

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.



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 Are	a										
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







APPENDIX



PROJECT: APL TERMIN/ 1395 Middle H	AL larbor Road - Port of Oakland	Log of	Well No.	MW-2 (B-5)
BORING LOCATION: 50 fe	et southwest of former excavation	ELEVATION AND	DATUM:	
DRILLING CONTRACTOR: (Gregg Drilling and Testing, Inc.	DATE STARTED:	DA	TE FINISHED:
DRILLING METHOD: Hollo	w stem auger (8 1/4" and 10 1/4" OD)	TOTAL DEPTH:	SC:	REEN INTERVAL:
DRILLING EQUIPMENT: MO	bile B-53	DEPTH TO WATE	ER ATD: CA	SING:
SAMPLING METHOD: 5' CM	E continuous core and 18" x 2" solit appear	LOGGED BY:	2	dia SCH 40 PVC
		J. M. Abitz RESPONSIBLE P	ROFESSIONAL	REG. NO.
	DESCRIPTION NAME (USCS Symbol): color moist, % by wt., plast., density struct	Sally E. Goodin	WELL CO	RG 3743
Per Contraction (16, 16, 16, 16, 16, 16, 16, 16, 16, 16,	cementation. react. w/HCl, geo. inter	DE	ETAILS AND/OR	DRILLING REMARKS
	Asphalt			
	30% fine gravel, 10% low plasticity fines [FI			2° locking cap eat cement grout diameter SCH PVC 8° bentonite pellets dia SCH 40 PVC 0 010° 01 §
5	SAND with SILT and CLAY (SW - SC) Dark greenish gray (5GY 4/1), moist, 60% fii sand, 20% low plastic fines, 20% high plastic	ne –		
	SAND (SP Dark greenish gray (5GY 4/1), wet, 100% firi	m sand		
8-	Lean CLAY (CL) Dark greenish gray (5GY 4/1), wet, 70% fine organics, high plasticity, firm [BAY MUD]	s, 30%		
9	Organic SOIL (OL/OH) Dark greenish gray (5GY 4/1), wet, 50% high plastic fines, 50% organics, very soft [BAY M		Slip	end cap
2 - 115	Bottom of boring at 11 5 feet		201220223	
4				
– 19. Of the billion subset of the distance of the state	Geomatrix Consultants	Project No.	2067	W-1 (11/92)

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1395 Middle H	larbor Road - Port of Oakland	Log of Well No. MW-3 (B-10)						
BORING LOCATION: 60 fe	eet south of former excavation	ELEVATION AND DATUM: 9.84 MLLW						
DRILLING CONTRACTOR: (Gregg Drilling and Testing, Inc.	DATE STARTED: 1/20/93	DATE FINISHED:					
DRILLING METHOD: Hollo	w stem auger (8 1/4" and 10 1/4" OD)	TOTAL DEPTH:	SCREEN INTERVAL:					
DRILLING FOUIPMENT MA	wile B-53	DEPTH TO WATER ATD:	CASING:					
		6.5'	2" dia SCH 40 PVC					
SAMPLING METHOD: 5' CN	AE continuous core and 18" x 2" split spoon	J. M. Abitz						
HAMMER WEIGHT: 140 Ib	DROP: 40 inches	Sally E. Goodin	RG 374					
	DESCRIPTION NAME (USCS Symbol): color. moist. % by wt., plast., density. struct comentation. react. w/HCl, geo, inter	ure. WEI	L CONSTRUCTION					
	Surface Elevation:							
	Asphalt		Traffic rated Christy					
2	SAND (SP) Dark greenish gray (5GY 4/1), wet, 95% fine medium sand, 5% low plasticity fines Gravel Lean CLAY (CL) Dark greenish gray (5GY 4/1), wet, 80% fine organics, trace gravel, high plasticity, decrea organics with depth, firm [BAY MUD] Bottom of boring at 10 feet	ATD V ato	 2' locking cap Neat cement grout 2' diameter SCH PVC 3/8' bentonite pellets 2' dia SCH 40 PVC 0 010 slot 3 0/30 RMC Lonestar sand Slip end cap 					
4			W. 1 (11					
	Geometrix Consultante	Project No. 2067	W-1 (11/					

