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September 9, 2015

Mr. Keith Nowell  
Alameda County Department of Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

**RECEIVED**

By Alameda County Environmental Health 10:37 am, Sep 10, 2015

**RE: Well Decommissioning Report**  
500 Bancroft, San Leandro, California  
Fuel Leak Case No.: RO0000499

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 contact me at at (925) 790-6912.

Sincerely,

Nicole Arceneaux  
Union Oil of California – Project Manager

Attachment:  
Well Decommissioning Report

**Union Oil Company of California**

**Well Decommissioning Report**

76 Service Station 351563

500 Bancroft Avenue

San Leandro, California

Case No. RO0000499

September 9, 2015



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Christine Meyer  
Staff Geologist

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Katherine Brandt, P.G.  
Certified Project Manager



## Well Decommissioning Report

76 Service Station 35-1563  
500 Bancroft Avenue  
San Leandro, California  
Case No. RO0000499

Prepared for:  
Union Oil Company of California

Prepared by:  
ARCADIS U.S., Inc.  
2000 Powell Street  
Suite 700  
Emeryville  
California 94608  
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Our Ref.:  
B0047943.2013

Date:  
September 9, 2015

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### **Acronyms and Abbreviations**

ACEH	Alameda County Environmental Health
ACPWA	Alameda County Public Works Agency, Water Resources Section
ARCADIS	ARCADIS U.S., Inc.
bgs	below ground surface
CDWR	California Department of Water Resources
Cruz	Cruz Brothers Locators
EM	electromagnetic transmitter and receiver
GPR	ground-penetrating radar
Gregg	Gregg Drilling and Testing, Inc.
GWE	groundwater extraction
report	Well Decommissioning Report
site	76 Service Station 35-1563, located at 500 Bancroft Avenue in San Leandro, California
SVE	soil vapor extraction
UST	underground storage tank



## **Well Decommissioning Report**

76 Service Station 351563  
San Leandro, California

### **1. Introduction**

On behalf of Chevron Environmental Management Company's affiliate, Union Oil Company of California (Union Oil), ARCADIS U.S., Inc. (ARCADIS) prepared this Well Decommissioning Report (report) for the 76 Service Station 351563, located at 500 Bancroft Avenue in San Leandro, California (site; Figure 1). This report documents the decommissioning of ten groundwater monitoring wells (MW-1 through MW-10). The wells were abandoned in accordance with the Alameda County Public Works Agency (ACPWA), Water Resources Section requirements. Monitoring well destruction activities were conducted pursuant to California Well Standards Bulletin No. 74-81 and Supplement No. 74-90, under the supervision and signed by an appropriately licensed California Professional Geologist. Destruction of the wells is part of Alameda County Environmental Health's (ACEH) requirements to receive case closure at the site (ACEH 2014).

### **2. Site Description**

The site is an active 76 Products Service Station. Current site facilities include one station building, two dispenser islands, two 12,000-gallon gasoline underground storage tanks (USTs), and one 12,000-gallon diesel UST. There were ten monitoring wells associated with the site. Current site features are shown on Figure 2.

### **3. Monitoring Well Decommissioning Activities**

Ten monitoring wells (MW-1 through MW-10) were identified for well destruction. A site plan showing the former well locations is included as Figure 2.

#### **3.1 Pre-Field Activities**

Prior to initiating field activities, ARCADIS updated the site-specific Health and Safety Plan in accordance with state and federal requirements for use during the field activities. ARCADIS obtained well destruction permits from ACPWA prior to initiating the decommissioning activities. An encroachment permit was acquired from the City of San Leandro Engineering and Transportation Department to perform well destruction activities at MW-6 and MW-9, located in a City of San Leandro right-of-way.

### **3.2 Underground Utility Locating**

On November 04, 2014, ARCADIS contacted Underground Service Alert of Northern California to identify public utilities near the monitoring well locations. On November 4, 2014 and November 6, 2014, Cruz Brothers Locators (Cruz), a private utility-locating company, conducted a utility mark out under direct supervision by ARCADIS. Cruz conducted the utility mark out using an electromagnetic transmitter and receiver (EM; Fisher TW-6 Pipe & Cable Locator 81.92 kHz frequency) and ground-penetrating radar (GPR) to depths of approximately 4 to 6 feet, to clear proposed monitoring well locations of conductive and nonconductive underground utilities. Cruz used a traceable rod to locate the sewer lateral and inspected manholes and storm drains. Finally, ARCADIS staff conducted a visual inspection of the site to identify potential overhead utility lines. ARCADIS established three lines of evidence for utility location prior to implementing the planned drilling activities.

