



RECEIVED

By lopprojectop at 10:27 am, Mar 22, 2006

March 1, 2006

Mr. John Prall
Port of Oakland
530 Water Street
Oakland, California

Re: WELL DESTRUCTION WORK PLAN
American Presidential Lines
Berths 60 to 63 Yard and Gate Redevelopment Project
Port of Oakland
Oakland, California

Dear Mr. Prall:

ETIC Engineering, Inc. (ETIC) is pleased to present this *Well Destruction Work Plan* (Work Plan) for the above-referenced site (the site; Figure 1). The scope of work outlined in this Work Plan was requested by the Port of Oakland (Port) during a November 2005 meeting discussing the redevelopment plans for Berths 60-63. The areas where the wells are located are under the regulatory oversight of both the San Francisco Regional Water Quality Control Board (RWQCB) and Alameda County Health Care Services Agency (ACHCSA). As shown on Figure 2, there are a total of 12 known wells at Berths 60-63 (Yard and Gate Redevelopment Area) of the American Presidential Lines (APL) terminal, consisting of 11 groundwater monitoring wells (wells MW-1 through MW-3, MW6 through MW8, DSMW-1 through DSMW-3, APL/UP-W1, and APL/UP-W2) and one former groundwater extraction well (well EW-5).

The scope of work consists of abandoning/destroying the eleven groundwater monitoring wells located at Berths 60-63 of the APL terminal. Wells MW6, MW7, and MW8 (located at Berth 59) and wells APL/UP-W1 and APL/UP-W2 (located at Berth 60) are under the oversight of the RWQCB (Figure 2). Wells DSMW-1 through DSMW-3 (located in the diesel Spill area) and MW-1 through M-W3 (located in the tank EF6-9 area) are under the oversight of the ACHCSA (Figure 2). At this time, it is unclear whether wells DSMW-2 and DSMW-3 exist, as these wells may have previously been destroyed. Therefore, ETIC will verify the status of the wells in the field and take appropriate actions. Well construction details are presented in Table 1. Boring and well completion logs are included in the appendix.

The eleven monitoring wells are proposed for destruction in preparation for site redevelopment activities (Yard and Gate Redevelopment Project) that are planned to commence during the Spring of 2006. The following presents the site background, planned scope of work and schedule.

SITE BACKGROUND

Site Description and Location

Site Location and Background

The Berths 60-63 Terminal (Project Area) is located in an industrial and commercial area at the Port (see Figure 1). It is bounded by Middle Harbor Road and the Union Pacific Railyard to the north; Schnitzer Steel scrap metal operations to the east, the Oakland Inner Harbor to the south, and Berth 59 to the west (see Figure 2). The Oakland Inner Harbor Channel is used for commercial shipping. In its current

configuration, it occupies approximately 79 acres, including the wharf area, and is approximately 2,500 to 3,000 feet in length and 800 to 1,200 feet in width. The site lies at an elevation of 10 to 13 feet above mean sea level.

The Project Area is currently used by APL for container cargo transfer and storage operations. It is almost entirely paved with asphalt and concrete and currently contains eight onsite buildings: five maintenance, two administrative, and one guardhouse at the entrance. No underground fuel or waste storage tanks are currently located onsite. The Port intends to redevelop the Berths 60-63 Terminal (which incorporates the eastern portion of Berth 59) for more efficient marine cargo storage and transfer operations.

PLANNED SCOPE OF WORK

Prefield Activities

Permits: Drilling permits will be acquired from Alameda County Department of Public Works prior to field activities.

Site Health and Safety Plan: A comprehensive site safety plan will be prepared by ETIC for the benefit of site workers. The plan will be kept on site during field activities and signed by each site worker.

Field Activities

Well Destruction: Monitoring wells will be abandoned by the pressure grout method, in accordance with Alameda County Department of Public Works requirements. The well casings will be filled with neat cement grout, followed by pressurizing the grout to a pressure of at least 25 pounds per square inch for a minimum of 5 minutes. The existing flush-mounted monitoring well vault boxes will be left in-place upon completion of the pressure-grouting activities since the well vault boxes will be removed during the forthcoming site redevelopment activities.

The work will be performed by Gregg Drilling located in Martinez, California, a Port-approved and ETIC-contracted subcontractor. An ETIC field representative will be present onsite during destruction of the wells. ETIC anticipates that the field activities will be completed in one day.

Report Preparation

A technical report documenting the field activities will be prepared once field activities have been completed. Additionally, the California Department of Water Resources (DWR) well destruction completion forms (Form 188) will be completed and mailed to the DWR.

SCHEDULE

ETIC anticipates that field activities will be scheduled within two weeks of RWQCB and ACHCSA approval of this Work Plan. The technical report will be prepared within 45 days after site activities are complete.



American Presidential Lines
Berths 60-63 Yard and Gate
Oakland, California
March 1, 2006

CLOSING

ETIC appreciates your assistance with this project. Please do not hesitate to call us at (510) 208-1600 if you have any questions or comments.

