OST On-Site Technologies, Inc.

Engineers
Hydrogeologists

Report of Site Investigation

at

Desert Petroleum Service Station #795
2008 First Street
Livermore, CA

For:

John D. Rutherford
Desert Petroleum, Inc.
P.O. Box 1601
Oxnard, CA 93032

10-18-88

Project Number: 309-88-22
RD GX136.rpt

CONTENTS

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Date: October 18, 1988

Report of Hydrogeologic Site Investigation

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Desert Petroleum Service Station #795
2008 First Street
Livermore, California

I. INTRODUCTION

A. Site Location:

2008 First Street, Livermore, CA

B. Business:

Desert Petroleum Service Station
2008 First Street
Livermore, CA
Contact: John D. Rutherford (805) 644-6784

C. Site Description:

The facility is a motor vehicle refueling station.

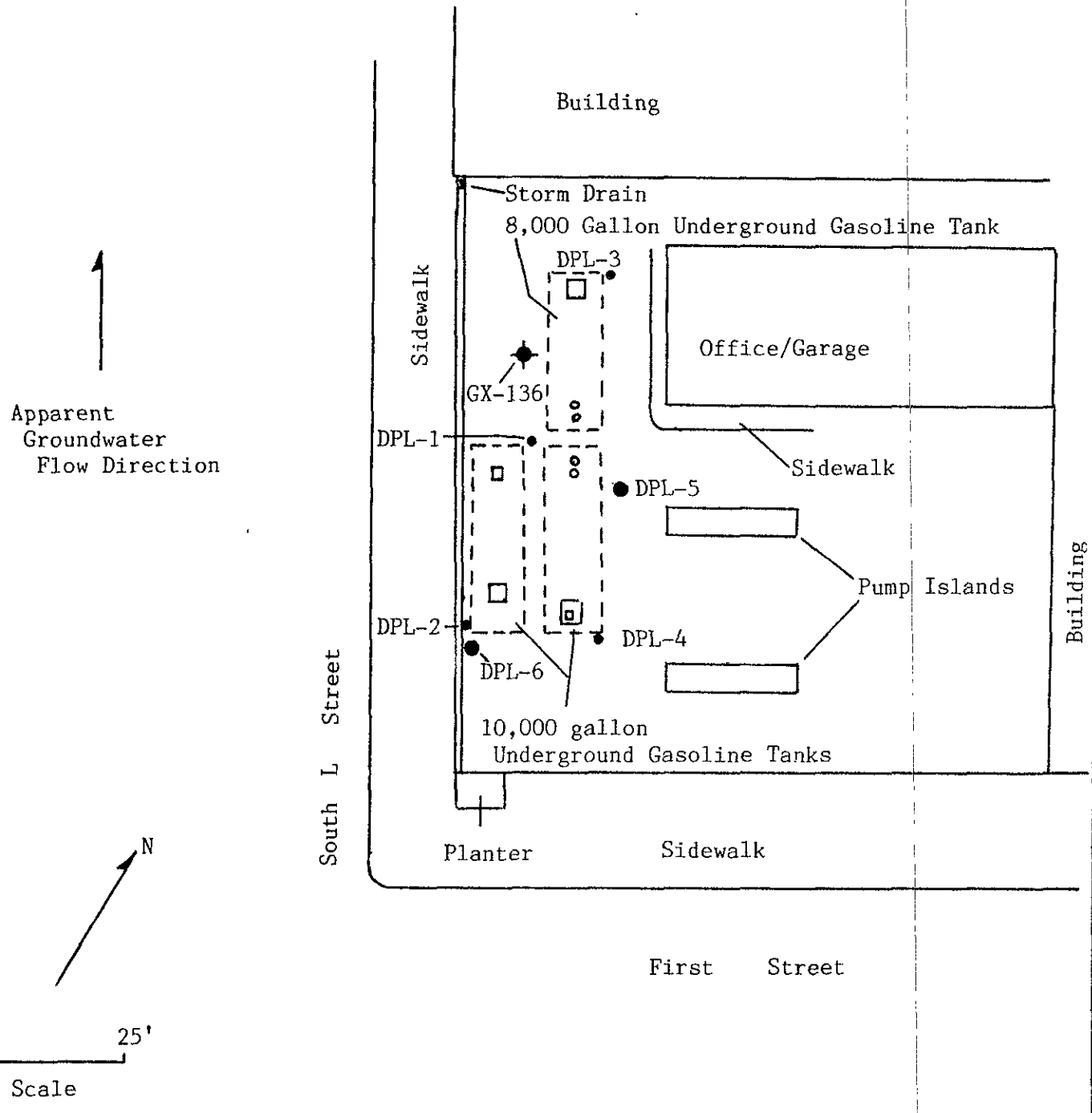
1. Site Map:

A site map illustrating the locations of underground storage tanks, the two soils borings, and one monitoring well is included as Figure 1.

D. Objective and Scope:

The purpose of the project was to investigate the condition of the soils and groundwater in the immediate vicinity of the underground gasoline storage tanks. The scope of the investigation was to drill two soil borings and install one groundwater monitoring well and to collect and analyze an appropriate number of soil and groundwater samples. This was considered to be the initial step toward a comprehensive site evaluation.