No utilities were identified within 5 feet of monitoring wells MW-1 through MW-3, MW-5, MW-8, and MW-10 during the public or private utility scans with EM and GPR. An electrical line was identified within 1 foot of on-site monitoring well MW-4. A gas line within 2 feet and 32 inches below grade was identified at offsite monitoring well MW-9. Linear metal anomalies were located within 1 foot of offsite monitoring well MW-6. An irrigation line was marked to be in line with off-site monitoring well MW-7 but it was not encountered during decommissioning activities.

### **3.3 Monitoring Well Decommissioning by Pressure Grouting**

From November 14 November 20, 2014, five on-site (MW-1 through MW-5) and five offsite (MW-7 through MW-10) monitoring wells were successfully decommissioned by pressure grouting in place. MW-6 was decommissioned on June 26, 2015 via pressure grouting. Gregg Drilling and Testing, Inc. (Gregg), a California licensed drilling contractor (C-57 License No. 485165) performed the well abandonment in accordance with ACPWA requirements and the California Well Standards. Available boring logs and well construction diagrams are included as Appendix A.

Prior to well decommissioning, the depth to groundwater and depth to bottom was measured to confirm well construction details (Table 1). The well collar and cover at well locations (MW-5 through MW-10) were removed with a jackhammer. The well box at MW-4 was left in place due to proximity of an electrical line, and the casing was removed to the base of the well box. The well vaults at MW-1 through MW-3 were left in place to maintain the integrity of the concrete surface on-site.

Monitoring wells were abandoned using neat cement grout pressurized at approximately 25 pounds per square inch (psi) for five minutes. At on-site monitoring well MW-1, air was leaking from the base of the well vault during the pressure test. A maximum pressure of 10 psi was maintained for five minutes. The pressure test was completed by connecting the well casing to an air compressor and monitoring the pressure to confirm sufficient setting of the neat cement mixture without leaks or pressure drop. Following the initial pressure test, additional neat cement was pumped into the well casing as necessary to bring the neat cement level back to the top of the casing. Annular materials were removed to approximately three feet below ground surface (bgs) and the casing was subsequently cut. Additional grout was added in the annular void from approximately 1 to 3 feet bgs.

The well casing at MW-4 was removed to the base of the well box. The monitoring well casing and horizontal casings associated with the former soil vapor extraction (SVE) and groundwater extraction (GWE) system at MW-1 through MW-3 were removed to the base of the vault. Additional grout was added to fill each vault to approximately 1 foot bgs.

The surface at MW-1 through MW-6, MW-8, and MW-10 was restored to match pre-existing conditions using concrete. The surface at MW-7, located on a grass lawn, was restored using potting soil. The surface at MW-9, located in a City of San Leandro right-of-way, was restored using hot asphalt on July 1, 2015 per the City of San Leandro's requirements.

#### **4. Management of Investigation-Derived Waste**

Construction waste generated as part of the well destruction activities was properly contained in one 55-gallon Department of Transportation (DOT) approved steel drum. Drum was labeled as non-hazardous construction debris and left onsite for removal. The drums were transported offsite on September 4, 2015 by Waste Management Inc. and transferred to the Waste Management Facility in Livermore, California. A copy of the generator waste manifest is attached in Appendix B.

#### **5. Well Completion Reports**

As required by Section 13751 of the California Water Code, Well Completion Reports must be filed with the California Department of Water Resources (CDWR) within 60 days of completion of the well destruction activities. Well Completion Reports were submitted to the CDWR on July, 24, 2015. Copies of the Well Completion Reports are included as Appendix C.



## **Well Decommissioning Report**

76 Service Station 351563  
San Leandro, California

### **6. Summary**

ARCADIS directed the decommissioning of ten monitoring wells at the site in November 2014 and June 2015. Wells were decommissioned according to ACPWA and CDWR Bulletin 74-90 guidelines. ARCADIS has fulfilled the requirements for case closure.



## Well Decommissioning Report

76 Service Station 351563  
San Leandro, California

### 7. References

ACEH, 2014. Request for Well Destruction; *Fuel Leak Case No. RO0000499 and GeoTracker Global ID T0600101479, UNOCAL #5367, 500 Bancroft Avenue, San Leandro, CA 94577.* October 27.

**Table**

**Table 1**  
**Well Construction Details**  
**Union Oil Company of California**  
**76 Service Station 351563**  
**500 Bancroft Avenue, San Leandro, California**

Monitoring Well ID	Well Installation Date	Well Destruction Date	Borehole Diameter (inches)	PVC diameter (inches)	Total Depth (feet bgs)	Screen Interval (feet bgs)	Depth to Bottom (feet btoc)
MW-1	9/23/1987	11/14/2014	8	2	35	10-35	35.09
MW-2	9/30/1988	11/18/2014	8	4	48	23-48	47.91
MW-3	9/30/1988	11/14/2014	8	4	48	23-48	49.15
MW-4	9/30/1988	11/14/2014	8	4	48	23-48	50.40
MW-5	5/15/1989	11/14/2014	8	2	45	25-45	44.98
MW-6	5/15/1989	6/25/2015	8	2	45	25-45	45
MW-7	2/7/1990	11/20/2014	8	2	44	24-44	41.65
MW-8	2/6/1990	11/20/2014	8	2	44	24-44	43.85
MW-9	12/16/1994	11/17/2014	8	2	45	20-45	44.47
MW-10	4/6/1995	11/18/2014	8	2	45	19-25.5	41.92

