RO-324

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Geo Environmental Technologies

3275 Stevens Creek Blvd. #208
San Jose, CA 95117
408-241-1798
FAX 408-248-7685

Provide

GROUNDWATER MONITORING REPORT
First Quarter 2001

Livermore Gas and Mini Mart
160 Holmes Street
Livermore, California

Prepared for:

Manwel and Samira Shuwayhat

March 12, 2001

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GET
Geo Environmental Technologies

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GROUNDWATER MONITORING REPORT
FIRST QUARTER 2001

Livermore Gas and Mini Mart
160 Holmes Street
Livermore, California

1.0 INTRODUCTION

This report documents the results of the February 22, 2001 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. Current site details are shown on the Site Plan, Figure 2.

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

The work was performed in compliance with the Alameda County Environmental Health Services (ACEHS) 7/26/99 written directive. A copy of the ACEHS directive is presented in Appendix A.

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 ug/l, Benzene: 6,100 ug/l, MTBE: 60,000). 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 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 not detectable 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 mg/kg 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, soil borings were drilled onsite to an approximate depth of 30-feet 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 0.010-inch. 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 ug/L and 320,000 ug/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 ug/L and 200,000 ug/L respectively. Geo Environmental Technologies issued a "Quarterly Monitoring Report" on January 31, 2000.

3.0 SITE CONTACTS

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

UST Operator:	Livermore Gas and Mini Mart Attention: Manwel and Samira Shuwayhat 160 Holmes Street Livermore, CA 94520 Phone: (925) 455-4212
Local Oversight Agency:	ACEHS Attention: Eva Chu 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502 Phone: (510) 567-6700
Environmental consultant:	Geo Environmental Technologies Attention: Costas Orountiotis 3275 Stevens Creek Boulevard, Suite 208 San Jose, CA 95117 Phone: (408) 241-1798

4.0 METHODS AND PROCEDURES

4.1 Sample Collection

Groundwater samples were collected from the site monitoring wells on 2/22/01. Depth to groundwater (DTW) was measured in each of the monitoring wells prior to purging and sampling. DTW data is summarized in Table 1. 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.

Monitoring wells MW1, MW2 and MW3 contained no floating product or sheen, but strong hydrocarbon odor was discerned; odor was strongest in MW1.

Groundwater samples were collected by carefully decanting groundwater from the bailer into the requisite sample containers. Groundwater samples for TPHg, BTEX and MTBE analyses were collected in 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 for TPHd analyses were collected in 1-liter amber glass bottles. Groundwater samples were collected, labeled and placed in a pre-cooled container to minimize potential loss of volatile constituents. Labels contained project name, sample number, date and time of collection and the identity of the sampler. Samples were collected using new, clean, disposable plastic bailers. Field sampling notes are presented in Appendix B.

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

Groundwater samples were analyzed for TPHg, BTEX and MTBE using EPA Methods SW846/8020A Nov 1990/8015 Mod and for TPHd using EPA Method 8015M.

4.2 Results

TPHd concentrations in monitoring wells MW1, MW2 and MW3 were 11,000, 880 and 100 µg/L, respectively.

TPHg concentration in monitoring well MW1 was 82,000 ug/L. BTEX concentrations for MW1 were 5,100, 1,000, 1,300 and 8,700 ug/L respectively, and MTBE was detected at 190,000 ug/L.

TPHg concentration in monitoring well MW2 was 7,600 ug/L. BTEX concentrations for MW2 were 25, < 10, 69 and 25 ug/L respectively. MTBE was 2,200 ug/L.

TPHg concentration in monitoring well MW3 was below the reporting limit of 50 ug/L. BTEX concentrations were all below the reporting limit of 0.50 ug/L. MTBE was below the reporting limit of 5.0 ug/L.

Cumulative groundwater analytical results are presented in Table 1. Copies of the Chain of Custody document and laboratory analysis report for this monitoring event are presented in Appendix C.

4.3 Groundwater Flow and Gradient

Depth to water (DTW) in wells MW1, MW2 and MW3 was 22.91 feet (ft) below ground surface (bgs), 22.87 ft bgs and 23.51 ft bgs, respectively.

Depths to groundwater measurements taken on February 22, 2001 were used to calculate the groundwater gradient and flow direction. Groundwater flow direction is northwesterly, consistent with general area direction of flow. The groundwater gradient was 0.00275 ft/ft. This information is presented graphically in Figure 3.

5.0 RECOMMENDATIONS

Based on the results of this groundwater monitoring episode, the following course of action is recommended:

- Continue quarterly groundwater sampling and depth to water data collection. Next monitoring date within a 15-day window of opportunity, is May 29, 2001.
- Complete the Geoprobe Investigation Report and submit to the ACEHS for review and approval. When will Rpt come?
- A copy of this report should be forwarded to:

  ACEHS
  Attention: Eva Chu
  1131 Harbor Bay Parkway, Suite 250
  Alameda, CA 94502

Questions or comments regarding this document should be addressed to the undersigned at (408) 241-1798.

