50 sampling locations, including the entrance channel and turning basin, in 1996, 2001, 2002, 2006 and 2008 (sampling stations designated by circles on Figure 4). Mercury, cadmium, TBT, total DDTs, total PCBs and total PAHs exceeded thresholds of concern in three areas, designated as hot spots (Figure 2). The contaminated sediments in these hot spots are not suitable for open ocean disposal nor beach replenishment and will be placed within the CAD cell. The remaining areas of the entrance channel and turning basin are relatively uncontaminated and these sediments will be used to create the clean cap for the CAD cell.

6. NBVC, which includes upland areas as well as harbor waters, has been part of an Installation Restoration Program (IRP) since 1985. Recent IRP activities have included extensive sampling of surface soils, groundwater, surface runoff, drainage canal sediment and harbor sediments. Correlation analyses have shown that pollutants in upland media (primarily PAHs, PCBs and DDT) are similar to those detected in drainage canal sediments, which have been shown to have the potential for transport into the harbor. It is probable that the majority of documented pollutants found in harbor sediments resulted from these historic transport pathways. However, the source of TBT to harbor sediments probably was anti-fouling boat paint on the hulls of commercial vessels utilizing the harbor. TBT is no longer used in most marine anti-fouling paints. The Navy is working to control these chemical migration routes into the harbor and remediate all upland pollutant sources through the IRP. NBVC is on schedule to have remedies in place for all its IRP sites by 2014.

   The proposed maintenance dredging project is not designed to function as a clean-up program as part of the IRP. However, the proposed project will result in the removal of approximately 95% of the contaminated sediments from Port Hueneme Harbor. The only location with contaminated sediments that will remain in the harbor after the maintenance dredging project is completed will be one small area that is not part of the federal shipping channel or active wharf areas. This area is located just inside west entrance channel jetty (but outside of the actual navigation channel).

7. While Port Hueneme initially was constructed by OHD in 1939, the United States Navy currently owns the submerged lands underlying the entire port with the exception of the portion known as Slip A. For the proposed project, the United States Navy has entered into a memorandum of understanding with OHD for shared financial responsibility and project liability to construct the CAD cell.

Following construction, OHD will assume responsibility for the long-term management of the CAD cell.

OHD has developed an Operations Mitigation and Monitoring Plan (OMMP) for the CAD cell which describes a plan for managing the cell as a disposal site for contaminated sediments during a single multi-user project within the harbor. The OMMP discusses the administrative steps and physical process of placing the contaminated material within the CAD cell, covering it or capping it with clean sand to prevent the release of contaminants and the details of an ongoing and long-term monitoring program to monitor for potential environmental impacts associated with the project. The OMMP includes the following components: pre- and post-disposal monitoring of the CAD cell; on-site monitoring of all disposal and capping operations within the CAD cell; design of the final isolation cap placed on the surface of the CAD cell at the conclusion of disposal operations; preparation of monitoring reports for the regulatory agencies that document compliance with the OMMP. Specific monitoring requirements are outlined in the attached Monitoring and Reporting Program.

8. On May 9. 2008, the California Coastal Commission adopted a federal consistency determination (CD-016-08) for the United States Navy and United States Army Corps of Engineers for maintenance dredging of the Port Hueneme Harbor entrance channel, turning basin, Navy wharves and Oxnard Harbor District wharves, for placement of contaminated sediments in a confined aquatic disposal site in the turning basin, and for placement of clean, sandy sediments on Hueneme Beach.

9. On April 4, 2008, the United States Corps of Engineers (COE) issued a public notice for the application for proposed dredging of the Port of Hueneme and the proposed disposal alternatives, including creation of a CAD site within the port (Public Notice No. 2008-357-AJS). The public comment period closed on May 4, 2008. The COE also issued a Draft Supplemental Environmental Assessment (SEA) for the Port Hueneme Harbor Maintenance Dredging Project on May 21, 2008. A final decision on issuance of the COE dredging permit application will not be made until the SEA has been finalized, which is expected to occur in July or August, 2008.

10. On April 7, 2008, the Oxnard Harbor District (OHD) issued a Draft Mitigated Negative Declaration for the Port of Hueneme Contaminated Sediment Dredging and Confined Aquatic Disposal Site Construction project. The public comment period closed on May 9, 2008. OHD adopted the Final Mitigated Negative Declaration on June 23, 2008.

11. 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 Port Hueneme. The requirements contained in this Order as they are met will be in conformance with the goals of the Water Quality Control Plan.

12. The beneficial uses of Port Hueneme (Harbor) are: industrial process supply, navigation, water contact recreation, non-contact water recreation, commercial and sport fishing, marine habitat and wildlife habitat.

13. 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.

14. 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 Oxnard Harbor District, Naval Base Ventura County 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 Oxnard Harbor District and Naval Base Ventura County, 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.

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.

6. Silt curtains shall be employed during dredging of the OHD and NBVC wharves to minimize turbidity and possible release and spread of contaminants by isolating the active dredge site from the rest of the harbor.

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 immediate area of operation.

   c. Discoloration outside the immediate area of operation.

   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 immediate area of operation.

   e. Objectionable odors emanating from the water surface.

   f. Depression of dissolved oxygen concentrations below 5.0 mg/l at any time outside the immediate area of operation.

   g. Any condition of pollution or nuisance.

B. Provisions

1. The Discharge Requirements specified above are valid only for dredging and disposal of a maximum of 1,081,600 cubic yards of sediment as proposed by OHD and NBVC.

2. OHD and NBVC 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, disposal operations, and construction and maintenance of the confined aquatic disposal cell; written confirmation shall follow within one week.