**Notes:**

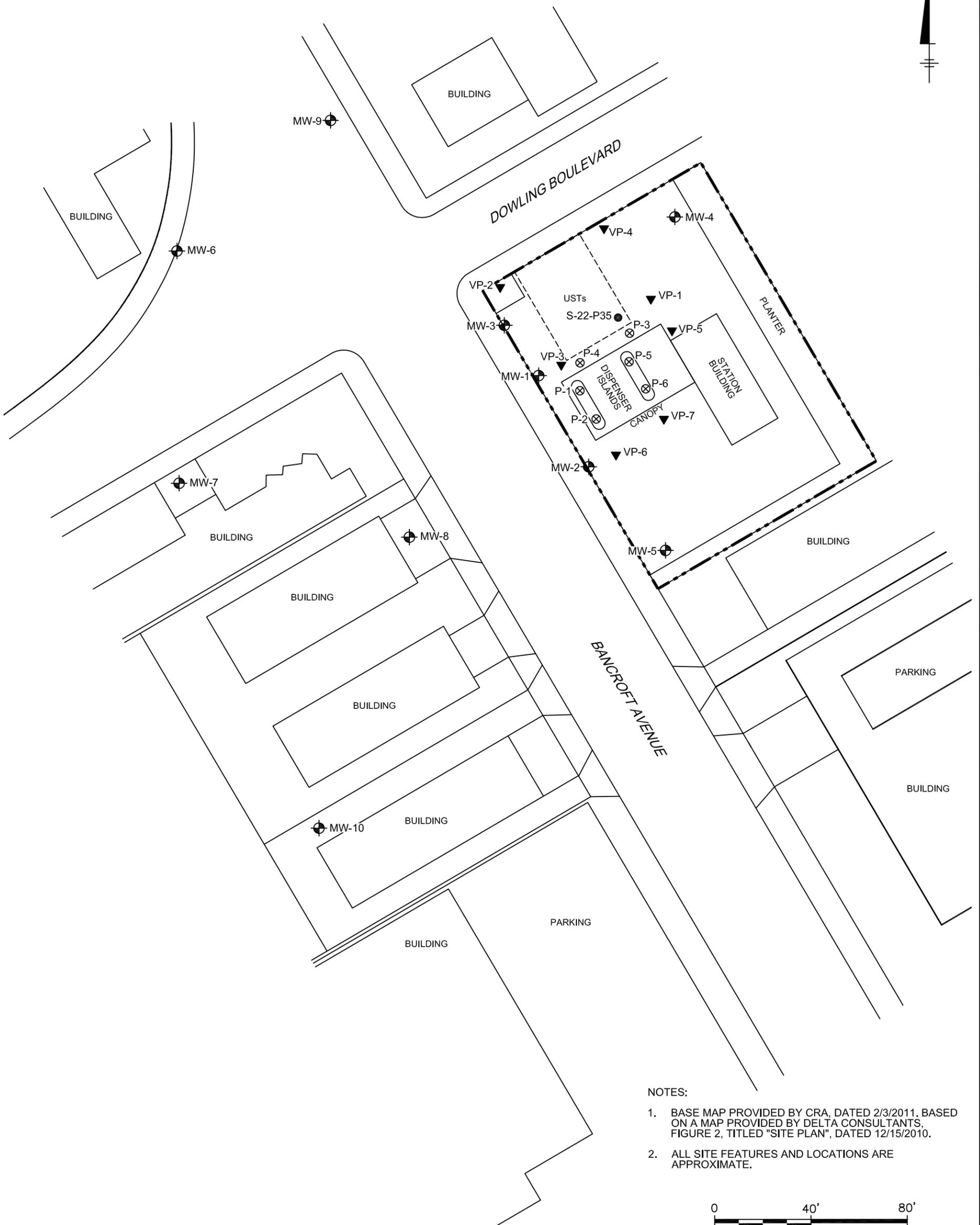
bgs = below ground surface

btoc = below top of casing



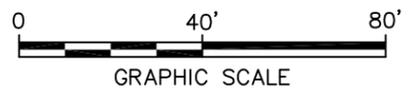
**Figures**





NOTES:

1. BASE MAP PROVIDED BY CRA, DATED 2/3/2011. BASED ON A MAP PROVIDED BY DELTA CONSULTANTS, FIGURE 2, TITLED "SITE PLAN", DATED 12/15/2010.
2. ALL SITE FEATURES AND LOCATIONS ARE APPROXIMATE.



