PO-324

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Geo Environmental Technology

Groundwater Monitoring Report
Fourth Quarter 2004

For

Livermore Gas and Mini Mart
160 Holmes Street
Livermore, California

Prepared by

Geo Environmental Technology
343 Soquel Avenue, #33
Santa Cruz, CA 95062

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1/25/05
Date

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GROUNDWATER MONITORING REPORT
FOURTH QUARTER 2004

Livermore Gas and Mini Mart
160 Holmes Street
Livermore, California

1.0 INTRODUCTION

This report documents the results of the 12/10/04 quarterly groundwater monitoring performed at the Livermore Gas and Mini Mart, located at 160 Holmes Street in Livermore, California (site). A Site Vicinity Map is presented as Figure 1 and site details are shown on the Site Plan, Figure 2.

The Livermore Gas and Mini Mart had provided fueling services using three 10,000-gallon gasoline and one 10,000-gallon diesel Underground Storage Tanks (USTs). The USTs, piping and dispensers were removed on 4/5/99 under permit from the Livermore-Pleasanton Fire Department (LPFD). Analysis of soil and groundwater samples collected at the time of the UST removal, indicated that the site has been impacted by a release of petroleum hydrocarbons and MTBE.

The Alameda County Environmental Health Services (ACEHS) has directed quarterly groundwater monitoring for this site.

2.0 PAST WORK ON SITE

On 2/26/99, a soil boring was advanced in the northern section of the property, about 10 feet from the edge of First Street sidewalk, to log the soil profile and determine depth to groundwater. A groundwater grab sample was collected and analyzed for Total Petroleum Hydrocarbons as gasoline (TPHg), benzene, toluene, ethyl-benzene, total xylenes (BTEX) and methyl tertiary butyl ether (MTBE). The sample was found to be impacted by petroleum hydrocarbons (TPHg: 100,000 µg/l, Benzene: 6,100 µg/l, MTBE: 60,000 µg/L). The results were communicated to the Livermore-Pleasanton Fire Department (LPFD) and a UST Unauthorized Release Report was generated.

On 4/5/99, three gasoline and one diesel USTs, associated dispensers and piping were removed, manifested and disposed, under permit by the LPFD. The pit was over-excavated and samples were collected from native soil beneath the USTs; sample analysis indicated the presence of petroleum hydrocarbons in soil. Total Petroleum

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Hydrocarbons as diesel (TPHd) were detected at low levels (61 mg/kg) in the soil stockpile, but not beneath the diesel tank; Total Petroleum Hydrocarbons as gasoline (TPHg) concentrations ranged from undetectable to 80 mg/kg in all samples; MTBE concentrations ranged from 24 to 110 mg/kg.

On 5/20/99 soil samples were collected beneath the dispenser islands. TPHg was found beneath the east dispenser island in varying concentrations ranging from 32 to 6,500 mg/kg; TPHd beneath the diesel dispenser was detected at 1300 mg/kg; no MTBE was detected beneath the dispenser islands.

On 7/26/00, three soil borings were drilled onsite to an approximate depth of 30' below ground surface (bgs). Soil samples were collected for analyses. Upon completion of drilling activities, the soil borings were converted to groundwater monitoring wells (MW1, MW2 and MW3) by installing 2-inch diameter, Schedule 40, factory threaded polyvinyl chloride (PVC) slotted pipe (0.010-inch slots). The slotted interval extends from 15 to 30 feet bgs. The wells were sampled on 8/11/00 and analyzed for TPHd, TPHg, BTEX and MTBE. The sample results indicated significant hydrocarbon impact in the groundwater. Directly downgradient well MW1 had concentrations of TPHg and MTBE of 170,000 μg/L and 320,000 μg/L, respectively. A "Well Installation Report" was issued by ETIC Engineering on 9/22/00.

On 10/19/00 groundwater samples were collected as part of quarterly monitoring at the site. Samples were analyzed for TPHd, TPHg, BTEX and MTBE. The sample results confirmed the presence of significant hydrocarbon impact in the groundwater. Directly downgradient well MW1 had concentrations of TPHg and MTBE of 170,000 μg/L and 200,000 μg/L, respectively. Geo Environmental Technologies (GET) issued a "Quarterly Monitoring Report" on 1/31/01.

On 02/22/01 groundwater samples were collected and analyzed for TPHd, TPHg BTEX and MTBE. The sample results confirmed significant hydrocarbon impact in the groundwater. Directly downgradient well MW1 had concentrations of TPHg and MTBE of 11,000 μg/L and 190,000 μg/L, respectively. GET issued a "Quarterly Monitoring Report" on 3/31/01.

On 05/30/01 all three monitoring wells were found to be dry. The monitoring wells also were dry in August 2001.

On 11/14/01 groundwater samples were collected following the installation of an onsite extraction well (EX1) and three off-site monitoring wells (MW4, MW5 ad MW6). Monitoring wells MW1, MW2 and MW3 were all dry. Groundwater samples collected from the four newly installed wells were analyzed for TPHd, TPHg, BTEX and MTBE. The sample results confirmed the presence of significant hydrocarbon concentrations offsite and an areal impact to the groundwater. Directly downgradient extraction well EX1 contained concentrations of TPHg and MTBE of 2,000 μg/L and 2,200 μg/L, respectively. GET issued a "Quarterly Monitoring Report" on 3/31/02. Well construction details are presented in Table 1.

In 2002, groundwater samples were collected on 5/7, 9/11 and 12/1. These were analyzed for TPHd, TPHg/BTEX and MTBE. Directly downgradient extraction well EX1 contained concentrations of TPHg ranging from 3,000 to 7,700 µg/L; MTBE in well EX1 ranged from 1,200 to 6,200 µg/L. The 9/11 sample from well MW1 contained TPHg at 130,000 µg/L, and MTBE below the detection limit of 5,000 µg/L. In the 12/1/02 monitoring episode, MW1 was dry. Respective quarterly monitoring reports were issued on May 28, and December 13, 2002, and in February 2003.

In 2003, groundwater samples were collected on 3/14, 6/25, 9/16 and 12/22, and analyzed for TPHd, TPHg/BTEX and MTBE. Downgradient well MW1 contained concentrations of TPHg ranging from 37,000 to 180,000 µg/L, and concentrations of MTBE ranging from 150,000 to 210,000 µg/L. Downgradient well EX1 contained concentrations of TPHg ranging from 120 to 260 µg/L, and concentrations of MTBE ranging from 260 to 1,200 µg/L. In the 12/22 sampling episode, groundwater from MW2 was found to contain 240 µg/L of TPHg and 1.200 µg/L of MTBE. Quarterly monitoring reports were issued in April, July and October 2003, and January 2004.