3. A copy of this Order shall be made available at all times to project construction personnel.

4. OHD and NBVC shall provide the following information to the Regional Board:

   a. A copy of the final permit issued by the United States Corps of Engineers for the dredge and disposal operations.

   b. A copy of the final Mitigated Negative Declaration adopted by the Oxnard Harbor District.

   c. The scheduled date of commencement of each dredging and disposal operation at least one week prior to initiation of dredging.

   d. Notice of termination of dredging and disposal operations, within one week following the termination date.

5. OHD and NBVC shall submit, under penalty of perjury, technical reports to the Regional Board in accordance with specifications prepared by the Executive Officer.

6. OHD shall be responsible for implementation of the Operations Mitigation and Monitoring Plan (OMMP) for the CAD cell and proper containment of contaminated sediments within the CAD cell. OHD shall be responsible for repairing the clean cap to maintain the integrity of the CAD cell, as necessary. In the event that the CAD cell is unsuccessful in providing full and reliable containment of the contaminated sediments, OHD shall be responsible for identifying an appropriate alternative disposal site or

containment method and transferring or treating the contaminated sediments, as necessary.

7. In accordance with section 13260(c) of the Water Code, OHD and NBVC shall file a report of any material change or proposed change in the character, location, or volume of the waste.

8. These requirements do not exempt OHD and NBVC 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.

8. In accordance with Water Code section 13263(g), these requirements shall not create a vested right to continue to discharge and are subject to rescission or modification. All discharges of waste into waters of the State are privileges, not rights.

9. 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.

10. 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;

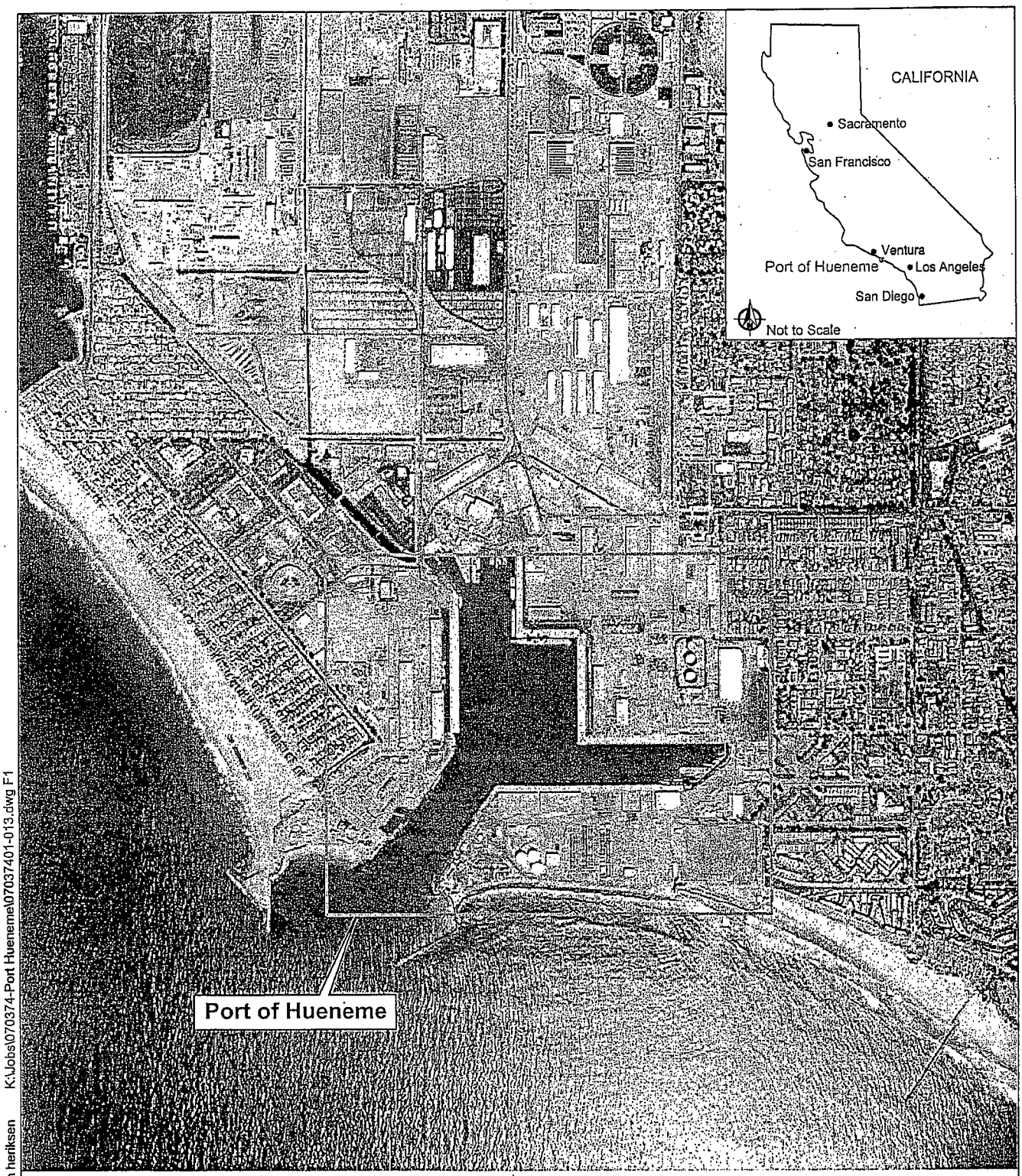
c. this certification is conditioned upon total payment of any fee required pursuant to 23 CCR division 3, chapter 28, and owed by the applicant.