Costas Orountiotis
Project Manager

REGISTERED PROFESSIONAL ENGINEER
KENNETH L. MELEEN
C017487
EXP 6/30/01
CIVIL
STATE OF CALIFORNIA

Kenneth Meleen
Licensed Civil Engineer #C17487
License expires 6/30/01

Geo Environmental Technologies

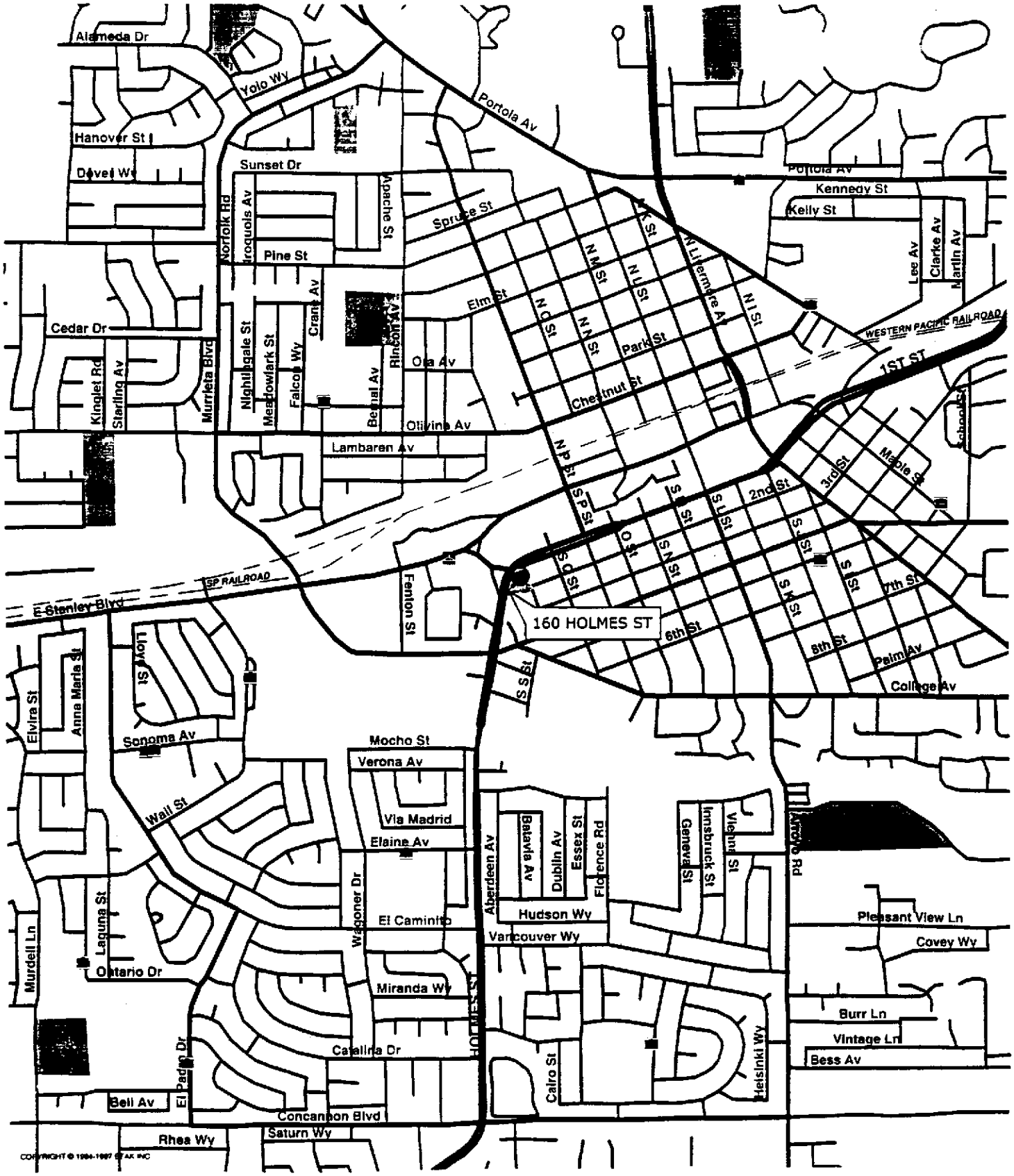
TABLE 1 - Groundwater Analytical Results