Underground Hazardous Materials Specialists
1715 S. Bascom Avenue • Campbell, CA 95008 • (408) 371-4810 • Fax (408) 371-2010



LEGEND:
- Soil Samples
- DPL- 1 thru 4 (5/20/88 Report) vapor wells
- Soil Borings DPL-5 & 6
- Water Well GX-136

Figure 1. Site Map
Desert Petroleum #795
2008 First Street
Livermore, CA

OST On-Site Technologies, Inc.
Suite 212
100 West Rincon Avenue
Campbell, CA 95008
(408) 374-9116

II. BACKGROUND

Contamination was identified at the site during the installation of vapor monitoring probes (DPL - 1 thru DPL - 4) on the underground gasoline tanks. Soil samples taken during the probe installation identified 400 PPM total volatile hydrocarbons (as gasoline) in a soil sample from probe DPL - 1. Soil samples from probes DPL - 3 and DPL - 4 did not indicate significant hydrocarbon contamination. Because the backfill of the 10,000 gallon gasoline tank nearest to L Street is pea gravel, we were unable to take a soil sample below probe DPL - 2. However a high vapor concentration (>13,000 PPM) was detected in this probe. These findings indicated the need for additional work at the site.

III. INVESTIGATIVE APPROACH

The investigative approach presented herein, consistent with the Regional Water Quality Control Board's (RWQCB) Guidelines for Addressing Fuel Leaks (September 1985), was submitted to the Alameda County Health Care Services, Department of Environmental Health in a proposal dated August 12, 1988.

Specifically proposed was the installation of a groundwater monitoring well located approximately 10 feet from the area where the highest hydrocarbon concentrations were detected and two other soil borings to take additional soil samples. The proposed location of the well is also in the apparent downgradient direction from the area of highest concentrations.

Figure 1 shows the location of the tanks, the four vapor probes/soil sample borings completed previously, and the groundwater well and two soil borings installed for this study. Since contamination was not evident until approximately 28 feet in the soil samples collected during drilling of the water well, a field decision was made to move the proposed location of DPL - 5 to a point farther away from the well. The new location of DPL -5 is approximately equidistant to the well and the DPL - 6 boring. The proposed location of DPL - 6 was also moved slightly because the original location was very close to one of the underground tanks.

A. Installation of Groundwater Monitoring Well and Borings:

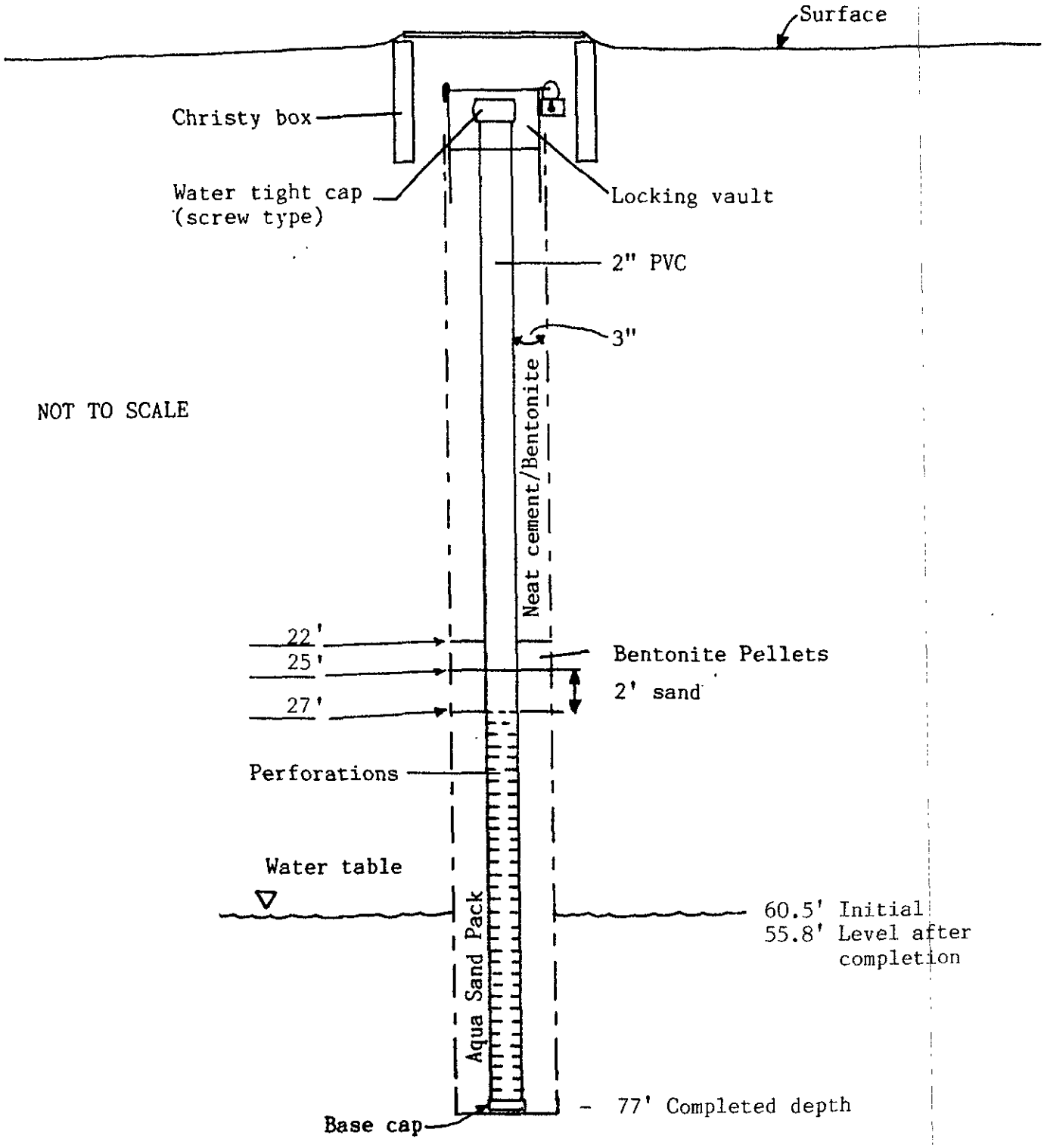
1. Well Locations and Borings:

The location of the monitoring well and two borings are shown on the site map, Figure 1.

2. Well Construction:

Monitoring well GX-136 was installed on September 22, 1988. Figure 2 is a schematic construction diagram which shows the construction details of the well. Construction of the groundwater monitoring well is in conformance with State Water Board Standards, specifically as provided in the "Guidelines for Addressing Fuel Leaks" by the RWQCB unless explicitly modified by the Alameda County Flood Control and Water Conservation District.

Figure 2 Well Construction Diagram



Specifically these standards are:

- The well was drilled with an 8 inch hollow stem auger.

- The bottom of the well was drilled approximately 16.5 ft into the saturated zone (depth where groundwater was first encountered).

- The casing was 2 inch PVC, perforated from the bottom of the well to approximately 33.5 ft above the top of where the saturated zone was first encountered (perforated from 27 to 77 ft).

- The slot size, based upon field examination of the soils from the aquifer horizon, was 0.020 in.

- The annular space around the well was packed with clean graded #3 aqua sand from the bottom to 2 ft above the perforated casing.

- The well was sealed with 3.0 ft of bentonite pellets above the sand followed by bentonite/neat cement grout.

- The wellhead was secured with a stovepipe type locking vault.

- Well identification information was affixed on the interior of the security structure as specified.

- Well construction was permitted and inspected by the Alameda County Flood Control and Water Conservation District.

- The well was developed by surging and bailing with a stainless steel bailer until turbidity had diminished and temperature and pH stabilized. Water produced during well development was stored in a 55 gallon drum for appropriate future disposal.

3. Soils Sampling for the Well and Soil Borings

- Soils sampled during drilling were collected, handled, and analyzed in accordance with State Water Quality Control Board and applicable EPA standards. Sampling frequency and analyses were consistent with the RWQCB Guidelines.

- Soils samples were taken during drilling using a split tube type drive sampler. Immediately after sampling, samples were appropriately sealed and refrigerated. Soil samples were taken starting from the point just below the elevation of the bottoms of the tanks (about 15 feet), at five foot intervals until the saturation zone was reached. All soil samples were analyzed for total petroleum hydrocarbons as gasoline plus BTEX.

- A detailed well construction report including the date of installation, drilling log, casing size and type, depth to water, screen interval, slot size, and surface sealing data is provided in this report.

- Soil cuttings obtained during drilling and groundwater produced during development and sampling of the well are stored on-site until laboratory analyses confirm whether or not these materials must be handled and disposed of as hazardous materials.

4. Groundwater Sampling:

A groundwater sample taken after well development was obtained, handled, and analyzed in accordance with State Water Quality Control Board and applicable EPA standards.

- The groundwater sample was taken after approximately 10 well volumes were removed from the well. Water produced during purging was stored in a 55-gallon drum for future disposal.

- After purging with a stainless steel bailer, the water sample was obtained with a teflon bailer and handled in a manner to minimize the loss of volatile constituents from the sample. Samples were collected in 40 ml. vials, immediately refrigerated and maintained in that condition until delivery to a State certified testing laboratory for the required analyses performed.

- Chain-of-custody documentation was maintained and copies are provided in this report.

B. Results

Laboratory results: (See attached laboratory analyses reports)

The soil and groundwater samples were analyzed by Trace Analysis Laboratory which is State certified for performing the required tests. Samples were tested for total petroleum hydrocarbons (as gasoline) plus BTEX. A summary of the laboratory results are presented in table 1 on page 9.

IV. SUMMARY/RECOMMENDATIONS

1. Detectable hydrocarbon concentrations were found in soils from the well and the two borings, see Figure 1 "Site Map" for hole locations.

- In soil boring DPL - 6 gasoline concentrations of 1,600 parts-per-million (PPM) were detected in a soil sample from a depth of 36 feet. All other soil samples taken during the sampling program tested at 100 PPM or less.

- Contamination was not detected at depths less than 26 feet in any of the borings.