LEGEND

- PROPERTY BOUNDARY
- MW-1 MONITORING WELL
- S-22-P35 TANK PIT SAMPLE LOCATION
- P-1 PRODUCT LINE SAMPLE LOCATION
- VP-1 VAPOR POINT

UNION OIL COMPANY OF CALIFORNIA  
 76 SERVICE STATION 35-1563  
 500 BANCROFT AVENUE  
 SAN LEANDRO, CALIFORNIA

SITE PLAN



FIGURE

2



## **Appendix A**

Boring Logs

DEPTH IN FEET	Blows/ Ft.	Sample No.	USCS	DESCRIPTION	WELL CONST.
0				Concrete (6 inches).	
2			CH	Clay, black with fragments of red brick, no product odor.	
4	27	S-5	CL	Silty clay, some silt, brown, damp, medium to high plasticity, stiff, no product odor.	
6					
8					
10	22	S-10		With trace of fine-grained gravel.	
12					
14	10	S-15	ML	Clayey silt, some clay, brown, very moist, low plasticity, stiff, no product odor.	
16					
18					
20	11	S-20	CL	Silty clay with trace of coarse-grained sand, brown-green, wet, medium plasticity, stiff, strong product odor.	
22					
24					
26	47	S-25		Some silt, brown with green mottling, moist, hard.	
28					
30					
(Section continues downward)					



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 41255 Mission Blvd. Suite B Fremont, CA 94539 415-651-9006

**LOG OF BORING B-1/MW-1 PLATE**

UNOCAL Station No. 5367  
 500 Bancroft Avenue  
 San Leandro, California

P-4

PROJECT NO. 87091-1

DEPTH IN FEET	Blows/ Ft.	Sample No.	USCS	DESCRIPTION	WELL CONST.	
	30	25	S-30	CL	Silty clay, some silt, brown with green mottling, moist, medium plasticity, very stiff, strong product odor.	[Well Construction Diagram]
32						
34	28	S-35				
36	Total Depth = 36 feet. Boring terminated at sufficient depth to evaluate contamination above and below water table.					
38						
40						



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**PROJECT NO. 87091-1**

**LOG OF BORING B-1/MW-1**

UNOCAL Station No. 5367  
 500 Bancroft Avenue  
 San Leandro, California

**PLATE**

P-5

DEPTH IN FEET	Blows/ Ft.	Sample No.	USCS	DESCRIPTION	WELL CONST.
0				Asphalt over sandy gravel.	
2			CL	Silty clay, dark brown-black, damp, medium plasticity.	
4			CL	Sandy clay, brown, damp, medium plasticity, hard.	
6	42	S-6		Some fine-grained gravel, OVM = 0ppm.	
10	16	S-10.5		Low plasticity, OVM = 0ppm.	
16	27	S-16	SP	Sand, fine- to coarse-grained and fine-grained gravel, brown, moist, medium dense, OVM = 0ppm.	
18			ML	Clayey silt, brown, moist, low plasticity, very stiff.	
22	27	S-21	CH	Silty clay, gray-green, moist, medium to high plasticity, very stiff, OVM = 0ppm.	
26	44			No sample recovered.	
28			CL	Silty clay, gray-green, moist, low to medium plasticity, very stiff.	
30				(Section continues downward)	



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**LOG OF BORING B-2/MW-2**  
 UNOCAL Station No. 5367  
 500 Bancroft Avenue  
 San Leandro, California

PLATE  
**P - 4**

PROJECT NO. 87091-3

Blows/ Ft.	Sample No.	USCS	DESCRIPTION	WELL CONST.
30				
34	S-30.5	CL	Silty clay, gray-green, moist, low to medium plasticity, very stiff, OVM = 280ppm.	
32				
34				
45	S-35.5		Green-brown, very moist, OVM = 3ppm.	
36				
38				
40	36		Sandy clay, trace fine-grained gravel, brown, wet, low plasticity, OVM = 0ppm.	
42				
44				
46	33		OVM = 0ppm.	
48				
50			Total Depth = 48 feet.	



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**PROJECT NO. 87091-3**

**LOG OF BORING B-2/MW-2**  
 UNOCAL Station No. 5367  
 500 Bancroft Avenue  
 San Leandro, California

PLATE  
**P - 5**

Blows/ Ft.	Sample No.	USCS	DESCRIPTION	WELL CONST.
0			Concrete.	
		ML	Clayey silt, dark gray, slightly damp.	
2		CL	Silty clay, trace of fine-grained sand, brown, damp, low plasticity, very stiff.	
4				
6	28	S-6	Lenses of fine-grained silty sand, OVM = 0ppm.	
8				
10	16	S-11	Sand, coarse-grained and fine-grained gravel, moist, medium dense, OVM = 0ppm.	
12		ML	Clayey silt, trace fine-grained gravel, green-brown, moist, low plasticity, stiff.	
14				
16	13	S-16	OVM = 0ppm.	
18				
20	18	S-21	Silty clay, some fine-grained sand, green, moist, medium plasticity, stiff. OVM = 5ppm.	
22				
24				
26	48	S-26	Brown, low plasticity, OVM = 55ppm.	
28				
30		CL	Silty clay, brown, low plasticity.	

