



Port of
LONG BEACH
The Green Port

May 13, 2014

Michael Lyons
Regional Water Quality Control Board
320 West 4th Street, Suite 200
Los Angeles, California 90013

Subject: Application for Waste Discharge Requirements for the Pier S and Back Channel Improvement Projects

Dear Mr. Lyons,

The Port of Long Beach (POLB) is filing an application for Waste Discharge Requirements (WDRs) for the Pier S and Back Channel Improvements Projects which include navigational safety improvements in the Back Channel and Turning Basin, dredging and widening of the Cerritos Channel, and dike realignment and shore cut on Pier S. The purpose of these projects is to improve navigational safety for larger ships that are calling at the POLB. In addition, the projects would produce dredge and excavation materials which could be beneficially reused as fill in POLB's Middle Harbor Redevelopment Project.

The POLB has prepared a project sediment management plan (SMP) to address water quality related issues from project activities. This SMP provides a short summary of the projects and discusses the project activities and best management practices (BMPs) likely to be employed. This SMP is intended to serve as a guide for sediment management issues throughout the duration of the projects for the Regional Board, POLB Engineering, POLB Environmental Planning, and other stakeholders.

Please find enclosed a hard copy of the Master Dredging Permit Application, a check for the WDR fee, and the SMP. Also enclosed is a disc with electronic versions of support documents related to this project:

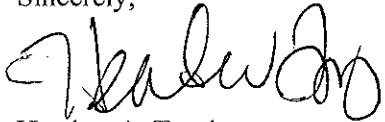
- Pier S and Back Channel Improvement Project Sediment Management Plan.
- Final EIR/EIS and Application Summary Report for the Pier S and Back Channel Improvements Project.
- Pier S and Back Channel Sampling and Analysis Plan.

Construction on the projects is estimated to begin in late 2015 and last approximately 2 to 3 years. Accordingly, the POLB respectfully requests WDRs from the Regional Water Quality Control Board for a 5-year period for the subject project.

Mr. Michael Lyons
Pier S and Back Channel WDR Application
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If you have any questions, please contact Janna Watanabe at (562) 283-7100.

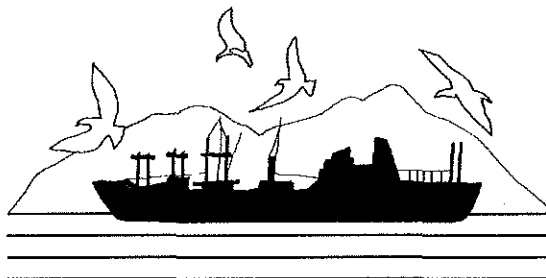
Sincerely,

A handwritten signature in black ink, appearing to read "Heather A. Tomley". The signature is fluid and cursive, with the first letter of the first name being a large, stylized 'H'.

Heather A. Tomley
Director of Environmental Planning

Attachments: Master Dredging Permit Application
Waste Discharge Requirements Fee Check
Project Sediment Management Plan
CD with Support Documents

STATE OF CALIFORNIA



Los Angeles Region
**CONTAMINATED
SEDIMENTS
TASK FORCE**

MASTER DREDGING PERMIT APPLICATION

Form Number REG4-DREDGE-001

PLEASE INDICATE WHICH OF THE FOLLOWING THIS FORM APPLIES TO:

- Section 404 and/or Section 10 dredging permits by the Los Angeles District of the Corps of Engineers
- California Regional Water Quality Control Board, Los Angeles Region, Report of Waste Discharge, pursuant to Sections 13260, 13374, and 13377 of Article 4, Chapter 4, of the Porter-Cologne Water Quality Control Act*
- Port of Long Beach Harbor Development Permit
- Port of Los Angeles Coastal Development Permit
- California Coastal Commission Coastal Development Permit
- California Coastal Commission Federal Consistency Certification/Determination

(New 04/02)

*This application shall serve as, and be functionally equivalent to, a Report of Waste Discharge, pursuant to Sections 13260, 13374, and 13377 of Article 4, Chapter 4 of the Porter-Cologne Water Quality Control Act.



LOS ANGELES REGION CONTAMINATED SEDIMENTS TASK FORCE

(Please complete all sections and follow instructions provided with application.)

SECTION 1 - GENERAL INFORMATION

1. APPLICANT INFORMATION (see instructions)

Applicant Name The Port of Long Beach		Contact Name (if different) Heather A. Tomley, Director of Environmental Planning	
Mailing Address 4801 Airport Plaza Drive		City Long Beach	
State CA	Zip 90815	Business Phone (562) 283-7100	Residence Phone N/A

2. LEGAL INTEREST (see instructions)

<input type="checkbox"/> Individual	<input type="checkbox"/> Legal Entity	<input checked="" type="checkbox"/> Government	<input type="checkbox"/> Non-profit
<input type="checkbox"/> Other (Please provide description): <u>Legal Interest: Tidelands Trust Act of 1911</u>			
Note: You will need to provide a copy of legal interest with this application (e.g., title, lease, deed, and easement).			

3. REPRESENTATIVE INFORMATION (see instructions)

Applicant's authorized agent, point of contact, and/or representative <input type="checkbox"/> None			
Name/Title	Organization		
Mailing Address	City		
State	Zip	Business Phone	Residence Phone
Who should receive correspondence relevant to this application? <input type="checkbox"/> Applicant <input type="checkbox"/> Representative <input type="checkbox"/> Both			
I hereby authorize the above named to act as my representative and bind me in all matters concerning this application.			
_____ Signature of Applicant		_____ Date	

THIS BOX IS FOR OFFICIAL USE ONLY:		Data Base Entry <input type="checkbox"/> Yes <input type="checkbox"/> No
Date received: _____	ACOE No. _____	
Date completed: _____	CCC No. _____	
SAP Approved: _____	RWQCB No. _____	
Data Submitted: _____	POLA CDP No. _____	
Date Approved: _____	POLB HDP No. _____	

SECTION II - PROJECT INFORMATION

4. GENERAL PROJECT INFORMATION (see instructions)

Project Name or Title Pier S and Back Channel Improvements Project		
Type of Dredging Project: <input type="checkbox"/> Maintenance <input checked="" type="checkbox"/> New Work	Timing of Project: <input type="checkbox"/> Single Episode <input checked="" type="checkbox"/> Multi-Episode	
Project description (attach additional sheets if necessary): Project includes: Back Channel navigational safety improvements, dredging and widening of the Cerritos Channel, and the dike realignment and shore-cut on Pier S. Please see attachment for more details.		
Project need and/or purpose: Improve navigational safety for vessels in the Cerritos Channel, Back Channel, and Turning Basin.		
Month and year work is proposed to begin 3rd or 4th Quarter 2015	Estimated completion date 2017-2018	Estimated total project cost \$112 million

5. DREDGING INFORMATION (see instructions)

Dredge Site Pier S/Back Channel/Turning Basin	County Los Angeles	Nearest City Long Beach
Latitude(s) Various	Longitude(s) Various	Waterway Long Beach Harbor
Type and composition of dredged material (Please give percentages if available) <input checked="" type="checkbox"/> Sand _____ <input checked="" type="checkbox"/> Silt/Clay _____		
Is the material appropriate for beach replenishment? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
Proposed type of equipment/construction methods to be used: Dredging: Hydraulic dredge and clamshell and barge operation.		
Will a temporary rehandling area or storage site be used for the dredged material? If Yes, for what length of time? <u>TBD</u> * Site address? <u>TBD</u> Type of containment? <u>TBD</u> Approximate size of area? <u>TBD</u> acres or ft ²		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No * A temporary rehandling area/ storage site may be used if material will be disposed of upland.
Will the project result in the construction of temporary or permanent structures? If Yes, please indicate: <input checked="" type="checkbox"/> Temporary <input checked="" type="checkbox"/> Permanent Please provide a description: Permanent structures: dredge material to be placed in Middle Harbor Fill Site to create landfill; shoreline stabilization. Temporary structures: BMPs & containment area to dry material for upland disposal.		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Will the proposed dredging affect existing public access or public recreational facilities? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, please describe location and nature of impact: Please describe how the impacts would be mitigated:		
Will the proposed dredging affect a historic/cultural resource? If Yes, please describe location and nature of impact: Please describe how the impacts would be mitigated:		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

BOX 5 (CONTINUED)

Depth of dredging based on Mean Lower Low Water (MLLW) datum
Existing depth: Varies Over/depth tolerance: -2'
Proposed design depth: -52' Proposed total depth: -54'

Volume of material to be dredged: Approx. 2.4 millioncy, area of dredging: Approx. 60 acres

Type(s) of substrate being dredged:
 Sub-tidal Bottom Mudflat Wetlands Estuary Other: _____

Please list agency and identification numbers of any previous permits for this activity:

Agency	Permit/Approval	Permit No.	Issue Date

If applicable, please give the Assessor's Parcel Number: _____

6. DISPOSAL SITE INFORMATION

AQUATIC DISPOSAL (see instructions)

Does the project involve aquatic disposal? Yes No

Site: (please check all that apply) LA-2 LA-3 CAD In-Harbor RCDS Other: _____

Total volume of dredged material designated for aquatic disposal: TBD cy

Will the proposed disposal affect a historic/cultural resource? Yes No
If Yes, please describe location and nature of impact:

SITE INFORMATION (Please attach the following information for additional sites):

LA-2 LA-3 CAD In-Harbor RCDS Other: Middle Harbor CDF

Volume of dredged material designated for this aquatic disposal site: TBD cy
Is the site an existing site that regularly receives dredged material? Yes No
Year site was last used for dredged material disposal: 2014
Proposed type of equipment/construction methods to be used:
Various - bottom dump scow, hydraulic placement, clamshell