2. Contamination was not detected in the groundwater sample taken at a depth of 55.8 ft from well GX-136. This may indicate that contamination may not be present in the groundwater at the site.

TABLE 1

Soil samples results:

Note: < means less than the detection limit.

Sample #	Depth (ft)	TPH as Gasoline (PPM)	Benzene (PPM)	Toluene (PPM)	Total Xylenes (PPM)	Ethyl/ benzene (PPM)
Water Well:						
GX136-1	16.0	<0.5	<0.03	<0.03	<0.07	<0.04
GX136-2A	23.5	<0.5	<0.03	<0.03	<0.07	<0.04
GX136-3	28.5	<0.5	<0.03	<0.03	<0.07	<0.04
GX136-4	33.5	31	0.14	0.87	4.70	0.74
GX136-5	38.5	72	<0.70	<0.70	4.00	<1.00
GX136-6	43.5	10	0.14	0.13	0.72	0.18
GX136-7	48.5	0.51	<0.03	<0.03	<0.07	<0.04
GX136-8	53.5	1.70	0.12	0.11	0.29	0.049
GX136-9	58.5	54	<0.70	<0.70	4.40	<1.00
Soil Borings:						
DPL 5-1	16.0	<0.50	<0.03	<0.03	<0.07	<0.04
DPL 5-2	21.0	<0.50	<0.03	<0.03	<0.07	<0.04
DPL 5-3	26.0	<0.50	<0.03	<0.03	<0.07	<0.04
DPL 5-4	31.0	33	0.71	1.70	6.20	0.77
DPL 5-5	36.0	8.5	0.054	1.10	2.00	0.23
DPL 5-6	41.0	0.80	0.097	0.10	0.13	<0.04
DPL 5-7	46.0	<0.50	<0.05	<0.05	<0.07	<0.04
DPL 6-1A	17.5	<0.50	<0.03	<0.03	<0.07	<0.04
DPL 6-2	21.0	<0.50	<0.03	<0.03	<0.07	<0.04
DPL 6-3	26.0	2.5	<0.03	<0.03	<0.07	<0.04
DPL 6-4	31.0	12	0.14	0.083	1.40	0.31
DPL 6-5	36.0	1600	<1.00	3.70	32	5.30
DPL 6-6	41.0	11	0.035	<0.03	<0.07	<0.04
DPL 6-7	46.0	100	<0.70	<0.70	4.80	<1.00

Groundwater sample results:

Sample #	Depth (ft)	TPH as Gasoline (PPB)	Benzene (PPB)	Toluene (PPB)	Total Xylenes (PPB)	Ethyl/ benzene (PPB)
GX136-1W	55.8	<7.0	<0.3	<0.3	<0.5	<0.3

3. Recommendations for Further Investigation to Define the Lateral and Vertical Extent of Contamination.

A. Drill one additional water well near DPL - 6 where the highest level of soil contamination was found.

B. Provide comprehensive report of results including recommendations for further work for remedial action to Alameda County Flood Control and Water Conservation District and Regional Water Quality Control Board (RWQCB), and the Alameda Department of Environmental Health.

V. REPORTING

A copy of this report including results of laboratory analyses should be sent to the Alameda County Flood Control and Water Conservation District, the State Regional Water Quality Control Board, San Francisco Bay Region, and the Alameda Department of Environmental Health in the provided format.

VI. CERTIFICATION

To the best of our knowledge, all statement above are true and correct.

Prepared by:

Roger D. Dockter
Senior Geologist

Reviewed by:

Ashok K. Verma, Ph.D.
Senior Hydrogeologist/Engineer

VII. DISTRIBUTION

Regional Water Quality Control Board
San Francisco Bay Region
1111 Jackson St., Room 6040
Oakland, CA 94607
Attn.: Ms. Leslie Fergerson

Mr. Wyman Hong
Alameda County Flood Control and Water Conservation District
5997 Parkside Drive
Pleasanton, CA 94566

Ms. Lizabeth Rose
Alameda County Health Care Services
Department of Environmental Health
80 Swan Way
Room 200
Oakland, CA 94621

APPENDIX

Well Installation Report

Well Owner: Desert Petroleum, Inc. Permit #: 88438
Address: 2008 First Street City: Livermore, CA
Well #: GX-136 Well Type: Water monitoring well Date installed: 9/22/88
MW-1

Gravel Pack:
Type: 3 Aqua sand From: 77.0 ft to: 25.0 ft Diameter of bore: 8.0 in.

Casing Installed:
Type: Plastic From: 0.0 ft to: 77.0 ft Diameter: 2.0 in.

Perforations:
Slot size: 0.020 in. From: 77.0 ft to: 27.0 ft

Surface Seal:
From: 0.0 ft to: 25.0ft Method of sealing: 3.0 ft bentonite at base followed by bentonite/cement grout to surface.