On 8/7/03 Geo Environmental personnel met onsite with Donna Drogos of the ACEHS. Ms. Drogos requested a workplan for additional site investigation using a multiple well-point system to monitor different aquifer levels beneath the site.

On 3/10/04, 6/15/04 and 9/17/04 groundwater samples were collected and analyzed for TPHd, TPHg/BTEX and MTBE. Downgradient well MW1 continues to contain high concentrations of TPHg. Wells MW1, MW2 and MW5 continue to contain high concentrations of MTBE. GET issued Quarterly monitoring reports in May, July and October 2004.

3.0 SITE CONTACTS

The following is a listing of site contacts, addresses and phone numbers.

UST Operator:	Livermore Gas and Mini Mart Attention: Manwel and Samira Shuwayhat 54 Wolfe Canyon Road Kentfield, CA 94904
Local Oversight Agency:	ACEHS Attention: Donna Drogos 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502 Phone: (510) 567-6700

Environmental engineers: Geo Environmental Technologies
Attention: Costas Orountiotis
343 Soquel Avenue, #33
Santa Cruz, CA 95062
Phone: (831) 423-8780

4.0 METHODS AND PROCEDURES

4.1 Sample Collection and Analysis

Groundwater was sampled on 12/10/04. Depth to groundwater (DTW) was measured in each of the monitoring wells prior to purging and sampling. DTW data is summarized in Table 2. A sample of static groundwater was collected from each well using a clean, clear plastic bailer to visually assess for the presence of floating product or product sheen. No floating product or sheen was found.

To maximize the possibility of sampling fresh, inflowing groundwater, individual wells were purged of four well casing volumes of groundwater prior to sample collection. Purged groundwater was stored onsite in a steel, 55-gallon, DOT 17H drum. After ascertaining that a minimum 80 percent recovery of the initial casing volume had occurred in the well, the monitoring wells were sampled. Field purge data is presented in Appendix A.

Groundwater samples were collected using new, clean, disposable plastic bailers. Water was decanted from the bailer into 1-liter amber glass bottles and 40-ml VOA vials with caps equipped with Teflon-lined septa, in such a manner that neither headspace nor air bubbles were allowed to remain in the containers. Samples were labeled and placed in a pre-cooled container on ice, to minimize potential loss of volatile constituents. Labels contained project name, sample number, date and time of collection.

Sample collection information was entered onto a Chain of Custody (COC) document that accompanied the samples during site time and during transport to McCampbell Analytical Labs, Inc., a State certified laboratory for hazardous materials analysis, for the requisite analyses.

Groundwater samples were analyzed for TPHd, TPHg, BTEX, and MTBE using EPA Methods 8015MOD and 8020.

4.2 Results

Downgradient monitoring well MW1 remains severely impacted. TPHd was detected at 2,700 µg/L, TPHg at 31,000 µg/L and MTBE at 200,000 µg/L. BTEX constituent concentrations were 4,600, 190, 4,400, and 2,800 µg/L, respectively.

Cross-gradient well MW2 contained concentration levels of 110 μg/L TPHd, 84 μg/L TPHg, and 1,300 μg/L MTBE; traces of BTEX concentrations also were detected.

Upgradient well MW3 contained no detectable concentrations of TPHd, TPHg or BTEX; MTBE was detected at 7.6 μg/L

Offsite monitoring well MW4 contained no detectable concentrations of TPHd, TPHg, BTEX or MTBE.

Offsite monitoring well MW5 contained no detectable concentrations of TPHd, TPHg or BTEX; MTBE was detected at 120 μg/L.

Offsite monitoring well MW6 contained no detectable concentrations of TPHg, TPHd, MTBE or BTEX.

Extraction well EX1 was not sampled since it is located within 10 feet of well MW1.

Cumulative groundwater analytical results are presented in Table 2. Copies of the Laboratory analysis report and COC documentation for this monitoring event are presented in Appendix B.

4.3 Groundwater Flow and Gradient

DTW measurements taken on 12/10/04 were used to calculate the groundwater flow direction and gradient. Groundwater flow direction was northerly, consistent with general area direction of flow. The gradient was 0.017 ft/ft. This information is presented graphically in Figure 4.

5.0 RECOMMENDATIONS

Based on the results of this groundwater monitoring episode, conversations and directives of the ACEHS the following tasks are recommended:

- Continue quarterly groundwater sampling and depth to water data collection. Next monitoring date within a 15-day window of opportunity, is 3/13/05.
- Install pressure transducers in monitoring wells MW5 and MW1 (which contained MTBE at 1,100 and 260,000 μg/L respectively) to monitor the pumping cycle of the nearest drinking water wells for a period of 72 hours. This will identify the impact, if any, that active pumping from nearby drinking water wells may have on the dispersal of MTBE across the aquifer.
- Perform a downgradient receptor survey and discuss cleanup levels with the ACEHS.

- Prepare an interim Remedial Action Plan for site remediation.

- Forward a copy of this report to:

ACEHS
Attention: Donna Drogos
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

TABLES

TABLE 1 - Well Construction Details

Livermore Gas and Minimart, 160 Holmes, Livermore, California

Well Number	Date Installed	TOC (feet)	Total Depth (feet bgs)	Borehole Diameter (inches)	Casing Diameter (inches)	Slot (inch)	Interval					DTW 12/10/04 (feet)
							Screen (feet)	Blank Casing (feet)	Sand Pack (feet)	Bentonite Seal (feet)	Cement Grout (feet)	
MW-1	07/26/00	465.03	30	8	2	0.01	30-15	15-0.5	30-13	13-11	11-1.0	22.18
MW-2	07/26/00	464.94	30	8	2	0.01	30-15	15-0.5	30-13	13-11	11-1.0	22.00
MW-3	07/26/00	465.84	30	8	2	0.01	30-15	15-0.5	30-13	13-11	11-1.0	22.65
MW-4	10/30/01	465.15	50	8	2	0.01	50-20	20-0.5	50-18	18-16	16-0.5	22.73
MW-5	10/30/01	464.65	50	8	2	0.01	50-20	20-0.5	50-18	18-16	16-0.5	23.93
MW-6	10/30/01	464.13	50	8	2	0.01	50-20	20-0.5	50-18	18-16	16-0.5	23.09
EX1	10/30/01	465.3	55	10	6	0.01	55-30	30-0.5	55-28	28-26	26-0.5	NM

