

San Diego Bay Environmental Restoration Fund – South

450 Montbrook Lane
Knoxville, TN 37919
Phone: (865) 691-5052

VIA Email and US Mail

December 13, 2013

David Gibson
San Diego Regional Water Quality Control Board
2375 Northside Drive, Suite 100
San Diego, CA 92108-2700

Re: November 2013, Monthly Water Column Monitoring Report Submittal
San Diego Shipyard Sediment Site – South Shipyard
Place ID 794466, Order No. R9-2013-0093

To Mr. Gibson:

The November 2013 Monthly Water Column Monitoring Report is being submitted to the San Diego Regional Water Quality Control Board by the San Diego Bay Environmental Restoration Fund – South (Attached).

Should there be any questions regarding this Monthly Report, please do not hesitate to contact me at 619-546-8377 ext. 103 or at mpalmer@demaximis.com.

Sincerely,



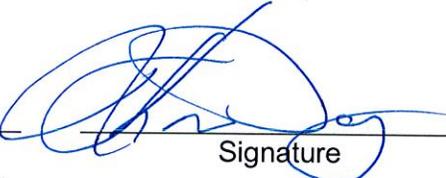
Mike Palmer
Project Coordinator

Attachment: San Diego Shipyard Sediment Site – South Shipyard (Place ID 794466, Order No. R9-2013-0093) Monthly Water Column Monitoring Report: November 2013

cc: Mike Chee, NASSCO (Via Email)
David Templeton, Anchor QEA (Via Email)
Chad Carpenter, R. E. Staite Engineering (Via Email)

CERTIFICATION STATEMENT

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

R. Thomas Dorsey  12/14/13
R. Thomas Dorsey, Signature Date
de maximis, inc. as Trustee

TECHNICAL MEMORANDUM

To: David Gibson, San Diego Regional Water Quality Control Board **Date:** December 13, 2013

From: Chris Osuch, Adam Gale, and Elizabeth Appy, Anchor QEA **Project:** 131003-01.02

Cc: Michael Chee, National Steel and Shipbuilding Company
Michael Palmer, de maximis, inc.
David Templeton and Michael Whelan, Anchor QEA
Robert Smith, U.S. Army Corps of Engineers

Re: San Diego Shipyard Sediment Site – South Shipyard (Place ID 794466, Order No. R9-2013-0093) Monthly Water Column Monitoring Report: November 2013

INTRODUCTION

The San Diego Bay Environmental Restoration Fund – South (South Trust) is remediating contaminated sediments at the South Shipyard portion of the San Diego Shipyard Sediment Site (Site). Remediation is required to comply with Cleanup and Abatement Order (CAO) No. R9-2012-0024 issued by the San Diego Regional Water Quality Control Board (Water Board 2012a). Sediment is being dredged from the South Shipyard and if suitable, dredged material will be disposed of at the Otay Landfill. Water column monitoring must be conducted during dredging operations in order to comply with Waste Discharge Requirements and Section 401 Water Quality Certification (WDR/WQC; Water Board 2013). Anchor QEA was contracted by the South Trust to conduct this water column monitoring.

This technical memorandum summarizes dredging operations and results of water column monitoring during November 2013. Monitoring during dredging was conducted on November 5, 12, 20, and 26. Monitoring was performed in accordance with the WDR/WQC Section VIII(A) (Water Board 2013) and Appendix C of the Remedial Action Plan (RAP; Anchor QEA 2012). Water quality monitoring included dissolved oxygen (DO), pH, turbidity, and visual observations.

In addition to the manual water quality monitoring conducted by Anchor QEA, an automatic monitoring system was set up and monitored by Tierra Data, Inc. (TDI) in accordance with the Mitigation Monitoring and Reporting Program (MMRP; Water Board

2012b). Automatic monitoring buoys were installed by TDI on September 26, prior to commencing dredging. Buoys are located at the reference station and two early warning stations. The reference station is located 1,000 feet from the remedial footprint in the direction of the ocean. Early warning stations are located 250 feet from the construction area;¹ however, it was necessary to slightly adjust this distance to allow for vessel traffic, including barge and tugboat access. Automatic monitoring is intended to alert the contractor if early warning triggers are achieved during dredging to allow for additional dredging best management practices (BMPs) to be implemented to prevent an exceedance at the compliance boundary. Automatic monitoring data are not presented in this technical memorandum but are available at <http://www.wqdata.com/webdblink/buoys.php>.

DREDGE VOLUMES AND LOCATIONS

In November, 11,700 cubic yards (cy) of sediment was dredged from the Site, consisting of 3,600 cy from within Sediment Management Unit (SMU)-1; 8,000 cy from within SMU-3; and 100 cy from within SMU-4 (Figure 1). Daily production rates ranged from 100 to 1,000 cy. All sediment was disposed of at the Otay Landfill. A summary of daily dredge volumes, locations from which sediment was removed, and final disposal locations is presented in Table 1. Waste manifests are provided in Attachment A.

WATER QUALITY MONITORING RESULTS

This section describes water quality monitoring results, including sampling locations, water column measurements, and visual observations.

Sampling Locations

Monitoring was performed at the reference station, two early warning stations, and four compliance stations. The reference station is located 1,000 feet from the remedial footprint in the direction of the ocean and beyond the influence of construction activities (Figure 2). Early warning and compliance stations are located 250 and 500 feet from the construction area, respectively. The general layout of early warning and compliance monitoring locations for SMU-1 and -3 are shown on Figures 3 and 4, respectively; however, actual locations were

¹ The construction area is defined as the area occupied by the dredging barge, sediment scow, sand and rock placement equipment, demolition work equipment, silt curtains, and other work.

positioned in the field relative to the construction area. Latitude and longitude coordinates for each monitoring location are presented in Table 2.

Water Column Measurements

DO, pH, and turbidity were measured 10 feet below the surface at each station using a Hydrolab MS5 or Horiba U52 multi-probe sonde. Instruments were calibrated prior to sampling according to the manufacturer's recommendations. Hydrolab calibration worksheets for each sampling event are provided in Attachment B. Water quality sample forms are provided in Attachment C. A summary of monitoring results during dredging is presented in Table 2.

During dredging, DO, pH, and turbidity results at each compliance station were compared to receiving water limitation compliance criteria. DO and pH concentrations were similar to the reference station and met compliance criteria. On November 26, the turbidity concentration at one early warning station was more than 20 percent greater than the reference, indicating a potential water quality issue. Dredging BMPs were evaluated and found to be working properly. Results at the compliance stations met criteria; therefore, compliance criteria were not exceeded.

Visual Observations

Visual observations are summarized in Table 2. No odors or visual evidence of discoloration, turbidity, or surface pollution was observed at any station. The double silt curtain was in place during all dredging operations, and no damage, dislocation, or gaps were observed.

Visual monitoring of turbidity inside and outside the silt curtains was performed in concert with water quality parameter monitoring. Attachment D provides site photographs of the silt curtains that visualize typical conditions during construction, showing an attenuating turbidity plume inside the two silt curtains. These visual observations are consistent with the results presented in this technical memorandum.

SUMMARY OF NON-COMPLIANCE

Based on the results of water quality monitoring, no incidents of non-compliance occurred during November.

PERSONS CONTRIBUTING TO THIS REPORT

Names, affiliations, and qualifications of the persons contributing to this technical memorandum are summarized in Table 3.

REFERENCES

Anchor QEA, 2012. *Remedial Action Plan*. San Diego Shipyard Sediment Site. Revised October 2012.

Water Board (San Diego Regional Water Quality Control Board), 2012a. Cleanup and Abatement Order R9-2012-0024 for the Shipyard Sediment Site. Issued March 14, 2012.