Bottom Seal: From: None

Water Levels: Depth to first water: 60.5 ft Level after completion: 55.8 ft

Well Log

Total depth: 77.0 ft Completed depth: 77.0 ft

	Description
0.0 - 1.0	Asphalt (4") and basefill (8')
1.0 - 3.0	Sand and gravel, silty
3.0 - 7.0	Sand, silty, fine (SM), 10YR6/2 & 10YR5/4, with scattered granules and pebbles.
7.0 -15.0	Gravel (GC) with clay silt matrix. Clasts to 2". Decrease in size to 0.5" at 9' and 0.25" at 12'.
15.0 -18.0	Sand, silty, fine with scattered pebbles (SM), 10YR4/4 & 10YR3/4. Sample GX136-1 taken at 16.0' (5/.5, 4/.5, 5/.5).
18.0 -22.5	Gravel (GC) with a silty clay matrix, 10YR4/4, clasts to 1". Sample GX136-2 taken at 21.0' (26/.5, 25/.5, 28/.5). Rock only, no recovery.
22.5 -26.0	Sand and Gravel (GP), Wet on rock surfaces with sewage odor. Sample GX136-2A at 23.5' (9/.5, 18/.5, 30/.5).
26.0 -33.0	Gravel with silty clay matrix (GC), 10YR4/4, clasts to 1.5". Sample GX136-3 at 28.5' (7/.5, 20/.5, 34/.5). Matrix is 10YR6/2 at 28'. Unit predominatly sand (SM) between 31 and 33'.

33.0 -38.0	Clay, silty with pebbles (CL), 10YR4/2.
38.0 -54.0	Gravel with silty clay matrix (GC), 5Y6/1, clasts <0.5". Sample GX136-5 taken at 38.5' (16/.5, 17/.5, 19/.5). Sample GX136-6 taken at 43.5' (10/.5, 13/.5,32/.5). Unit color is 10YR4/2 at 46'. Sample GX136-7 taken at 48.5' (19/.5, 44/.5, 46/.5). Unit color is 5Y6/1 at 48'. Sample GX136-8 taken at 53.5' (19/.5, 24/.5, 27/.5).
54.0 -60.5	Sand, Clayey with pebbles (SC), 10YR6/1 & 10YR5/6. Sample GX136-9 taken at 58.5 (5/.5, 7/.5, 12/.5). Water at 60.5'.
60.5 -77.0	Sand and gravels, no cuttings returned to surface.

Note - Well developed and water sample GX136-1W taken at 55.8' (standing level of water after well completion). Hydrocarbon odors detected in drill cuttings from approximately 26' to 60'.

Borehole Logs

Borehole	Interval (in ft)	Description
DPL-5	0.0 - 1.0	Asphalt (0.33'), Basefill (0.67')
	1.0 - 8.0	Sand and gravel, clayey (GC), 10YR3/2, unit contains brick fragments.
	8.0 - 15.0	Gravel (GC), clasts up to 1.5 inches decreaseing in size to .25 inches at 14.0'. Moist at 14.0'
	15.0 - 18.0	Sand (SM), with silty clay matrix, Mottled color, 10YR5/3 and 10YR4/6. Sample DPL5-1 taken at 16.0' (2/.5, 2/.5, 5/.5).
	18.0 - 30.0	Sand and gravel (GC), with silty clay matrix, 10YR4/4. Sample DPL5-2 at 21.0' (23/.5, 27/.5, 31/.5). Color 5GY5/1 at 21.5 and unit has a sewage odor. Zones of pea gravel occur above 21.5'. Sample DPL2-3 at 26.0' (9/.5, 21/.5, 27/.5). Unit becomes coarser at 27 -28'.
	30.0 - 46.5	Sand, sand and gravels, and gravels. Alternating zone with a fine clayey sand at 30', 10YR4/3. Gravel zones occur at 31.0', 40.0', and 42.0' and are less than 1 foot thick. Sample DPL5-4 taken at 31.0' (4/.5, 4/.5, 6/.5). Sample DPL5-5 taken at 36.0' (10/.5, 4/.5, 7/.5). Sample DPL5-6 taken at 41.0' (11/.5, 20/.5, 23/.5). Sample DPL5-7 taken at 42.0' (9/.5, 19/.5, 38/.5) Samples below 30' had hydrocarbon odors.
DPL-6	0.0 - 0.25	Asphalt
	0.25- 40.0	Silt, clayey (SC), 10YR3/2, with brick fragments to 9.0'. Color is 5Y4/1 at 9.0' with hydrocarbon odor, 10Y4/2 at 13.0' with no odor. Sample DPL6-1 taken at 16.0', but was not recovered. Alternate sample DPL6-1A taken at 17.5' (4/.5, 8/.5, 13/.5). Mottled color at 20', 10YR5/3 and 10YR4/6. Sample DPL6-2 taken at 21.0' (16/.5, 22/.5, 9/.5). Sample DPL6-3 taken at 26.0' (3/.5, 4/.5, 7/.5). Sample DPL6-4 at 31.0' (4/.5, 7/.5, 9/.5), unit color is 5Y4/1 and 10YR4/4. Color is 5GY4/1 at 32'. Sample DPL6-5 taken at 36.0' (3/.5, 4/.5, 5/.5).

DPL-6 (continued next page)

Borehole Logs (cont.)