PROPOSED UPLAND, WETLAND, REUSE, OR FILL DISPOSAL (see instructions)

Does the project involve upland, wetland, reuse, or fill disposal? Yes No
If the project will involve upland, wetland, or fill disposal, but will not involve reuse, please explain why reuse has not been considered:

Will the proposed disposal affect a historic/cultural resource? Yes No
If Yes, please describe location and nature of impact:

Site(s): (please check all that apply)
 Upland Federal Wetland State Wetland Reuse Fill

Total volume of dredged material designated for upland, wetland, reuse, and fill disposal: TBD cy

SITE INFORMATION (Please attach the following information for additional sites):
(Check only one) Upland Federal Wetland State Wetland Reuse Fill

Site Name:
Middle Harbor

BOX 6 (CONTINUED)

Site Description (see instructions): Middle Harbor - Slip 1 and East Basin			
Site Address Middle Harbor - the Port of Long Beach	City Long Beach	State CA	Zip 90802
Latitude(s) 33.756 to 33.763	Longitude(s) 118.214 to 118.215	Zoning Port Use - Industrial	
Owner's Name Port of Long Beach		Phone Number (562) 283-7100	
Address 4801 Airport Plaza Drive	City Long Beach	State CA	Zip 90815
Does this site include jurisdictional wetlands? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, give name and permit number of approved wetlands project where material will be placed:			
Is the site an existing site that regularly receives dredged material? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Year site was last used for dredged material disposal: 2014 Volume of dredged material designated for this disposal site: TBD cy Proposed type of equipment to be used: Various - bottom dump scow, hydraulic placement, clamshell			
Will disposal result in the construction of temporary or permanent structures? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes, please describe: Pier S and the Back Channel Improvements Project material will be reused in the Middle Harbor landfill.			
Will the proposed disposal affect existing public access or public recreational facilities? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, please describe how the impacts would be mitigated:			
Will the proposed disposal involve the transportation of dredged material by trucks? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, please describe the number of truck trips and the route to be used: TBD - program dependent			
(Attach the above information for additional sites)			

7. SENSITIVE AREAS (see instructions)

Does the project have the potential to affect a sensitive area? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
Type of Habitat:	<input type="checkbox"/> Inter-Tidal	<input checked="" type="checkbox"/> Sub-Tidal	<input type="checkbox"/> Coastal Wetlands
<input type="checkbox"/> Sandy Beach	<input checked="" type="checkbox"/> Eelgrass	<input type="checkbox"/> Kelp Forest	<input type="checkbox"/> Riparian
Habitat Name: marine habitat/water column and benthic and possible impacts to eelgrass			
Habitat Size: TBD acres or ft ²		Size of area impacted: TBD acres or ft ²	
Estimated Dates of Impact: From 2015 To 2017			
Have you contacted the following agencies? (see instructions):			
1. U.S. Environmental Protection Agency	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> N/A	
2. U.S. Fish and Wildlife	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> N/A	
3. U.S. Army Corps of Engineers	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> N/A	
4. National Marine Fisheries Service	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> N/A	
5. U.S. Bureau of Land Management	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> N/A	
6. Nat'l Oceanic & Atmospheric Association	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> N/A	
7. CA Environmental Protection Agency	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> N/A	
8. CA Department of Fish & Game	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> N/A	
9. CA State Lands Commission	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> N/A	
10. S. Coast Air Quality Mgmt. District	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> N/A	
11. California Coastal Commission	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> N/A	
12. Regional Water Quality Control Board	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> N/A	

(BOX 7 CONTINUED)

If Yes to any of the above, please give the following information for each agency: If more than can be entered here, please attach a supplemental list.	
Name of Agency:	NOAA National Marine Fisheries Service (NMFS)
Name of Contact:	Bryant Chesney
Permit required?: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If Yes, please give number:
Special Condition(s) required?: <input type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, please describe:
Name of Agency:	U.S. Army Corps of Engineers
Name of Contact:	John Markham
Permit required?: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, please give number: Has not yet been assigned.
Special Condition(s) required?: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, please describe: Pre-construction Caulerpa and eelgrass surveys; eelgrass mitigation plan
Name of Agency:	
Name of Contact:	
Permit required?: <input type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, please give number:
Special Condition(s) required?: <input type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, please describe:
Name of Agency:	
Name of Contact:	
Permit required?: <input type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, please give number:
Special Condition(s) required?: <input type="checkbox"/> Yes <input type="checkbox"/> No	If Yes, please describe:

8. THREATENED OR ENDANGERED SPECIES (see instructions)

Does the project have the potential to affect any federal or state threatened or endangered species? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, please indicate: <input type="checkbox"/> Federal <input type="checkbox"/> State	
<i>Note: If more than one, please attach a supplemental list.</i>	
Name of species:	
Location of species in relation to project:	
Estimated Dates of Impact: From _____ To _____	
Do these dates coincide with the breeding season?: <input type="checkbox"/> Yes <input type="checkbox"/> No	
Has a Section 7 consultation been initiated? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Have you prepared a mitigation plan? <input type="checkbox"/> Yes <input type="checkbox"/> No	
If Yes, please attach; if No, please give the expected submission date: _____	
Does this project have the potential to affect any marine fisheries or marine mammals? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
If Yes, have you consulted National Marine Fisheries Service? <input type="checkbox"/> Yes <input type="checkbox"/> No	
If Yes, please give the following information:	
Name of Contact:	
Permit required?: <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, please give number:	
Special Condition(s) required?: <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, please describe:	

(BOX 8 CONTINUED)

Have you consulted CA Department of Fish & Game?: <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, please give the following information:
Name of Contact:
Permit required?: <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, please give number:
Special Condition(s) required?: <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, please describe:

9. ESSENTIAL FISH HABITAT (see instructions)

Does the project have the potential to affect any essential fish habitat? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Fishery Type: <input checked="" type="checkbox"/> Coastal Pelagic Species <input type="checkbox"/> Salmon <input checked="" type="checkbox"/> Pacific Coast Groundfish
<i>Note: If more than one, please attach a supplemental list.</i>
Affected Species : Please refer to Pier S and Back Channel EIR/EIS (on attached CD)
Has an analysis of the effect of the project on managed species been conducted ? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes, please attach; if No, please give the expected submission date: See Pier S and Back Channel EIR/EIS
Have you contacted National Marine Fisheries Service? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If Yes, please give the following information:
Name of Contact: Bryant Chesney
Permit required?: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If Yes, please give number:
Special Condition(s) required?: <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, please describe:

SECTION III - OTHER REQUIRED INFORMATION

10. ENVIRONMENTAL APPROVALS (see instructions)

<i>Note: Please provide a copy of the project's environmental documentation with your application.</i>
CEQA Lead Agency: The Port of Long Beach
Type of Environmental Documentation: <input type="checkbox"/> CE <input type="checkbox"/> ND <input checked="" type="checkbox"/> EIR Date of Approval: 10/29/2013 or Approximate date of completion: _____
NEPA Lead Agency: U.S. Army Corps of Engineers
Type of Environmental Documentation: <input type="checkbox"/> CE <input type="checkbox"/> EA <input checked="" type="checkbox"/> EIS Date of Approval: _____ or Approximate date of completion: May 2014

11. OTHER APPROVALS (see instructions)

CA DEPARTMENT OF FISH & GAME - 1601 & 1603 Approval Number _____ Date of Application _____ <input checked="" type="checkbox"/> None Required Date of Issuance _____
LOCAL GOVERNMENT APPROVALS
Approving Agency: Los Angeles RWQCB Approval Type: WDRs
Approval Date: _____ Local Contact & Phone: Michael Lyons (213) 576-6718
Approving Agency: Port of Long Beach Approval Type: Harbor Development Permit
Approval Date: 10/29/2013 Local Contact & Phone: Alex Holford (562) 283-7100
Approving Agency: _____ Approval Type: _____
Approval Date: _____ Local Contact & Phone: _____

12. ADJOINING PROPERTY OWNERS (see instructions)

Please provide names and addresses of property owners, lessees, etc., whose property adjoins either the project or the disposal site (disposal site information is not required for the designated aquatic sites). If more than can be entered here, please attach a supplemental list.

Name Long Beach Container Terminal			
Address 1171 Pier F Avenue	City Long Beach	State CA	Zip 90802
Property adjoins: <input type="checkbox"/> Dredging Site <input checked="" type="checkbox"/> Disposal Site Party given is: <input type="checkbox"/> Owner <input checked="" type="checkbox"/> Lessee <input type="checkbox"/> Other (explain):			
Name Cemex USA			
Address 601 Pier D Avenue	City Long Beach	State CA	Zip 90802
Property adjoins: <input checked="" type="checkbox"/> Dredging Site <input type="checkbox"/> Disposal Site Party given is: <input type="checkbox"/> Owner <input checked="" type="checkbox"/> Lessee <input type="checkbox"/> Other (explain):			
Name Foss Maritime Company (Pier D)			
Address P.O. Box 1940	City Long Beach	State CA	Zip 90801
Property adjoins: <input checked="" type="checkbox"/> Dredging Site <input type="checkbox"/> Disposal Site Party given is: <input type="checkbox"/> Owner <input checked="" type="checkbox"/> Lessee <input type="checkbox"/> Other (explain):			
Name Please see attached for additional adjoining property lessees.			
Address	City	State	Zip
Property adjoins: <input type="checkbox"/> Dredging Site <input type="checkbox"/> Disposal Site Party given is: <input type="checkbox"/> Owner <input type="checkbox"/> Lessee <input type="checkbox"/> Other (explain):			

13. CHECKLIST OF ADDITIONAL INFORMATION TO BE SUBMITTED (see instructions)

This box identifies other information that is required before your dredging application can be accepted as complete and processing of the application initiated. Please indicate whether the material is attached or in-progress. If the material is in-progress, please give the expected submission date.

