May 8, 2014

Mr. Keith Nowell
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject: **Work Plan – Well Destruction**

Site: **76 Station No. 5191/5043**
449 Hegenberger Road
Oakland, California
Fuel Leak Case No. RO0000219

Dear Mr. Nowell;

I declare under penalty of perjury that to the best of my knowledge the information and/or recommendations contained in the attached report is/are true and correct.

If you have any questions or need additional information, please call:

Walter T. Sprague
Pacific Convenience & Fuel
7180 Koll Center Parkway, Suite 100
Pleasanton, California 94566
Tel: (925) 931-5714
Fax: (925) 905-2746
WSprague@pcandf.com

Sincerely,

PACIFIC CONVENIENCE & FUEL

WALTER SPRAGUE
Director of Retail Services

Attachment

Work Plan - Well Destruction

76 Station No. 5191/5043
449 Hegenberger Road
Oakland, CA

Alameda County Health Care Services Agency Fuel Leak Case No. RO0000219

San Francisco Bay, Regional Water Quality Control Board Case No. 01-1601

GeoTracker Global ID No.T0600101476

Antea Group Project No. I42705191

May 8, 2014

Prepared for:
Mr. Keith Nowell
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway,
Suite 250
Alameda, CA 94502-6577

Prepared by:
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Work Plan

Well Destruction
76 Station No. 5191/5043

1.0 INTRODUCTION

Antea[TM]Group is pleased to submit this *Work Plan – Well Destruction*, for the references site in Oakland, California (**Figure 1**). The proposed destruction of five (5) on-site monitoring wells is in preparation of the proposed soil excavation activities as detailed in the *Corrective Action Plan* (CAP), dated November 22, 2013, submitted to the Alameda County Health Care Services Agency (ACHCSA).

1.1 Site Description

The subject site is an operating 76 station located on the southwestern corner of Hegenberger Road and Edgewater Drive in Oakland, California **(Figure 1)**. This site contains six fuel dispensers on two islands under a single canopy, three fuel underground storage tanks (USTs) on the north side of the site, a carwash facility on the west side of the site, and a station building in the central portion of the site. The current site features are shown on **Figure 2**. A summary of previous site assessment, environmental investigations, remedial activities, and sensitive receptors are presented in **Appendix A.**

2.0 PROPOSED ACTIVITIES

2.1 Health and Safety

Before commencing field activities, Antea Group will prepare a Health and Safety Plan in accordance with state and federal requirements for use during investigation activities. Drilling permits will be obtained for the well destruction from the Alameda County Public Works Agency (ACPWA). Prior to well destruction, Underground Service Alert (USA) will be notified, as required by law, and a private utility locator will be employed to clear the well locations for underground utilities.

2.2 Well Destruction

Antea Group proposes destroying monitoring wells MW-12, MW-12A, and MW-17 in preparation of the proposed soil excavation Area 1 (A1) as depicted on **Figure 3**. Monitoring wells MW-6 and MW-14 will be destroyed at a later date, when the proposed soil excavation Area 2 (A2) is ready to proceed. Prior to the destruction of each of the monitoring wells, the total depth of each monitoring well will be measured to assess if any obstruction or sediment is present. Well logs of the five monitoring wells are included as **Appendix B**. Subsequent to measuring the depths of the monitoring wells, the monitoring well will be destroyed by pressure grouting using neat cement. Pressure grouting will consist of attaching a hose from the cement mixer directly to the top of the well casing and pumping neat cement into the monitoring well, under pressure (a minimum of 25 pounds per square inch (psi)) for five minutes or pumping refusal. The well boxes will remain in-place after pressure grouting. The well boxes and grouted well column will be removed during the proposed soil excavation activities.

2.3 Disposal of Drill Cuttings and Waste Water

Drill cuttings and decontamination water generated during well destruction activities will be placed into properly labeled 55-gallon Department of Transportation (DOT) approved steel drums and temporarily stored on the station property. Samples of the drill cuttings, and decontamination wastewater will be collected, properly labeled and placed on ice for submittal to a California-certified laboratory and will be analyzed for total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and total xylenes (BTEX), and methyl tertiary-butyl ether (MTBE) by Environmental Protection Agency (EPA) Method 8260, and lead by EPA Method 6010. A chain-of-custody will accompany the samples during transportation to the laboratory. Subsequent to receiving the laboratory analytical results, the drummed drill cuttings and decontamination wastewater will be profiled, transported, and disposed of at an approved facility.

2.4 Reporting

A summary report, describing the well destruction activities will be submitted no later than 60 days after the field work has been completed. Required electronic submittals will be uploaded to the State Geotracker database.

3.0 REMARKS

The recommendations contained in this report represent Antea USA, Inc.'s professional opinions based upon the currently available information and are arrived at in accordance with currently accepted professional standards. This report is based upon a specific scope of work requested by the client. The contract between Antea USA, Inc. and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this report were performed. This report is intended only for the use of Antea USA, Inc.'s client and anyone else specifically identified in writing by Antea USA, Inc. as a user of this report. Antea USA, Inc. will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Antea USA, Inc. makes no express or implied warranty as to the contents of this report.