Livermore Gas and Minimart, 160 Holmes, Livermore, California

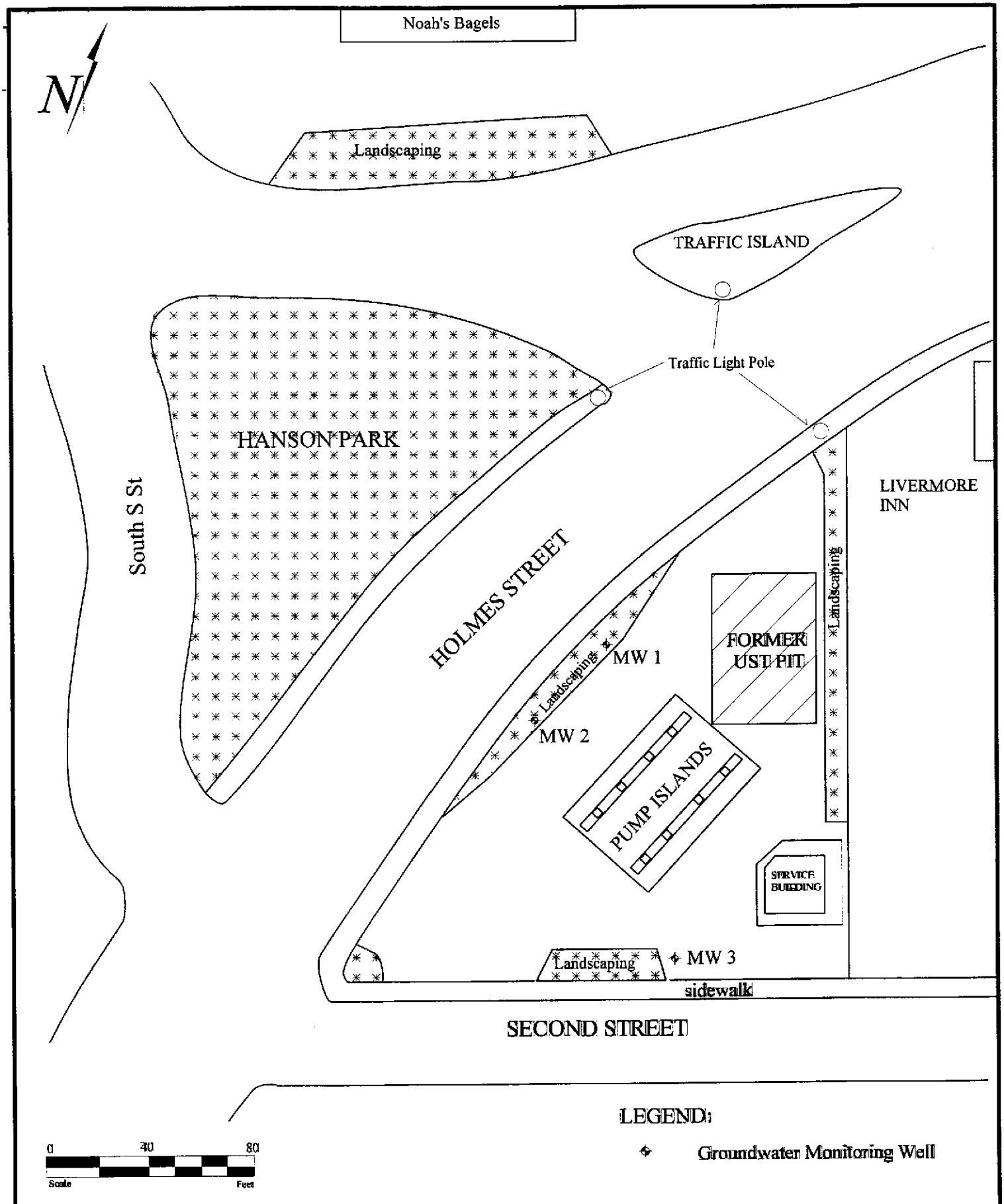
Well ID.	Date	DTW (ft bgs)	TPHd (µg/L)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	MtBE (µg/L)
MW1	08/11/00		57,000	170,000	6,400	7,600	4,200	9,700	320,000
	10/19/00	21.94	17,000	170,000	8,400	3,200	2,700	10,000	200,000
	02/22/01	22.91	11,000	82,000	5,100	1,000	1,300	8,700	190,000
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
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	< 0.5	< 0.50	< 0.50	< 0.50	< 5.0

Notes:

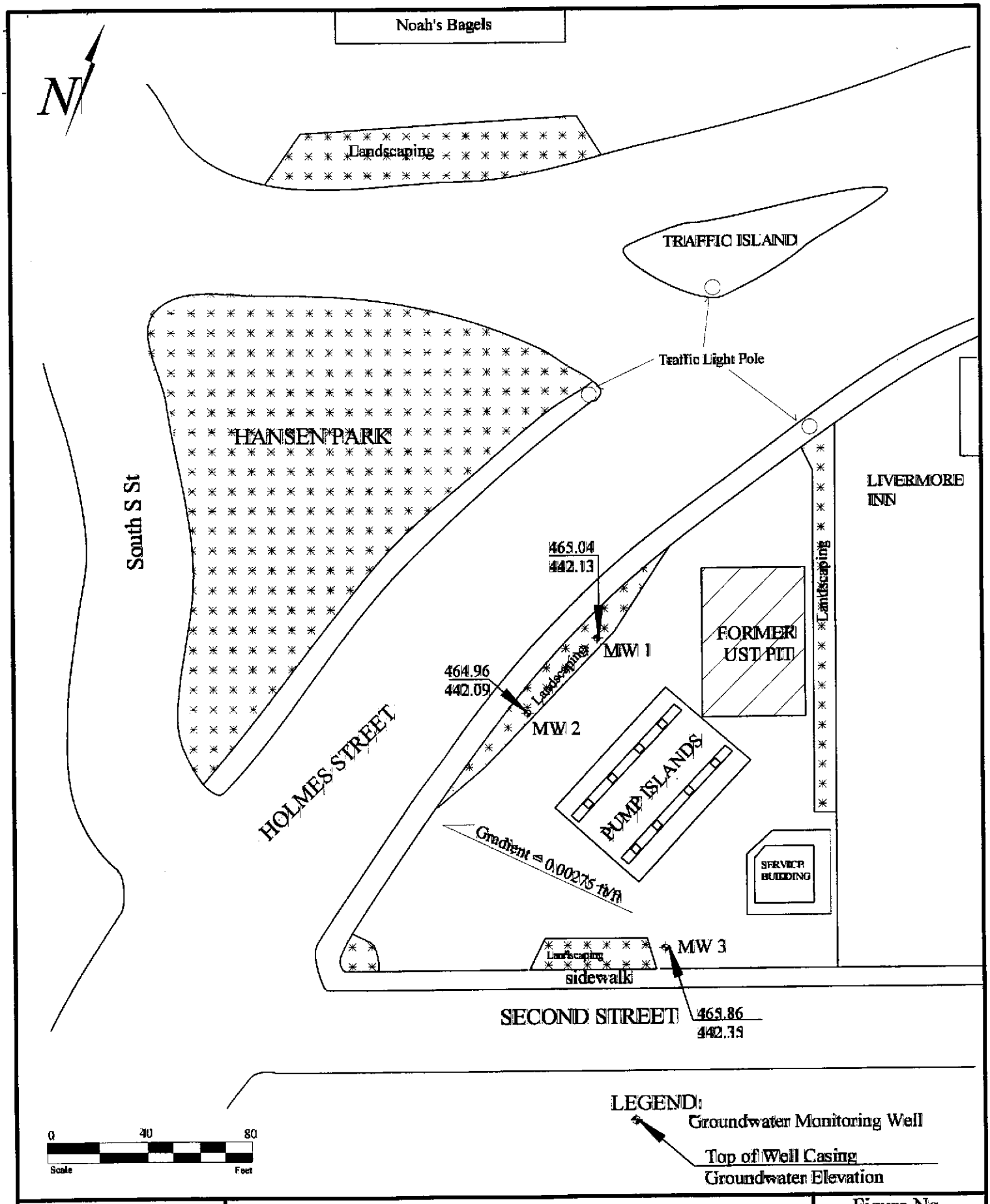
ft bgs	Feet Below Ground Surface
TPHg	Total Petroleum Hydrocarbons as gasoline
TPHd	Total Petroleum Hydrocarbons as diesel
µg/L	Micrograms per liter
MtBE	Methyl tertiary butyl ether



Geo Environmental Technologies	SITE VICINITY MAP Livermore Gas and Minimart 160 Homes Street, Livermore, CA	Figure No. 1 Project Manwel



Geo Environmental Technologies	SITE MAP Livermore Gas and Minimart 160 Homes Street, Livermore, CA	Figure No. 2 Project Manwel



Geo Environmental Technologies	Hydrogeology Livermore Gas and Minimart 160 Homes Street, Livermore, CA	Figure No. 3 Project Manwel

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
(510) 337-9335 (FAX)

StID 4130

July 26, 1999

Mr. Manwei Shuwayhat
Livermore Gas and Mini Mart
54 Wolfe Canyon Road
Kentfield, C A 94904

RE: PSA for 160 Holmes Street, Livermore, CA

Dear Mr. Shuwayhat:

I have completed review of ETIC's July 1999 reports documenting the removal of four underground storage tanks (in February 1999) at the above referenced address. Soil samples collected from the tank excavation contained up to 6,500 parts per million total petroleum hydrocarbons as gasoline (TPHg) and 110 ppm Methy-Tert-Butyl-Ether (MTBE). In addition, a grab water sample collected from a soil boring advanced next to the former USTs contained 100 ppm TPHg and 60ppm MTBE. Clearly an unauthorized release of fuel products has occurred at the site.