(Section continues downward)



41275 Mission Blvd Suite B Fremont, CA 94538-4315-1906

**LOG OF BORING B-3/MW-3**  
 UNOCAL Station No. 5367  
 500 Bancroft Avenue  
 San Leandro, California

PLATE  
**P - 6**

PROJECT NO. **87091-3**

DEPTH IN FEET	Blows/ Ft.	Sample No.	USCS	DESCRIPTION	WELL CONST.
30	25	S-30.5	CL	Silty clay, brown, low plasticity, OVM = 20ppm.	
32					
34					
36	33	S-36		Trace of gravel, OVM = 365ppm.	
38					
40	17	S-40	▼ =	Wet, OVM = .10ppm.	
42					
44			ML	Clayey silt, some fine-grained sand, gray-brown, moist, low plasticity, stiff.	
46	27	S-46		OVM = 160ppm.	
48					
50				Total Depth = 48 feet.	



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**LOG OF BORING B-3/MW-3**  
UNOCAL Station No. 5367  
500 Bancroft Avenue  
San Leandro, California

PLATE  
**P - 7**

PROJECT NO. **87091-3**

Blows/ Ft.	Sample No.	USCS	DESCRIPTION	WELL CONST.
0		MH	Clayey silt, dark brown, damp, high plasticity.	
2		CL	Sandy clay, light brown, dry, low plasticity, hard.	
6	S-6		OVM = Oppm.	
10	S-11		Brown-dark brown, moist, medium plasticity, OVM = Oppm.	
16	S-16	SM	Clayey sand, trace of fine-grained gravel, brown, medium dense, OVM = Oppm.	
18		CL	Silty clay, light brown, very moist, medium to high plasticity, very stiff.	
20	S-21		OVM = Oppm.	
26	S-26		Medium brown, hard, OVM = Oppm.	



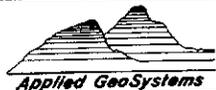
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**PROJECT NO. 87091-3**

**LOG OF BORING B-4/MW-4**  
 UNOCAL Station No. 5367  
 500 Bancroft Avenue  
 San Leandro, California

PLATE  
**P - 8**

DEPTH IN FEET	Blows/ Ft.	Sample No.	USCS	DESCRIPTION	WELL CONST.
30	28	S-30.5			
32			SM	Silty sand, some fine-grained gravel, gray-brown, medium dense.	
34			CL	Sandy clay, fine-grained, some gravel, light brown, very moist, low to medium plasticity, very stiff.	
36	23	S-36		OVM = 0ppm.	
40	27	S-40		Trace fine-grained gravel, brown, wet, OVM = 0ppm.	
42					
44					
46	33	S-45.5		Some sand, light brown, wet, low plasticity, OVM = 0ppm.	
48	Total Depth = 48 feet.				
50					



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PROJECT NO. 87091-3

**LOG OF BORING B-4/MW-4**  
UNOCAL Station No. 5367  
500 Bancroft Avenue  
San Leandro, California

PLATE  
**P - 9**

Total depth of boring: 46-1/2 feet Diameter of boring: 8 inches Date drilled: 5-15-89  
 Casing diameter: 2 inches Length: 45 feet Slot size: 0.020-inch  
 Screen diameter: 2 inches Length: 20 feet Material type: Sch 40 PVC  
 Drilling Company: HEW Drilling, Inc. Driller: \_\_\_\_\_  
 Method Used: Hollow-Stem Auger Field Geologist: James Orr

Depth	Sample No.	BLOWS	OVM	USCS Code	Description	Well Const.
0					Asphalt (6 inches).	
2				CL	Silty clay, dark brown, damp, medium plasticity, loose.	
4				CL	Sandy clay, brown, damp, low plasticity, very stiff, remnant root holes.	
6	S-6	6 14 16	1.0			
10						
12	S-11	4 7 5	1.0		Layers of sand and fine-grained gravel.	
16	S-16	2 3 5	1.0	SP	Fine-grained sand, light brown, moist, loose, remnant root holes.	
20				ML	Clayey silt, brown, moist, medium plasticity, stiff.	
20	S-16	2 4 5	1.2			

(Section continues downward)