Notes:

bgs	Below ground surface
DTW	Depth to water
TOC	Top of Casing Elevation

TABLE 2 - Groundwater Analytical Results

Livermore Gas and Minimart, 160 Holmes, Livermore, California

Well ID.	Date	DTW (feet)	TPHd (µg/L)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)
MW1	08/11/00		57,000	170,000	6,400	7,600	4,200	9,700	320,000
	10/19/00	21.94	17,000	170,000	8,400	3,200	2,700	10,000	200,000
	02/22/01	22.91	11,000	82,000	5,100	1,000	13,000	8,700	190,000
	05/30/01	Dry	not sampled						
	11/14/01	Dry	not sampled						
	05/07/02	Dry	not sampled						
	09/11/02	26.16	NA	130,000	7,700	1,100	4,500	1,500	<5000
	12/01/02	27.55	NS	NS	NS	NS	NS	NS	NS
	03/14/03	22.63	3,800	180,000	7,100	3,200	4,300	6,000	220,000
	06/25/03	22.1	3,100	71,000	7,500	4,700	4,800	8,900	210,000
	09/16/03	24.91	3,600	37,000	4,600	220	3,600	930	150,000
	12/22/03	21.75	4,000	44,000	6,800	1,500	4,000	3,800	180,000
	03/10/04	17.45	3,100	72,000	6,000	11,000	3,900	10,000	260,000
	06/15/04	22.38	4,300	42,000	5,000	1,800	3,700	6,000	210,000
	09/17/04	25.61	2,900	24,000	2,800	< 33	2,900	500	83,000
	12/10/04	22.18	2,700	31,000	4,600	190	4,400	2,800	200,000
MW2	08/11/00		1,900	4,500	220	52	160	170	3,000
	10/19/00	21.80	1,300	3,400	150	21	100	70	1,900
	02/22/01	22.87	880	7,600	25	< 10	69	25	2,200
	05/30/01	Dry	not sampled						
	11/14/01	Dry	not sampled						
	05/07/02	26.70	86	400	5.4	<0.50	1.9	2.3	230
	09/11/02	25.96	NA	260	1.3	<0.50	0.57	0.77	200
	12/11/02	27.56	120	250	7.9	1.6	13	9.9	180
	03/14/03	22.41	110	830	56	<0.50	<0.50	<1.0	1,200
	06/25/03	21.97	180	260	0.92	2.9	3.1	8.1	2,000
	09/16/03	24.70	260	420	3.6	3.4	5.2	2.4	1,300
	12/22/03	21.58	120	240	0.82	3.1	7.8	3.9	1,400
	03/10/04	17.31	210	280	9.4	4.2	14	11	1,400
	06/15/04	22.18	150	150	2.1	2.4	2.2	1.3	1,500
	09/17/04	25.44	70	61	< 0.50	1.0	< 0.50	< 0.50	730
	12/10/04	22.00	110	84	< 0.5	1.2	< 0.5	1.5	1,300
MW3	08/11/00		260	59	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
	10/19/00	22.45	< 65	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
	02/22/01	23.51	100	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
	05/30/01	Dry	not sampled						
	11/14/01	Dry	not sampled						
	05/07/02	Dry	not sampled						
	09/11/02	26.61	NA	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
	12/11/02	28.18	not sampled						
	03/14/03	23.04	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
	06/25/03	22.59	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
	09/16/03	25.33	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0

TABLE 2 - Groundwater Analytical Results

Livermore Gas and Minimart, 160 Holmes, Livermore, California

Well ID.	Date	DTW (feet)	TPHd (µg/L)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)
MW3	12/22/03	22.37	69	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
	03/10/04	17.88	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
	06/15/04	22.82	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
	09/17/04	26.09	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
	12/10/04	22.65	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	7.6
MW4	11/14/01	33.84	90	510	4	< 0.50	< 0.50	< 0.50	14
	05/07/02	26.75	< 50	150	3.5	0.5	< 0.50	< 0.50	48
	09/11/02	26.66	NA	< 50	< 0.50	< 0.50	< 0.50	< 0.50	15
	12/11/02	28.39	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	24
	03/14/03	23.14	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0
	06/25/03	22.72	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0
	09/16/03	25.39	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
	12/22/03	22.42	69	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
	03/04/04	18.20	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	37
	06/15/04	22.95	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	7.4
	09/17/04	26.12	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
	12/10/04	22.73	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
MW5	11/14/01	34.94	< 66	< 50	< 0.50	< 0.50	< 0.50	< 0.50	8.2
	05/07/02	27.90	< 50	140	< 0.50	< 0.50	< 0.50	< 0.50	110
	09/11/02	27.99	NA	< 50	< 0.50	< 0.50	< 0.50	< 0.50	6.3
	12/11/02	29.50	< 50	73	< 0.50	< 0.50	< 0.50	< 0.50	160
	03/14/03	24.26	< 50	110	< 0.50	< 0.50	< 0.50	< 0.50	170
	06/25/03	24.01	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	89
	09/16/03	26.83	< 50	630	< 0.50	3.5	< 0.50	2.63	1,500
	12/22/03	23.68	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	630
	03/10/04	19.22	< 50	57	< 0.50	< 0.50	< 0.50	< 0.50	1,100
	06/15/04	24.20	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	750
	09/17/04	27.68	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	780
	12/10/04	23.93	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	120
MW6	11/14/01	33.88	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
	05/07/02	27.01	< 67	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
	09/11/02	27.03	NA	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
	12/11/02	28.77	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 1.0
	03/14/03	23.46	< 50	< 50	< 0.50	< 0.50	< 0.50	< 1.0	< 1.0
	06/25/03	23.08	< 50	< 50	< 0.50	< 0.50	< 0.50	< 1.0	< 1.0
	09/16/03	25.77	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
	12/22/03	22.59	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
	03/10/04	18.65	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
	06/15/04	23.31	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
	09/17/04	26.56	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
	12/10/04	23.09	< 50	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0