At this time, additional investigations are required to delineate the extent and severity of soil and groundwater contamination at the site. Such an investigation shall be in the form of a **Preliminary Site Assessment**, or PSA. The information gathered by the PSA will be used to determine an appropriate course of action to remediate the site, if deemed necessary. The PSA must be conducted in accordance with the RWQCB Staff Recommendations for the Initial Evaluation and Investigation of Underground Tanks, and Article 11 of Title 23, California Code of Regulations. The major elements of such an investigation are summarized in the attached Appendix A.

In order to proceed with this site investigation, you should obtain the professional services of a reputable environmental consultant. Your responsibility is to have the consultant submit for review a proposal outlining planned activities for the delineation of soil and groundwater contamination at the site.

The PSA proposal is due **within 60 days** of the date of this letter, or **by September 27, 1999.** Once the proposal is approved, field work should commence within 60 days. A report must be submitted within 45 days after the completion of this phase of work at the site. Subsequent reports are to be submitted quarterly until this site qualifies for RWQCB "sign off." All reports and proposals must be submitted under seal of a California Registered Geologist, Certified Engineering Geologist, or Registered Civil Engineer.

Manwel

Well	Sampling Date	DTW	pH	Conductivity us/cm	Temp C	Comments odor/product
MW1	2/22/01	22.91	6.7	913	16.6	Y / N
MW2	2/22/01	22.87	6.6	988	15.9	Y / N
MW3	2/22/01	23.51	7.2	879	16.8	N / N

Notes: DTW: Depth to Water
us/cm: microsiemens/centimeter
C: degrees celsius

Geo Enviromental Technologies
3275 Stevens Creek Blvd
#208
San Jose, CA 95117

Attn.: Mr. Costas Orountiotis

Project: Manuel

Dear Mr. Orountiotis

Attached is our report for your samples received on Thursday February 22, 2001
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after April 8, 2001 unless you have requested otherwise. We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919. You can also contact me via email. My email address is: vvancil@chromalab.com

Sincerely,

Vincent Vancil

Diesel

Geo Enviromental Technologies

3275 Stevens Creek Blvd
#208
San Jose, CA 95117

Attn: Costas Orountiotis

Phone: (408) 241-1798 Fax: (408) 248-7685

Project #:

Project: Manuel

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
MW 1	Water	02/22/2001	1
MW 2	Water	02/22/2001	2
MW 3	Water	02/22/2001	3

To: **Geo Enviromental Technologies**
Attn.: Costas Orountiotis

Test Method: 8015M
Prep Method: 3510/8015M

Diesel

Sample ID: **MW 1**
Project: Manuel
Sampled: 02/22/2001
Matrix: Water

Lab Sample ID: **2001-02-0408-001**
Received: 02/22/2001 16:50
Extracted: 02/23/2001 12:33
QC-Batch: 2001/02/23-03.10

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	11000	50	ug/L	1.00	02/26/2001 12:29	ndp
Surrogate(s)						
o-Terphenyl	82.5	60-130	%	1.00	02/26/2001 12:29	

To: **Geo Enviromental Technologies**
Attn.: Costas Orountiotis

Test Method: 8015M
Prep Method: 3510/8015M

Diesel

Sample ID: **MW 2**
Project: Manuel
Sampled: 02/22/2001
Matrix: Water

Lab Sample ID: **2001-02-0408-002**
Received: 02/22/2001 16:50
Extracted: 02/23/2001 12:33
QC-Batch: 2001/02/23-03.10

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	880	50	ug/L	1.00	02/26/2001 13:08	ndp
Surrogate(s)						
o-Terphenyl	79.4	60-130	%	1.00	02/26/2001 13:08	

To: **Geo Enviromental Technologies**
Attn.: Costas Orountiotis

Test Method: 8015M
Prep Method: 3510/8015M

Diesel

Sample ID: **MW 3**
Project: Manuel
Sampled: 02/22/2001
Matrix: Water

Lab Sample ID: **2001-02-0408-003**
Received: 02/22/2001 16:50
Extracted: 02/23/2001 12:33
QC-Batch: 2001/02/23-03.10

Sample/Analysis Flag rl (See Legend & Note section)

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Diesel	100	60	ug/L	1.20	02/26/2001 11:51	ldr
Surrogate(s)						
o-Terphenyl	96.7	60-130	%	1.20	02/26/2001 11:51	

To: **Geo Enviromental Technologies**
Attn.: Costas Orountiotis

Test Method: 8015M
Prep Method: 3510/8015M

Batch QC Report
Diesel

Method Blank **Water** **QC Batch # 2001/02/23-03.10**

MB: 2001/02/23-03.10-001 Date Extracted: 02/23/2001 12:33

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Diesel	ND	50	ug/L	02/26/2001 11:12	
Surrogate(s)					
o-Terphenyl	91.0	60-130	%	02/26/2001 11:12	