Sincerely,
ETIC ENGINEERING, INC.

Katherine Brandt
Project Manager

Alan Anselmo, P.E.
Program Manager

ATTACHMENTS

Table 1 – Well Construction Details
Figure 1 – Site Vicinity Map
Figure 2 – Site Plan with Well Destruction Locations
Appendix – Boring and Well Completion Logs

TABLES

TABLE 1
WELL CONSTRUCTION DETAILS
PORT OF OAKLAND
OAKLAND, CALIFORNIA

Well Number	Well Installation Date	Elevation TOC (feet)	Casing Material	Total Depth (feet)	Well Depth (feet)	Borehole Diameter (inches)	Casing Diameter (inches)	Screened Interval (feet bgs)	Slot Size (inches)	Filter Pack Interval (feet bgs)	Filter Pack Material
EF6-9 Area											
MW-1	01/21/93	10.37	PVC	10	10	8.25	2	3.0 - 10	0.010	2.5 - 10	Lonestar #3
MW-2	01/20/93	10.03	PVC	11.5	10	8.25	2	3.0 - 10	0.010	2.5 - 10	Lonestar #3
MW-3	01/20/93	9.84	PVC	10	10	8.25	2	3.0 - 10.0	0.010	2.5 - 10.0	Lonestar #3
Berth 59											
MW6	09/07/03	12.74	PVC	21.5	21.5	8.25	2	6.5 - 21.5	0.020	5.5 - 21.5	Lonestar #3
MW7	09/07/03	14.44	PVC	22.5	22.5	8.25	2	6.5 - 22.5	0.020	5.5 - 22.5	Lonestar #3
MW8	09/07/03	14.77	PVC	17	17	8.25	2	6.5 - 17	0.020	5.5 - 17	Lonestar #3
Berth 60											
APL/UP-W1	07/15/93	13.99	PVC	22.5	22	8.25	2	7 - 22	0.010	5.0 - 22.5	20/40
APL/UP-W2	07/15/93	13.19	PVC	17.5	17.25	8.25	2	7.25 - 17.25	0.010	5.25 - 17.5	20/40
Diesel Spill Area											
DSMW-1	11/8/1995	NA	PVC	17	17	8.25	2	7 - 17	0.010	6.0 - 17	#10-20
DSMW-2	11/8/1995	NA	PVC	12	12	8.25	2	7 - 12	0.010	5.0 - 12	#10-20
DSMW-3	11/8/1995	NA	PVC	12	12	8.25	2	7 - 12	0.010	5.0 - 12	#10-20

Notes:

TOC Top of casing elevations referenced to Port Datum (msl-3.20 feet).
PVC Polyvinyl chloride.
NA Not available.

FIGURES



SITE LOCATION



0 1,000 2,000
Approx. Scale (feet)