11. This Order shall expire on August13, 2013.

I, Tracy J. Egoscue, 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 August 14, 2008.

TRACY J. EGOSCUE
Executive Officer

\jml



ANCHOR ENVIRONMENTAL, L.L.C.

Figure 1
Site Location Map
Port of Hueneme

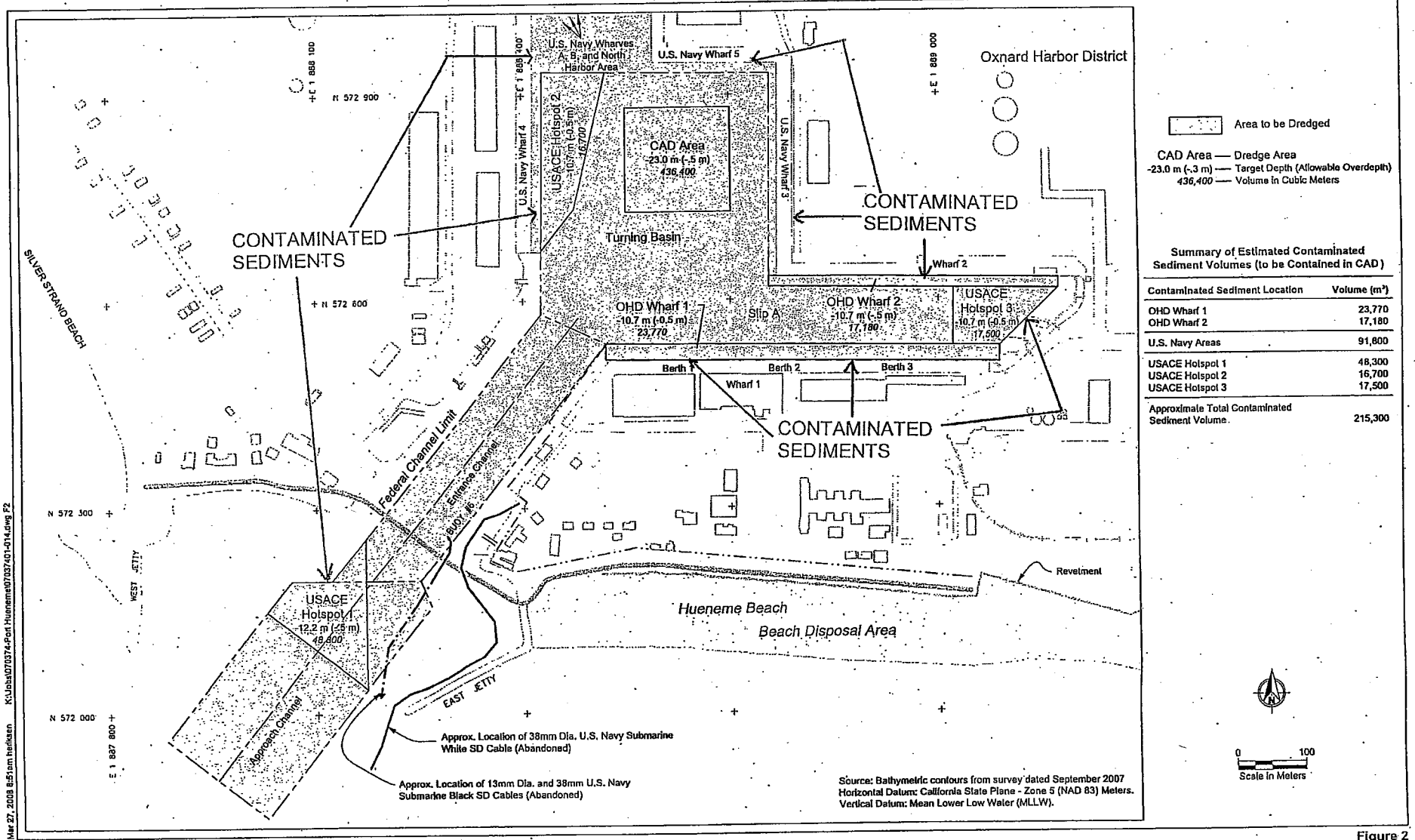
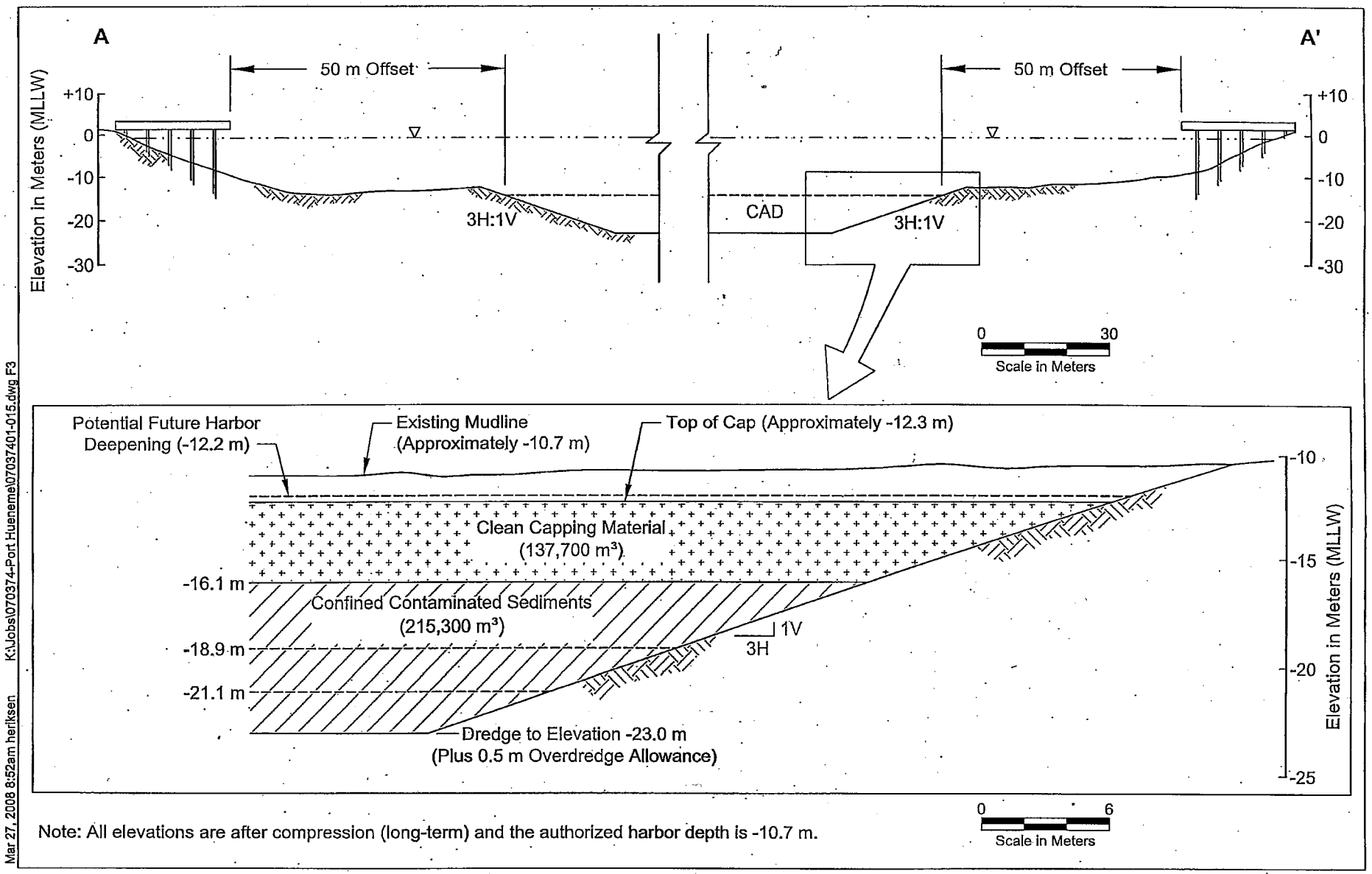