								CLIENT			SITE	NUMBER		LOCATI	ON	
	»E		C					Port	t of Oakland			TMB59		1717 Berti	' Middl h 57/5	e Harbor 8 and 59
V	EN	IGINEER	RING							Clea s aug	ared to (8 ers Sarr	.25" by 5') with vacu pled with 18' by 2"	um rig. Drill split spoon s	ed with 8 25" ampler	'OD hol	low stem
LOG	OF S	OIL BO	RING	i:	Μ	M	/6			-						
COOF	RDINATI	ES: N21 ⁻	16995.6	3 :E6040	264.	2		WATEF	RLEVEL	⊻ 7.	68					
ELEV	ATION	TOP OF	CASIN	G: 12.74	ł			TI	ME	14	40			TIME	<u>art</u>	FINISH
CASIN		OW SUR	RFACE:	0.47					TE	9/7	7/03			12	240	1440
	ING CC	MPANY: MBER: C	: Gregg 57 485	Drilling 165				REFE	RENCE	т	C		·	— DATI 9/7	е 7/03	DATE 9/7/03
INC	CHES	<u>م</u> ورً			LE			SURFACE CON	DITIONS			<u>.</u>				I
VEN	OVEF	WS / 6	DING	E⇔	AMPLE R SAMF	VERED	PHIC				Α	sphalt (1")				
DRI	REC	SAN	NO NO ND ND ND ND ND ND ND ND ND ND ND ND ND	DEP (feet	AIR S. WATE	SOIL	GRA LOG	DESCRIPTION	BY: B. C	ampb	ell			D	ETAILS	
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				- 1-	$\left \right $	H	*****	CONCRETE.	(0)						Sox. Surface Sement	Cap. Grout
				2											rom 0.5	to 4 5 feet
			-											2	in. I.D	Schedule
			-	- 3-										4 C	asing 1	from 0.5 to
				- 4				SAND (FILL):	olive yellow ((5Y 6/6), weak	cementation.			.0 1001	090
				- 5				non-plastic fin	es, medium s	sand, p	oorly gr	aded moist		B ≺— fr	entonit	e Chips to 5.5 feet
18	18	5 6												b	gs.	
		7	1.0				SP	Color change	to olive (5Y 4	/3)						
—18—	18-	4	24	- 7						,						
		5	47	- ⊻ 8										≠	3 Sand ack fro	Filter m 5.5 to
18	18	2		9										; 2	1.5 fee	t bgs
		4 5														
		5	53	- 10-												
10	10	4 5		11-												
10	10	5		12												
18		6	23	12_			ML	SILT (FILL): ol	live gray (5Y 4	4/2) sc	oft low p	plasticity, moist				
	10	6 7	11					SAND (FILL):	olive vellow (!	5Y 6/6)	, weak	cementation				
18	18	3		14-			SP	non-plastic fine	es, medium s	and po	orly gra	aded moist		2	in I.D.	0.020 in.
		5 7		15-										SI 	ot, Sch VC Scr	edule 40 een from
18	18	4	11	16			ML	SILT (FILL): ol	ive gray (5Y 4	4/2) so	ft, low p	plasticity moist		bg	3 10 21 JS	JICEL
		4 5														
0	0	' 1	11	1 1/		$\left \right $	SP	SAND (FILL): o non-plastic fine	olive yellow (S es, medium s	5Y 6/6) and po	, weak o orly gra	cementation				
		 '		18-												
-0	-0	3		19-				CLAY (YBM): a moist	olive (5Y 4/3)	soft m	edium	plasticity,				
1		5		20		Ľ.	ĨĨ									
						1.							1			Page 1 of 2