TABLE 2 - Groundwater Analytical Results

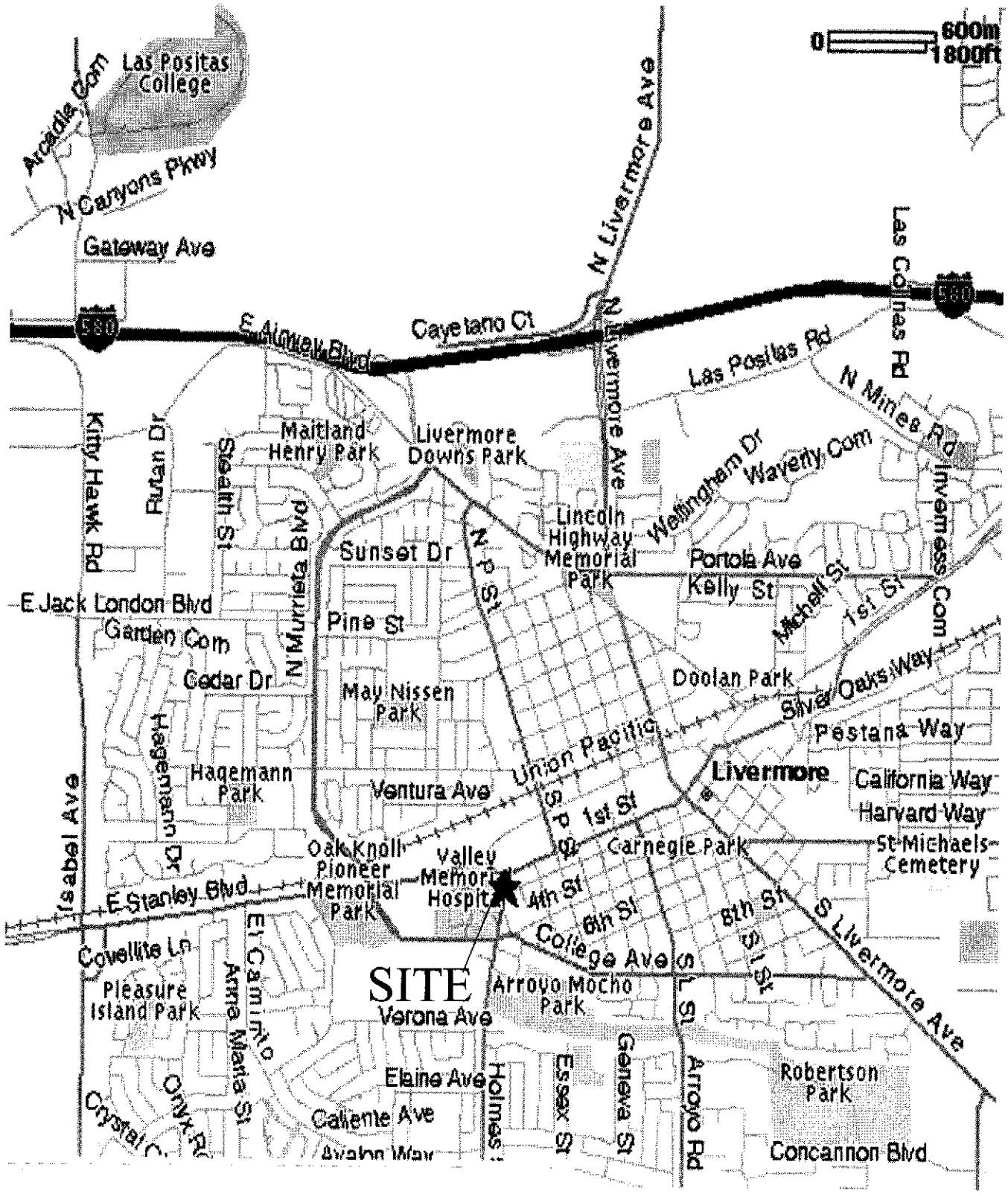
Livermore Gas and Minimart, 160 Holmes, Livermore, California

Well ID.	Date	DTW (feet)	TPHd (µg/L)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)
EX1	11/14/01	33.41	2,000	13,000	180	1,000	330	3,200	2,200
	05/07/02	27.58	560	7,700	320	< 25	66	150	6,200
	09/11/02	NM	NA	2,800	32	< 13	14	< 13	2,500
	12/11/02	27.98	100	3,000	81	< 0.50	44	< 1	4,800
	03/14/03	23.02	50	750	< 0.50	< 0.50	7.7	13	1,200
	06/25/03	22.41	<50	120	3.2	3.7	4.2	7.6	260
EX1	09/16/03	24.65	< 50	170	0.51	1.5	< 0.50	0.94	1,600
	12/22/03	NM	not sampled						
	03/10/04	17.99	not sampled						
	06/15/04	22.48	not sampled						
	09/17/04	25.91	not sampled						
	12/10/04	NM	not sampled						

Notes:

DTW: Depth to Groundwater
NM: Not Measured
NA: Not Analyzed
TPHg: Total Petroleum Hydrocarbons as gasoline
TPHd: Total Petroleum Hydrocarbons as diesel
MTBE: Methyl tertiary Butyl Ether
µg/L: Micrograms per liter

FIGURES



GET
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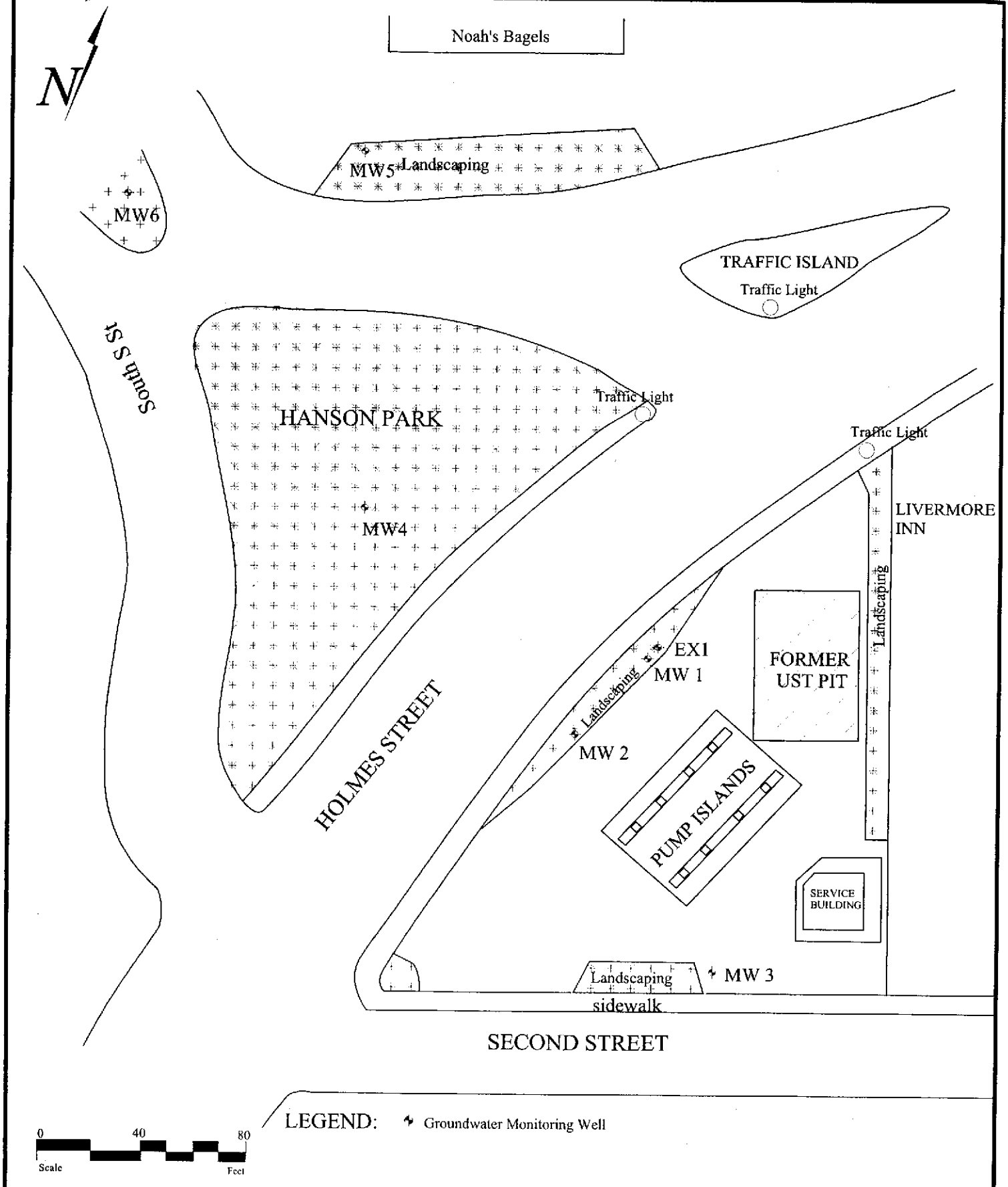
Site Vicinity Map