Date: 5/8/14

Edward T. Weyrens, G.I.T.
Project Professional

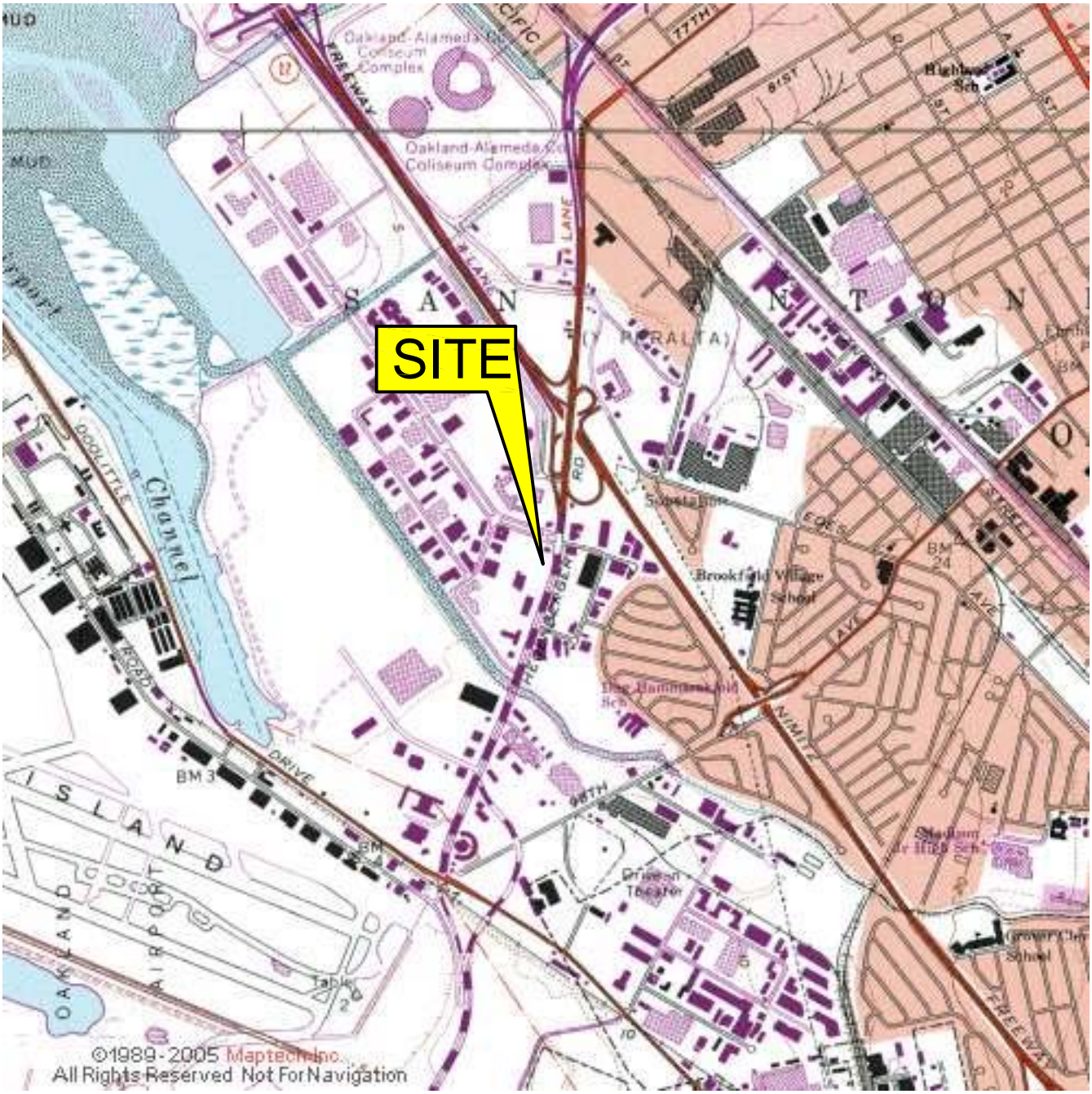
Reviewed by:

PROFESSIONAL GEOLOGIST
DENNIS SHANNON DETTLOFF
No. 7480
STATE OF CALIFORNIA

Date: 5/8/14

Dennis S. Dettloff, P.G.
Senior Project Manager
California Registered Geologist No. 7480