Borehole	Interval (in ft)	Description
DPL-6	40.0 - 46.0	Gravel, sandy, clayey (GC), matrix color is 5GY4/1, gravel clasts are up to 1.5 inches. Sample DPL6-6 taken at 41.0' (15/.5, 24/.5, 32/.5).
	46.0 - 46.5	Sand (SC), 5GY4/1, moist. Sample DPL6-7 taken at 46.0' (19/.5, 15/.5, 10/.5). Hydrocarbon odors noted in samples below 26.0'

Note - Boreholes were sealed with 3 feet of bentonite pellets at the bottom of the hole with a cement/bentonite mixture to 1 foot below the surface. A 1 foot thick concrete plug was installed at the surface.

Trace Analysis Laboratory, Inc.
3423 Investment Boulevard, #8 • Hayward, California 94545 (415) 783-6960

TAL

DATE: 10/13/88

LOG NO.: 6438

DATE SAMPLED: 9/22/88, 9/23/88 and 9/27/88

DATE RECEIVED: 9/27/88

CUSTOMER: On-Site Technologies, Inc.

REQUESTER: Roger Dockter

PROJECT: No. 309-88-22, Desert Petroleum, 2008 1st Street, Livermore, CA

Sample Type: Soil

Method and Constituent	Units	GX136-1 Concentration	GX136-1 Detection Limit	GX136-2A Concentration	GX136-2A Detection Limit	GX136-3 Concentration	GX136-3 Detection Limit
DHS Method:							
Total Petroleum Hydrocarbons as Gasoline	ug/kg	< 500	500	< 500	500	< 500	500
Modified EPA Method 8020:							
Benzene	ug/kg	< 30	30	< 30	30	< 30	30
Toluene	ug/kg	< 30	30	< 30	30	< 30	30
Xylenes	ug/kg	< 70	70	< 70	70	< 70	70
Ethyl Benzene	ug/kg	< 40	40	< 40	40	< 40	40

DATE: 13/88
LOG NO.: 6438
DATE SAMPLED: 9/22/88, 9/23/88 and 9/27/88
DATE RECEIVED: 9/27/88
PAGE: Two

Sample Type: Soil

Method and Constituent	Units	GX136-4 Concentration	GX136-4 Detection Limit	GX136-5 Concentration	GX136-5 Detection Limit	GX136-6 Concentration	GX136-6 Detection Limit
DHS Method:							
Total Petroleum Hydrocarbons as Gasoline	ug/kg	31,000	500	72,000	7,000	10,000	500
Modified EPA Method 8020:							
Benzene	ug/kg	140	30	< 700	700	140	30
Toluene	ug/kg	870	30	< 700	700	130	30
Xylenes	ug/kg	4,700	70	4,000	2,000	720	70
Ethyl Benzene	ug/kg	740	40	< 1,000	1,000	180	40

		GX136-7		GX136-8		GX136-9	
DHS Method:							
Total Petroleum Hydrocarbons as Gasoline	ug/kg	510	500	1,700	500	54,000	7,000
Modified EPA Method 8020:							
Benzene	ug/kg	< 30	30	120	30	< 700	700
Toluene	ug/kg	< 30	30	110	30	< 700	700
Xylenes	ug/kg	< 70	70	290	70	4,400	2,000
Ethyl Benzene	ug/kg	< 40	40	49	40	< 1,000	1,000

		DPL5-1		DPL5-2		DPL5-3	
DHS Method:							
Total Petroleum Hydrocarbons as Gasoline	ug/kg	< 500	500	< 500	500	< 500	500
Modified EPA Method 8020:							
Benzene	ug/kg	< 30	30	< 30	30	< 30	30
Toluene	ug/kg	< 30	30	< 30	30	< 30	30
Xylenes	ug/kg	< 70	70	< 70	70	< 70	70
Ethyl Benzene	ug/kg	< 40	40	< 40	40	< 40	40

DATE: 10/13/88
LOG NO.: 6438
DATE SAMPLED: 9/22/88, 9/23/88 and 9/27/88
DATE RECEIVED: 9/27/88
PAGE: Three

Sample Type: Soil

Method and Constituent	Units	DPL5-4 Concentration	DPL5-4 Detection Limit	DPL5-5 Concentration	DPL5-5 Detection Limit	DPL5-6 Concentration	DPL5-6 Detection Limit
DHS Method:							
Total Petroleum Hydrocarbons as Gasoline	ug/kg	33,000	500	8,500	500	800	500
Modified EPA Method 8020:							
Benzene	ug/kg	710	30	54	30	97	30
Toluene	ug/kg	1,700	30	1,100	30	100	30
Xylenes	ug/kg	6,200	70	2,000	70	130	70
Ethyl Benzene	ug/kg	770	40	230	40	< 40	40

Method and Constituent	Units	DPL5-7 Concentration	DPL5-7 Detection Limit	DPL6-1A Concentration	DPL6-1A Detection Limit	DPL6-2 Concentration	DPL6-2 Detection Limit
DHS Method:							
Total Petroleum Hydrocarbons as Gasoline	ug/kg	< 500	500	< 500	500	< 500	500
Modified EPA Method 8020:							
Benzene	ug/kg	< 50	50	< 30	30	< 30	30
Toluene	ug/kg	< 50	50	< 30	30	< 30	30
Xylenes	ug/kg	< 70	70	< 70	70	< 70	70
Ethyl Benzene	ug/kg	< 40	40	< 40	40	< 40	40