							CLIENT		SITE NUMBER	LOCATION
		GINEER	ING				Port of Oakl	and	TMB59	1717 Middle Harbor Berth 57/58 and 59
INC	HES	*			щ		LOG OF SOIL BC	RING:		
DRIVEN	RECOVER	BLOWS / 6 SAMPLER	OVA READING	DEPTH (feet)	AIR SAMPLE WATER SAMP SOIL SAMPLE RECOVERED	GRAPHIC LOG			MW6	
IG BERTH 57-59.GPJ ETIC GDT 223/06			e o	HL(199)) 21- 22- 23- 24- 26- 27- 28- 29- 30- 31- 32- 33- 34- 35- 36- 37- 38- 39- 40- 41- 42- 42- 42- 42- 42- 44- 42- 42		CO CRAPH	CLAY (YBM): olive (5Y moist. Boring terminated at 21	4/3) soft n 5 feet bgs	nedium plasticity.	#3 Sand Filter Pack from 5.5 to 21.5 feet bgs Bottom Cap
LOG OF SOIL BORI				44— 45—						

							CLIENT	SITE	NUMBER	L	OCATION	
	s E		С				Port of Oakland	t	TMB59		1717 Midd Berth 57/5	le Harbor 8 and 59
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	דאואותכ	20. 104-	17044 5	ECOAC	1440 0		WATER LEVEL					
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DRILL	ING CO	MPANY	Gregg	Drilling			DATE				DATE	DATE
LICEN	NSE NUI	MBER: C	57 4851	65			REFERENCE				9/7/03	9/7/03
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JEN /		WS /	DING	۲.	R SAMI	PHIC		A	sphalt (4")	l. –		
DRI	REO	BLO SAN	REA	DEP (feet	AIR S. WATE	GRA LOG	DESCRIPTION BY: B. (Campbell			DETAILS	
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				2-		[]	sand minor gravel clasts	up to 1 5", oils.	astic tines, tine		bgs.	5 10 410 1001
				3			At 2 5 feet: bricks (red).			Š Š	2 in. I.D 40 PVC	. Schedule Riser
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-6	3	-	17	8—			drilling	·····, ·	<u>-</u>		Pack fro 22.5 fee	om 5.5 to
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18	18	9				GŴ	medium sand subangular oils	clasts up to 0	5", saturated.			
	1	12	32	10—								
—18—	-18-	11		11—			SAND (FILL): olive (5Y 5/6 non-plastic fines fine sand	 weak cemer saturated, oil 	ntation, s			
		9 6	9			54						
18	18	4		12-			SANDY SILT (FILL): olive sand, moist_oils	(5Y 5/6), low p	lasticity fine			
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40	40	2	4									
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	DRIVEN	RECOVER	BLOWS / 6 SAMPLER	OVA READING	DEPTH (feet)	AIR SAMPLE WATER SAMPL SOIL SAMPLE	RECOVERED GRAPHIC LOG			MW7		
	18	18	3	23			ML	SILT (FILL): black (2 5/1) s	oft lo	w plasticity, moist	H H3 St H H3 St H H3 St H3 St Pack	and Filter from 5.5 to
	18	18	3 4	2	21— 22—		SM	SILTY SAND (FILL): dark o cementation, non-plastic fin saturated.	live gr les fin	ay (5Y 3/2), weak e sand subangular	22 5 2 in Slot, PVC	feet bgs I.D. 0.020 in. Schedule 40 Screen from
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								CLIENT		SITE	NUMBER		LC	OCATION	
	SE	T	C					Port of Oakland			TMB59			1717 Middle Harbor Berth 57/58 and 59 ith 8.25" O D hollow stem ler. START FINISH TIME TIME 0940 1040 DATE DATE 9/7/03 9/7/03 DETAILS Water-Tight Traffic Box. 2 in. I.D Schedule 40 PVC Casing from 0.3 to 6 5 feet bgs. Surface Cap. Cement Grout from 0.5 to 4 5 feet bgs. Bentonite Chips from 4 5 to 5.5 feet bgs. Bentonite Chips from 4 5 to 5.5 feet bgs. 2 in. I.D. 0.020 in. Slot, Schedule 40 PVC Screen from 6.5 to 17.0 feet bgs. #3 Sand Filter Pack from 5.5 to 17 0 feet bgs Bottom Cap.	
V	EN	GINEER	RING					DRILLING AND	Clea aug	ared to (8 ers Sarr	.25" by 5') with vac pled with 18" by 2'	uum rig. ' split soo	Drilled v	with 8.25" O.D ho	llow stem
LOG	OF SC	DIL BO	RING	:	M۱	W8						, ,			
COOR	RDINATE	ES: N211	16707 5	:E6040	075 7			WATER LEVEL	<u>⊽</u> 10	.18					
ELEV	ATION T	OP OF	CASING	G: 14.77	,			TIME	17	10				TIME	FINISH TIME
CASIN	NG BELO	OW SUR	RFACE:	0.32				DATE	9/7	7/03				0940	1040
	.ING CO ISE NUN	MPANY: /BER: C	: Gregg :57 485	Drilling 165			F	REFERENCE	т	C				DATE 9/7/03	DATE 9/7/03
INC	CHES				ш		SU	RFACE CONDITIONS			····				<u> </u>
EN	OVER	VS / 6 PLER	DING	폰	MPLE SAMPI AMPLE	PHIC				Co	ncrete (10)").			
DRIV	REC	BLO	OVA	DEP (feet)	AIR SA WATEF SOIL S	GRAI LOG	DE	SCRIPTION BY: B. C	ampb	ell				DETAILS	
				0-			С	ONCRETE: (10")						Water-7	Fight Traffic
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				2										bgs. Surface	Cap.
				3-										Cement from 0.5	t Grout 5 to 4 5 feet
			-			- SP						Š	Š	bgs.	
				4-			S/ no	AND (FILL): olive (5Y 5/6 n-plastic fines, poorly gra), weak aded, n	cemer nedium	itation sand moist			Bontoni	to Chine
	40	3		5—										← from 4 5	5 to 5.5 feet
18	18	4		- 6										bga.	
		5	0												
		5	0	7—			SII	LT (FILL): dark olive gray asticity, moist	/ (5Y 3/	2). soft	to firm, low				
		6 3		8			SA	ND (FILL): olive (5Y 5/6)), weak	cemen	tation				
18	18	3		9-		SP	no	n-plastic fines, poorly gra	aded m	nedium	sand moist.				
		4	0												
	18	5	0	10— ⊈			SIL	TY SAND (FILL): dark o	live gra	ay (5Y 3 e sand	l/2), weak			2 in. I.D.	0.020 in.
		6		11—		SM	sai	iurated	165 mil	, sana,	moiseto			Slot, Sci PVC Sci	hedule 40 reen from
18	18	3		12		H	SIL	T WITH SAND (FILL): d	ark oliv	/e gray	(5Y 3/2). soft.			6.5 to 17 bgs.	Cuteet
		4	0				.01	plasticity, fine sand file	101					Pack fro	m 5.5 to
မ 18	-18-	4	0	13										17 0 166	1 093
T 2/23		4		14											
0. 18	18	6		15		SP .	SA	ND (FILL): ofive (5Y 5/6)	, weak	cemen	tation,				
2		7	0	10					110151						
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RTH 5		3		17—			CL	AY (YBM): black (2 5/1) ist.	firm, m	ledium	plasticity			Bottom (Cap.
9 9				10			Bor	ring terminated at 17 feet	bgs.						
BORIN				10-											
Solt				19-											
				20											