Figures



North

0 900 1800 FT

SCALE

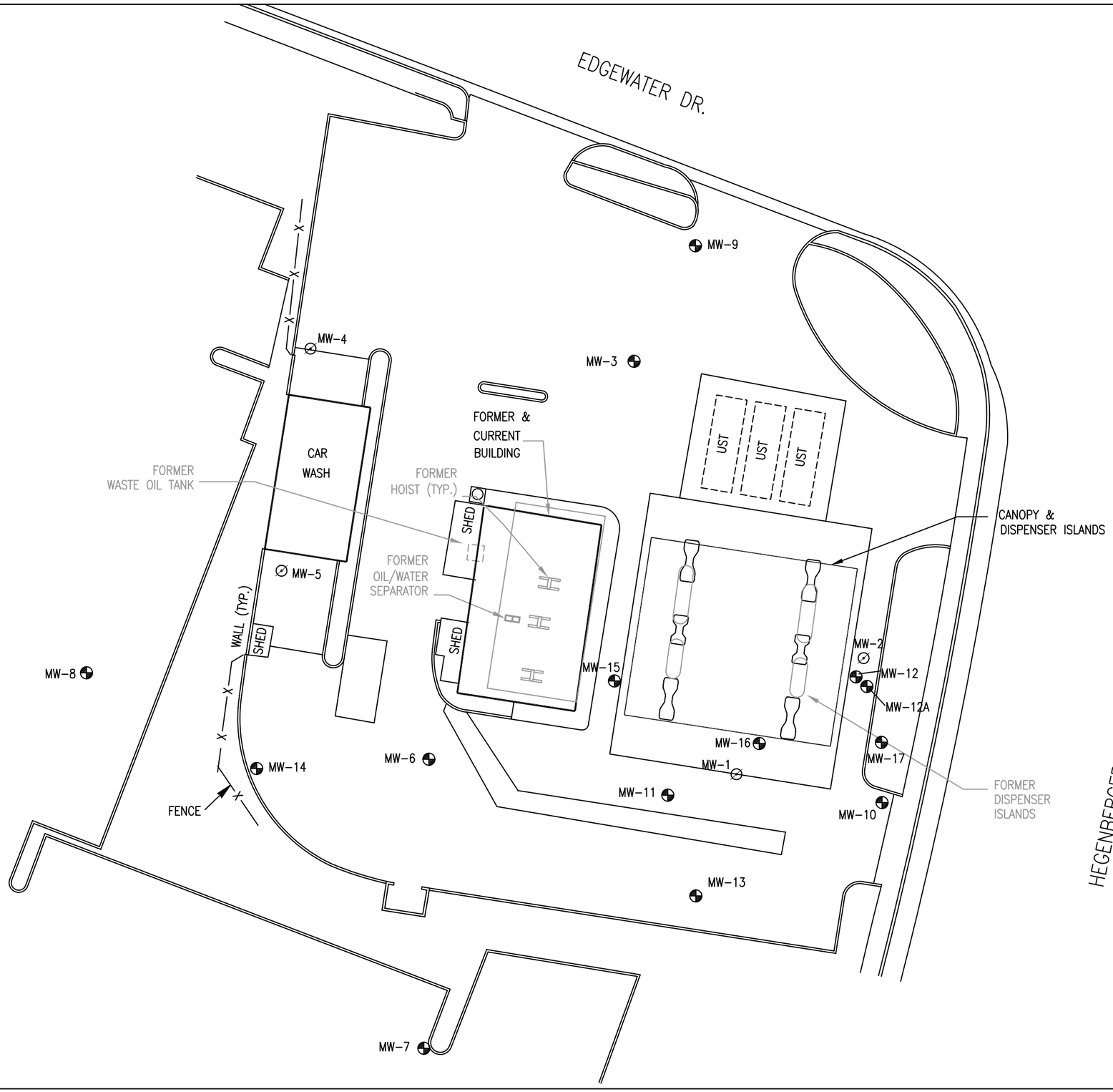
SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP, OAKLAND EAST QUADRANGLE (1973)

FIGURE 1
SITE LOCATION MAP

76 STATION NO. 5191/5043
449 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY
142705191	EW	DR/JH
DATE	REVIEWED BY	FILE NAME
1/31/11	DD	5043-SiteLocator

antea group



LEGEND

- MW- MONITORING WELL
- MW- ABANDONED MONITORING WELL

North

0 30

SCALE IN FEET

FIGURE 2
SITE PLAN

76 STATION NO. 5191/5043
449 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY
142705191	DD	JH
DATE	REVIEWED BY	FILE NAME
5/26/11	DD	5191-SiteS

antea group

EDGEWATER DR.

HEGENBERGER RD.

MW-9
MW-4
MW-3
MW-5
MW-8
MW-7
MW-6
MW-14
MW-15
MW-16
MW-1
MW-11
MW-13
MW-10
MW-12
MW-12A
MW-17

CAR WASH

FORMER WASTE OIL TANK

FORMER & CURRENT BUILDING

FORMER HOIST (TYP.)

FORMER OIL/WATER SEPARATOR

FORMER DISPENSER ISLANDS

CANOPY & DISPENSER ISLANDS

UST

SHED

WALL (TYP.)