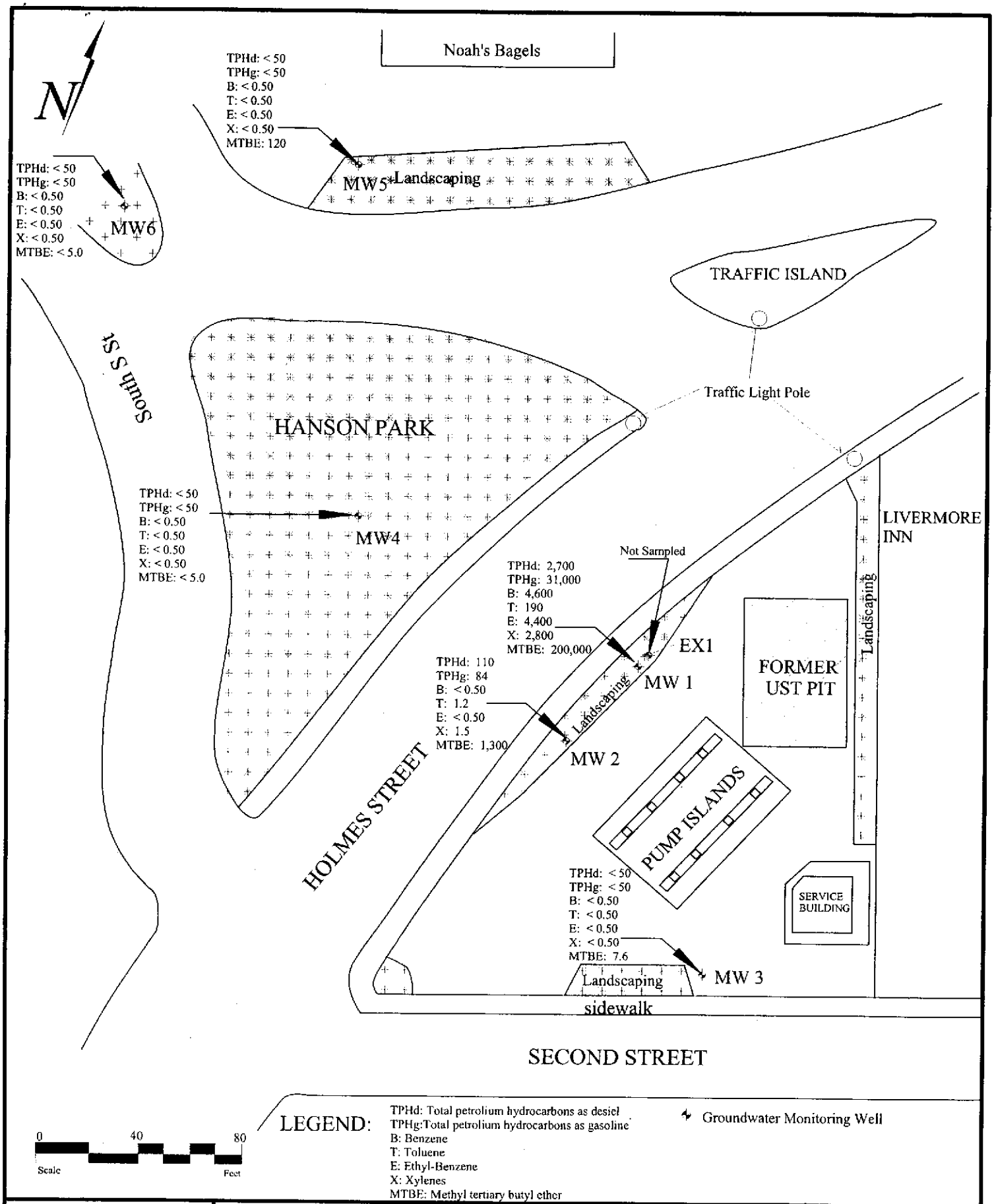
Livermore Gas and Mini Mart
160 Holmes Street
Livermore, California