Water Board, 2012b. Mitigation Monitoring and Reporting Program for the Shipyard Sediment Remediation Project Environmental Impact Report (SCH#2009111098). Issued on March 14, 2012.

Water Board, 2013. Waste Discharge Requirements for San Diego Shipyard Sediment Remediation Project, San Diego Bay, San Diego, California. Order No. R9-2013-0093. Issued on July 10, 2013.

TABLES

Table 1
Estimated Dredge Volumes, Dredging Locations, and Final Disposal Locations
for November 2013

Date	Estimated Dredge Volume (cubic yards)	Dredging Location	Final Disposal Location¹
11/1/2013	1,000	SMU-3	Otay Landfill
11/4/2013	500	SMU-3	Otay Landfill
11/5/2013	1,000	SMU-3	Otay Landfill
11/6/2013	1,000	SMU-3	Otay Landfill
11/7/2013	1,000	SMU-3	Otay Landfill
11/9/2013	1,000	SMU-3	Otay Landfill
11/12/2013	1,000	SMU-3	Otay Landfill
11/13/2013	600	SMU-3	Otay Landfill
11/14/2013	600	SMU-3	Otay Landfill
11/15/2013	200	SMU-3	Otay Landfill
11/16/2013	100	SMU-4	Otay Landfill
11/19/2013	200	SMU-1	Otay Landfill
11/20/2013	800	SMU-1	Otay Landfill
11/21/2013	500	SMU-1	Otay Landfill
11/22/2013	600	SMU-1	Otay Landfill
11/23/2013	500	SMU-1	Otay Landfill
11/26/2013	1,000	SMU-1	Otay Landfill
11/27/2013	100	SMU-3	Otay Landfill
Total	11,700	-	-

Notes:

SMU = Sediment Management Unit

1 Otay Landfill is located at 1700 Maxwell Road, Chula Vista, California 91912.

Table 2
Water Quality Monitoring Results During Dredging - November 1 through 30, 2013

Date	Time	Station Type	Station ID	Latitude ¹	Longitude ¹	Water Quality Measurements			Visual Observations		
						DO (mg/L)	pH	Turbidity (NTU)	Odor	Surface Pollution	Discoloration or Turbidity
11/5/2013	13:14:16	Reference	D-BG-131105	32.69167	-117.15066	7.1	8.0	1.3	No	No	No
11/5/2013	13:36:51	Early Warning	D-EWS-131105	32.68739	-117.13921	6.8	8.0	1.4	No	No	No
11/5/2013	13:44:44	Early Warning	D-EWN-131105	32.68807	-117.13970	6.8	8.0	1.3	No	No	No
11/5/2013	13:50:10	Compliance	D-CNN-131105	32.68953	-117.14055	6.7	8.0	1.4	No	No	No
11/5/2013	13:56:37	Compliance	D-CON-131105	32.68755	-117.14017	6.8	8.0	1.3	No	No	No
11/5/2013	14:09:03	Compliance	D-COS-131105	32.68705	-117.13996	6.8	8.0	1.3	No	No	No
11/5/2013	14:16:57	Compliance	D-CNS-131105	32.68637	-117.13931	6.9	8.0	1.4	No	No	No
11/12/2013	12:58:09	Reference	D-BG-131112	32.69136	-117.15026	7.4	8.0	1.7	No	No	No
11/12/2013	13:23:34	Early Warning	D-EWN-131112	32.68805	-117.13966	7.2	8.0	1.6	No	No	No
11/12/2013	13:33:24	Early Warning	D-EWS-131112	32.68714	-117.13969	7.5	8.0	1.7	No	No	No
11/12/2013	13:44:11	Compliance	D-CNN-131112	32.68936	-117.14075	7.3	8.0	1.6	No	No	No
11/12/2013	13:51:19	Compliance	D-CON-131112	32.68849	-117.14093	7.2	8.0	0.9	No	No	No
11/12/2013	14:01:27	Compliance	D-COS-131112	32.68755	-117.14056	7.3	8.0	1.1	No	No	No
11/12/2013	14:07:02	Compliance	D-CNS-131112	32.68664	-117.13990	7.3	8.0	1.5	No	No	No
11/20/2013	15:08:31	Reference	D-BG-131120	32.69157	-117.15053	6.6	7.9	4.1	No	No	No
11/20/2013	15:30:41	Early Warning	D-EWN-131120	32.68917	-117.14334	7.2	8.0	3.0	No	No	No
11/20/2013	15:38:11	Early Warning	D-EWS-131120	32.68882	-117.14205	6.0	8.0	2.6	No	No	No
11/20/2013	15:41:06	Compliance	D-CNS-131120	32.68884	-117.14106	6.2	8.0	1.8	No	No	No
11/20/2013	15:44:44	Compliance	D-COS-131120	32.68816	-117.14169	8.8	8.0	2.5	No	No	No
11/20/2013	16:17:24	Compliance	D-CNN-131120	32.68854	-117.14369	8.9	8.0	2.9	No	No	No
11/20/2013	16:22:29	Compliance	D-CON-131120	32.68821	-117.14330	6.2	8.0	2.9	No	No	No
11/26/2013	12:00:52	Reference	D-BG-131126	32.69133	-117.15017	6.6	8.0	2.1	No	No	No
11/26/2013	12:33:57	Early Warning	D-EWN-131126	32.68919	-117.14313	9.2	8.0	1.5	No	No	No
11/26/2013	13:09:29	Early Warning	D-EWS-131126	32.68868	-117.14182	6.0	8.0	5.0 ²	No	No	No
11/26/2013	13:22:10	Reference	D-BG-131126	32.69130	-117.15028	7.0 ⁴	8.0	1.9 ³	No	No	No
11/26/2013	13:39:25	Early Warning	D-EWS-131126	32.68874	-117.14190	7.2	8.0	5.0 ³	No	No	No
11/26/2013	13:46:34	Compliance	D-CNS-131126	32.68941	-117.14022	8.3	8.0	1.8	No	No	No
11/26/2013	13:53:37	Compliance	D-COS-131126	32.68826	-117.14156	6.5	8.0	1.2	No	No	No
11/26/2013	13:57:22	Compliance	D-CON-131126	32.68829	-117.14229	8.0	8.0	1.5	No	No	No
11/26/2013	14:00:26	Compliance	D-CNN-131126	32.68852	-117.14286	8.5	8.0	1.4	No	No	No

Table 2
Water Quality Monitoring Results During Dredging - November 1 through 30, 2013

Date	Time	Station Type	Station ID	Latitude ¹	Longitude ¹	Water Quality Measurements			Visual Observations		
						DO (mg/L)	pH	Turbidity (NTU)	Odor	Surface Pollution	Discoloration or Turbidity
11/26/2013	14:37:06	Early Warning	D-EWS-131126	32.68886	-117.14199	6.0 ⁴	8.0	2.5 ³	No	No	No

Notes:

Receiving water limitation compliance criteria: DO shall not be depressed more than 10 percent from the reference (BG); pH shall not be changed more than 0.2 unit from reference (BG); pH shall not be depressed below 7.0 nor raised above 9.0; turbidity must not exceed 20 percent of reference (BG; if natural turbidity from 0 to 50 NTU).

DO = dissolved oxygen

mg/L = milligrams per liter

NTU = Nephelometric Turbidity Units

- 1 Latitude and longitude coordinates in decimal degrees, North American Datum 1983 (NAD83)
- 2 Early warning station results were potentially greater than the receiving water limitation. These results were used as an early indicator of a potential water quality issue. Dredging best management practices (BMPs) were evaluated and were found to be working properly. Results at the compliance stations met criteria; therefore, compliance criteria were not exceeded.
- 3 Measurements were re-taken at the reference station and early warning station to confirm the initial results. Turbidity concentrations were greater than 20 percent of the second reference measurement; therefore, the initial results were confirmed. Dredging BMPs were evaluated and found to be working properly and results at the compliance stations met criteria; therefore, compliance criteria were not exceeded.
- 4 Measurements were re-taken at the reference station and early warning station to confirm the initial results. DO concentrations were depressed by more than 10 percent of the second reference measurement. Dredging BMPs were evaluated and found to be working properly and results at the compliance stations met criteria; therefore, compliance criteria were not exceeded.