SW1 SW2 SW3 SW4 SW5 SW6 SW7 SW8 SW8(6)

FB1 FB2/RF1 FB3/RF2 FB4

FBSW1 FBSW2 FBSW3 FBSW4

WO1

UH-1 UH-2 UH-3

OWS-1

HS-4-E HS-4-S HS-4-W HS-4-N

B1 B2 B3 B4 B-4 B-5 B-6

P1 P2 P3 P4

D1/BD1 D2/BD2 BD3 BD4

S1 S2 S3 S4

HPB-1 HPB-2 HPB-3 HPB-4 HPB-5

SB-1 SB-2 SB-3 SB-4 SB-5 SB-6 SB-7 SB-8 SB-9 SB-10

FS-1

WE1 WE2 WE3

MW1SW1 MW1SW2

A1

A2

North

0 30

SCALE IN FEET

LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- MW- MONITORING WELL
- MW- ABANDONED MONITORING WELL
- SB- SOIL BORING LOCATION (ANTEA GROUP 2013)
- HPB- SOIL BORING LOCATION (ANTEA GROUP 2012)
- B- BORING LOCATION
- SOIL SAMPLE LOCATION
- 1995 EXCAVATION AREA
- PROPOSED EXCAVATION AREA

ADAPTED FROM A MORROW SURVEY ON 5/23/11 AND A SOIL SAMPLING REPORT AND CONTINUING GROUNDWATER INVESTIGATION BY KAPREALIAN ENGINEERING, INC., 6/2/95

FIGURE 3
SITE PLAN WITH PROPOSED EXCAVATIONS

76 STATION NO. 5191/5043
449 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY
142705191	JF	JH
DATE	REVIEWED BY	FILE NAME
11/22/13	DD	5191-SiteS

antea group

Appendix A

Previous Investigation and Site History Summary

PREVIOUS INVESTIGATION AND SITE HISTORY SUMMARY

October 1991 - Four soil samples were collected from the product pipe trenches at depths of approximately 3 feet below ground surface (bgs) during a dispenser island modification. The product pipe trenches were subsequently excavated to the groundwater depth at 4 to 4.5 feet bgs.

February 1992 - Three monitoring wells, MW-1 through MW-3, were installed at the site to depths ranging from 13.5 to 15 feet bgs.

August 1992 - Three additional monitoring wells, MW-4 through MW-6, were installed at the site to a depth of 13.5 feet bgs.

September 1994 - One 280-gallon waste-oil UST was removed from the site. The UST was made of steel, and no apparent holes or cracks were observed in the UST. One soil sample was collected from beneath the former UST at a depth of approximately 9 feet bgs. No petroleum hydrocarbons were reported.

January 1995 - Two additional monitoring wells, MW-9 and MW-10, were installed to depths of 13 and 15 feet bgs. In addition, monitoring wells MW-4 and MW-5 were destroyed by over-drilling the wells and backfilling with neat cement.

March 1995 - Two 10,000-gallon gasoline USTs and one 10,000-gallon diesel UST were removed from the site. Groundwater was encountered in the tank cavity at a depth of approximately 8.5 feet bgs. Soil samples contained total petroleum hydrocarbons as diesel (TPHd) and benzene, and TPH as gasoline (TPHg). Approximately 125,000 gallons of groundwater were pumped from the site for remediation and properly disposed off-site. Four fuel dispenser islands and associated product piping were also removed. Based on the results of the confirmation samples, the product dispenser islands were over excavated to approximately 6 feet bgs.

March-April 1995 - During demolition activities of the former station building, soil samples were collected from two excavations, which were subsequently over excavated. Confirmation samples contained petroleum hydrocarbons. An additional area on the south side of the former station building was excavated based on photo-ionization detector (PID) readings. Two monitoring wells, MW-1 and MW-2, were destroyed in order to allow for over excavation activities to extend to an area adjacent to the dispenser islands in the southeastern quadrant of the site. The excavated areas were subsequently backfilled with clean-engineered fill.

April 1997 - Two additional monitoring wells, MW-7 and MW-8, were installed off-site to the south and east on the neighboring property to a depth of 13 feet bgs. In addition, monitoring well MW-3, which was damaged during site renovation activities, was fully drilled out and reconstructed in the same borehole.

October 2003 - Site environmental consulting responsibilities were transferred to TRC.

April 8-9, 2005 - TRC conducted a 24-hour dual phase extraction (DPE) test at the site using monitoring well MW-6. The 24-hour DPE test was only moderately successful at removing vapor-phase petroleum hydrocarbons from the subsurface; therefore, TRC recommended DPE no longer be considered a viable remedial alternative for the site.

October 2007 - Site environmental consulting responsibilities were transferred to Delta Consultants.

December 2009 - Delta advanced two borings, B-4 and B-5, to depths of 20 feet bgs and 32 feet bgs, respectively. Analytical results from the soil and groundwater samples collected from these two borings indicated that the soil and the groundwater were impacted by petroleum hydrocarbons at these locations.