To: **Geo Enviromental Technologies**
Attn: Costas Orountiotis

Test Method: 8015M
Prep Method: 3510/8015M

Batch QC Report

Diesel

Laboratory Control Spike (LCS/LCSD) **Water** **QC Batch # 2001/02/23-03.10**

LCS: 2001/02/23-03.10-002 Extracted: 02/23/2001 12:33 Analyzed 02/26/2001 09:55
LCSD: 2001/02/23-03.10-003 Extracted: 02/23/2001 12:33 Analyzed 02/26/2001 10:34

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Diesel	954	911	1250	1250	76.3	72.9	4.6	60-130	25		
Surrogate(s)											
o-Terphenyl	18.6	18.7	20.0	20.0	93.0	93.5		60-130			

To: **Geo Enviromental Technologies**
Attn: Costas Orountiotis

Test Method: 8015M
Prep Method: 3510/8015M

Legend & Notes

Diesel

Analysis Flags

rl

Reporting limits raised due to reduced sample size.

Analyte Flags

ldr

Hydrocarbon reported is in the late Diesel range, and does not match our Diesel standard

ndp

Hydrocarbon reported does not match the pattern of our Diesel standard

Gas/BTEX and MTBE

Geo Enviromental Technologies

3275 Stevens Creek Blvd
#208
San Jose, CA 95117

Attn: Costas Orountiotis

Phone: (408) 241-1798 Fax: (408) 248-7685

Project #:

Project: Manuel

Samples Reported

Sample ID	Matrix	Date Sampled	Lab #
MW 1	Water	02/22/2001	1
MW 2	Water	02/22/2001	2
MW 3	Water	02/22/2001	3

To: **Geo Enviromental Technologies**

Attn.: Costas Orountiotis

Test Method: 8020
8015M

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: **MW 1**
Project: Manuel
Sampled: 02/22/2001
Matrix: Water

Lab Sample ID: **2001-02-0408-001**
Received: 02/22/2001 16:50
Extracted: 02/28/2001 13:17
QC-Batch: 2001/02/28-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	82000	50000	ug/L	1000.00	02/28/2001 13:17	
Benzene	5100	500	ug/L	1000.00	02/28/2001 13:17	
Toluene	1000	500	ug/L	1000.00	02/28/2001 13:17	
Ethyl benzene	1300	500	ug/L	1000.00	02/28/2001 13:17	
Xylene(s)	8700	500	ug/L	1000.00	02/28/2001 13:17	
MTBE	190000	5000	ug/L	1000.00	02/28/2001 13:17	
Surrogate(s)						
Trifluorotoluene	78.5	58-124	%	1000.00	02/28/2001 13:17	
4-Bromofluorobenzene-FID	89.6	50-150	%	1000.00	02/28/2001 13:17	

To: **Geo Enviromental Technologies**

Attn.: Costas Orountiotis

Test Method: 8020
8015M

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: **MW 2**

Project: Manuel

Sampled: 02/22/2001

Matrix: Water

Lab Sample ID: **2001-02-0408-002**

Received: 02/22/2001 16:50

Extracted: 02/28/2001 19:36

QC-Batch: 2001/02/28-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	7600	1000	ug/L	20.00	02/28/2001 19:36	
Benzene	25	10	ug/L	20.00	02/28/2001 19:36	
Toluene	ND	10	ug/L	20.00	02/28/2001 19:36	
Ethyl benzene	69	10	ug/L	20.00	02/28/2001 19:36	
Xylene(s)	25	10	ug/L	20.00	02/28/2001 19:36	
MTBE	2200	100	ug/L	20.00	02/28/2001 19:36	
Surrogate(s)						
Trifluorotoluene	76.8	58-124	%	20.00	02/28/2001 19:36	
4-Bromofluorobenzene-FID	78.0	50-150	%	20.00	02/28/2001 19:36	

STL ChromaLab

Environmental Services (CA 1094)

Submission #: 2001-02-0408

To: **Geo Enviromental Technologies**

Attn.: Costas Orountiotis

Test Method: 8020
8015M

Prep Method: 5030

Gas/BTEX and MTBE

Sample ID: **MW 3**

Project: Manuel

Sampled: 02/22/2001

Matrix: Water

Lab Sample ID: **2001-02-0408-003**

Received: 02/22/2001 16:50

Extracted: 03/01/2001 12:03

QC-Batch: 2001/03/01-01.01

Compound	Result	Rep.Limit	Units	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	03/01/2001 12:03	
Benzene	ND	0.50	ug/L	1.00	03/01/2001 12:03	
Toluene	ND	0.50	ug/L	1.00	03/01/2001 12:03	
Ethyl benzene	ND	0.50	ug/L	1.00	03/01/2001 12:03	
Xylene(s)	ND	0.50	ug/L	1.00	03/01/2001 12:03	
MTBE	ND	5.0	ug/L	1.00	03/01/2001 12:03	
Surrogate(s)						
Trifluorotoluene	74.6	58-124	%	1.00	03/01/2001 12:03	
4-Bromofluorobenzene-FID	72.2	50-150	%	1.00	03/01/2001 12:03	