Figure No.
1

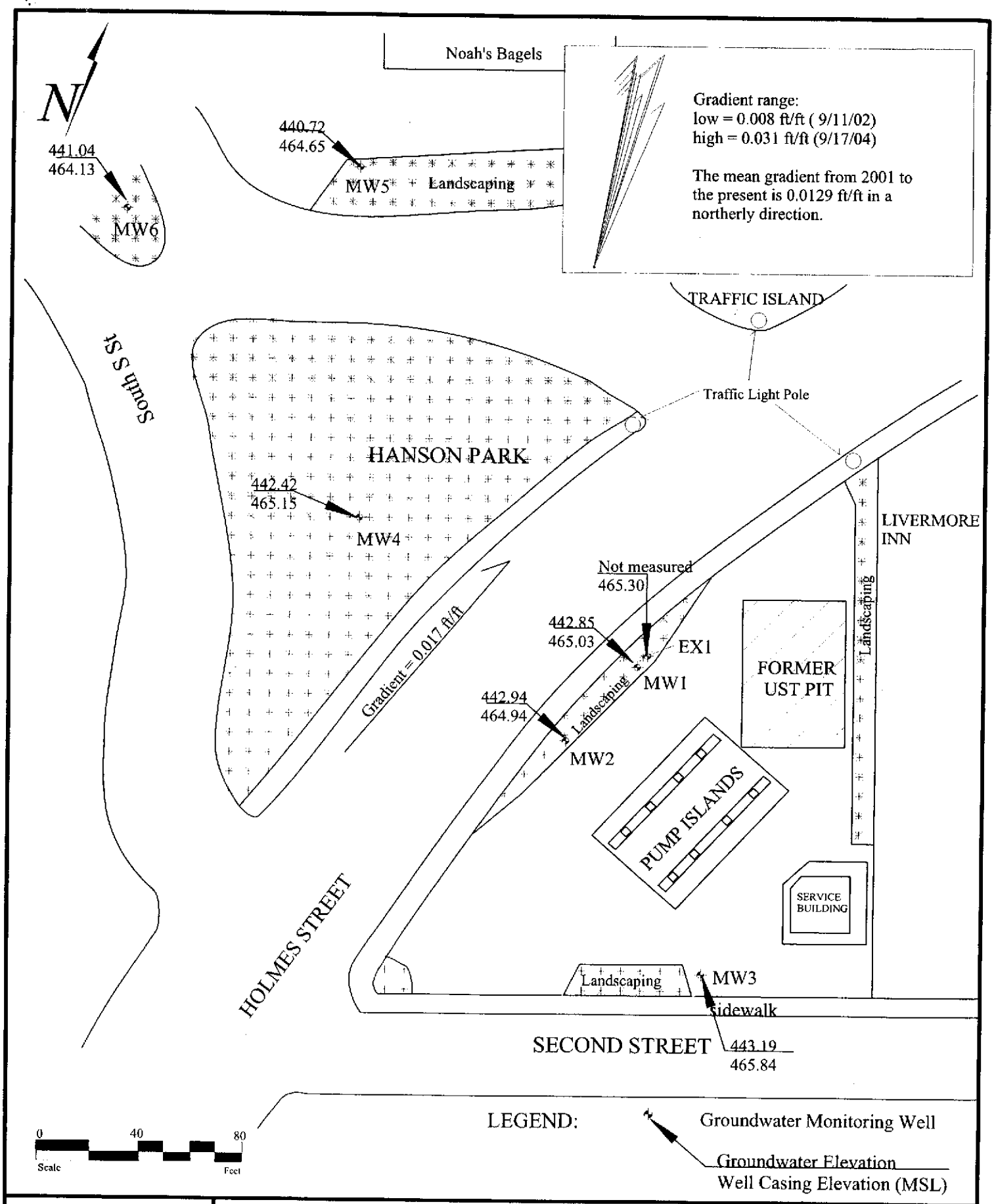
Project
MANWEL



Geo Environmental Technologies	Site Plan 12/10/04 Livermore Gas and Minimart 160 Homes Street, Livermore, CA	Figure No. 2 Project Manwel



Geo Environmental Technologies	Groundwater Analyticals 12/10/04 Livermore Gas and Minimart 160 Homes Street, Livermore, CA	Figure No. 3 Project Manwel



Geo Environmental Technologies	Groundwater Direction and Gradient 12/10/04 Livermore Gas and Minimart 160 Homes Street, Livermore, CA	Figure No. 4 Project Manwel

APPENDIX A

Project: Manuel				Sampler: DIMITRI KELLY
Site Location: 160 Holmes Street, Livermore, CA				
Well ID: MW1	Well Diameter(in): 2"	(1)Initial Depth of water (ft): 22.18'		(2) Total Depth (ft): 30
Free Product (Y / (N))	Product Thickness(in): N/A			
	Measurements Referenced to: (TOC)	Grade	Other:	

Calculations

Length of water column= 30.00 (2) ft - 22.18 (1) ft = 7.82 (3) ft

80% of the water level= 22.18 (1) ft + (7.82 (3) ft x 0.2) = 23.74 ft

Estimated purge volume (EPV)= 7.82 (3) ft x 0.16 (VCF) x = 1.25 (1 casing vol) x 3 = 3.75 Gal (purge volume)

Volume conversion factor(VCF)	
VCF=0.052gal/(in^2x ft)xP(d^2/4)	
where p=3.14 and d=well dia(in)	
Well Dia	VCF
2"	0.16
3"	0.37
4"	0.65
5"	1.02
6"	1.47

Purging Equipment:
- ( )_____Bailer
- (X)Disposable bailer
- ( )Electric Submersible Pump
- ( )Extraction Pump
- ( )Other

Sampling Equipment:
- ( )_____Bailer
- (X)Disposable Bailer
- ( )Extraction Port
- ( )Other

Did well dewater? if yes, _____gal

Sample ID: MW1 Sampling time: Sampling date: 12/10/04

Notes:
Strong odor

Project: Manwel				Sampler: DIMITRI KELLY
Site Location: 160 Holmes Street, Livermore, CA				
Well ID: MW2	Well Diameter(in): 2"	(1)Initial Depth of water (ft): 22.00'		(2) Total Depth (ft): 30'
Free Product (Y / (N))	Product Thickness(in):			
	Measurements Referenced to: (TOC) Grade Other:			

Calculations

Length of water column= 30.00 (2) ft - 220.00 (1) ft = 8.00 (3) ft

80% of the water level= 22.00 (1) ft + (8.00 (3) ft x 0.2) = 23.6 ft

Estimated purge volume (EPV)= 8.00 (3) ft x 0.16 (VCF) x = 1.28 (1 casing vol) x 3 = 3.84 Gal (purge volume)

Volume conversion factor(VCF)	
VCF=0.052gal/(in^2x ft)xP(d^2/4)	
where p=3.14 and d=well dia(in)	
Well Dia	VCF
2"	0.16
3"	0.37
4"	0.65
5"	1.02
6"	1.47

Purging Equipment:
- ( )_____Bailer
- (X)Disposable bailer
- ( )Electric Submersible Pump
- ( )Extraction Pump
- ( )Other

Sampling Equipment:
- ( )_____Bailer
- (X)Disposable Bailer
- ( )Extraction Port
- ( )Other