	Attached	OR	In-Progress	Expected Submittal Date
Sampling & Analysis Plan (SAP):	<input checked="" type="checkbox"/>		<input type="checkbox"/>	_____
Testing Data:	<input type="checkbox"/>		<input checked="" type="checkbox"/>	July 2014
Environmental Documentation:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	_____
Dredging & Disposal Plan:	<input type="checkbox"/>		<input checked="" type="checkbox"/>	30 days before dredging
Proof of Legal Interest:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	_____
Federal Consistency Determination or Certification	<input type="checkbox"/>		<input type="checkbox"/>	_____
Fees:	<input type="checkbox"/> USACE		<input type="checkbox"/> CCG	<input checked="" type="checkbox"/> RWQCB

14. COASTAL DEVELOPMENT PERMIT

Use of this application for a California Coastal Commission Coastal Development Permit (CDP) requires certain additional information. If you plan to use this form to apply for a CDP please provide the following:

- Stamped envelopes addressed to each property owner and occupant of property situated within 100' of property lines of the project site.
- Stamped envelopes addressed to all other parties known to the applicant to be interested in the project.
- Verification of all other permits, permissions, or approvals granted by public agencies such as CA Dept. of Fish and Game, CA State Lands Commission, US Army Corps of Engineers, US Coast Guard, etc.

(BOX 14 CONTINUED)

- Declaration of campaign contributions (see attached form Appendix A).
- Declaration of posting (see attached form Appendix B).

If you have any questions concerning these requirements, please contact the California Coastal Commission South Coast District office in Long Beach.

NOTICE TO APPLICANTS

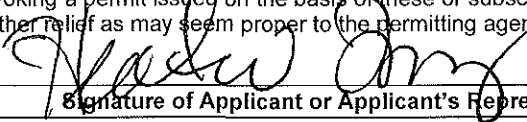
The California Coastal Commission may adopt or amend regulations affecting the issuance of coastal development permits. If you would like notice of such proposals during the pendency of this application, if such proposals are reasonably related to this application, please indicate that desire: Yes No

COMMUNICATION WITH COMMISSIONERS

Decisions of the California Coastal Commission must be made on the basis of information available to all commissioners and the public. Therefore, permit applicants and interested parties and their representatives are advised not to discuss with commissioners any matters relating to a permit outside the public hearing. Such contacts may jeopardize the fairness of the hearing and result in invalidation of the Commission's decision by court. Any written material sent to a commissioner should also be sent to the commission office for inclusion in the public record and distribution to other Commissioners.

15. CERTIFICATION OF ACCURACY OF INFORMATION

I hereby certify under penalty of perjury that to the best of my knowledge, the information in this application and all attached exhibits is full, complete, and correct, and I understand that any misstatement or omission of the requested information or of any information subsequently requested shall be grounds for denying the permit, for suspending or revoking a permit issued on the basis of these or subsequent representation, or for the seeking of such other and further relief as may seem proper to the permitting agencies.



Signature of Applicant or Applicant's Representative

5/12/14

Date

APPENDIX A – DECLARATION OF CAMPAIGN CONTRIBUTIONS

Please read and fill out the following if you are using this form to apply for a Coastal Development Permit (CDP) from the California Coastal Commission.

Government Code Section 84308 prohibits any Commissioner from voting on a project if he or she has received campaign contributions in excess of \$250 within the past year from project proponents or opponents, their agents, employees or family, or any person with a financial interest in the project.

In the event of such contributions, a Commissioner must disqualify himself or herself from voting on the project.

Each applicant must declare below whether any such contributions have been made to any of the listed Commissioners or Alternates (see attached list – Roster of Commissioners).

Check One

- The applicants, their agents, employees, family and/or any person with a financial interest in the project **have not contributed** over \$250 to any Commissioner(s) or Alternate(s) within the past year.
- The applicants, their agents, employees, family and/or any person with a financial interest in the project **have contributed** over \$250 to any Commissioner(s) or Alternate(s) within the past year.

Commissioner or Alternate _____

Commissioner or Alternate _____

Commissioner or Alternate _____

Signature of Applicant or Authorized Agent

Date

Please print your name _____

APPENDIX B - DECLARATION OF POSTING

Please read and fill out the following if you are using this form to apply for a Coastal Development Permit (CDP) from the California Coastal Commission.

TO: Applicant

Pursuant to the requirements of California Administrative Code 13054(b), this certifies that I/we have posted the "Public Notice" of application to obtain Coastal Commission Permit No. _____

for:

located:

The public notice was posted at a conspicuous place, easily read by the public and as close as possible to the site of the proposed development.

(Signature)

(Date)

NOTE: YOUR APPLICATION CANNOT BE PROCESSED UNTIL THIS "DECLARATION OF POSTING" IS RETURNED TO THE CALIFORNIA COASTAL COMMISSION OFFICE. If the site is not posted at least eight days prior to the meeting at which the application is scheduled for hearing, or the Declaration of Posting is not received in our office prior to the hearing, your application will be removed from its scheduled agenda and will not be rescheduled for Commission action until the Declaration of Posting has been received by this office.

Box 2 – Legal Interest

Pursuant to the Tidelands Trust Act, the Port's lands, both submerged and dry are held in trust by the City of Long Beach for the State. The Trust allows the City to use all tidelands and submerged lands within the City's Harbor District as a port. The land was originally granted to the City of Long Beach through State of California Chapter 676, Statutes of 1911. The responsibility for the promotion and management of the Port is granted to the City's Harbor Department through Article XII of the City's Charter. The Charter, in turn, grants the control and management of the Harbor Department to the Board of Harbor Commissioners.

Box 6 – Disposal Site Information

The proposed disposal sites include:

- (1) Port landfill project
- (2) Port upland disposal site

The Port's first priority is to beneficially reuse the material in a Port landfill project. However, dredge material may be disposed of at an upland landfill if found unsuitable for reuse as fill material within the Port. Additional information on each of the proposed constructed fill/upland disposal sites for the dredged material is listed below:

1. **Middle Harbor Redevelopment Slip and Basin Fill** - The Middle Harbor Redevelopment Project involves the fill of the Pier E Slip No.1 and a portion of the East Basin. A rock containment dike was constructed at the southern boundary of Slip No. 1 and a second containment dike will be constructed from Pier E, Berth E24 to Pier F, Berth F10. The containment dikes are designed to effectively contain chemically impacted materials and to control runoff of decant water from the settling of dredged material at the site. Any contaminated sediments placed at this site will be capped and sequestered by the placement of uncontaminated materials on top and a sand filter layer behind the containment dike in accordance with regulatory requirements and permits. Accordingly, disposal of dredged material at this disposal site will not pose any significant environmental concerns. The landfill has been analyzed in the Middle Harbor Terminal Redevelopment EIR/EIS.
2. **Port Upland Processing Area** - Dredged material may also be placed upland on Port property temporarily for sorting and drying of the material prior to disposal at an approved upland disposal facility. Port upland processing areas may include Pier S and other various upland sites throughout the Harbor District. All processing sites will be designed with the proper BMPs. Material would be placed within a retention berm for sorting and drying and a discharge weir would help to regulate the flow of decant water from the confined area. Once the material has been dried and sorted, scrap steel will be recycled and rock will be crushed into miscellaneous road base. Non-recyclable debris and materials will be disposed of at upland disposal facilities appropriate for the type of debris generated and in accordance with federal and state regulations.

Proposed Upland, Wetland, Reuse, or Fill Disposal

Site Information: Upland

Total volume: TBD

Site Name/Description/Address: TBD

Owner's Name: Port of Long Beach, 4801 Airport Plaza Drive, Long Beach, CA 90815

Site includes jurisdictional wetlands? No

Existing site that receives dredged material? Varies depending on site.

Will disposal result in the construction of temporary or permanent structures? Temporary BMPs and containment area to sort and dry material before disposing at approved upland facility.

Will the proposed disposal involve the transportation of dredged material by trucks? Yes

Box 12 – Adjoining Property Owners

Name: Pier S

Address: N/A

City: Long Beach

State: CA

Zip: 90802

Property adjoins: Dredging Site

Party given is: Owner (Port of Long Beach)

Name: Long Beach Generating Station (NRG Energy)

Address: 2665 West Seaside Blvd.

City: Long Beach

State: CA

Zip: 90802

Property adjoins: Dredging Site

Party given is: Private owner

Name: SSA Container Terminal (Pier A)

Address: 700 Pier A Plaza

City: Long Beach

State: CA

Zip: 90813

Property adjoins: Dredging Site

Party given is: Port of Long Beach lessee

Name: SSA/Matson Terminal (Pier C)

Address: 1521 Pier C Street

City: Long Beach

State: CA

Zip: 90813

Property adjoins: Dredging Site

Party given is: Port of Long Beach lessee

Name: Connolly-Pacific Company

Address: 1925 Pier D Street

City: Long Beach
State: CA
Zip: 90802
Property adjoins: Dredging Site
Party given is: Lessee of private property owner L.G. Everist, Inc.