Figure 2
Project Area Site Plan
Port of Hueneme

ANCHOR ENVIRONMENTAL, L.L.C.



Note: All elevations are after compression (long-term) and the authorized harbor depth is -10.7 m.

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ANCHOR ENVIRONMENTAL, L.L.C.

Figure 3
Typical Cross-section through CAD Facility
Port of Hueneme

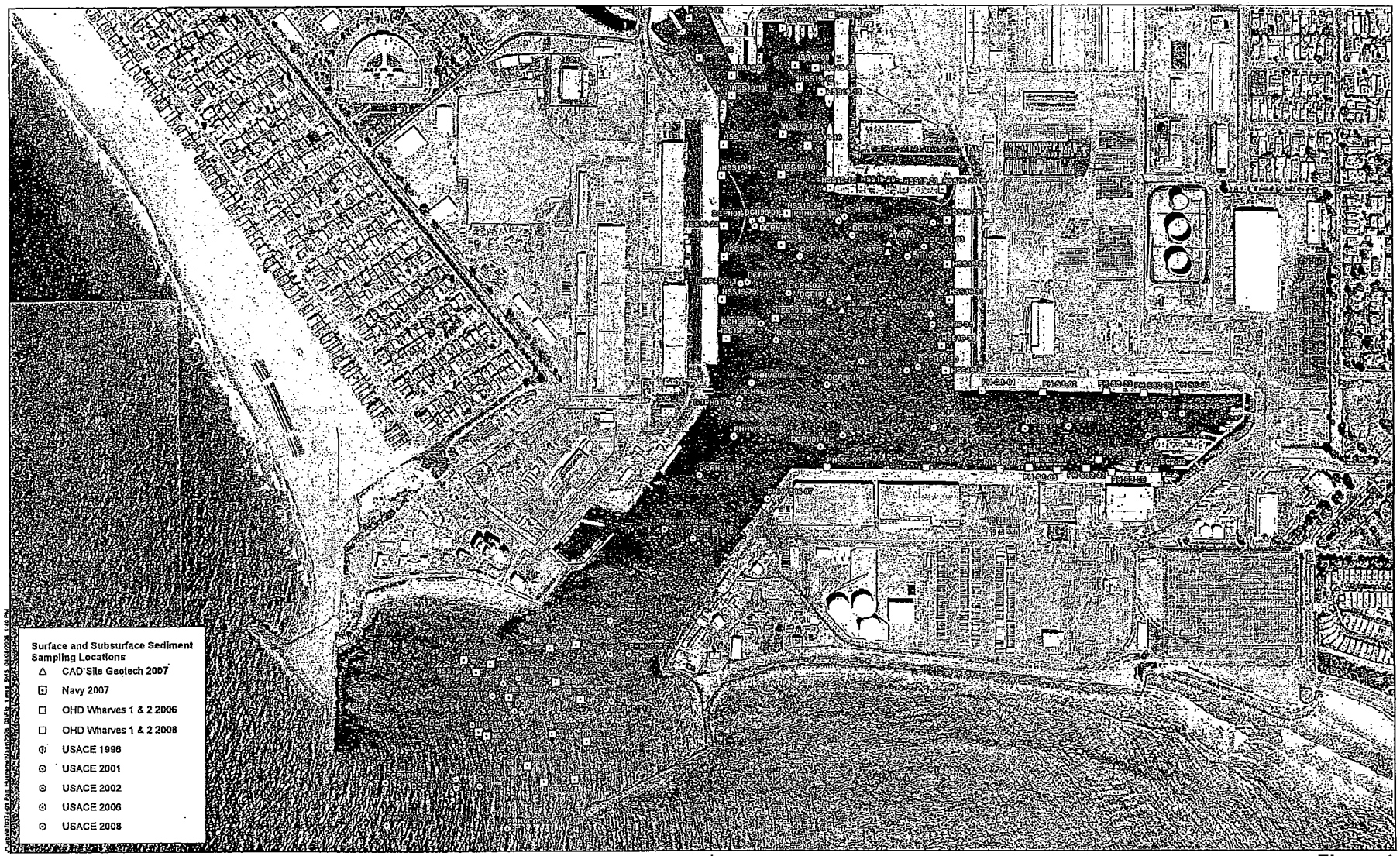
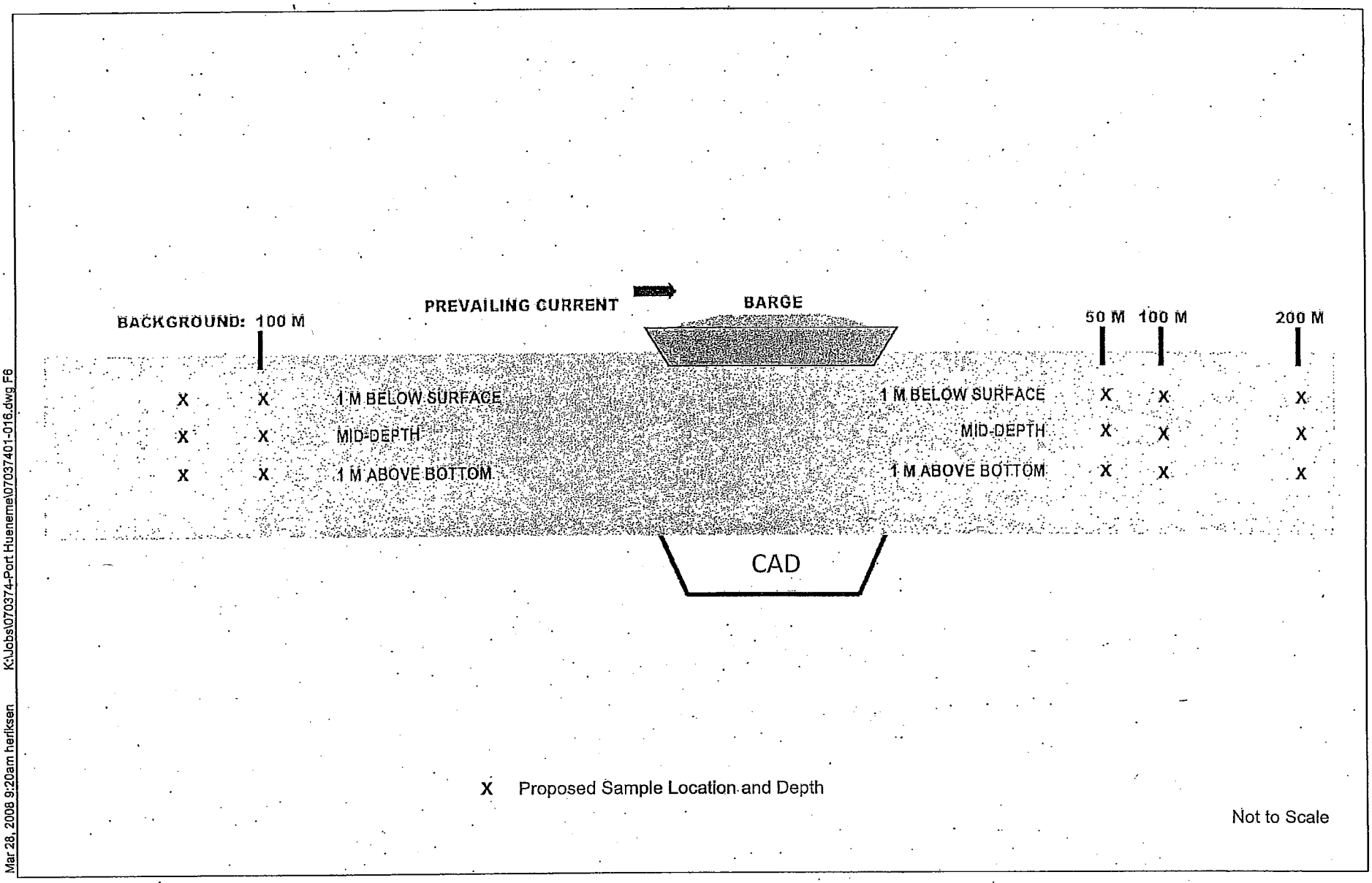


Figure 4
Surface and Subsurface
Sediment Sampling Locations
Port of Hueneme



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ANCHOR ENVIRONMENTAL, L.L.C.