Did well dewater? if yes, _____gal

Sample ID: MW2 Sampling time: Sampling date: 12/10/04

Notes:
slight odor

Project: Manwel				Sampler: DIMITRI KELLY
Site Location: 160 Holmes Street, Livermore, CA				
Well ID: MW3	Well Diameter(in): 2"	(1)Initial Depth of water (ft): 22.65		(2) Total Depth (ft): 30'
Free Product (Y /(N)	Product Thickness(in):			
	Measurements Referenced to: (TOC) Grade Other:			

Calculations

Length of water column= 30.00 (2) ft - 22.65 (1) ft= 7.35 (3) ft

80% of the water level= 22.65 (1) ft + (7.35 (3) ftx0.2)= 1.47 ft

Estimated purge volume (EPV)= 7.35 (3) ft x 0.16 (VCF) x = 1.18 (1 casing vol) x 3 = 3.53 Gal (purge volume)

Volume conversion factor(VCF)	
VCF=0.052gal/(in^2x ft)xP(d^2/4)	
where p=3.14 and d=well dia(in)	
Well Dia	VCF
2"	0.16
3"	0.37
4"	0.65
5"	1.02
6"	1.47

Purging Equipment:
- ( )_____Bailer
- (X)Disposable bailer
- ( )Electric Submersible Pump
- ( )Extraction Pump
- ( )Other

Sampling Equipment:
- ( )_____Bailer
- (X)Disposable Bailer
- ( )Extraction Port
- ( )Other

Did well dewater? if yes, _____gal

Sample ID: MW3 Sampling time: Sampling date: 12/10/04

Notes:

Project Manwel				Sampler: DIMITRI KELLY
Site Location: 160 Holmes Street, Livermore, CA				
Well ID: MW 4	Well Diameter(in): 2"	(1)Initial Depth of water (ft): 22.73'		(2) Total Depth (ft): 50'
Free Product (Y /(N))	Product Thickness(in):			
	Measurements Referenced to: (TOC) Grade Other:			

Calculations

Length of water column= $\frac{50.00}{2}$ ft - $\frac{22.73}{1}$ ft= $\frac{27.27}{3}$ ft

80% of the water level= $\frac{22.73}{1}$ ft + $\frac{(27.27}{3}$ ftx0.2)= $\frac{5.45}{}$ ft

Estimated purge volume (EPV)= $\frac{27.27}{3}$ ft x $\frac{0.16}{\text{VCF}}$ x = $\frac{4.36}{\text{1 casing vol}}$ x 3 = $\frac{13.09}{\text{purge volume}}$ Gal

Volume conversion factor(VCF)	
VCF=0.052gal/(in^2x ft)xP(d^2/4)	
where p=3.14 and d=well dia(in)	
Well Dia	VCF
(2")	(0.16)
3"	0.37
4"	0.65
5"	1.02
6"	1.47

Purging Equipment:
- ( )_____Bailer
- (N)Disposable bailer
- (X)Electric Submersible Pump
- ( )Extraction Pump
- ( )Other

Sampling Equipment:
- ( )_____Bailer
- (X)Disposable Bailer
- ( )Extraction Port
- ( )Other

Did well dewater? if yes, _____gal

Sample ID: MW4 Sampling time: Sampling date: 12/10/04

Notes:

Project: Manuel			Sampler: DIMITRI KELLY
Site Location: 160 Holmes Street, Livermore, CA			
Well ID: MW 5	Well Diameter(in): 2"	(1)Initial Depth of water (ft): 23.93'	(2) Total Depth (ft): 50'
Free Product (Y / (N))	Product Thickness(in):		
	Measurements Referenced to: (TOC) Grade Other:		

Calculations

Length of water column= $\frac{50.00}{2}$ ft - $\frac{23.93}{1}$ ft= $\frac{26.07}{3}$ ft

80% of the water level= $\frac{23.93}{1}$ ft + $\frac{(26.07}{3}$ ftx0.2)= $\frac{29.14}{}$ ft

Estimated purge volume (EPV)= $\frac{26.07}{3}$ ft x $\frac{0.16}{\text{VCF}}$ x = $\frac{4.17}{\text{1 casing vol}}$ x 3 = $\frac{12.51}{\text{purge volume}}$ Gal

Volume conversion factor(VCF)
VCF=0.052gal/(in^2x ft)xP(d^2/4)
where p=3.14 and d=well dia(in)

Well Dia	VCF
2"	0.16
3"	0.37
4"	0.65
5"	1.02
6"	1.47

Purging Equipment:
( )_____Bailer
( )Disposable bailer
(X)Electric Submersible Pump
( )Extraction Pump
( )Other

Sampling Equipment:
( )_____Bailer
(X)Disposable Bailer
( )Extraction Port
( )Other

Did well dewater? if yes, _____gal

Sample ID: MW5 Sampling time: Sampling date: 12/10/04

Notes:

Project: Manwel				Sampler: DIMITRI KELLY
Site Location: 160 Holmes Street, Livermore, CA				
Well ID: MW6	Well Diameter(in):	(1)Initial Depth of water (ft): 23.09'		(2) Total Depth (ft): 50'
Free Product (Y / (N))	Product Thickness(in):			
	Measurements Referenced to: (TOC) Grade Other:			

Calculations

Length of water column= 50.00 (2) ft - 23.09 (1) ft= 26.91 (3) ft

80% of the water level= 23.09 (1) ft + (26.91 (3) ft x 0.2)= 28.47 ft

Estimated purge volume (EPV)= 26.91 (3) ft x 0.16 (VCF) x = 4.31 (1 casing vol) x 3 = 12.92 Gal (purge volume)

Volume conversion factor(VCF)	
VCF=0.052gal/(in^2x ft)xP(d^2/4)	
where p=3.14 and d=well dia(in)	
Well Dia	VCF
2"	0.16
3"	0.37
4"	0.65
5"	1.02
6"	1.47

Purging Equipment:
- ( )_____Bailer
- ( )Disposable bailer
- (X)Electric Submersible Pump
- ( )Extraction Pump
- ( )Other

Sampling Equipment:
- ( )_____Bailer
- (X)Disposable Bailer
- ( )Extraction Port
- ( )Other

Did well dewater? if yes, _____gal

Sample ID: MW6 Sampling time: Sampling date: 12/10/04

Notes:

APPENDIX B

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Geo Environmental Technologies	Client Project ID: Manuel	Date Sampled: 12/10/04
343 Soquel Avenue #33		Date Received: 12/10/04
Santa Cruz, CA 95062	Client Contact: Costas Orountiotis	Date Reported: 12/17/04
	Client P.O.:	Date Completed: 12/17/04

WorkOrder: 0412245

December 17, 2004

Dear Costas:

Enclosed are:

1). the results of **6** analyzed samples from your **Manuel project,**

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Geo Environmental Technologies	Client Project ID: Manuel	Date Sampled: 12/10/04
343 Soquel Avenue #33		Date Received: 12/10/04
Santa Cruz, CA 95062	Client Contact: Costas Orountiotis	Date Extracted: 12/10/04
	Client P.O.:	Date Analyzed: 12/12/04-12/14/04

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel*

Extraction method: SW3510C Analytical methods: SW8015C Work Order: 0412245

Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
0412245-001B	MW1	W	2700,d,i	1	83
0412245-002B	MW2	W	110,b,d,i	1	120
0412245-003B	MW3	W	ND,i	1	106
0412245-004B	MW4	W	ND	1	100
0412245-005B	MW5	W	ND,i	1	120
0412245-006B	MW6	W	ND	1	120

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	µg/L
	S	NA	NA

* water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/L.