PORT OF OAKLAND
APL TERMINAL
REDEVELOPMENT PROJECT

SITE VICINITY MAP

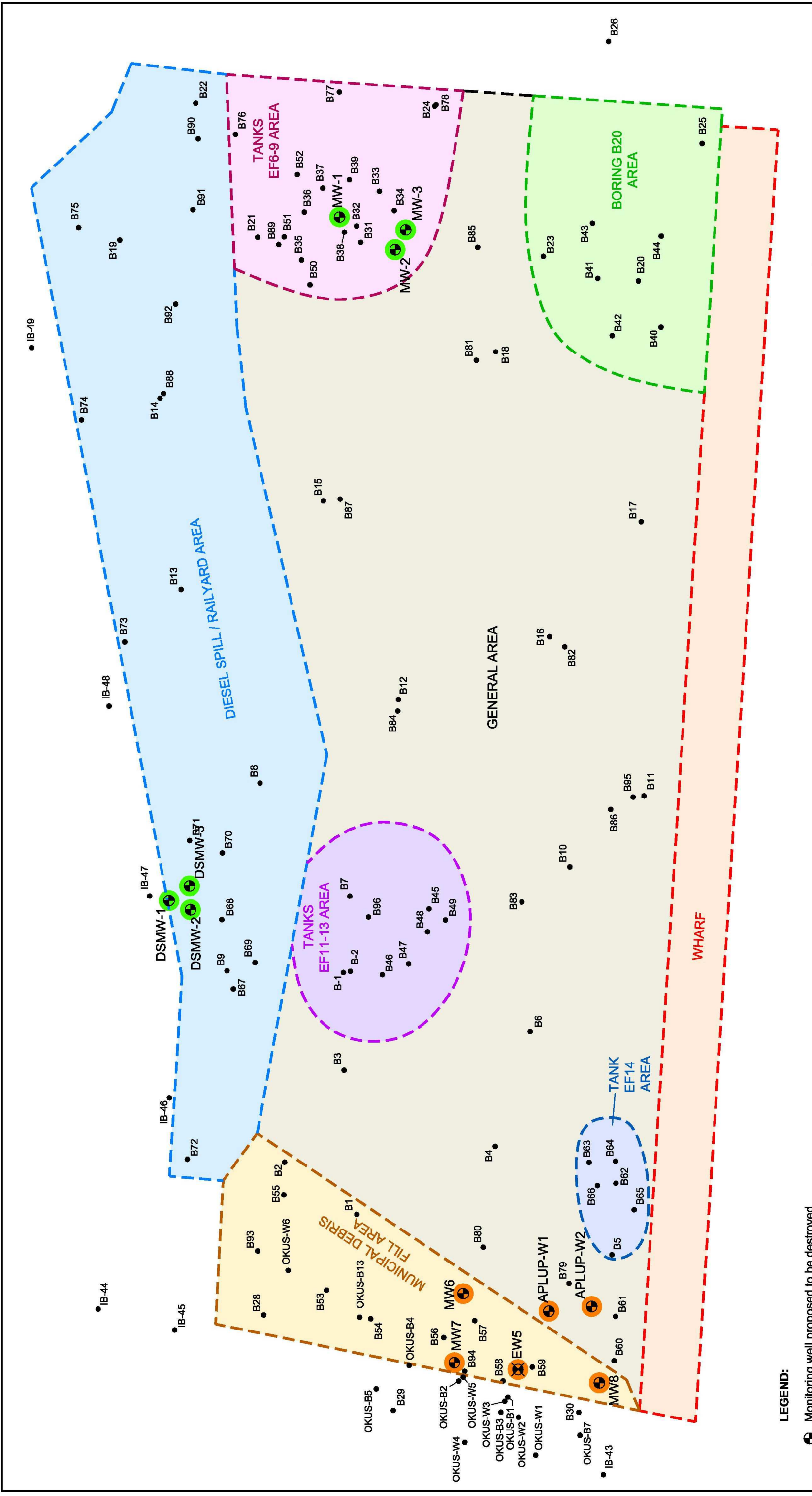
PORT OF OAKLAND
APL TERMINAL REDEVELOPMENT PROJECT
OAKLAND, CALIFORNIA



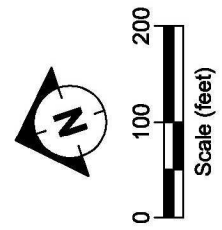
Date:
2/3/2006

Figure:
1

TOP00106.DWG



SITE PLAN WITH WELL DESTRUCTION LOCATIONS	
PORT OF OAKLAND APL TERMINAL REDEVELOPMENT PROJECT OAKLAND, CALIFORNIA	
Date: 2/28/2006	Figure: 2
ETIC ENGINEERING File: siteplan0106.dwg	



- LEGEND:**
- Monitoring well proposed to be destroyed
 - Extraction well
 - Soil boring
 - RWQCB oversight
 - ACHCSA oversight

APPENDIX

PROJECT: APL TERMINAL 1395 Middle Harbor Road - Port of Oakland		Log of Well No. MW-1 (B-11)	
BORING LOCATION: 50 feet north of former excavation		ELEVATION AND DATUM: 10.37 MLLW	
DRILLING CONTRACTOR: Gregg Drilling and Testing, Inc		DATE STARTED: 1/21/93	DATE FINISHED: 1/21/93
DRILLING METHOD: Hollow stem auger (8 1/4" and 10 1/4" OD)		TOTAL DEPTH: 10'	SCREEN INTERVAL: 3 - 10'
DRILLING EQUIPMENT: Mobile B-53		DEPTH TO WATER ATD: 6'	CASING: 2" dia SCH 40 PVC
SAMPLING METHOD: 5' CME continuous core and 18" x 2" split spoon		LOGGED BY: J. M. Abitz	
HAMMER WEIGHT: 140 lbs	DROP: 40 inches	RESPONSIBLE PROFESSIONAL: Sally E. Goodin	REG. NO. RG 3743

DEPTH (feet)	SAMPLES			OVM Reading	DESCRIPTION NAME (USCS Symbol); color moist % by wt., plast., density structure. cementation, react w/HCl geo. inter.	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ Foot			
					Surface Elevation:	
					Asphalt	
1					SAND with SILT and GRAVEL (SW - SM) Light olive brown (2.5Y 5/4), moist, 60% fine to coarse sand, 30% fine gravel, 10% low plasticity fines [FILL]	
2						
3						
4						
5						
6	B-11-6				ATD ∇	
7					SAND (SP) Dark greenish gray (5GY 4/1), wet, 95% fine to medium sand, 5% low plasticity fines	
8					Organic SOIL (OL/OH) Dark greenish gray (5GY 4/1), wet, 50% high plasticity fines, 50% organics, very soft [BAY MUD]	
9						
10					Lean CLAY (CL) Dark greenish gray (5GY 4/1), wet, 100% fines, high plasticity [BAY MUD]	
11					Bottom of boring at 10 feet	
12						
13						
14						