Figure 5.
Water Quality Monitoring Locations During Dredging and Disposal
Port of Hueneme

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

MONITORING AND REPORTING PROGRAM NO. 9447
FOR
OXNARD HARBOR DISTRICT AND NAVAL BASE VENTURA COUNTY
(PORT HUENEME MAINTENANCE DREDGING)
(FILE NO. 08-066)

Receiving Water Monitoring

The monitoring program is designed to fulfill the following objectives: 1) demonstrate that no chemical releases from the sediments occur during dredging and disposal operations at levels that pose a potential ecological risk to resident aquatic organisms; 2) demonstrate that no significant quantities of contaminated sediments are deposited outside of the designated Confined Aquatic Disposal (CAD) cell; 3) demonstrate that the contaminated sediments within the CAD remain completed capped and isolated from the adjacent receiving water environment.

The following sampling protocol shall be undertaken by the Oxnard Harbor District (OHD) and Naval Base Ventura County (NBVC) during the proposed dredging and disposal project. Sampling for the receiving water monitoring shall commence at least one week prior to the start of the dredging and disposal operations and continue at least one week following the completion of all such operations. Sampling shall be conducted a minimum of once a week during dredging and disposal operations (or more frequently as noted). Sampling shall be conducted down current of the dredge sites (at least one hour after dredging has commenced) and disposal sites (the station closest to the disposal site shall be monitored within 15 minutes after the start of disposal activities) and at a control site outside of the influence of dredging and disposal operations. All receiving water monitoring data shall be obtained via grab samples or remote electronic detection equipment. Receiving water samples shall be taken at a minimum at the following stations:

Station	Description
A	50 meters (164 feet) down current of the dredging and disposal operations, safety permitting.
B	100 meters (328 feet) down current of the dredging and disposal operations, safety permitting.
C	200 meters (656 feet) down current of the dredging and disposal operations.

D Control site (area not affected by dredging and disposal operations).

The following shall constitute the receiving water monitoring program in the vicinity of dredging and disposal operations:

1. Water Column Monitoring (illustrated by Figure 5)

Parameters	Units	Station	Frequency
Dissolved oxygen[1]	mg/l	A-D	Weekly[2]
Temperature[1]	°C	A-D	Weekly[2]
Salinity[1]	Parts per thousand	A-D	Weekly[2]
Light transmittance[1]	% Transmittance	A-D	Weekly[2]
pH[1]	pH units	A-D	Weekly[2]
Suspended solids[3]	mg/l	A-D	Three times per week
Dissolved metals[3,4]	Parts per million	A-D	Weekly
Total DDTs[5]	Parts per billion	A-D	Weekly[6]
Total PCBs[5]	Parts per billion	A-D	Weekly[6]
Tributyltin[5]	Parts per million	A-D	Weekly[6]

[1]Measurements shall be taken throughout the water column (at a minimum, at 2-meter increments).
[2]During the first two weeks of dredging and disposal, stations shall be sampled two times per week.
[3]At a minimum, samples shall be collected 1 meter below the surface, 1 meter above the bottom and at mid-depth.
[4]Water samples for dissolved metals analysis shall be collected concurrently when a suspended solids sample is collected at each of the specified water depths so that a relationship can be derived between suspended solids concentrations and metals concentrations. Metals analyses shall be processed so that the results are available within a 7-day turnaround time. Metals analysis shall include dissolved concentrations of arsenic, cadmium, chromium, copper, lead, mercury, nickel, silver and zinc.
[5]Water samples for total DDTs, total PCBs and tributyltin shall be collected concurrently when a suspended solids sample is collected at each of the specified water depths so that a relationship can be derived between suspended solids concentrations and contaminant concentrations.
[6]During the first two weeks of dredging and disposal, stations shall be sampled three times per week. After the first two weeks, sampling may be conducted weekly; however, if any of the contaminants exceed water quality objectives the sampling frequency shall revert to three times per week until no exceedances are observed.

Water column light transmittance values from Stations C and D shall be compared for the near surface (1 meter below the surface), for mid-water (averaged values throughout the water column, excluding the near surface and bottom) and for the bottom (1 meter above the bottom). If the difference in % light transmittance between stations C and D for the near surface or mid-water or bottom is 30% or greater, OHD/NBVC shall conduct the standard water quality monitoring described above for three consecutive days following the date of exceedance. OHD/NBVC shall notify the Regional Board, the California Coastal Commission, the United States Environmental Protection Agency and the United States Army Corps of Engineers within 24 hours following observance of the transmissivity exceedance. OHD/NBVC shall investigate whether the exceedance is due to obvious dredging operational problems and can be corrected easily and quickly. However, if the turbidity problem persists or recurs, OHD/NBVC shall look for other causes of the problem and evaluate whether additional, more aggressive best management practices are required to eliminate the exceedances; this evaluation shall be performed in consultation with the four regulatory agencies listed above.

Color photographs shall be taken at the time of sampling to record the presence and extent of visible effects of dredging operations. These photographs shall be submitted with the receiving water monitoring reports.

OHD/NBVC shall provide Regional Board staff with a receiving water monitoring program field schedule at least one week prior to initiating the program. Regional Board staff shall be notified of any changes in the field schedule at least 48 hours in advance.

The receiving water monitoring requirements are summarized in Table 1 below.

2. Confined Aquatic Disposal (CAD) Cell Monitoring

The following monitoring shall be conducted to ensure that the CAD cell is properly constructed and maintained:

2.1 Construction Operations Monitoring

Proposed monitoring procedures to meet the objectives related to cap design include:
- Recording tonnage/volume of sediment dredged and placed within the CAD cell;
- Tracking location of sediment placement within the CAD cell;
- Recording tonnage/volume of capping sediment dredged and placed within the CAD cell;
- Completing progress bathymetric surveys to verify sediment placement location;

• Obtaining grab samples from along all wharves to ensure only "clean" surfaces remain;
• Tracking operational information such as dredge production rates, downtime, and barge discharge time;
• Completing a bathymetric survey of the CAD cell after the cap has been placed over the CAD to ensure that the cap material has been placed evenly over the entire cell.