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range/jet fuel range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Geo Environmental Technologies	Client Project ID: Manuel	Date Sampled: 12/10/04
343 Soquel Avenue #33		Date Received: 12/10/04
Santa Cruz, CA 95062	Client Contact: Costas Orountiotis	Date Extracted: 12/13/04-12/17/04
	Client P.O.:	Date Analyzed: 12/13/04-12/17/04

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0412245

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW1	W	31,000,a,i	200,000	4600	190	4400	2800	100	114
002A	MW2	W	84,b,i	1300	ND	1.2	ND	1.5	1	93
003A	MW3	W	ND,i	7.6	ND	ND	ND	ND	1	91
004A	MW4	W	ND	ND	ND	ND	ND	ND	1	96
005A	MW5	W	ND,i	120	ND	ND	ND	ND	1	103
006A	MW6	W	ND	ND	ND	ND	ND	ND	1	104

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	1	µg/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

* water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) range non-target isolated peaks subtracted out of the TPH(g) concentration at the client's request.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0412245

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 14270 Spiked Sample ID: 0412241-006A

Analyte	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex)£	ND	60	99.5	99.9	0.443	97.7	97.4	0.253	70 - 130	70 - 130
MTBE	ND	10	104	105	0.471	105	107	2.23	70 - 130	70 - 130
Benzene	ND	10	105	109	3.30	111	112	1.09	70 - 130	70 - 130
Toluene	ND	10	102	104	2.24	107	106	0.786	70 - 130	70 - 130
Ethylbenzene	ND	10	105	107	1.56	110	111	0.457	70 - 130	70 - 130
Xylenes	ND	30	91.7	95.3	3.92	96.7	96.3	0.345	70 - 130	70 - 130
%SS:	97	10	109	111	2.11	108	110	2.28	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

* MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not applicable or not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

QA/QC Officer

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0412245

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 14273 Spiked Sample ID: 0412245-006A

Analyte	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex)£	ND	60	100	99.6	0.716	82.5	84.7	2.69	70 - 130	70 - 130
MTBE	ND	10	111	112	1.33	91	91.8	0.889	70 - 130	70 - 130
Benzene	ND	10	111	111	0	90.6	90.3	0.335	70 - 130	70 - 130
Toluene	ND	10	107	106	0.889	92.7	92.2	0.553	70 - 130	70 - 130
Ethylbenzene	ND	10	110	108	1.70	96	95.9	0.0809	70 - 130	70 - 130
Xylenes	ND	30	96.3	95.7	0.694	95.7	95.7	0	70 - 130	70 - 130
%SS:	104	10	110	110	0	97	96	1.43	70 - 130	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

* MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not applicable or not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

QA/QC Officer

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QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0412245

EPA Method: SW8015C Extraction: SW3510C BatchID: 14268 Spiked Sample ID: N/A

Analyte	Sample	Spiked	MS*	MSD*	MS-MSD*	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(d)	N/A	7500	N/A	N/A	N/A	104	102	2.79	N/A	70 - 130
%SS:	N/A	2500	N/A	N/A	N/A	108	107	0.842	N/A	70 - 130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

* MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

QA/QC Officer

McCampbell Analytical, Inc.
110 Second Avenue South, #D7
Pacheco, CA 94553-5560
(925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0412245 **ClientID: GET**

Report to:
Costas Orountiotis
Geo Environmental Technologies
343 Soquel Avenue #33
Santa Cruz, CA 95062
TEL: (831) 423-8780
FAX: (831) 423-8827
ProjectNo: Manuel
PO:

Bill to:
Accounts Payable
Geo Environmental Technologies
343 Soquel Avenue #33
Santa Cruz, CA 95062

Requested TAT: 5 days
Date Received: 12/10/2004
Date Printed: 12/10/2004

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)														
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0412245-001	MW1	Water	12/10/04	☐	A	A	B												
0412245-002	MW2	Water	12/10/04	☐	A		B												
0412245-003	MW3	Water	12/10/04	☐	A		B												
0412245-004	MW4	Water	12/10/04	☐	A		B												
0412245-005	MW5	Water	12/10/04	☐	A		B												
0412245-006	MW6	Water	12/10/04	☐	A		B												

Test Legend:

1	G-MBTEX_W	2	PREDF REPORT	3	TPH(D)_W	4		5	
6		7		8		9		10	
11		12		13		14		15	

Prepared by: Maria Venegas

Comments:

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

0412245

McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622
Email: main@mccampbell.com

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAY

EDF Required? ☑ Yes ☐ No

Report To: Costas Orountiotis Bill To: GET

Company: Geo Environmental Technologies

343 Soquel Ave. #33

Santa Cruz, CA 95062 E-Mail: MCPOOTROCKY@hoo

Tele: (831) 423-8780 Fax: (831) 423-8827

Project #: Project Name: Manuel

Project Location: Livermore

Sampler Signature:

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	Soil	Air	Sludge	Other	METHOD PRESERVED Ice	HCl	HNO_3	Other	BTEX & TPH as Gas (602/8020 + 8015)/MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)	RCI	pH	TSS	Specific Conductivity	Comments
+1 MW1	Manuel	12/10		3	VOA	X					X	X			X	X																
+1 MW2						X					X	X			X	X																
+2 MW3						X					X	X			X	X																
✓ MW4						X					X	X			X	X																
+2 MW5						X					X	X			X	X																
+ MW6						X					X	X			X	X																

Relinquished By:	Date:	Time:	Received By:
	12/10	3:07	
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

Other	VOAS	O&G	METALS	OTHER

ICE/t° ✓ PRESERVATION ✓
GOOD CONDITION ✓ APPROPRIATE
HEAD SPACE ABSENT ✓ CONTAINERS ✓