PROJECT NO. 87091-4

**LOG OF BORING B-5/MW-5**  
 Unocal Station No. 5367  
 500 Bancroft Avenue  
 San Leandro, California

PLATE  
**5**

Depth	Sample No.	Blows	OVM	USCS Code	Description	Well Const.
22				ML	Clayey silt, brown, moist, medium plasticity, stiff.	
24				ML	Sandy silt, brown, moist, low plasticity, stiff.	
26	S-26	2 6 7	1.0			
28						
30	S-31	5 10 14	1.0	CL	Silty clay, light brown, damp, medium plasticity, very stiff.	
32						
34						
36	S-36	5 10 17	0.8		Layers of saturated fine-grained sand and damp silty clay.	
38						
40	S-41	9 14 19	0.8	SC	Clayey sand, trace gravel, brown, damp, medium plasticity, hard.	
42						
44						
46	S-48	7 7 12	0.8		Layers of saturated sand and damp sandy clay.	
48					Total Depth = 46-1/2 feet.	
50						



PROJECT NO. 87091-4

**LOG OF BORING B-5/MW-5**

Unocal Station No. 5367  
500 Bancroft Avenue  
San Leandro, California

PLATE

6

Total depth of boring: 46-1/2 feet Diameter of boring: 8 inches Date drilled: 5-15-89  
 Casing diameter: 2 inches Length: 45 feet Slot size: 0.020-inch  
 Screen diameter: 2 inches Length: 20 feet Material type: Sch 40 PVC  
 Drilling Company: HEW Drilling, Inc. Driller: Anibal  
 Method Used: Hollow-Stem Auger Field Geologist: James Orr

Depth	Sample No.	Blows	OVM	USCS Code	Description	Well Const.
0				CL	Silty clay, brown, damp, medium plasticity, very stiff, some organic material.	
2						
4						
6	S-6	5 9 12	1.2			
8						
10				SC	Clayey sand, brown-black, damp, loose.	
				SP	Gravelly sand, brown, damp, loose.	
12	S-11	6 2 3	0.0	CL	Silty clay, medium brown, moist, medium plasticity, medium stiff.	
				SP	Sand, brown, moist, medium plasticity, medium dense.	
14						
16	S-18	4 5 6	0.0			
18						
20	S-21	2 3 4	0.5	CL	Silty clay, brown, damp, medium plasticity, medium stiff, remnant root holes.	



PROJECT NO. 87091-4

**LOG OF BORING B-6/MW-6**  
 Unocal Station No. 5367  
 500 Bancroft Avenue  
 San Leandro, California

**PLATE**  
**7**

Depth	Sample No.	Blows	OVM	USCS Code	Description	Well Const.
-22				CL	Silty clay, brown, damp, medium plasticity, medium stiff, remnant root holes.	
-24						
-26	S-26	5 20 20	0.5			
-28				ML	Clayey silt, brown, damp, low plasticity, stiff, remnant root holes.	
-30						
-32	S-31	4 5 5	0.3			
-34				▼ =		
-36	S-35.5	6 11	0.3	SM	Silty sand, brown, wet, medium dense.	
-38						
-40						
-42	S-41	4 6 6	0.3	SC	Clayey sand, brown, damp, low plasticity, medium dense.	
-44						
-46	S-48	4 8 13	0.1			
-48					Total Depth = 46-1/2 feet.	
-50						



PROJECT NO. 87091-4

**LOG OF BORING B-6/MW-6**

Unocal Station No. 5367  
500 Bancroft Avenue  
San Leandro, California

PLATE

8

Total depth of boring: 44 feet Diameter of boring: 8 inches Date drilled: 2-7-90  
 Casing diameter: 2 inches Length: 44 feet Slot size: 0.020-inch  
 Screen diameter: 2 inches Length: 20 feet Material type: Sch 40 PVC  
 Drilling Company: HEW Drilling, Inc. Driller: Tomas and Perfecto  
 Method Used: Hollow-Stem Auger Field Geologist: Russell Bak

Depth	Sample No.	Blows	OVN	USCS Code	Description	Well Const.
0						
2				CL	Silty clay, dark brown, damp, medium to high plasticity, very stiff.	
4					Layers of sand and fine-grained gravel.	
6	S-5.5	8 14	0.2			
8						
10	S-10.5	8 14	0.2		Sandy clay, trace gravel, brown, medium plasticity.	
12						
14						
16	S-16	3 10	0.2			
18						
20	S-21	6 9 13	0			

(Section continues downward)



PROJECT NO. 87091-4

**LOG OF BORING B-7/MW-7**

Unocal Station No. 5367  
 500 Bancroft Avenue  
 San Leandro, California

PLATE

9

Depth	Sample No.	Blows	OVM	USCS Code	Description	Well Const.
-22				CL	Sandy clay, trace gravel, brown, damp, medium plasticity, stiff to hard.	
-24						
-26	S-26	16 33 36	0		Increase in sand.	
-28						
-30		9 15 16	0		Trace sand.	
-32		5 7 18	0			
-34	S-33.5		0			
-36	S-36	14 21 30	0		Some gray-green mottling.	
-38		5 9 14	0			
-40		18 34 55	0			
-42	S-41		0			
-44	S-43.5	20 44 45	0		Silty clay, trace sand and gravel.	
					Total Depth = 44 feet.	
-46						
-48						
-50						