2.2 Immediate Post-Construction Monitoring

Monitoring immediately after construction is completed is required to ensure that placement of the contaminated sediment is successful, which, in this case, is measured by achieving the desired minimum cap thickness over the entire CAD cell while minimizing the incidence of off-site transport of sediment outside of the CAD cell. These parameters will be measured through the use of during- and post-construction bathymetry surveys and post-construction sediment coring of the cap layer. Each parameter is described in greater detail below.

2.2.1 Bathymetric Surveys

Bathymetric surveys will be conducted prior to initiation of disposal activities to establish the baseline conditions for the CAD cell and routinely during disposal operations as a way to monitor successful placement of contaminated material into the CAD cell. A post-construction cap bathymetric survey is also required to quantify the final configuration and elevations of the capped site. This information will help determine whether design criteria are met and provide a baseline for comparison to long-term bathymetric surveys of the CAD cell.

2.2.2 Cap Coring

Immediate post-construction coring is required to provide information both on the physical characteristics of the cap and the underlying sediment (e.g., cap thickness, horizontal coverage, and extent of mixing between layers) and the chemical characteristics of the cap once it has been placed. Core chemistry data will be collected to establish a baseline profile of chemicals in various layers of the cap and in the underlying sediment. Cap core chemistry information will also help to quantify the extent of mixing between the cap and underlying sediment that occurred during placement.

This baseline chemistry profile will be compared to long-term monitoring core chemistry data to determine whether any chemicals are migrating from the underlying sediment into the cap sediment. Because diffusion of chemicals through sediment is a time-dependent process, migration from underlying sediments will be observable first in the deepest layers of the cap. If long-term monitoring reveals increases in chemicals only in surface layers of the cap, it would be indicative of chemicals from sources outside the CAD cell being deposited on the cap surface (rather than migration of chemicals from beneath the cap).

2.3 Long-Term Post-Construction Monitoring

Long-term monitoring after construction is completed is required to verify that the CAD cell has maintained its physical integrity and that the cap is maintaining its ability to sequester underlying contaminants. These parameters will be measured through the use of periodic post-construction bathymetric surveys and sediment coring of the cap layer. Each parameter is described in greater detail below. The key elements addressed by the monitoring program included:

- Determining if the CAD cell cap has maintained its physical integrity
- Ensuring that fractures, erosion or deposition had not compromised the cap's ability to sequester underlying contaminants
- Determining if contaminants are migrating through the cap at an unacceptable rate.

2.3.1 Bathymetric and Fracture Detection Surveys

Bathymetric surveys will be conducted 3, 6, and 12 months after completion of cap construction to quantify the configuration and elevations of the capped site. Then bathymetric surveys will be taken annually and reported to the responsible state and federal regulatory agencies (California Coastal Commission, Los Angeles Regional Water Quality Control Board, United States Environmental Protection Agency, and United States Army Corps of Engineers). If there is consensus among the regulatory agencies that the cap is performing as predicted after 10 surveys, the applicants may apply to the Executive Director of the California Coastal Commission and the Executive Officer of the Los Angeles Regional Water Quality Control Board to narrow the focus or modify this aspect of the long-term monitoring program. This information will help determine whether design criteria continue to be met and quantify rates of erosion or deposition at the CAD cell. As indicated above, fractures may form in the cap due to loss of fluid or differential settling. Fracture detection surveys (e.g., side scan sonar, diver observations, and box cores on bathymetric anomalies) will be conducted at least

every 2 years after completion of the cap to detect any fractures that might pose a threat to cap integrity. The results of these surveys will be reported biannually to the four responsible state and federal regulatory agencies specified above. If there is consensus among the regulatory agencies that the cap is performing as predicted and fractures that could potentially threaten cap integrity are not forming after 5 surveys, the applicants may apply to the Executive Director of the California Coastal Commission and the Executive Officer of the Los Angeles Regional Water Quality Control Board to narrow the focus or modify this aspect of the long-term monitoring plan.

2.3.2 Cap Coring

Twelve months after completion of cap construction, sediment coring will be conducted to provide information both on the physical characteristics of the cap and underlying sediment (i.e., cap thickness, horizontal coverage, and extent of mixing between layers) and the chemical characteristics of the cap for comparison to baseline data collected immediately after cap construction. Core chemistry data will be collected at a minimum of five locations distributed across the CAD cell to establish a profile of chemicals in various layers of the cap and in the underlying sediment. This chemistry data will be compared to the baseline chemistry data to determine whether any chemicals are migrating from the underlying sediment into the cap sediment. Because diffusion of chemicals through sediment is a time-dependent process, migration from underlying sediments will be observable first in the deepest layers of the cap. As such bulk chemistry and porewater samples will be taken within 1 meter of the interface between the contaminated material and the cap material to determine if there has been significant movement of PCBS, the most persistent and mobile of the contaminants in the CAD cell. At least five samples will be taken 12 months after completion of the cap and then every 5 years thereafter. A report will be submitted to the four responsible state and federal regulatory agencies. If there is consensus among the regulatory agencies that the cap is performing as predicted after the third round of samples, the applicants may apply to the Executive Director of the California Coastal Commission and the Executive Officer of the Los Angeles Regional Water Quality Control Board to narrow the focus or modify this aspect of the long-term monitoring program. If long-term monitoring reveals increases in chemicals only in surface layers of the cap, it would be indicative of chemicals from sources outside the CAD cell being deposited on the cap surface (rather than migration of chemicals from beneath the cap).