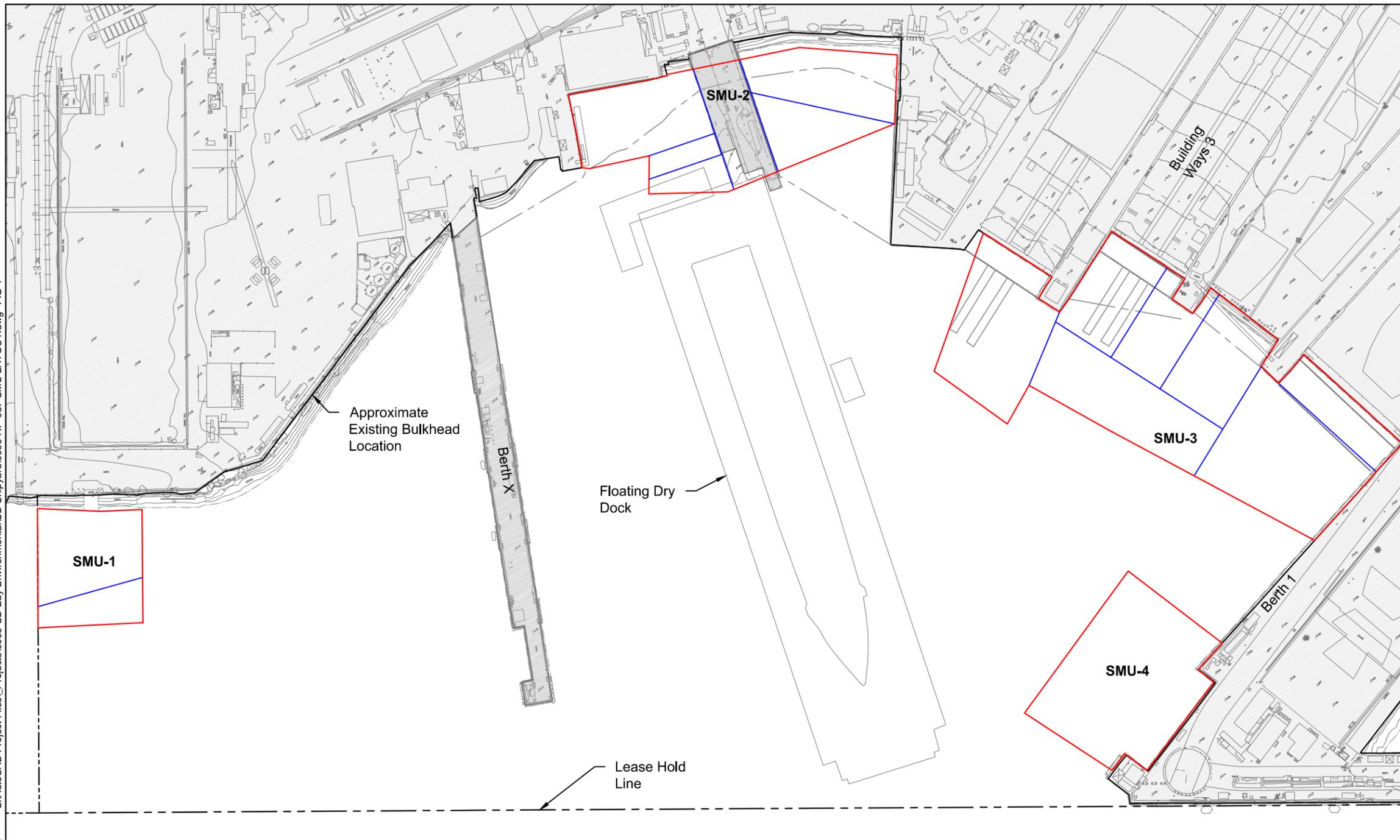
Table 3
Persons Contributing to this Report

Name	Title	Affiliation	Qualifications
Chris Osuch	Senior Scientist	Anchor QEA	University of California, Santa Barbara, B.A., Environmental Studies, 1998 Environmental scientist with more than 14 years of professional experience Experienced with collecting and measuring water quality parameters
Adam Gale	Senior Planner	Anchor QEA	University of Washington, Certificate Program in Geographic Information Systems, 2007; California Polytechnic State University, San Luis Obispo, B.S., Ecology and Systematic Biology, 2004 Planner with more than 8 years of professional experience Experienced with implementing water quality monitoring programs for remediation projects
Elizabeth Appy	Managing Scientist	Anchor QEA	Colby College, B.A., Biology, 1994; Oregon State University, M.S., Marine Resource Management, 2000 Managing scientist with more than 15 years of professional experience Experienced with implementing water quality monitoring programs for remediation projects
Brittany Geisler	Environmental Scientist	Anchor QEA	University of California, Irvine, B.A., Social Ecology, 2006 Environmental scientist with more than 5 years of professional experience Experienced with collecting and measuring water quality parameters

FIGURES

L:\AutoCAD Project Files\Projects\0995-SD Bay Environmental\SD Shipyard\0995-RP-037 SMU LAYOUT.dwg FIG 1

Nov 07, 2013 10:43am mpratschner



LEGEND:

- Remediation Boundary
- Sub-SMU Boundary

SOURCE: Upland topography from Digital Mapping Inc., dated September 2009, and supplemented by Environmental Data Solutions survey dated April 13, 2013.
HORIZONTAL DATUM: California State Plane, Zone 6, NAD83, U.S. Feet.



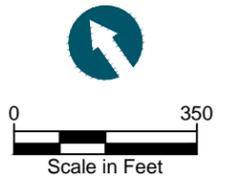
L:\AutoCAD Project Files\Projects\0995-SD Bay Environmental\SD Shipyard\0995-RP-027 REF SAMP 2.dwg FIG 2