Method and Constituent	Units	DPL6-3 Concentration	DPL6-3 Detection Limit	DPL6-4 Concentration	DPL6-4 Detection Limit	DPL6-5 Concentration	DPL6-5 Detection Limit
DHS Method:							
Total Petroleum Hydrocarbons as Gasoline	ug/kg	2,500	500	12,000	500	1,600,000	10,000
Modified EPA Method 8020:							
Benzene	ug/kg	< 30	30	140	30	< 1,000	1,000
Toluene	ug/kg	< 30	30	83	30	3,700	1,000
Xylenes	ug/kg	< 70	70	1,400	70	32,000	2,000
Ethyl Benzene	ug/kg	< 40	40	310	40	5,300	1,000

DATE: 10/13/88
LOG NO.: 6438
DATE SAMPLED: 9/22/88, 9/23/88 and 9/27/88
DATE RECEIVED: 9/27/88
PAGE: Four

Sample Type: Soil

Method and Constituent	Units	DPL6-6 Concentration	DPL6-6 Detection Limit	DPL6-7 Concentration	DPL6-7 Detection Limit
DHS Method:					
Total Petroleum Hydrocarbons as Gasoline	ug/kg	11,000	500	100,000	7,000
Modified EPA Method 8020:					
Benzene	ug/kg	35	30	< 700	700
Toluene	ug/kg	< 30	30	< 700	700
Xylenes	ug/kg	< 70	70	4,800	2,000
Ethyl Benzene	ug/kg	< 40	40	< 1,000	1,000

DATE: 10/13/88
LOG NO.: 6438
DATE SAMPLED: 9/22/88, 9/23/88 and 9/27/88
DATE RECEIVED: 9/27/88
PAGE: Five

Sample Type: Water

Method and Constituent	Units	GX136-1W Concentration	GX136-1W Detection Limit
DHS Method:			
Total Petroleum Hydrocarbons as Gasoline	ug/l	< 7	7
Modified EPA Method 8020:			
Benzene	ug/l	< 0.3	0.3
Toluene	ug/l	< 0.3	0.3
Xylenes	ug/l	< 0.5	0.5
Ethyl Benzene	ug/l	< 0.3	0.3

Hugh R. McLean
Supervisory Chemist

HRM:mln

1715 S. Bascom Avenue
Campbell, California 95008

OST On-Site Technologies, Inc. (408) 371-4810

TO: TAL
(Laboratory Name)

CHAIN OF CUSTODY RECORD

Attention: Roger Dockter

Project Number	Site Name & Address
309-88-22	DESERT PETROLEUM 2008 1st St. Livermore CA

SAMPLERS: (Signature) Roger Dockter

Sample No.	Date	Time	Soil	Water	Location of Sample	No. of containers	Analyses requested: TPH as gas +BTEX*	TPH as Diesel*	VOC - EPA 8240*	TOG - EPA 503E*	Waste Oil Suite* TPH (High Boilers) Total Oil & Grease EPA 8240 plus identify 10 highest peaks.	REMARKS
GX136-1	9/22/88	8:30			Water well @ 16'	1	X					
GX136-2A		9:15			" " " 23.5	1	X					
GX136-3		9:25			" " " 28.5	1	X					
GX136-4		9:40			" " " 33.5	1	X					
GX136-5		9:59			" " " 38.5	1	X					
GX136-6		10:30			" " " 43.5	1	X					
GX136-7		11:15			" " " 48.5	1	X					
GX136-8		12:00			" " " 53.5	1	X					
GX136-9		1:30			" " " 58.5	1	X					

Relinquished by: (signature)	Date/Time	Received by: (signature)	Relinquished by: (signature)	Date/Time	Received by: (signature)
Relinquished by: (signature)	Date/Time	Received by: (signature)	Relinquished by: (signature)	Date/Time	Received by: (signature)
Relinquished by: (signature) Roger Dockter	Date/Time 9/27/88 3:15 pm	Received for LABORATORY by: (signature) TAL	Date/Time 9/27/88 3:15	Remarks: Lead Region 3 detection levels 10-day TAT	*Per RWQCB Guidelines Benzene 50 ppb T, X, E 100 ppb TPH 1,000 ppb

1715 S. Bascom Avenue
Campbell, California 95008

TO: TAL
(Laboratory Name)

OST On-Site Technologies, Inc. (408) 371-4810

CHAIN OF CUSTODY RECORD

Attention: Roger Dockter

Project Number	Site Name & Address
309-88-22	DESERT PETROLEUM LIVERMORE, CA 2008 1st St.