June 2010 – Delta installed two 4-inch diameter monitoring/extraction wells, MW-11 and MW-12, and two 2-inch diameter monitoring wells, MW-12A and MW-13, at the site. Analytical results from the soil and groundwater samples collected from the MW-12 and MW-12A boring locations indicated that the soil and the groundwater were impacted by petroleum hydrocarbons at these locations.

May 2011 – Antea Group (formally Delta Consultants) installed four 2-inch diameter monitoring wells, MW-14 through MW-17, and advanced one soil boring, B-6, at the site. All four monitoring wells were installed with ten feet of screen from 3 feet bgs to 13 feet bgs. Analytical results of soil samples collected during the monitoring well installation reported TPHg concentrations ranging from 1.0 milligrams per kilogram (mg/kg) (MW-14d13) to 2,490 mg/kg (B-6d9), benzene concentrations ranging from 0.67 mg/kg (B-6d21) to 26.4 mg/kg (B-6d9), toluene concentrations ranging from 0.2 mg/kg (MW-14d10) to 73.9 mg/kg (B-6d9), ethylbenzene concentrations ranging from 0.037 mg/kg (MW-14d13) to 58.1 mg/kg (B-6d9), total xylenes concentrations ranging from 0.066 mg/kg (MW-14d13) to 230 mg/kg (B-6d9), methyl tertiary-butyl ether (MTBE) concentrations ranging from 0.015 mg/kg (MW-15d13) to 0.19 mg/kg (MW-15d8), tertiary-butyl alcohol (TBA) concentrations ranging from 0.014 mg/kg (MW-16d8 and B-6d21) to 0.16 mg/kg (MW-15d8), and lead concentrations ranging from 5.5 mg/kg (MW-16d13) to 16.3 mg/kg (MW-17d9). Diesel range organics (DRO) and DRO with silica gel concentrations were reported; however, all of the results did not match the laboratory standard for diesel. Concentrations of DRO ranged from 2.9 mg/kg (MW-17d13) to 258 mg/kg (B-6d14) and DRO with silica gel concentrations ranged from 2.5 mg/kg (MW-17d13) to 250 mg/kg (B-6d14).

March 2012 – Antea Group advanced five soil borings (HPB-1 through HPB-5) at the site. The borings were advanced using direct push technology. The borings were used to obtain a hydraulic profile of the substrate beneath the site. The data obtained during the investigation will be used to determine the best path forward in terms of remediation.

July 2013 – Antea Group advanced ten soil borings (SB-1 through SB-10) at the site. The borings were advanced using direct push technology. The borings were used to delineate petroleum hydrocarbon impacted soil around

monitoring well MW-6. Results of the investigation can be found in the *Site Investigation Report*, dated January 9, 2014.

SENSITIVE RECEPTORS

April 24, 2006, TRC completed a sensitive receptor survey for the site. According to the Department of Water Resources (DWR) records, three water supply wells are located within one-half mile of the site. The closest well is an irrigation well, reported to be, approximately 1,080 feet southeast of the site. In addition, two surface water bodies were observed within a one-half mile radius of the site. San Leandro Creek is located approximately 1,400 feet southwest of the site and flows into the San Leandro Bay. Elmhurst Creek is located approximately 2,220 feet north of the site and also flows into the San Leandro Bay.

Current Consultant: **Antea Group**

Appendix B

Well Logs

BORING LOG

Project No. KEI-P91-1004	**Boring Diameter** 9" **Casing Diameter** 2"	**Logged By** JGG D.L. CEG 1653
Project Name Unocal S/S #5043 449 Hegenberger Rd., Oakland	**Well Cover Elevation**	**Date Drilled** 8/21/92
Boring No. MW6	**Drilling Method** Hollow-stem Auger	**Drilling Company** West Hazmat

Penetration blows/6"	G. W. level	Depth (feet) Samples	Strati-graphy USCS	Description
		0		Asphalt pavement over sand and gravel base.
				Gravelly clay with sand, stiff, moist, black and olive gray, disturbed (fill).
3/4/4			CH	Clay with silt, stiff, moist, black (5Y 2.5/1) lensed with poorly graded and well graded sand.
4/5/7	▼	5	ML	Silt with very fine-grained sand, stiff, moist to wet, dark greenish gray (5GY 4/1), lensed with clayey silt between 4.5 and 5.5 feet.
3/3/4			OL	Clayey silt, stiff, moist, black (5Y 2.5/1) and very dark gray (5Y 3/1) mottled, with abundant organic matter (bay mud).
5/7/8		10	OH	Silty clay, stiff, moist, black (2.5YR 2.5/0), with abundant organic matter.
5/7/9			CH	Silty clay, stiff, moist, very dark gray (5Y 3/1), with organic matter.
				Silty clay, trace fine-grained sand, stiff, moist, dark greenish gray (5GY 4/1).
		15		TOTAL DEPTH 13.5'
		20		