Name: SA Recycling, LLC
Address: 482 Pier T Avenue, Berth 118
City: Long Beach
State: CA
Zip: 90802
Property adjoins: Dredging Site
Party given is: Port of Long Beach lessee

Name: Tesoro Long Beach Terminal
Address: 820 Carrack Avenue
City: Long Beach
State: CA
Zip: 90813
Property adjoins: Dredging Site
Party given is: Port of Long Beach lessee

Union Bank
Disbursement Services
Los Angeles, CA 90071

CITY OF LONG BEACH

90-1150
1221

1085743

ACCOUNTS PAYABLE ACCOUNT

VOID AFTER 120 DAYS

DATE

AMOUNT

PAY EXACTLY***75,071 **DOLLARS AND 00 CENTS 04/25/2014 01085743 ***75,071.00*

TO THE ORDER OF

STATE WATER RESOURCES CONTROL BOARD
1001 I ST
SACRAMENTO CA 95814-2120

DAVID S. NAKAMOTO, City Treasurer

LAURA L. DOUD, City Auditor

⑈ 1085743 ⑈ ⑆ 12224 150 ⑆ ⑈ 9080009248 ⑈

THE ORIGINAL DOCUMENT HAS A REFLECTIVE WATERMARK ON THE BACK. - - - - - HOLD AT AN ANGLE TO VIEW WHEN CHECKING THE ENDORSEMENT.

Attached is our check in full payment of items listed below
VENDOR NO. V037085 04 CHECK NO. 01085743
DATE 04/25/2014 DETACH BEFORE DEPOSITING

CITY OF LONG BEACH

VOUCHER NO.	DOCUMENT NO.	INVOICE NUMBER AND DESCRIPTION	NET AMOUNT
VFHA1400070701		HARBOR-PIER S & BACK CHANNEL WDR FEE	37535.50
VFHA1400070702		HARBOR-PIER S & BACK CHANNEL WDR FEE	37535.50

PIER 5 AND BACK CHANNEL IMPROVEMENTS PROJECT
SEDIMENT MANAGEMENT PLAN

Port of Long Beach
Environmental Planning



May 2014

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Appendix A	Pier S and Back Channel Improvements: Water Quality Monitoring for Dredging Activities	
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LIST OF ACRONYMS AND ABBREVIATIONS

BMP	best management practice
CWA	Clean Water Act
cy	cubic yard
MLLW	mean lower low water
Project	Pier S and Back Channel Improvements Project
Port	Port of Long Beach
RWQCB	Regional Water Quality Control Board
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
WDR	Waste Discharge Requirement
WQC	Water Quality Certification

1 INTRODUCTION

The Pier S and Back Channel Improvements Projects (Project) are navigation safety dredging projects in the Port of Long Beach (Port), Long Beach, California. Project elements include dredging/excavation, slope stabilization and protection, and placement of materials at the Middle Harbor Fill Site. This project-specific Sediment Management Plan was developed to:

- Illustrate the Port's decision process for the management of sediments generated by the Project.
- Define management priorities for contaminated and uncontaminated sediments.
- Define procedures for the maintenance of water quality during the movement (dredging, excavation, and disposal) of sediment.
- Serve as a guidance document for Port Engineering and Environmental Planning throughout the life of the project.
- Be a living document that will continue to be updated as conditions change.

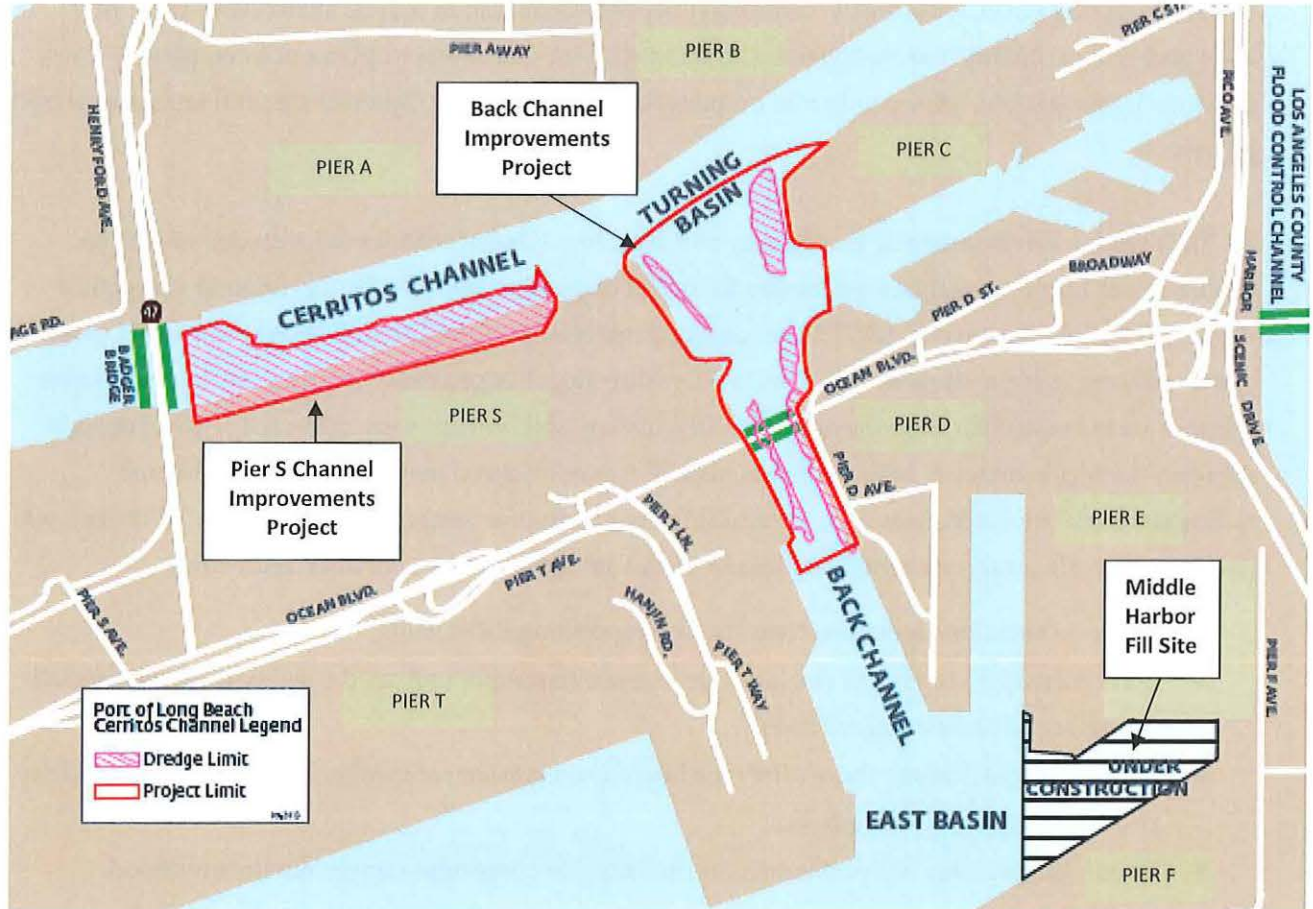
This document addresses these goals by providing:

- A summary of the anticipated Project activities, sediment budget, and project schedule.
- Guidance for applying best management practices (BMPs) to Project activities.

1.1 Project Summary

In late 2015, the Port of Long Beach (Port) will begin construction of the Pier S and Back Channel Improvements Projects, which include navigation safety improvements in the Back Channel and Turning Basin, the dredging and widening of the Cerritos Channel, and the dike realignment and shore-cut on Pier S (Figure 1). The primary purpose of these projects is to improve safety and navigation for vessels calling at the Port. In addition, the projects would produce dredged and excavated materials which could be beneficially reused as fill in the Port's Middle Harbor Terminal Redevelopment Project. The Pier S and the Back Channel Improvements Projects are estimated to take about 3 years to complete. The construction elements that are relevant to water quality include: 1) dredging and excavation, 2) slope stabilization and protection, 3) demolition of structures, and 4) placement of dredged/excavated material at the Middle Harbor Fill Site. The Port has structured this Sediment Management Plan around the expected activities in order to facilitate compliance with the relevant water quality permits (see Section 2).

Figure 1. Site Location



1.2 Construction Activities

1.2.1 Pier S Channel Improvements Project

1.2.1.1 Dredging

The dredge footprint is within the Cerritos Channel, which lies between Piers A and S (Figure 1). Portions of the Cerritos Channel will be dredged to -52 feet MLLW, with a 2-foot overdredge allowance to -54 feet MLLW to match the existing channel depth. Directly adjacent to the shoreline, minor dredging will be performed to key in the toe of the new shoreline rock dike. Dredging is estimated to generate up to approximately 631,000 cy of dredged material, (631,000 cy does not include bulking). Material generated from dredging activities will be beneficially used as fill for the Middle Harbor Fill Site. Existing and abandoned utilities and structures affected by the dredging will be removed, modified, or relocated. Any miscellaneous debris/objects (e.g. rocks, sunken vessels, pilings, etc.) within the Cerritos Channel will be removed and disposed of properly.

Sediment Sampling Data

A 2014 sampling effort is currently underway; the sediment results will be available in early July 2014 and will be included as an appendix to this sediment management plan once completed. Two previous investigations were conducted on material within the Pier S project site and are summarized below.