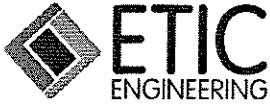
W-1 (11-92)

PROJECT: APL TERMINAL 1395 Middle Harbor Road - Port of Oakland		Log of Well No. MW-2 (B-5)	
BORING LOCATION: 50 feet southwest of former excavation		ELEVATION AND DATUM: 10.03 MLLW	
DRILLING CONTRACTOR: Gregg Drilling and Testing, Inc.		DATE STARTED: 1/20/93	DATE FINISHED: 1/20/93
DRILLING METHOD: Hollow stem auger (8 1/4" and 10 1/4" OD)		TOTAL DEPTH: 10'	SCREEN INTERVAL: 3 - 10'
DRILLING EQUIPMENT: Mobile B-53		DEPTH TO WATER ATD: 5.5'	CASING: 2" dia SCH 40 PVC
SAMPLING METHOD: 5' CME continuous core and 18" x 2" split spoon		LOGGED BY: J. M. Abitz	
HAMMER WEIGHT: 140 lbs	DROP: 40 inches	RESPONSIBLE PROFESSIONAL: Sally E. Goodin	REG. NO. RG 3743

DEPTH (feet)	SAMPLES			OVM Reading	DESCRIPTION NAME (USCS Symbol): color moist, % by wt., plast., density structure, cementation, react. w/HCl, geo. inter	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/Foot			
					Surface Elevation:	
1					Asphalt	
2					SAND with SILT and GRAVEL (SW - SM) Light olive brown (2.5Y 5/6), moist, 60% fine sand, 30% fine gravel, 10% low plasticity fines [FILL]	
3						
4						
5					SAND with SILT and CLAY (SW - SC) Dark greenish gray (5GY 4/1), moist, 60% fine sand, 20% low plastic fines, 20% high plastic fines	
6						
7	B-5-65				SAND (SP) Dark greenish gray (5GY 4/1), wet, 100% firm sand	
8					Lean CLAY (CL) Dark greenish gray (5GY 4/1), wet, 70% fines, 30% organics, high plasticity, firm [BAY MUD]	
9					Organic SOIL (OL/OH) Dark greenish gray (5GY 4/1), wet, 50% high plastic fines, 50% organics, very soft [BAY MUD]	
10						
11	B-5-115				Bottom of boring at 11.5 feet	
12						
13						
14						

PROJECT: APL TERMINAL 1395 Middle Harbor Road - Port of Oakland		Log of Well No. MW-3 (B-10)	
BORING LOCATION: 60 feet south of former excavation		ELEVATION AND DATUM: 9.84 MLLW	
DRILLING CONTRACTOR: Gregg Drilling and Testing, Inc.		DATE STARTED: 1/20/93	DATE FINISHED: 1/20/93
DRILLING METHOD: Hollow stem auger (8 1/4" and 10 1/4" OD)		TOTAL DEPTH: 10'	SCREEN INTERVAL: 3 - 10'
DRILLING EQUIPMENT: Mobile B-53		DEPTH TO WATER ATD: 6.5'	CASING: 2" dia SCH 40 PVC
SAMPLING METHOD: 5' CME continuous core and 18" x 2" split spoon		LOGGED BY: J. M. Abitz	
HAMMER WEIGHT: 140 lbs	DROP: 40 inches	RESPONSIBLE PROFESSIONAL: Sally E. Goodin	REG. NO. RG 3743

DEPTH (feet)	SAMPLES			OVM Reading	DESCRIPTION NAME (USCS Symbol): color, moist, % by wt., plast., density, structure, cementation, react w/HCl, geo. inter	WELL CONSTRUCTION DETAILS AND/OR DRILLING REMARKS
	Sample No.	Sample	Blows/ Foot			
					Surface Elevation:	
					Asphalt	
1					SAND with SILT and GRAVEL (SW - SM) Reddish brown (5Y 5/3), moist, 60% fine sand, 30% fine gravel, 10% low plastic fines, increasing plasticity with depth [FILL]	
2						
3						
4						
5						
5.5	B-10				ATD ▽	
6					SAND (SP) Dark greenish gray (5GY 4/1), wet, 95% fine to medium sand, 5% low plasticity fines	
7					Gravel	
8					Lean CLAY (CL) Dark greenish gray (5GY 4/1), wet, 80% fines, 20% organics, trace gravel, high plasticity, decreasing organics with depth, firm [BAY MUD]	
9						
10					Bottom of boring at 10 feet	
11						
12						
13						
14						



CLIENT Port of Oakland	SITE NUMBER TMB59	LOCATION 1717 Middle Harbor Berth 57/58 and 59
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DRILLING AND SAMPLING METHODS: Cleared to (8.25" by 5') with vacuum rig. Drilled with 8.25" O D hollow stem augers. Sampled with 18" by 2" split spoon sampler.