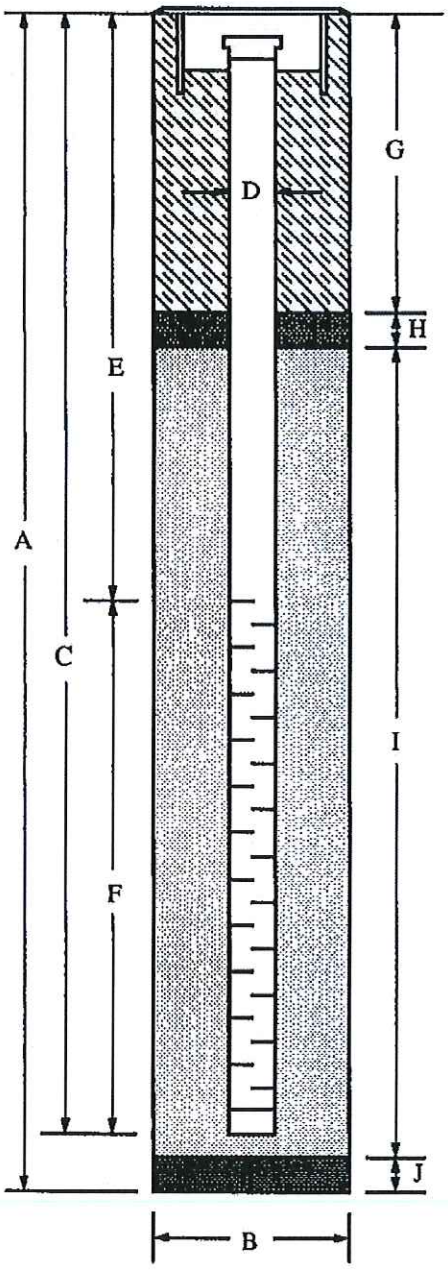
WELL COMPLETION DIAGRAM

PROJECT NAME: Unocal S/S #5043, 449 Hegenberger Rd., Oakland WELL NO. MW6

PROJECT NUMBER: KEI-P91-1004

WELL PERMIT NO.: ACFCD & WCD #92368

Flush-mounted Well Cover



A. Total Depth : 13.5'

B. Boring Diameter: 8"

Drilling Method: Hollow Stem Auger

C. Casing Length: 13.5'

Material: Schedule 40 PVC

D. Casing Diameter: OD = 2.375"

ID = 2.067"

E. Depth to Perforations: 2.5'

F. Perforated Length: 11'

Perforation Type: Machined Slot

Perforation Size: 0.010"

G. Surface Seal: 1'

Seal Material: Neat Cement

H. Seal: 0.5'

Seal Material: Bentonite

I. Filter Pack: 12'

Pack Material: RMC Lonestar Sand

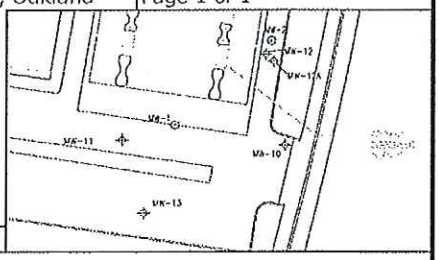
Size: #2/12

J. Bottom Seal: None

Seal Material: N/A

Delta Consultants

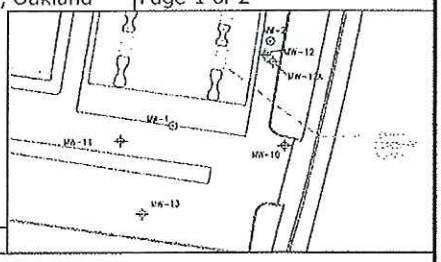
Project No:	I42705191	Client:	Delta/ELT	**Well No: MW-12**	
Logged By:	Jonathan Fillingame	Location:	449 Hegenberger Road, Oakland	Page 1 of 1	
Driller:	Gregg	Date Drilled:	6/22/2010		
Drilling Method:	Hollow Stem Auger	Hole Diameter:	11"		
Sampling Method:	Direct Push	Hole Depth:	20'		
Casing Type:	Sch 40 PVC	Well Diameter:	4"		
Slot Size:	0.020	Well Depth:	20'		
Gravel Pack:	#3 Monterey Sand	First Water Depth:	5.5'		
		Static Water Depth:	4.5'		
Elevation:		Northing:		Easting:	