In 2000, Ogden Environmental and Energy Services, Inc. (Ogden) conducted a dredged material evaluation at Pier S to evaluate sediments for ocean disposal at the U.S. Environmental Protection Agency (USEPA)-designated LA-2 ocean dredged material disposal site (ODMDS). Sediment cores were collected using a vibracore at 10 stations within two dredge areas. Top and bottom composite samples were created for each dredge area. In addition, soil borings were collected at five landside stations. Landside material below 4.8 feet MLLW was considered marine sediments. Marine sediments from the landside area were combined to create one composite sample. Tier III testing was performed on all composite samples. Results of this investigation are summarized below:

- All concentrations were less than the corresponding ERM value.
- Solid phase (SP) testing of the landside composite sample indicated toxicity to *Grandidierella japonica* and *Americamysis bahia*.
- Suspended particulate phase (SPP) testing of the landside composite sample indicated toxicity to *A. bahia* and *Mytilus edulis*.
- Tissue analysis was not performed on the landside composite sample due to amphipod toxicity.
- Bioaccumulation testing of the waterside samples showed a significant uptake of lead, chromium, and benzo(k)fluoranthene in *Macoma nasuta* and/or *Nereis virens* tissues. In all cases, the magnitude of exceedance was low (less than 2 times the reference).

In 2002, AMEC conducted a shoreline characterization study at Pier S to evaluate material for placement in a Port fill site. Hollow-stem split-spoon auger drill borings were collected at 15 stations. Borings were segmented into top and bottom intervals. Samples were submitted for sediment and elutriate chemistry to determine suitability of the material for placement at a landfill site. Results of this investigation are summarized below:

- All concentrations were less than the corresponding ERM value.
- Concentrations of copper and selenium in some standard elutriate test (SET) samples were greater than acute CTR water quality criteria; however, the Short-Term Fate of Dredge Material Model (STFATE) indicated that concentrations would decrease below water quality criteria within 1 hour following disposal.

Results of the current characterization program will be provided in July 2014 to the CSTF and included in an amendment to this application.

Environmental Considerations

The material to be dredged within the Cerritos Channel was evaluated both for its potential suitability for use as fill material and for its chemical nature. The chemical concentrations in the sediment and sediment elutriates collected from the dredge footprint indicate that this material is (a) not hazardous waste and (b) acceptable for use as fill in the Middle Harbor Fill Site. Dredging, therefore, is not expected to result in any long-term or significant impacts to water quality. Short-term impacts to water quality could occur via temporary increases in turbidity during dredging, but turbidity would be expected to dissipate rapidly following project activities, and BMPs would be employed to control turbidity, as described in Section 2.3. In addition, within the Waste Discharge Requirements (WDR) a project-specific water quality monitoring plan will be implemented to ensure water quality is maintained during dredging activities.

1.2.1.2 *Excavation/Dike Realignment and Shoreline Dike Reconstruction*

The Pier S Channel Improvements Project will excavate up to approximately 1.31 million cubic yards (cy) of existing Pier S shoreline to realign the existing dike and widen the Cerritos Channel to 808 feet between Pier A and Pier S. Material generated from excavation activities will be beneficially reused as fill in the Middle Harbor Slip Fill Site. Prior to excavation approximately 100,000 tons of existing rock will be removed from the slope and reused at the Middle Harbor Slip Fill Site or elsewhere in the Port. Existing and abandoned utilities, structures, and debris/objects affected by the excavation will be removed, modified, or relocated. An approximately 3,666-foot-long, 3-foot-thick, and 60 –to 65-foot deep cutoff wall will be constructed landward of the shoreline to replace the existing clay core cutoff wall that will be impacted by the excavation activities. In addition, approximately 476,000 tons of quarry run and armor rock will be imported to stabilize and reconstruct the shoreline that is excavated.

Soil Sampling Data

A 2014 sampling effort is currently underway; the soil sampling results will be included as an appendix to this sediment management plan once completed. A previous investigation was conducted on landside material above 4.8 feet MLLW (considered fastland material) within the Pier S cut area by AMEC (AMEC, 2002) and the results are summarized in Section 1.2.1.1.

Environmental Considerations

Excavated material that will be generated through the Pier S shoreline cut/dike realignment was evaluated for its potential suitability for use as fill material in Middle Harbor Fill Site. The soil

evaluation indicates that this material is suitable for use as fill in the Middle Harbor Fill Site. Excavation activities are not anticipated to cause any long-term impacts to water quality. Permit-required monitoring of previous in-water construction projects has shown that substantial resuspension and dispersal of sediments does not occur (USACE/Port 2009). Short-term, less-than-significant impacts may occur due to increases in turbidity or the presence of debris at the project site; however, BMPs will be implemented as appropriate to ensure that any impacts are negligible. Potential BMPs that may be implemented are described in Section 2.3.

Based on site history of proximity to a historic oil field and soil sampling data, it is anticipated that excavation may encounter areas of petroleum hydrocarbon impacted soil. If such material is encountered during excavation activities, the contractor will implement appropriate Best Management Practices (BMPs) to ensure that water quality impacts are negligible. BMPs will be implemented to treat the material or amend the material to reduce the presence of or bind the oily material. If the material is found to be unsuitable for fill material, the Port will dispose of the material upland. Unsuitable dredge material will be placed upland on POLB property temporarily for sorting and drying of the material prior to disposal at an approved upland disposal facility. Port upland processing areas may include Pier S or various other upland sites throughout the port. All processing sites will be designed with proper BMPs designed to contain dredged materials on site. Dredged material would be placed within a retention berm for sorting and drying and a discharge weir would help to regulate the flow of decant water from the confined area. Management guidelines and potential BMPs that may be implemented are being prepared by the Port and will be included as an appendix to this sediment management plan once finalized.

The cut-off wall construction activity will be performed within the Pier S upland landside area and will not involve any in-water work and is not included in the WDR permit. No impacts to water quality are anticipated. The rock dikes will help to stabilize and reconstruct the shoreline that is excavated.

1.2.2 Back Channel Improvements Project

1.2.2.1 Dredging

The dredge footprint for the Back Channel Improvements Project is located within the Turning Basin and Back Channel, located north and south of the Gerald Desmond Bridge (Figure 1). The Back Channel will be widened to a width of 323 feet and portions will be dredged to -52 feet MLLW, with a 2-foot overdredge allowance to -54 feet MLLW, to match the existing channel depth. The Turning Basin will be widened to a diameter of approximately 1,200 feet and dredged to -52 feet MLLW, with a 2-foot overdredge allowance to -54 feet MLLW. Side slope dredging would be limited to specific

side slope locations along the western tip of Pier C; the western edge of Pier D; the eastern edge of Pier S, including areas adjacent to the Long Beach Generation Station (NRG Station); and the eastern edge of Pier T. This activity is estimated to generate approximately 250,000 cy of dredged material, (250,000 cy does not include bulking). Material generated from dredging activities will be beneficially used as fill for the Middle Harbor fill Site. Existing and abandoned utilities, structures, and debris/objects affected by the dredging will be removed, modified, or relocated following standard port practices.

Sediment Data

A 2014 sampling effort is currently underway; the sediment results will be available in early July 2014 and will be included as an appendix to this sediment management plan once completed. Two previous investigations were conducted on material within the Back Channel and Turning Basin project site and are summarized below.

In 1998, MEC Analytical Systems, Inc. (MEC) conducted a dredge material evaluation within Channel 2 and the Back Channel and Turning Basin to evaluate sediments for ocean disposal at LA-2. Sediment cores were collected during two sampling events using a vibrocore. During the first sampling event, cores were collected at 38 stations within six dredge areas. Cores were segmented into top and bottom intervals, and composite samples were created for Tier III testing. During the second sampling event, cores were collected at 23 stations to address potential confounding factors during testing. Results of this investigation are summarized below:

- Top intervals from three dredge areas were eliminated from further testing due to elevated PAHs and PCB Aroclors in surface sediments of the individual stations.
- SP testing indicated toxicity to *Rhepoxynius abronius*; however, tests were believed to be confounded due to elevated porewater ammonia and grain size effects.
- Side-by-side testing was performed with *R. abronius* and *Ampelisca abdita* and grain size effects were inconclusive.
- SPP testing indicated toxicity to *A. bahia*, *Atherinops affinis*, and *Strongylocentrotus purpuratus* in at least one sample; however, STFATE indicated ocean disposal would not result in unacceptable water column impacts.
- Bioaccumulation testing showed a statistically significant uptake of several contaminants in *M. nasuta* and/or *N. virens* tissues; however, all concentrations were below U.S. Food and Drug Administration (FDA) action levels and relevant residue-effect values.

In 2004, AMEC conducted a dredge material evaluation within the Back Channel and Turning Basin to evaluate sediments for upland placement within the Port and unconfined aquatic disposal at the Western Anchorage Temporary Sediment Storage Site. Sediment cores were collected using a

vibracore at 28 stations within four dredge areas. Cores were segmented into top and bottom intervals and composite samples were created for sediment chemistry, elutriate chemistry, SP testing, and SPP testing. Results of this investigation are summarized below:

- Concentrations of total DDTs and mercury were greater than corresponding ERM values in at least one sediment composite sample. All ERM exceedances were measured in the top interval (i.e., surface to 5 feet).
- Concentrations of copper in all SET samples were greater than the acute CTR water quality criterion.
- SP testing indicated toxicity to *Eohaustorius estuarius* in top and bottom composite samples from one area.
- No toxicity was observed in SPP testing.

Environmental Considerations

Dredged material that will be generated through dredging in the Back Channel and Turning Basin was evaluated for its potential suitability for use as fill material in Middle Harbor Fill Site. The sediment evaluation indicates that this material is (a) not hazardous waste and (b) acceptable for use as fill in the Middle Harbor Fill Site. Dredging, therefore, is not expected to result in any long-term or significant impacts to water quality. Short-term impacts to water quality could occur via temporary increases in turbidity during dredging, but turbidity would be expected to dissipate rapidly following project activities, and BMPs would be employed to control turbidity, as described in Section 2.3. In addition, within the Waste Discharge Requirements (WDR) a project-specific water quality monitoring plan will be implemented to ensure water quality is maintained during dredging activities.