LOG OF SOIL BORING: **MW6**

COORDINATES: N2116995.6 : E6040264.2
 ELEVATION TOP OF CASING: 12.74
 CASING BELOW SURFACE: 0.47

WATER LEVEL	▽ 7.68			
TIME	1440		START TIME	FINISH TIME
DATE	9/7/03		1240	1440
REFERENCE	TOC		DATE	DATE
			9/7/03	9/7/03

DRILLING COMPANY: Gregg Drilling
 LICENSE NUMBER: C57 485165

INCHES		BLOWS / 6" SAMPLER	OVA READING	DEPTH (feet)	AIR SAMPLE	WATER SAMPLE	SOIL SAMPLE RECOVERED	GRAPHIC LOG	SURFACE CONDITIONS	
DRIVEN	RECOVER								Asphalt (1")	
									DESCRIPTION BY:	DETAILS
				0					B. Campbell	Water-Tight Traffic Box.
				1				ASPHALT: (1") CONCRETE: (8")		Surface Cap.
				2						Cement Grout from 0.5 to 4.5 feet bgs.
				3						2 in. I.D. Schedule 40 PVC Riser Casing from 0.5 to 6.5 feet bgs
				4				SAND (FILL): olive yellow (5Y 6/6), weak cementation, non-plastic fines, medium sand, poorly graded moist		Bentonite Chips from 4.5 to 5.5 feet bgs
18	18	5		5						
		6		6				SP		
		7	1.0	7				Color change to olive (5Y 4/3)		
18	18	3		8						#3 Sand Filter Pack from 5.5 to 21.5 feet bgs
		4	2.4	9						
		5		10						
18	18	2		11						
		2		12				ML		
		4		13				SILT (FILL): olive gray (5Y 4/2) soft low plasticity, moist		
18	18	5	5.3	14				SAND (FILL): olive yellow (5Y 6/6), weak cementation non-plastic fines, medium sand, poorly graded moist		2 in. I.D. 0.020 in. Slot, Schedule 40 PVC Screen from 6.5 to 21.5 feet bgs
		4		15				SP		
		7		16				ML		
18	18	3		17				SILT (FILL): olive gray (5Y 4/2) soft, low plasticity moist		
		4	1.1	18				SP		
		5		19				SAND (FILL): olive yellow (5Y 6/6), weak cementation, non-plastic fines, medium sand, poorly graded moist		
0	0	1	1.1	20				CLAY (YBM): olive (5Y 4/3) soft medium plasticity, moist		
		3								
		4								
		5								

LOG OF SOIL BORING - BERTH 57-58.GPJ ETIC.GDT 2/23/06



CLIENT
Port of Oakland

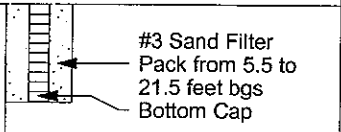
SITE NUMBER
TMB59

LOCATION
1717 Middle Harbor
Berth 57/58 and 59

LOG OF SOIL BORING:
MW6

INCHES		BLOWS / 6" SAMPLER	OVA READING	DEPTH (feet)	AIR SAMPLE	WATER SAMPLE	SOIL SAMPLE	RECOVERED	GRAPHIC LOG
DRIVEN	RECOVER								
18	18	2	09	21					CL
		2		22					
		3		23					
				24					
				25					
				26					
				27					
				28					
				29					
				30					
				31					
				32					
				33					
				34					
				35					
				36					
				37					
				38					
				39					
				40					
				41					
				42					
				43					
				44					
				45					

CLAY (YBM): olive (5Y 4/3) soft medium plasticity, moist.
Boring terminated at 21.5 feet bgs



LOG OF SOIL BORING_BERTH 57-59.GPJ_ETIC.GDT_2/23/06



CLIENT Port of Oakland	SITE NUMBER TMB59	LOCATION 1717 Middle Harbor Berth 57/58 and 59
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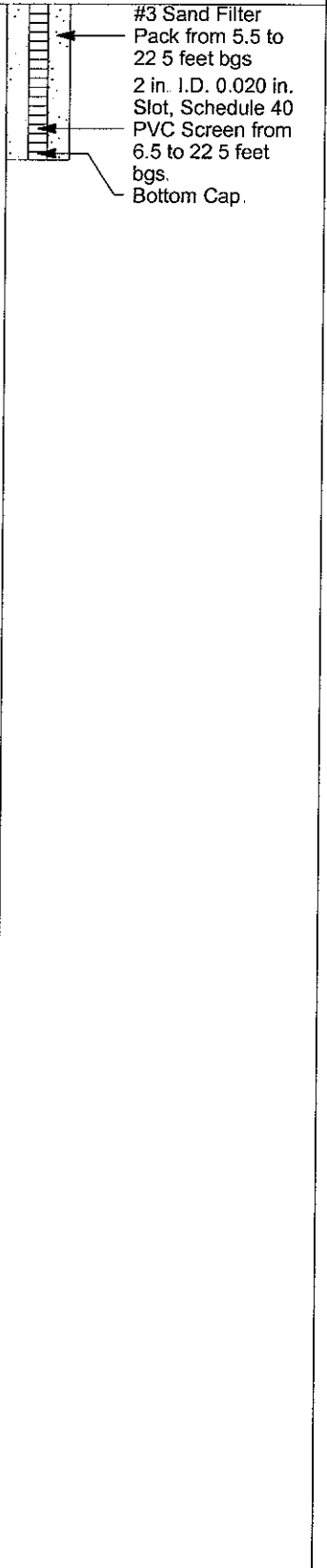
LOG OF SOIL BORING: **MW7**