PROJECT NO. 87091-4

**LOG OF BORING B-7/MW-7**

Unocal Station No. 5367  
500 Bancroft Avenue  
San Leandro, California

PLATE

10

Total depth of boring: 44 feet Diameter of boring: 8 inches Date drilled: 2-6-90  
 Casing diameter: 2 inches Length: 44 feet Slot size: 0.020-inch  
 Screen diameter: 2 inches Length: 20 feet Material type: Sch 40 PVC  
 Drilling Company: HEW Drilling, Inc. Driller: Tomas and Perfecto  
 Method Used: Hollow-Stem Auger Field Geologist: Russell Bak

Depth	Sample No.	Blows	OVM	USCS Code	Description	Well Const.
0					Concrete ( 3 inches).	
2				CL	Silty clay, medium brown to tan, damp, medium plasticity, very stiff to hard.	
6	S-6	12 20 27	1.7		Layers of fine-grained sand and silt.	
12	S-11	10 13 20	0.8		Tan to brown, moist.	
16	S-16	5 19 13	1.1		Low plasticity.	
20	S-21	8 13 15	0.4			

(Section continues downward)



PROJECT NO. 87091-4

**LOG OF BORING B-8/MW-8**  
 Unocal Station No. 5367  
 500 Bancroft Avenue  
 San Leandro, California

PLATE  
 11

Depth	Sample No.	Blows	OVM	USCS Code	Description	Well Const.
-22				CL	Silty clay, tan to brown, moist, low plasticity, very stiff to hard.	
-24						
-26	S-26	8 28 32	1.1			
-28						
-30		8 13				
-32	S-31	18	6.3	ML	Silt, tan to brown, damp, low to medium plasticity, very dense, noticeable odor.	
-34						
-36	S-36	12 28 50	10.1	CL	Silty clay, trace rock fragments, brown, damp, medium plasticity, hard, trace mottling.	
-38		15 25				
-40	S-38.5	35	3.1	ML	Sandy silt, trace sand and gravel, brown, moist, low plasticity, hard, trace mottling.	
-42	S-41	20 25 38	1.3			
-44	S-43.5	9 11 20	3	GC	Clayey gravel, some sand, gray-brown, wet, dense.	
				CL	Sandy clay, trace gravel, brown, damp, low to medium plasticity, very stiff.	
					Total Depth = 44 feet.	
-46						
-48						
-50						



PROJECT NO. 87091-4

**LOG OF BORING B-8/MW-8**

Unocal Station No. 5367  
500 Bancroft Avenue  
San Leandro, California

PLATE

12

# GeoResearch

## FIELD LOG OF BORING

 BORING/WELL I.D. MW9  
 SHEET 1 OF 2

PROJECT NAME UNOCAL SAN LEANDRO		PROJECT NUMBER 9480600100	ELEVATION AND DATUM NA	REFERENCE NA
DRILLING COMPANY BAYLAND DRILLING		DRILLER KURT VOSS	DATE & TIME STARTED 12/16/94 11:20 AM	DATE & TIME COMPLETED 12/16/94
DRILLING EQUIPMENT METHOD CME-75	DIRECTION OF BORING <input checked="" type="checkbox"/> VERTICAL <input type="checkbox"/> SLANT _____ DEG. FROM VERT		TOTAL DEPTH OF BORING 45 FT.	
SIZE AND TYPE OF BIT 8" HOLLOW STEM AUGER		TOTAL NO. OF SAMPLES 1	BULK	SS 1
DRILLING FLUID NONE		WATER LEVEL	FIRST	AFTER HOURS
SAMPLER TYPECAL MOD DRIVING WT. 130 DROP 30"		HYDROGEOLOGIST/DATE MICHAEL GUY 12/16/94		CHECKED BY/DATE

DEPTH (FEET)	WELL		OVA (PPM)	SAMPLES			GRAPH. LOG	SOIL CLASS (USCS)	DESCRIPTION OF MATERIALS	REMARKS
	CONST CSG	FILL		NO.	TYPE	BLOWS /6"				
0							AF CL	ASPHALT SILTY CLAY, moderate yellowish-brown, stiff, moist, low to medium plasticity, minor fine to coarse sand. Becomes low plasticity at 4.5 ft.		
5										
10										
15										
20										
25									Becomes clay between 23-25 ft. and	

## FIELD LOG OF BORING

BORING/WELL I.D. MW9  
 SHEET 2 OF 2

PROJECT NAME UNOCAL SAN LEANDRO	PROJECT NUMBER 9480600100	HYDROGEOLOGIST MICHAEL GUY 12/16/94	CHECKED BY/DATE
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DEPTH (FEET)	WELL CONST		OVA (PPM)	SAMPLES			GRAPH. LOG	SOIL CLASS (USCS)	DESCRIPTION OF MATERIALS	REMARKS
	CSG	FILL		NO.	TYPE	BLOWS /6"				
0			0					CL	SILTY CLAY, yellowish-brown, stiff, moist, low plasticity, minor to coarse sand.	
30						2 3 5		ML	SILT, moderate yellowish-brown, stiff, <del>stiff</del>	
35										
40										
45										Boring terminated at 4 ft.