1.2.2.2 Embankment Stabilization

Embankment stabilization will be constructed at both sides of the Back Channel and at the Turning Basin to facilitate steepening of the channel side slopes. Stabilization methods may include soil-cement stabilization using either cement deep-soil mixing (CDSM) or jet grouting methods or installation of sheetpiles. Approximately 80,000 tons of armor rock/riprap will be placed on the dredged slopes for erosion protection.

Environmental Considerations

The rock and embankment stabilization activities will help to stabilize and reconstruct the slope that is dredged. No long-term or significant impacts to water quality are anticipated as a result of rock placement and embankment stabilization. Short-term increases in turbidity may occur following the activities; however, because BMPs will be employed where appropriate, during this portion of the

project, any turbidity would be localized and short term. Potential BMPs that may be implemented are described in Section 2.3.

1.2.2.3 Intake Structure Demolition

The remaining portions of an abandoned intake structure will be demolished, the existing outfall structure will be modified, and adjacent submerged structures located at NRG in the Back Channel will be removed.

Environmental Considerations

Demolition, modification, and removal activities are not anticipated to cause any long-term adverse impacts to water quality. Permit-required monitoring of previous in-water construction projects has shown that substantial resuspension and dispersal of sediments does not occur (USACE/Port 2009). Short-term, less-than-significant impacts may occur due to increases in turbidity; however, BMPs will be implemented, as appropriate, to ensure that any impacts are negligible. Potential BMPs that may be implemented are described in Section 2.3.

2 ENVIRONMENTAL CONTROLS

2.1 Section 404/Section 10 Permit

The Section 404/10 permit issued by the US Army Corps of Engineers will include environmental controls, which are made a part of this Sediment Management Plan by this reference.

2.2 Waste Discharge Requirements (Water Quality Permit)

The CWA Section 401 WQC/WDR issued by the Los Angeles RWQCB will include environmental controls, which are made a part of this Sediment Management Plan by this reference.

2.2.1 Water Quality Monitoring Program for Dredging Activities

The Port has developed a project specific approach for assessing water quality during dredging activities. The dredging water quality monitoring plan proposed by the Port is provided in Appendix A. BMPs that may be implemented to minimize impacts to water quality during dredging/excavation operations are summarized in Section 2.3.1 below.

2.3 Potential Project Best Management Practices

The activities that may adversely affect water quality include dredging and excavation, disposal of dredged/excavated material, slope stabilization, and demolition of structures. The following sections summarize/outline BMPs that may be implemented to minimize the impacts of these activities.

2.3.1 Dredging/Excavation Best Management Practices

- A Water Quality Monitoring Plan (approved by the RWQCB) will be implemented by the Port during dredging/excavation. This plan will describe methods and documentation for the monitoring of turbidity, pH, and dissolved oxygen during dredging.
- The contractor will be required to ensure that no overflow will be permitted from scows.
- In order to ensure compliance with permit conditions, the following specific BMPs (Table 1) may be implemented when water quality monitoring indicates that an exceedance of water quality standards and permit limits is either likely or has already occurred.

Table 1
Best Management Practices that May Be Used to Reduce Resuspension and Contaminant Loss During Dredging

	Equipment Selection	Operational Controls	Site Containment
Mechanical	<ul style="list-style-type: none"> • Closed bucket or sealed environmental bucket • Real-time positioning • Bucket size/type (digging vs. re-handling) 	<ul style="list-style-type: none"> • Use experienced operator • Avoid tidal (current) extremes • Increase cycle time/slow down production • Slow bucket at bottom and at water surface • Eliminate multiple cuts and bottom stockpiling • Avoid sweeping with bucket • Do not use bucket or derrick to reposition dredge • Eliminate scow washing and overflow 	<ul style="list-style-type: none"> • Silt curtain or Gunderboom¹ • Oil containment boom¹
Hydraulic	<ul style="list-style-type: none"> • Type of hydraulic (cutterhead, suction, etc.) • Real-time positioning • Dredge size and pump capacity 	<ul style="list-style-type: none"> • Use experienced operator • Avoid tidal (current) extremes • Reduce impeller rotation speed • Reduce up swing speed • Adjust cut thickness • Eliminate the process of bank undercutting 	<ul style="list-style-type: none"> • Silt curtain of Gunderboom¹ • Oil containment boom¹

Notes:

1. Minimal benefits provided when dredge site is located in deep water or dynamic site conditions

A brief description of BMPs listed in Table 1 is provided below:

- Equipment BMPs to reduce sediment resuspension and contaminant loss when using a mechanical dredge include:
 - *Environmental bucket.* A sealed bucket designed to reduce water loss and suspended sediments, which is typically effective in loose unconsolidated sediment.
 - *Closed bucket.* A standard clamshell dredge bucket sealed by plates welded to the top of each clam.

- *Real-time positioning.* Real-time positioning data allows the operator to better control the dredge cut and bucket depth.
- *Bucket size/type.* Selection of the appropriate bucket can reduce overflow and excessive water in the bucket and reduce the need to take multiple bites.
- Equipment BMPs to reduce sediment resuspension and contaminant loss when using a hydraulic dredge include:
 - *Type of hydraulic dredge (cutterhead, suction, etc.).* Using the appropriate type of hydraulic dredge will minimize sediment loss.
 - *Real-time positioning.* Real-time positioning data allows the operator to better control the dredge cut and bucket depth.
 - *Dredge size and pump capacity.* Adjusting the pump rate can have an impact on reducing suspended solids and both the dredging and disposal location.
- Specific operational BMPs that could be used to reduce turbidity outside the allowable mixing zone at the dredge site when using a mechanical dredge include:
 - *Use experienced operator.* Experienced operators can better reduce sediment resuspension while maintaining production.
 - *Avoid tidal extremes.* Tidal extremes may limit the distance that suspended sediments travel.
 - *Increase cycle time.* To control turbidity, a longer cycle time could be used to reduce the velocity of the ascending loaded bucket through the water column, which reduces the potential to wash sediment from the bucket. Limiting the velocity of the descending bucket reduces the volume of sediment that is picked up and requires more total bites to remove the project material. For a clamshell bucket, the majority of the sediment resuspension occurs when the bucket hits the bottom.
 - *Slow bucket at bottom and at water surface.* Slowing the bucket at the bottom will reduce sediment resuspension when the bucket hits the bottom. Slowing the bucket at the water surface will reduce drainage at the surface.
 - *Eliminate multiple cuts.* If a turbidity exceedance is observed, the contractor should not be allowed to use multiple bites of the clamshell bucket to achieve the target dredge depth. When the bucket hits the bottom, an impact wave of suspended sediment travels along the bottom away from the dredge bucket. When the clamshell bucket takes multiple bites, the bucket loses sediment as it is reopens for subsequent bites. Sediment is also released higher in the water column as the bucket is raised, opened, and lowered. If this occurs the bucket type and size should be altered.

- *Eliminate bottom stockpiling.* The contractor should be prohibited to use bottom stockpiling to increase the efficiency of the dredging operation. Bottom stockpiling of dredged material in silty sediment has a similar effect as multiple dredging bites, an increased volume of sediment is released into the water column from the operation.
 - *Avoid sweeping with bucket.* Single bites of the sediment should be taken, and using the bucket to sweep or smooth out high spots should be avoided when working with contaminated sediments.
 - *Eliminate overflow or washing from scows.* The contractor should be prohibited from overloading scows to increase the efficiency of the dredging operation or from washing excess material from scows.
 - *Avoid using bucket or derrick to reposition barge.* The barge should be repositioned using a second vessel and not the bucket, as to reduce sediment resuspension during relocating.
- Specific operational BMPs to reduce turbidity outside the allowable mixing zone at the dredge site when using a hydraulic dredge include:
 - *Use experienced operator.* Experienced operators can better reduce sediment resuspension while maintaining production.
 - *Avoid tidal extremes.* Tidal extremes may limit the distance that suspended sediments travel.
 - *Reduce impeller rotation speed.* Reducing cutterhead rotation speed reduces the potential for side casting the excavated sediment away from the suction entrance and resuspending sediment. This measure is typically effective only on maintenance or relatively loose, fine-grained sediment.
 - *Reduce swing speed.* Reducing the swing speed ensures that the dredge head does not move through the cut faster than it can hydraulically pump the sediment and reduces the volume of resuspended sediment. The goal is to swing the dredge head at a speed that allows as much of the disturbed sediment as possible to be removed with the hydraulic flow. Typical swing speeds are 1.5 to 9 meters (5 to 30 feet) per minute.
 - *Eliminate the process of bank undercutting.* Dredge operators should remove the sediment in lifts equal to 80 percent or less of the cutterhead diameter.
 - Specific site containment BMPs to use if operational measures prove inadequate include:
 - *Silt curtain.* A silt curtain could be deployed around the dredge area, creating a physical barrier that contains the suspended sediments and allows them to settle out.
 - *Gunderboom.* A gunderboom is similar to the silt curtain; however, it is made of a permeable material. It filters out the sediment and allows the water to pass through. It

also extends all the way from the water surface to the sediment where the silt curtain only extends partially down the water column.

- *Oil containment boom* – If an oil sheen is encountered, an oil containment boom should be added to the silt curtain to contain and remove surficial petroleum material.

2.3.2 *Barge Transport and Material Placement within Fill Site*

Releases of dredged material outside of the approved disposal location (e.g. fill site) could occur during transport of material from the source area or during placement at the disposal location. Possible barge disposal practices could include both bottom dumping of material or clamshell re-handling over an already constructed containment dike. BMPs that could be implemented to minimize loss of sediment during transport and/or from the fill site are listed in Table 2 and discussed below. These BMPs should be employed at all times to ensure that no exceedance of water quality standards will occur and to ensure compliance with permit conditions with minimal impact on both the environment and the construction schedule and budget.