		CLIENT	SI	ITE NUMBER	L	OCATION	
ETIC		Port of Oakland		TMB59		1717 Middl Berth 57/58	e Harbor 8 and 59
ENGINEERING		DRILLING AND	Cleared Sampled	to 5' (by 9") with vacuum I with 18' split spoon san	rig. Drilled with	8.25" O D hollow-	stern augers
LOG OF SOIL BORING:	MW9	SAMPLING METHOD	3				
		WATER LEVEL	⊈ 10.9				
ELEVATION TOP OF CASING:		TIME	1215	5			FINISH
CASING BELOW SURFACE:		DATE	12/29/(04		0810	1300
DRILLING COMPANY: Gregg Drillin	9	REFERENCE	GS			DATE	DATE
INCHES		SURFACE CONDITIONS				12/13/04	12/13/04
VER OVER	WPLE SAMPLE ERED PHIC			Pavers (4").			
DRIV SAMI SAMI COVA REC REC	AIR SAIL SOL SOL SOL SOL SOL SOL	DESCRIPTION BY: B. C	ampbell			DETAILS	
c		Pavers.				Water-ti	ght Traffic
		Asphalt GRAVEL with SAND: olive	(5Y 4/3), v	vell cemented, non		Box	
		plastic fines, subangular to medium to coarse sand we	angular gi ell graded	ravel to 5 cm moist			
						Comont	Oracit (c
3						5 0 feet	bgs.
4		Cobble to 6"				40 PVC from 0.5	Casing to 7.0 feet
5	GW					bgs.	
18 18 0.4						Bentonit from 5.0	e Chips to 6 0 feet
6					•	bgs.	
-18							
				· · · · · · · · · · · · · · · · · · ·			
18 12 -		moist	., non plast	ac lines, fine sand,		#3 Sand	Filter
9						Pack from 17 0 feet	m 6.0 to bgs
0.3- 7 11-		Wet.					
18 18 - 12-							
0.3	X SP					2 in. I.D. Slot, Sch	0.020 in. iedule 40
						PVC Scr 7.0 to 17	een from .0 feet
						bgs	
		SILT: black (5Y 2.5/1), soff.	medium ni	lasticity moist			
		Boring terminated at 17 feet	bgs				
18-							
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LOG