INCHES		BLOWS / 6" SAMPLER	OVA READING	DEPTH (feet)	AIR SAMPLE	WATER SAMPLE	SOIL SAMPLE	RECOVERED	GRAPHIC LOG
DRIVEN	RECOVER								
18	18	3	2 3	21					ML
		3							
18	18	3	2	21					SM
		4		22					
		5		22					CL
				23					
				24					
				25					
				26					
				27					
				28					
				29					
				30					
				31					
				32					
				33					
				34					
				35					
				36					
				37					
				38					
				39					
				40					
				41					
				42					
				43					
				44					
				45					

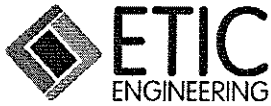
SILT (FILL): black (2 5/1) soft, low plasticity, moist

SILTY SAND (FILL): dark olive gray (5Y 3/2), weak cementation, non-plastic fines fine sand subangular saturated.

CLAY (YBM): olive (5Y 4/3) soft, medium plasticity, moist.
Boring terminated at 22.5 feet bgs



LOG OF SOIL BORING BERTH 57-58.GPJ ETIC.GDT 2/23/06



CLIENT Port of Oakland	SITE NUMBER TMB59	LOCATION 1717 Middle Harbor Berth 57/58 and 59
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DRILLING AND SAMPLING METHODS: Cleared to (8.25" by 5") with vacuum rig. Drilled with 8.25" O.D. hollow stem augers. Sampled with 18" by 2" split spoon sampler.

LOG OF SOIL BORING: **MW8**

COORDINATES: N2116707 5 :E6040075 7
 ELEVATION TOP OF CASING: 14.77
 CASING BELOW SURFACE: 0.32

WATER LEVEL	10.18			
TIME	1710		START TIME	FINISH TIME
DATE	9/7/03		0940	1040
REFERENCE	TOC		DATE	DATE
			9/7/03	9/7/03

DRILLING COMPANY: Gregg Drilling
 LICENSE NUMBER: C57 485165

INCHES				DEPTH (feet)	AIR SAMPLE	WATER SAMPLE	SOIL SAMPLE RECOVERED	GRAPHIC LOG	SURFACE CONDITIONS	
DRIVEN	RECOVER	BLOWS / 6" SAMPLER	OVA READING						Concrete (10")	
				0					DESCRIPTION BY: B. Campbell	DETAILS
				1					CONCRETE: (10")	
				2						
				3						
				4				SP	SAND (FILL): olive (5Y 5/6), weak cementation, non-plastic fines, poorly graded, medium sand moist	
18	18	3		5						
		4		6						
18	18	4	0	7				MH	SILT (FILL): dark olive gray (5Y 3/2). soft to firm, low plasticity. moist	
		5	0	8						
18	18	3		9				SP	SAND (FILL): olive (5Y 5/6), weak cementation, non-plastic fines, poorly graded medium sand moist.	
		3		10						
18	18	4	0	11				SM	SILTY SAND (FILL): dark olive gray (5Y 3/2), weak cementation, non-plastic fines fine sand, moist to saturated	
		4	0	12						
18	18	3		13				ML	SILT WITH SAND (FILL): dark olive gray (5Y 3/2). soft. low plasticity, fine sand moist	
		3	0	14						
18	18	4	0	15				SP	SAND (FILL): olive (5Y 5/6). weak cementation, non-plastic fines. fine sand moist	
		5		16						
18	18	6	0	17				CL	CLAY (YBM): black (2.5/1) firm, medium plasticity. moist. Boring terminated at 17 feet bgs.	
		7	0	18						
		2	0	19						
		2	0	20						
		3								

LOG OF SOIL BORING BERTH 57-59.GPJ ETIC.GDT 2/23/06

CLIENT: <i>Union Pacific Railroad</i>			JOB NO.: <i>98464</i>		
PROJECT: <i>Derailment Site, 1717 Middle Harbor Rd.</i>			LOCATION: <i>Oakland, California</i>		
DRILLED BY: <i>Exploration Geoservices</i>		DRILLER: <i>Dave/Howard</i>		METHOD: <i>8" HSA</i>	
START DATE: <i>11/8/95</i>		COMP DATE: <i>11/8/95</i>		SURF EL.: <i>FT. est</i>	TD: <i>17.0 FT BGS</i>
LOGGED BY: <i>Ken Rose</i>			D. T. WATER: <i>8.0 FT. BGS</i>		