## FIELD LOG OF BORING

 BORING/WELL I.D. MW10

 SHEET 2 OF 2

PROJECT NAME UNOCAL SAN LEANDRO	PROJECT NUMBER 9480600100	HYDROGEOLOGIST MICHAEL GUY 4/6/95	CHECKED BY/DATE WARREN GROSS
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DEPTH (FEET)	WELL CONST		OVA (PPM)	SAMPLES			GRAPH. LOG	SOIL CLASS (USCS)	DESCRIPTION OF MATERIALS	REMARKS
	CSG	FILL		NO.	TYPE	BLOWS /6"				
30 35 40 45							CL		Boring terminated 45 ft bgs.	



## **Appendix B**

Generator Waste Manifest

<b>NON-HAZARDOUS WASTE MANIFEST</b>	1. Generator ID Number <b>NOT REQUIRED</b>	2. Page 1 of <b>1</b>	3. Emergency Response Phone <b>1-800-424-9300</b>	4. Waste Tracking Number <b>WR2761-001</b>		
5. Generator's Name and Mailing Address <b>Former Unocal 351563 PO Box 6004 - Chevron EMC Waste Desk San Ramon, CA 94583 Generator's Phone: 877 386-6044</b>		Generator's Site Address (if different than mailing address) <b>500 BANCROFT AVE SAN LEANDRO, CA 94578</b>				
6. Transporter 1 Company Name <b>Integrated Wastestream Management Inc.</b>			U.S. EPA ID Number <b>C A D 9 8 3 6 5 3 6 2 7</b>			
7. Transporter 2 Company Name			U.S. EPA ID Number			
8. Designated Facility Name and Site Address <b>WMI - Altamont 10840 Altamont Pass Rd Livermore, CA 94550 Facility's Phone: 925-455-7350</b>			U.S. EPA ID Number <b>C A D 9 8 1 3 8 2 7 3 2</b>			
9. Waste Shipping Name and Description		10. Containers		11. Total Quantity	12. Unit Wt./Vol.	
		No.	Type			
1. Non DOT Regulated Material (Construction, demolition debris, and soil, non-regulated)		<b>001</b>	<b>D M</b>	<b>500</b>	<b>P</b>	
2.						
3.						
4.						
13. Special Handling Instructions and Additional Information <b>9b1Wear Appropriate PPE WR-2761      ERG: N/A</b> <b>Wear Level "D" PPE, Wear Splash Protection if liquids present Profile # 623724CA - "Clean" Construction, demolition debris, and soil, non-regulated</b>						
14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.						
Generator's/Offeor's Printed/Typed Name <b>B F LEW Y I F R U</b>		Signature <i>[Signature]</i>		Month <b>9</b>	Day <b>4</b>	Year <b>15</b>
15. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.    Port of entry/exit: _____ Transporter Signature (for exports only): _____    Date leaving U.S.: _____						
16. Transporter Acknowledgment of Receipt of Materials						
Transporter 1 Printed/Typed Name <b>SCOTT DUNDON</b>		Signature <i>[Signature]</i>		Month <b>09</b>	Day <b>04</b>	Year <b>15</b>
Transporter 2 Printed/Typed Name		Signature		Month	Day	Year
17. Discrepancy						
17a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
Manifest Reference Number:						
17b. Alternate Facility (or Generator)				U.S. EPA ID Number		
Facility's Phone:						
17c. Signature of Alternate Facility (or Generator)				Month	Day	Year
18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a						
Printed/Typed Name		Signature		Month	Day	Year



## **Appendix C**

Well Completion Reports

**CONFIDENTIAL**

STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)

**REMOVED**

**CONFIDENTIAL**

STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)

**REMOVED**

**CONFIDENTIAL**

**STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)**

**REMOVED**

**CONFIDENTIAL**

STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)

**REMOVED**

**CONFIDENTIAL**

STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)

**REMOVED**

**CONFIDENTIAL**

STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)

**REMOVED**

**CONFIDENTIAL**

STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)

**REMOVED**

**CONFIDENTIAL**

STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)

**REMOVED**

**CONFIDENTIAL**

**STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)**

**REMOVED**

**CONFIDENTIAL**

STATE OF CALIFORNIA DWR  
WELL COMPLETION REPORT  
(WELL LOGS)

**REMOVED**