WELL NO. DSMW-1

CLIENT: Union Pacific Railroad	JOB NO :	9646	14	
PROJECT: Derailment Site, 1717 Middle Harbor Rd. LOCATION	N: Oakland,	Califo	irnia	
DRILLED BY: Exploration Geoservices DRILLER: Dave/Howar	а метнор	8 H	SA	
START DATE: 11/8/95 COMP DATE: 11/8/95 SURF EL.: F	T. est	TD: 17.0	O FT BG	S
LOGGED BY: Ken Rose	D. T. WA	TER: 8	OFT. BO	35
WELL DPT DESCRIPTION	GRAPHIC LOG USCS CODE		SAMPLE NUMBER	Blow Count
O.0' to 2.0' Gravel, It. grayish brown w/ some sand, wood and metal debris (fill). damo, strong diesel odor Z.0' to 7.0' Meddum to coarse sand, it. grayish brown w/ some gravel, trace slit moist, strong diesel odor S- As above, v. noist, strong diesel odor J.0' to 15.0' Fine to medium sand, gray, greenish gray, w/ some slit, trace clay, wet at 8', strong diesel odor As above, wet, slight diesel odor S- As above, wet, slight diesel odor S- Bay Mud Boring completed to 17.0' Groundwater encountered at 8.0' Moditor well installed to 17.0' of 0 000' screen T' of SCH 40 2' PVC blank S.5 secks of 4P0-2' slitca 1 bucket of bentonite pellets B'' Flush mount well cover S- Ge NUMEEF: 98464				

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LOG

WELL NO. DSMW-2

CLIENT: Union Pacific Railroad	JOB NO: 96464
PROJECT: Derailment Site, 1717 Middle Harbor Rd. LOCATI	ION: Oakland, California
DRILLED BY: Exploration Geoservices DRILLER: Dave/How	vərd METHOD: 8 HSA
START DATE: 11/8/95 COMP DATE: 11/8/95 SURF. EL :	FT. est. TD: 120 FT BGS
LOGGED BY: Ken Rose	D. T. WATER: 10.0 FT. BGS
WELL DIAGRAM DPT DESCRIPTION	GRAPHIC LOG OVA SAMPLE Blow USCS CODE ppm NUMBER Count
0.0° to 3.0° Sand, II. brown w/ some glass and organic debris (roots, leaves), damp, no odor or staining 3.0° to 5.0° Encounter gravel, cobbles and concrete debris 5 5.0° to 10.0° Fine to medium sand, brown, It. brown w/ trace silt and gravel, slightly moist, no odor or staining 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) Boring completed to 12.0° Groundwater encountered at 10.0° Monitor well installed to 12.5° of 0.010° screen 7 of 5CH 40 2° PXO blank 2 stacks of #10-20 silica, 1 bucket of bentonite pellets Plush mount well cover 20 20 20 30 30 30 30 30 30 30 30 30 30	SP