WELL DIAGRAM	OPT	DESCRIPTION	GRAPHIC LOG USCS CODE	OVA ppm	SAMPLE NUMBER	Blow Count
		0.0' to 2.0' Gravel, lt. grayish brown w/ some sand, wood and metal debris (fill), damp, strong diesel odor	Fill			
	5	2.0' to 7.0' Medium to coarse sand, lt. grayish brown w/ some gravel, trace silt moist, strong diesel odor As above, v. moist, strong diesel odor	SP			
	10	7.0' to 15.0' Fine to medium sand, gray, greenish gray, w/ some silt, trace clay, wet at 8', strong diesel odor, Bay Mud As above, wet, slight diesel odor	SW			
	15	15.0' to 17.0' Clayey silt, gray, greenish gray w/ some fine sand, wet, no odor, Bay Mud	ML			
	20	Boring completed to 17.0' Groundwater encountered at 8.0' Monitor well installed to 17', 10' of 0 010" screen 7' of SCH 40 2" PVC blank 3.5 sacks of #10-20 silica 1 bucket of bentonite pellets 8" Flush mount well cover				
	25					
	30					

CLIENT: <i>Union Pacific Railroad</i>		JOB NO.: <i>96464</i>	
PROJECT: <i>Derailment Site, 1717 Middle Harbor Rd.</i>		LOCATION: <i>Oakland, California</i>	
DRILLED BY: <i>Exploration Geoservices</i>	DRILLER: <i>Dave/Howard</i>	METHOD: <i>8" HSA</i>	
START DATE: <i>11/8/95</i>	COMP DATE: <i>11/8/95</i>	SURF. EL.: <i>FT. est.</i>	TD: <i>12.0 FT BGS</i>
LOGGED BY: <i>Ken Rose</i>		D. T. WATER: <i>10.0 FT. BGS</i>	

WELL DIAGRAM	DPT	DESCRIPTION	GRAPHIC LOG USCS CODE	OVA ppm	SAMPLE NUMBER	Blow Count
		0.0' to 3.0' Sand, lt. brown w/ some glass and organic debris (roots, leaves), damp, no odor or staining		SP		
		3.0' to 5.0' Encounter gravel, cobbles and concrete debris		GW		
	5	5.0' to 10.0' Fine to medium sand, brown, lt. brown w/ trace silt and gravel, slightly moist, no odor or staining		SP		
		As above, becomes wet at 10.0'				
	10	10.0' to 12.0' Clayey silt, gray, greenish gray w/ some fine sand, wet, no odor, encounter obstruction at 12.0' (City Water Main)		ML		
	15	Boring completed to 12.0' Groundwater encountered at 10.0' Monitor well installed to 12', 5' of 0.010" screen 7' of SCH 40 2" PVC blank 2 sacks of #10-20 silica, 1 bucket of bentonite pellets Flush mount well cover				
	20					
	25					
	30					

CLIENT: <i>Union Pacific Railroad</i>		JOB NO.: <i>96464</i>	
PROJECT: <i>Derailment Site, 1717 Middle Harbor Rd.</i>		LOCATION: <i>Oakland, California</i>	
DRILLED BY: <i>Exploration Geoservices</i>	DRILLER: <i>Dave/Howard</i>	METHOD: <i>8' HSA</i>	
START DATE: <i>11/8/95</i>	COMP. DATE: <i>11/8/95</i>	SURF. EL: <i>FT. est.</i>	TD: <i>12.0 FT. BGS</i>
LOGGED BY: <i>Ken Rose</i>		D. T. WATER: <i>10.0 FT. BGS</i>	

WELL DIAGRAM	DPT	DESCRIPTION	GRAPHIC LOG USCS CODE	OVA com	SAMPLE NUMBER	Blow Count
	0.0'	0.0' to 3.0' Sand, lt brown w/ some glass and organic debris (roots, leaves), damp, no odor or staining	[Pattern: small dots]			
	3.0'	3.0' to 5.0' Encounter gravel, cobbles and concrete debris	[Pattern: circles]			
	5.0'	5.0' to 10.0' Fine to medium sand, brown, lt. brown w/ trace silt and gravel, slightly moist, no odor or staining	[Pattern: small dots]			
	10.0'	As above, becomes wet at 10.0'	[Pattern: small dots]			
	10.0'	10.0' to 12.0' Clayey silt, gray, greenish gray w/ some fine sand, wet, no odor, encounter obstruction at 12.0' (City Water Main)	[Pattern: vertical lines]			
15.0'	Boring completed to 12.0' Groundwater encountered at 10.0' Monitor well installed to 12', 5' of 0.010" screen 7' of SCH 40 2" PVC blank 2 sacks of #10-20 silica, 1 bucket of bentonite pellets Flush mount well cover					