To: **Geo Enviromental Technologies**

Attn.: Costas Orountiotis

Test Method: 8015M
8020

Prep Method: 5030

Batch QC Report
Gas/BTEX and MTBE

Method Blank **Water** **QC Batch # 2001/02/28-01.01**

MB: 2001/02/28-01.01-003 Date Extracted: 02/28/2001 08:13

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	50	ug/L	02/28/2001 08:13	
Benzene	ND	0.5	ug/L	02/28/2001 08:13	
Toluene	ND	0.5	ug/L	02/28/2001 08:13	
Ethyl benzene	ND	0.5	ug/L	02/28/2001 08:13	
Xylene(s)	ND	0.5	ug/L	02/28/2001 08:13	
MTBE	ND	5.0	ug/L	02/28/2001 08:13	
Surrogate(s)					
Trifluorotoluene	81.8	58-124	%	02/28/2001 08:13	
4-Bromofluorobenzene-FID	81.2	50-150	%	02/28/2001 08:13	

To: **Geo Enviromental Technologies**

Attn.: Costas Orountiotis

Test Method: 8015M
8020

Prep Method: 5030

Batch QC Report
Gas/BTEX and MTBE

Method Blank | **Water** | **QC Batch # 2001/03/01-01.01**

MB: 2001/03/01-01.01-005

Date Extracted: 03/01/2001 09:20

Compound	Result	Rep.Limit	Units	Analyzed	Flag
Gasoline	ND	50	ug/L	03/01/2001 09:20	
Benzene	ND	0.5	ug/L	03/01/2001 09:20	
Toluene	ND	0.5	ug/L	03/01/2001 09:20	
Ethyl benzene	ND	0.5	ug/L	03/01/2001 09:20	
Xylene(s)	ND	0.5	ug/L	03/01/2001 09:20	
MTBE	ND	5.0	ug/L	03/01/2001 09:20	
Surrogate(s)					
Trifluorotoluene	94.2	58-124	%	03/01/2001 09:20	
4-Bromofluorobenzene-FID	94.6	50-150	%	03/01/2001 09:20	

To: **Geo Enviromental Technologies**
Attn: Costas Orountiotis

Test Method: 8020
Prep Method: 5030

Batch QC Report

Gas/BTEX and MTBE

Laboratory Control Spike (LCS/LCSD) **Water** **QC Batch # 2001/02/28-01.01**

LCS: 2001/02/28-01.01-004 Extracted: 02/28/2001 08:46 Analyzed 02/28/2001 08:46
LCSD: 2001/02/28-01.01-005 Extracted: 02/28/2001 09:19 Analyzed 02/28/2001 09:19

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Benzene	92.5	86.3	100.0	100.0	92.5	86.3	6.9	77-123	20		
Toluene	93.2	87.3	100.0	100.0	93.2	87.3	6.5	78-122	20		
Ethyl benzene	95.2	86.4	100.0	100.0	95.2	86.4	9.7	70-130	20		
Xylene(s)	282	266	300.0	300.0	94.0	88.7	5.8	75-125	20		
Surrogate(s)											
Trifluorotoluene	479	437	500	500	95.8	87.4		58-124			

To: **Geo Enviromental Technologies**

Test Method: 8015M
8020

Attn: Costas Orountiotis

Prep Method: 5030

Batch QC Report

Gas/BTEX and MTBE

Laboratory Control Spike (LCS/LCSD) **Water** **QC Batch # 2001/02/28-01.01**

LCS: 2001/02/28-01.01-006 Extracted: 02/28/2001 09:52 Analyzed 02/28/2001 09:52

LCSD: 2001/02/28-01.01-007 Extracted: 02/28/2001 10:24 Analyzed 02/28/2001 10:24

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Gasoline	434	529	500	500	86.8	105.8	19.7	75-125	20		
Surrogate(s)											
4-Bromofluorobenzene-FI	334	450	500	500	66.8	90.0		50-150			

To: **Geo Enviromental Technologies**
Attn: Costas Orountiotis

Test Method: 8020
Prep Method: 5030

Batch QC Report

Gas/BTEX and MTBE

Laboratory Control Spike (LCS/LCSD) **Water** **QC Batch # 2001/03/01-01.01**

LCS: 2001/03/01-01.01-006 Extracted: 03/01/2001 09:52 Analyzed 03/01/2001 09:52
LCSD: 2001/03/01-01.01-007 Extracted: 03/01/2001 10:25 Analyzed 03/01/2001 10:25