SAMPLERS:(Signature) Roger Dockter

Sample No.	Date	Time	Soil	Water	Location of Sample	No. of containers	Analyses requested: TPH as gas +BTEX*	TPH as Diesel*	VOC - EPA 8240*	TOG - EPA 503E*	Waste Oil Suite* TPH (High Boilers) Total Oil & Grease EPA 8240 plus identify 10 highest peaks.	REMARKS
DPL 5-1	9/23/88	9:00			Soil boring #5 @ 16'	1	X					
DPL 5-2		9:20			" " " " 21'	1	X					
DPL 5-3		9:35			" " " " 26'	1	X					
DPL 5-4		9:50			" " " " 31'	1	X					
DPL 5-5		10:30			" " " " 36'	1	X					
DPL 5-6		11:00			" " " " 41'	1	X					
DPL 5-7		11:30			" " " " 46'	1	X					
DPL 6-1A		12:30			Soil boring #6 @ 17.5'	1	X					
DPL 6-2		1:00			" " " 21'	1	X					
DPL 6-3		1:20			" " " 26'	1	X					
DPL 6-4		1:45			" " " 31'	1	X					
DPL 6-5		2:15			" " " 36'	1	X					
DPL 6-6		2:45			" " " 41'	1	X					
DPL 6-7	↓	3:00			" " " 46'	1	X					

Relinquished by:(signature)	Date/Time	Received by:(signature)	Relinquished by:(signature)	Date/Time	Received by:(signature)
Relinquished by:(signature)	Date/Time	Received by:(signature)	Relinquished by:(signature)	Date/Time	Received by:(signature)
Relinquished by:(signature) Roger Dockter	Date/Time 9/21/88 3:15	Received for LABORATORY by: (signature) TAL	Date/Time 9/27/88 3:15	Remarks Need Reporting limits detection levels 10-day TAT	*Per RWQCB Guidelines B, T, X, E ... ppb TPH ... 1,000 ppm

1715 S. Bascom Avenue
Campbell, California 95008

TO: Trace Analysis
(Laboratory Name)

OST On-Site Technologies, Inc. (408) 371-4340

CHAIN OF CUSTODY RECORD

Attention: Roger Dockter

Project Number	Site Name & Address
309-88-22	Desert Petroleum 2008 1st. St. Livermore, CA

SAMPLERS: (Signature) Tom Hoffman

Sample No.	Date	Time	Soil	Water	Location of Sample	No. of containers	Analyses requested: TPH as gas +BTEX*	TPH as Diesel*	VOC - EPA 8240*	TOG - EPA 503E*	Waste Oil Suite*	TPH (High Boilers)	Total Oil & Grease	EPA 8240 plus identify 10 highest peaks.	REMARKS
GX136-1W	9/27/88	1:30pm		X	GX136/65'	2	X								

Relinquished by: (signature)	Date/Time	Received by: (signature)	Relinquished by: (signature)	Date/Time	Received by: (signature)
Tom Hoffman	9/27/88 2:30	Roger Dockter			
Relinquished by: (signature)	Date/Time	Received by: (signature)	Relinquished by: (signature)	Date/Time	Received by: (signature)
Relinquished by: (signature)	Date/Time	Received for LABORATORY by: (signature)	Date/Time	Remarks	
Roger Dockter	9/27/88 3:22		9/27/88 3:22	10-day TAT	*Per RWQCB Guidelines

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE • PLEASANTON, CALIFORNIA 94566 • [illegible]

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

(1) LOCATION OF PROJECT Desert Petroleum #795
2008 First St.
Livermore, CA

(2) CLIENT
Name Desert Petroleum, Inc.
Address P.O. 1601 Phone (805) 644-6784
City Oxnard, CA Zip 93032

(3) APPLICANT
Name Geonomics, Inc.
Address 100 W. Rincon #212 Phone (408) 374-9116
City Campbell, CA Zip 95008

(4) DESCRIPTION OF PROJECT
Water Well Construction ___ Geotechnical X
Cathodic Protection ___ Well Destruction X

(5) PROPOSED WATER WELL USE
Domestic ___ Industrial ___ Irrigation ___
Municipal ___ Monitoring X Other Borings

(6) PROPOSED CONSTRUCTION
Drilling Method:
Mud Rotary ___ Air Rotary ___ Auger ___
Cable ___ Other Hollow stem auger

WELL PROJECTS
Drill Hole Diameter 8 in. Depth(s) 65 ft.
Casing Diameter 2 in. Number
Surface Seal Depth 5+ ft. of Wells 1
Driller's License No. 384167

GEOTECHNICAL PROJECTS
Number 2
Diameter 8 in. Maximum Depth 25 ft.

(7) ESTIMATED STARTING DATE 8/31/88
ESTIMATED COMPLETION DATE 8/31/88

(8) I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Thomas Shett Date 8/22/88

FOR OFFICE USE

PERMIT NUMBER 88438
LOCATION NUMBER

Approved Wyman Hong Date 23 Aug 88
Wyman Hong

PERMIT CONDITIONS

Circled Permit Requirements Apply

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Notify this office (484-2600) at least one day prior to starting work on permitted work and before placing well seals.
3. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or bore hole logs and location sketch for geotechnical projects. Permitted work is completed when the last surface seal is placed or the last boring is completed.
4. Permit is void if project not begun within 90 days of approval date.

(B.) WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie, or equivalent.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic, irrigation, and monitoring wells unless a lesser depth is specially approved.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie, or equivalent.

E. WELL DESTRUCTION. See attached.

91987