CLIENT: UNION PACIFIC RAILROAD			JOB NUMBER: 96120-844		
PROJECT: UPMF OAKLAND (PHASE II)			LOCATION: 1750 FERRO ST., OAKLAND, CA		
DRILLED BY: LAYNE WESTERN		DRILLER: STEVE McCOY		METHOD: H-S AUGER W/ SPL SPOON	
DATE START: 7-15-93		DATE COMP: 7-15-93		REF. EL.: 8.52	
LOGGED BY: C.S. BYERMAN			APPROVED BY: R.M. POLLARD - R.G.# 4659		DEPTH TO WATER: 9.93

WELL COMP	DPT	BLOW	GRAPHIC LOG ASTM CODE	DESCRIPTION	OVM	SAMPLE NUMBER	SAMPLE ANAL.
			ASP	0.0 to 1.5 ASPHALT CONCRETE	ND		
			FL	1.5 to 3.0 FILL MATERIAL: DARK BROWN TO GRAY, MIX OF GRAVEL, SAND, BRICKS, GLASS AND OTHER MATERIAL, WELL GRADED, DRY, NO ODOR	ND		
			SW	3.0 to 4.0 SAND: OLIVE GRAY, WITH FINE GRAVEL, WELL GRADED, LOOSE, DRY, NO ODOR	ND	APL/UP- W1 (6')	TPH-D TPH-G TPH-IR BTEX As,Pb, Cd,Cr
	5	6	SP	4.0 to 20.0 SAND: BROWN TO GRAY, WITH NO GRAVEL, POORLY GRADED, WET AT 12 FEET	ND	APL/UP- W1 (12')	TPH-D TPH-G TPH-IR BTEX As,Pb, Cd,Cr
	8	4					
		3					
	10						
	15						
	20		SM	20.0 to 22.5 SAND: OLIVE GRAY, VERY FINE-GRAINED, NO GRAVEL, SILT, WET, NO ODOR	ND		
	25				ND		
	30				ND		
				TOTAL DEPTH - 22.5 FEET (WELL SET AT 22 FEET)			
				SAMPLE ANALYTICAL RESULTS - SEE TABLES 2a and 2b			
				NO - NOT DETECTED			
				ELEVATION MEASURED FROM MSL			
				WATER LEVEL MEASURED 8-25-93			

CLIENT: UNION PACIFIC RAILROAD			JOB NUMBER: 96120-844		
PROJECT: UPMF OAKLAND (PHASE II)			LOCATION: 1750 FERRO ST, OAKLAND, CA		
DRILLED BY: LAYNE WESTERN		DRILLER: STEVE McCOY		METHOD: H-S AUGER W/ SPL SPOON	
DATE START: 7-15-93		DATE COMP: 7-15-93		REF. EL.: 7.50	TOTAL DEPTH: 17.5
LOGGED BY: C.S. BYERMAN			APPROVED BY: R.M. POLLARD - R.G.# 4659		DEPTH TO WATER: 9.20

WELL COMP	DPT	BLOWS	GRAPHIC LOG ASTM CODE	DESCRIPTION	OVM	SAMPLE NUMBER	SAMPLE ANAL.	
			ASPH	0.0 to 1.5 ASPHALT CONCRETE	ND			
			FL	1.5 to 3.0 FILL MATERIAL: DARK BROWN TO GRAY, MIX OF GRAVEL, SAND, BRICKS, GLASS AND OTHER MATERIAL. WELL GRADED, DRY, NO ODOR	ND	APL/UP- W2 (3)	TPH-D TPH-6 BTEX As,Pb	
	7 10 7 8		SW	3.0 to 5.0 SAND: OLIVE GRAY, WITH FINE GRAVEL, WELL GRADED, LOOSE, NO ODOR	ND			
	5			5.0 to 17.0 SAND: BROWN TO GRAY, NO GRAVEL, POORLY GRADED TRACE OF SILT, LOOSE, WET AT 12 FEET, NO ODOR	ND		Cd,Cr	
				SP		ND	APL/UP- W1 (1F)	TPH-D TPH-6 TPH-IR BTEX As,Pb, Cd,Cr
	5 4 4 4							
	NO			SM	17.0 to 17.5 SAND: OLIVE GRAY, VERY FINE-GRAINED, WITH SILT NO GRAVEL, POORLY GRADED, WET, NO ODOR			
15								
NO								
20								
25								
30								

TOTAL DEPTH - 17.5 FEET (WELL SET AT 17.3 FEET)

SAMPLE ANALYTICAL RESULTS - SEE TABLES 2a and 2b
OVM VALUES IN PPM
ND - NOT DETECTED
ELEVATION MEASURED FROM MSL

WATER LEVEL MEASURED 8-25-93