Nov 07, 2013 10:04am mpratschner

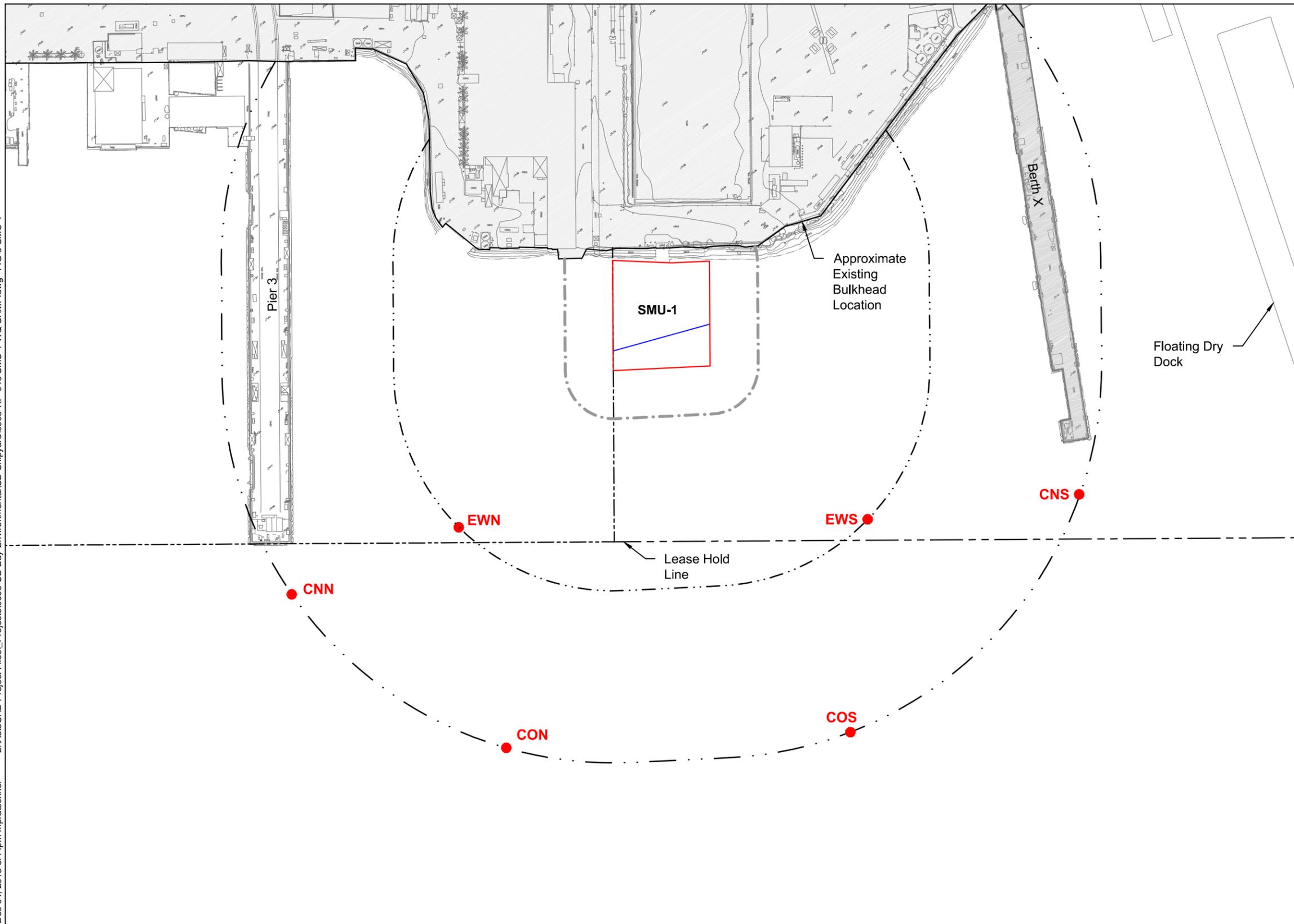


SOURCE: Aerial from ESRI base maps. Upland topography from Digital Mapping Inc., dated September 2009, and supplemented by Environmental Data Solutions survey dated April 13, 2013.
HORIZONTAL DATUM: California State Plane, Zone 6, NAD83, U.S. Feet.

NOTES:
 Reference Sampling Location BG
 Latitude: 32° 41.4970'
 Longitude: 117° 09.0185'



L:\AutoCAD Project Files\Projects\0995-SD Bay Environmental\SD Shipyard\0995-RP-046 SMU-1 WQ SAMP.dwg FIG 3 SMU-1
 Dec 04, 2013 3:44pm mpratschner



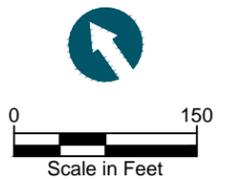
LEGEND:

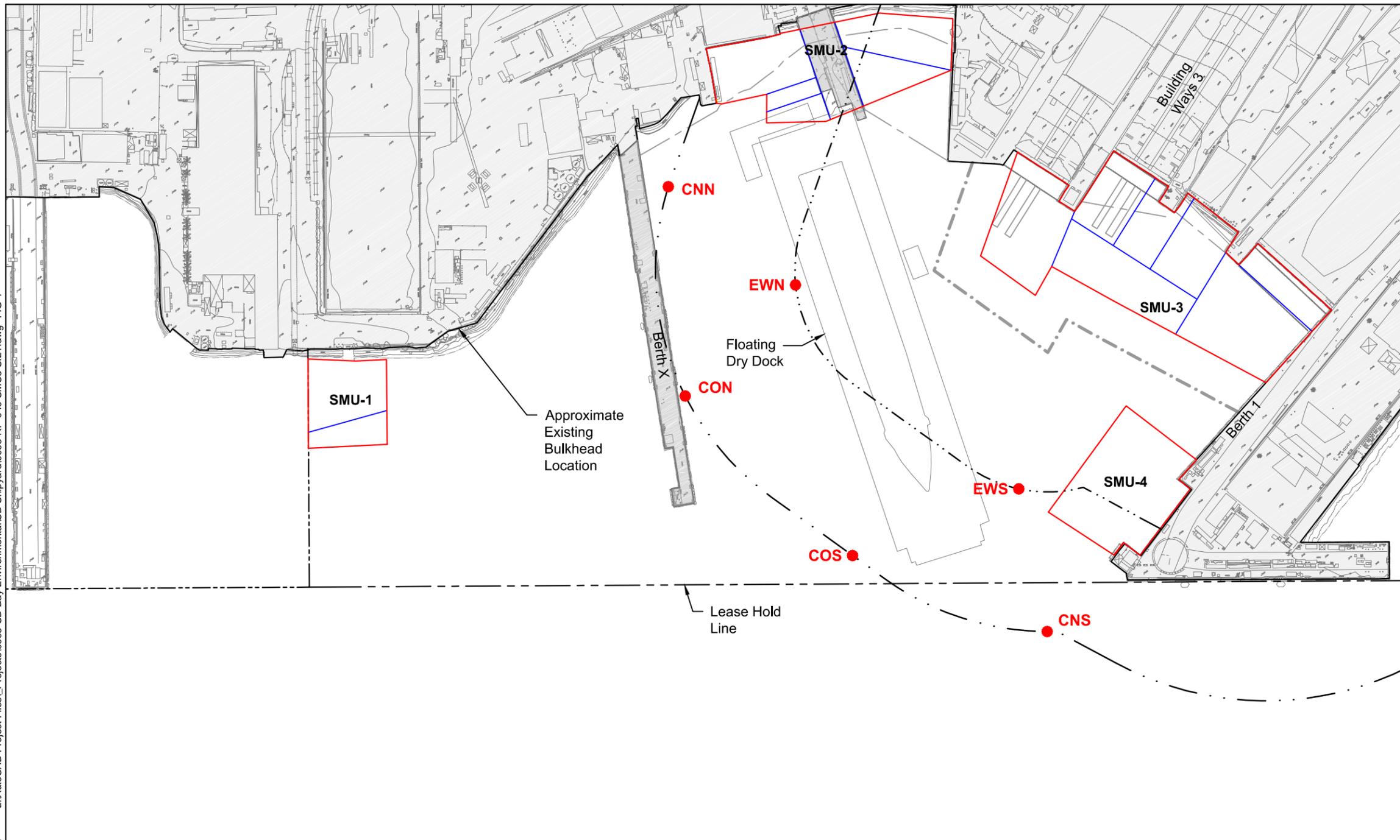
	Remediation Boundary
	Sub-SMU Boundary
	250 ft from Construction Area
	500 ft from Construction Area
	Sampling Location
	Silt Curtain
EWN	Early Warning North
EWS	Early Warning South
CNN	Compliance Nearshore North
CNS	Compliance Nearshore South
CON	Compliance Offshore North
COS	Compliance Offshore South

SOURCE: Upland topography from Digital Mapping Inc., dated September 2009, and supplemented by Environmental Data Solutions survey dated April 13, 2013.

HORIZONTAL DATUM: California State Plane, Zone 6, NAD83, U.S. Feet.

NOTE:
 Actual sampling locations determined in the field based on the location of the construction area.