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WELL NO. DSMW-3

CLIENT:	Union Pacific Railroad		08 40		
PROJECT:	Derailment Site, 1717 Middle Harbor Rd	TION: COMPLET	9048		
DRILLED B	Y: Exploration Geoservices DRILLER: Dave (14)			ornia	
START DA	E: 11/8/95 COMP. DATE: 11/8/95 SUPE 5	Ward METHOD:	8'H	5'A	
OGGED BY	: Ken Rose	Fr. est.	D: 12 (OFT. BO	<u></u>
WELL DRT		UIWA	ER: 10	0.0 FT. E	IGS
JIAGRAM	DESCRIPTION	GRAPHIC LOG USCS CODE		SAMPLE NUMBER	Blov
	0.0' to 3.0' Sand, It brown w/ some glass and organic debris (roots, leaves), damo, no odor or staining 3.0' to 5.0' Encounter gravel, cobbles and concrete debris 5.0' to 10.0' Fine to medium sand, brown, It, brown w/ trace silt and gravel, slightly moist, no odor or staining As above, becomes wet at 10.0' 10.0' to 12.0' Clayey slit, gray, greenish gray w/ some fine sand, wet, no odor, encounter obstruction at 12.0' (City Water Main) 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 slica, I bucket of bentonite pellets Flush mount well cover	SP 0.0000 GW 0.000 GW ML			

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SOIL BORING/WELL LOG

BORING NO.

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WELL NO. APL/UP-W1

CLIENT: UNION	Union Pacific Corporation JOB NUMBER:					-844	
PROJECT: UPMF OAKLAND (PHASE II) LOCATION: 1750 FERRO ST. OAKLA					KLAND, CA	· · · · · · · · · · · · · · · · · · ·	
DRILLED BY: LAYNE WESTERN		DRILLER: STEVE McCOY		METHOD: H-S AUGER W/ SPL SPOON			
DATE START: 7-15-93	DATE	E COMP: 7-15-93			TOTAL D	EPTH: 22.5	
LOGGED BY: C.S. BYERMAN		APPROVED BY: R M POLLARD - R.G.# 4659 DEPTH TO W		WATER: 9.93			
WELL DPT ST	GRAPHIC LOG	DES	CRIPTION		OVM	SAMPLE NUMBER	SAMPLE ANAL
5	ASP FL SP SP SM	0 0 to 15 ASPHALT CONCRETE 15 to 3.0 FILL MATERIAL: DARK BRC SAND, BRICKS, GLASS AND DRY, NO ODOR 3 0 to 4.0 SAND: OLIVE GRAY, WITH I LOOSE, DRY, NO ODOR 4 0 to 20.0 SAND: BROWN TO GRAY, WI GRADED, WET AT 12 FEET 20.0 to 22.5 SAND: OLIVE GRAY, VERY F SILT, WET, NO ODOR 20.0 to 22.5 SAND: OLIVE GRAY, VERY F SILT, WET, NO ODOR TOTAL DEPTH - 22.5 FEET (W SAMPLE ANALYTICAL RESULTS ND - NOT DETECTED ELEVATION MEASURED FROM N WATER LEVEL MEASURED 8-25	DWN TO GRAY, MIX OF GRA O THER MATERIAL, WELL FINE GRAVEL, WELL GRAG TH NO GRAVEL, POORLY TINE-GRAINED, NO GRAVI ELL SET AT 22 FEET) S - SEE TABLES 28 and 2 45L 5-93	VEL, GRADEO, DEO, EL, 2b		арі/ир- иі (б') иі (12')	TPH-O TPH-G TPH-JR BTEX As,PD, Cd,Cr TPH-G TPH-IR BTEX As,PD, Cd,Cr

US	PCI				
Remedial Services					
- A Subsidiary Union Pacific	cor Corporation				

SOIL BORING/WELL LOG

BORING NO.

WELL NO. APL/UP-W2