Table 2
Best Management Practices that May Be Used to Minimize Sediment Loss
During Discharge into Fill Site

	Equipment Selection	Operational Controls	Site Containment
Mechanical	<ul style="list-style-type: none"> • Barge type • Re-handling equipment type 	<ul style="list-style-type: none"> • Use experienced operator • Reduce rate of discharge • Reduce barge movement during discharge • Place material further away from dike/weir • Eliminate barge overflow/spilling 	<ul style="list-style-type: none"> • Silt curtain or Gunderboom¹
Direct hydraulic placement or offloader ²	<ul style="list-style-type: none"> • Diffuser pipes • Adjustable pump rates 	<ul style="list-style-type: none"> • Adjust flow rate • Adjust solids concentration at point of discharge • Move discharge point to allow for maximize retention time • Closely monitor and adjust weir level 	<ul style="list-style-type: none"> • Silt curtain or Gunderboom¹ • Discharge site control: <ul style="list-style-type: none"> – Install overflow weir – Install baffles or other flow diversion device

Notes:

1 Effectiveness dependent on dynamic site conditions and water depth

2 Occasionally, a fill site elevation will require the use of a hydraulic offloader to place material behind the containment dike.

A brief description of the BMPs listed in Table 2 is provided below:

- Equipment BMPs to reduce sediment loss when using a mechanical offloader to transfer sediments into a fill site or upland for placement include:

- *Barge type.* The contractor should use the appropriate type of barge (e.g., flat-deck barge with containment structures) to minimize sediment loss during offloading. For bottom dump scows, the barges must have fully sealed doors.
- *Handling equipment type.* The contractor should use the appropriate type of re-handling equipment (e.g., long-reach excavator) and spill aprons to reduce sediment loss.
- Equipment BMPs to reduce sediment loss when using direct hydraulic placement or a hydraulic offloader include:
 - *Diffuser pipes.* A diffuser can be used to slow the rate of discharge; therefore, reducing sediment resuspension in the fill and increasing the settling rates which will assist in controlling the loss of fines from the fill site.
 - *Adjustable pump rates.* In some instances, adjusting the pump rate or using a smaller dredge may be required to control the loss of fines from the fill site.
- Operational changes if using a mechanical offloader include:
 - *Use experienced operator.* Experienced operators can better reduce sediment resuspension while maintaining production.
 - *Reduce rate of discharge.* Disposing of sediment at a slower rate will have less impact on bottom and, therefore, reducing sediment resuspension.
 - *Minimize barge movement during offloading.* Moving the barge during offloading may increase the potential for losses during offloading.
 - *Place sediment farther away from dike or weir.* Position bottom-dump barges at a sufficient distance inside the slip to minimize the chance that excessive turbidity is released beyond the slip fill limits and that light transmittance requirements are exceeded outside the dike. Placing sediment farther away from dike or weir will increase retention time and allow more suspended sediment to settle.
- Operational changes if using a hydraulic dredge or offloader include:
 - *Adjust flow rate.* Placing material at a slower rate will reduce the amount of sediment being discharged and increase the retention time in the settling basin.
 - *Adjust solids concentration at point of discharge.* In a settling basin, higher solids concentration may result in higher settling rates and less suspended sediment at the effluent discharge.
 - *Move discharge point to maximize retention time.* Moving the discharge point to a place in the settling basin that will increase retention time will allow more suspended sediment to settle.

- *Closely monitor and adjust weir level.* The weir level should be adjusted as the settling basin is filled to maximize the settlement of fine material and minimize the amount of sediment that escapes in the return water.
- Specific site containment BMPs if using a mechanical offloader include:
 - *Silt curtain.* A silt curtain could be deployed around the discharge area, creating a physical barrier that contains the suspended sediments and allows them to settle out.
 - *Gunderboom.* A gunderboom is similar to the silt curtain; however, it is made of a permeable material. It filters out the sediment and allows the water to pass through. It also extends all the way from the water surface to the sediment where the silt curtain only extends partially down the water column.
- Specific site containment BMPs if using a hydraulic offloader include:
 - *Install an overflow weir.* Include a weir system designed to maximize the settlement of fine material into the fill and minimize the amount of sediment that escapes in the return water. The specific design of the weir will vary with the fill geometry and fill height.
 - *Silt curtain.* When the dike is completed to full height, with a temporary drainage weir, a filter fabric barrier or continuous floating silt curtain should be install across, or just outside of, the weir outflow point to prevent the passage of suspended sediments out into the adjacent water area, if necessary.
 - *Dredging (sweeping) outside of discharge point or weir at the end of fill operations.* Include an additional final dredge pass over the area immediately adjacent to the containment berm in order to remove any escaped dredged material and place it back within the fill. This determination would be subject to results of observations via surveys and on water quality monitoring during the filling process.

2.3.3 Debris Removal, Dike Construction, and Slope Stabilization Best Management Practices

- Debris will be removed from waters of the state/United States daily and stockpiled until disposal.
- A solid debris or silt curtain will be maintained in place during removal activities and slope stabilization activities to isolate the active construction area from the surrounding waters.

3 REFERENCES

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Ogden Earth and Environmental, Inc. (Ogden). 2000. Final Report, Pier S Realignment and Dredging Project, Contract HD-5951. Long Beach, California.

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APPENDIX A
PIER S AND BACK CHANNEL IMPROVEMENTS:
WATER QUALITY MONITORING FOR DREDGING
ACTIVITIES

1 WATER QUALITY MONITORING OBJECTIVES

The water quality monitoring program described below will be conducted during dredging activities. The objectives of the water quality monitoring program include:

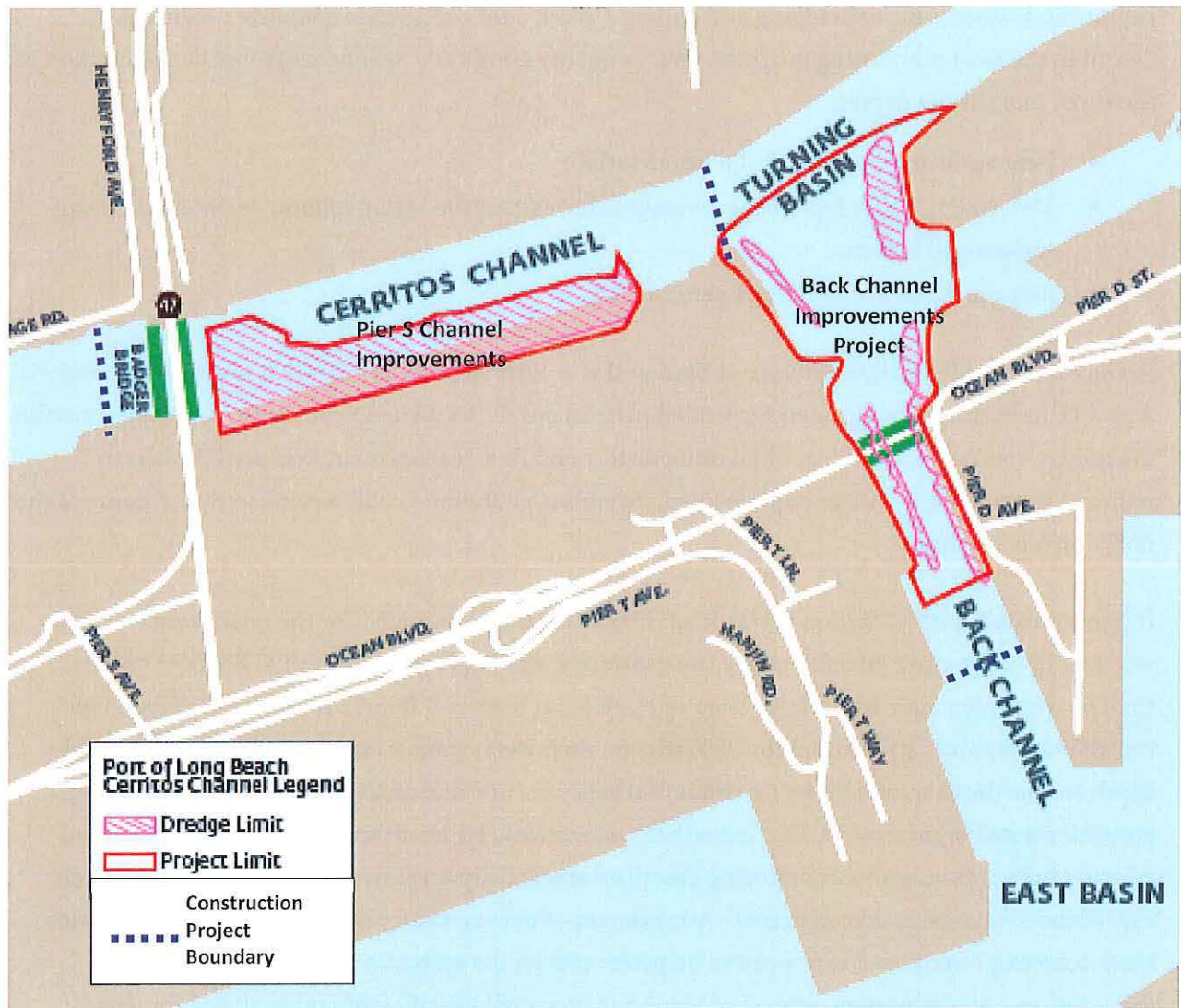
- Ensuring that water quality conditions are within the prescribed limits of relevant regulatory requirements
- Designating water quality monitoring procedures
- Planning appropriate project best management practices (BMPs) to avoid and minimize project impacts to the maximum extent practicable
- Documenting the results of water quality monitoring and BMP effectiveness

2 WATER QUALITY MONITORING APPROACH

The Port has designated construction project boundaries that define the area in which temporary water quality impacts may occur (Figure A-1). BMPs will be used as needed to limit the escape of suspended particulates beyond the mixing zone boundary, located 300 feet beyond the construction project boundary. Water quality monitoring will be conducted at four locations (Stations A, B, C, and D) during each sampling event, as described below:

Station	Description
A	300 feet up current of the designated construction project boundary. This station defines the near-dredging background and is used to determine whether water quality impacts are related to dredging activities or an up current source.
B	200 feet down current of the designated construction project boundary. This station represents an early-warning screening station to determine if Best Management Practices may need to be implemented.
C	300 feet down current of the designated construction project boundary. This station defines the dredging mixing zone boundary, beyond which temporary water quality impacts related to dredging activities are not to occur.
D	Control site (area not affected by dredging operations). This station defines the harbor background and provides a baseline for comparison to determine if temporary water quality impacts are present at Station C.