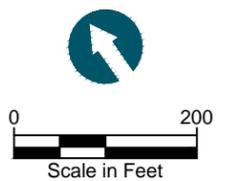
LEGEND:

- Remediation Boundary
- Sub-SMU Boundary
- - - - - 250 ft from Construction Area
- . - . - 500 ft from Construction Area
- XXX Sampling Location
- - - - - Silt Curtain
- EWN Early Warning North
- EWS Early Warning South
- CNN Compliance Nearshore North
- CNS Compliance Nearshore South
- CON Compliance Offshore North
- COS Compliance Offshore North

NOTE:

Actual locations were positioned in the field relative to the construction area.

SOURCE: Upland topography from Digital Mapping Inc., dated September 2009, and supplemented by Environmental Data Solutions survey dated April 13, 2013.
HORIZONTAL DATUM: California State Plane, Zone 6, NAD83, U.S. Feet.



ATTACHMENT A
WASTE MANIFESTS

PROVIDED ON CD

ATTACHMENT B
CALIBRATION LOGS

HYDROLAB CALIBRATION WORKSHEET

PROJECT(S): SD Shipyards

PROJECT #: 131003-01.02

REMINDER: ALLOW TWO MINUTES WARMUP BEFORE CALIBRATION OR USE.

Calib by:	Date	Time (24 Hr)	DO				pH					REDOX		
			Temp. (°C)	BP (mm Hg)	Initial DO (mg/L)	Final DO (mg/L)	Initial pH 7.0	Final pH 7.0	Temp. (°C)	Initial pH: 10.0	Final pH: 10.0	Initial (mV)	Final (mV)	Temp. (°C)
DF	11.5.03	0630	23.0	760	8.6	8.6	7.0	7.01	22.6	10.2	10.03			

Calib by:	Date	Time (24 Hr)	CONDUCTIVITY				TURBIDITY					
			Initial 0 µs/cm	Final 0 µs/cm	Temp. (°C)	Initial 1412 µs/cm	Final 1412 µs/cm	Initial 0 NTU	Final 0 NTU	Temp. (°C)	Initial 40 NTU	Final 40 NTU
DF	11.5.03	0630	0.1	0.0	18.8	1414	1412	0.3	0.0	22.8	43.7	40.0

Dissolved Oxygen Method (circle one):
 Air Saturated Water Winkler Titration

Conductivity Stds: Calibration: 1412 µs/cm
 Lot # A23110 Exp. Date: 12/13

Source of Barometric Pressure Surveyor
 Turb Std. (40 NTU)
 Lot# A2326 Exp. 11/14

Verification: _____ µs/cm
 Lot # _____ Exp. Date: _____

Turbidity Std (40.1 NTU)
 Lot# A3003 Exp. Date: 12/14

pH Buffers:
 pH 7.0 Lot # A3046 Exp. Date: 2/15
 pH 10 Lot# A3042 Exp. Date: 2/14
 pH 4 Lot# A3042 Exp. Date: 2/17

4.2 @ 22.7
 4.01

Redox Standard:
 428 mV ± @ 25 °C (Zobell's)
 Lot# _____ Exp. Date: _____

NOTES:

HYDROLAB CALIBRATION WORKSHEET

PROJECT(S): SD Shipyards

PROJECT #: 131003-01.02

REMINDER: ALLOW TWO MINUTES WARMUP BEFORE CALIBRATION OR USE.

Calib by:	Date	Time (24 Hr)	DO				pH					REDOX		
			Temp. (°C)	BP (mm Hg)	Initial DO (mg/L)	Final DO (mg/L)	Initial pH 7.0	Final pH 7.0	Temp. (°C)	Initial pH: 10.0	Final pH: 10.0	Initial (mV)	Final (mV)	Temp. (°C)
DF	11.12.13	0630	24.5	716	8.4	8.4	7.0	7.0	24.9	10.0	10.01			

Calib by:	Date	Time (24 Hr)	CONDUCTIVITY				TURBIDITY					
			Initial 0 µs/cm	Final 0 µs/cm	Temp. (°C)	Initial 1412 µs/cm	Final 1412 µs/cm	Initial 0 NTU	Final 0 NTU	Temp. (°C)	Initial 40 NTU	Final 40 NTU
DF	11.12.13	0630	0.1	22 ^{DF}	22.2	1407	1412	0.0	0.0	24.5	40.3	40.0
				0.0								

Dissolved Oxygen Method (circle one):
 Air Saturated Water Winkler Titration

Source of Barometric Pressure Surveyor
 Turb Std. (40 NTU)
 Lot # A3280 Exp. 10/15

Turbidity Std (40 NTU)
 Lot# A8347 Exp. Date: 12/10

Conductivity Stds: Calibration: 1412 µs/cm
 Lot # A2340 Exp. Date: 12/13
 Verification: _____ µs/cm
 Lot # _____ Exp. Date: _____

pH Buffers:
 pH 7.0 Lot # A3046 Exp. Date: 2/15
 pH 10 Lot# A3042 Exp. Date: 2/14
 pH 4 Lot# A3042 Exp. Date: 2/17

Redox Standard:
 428 mV ± @ 25 °C (Zobell's)
 Lot# _____ Exp. Date: _____

4.3 @ 24.8
 4.01

NOTES:

ATTACHMENT C
WATER QUALITY SAMPLE FORMS



27201 Puerta Real, Suite 350
Mission Viejo, California 92691
Phone 949.347.2780
www.anchorqea.com

Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Fellers Brittany Geisler		Date: 11.5.13	Tide: Flood / <u>Ebb</u> / Slack	
Station ID: D-BB-131105		Water Depth (ft): 37.7		
Coordinates				
Latitude/Northing: 32° 41' 30.018 "		Longitude/Easting: 117° 09' 02.370 "		
Weather and Wind Conditions: Sunny, Strong wind				
Predominant Current Direction: NW				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
13:14:16	10	7.1	8.0	1.3
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y / <u>N</u>			Photograph(s) Taken: <u>Y</u> / N	
Discoloration or Turbidity: Y / <u>N</u>			Recorded by: <u>Brittany Geisler</u>	
Comments:				