Depth (feet)	Well Completion (Backfill / Casing)	Water Level	Blow Counts	PID Reading (ppm)	Sample Identification	Sample Recovery	Sample Analyzed	Soil Type	LITHOLOGY / DESCRIPTION
0	Neat Cement								4" Asphalt
1									**Fill (Silty SAND with Gravel)**; brown, 60% fine to coarse sand, 20% silt, 20% fine to coarse gravel, chuncks of asphalt, damp.
2					Air-Knife				**Lean CLAY (CL)**; dark greenish grey, 95% clay, medium stiff, medium plasticity, 5% fine sand, moist.
3									
4									**Lean CLAY (CL)**; dark brownish grey and black, 90% clay, stiff, medium plasticity, 5% fine sand, 5% organics/roots, moist, hydrocarbon odor.
5		▽		32.9					
6									**Lean CLAY with Gravel (CL)**; dark brownish grey, 80% clay, stiff, low plasticity, 20% fine gravel,
7									**Clayey GRAVEL (GC)**; dark brown, 50% fine gravel, loose, 40% clay, low plasticity, 10% fine to coarse sand, moist.
8				2365	MW-12 @8				
9									
10					MW-12 @10				**Lean CLAY (CL)**; dark grey to black, soft, medium plasticity, wet, hydrocarbon odor.
11									
12				203					
13									
14									**Lean CLAY with Sand (CL)**; green grey, 85% clay, stiff, medium plasticity, 15% fine to medium sand, moist.
15									Color Change to Brown.
16				160					**Fat CLAY (CH)**; black, very soft, high plasticity, wet.
17									**Fat CLAY (CH)**; greenish grey, 90% clay, soft, high plasticity, 10% fine sand, moist.
18									
19									**Lean CLAY (CL)**; brown with black spots, very stiff, medium plasticity, damp.
20				335	MW-12 @20				
21									
22									

Delta
Consultants

Project No:	I42705191	Client:	Delta/ELT	**Well No: MW-12A**	
Logged By:	Jonathan Fillingame	Location:	449 Hegenberger Road, Oakland	Page 1 of 2	
Driller:	Gregg	Date Drilled:	6/23/2010		
Drilling Method:	Hollow Stem Auger	Hole Diameter:	8"		
Sampling Method:	Direct Push	Hole Depth:	44'		
Casing Type:	Sch 40 PVC	Well Diameter:	2"		
Slot Size:	0.020	Well Depth:	34'		
Gravel Pack:	#3 Monterey Sand	First Water Depth:	5.5'		
		Static Water Depth:	6'		
Elevation:		Northing:		Easting:	

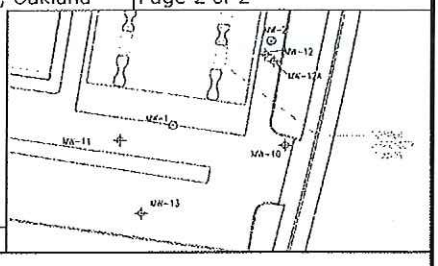


Well Completion: Backfill	Well Completion: Casing	Water Level	Blow Counts	PID Reading (ppm)	Sample Identification	Depth (feet)	Sample: Recovery	Sample: Analyzed	Soil Type	LITHOLOGY / DESCRIPTION
Neat Cement					Air-Knife	1				4" Asphalt
						1				**Fill (Silty SAND with Gravel)**; brown, 60% fine to coarse sand, 20% silt, 20% fine to coarse gravel, chuncks of asphalt, damp.
						2				**Lean CLAY (CL)**; dark greenish grey, 95% clay, medium stiff, medium plasticity, 5% fine sand, moist.
						3				**Lean CLAY (CL)**; dark brownish grey and black, 90% clay, stiff, medium plasticity, 5% fine sand, 5% organics/roots, moist, hydrocarbon odor.
						4				
						5				
		▽		32.9		5				**Lean CLAY with Gravel (CL)**; dark brownish grey, 80% clay, stiff, low plasticity, 20% fine gravel,
		▼				6				**Clayey GRAVEL (GC)**; dark brown, 50% fine gravel, loose, 40% clay, low plasticity, 10% fine to coarse sand, moist.
						7				
				2365		8				
						9				
						10				**Lean CLAY (CL)**; dark grey to black, soft, medium plasticity, wet, hydrocabon odor.
						11				
				203		12				
						13				
						14				**Lean CLAY with Sand (CL)**; green grey, 85% clay, stiff, medium plasticity, 15% fine to medium sand, moist.
						15				Color Change to Brown.
				160		16				**Fat CLAY (CH)**; black, very soft, high plasticity, wet.
						17				**Fat CLAY (CH)**; greenish grey, 90% clay, soft, high plasticity, 10% fine sand, moist.
						18				
						19				**Lean CLAY (CL)**; brown with black spots, very stiff, medium plasticity, damp.
				335		20				No Recovery
						21				
						22				

Delta
Consultants

Project No:	I42705191	Client:	Delta/ELT
Logged By:	Jonathan Fillingame	Location:	449 Hegenberger Road, Oakland
Driller:	Gregg	Date Drilled:	6/23/2010
Drilling Method:	Hollow Stem Auger	Hole Diameter:	8"
Sampling Method:	Direct Push	Hole Depth:	44'
Casing Type:	Sch 40 PVC	Well Diameter:	2"
Slot Size:	0.020	Well Depth:	34'
Gravel Pack:	#3 Monterey Sand	First Water Depth:	5.5'
		Static Water Depth:	6'