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Benzene	95.7	83.5	100.0	100.0	95.7	83.5	13.6	77-123	20		
Toluene	98.1	85.5	100.0	100.0	98.1	85.5	13.7	78-122	20		
Ethyl benzene	98.9	86.8	100.0	100.0	98.9	86.8	13.0	70-130	20		
Xylene(s)	299	261	300	300	99.7	87.0	13.6	75-125	20		
Surrogate(s)											
Trifluorotoluene	492	426	500	500	98.4	85.2		58-124			

To: **Geo Enviromental Technologies**

Test Method: 8015M
8020

Attn: Costas Orountiotis

Prep Method: 5030

Batch QC Report

Gas/BTEX and MTBE

Laboratory Control Spike (LCS/LCSD) **Water** **QC Batch # 2001/03/01-01.01**

LCS: 2001/03/01-01.01-008 Extracted: 03/01/2001 10:58 Analyzed 03/01/2001 10:58

LCSD: 2001/03/01-01.01-009 Extracted: 03/01/2001 11:30 Analyzed 03/01/2001 11:30

Compound	Conc. [ug/L]		Exp.Conc. [ug/L]		Recovery [%]		RPD	Ctrl. Limits [%]		Flags	
	LCS	LCSD	LCS	LCSD	LCS	LCSD	[%]	Recovery	RPD	LCS	LCSD
Gasoline	490	509	500	500	98.0	101.8	3.8	75-125	20		
Surrogate(s)											
4-Bromofluorobenzene-FI	365	443	500	500	73.0	88.6		50-150			

CHROMALAB, INC.

Environmental Services (SDB) (DOHS 1094)

1220 Quarry Lane • Pleasanton, California 94566-4756
(925) [illegible] • Fax (925) 484-10[illegible]

Reference #: 2001-02-0408

Chain of Custody

DATE 2/22/01 PAGE 1 OF 1

PROJ. MGR Costas Orountiotis
COMPANY Geo-Environmental Technologies
ADDRESS 3275 Stevens Creek blvd. #208
San Jose, CA 95517
SAMPLERS (SIGNATURE)
(PHONE NO.) (408) 241-1798
(FAX NO.) 248-7685

ANALYSIS REPORT

SAMPLE ID.	DATE	TIME	MATRIX	PRESERV.	TPH-(EPA 8015/8020) ☒Gas w/ ☒BTEX ☐MTBE	PURGEABLE AROMATICS BTEX (EPA 8020)	TPH-Diesel (EPA 8015M)	TEPH (EPA 8015M) ☐Diesel ☐M.O. ☐Other	PURGEABLE HALOCARBONS (HVOCs) (EPA 8010)	VOLATILE ORGANICS (VOCs) (EPA 8260)	SEMIVOLATILES (EPA 8270)	Oil & Grease ☐Petrol ☐Total ☐1664		☐PESTICIDES(EPA 8080) ☐PCB'S (EPA 8080)	PNA's by ☐8270 ☐8310	☐Spec. Cond. ☐TSS ☐TDS	LUFT METALS: Cd, Cr, Pb, Ni, Zn	CAM 17 METALS (EPA 6010/7470/7471)	TOTAL LEAD	☐W.E.T. (STLC) ☐TCLP	☐Hexavalent Chromium ☐pH (24 hr hold time for H20)				NUMBER OF CONTAINERS
MW1	2/22		H_2O	ice	X		X																		4
MW2	2/22		H_2O	ice	X		X																		
MW3	2/22		H_2O	ice	X		X																		

PROJECT INFORMATION

PROJECT NAME: Manuel
PROJECT NUMBER
P.O. #

SAMPLE RECEIPT

TOTAL NO. OF CONTAINERS	12
HEAD SPACE	
TEMPERATURE	5.0°C
CONFORMS TO RECORD	

TAT: STANDARD 5-DAY | | 24 | 48 | 72 | OTHER

SPECIAL INSTRUCTIONS/COMMENTS:
Report: ☐ Routine ☐ Level 2 ☐ Level 3 ☐ Level 4 ☐ Electronic Report

RELINQUISHED BY 1.	RELINQUISHED BY 2.	RELINQUISHED BY 3
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) (TIME)
(PRINTED NAME) David Kelly (DATE) 2/22	(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)
(COMPANY) G.E.T.	(COMPANY)	(COMPANY)
RECEIVED BY 1.	**RECEIVED BY 2.**	**RECEIVED BY (LABORATORY) 3**
(SIGNATURE) (TIME)	(SIGNATURE) (TIME)	(SIGNATURE) Denise Harrington (TIME)
(PRINTED NAME) (DATE)	(PRINTED NAME) (DATE)	(PRINTED NAME) D Harrington 1650 (DATE)
(COMPANY)	(COMPANY)	(LAB) STL-CL 2/22/01