27201 Puerta Real, Suite 350
 Mission Viejo, California 92691
 Phone 949.347.2780
 www.anchorqea.com

Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: <i>Dustin Fellers Brittany Geister</i>		Date: <i>11.5.13</i>	Tide: Flood / <u>Ebb</u> / Slack	
Station ID: <i>D-EWN-131105</i>			Water Depth (ft): <i>46.7</i>	
Coordinates				
Latitude/Northing: <i>32° 41' 17.046"</i>		Longitude/Easting: <i>117° 08' 22.920"</i>		
Weather and Wind Conditions: <i>Sunny, Calm wind</i>				
Predominant Current Direction: <i>NW</i>				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
<i>13:44:44</i>	<i>10</i>	<i>6.8</i>	<i>8.0</i>	<i>1.3</i>
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution <u>Y</u> /N <i>woody debris</i>			Photograph(s) Taken <u>Y</u> /N <i>1</i>	
Discoloration or Turbidity: Y/ <u>N</u>			Recorded by: <i>Brittany Geister</i>	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Fellers Brittany Geisler		Date: 11.5.13	Tide: Flood (Ebb) Slack	
Station ID: D-EWS-131105			Water Depth (ft): 31.3	
Coordinates				
Latitude/Northing: 32° 41' 14.616"		Longitude/Easting: 117° 08' 21.156"		
Weather and Wind Conditions: Sunny, light wind				
Predominant Current Direction: NW				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
13:30:51	10	6.8	8.0	1.4
Odor: (none) slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y/N (N)		Photograph(s) Taken: Y/N (Y)		
Discoloration or Turbidity: Y/N (N)		Recorded by: Brittany Geisler		
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: <i>Dustin Fellers</i> <i>Brittany Geister</i>		Date: <i>11.5.13</i>	Tide: Flood <input checked="" type="radio"/> Ebb <input type="radio"/> Slack	
Station ID: <i>D-CNN-131105</i>		Water Depth (ft): <i>35.5</i>		
Coordinates				
Latitude/Northing: <i>32° 41' 22.290''</i>		Longitude/Easting: <i>117° 08' 25.968''</i>		
Weather and Wind Conditions: <i>Sunny, light wind</i>				
Predominant Current Direction: <i>NW</i>				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
<i>13:50:10</i>	<i>10</i>	<i>6.7</i>	<i>8.0</i>	<i>1.4</i>
Odor: <input checked="" type="radio"/> none <input type="radio"/> slight <input type="radio"/> moderate <input type="radio"/> strong <input type="radio"/> H ₂ S <input type="radio"/> petroleum <input type="radio"/> septic				
Presence of Surface Pollution: Y <input checked="" type="radio"/> N <input type="radio"/>		Photograph(s) Taken: Y <input checked="" type="radio"/> N <input type="radio"/>		
Discoloration or Turbidity: Y <input checked="" type="radio"/> N <input type="radio"/>		Recorded by: <i>Brittany Geister</i>		
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02			
Field Personnel: <i>Dustin Fellers</i> <i>Brittany Geisler</i>		Date: <i>11.5.13</i>	Tide: Flood <input checked="" type="radio"/> Ebb / Slack		
Station ID: <i>D-CON-131105</i>			Water Depth (ft): <i>42.9</i>		
Coordinates					
Latitude/Northing: <i>32° 41' 15.162"</i>		Longitude/Easting: <i>117° 08' 24.612"</i>			
Weather and Wind Conditions: <i>Sunny, light wind</i>					
Predominant Current Direction: <i>NW</i>					
Field Parameters					
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)	
<i>13:56:37</i>	<i>10</i>	<i>6.8</i>	<i>8.0</i>	<i>1.3</i>	
Odor: <input checked="" type="radio"/> none <input type="radio"/> slight <input type="radio"/> moderate <input type="radio"/> strong <input type="radio"/> H ₂ S <input type="radio"/> petroleum <input type="radio"/> septic					
Presence of Surface Pollution: <i>Y</i> / <input checked="" type="radio"/> N			Photograph(s) Taken: <input checked="" type="radio"/> Y / <input type="radio"/> N		
Discoloration or Turbidity: <i>Y</i> / <input checked="" type="radio"/> N			Recorded by: <i>Brittany Geisler</i>		
Comments:					