Well No: MW-12A
Page 2 of 2



Elevation: Northing: Easting:

Well Completion (Backfill / Casing)	Water Level	Blow Counts	PID Reading (ppm)	Sample Identification	Depth (feet)	Sample Recovery	Sample Analyzed	Soil Type	LITHOLOGY / DESCRIPTION
Neat Cement					23				No recovery
					24				
					25				
			1277	MW-12A @26	26				**Fat CLAY (CH)**; black, soft, high plasticity, wet, hydrocarbon odor.
					27				**Lean CLAY (CL)**; brown, greenish grey, 90% clay, stiff, medium plasticity, 10% fine to coarse sand, moist.
					28				
					29				
					30				
			3400		31				**Sandy Lean CLAY (CL)**; brown, 70% clay, stiff, medium plasticity, 30% fine to coarse sand, moist.
				MW-12A @32	32				
					33				**Clayey SAND (SC)**; brown, 60% fine to medium sand, loose, 40% clay, stiff, medium plasticity, wet.
			47.9	MW-12A @34	34				**Well Graded SAND with Clay (SW-SC)**; brown, 90% fine to coarse sand, dense, 10% clay, wet.
					35				
					36				**Clayey SAND (SC)**; brown, 60% fine to medium sand, 40% clay, wet.
					37				**Well Graded SAND (SW)**; brown, fine to coarse, wet.
					38				
					39				**Well Graded SAND (SW)**; brown, 90% medium to coarse sand, loose, 10% fine gravel, wet.
Sand Caved in while Augers were removed (slough)					40				**Well Graded SAND (SW)**; brown, 95% fine to coarse sand, loose, 5% clay, wet.
					41				**Well Graded SAND (SW)**; brown, 95% fine to coarse sand, loose, 5% fine gravel, wet.
					42				
					43				**Clayey SAND (SC)**; brown, 60% fine to medium sand, loose, 40% clay, wet.
					44				

anteagroup

Project No:	I42705191	Client:	COP-ELT
Logged By:	ETW	Location:	449 Hegenberger Road
Driller:	Gregg Drilling	Date Drilled:	5/17/2011
Drilling Method:	HSA	Hole Diameter:	8"
Sampling Method:	Direct Push	Hole Depth:	13'
Casing Type:	Sch. 40 PVC	Well Diameter:	2"
Slot Size:	0.02	Well Depth:	13'
Gravel Pack:	#3	▼ First Water Depth:	7.5'
		▽ Static Water Depth:	

Boring/Well No:MW-14
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Location Map

Elevation: Northing: Easting:

Well Completion (Backfill / Casing)	Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Sample Recovery	Sample Interval	Soil Type	LITHOLOGY / DESCRIPTION
					0				Asphalt (6" Thick)
									Class II AB
					1				Rocky Fill
					2				
					3			SC	**Clayey sand**; 55% fine sand, 45% clay,
					4				Olive green, moist, no odor
					5				
					6	X			
						X			
	▼		38.4	MW-14d7	7	X	O		Wet
						X		CL	**Lean Clay**; 90% clay, 10% fine sand, black, wet,
					8	X			medium plasticity, slight odor
						X			
					9	X			
						X			
			43.6	MW-14d10	10	X	O		
						X			
					11	X			Brown from 11 to 12 feet
						X			Organics material, plant roots
					12	X			
			56.3	MW-14d13		X	O		Black at 13 feet, strong odor
					13				
					14				
					15				
					16				
					17				
					18				
					19				
					20				
					21				
					22				

anteagroup

Project No:	I42705191	Client:	COP-ELT
Logged By:	ETW	Location:	449 Hegenberger Road
Driller:	Gregg Drilling	Date Drilled:	5/18/2011
Drilling Method:	HSA	Hole Diameter:	8"
Sampling Method:	Direct Push	Hole Depth:	13'
Casing Type:	Sch. 40 PVC	Well Diameter:	2"
Slot Size:	0.02	Well Depth:	13'
Gravel Pack:	#3	▼ First Water Depth:	
		▽ Static Water Depth:	

Boring/Well No:MW-17
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Location Map

Elevation: Northing: Easting:

Well Completion (Backfill / Casing)	Water Level	Moisture Content	PID Reading (ppm)	Sample Identification	Depth (feet)	Sample Recovery	Sample Interval	Soil Type	LITHOLOGY / DESCRIPTION
					1				Top Soil and fill
					2			CL	**Lean Clay**; 95% clay, 5% fine sand, black, moist, medium plasticity, no odor
					3				
					4				
					5				Wet
					6				
					7	X			
					8	X			
						X			Olive green color, slight odor
			23.7	MW-17d9	9	X	O		
					10				
					11	X			
					12	X			wet
						X			
			28.4	MW-17d13	13	X	O		Black color, slight odor
					14				
					15				
					16				
					17				
					18				
					19				
					20				
					21				
					22				