2.3.3 Adaptive Management

After the first year of post-construction monitoring has been completed, an adaptive management plan will be developed based on analysis of the data collected during the year. The long-term management plan will be developed based on the existing conditions of the site and current technological developments and will be designed to ensure long-term cap stability and isolation of contaminants. Monitoring requirements, such as timing of the events, will be determined at that time. At a minimum, however, long-term monitoring will include:

- Completing bathymetric surveys to rates of erosion and deposition
- Coring for chemistry in bulk sediments and porewater.

The exact scope and frequency of the long-term monitoring program will be evaluated and developed after the first year of post-construction monitoring data is available and has been reviewed. This long-term monitoring program will be submitted to the Executive Officer of the Los Angeles Regional Board and the Executive Director of the California Coastal Commission for review and approval.

Table 1. Summary of Receiving Water and Confined Aquatic Disposal Cell Monitoring Requirements.

Matrix	Target Analytes	Frequency	Collection Technique
Surface Water –During dredging outside silt curtain and at disposal location	TSS, Metals, PCBs, DDT and TBT	3 times per week for first two weeks, then weekly if no elevated concentrations observed	Grab samples
Bathymetry – During Disposal	-----	As needed, and at milestones	Multi- Beam Sonar
Sediment Cores – Immediate Post Construction	Metals, PCBs, DDT and TBT	Immediately following construction	Core samples
Bathymetry – Immediate Post Construction	-----	Immediately following construction	Multi- Beam Sonar
Pore Water – Long-Term Monitoring	Metals and PCBs	1 year post construction, then every 5 years	In-situ sediment probes
Sediment Cores – Long-Term Monitoring	Metals, PCBs, DDT and TBT	1 year post construction, then every 5 years	Core samples
Bathymetry/Fracture Surveys – Long-Term Monitoring	____	3, 6, and 12 months post construction and then every 5 years	Multi-Beam Sonar and/or side-scan sonar

3. Sediment Characterization Study

The proposed maintenance dredging project is expected to remove approximately 95% of the contaminated sediments present within Port Hueneme Harbor. To verify the extent of the removal of contaminated sediments and demonstrate that harbor sediments have not become recontaminated over time, OHD and NBVC shall conduct a sediment characterization study throughout the harbor within eighteen months following completion of the maintenance dredging project. A detailed work plan outlining the proposed scope of the sediment characterization study shall be submitted to the Los Angeles Regional Board for approval by the Executive Officer within twelve months following completion of the maintenance dredging project. The schedule for completion of the sediment characterization study may be extended upon approval of the Executive Officer if necessary to accomplish the study objectives.

4. Observations

The following receiving water observations shall be made and logged daily during dredging or excavating operations:

a. Date and time;
b. Direction and estimated speed of currents;
c. General weather conditions and wind velocity;
d. Tide stage;
e. Appearance of trash, floatable material, grease, oil or oily slick, or other objectionable materials;
f. Discoloration and/or turbidity;
g. Odors;
h. Depth of dredge operations during previous day;
i. Amount of material dredged the previous day;
j. Cumulative total amount of material dredged to date.

5. General Provisions

All sampling, sample preservation, and analyses shall be performed in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants" promulgated by the United States Environmental Protection Agency.

All chemical analyses shall be conducted at a laboratory certified for such analysis by the State Department of Health Services, Environmental Laboratory Accreditation Program (ELAP), or approved by the Executive Officer.

OHD/NBVC shall calibrate and perform maintenance procedures on all monitoring instruments and equipment to insure accuracy of measurements, or shall insure that both activities will be conducted by third parties under OHD/NBVC supervision.

A grab sample is defined as an individual sample collected in fewer than 15 minutes.

All samples shall be representative of the waste discharge under normal operating conditions.

6. Reporting

Monitoring reports shall be submitted within 10 days following each weekly sampling period. In reporting, the OHD/NBVC shall arrange the monitoring data in tabular form so that dates, time, parameters, test data, and observations are readily discernible. The data shall be summarized to demonstrate compliance with the waste discharge requirements. A final report, summarizing the results of the weekly monitoring and reporting the total volume discharged, shall be submitted within one month of completion of the project.

Each monitoring report shall contain a separate section titled "Summary of Non-Compliance" which discusses the compliance record and corrective actions taken or planned that may be needed to bring the discharge into full compliance with waste discharge requirements. This section shall clearly list all non-compliance with waste discharge requirements, as well as all excursions of effluent limitations.

Each monitoring report must affirm in writing that:

> All analyses were conducted at a laboratory certified for such analyses by the Department of Health Services or approved by the Executive Officer and in accordance with current EPA guidelines or as specified in the Monitoring Program.

For any analysis preformed for which no procedure is specified in the EPA guidelines or in the Monitoring Program, the constituent or parameter analyzed and the method or procedure used must be specified in the report.

7. General Provisions for Reporting

For every item where the requirements are not met, the Port shall submit a statement of the actions undertaken or proposed which will bring the discharge into full compliance with requirements at the earliest time and submit a timetable for correction.

Each report shall contain the following completed declaration:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of a fine and imprisonment for knowing violations.

Executed on the_____day of_____, 20___,
at _____.

_____(Signature)

_____(Title)"

These records and reports are public documents and shall be made available for inspection during business hours at the office of the California Regional Water Quality Control Board, Los Angeles Region.

Ordered by:

TRACY J. EGOSCUE
Executive Officer

Date: August 24, 2008