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: <i>Dustin Fellers</i> <i>Brittany Geisler</i>		Date: <i>11.5.13</i>	Tide: Flood <input checked="" type="radio"/> Ebb <input type="radio"/> Slack	
Station ID: <i>D-COS</i> <i>Be</i> <i>-131105</i>		Water Depth (ft): <i>37.9</i>		
Coordinates				
Latitude/Northing: <i>32° 41' 13.380"</i>		Longitude/Easting: <i>117° 08' 23.844"</i>		
Weather and Wind Conditions: <i>Sunny</i>				
Predominant Current Direction: <i>NW</i>				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
<i>13:14:09.03</i>	<i>10</i>	<i>6.8</i>	<i>8.0</i>	<i>1.3</i>
Odor: <input checked="" type="radio"/> none slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: <input checked="" type="radio"/> Y <input type="radio"/> N <i>Be</i> <i>NO</i>		Photograph(s) Taken <input checked="" type="radio"/> Y <input type="radio"/> N <i>1</i>		
Discoloration or Turbidity: Y <input checked="" type="radio"/> N		Recorded by: <i>Brittany Geisler</i>		
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Dustin Fellers Brittany Geister		Date: 11.5.13	Tide: Flood <input checked="" type="radio"/> Ebb / Slack	
Station ID: ^{CNS} D-605-131105		Water Depth (ft): 36.5		
Coordinates				
Latitude/Northing: 32° 41' 10.932"		Longitude/Easting: 117° 08' 21.498"		
Weather and Wind Conditions: Sunny, mod. wind				
Predominant Current Direction: NW Rocky water				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
14:16:57	10	6.9	8.0	1.4
Odor: <input checked="" type="radio"/> none slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y / <input checked="" type="radio"/> N			Photograph(s) Taken: <input checked="" type="radio"/> Y / N	
Discoloration or Turbidity: Y / <input checked="" type="radio"/> N			Recorded by: Brittany Geister	
Comments: Ship in way of 500ft. zone 600ft. away				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: <i>Chris Osuch, Dustin Felker</i>		Date: <i>11/12/13</i>	Tide: <u>Flood</u> / Ebb / Slack	
Station ID: <i>D-BG-131112</i>		Water Depth (ft): <i>40.3</i>		
Coordinates				
Latitude/Northing: <i>32°41'28.908"</i>		Longitude/Easting: <i>117°09'00.948"</i>		
Weather and Wind Conditions: <i>overcast w/ slight breeze from NW</i>				
Predominant Current Direction: NW <i>SE</i>				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
<i>12:59:09</i>	<i>10</i>	<i>7.4</i>	<i>8.0</i>	<i>1.7</i>
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y / <u>N</u>			Photograph(s) Taken <u>Y</u> / N <i>1</i>	
Discoloration or Turbidity: Y / <u>N</u>			Recorded by: <i>Chris Osuch</i>	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Chris Osuch, Dustin Fellers		Date: 11/12/13	Tide: <u>Flood</u> / Ebb / Slack	
Station ID: D-EWN-131112		Water Depth (ft): 67.2		
Coordinates				
Latitude/Northing: 32°41'16.992"		Longitude/Easting: 117°08'22.788"		
Weather and Wind Conditions: overcast w/ moderate wind from NW				
Predominant Current Direction: SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
13:23:34	10	7.2	8.0	1.6
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y/ <u>N</u>		Photograph(s) Taken: <u>Y</u> / <u>N</u> 1		
Discoloration or Turbidity: Y/ <u>N</u>		Recorded by: <u>Chris Osuch</u>		
Comments: Limited access for EWN station due to dry dock. Wind picked up.				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: <i>Chris Osuch, Dustin Fellers</i>		Date: <i>11/12/13</i>	Tide: <u>Flood</u> / Ebb / Slack	
Station ID: <i>D-EWS-131112</i>		Water Depth (ft): <i>41.2</i>		
Coordinates				
Latitude/Northing: <i>32°41'13.698"</i>		Longitude/Easting: <i>117°08'22.890"</i>		
Weather and Wind Conditions: <i>overcast w/ moderate wind from NW</i>				
Predominant Current Direction: <i>SE</i>				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
<i>13:33:24</i>	<i>10</i>	<i>8.0</i> ^{<i>7.5</i>} _{<i>w</i>}	<i>8.0</i>	<i>1.7</i>
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y / <u>N</u>		Photograph(s) Taken: <u>Y</u> / N		
Discoloration or Turbidity: Y / <u>N</u>		Recorded by: <i>Chris Osuch</i>		
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Chris Osuch, Dustin Felker		Date: 11/12/13	Tide: <u>Flood</u> / Ebb / Slack	
Station ID: D ⁴ -CNN-13112		Water Depth (ft): 36.8		
Coordinates				
Latitude/Northing: 32°41'21.684"		Longitude/Easting: 117°08'26.682"		
Weather and Wind Conditions: overcast w/ slight wind from NW				
Predominant Current Direction: SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
13:44:11	10	7.3	8.0	1.6
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y/ <u>N</u>			Photograph(s) Taken: <u>Y</u> /N 1	
Discoloration or Turbidity: Y/ <u>N</u>			Recorded by: <i>Chris Osuch</i>	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Chris Osuch, Dustin Fellers		Date: 11/12/13	Tide: <u>Flood</u> / Ebb / Slack	
Station ID: D-CON-131112		Water Depth (ft): 39.6		
Coordinates				
Latitude/Northing: 32°41'18.546"		Longitude/Easting: 117°08'27.348"		
Weather and Wind Conditions: overcast w/ slight wind from NW				
Predominant Current Direction: SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
13:51:19	10	7.2	8.0	0.9
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y/ <u>N</u>			Photograph(s) Taken: <u>0</u> /N	
Discoloration or Turbidity: Y/ <u>N</u>			Recorded by: <u>Chris Osuch</u>	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Chris Osuch, Dustin Fellers		Date: 11/12/13	Tide: <u>Flood</u> / Ebb / Slack	
Station ID: D-COS-131112		Water Depth (ft): 43.4		
Coordinates				
Latitude/Northing: 32°41'15.162"		Longitude/Easting: 117°08'25.998"		
Weather and Wind Conditions: Overcast w/ slight wind from NW				
Predominant Current Direction: SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
14:01:27	10	7.3	8.0	1.1
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y/ <u>N</u>			Photograph(s) Taken: <u>Y</u> /N 1	
Discoloration or Turbidity: Y/ <u>N</u>			Recorded by: <i>Chris Osuch</i>	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: Chris Osuch, Dustin Fellors		Date: 11/12/13	Tide: Flood / Ebb / Slack	
Station ID: D-CNS-131112		Water Depth (ft): 42.4		
Coordinates				
Latitude/Northing: 32°41'11.886"		Longitude/Easting: 117°08'23.646"		
Weather and Wind Conditions: overcast w/ slight wind from NW				
Predominant Current Direction: SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
14:07:02	10	7.3	8.0	1.5
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y / <u>N</u>			Photograph(s) Taken: <u>Y</u> / N	
Discoloration or Turbidity: Y / <u>N</u>			Recorded by: <i>Chris Osuch</i>	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: D. Fellers, B. Geisler		Date: 11.20.13	Tide: Flood / <u>Ebb</u> / Slack	
Station ID: D-BG-131120			Water Depth (ft): 33.2	
Coordinates				
Latitude/Northing: 32° 41' 29.646"		Longitude/Easting: 117° 09' 01.920"		
Weather and Wind Conditions: Partly cloudy, light wind				
Predominant Current Direction: NW				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
VOID	10	15.2	6.6	4.5
15:08:31	10	6.6	7.9	4.1
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y/ <u>N</u>			Photograph(s) Taken: <u>Y</u> /N 1	
Discoloration or Turbidity: Y/ <u>N</u>			Recorded by: <i>Brittany</i>	
Comments: First reading parameters were atypical - possible air bubbles in rental equipment. Second attempt parameters presented more typical/standard results after allowing equipment to rest at 10 feet for 30 sec.				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: D. Fellers, B. Geisler		Date: 11.20.13	Tide: Flood / <u>Ebb</u> / Slack	
Station ID: D-EWN-131120		Water Depth (ft): 30.4		
Coordinates				
Latitude/Northing: 32° 41' 21.012"		Longitude/Easting: 117° 08' 36.030"		
Weather and Wind Conditions: <i>partly cloudy, light wind</i>				
Predominant Current Direction: <i>SW</i>				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
15:30:41	10	7.2	8.0	3.0
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y / <u>N</u>			Photograph(s) Taken: <u>Y</u> / N	
Discoloration or Turbidity: Y / <u>N</u>			Recorded by: <i>Betty Ge</i>	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: D. Fellers, B. Geisler		Date: 11.20.13	Tide: Flood <input checked="" type="radio"/> Ebb <input type="radio"/> Slack	
Station ID: D-EWS-131120			Water Depth (ft): 23.8	
Coordinates				
Latitude/Northing: 32° 41' 19.752"		Longitude/Easting: 117° 08' 31.368"		
Weather and Wind Conditions: Partly cloudy, light wind				
Predominant Current Direction: SW				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
15:38:11	10	6.0	8.0	2.6
Odor: <input checked="" type="radio"/> none slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y/ <input checked="" type="radio"/> N			Photograph(s) Taken: Y/ <input checked="" type="radio"/> N	
Discoloration or Turbidity: Y/ <input checked="" type="radio"/> N			Recorded by: <i>Berto Ge</i>	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: D. Fellers, B. Geisler		Date: 11.20.13	Tide: Flood / <u>Ebb</u> / Slack	
Station ID: D-CNN-131120			Water Depth (ft): 31.7 31.8	
Coordinates				
Latitude/Northing: 32° 41' 18.726"		Longitude/Easting: 117° 08' 37.7 37.278"		
Weather and Wind Conditions: Partly cloudy, moderate wind				
Predominant Current Direction: SW				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
16:17:24	10	8.9	8.0	3 + 2.9
Odor: <u>none</u> slight moderate / strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y / <u>N</u>			Photograph(s) Taken: <u>Y</u> / N 1	
Discoloration or Turbidity: Y / <u>N</u>			Recorded by: B. Geisler	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: D. Fellers, B. Geisler		Date: 11.20.13	Tide: Flood / <u>Ebb</u> / Slack	
Station ID: D-CON-131120			Water Depth (ft): 31.7	
Coordinates				
Latitude/Northing: 32° 41' 17.556"		Longitude/Easting: 117° 08' 35.874"		
Weather and Wind Conditions: Partly cloudy, moderate wind				
Predominant Current Direction: SW				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
16:22:29	10	6.2	8.0	2.9
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y / <u>N</u>			Photograph(s) Taken: Y / <u>N</u>	
Discoloration or Turbidity: Y / <u>N</u>			Recorded by: <u>Billy Ge</u>	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: D. Fellers, B. Geisler		Date: 11.20.13	Tide: Flood <input checked="" type="radio"/> Ebb <input type="radio"/> Slack	
Station ID: D-COS-131120			Water Depth (ft): 30.1	
Coordinates				
Latitude/Northing: 32° 41' 17.358"		Longitude/Easting: 117° 08' 30.066"		
Weather and Wind Conditions: Partly cloudy, moderate wind				
Predominant Current Direction: SW				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
15:44:44	10	8.8	8.0	2.5
Odor: <input checked="" type="radio"/> none slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y/ <input checked="" type="radio"/> N			Photograph(s) Taken <input checked="" type="radio"/> Y <input type="radio"/> N	
Discoloration or Turbidity: Y/ <input checked="" type="radio"/> N			Recorded by:	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: D. Fellers, B. Geisler		Date: 11.20.13	Tide: Flood / <u>Ebb</u> / Slack	
Station ID: D-CNS-131120			Water Depth (ft): 31.7	
Coordinates				
Latitude/Northing: 32° 41' 19.818"		Longitude/Easting: 117° 08' 27.810"		
Weather and Wind Conditions: Partly cloudy, light wind				
Predominant Current Direction: SW				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
15:41:00	10	6.2	8.0	1.8
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y / <u>N</u>			Photograph(s) Taken: <u>Y</u> / N	
Discoloration or Turbidity: Y / <u>N</u>			Recorded by: <i>Barty [Signature]</i>	
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: D. Fellers, B. Geisler		Date: 11.26.13	Tide: <u>Flood</u> / Ebb / Slack	
Station ID: D-BG-131126			Water Depth (ft): 37.7/36.7	
Coordinates				
Latitude/Northing: 32° 41' 28.782"		Longitude/Easting: 117° 09' 00.630"		
Weather and Wind Conditions: Sunny, moderate wind				
Predominant Current Direction: SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
12:00:52	10	6.6	8.0	2.1
13:22:10	10	7.0	8.0	1.9
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y <u>N</u>		Photograph(s) Taken <u>Y</u> / N		
Discoloration or Turbidity: Y <u>N</u>		Recorded by: <u>Betty Sol</u>		
Comments: D-EWS-131126 had turbidity more than 20% above BG. Attempt 2: Lat 32° 41' 28.636" Long 117° 09' 00.990				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: D. Fellers, B. Geisler		Date: 11.26.13	Tide: <u>Flood</u> / Ebb / Slack	
Station ID: D-EWN-131126			Water Depth (ft): 30.4	
Coordinates				
Latitude/Northing: 32° 41' 21.084"		Longitude/Easting: 117° 08' 35.256"		
Weather and Wind Conditions: <u>Sunny, light to moderate wind</u>				
Predominant Current Direction: <u>SE</u>				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
12:33:57	10	9.2	8.0	1.5
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y/ <u>N</u>			Photograph(s) Taken: <u>Y</u> /N	
Discoloration or Turbidity: Y/ <u>N</u>			Recorded by: <u>Bentley GL</u>	
Comments: <u>Station located as far N as we could access without breaching BAE boundary.</u>				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: D. Fellers, B. Guster		Date: 11.26.13	Tide: <u>Flood</u> / Ebb / Slack	
Station ID: D-EWS-131126		Water Depth (ft): 36.3 / 28.9 / 30.1		
Coordinates				
Latitude/Northing: 32° 41' 19.260"		Longitude/Easting: 117° 08' 30.534"		
Weather and Wind Conditions: Sunny, moderate wind				
Predominant Current Direction: SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
13:09:29	10	6.0	8.0	5.0
13:39:25	10	7.2	8.0	5.0
14:37:06	10	6.0	8.0	2.5
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y <u>(N)</u>		Photograph(s) Taken: Y <u>(N)</u>		
Discoloration or Turbidity: Y <u>(N)</u>		Recorded by: <i>Budy</i>		
Comments: <u>Attempt 1</u> But Turbidity more than 20% above BG. Monitored BG a second time for a current turbidity reading of 1.9 NTU. <u>Attempt 2</u> Lat 32° 41' 19.446" Long 117° 08' 30.834" Notified RE at 1404 who notified contractor. While waiting on site, observed sets of rough, rolling water surface in EWS area. not caused by passing vessels. <u>Attempt 3</u> Lat 32° 41' 19.890" Long 117° 08' 31.146"				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: D. Fellers, B. Geister		Date: 11.26.13	Tide: <u>Flood</u> / Ebb / Slack	
Station ID: D-CNN-131126		Water Depth (ft): 38.2		
Coordinates				
Latitude/Northing: 32° 41' 18.660"		Longitude/Easting: 117° 08' 34.308"		
Weather and Wind Conditions: Sunny, moderate wind				
Predominant Current Direction: SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
14:00:26	10	8.5	8.0	1.4
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y/ <u>N</u>		Photograph(s) Taken: <u>Y</u> / <u>N</u> + 0 86		
Discoloration or Turbidity: Y/ <u>N</u>		Recorded by: <i>Betty</i>		
Comments: Station location determined/restricted by security boom locations.				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: D. Fellers, B. Gerster		Date: 11.26.13	Tide: <u>Flood</u> / Ebb / Slack	
Station ID: D-CNS-131126			Water Depth (ft): 39.2	
Coordinates				
Latitude/Northing: 32° 41' 21.876"		Longitude/Easting: 117° 08' 24.780"		
Weather and Wind Conditions: Sunny, light wind				
Predominant Current Direction: SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
13:46:34	10	8.3	8.0	1.8
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y <u>(N)</u>		Photograph(s) Taken <u>(Y)</u> N 1		
Discoloration or Turbidity: Y <u>(N)</u>		Recorded by: <i>Bentley Gil</i>		
Comments:				