Figure A-1. Construction Project Boundaries for Pier S and Back Channel Water Quality Monitoring



3 WATER QUALITY MONITORING PROCEDURES

Water quality monitoring will be conducted at least once a week during dredging operations, beginning 1 week prior to dredging and ending 1 week after dredging is complete. Figure A-2 describes the field monitoring program. Water quality conditions will be measured at each station at the three monitoring depths:

- Near surface: 3 feet below the water surface
- Mid-water: 6-foot increments averaged throughout the water column, between the near surface and bottom
- Bottom: 3 feet above the sediment surface

In the event that light transmittance at Station B is at least 30% lower than that measured at Stations A and D, indicating that elevated suspended particulates in the area may be due to dredging activities, the dredge contractor will be notified immediately and Best Management Practices (BMPs) to improve water quality will be implemented. Sampling at Station C will resume within 2 hours of the BMP implementation.

If light transmittance at Station C is at least 30% lower than Station D (for the near surface or mid-water or bottom), the Port shall notify the contractor and implement additional BMPs. Station C shall be resampled after BMPs have been in place for at least two hours. If after resampling, light transmittance values still exceed the 30% trigger, then water samples shall be collected from mid-depth (or the depth at which the maximum turbidity occurs) and analyzed for trace metals, DDTs, polychlorinated biphenyls (PCBs), and polycyclic aromatic hydrocarbons (PAHs). The Port shall conduct light transmittance monitoring described above daily until two consecutive days with no exceedances have been demonstrated. A maximum of one chemistry sample will be collected each week (chemical analyses do not need to be performed on the second or third day following an exceedance). At a minimum, one set of water samples shall be collected and analyzed for these chemical constituents during the first month of the dredging operation, even if no exceedances of the light transmittance criteria occur.

The Port 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 a transmissivity exceedance. The Port 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, the Port 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.

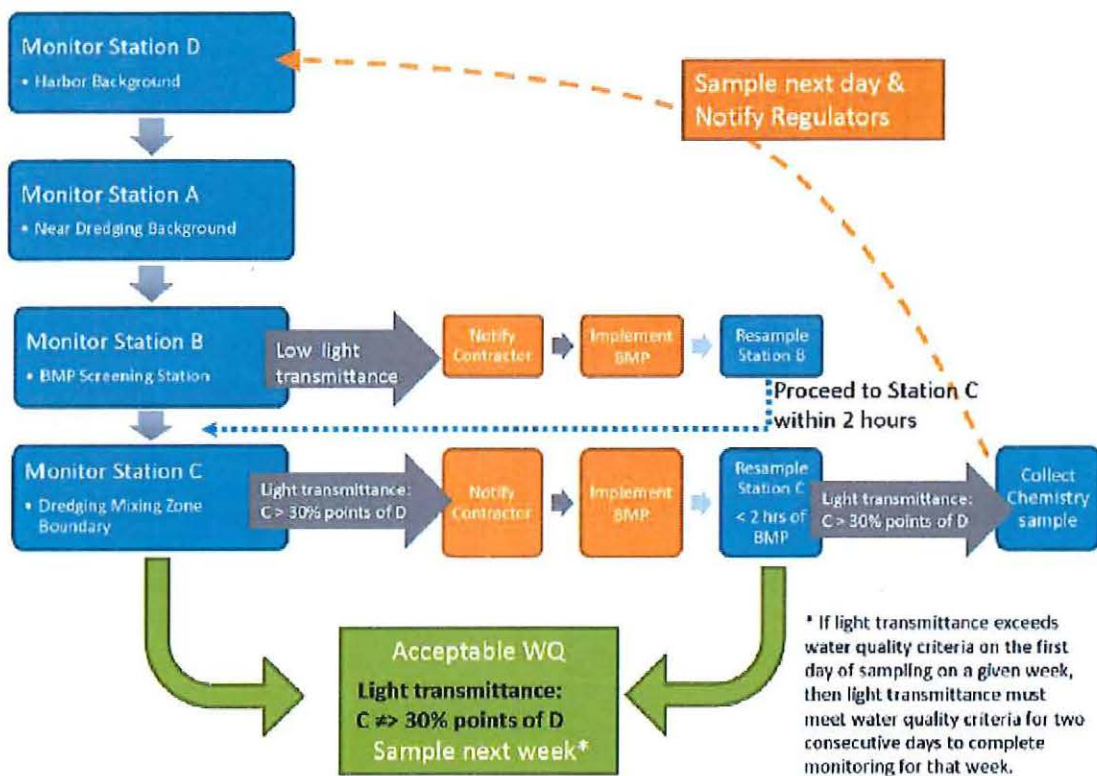


Figure A-2. Water Quality Monitoring Program During Dredging Activities

3.1 Water Quality Measurements

Water quality will be monitored for light transmittance, dissolved oxygen (DO), pH, and total suspended solids (TSS). In general, water quality parameters will be collected with field probes to monitor short-term water quality impacts from dredging activities. Monitoring equipment will include light transmittance, DO, and pH probes. Field probes will provide “real-time” monitoring data where the results can be evaluated during dredging activities. A grab sample from the mid-water depth will be collected and analyzed for TSS. Table A-1 lists specific criteria for water quality monitoring. Additional water chemistry grab samples may be collected as required based on the presence of decreased light transmittance (see Section 3). Equipment will be maintained in good-working order and in safe working condition at all times. Survey equipment will be maintained and calibrated in accordance with manufacturer specifications.

**Table A-1
Water Quality Monitoring**

Parameter	Units	Station	Frequency
Light transmittance ¹	% transmittance	A through D	Bi-weekly for first two weeks of dredging then weekly
DO ¹	mg/L		
pH ¹	pH units		
TSS	mg/L		
Water chemistry: metals, DDTs, PCBs, and PAHs	µg/L or ng/L	C	At least once during program or as required with decreased light transmittance at Station C

Notes:

1 Measurements shall be taken throughout the water column (at minimum, 2-meter increments).

µg/L = microgram per liter

mg/L = milligram per liter

ng/L = nanogram per liter

PAH = polycyclic aromatic hydrocarbon

PCB = polychlorinated biphenyl

Visual observations and relevant information will be recorded and photographed in the field, including:

- Field observations during sample collection, such as date, time, weather conditions, and tide
- Evidence of floatable and suspended materials, such as trash, oily slick, and grease
- Evidence of discoloration and turbidity, such as description of color, source, and size of affected area
- Evidence of odors

3.2 Water Quality Criteria for Dredging Activities

Water column light transmittance at each of the three depth intervals at Station C will be compared to the same depth interval at Station D. Values at Station C that are at least 30 percentage points less than at Station D at any of the three depth intervals would be an indication that water quality may be temporarily impacted by dredging activities. Dredging-related BMPs will be employed as needed (see next section). If BMPs are not able to reduce turbidity after 2 hours, a water chemistry grab sample will be collected at Station C. The water chemistry grab sample will be collected at the depth with the least light transmittance (i.e., greatest turbidity) and will be analyzed for trace metals, DDTs, PCBs, and PAHs. If light transmittance exceeds water quality criteria on the first day of sampling on

a given week, then light transmittance must meet water quality criteria for two consecutive days to complete monitoring for that week, as described in Figure A-2.

3.3 Potential Project Best Management Practices

BMPs will be implemented to minimize potential water quality impacts if elevated turbidity (i.e., light transmittance at least 30 percentage points lower than the harbor background) is observed at Station B. Dredging related BMPs are summarized in the Pier S and Back Channel Improvements Sediment Management Plan.

3.4 Executive Officer Oversight

The Executive Officer of the Regional Water Quality Control Board (RWQCB) has the authority to amend the sampling procedures should the available information support the changes that will add efficiencies to the water quality sampling program. If the results of three consecutive water chemistry samples demonstrate that there are no contaminants of concern associated with the increased turbidity, then further chemistry sampling may not be required at the discretion of the Executive Officer. In addition, if the decreased light transmittance at Station C appears to be due to other, non-dredge related activities, then further chemistry sampling may not be required at the discretion of the Executive Officer.

3.5 Reporting and Record Keeping

Monitoring reports will be submitted to the Regional Water Quality Control Board within 10 business days following each weekly sampling period or receipt of water chemistry, when conducted. Reports will be posted to the RWQCB Geotracker database system. The Port or its contractor will maintain daily records of all water quality monitoring results. In addition, the Port or its contractor shall maintain information for equipment used, including calibration and maintenance records.