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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: D. Fellers, B. Geister		Date: 11-26-13	Tide: <input checked="" type="radio"/> Flood / Ebb / Slack	
Station ID: D-CON-131126		Water Depth (ft): 38.4		
Coordinates				
Latitude/Northing: 32° 41' 17.826"		Longitude/Easting: 117° 08' 32.226"		
Weather and Wind Conditions: sunny, moderate wind				
Predominant Current Direction: SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
13:57:22	10	8.0	8.0	1.5
Odor: <input checked="" type="radio"/> none slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y / <input checked="" type="radio"/> N		Photograph(s) Taken: <input checked="" type="radio"/> Y / N		
Discoloration or Turbidity: Y / <input checked="" type="radio"/> N		Recorded by: <i>Brentley Gail</i>		
Comments:				

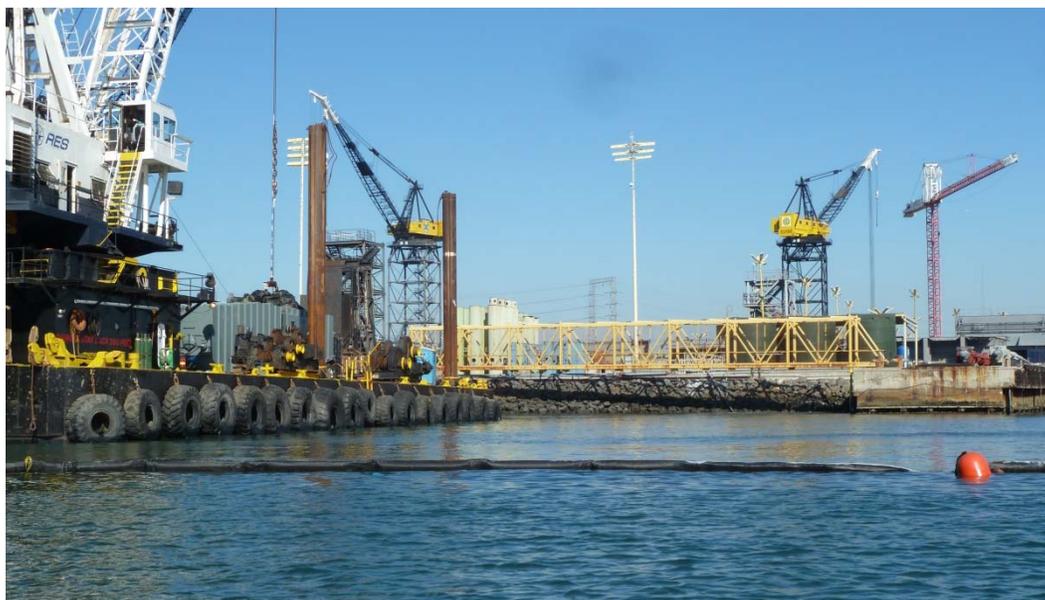


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Water Quality Sample Form

Project Name: San Diego Shipyard Sediment Site		Project Number: 131003-01.02		
Field Personnel: D. Fellers, B. Beister		Date: 11.26.13	Tide: <u>Flood</u> / Ebb / Slack	
Station ID: D-COS-131126		Water Depth (ft): 35.8		
Coordinates				
Latitude/Northing: 32° 41' 17.718"		Longitude/Easting: 117° 08' 29.598"		
Weather and Wind Conditions: Sunny, moderate wind				
Predominant Current Direction: SE				
Field Parameters				
Sample Time (hh:mm:ss)	Sample Depth (ft)	DO (mg/L)	pH	Turbidity (NTU)
13:53:37	10	6.5	8.0	1.2
Odor: <u>none</u> slight moderate strong H ₂ S petroleum septic				
Presence of Surface Pollution: Y/ <u>N</u>		Photograph(s) Taken: Y/ <u>N</u>		
Discoloration or Turbidity: Y/ <u>N</u>		Recorded by: <u>Bundy Gil</u>		
Comments:				

ATTACHMENT D
PHOTOGRAPHS



View east of silt curtains at SMU-3, November 5, 2013



View northeast of silt curtains at SMU-3, November 12, 2013



View northwest of silt curtains at SMU-1, November 20, 2013



View northeast of silt curtains at SMU-1, November 26, 2013