

San Jose, CA 95117 408-241-1798

FAX 408-248-7685

NAMES OF STREET OF THE STREET

WORKPLAN

OFF SITE SOIL AND GROUNDWATER INVESTIGATION

For

Livermore Gas and Mini Mart 160 Holmes Street Livermore, California

Prepared For:

Manwel and Samira Shuwayhat

(408) 316-4507 cell for costas.

January 22, 2001

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408-241-1798 FAX 408-248-7685

Workplan for Soil and Groundwater Characterization Livermore Gas and Mini Mart 160 Holmes Street, Livermore, California

1.0 INTRODUCTION

The Livermore Gas and Mini Mart, located at 160 Holmes Street in Livermore, 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.

A soil and groundwater investigation requested by the Alameda County Environmental Health Services (ACEHS) and completed on 9/22/00, confirmed that groundwater beneath the site was severely impacted by petroleum hydrocarbons and Methyl Tertiary Butyl Ether (MTBE).

This Workplan addresses 10/16/00 and 1/17/01 request (2nd Notice) by Ms. Eva Chu of the ACEHS to further characterize soil and groundwater on and off the site. The Workplan describes procedures and timelines for the proposed work. The ACEHS letters are presented in Appendix A.

PAST WORK ON SITE 2.0

On 2/26/99, a boring was advanced in the northern section of the property, about 10 feet from the edge of First Street sidewalk, to log soil 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) was detected at low levels (61 mg/kg) in the soil stockpile but not beneath the diesel tank; TPHg concentrations ranged from not detectable (ND) to 80 mg/kg; MTBE concentrations ranged from 24 to 110 mg/kg.

On 5/20/99 samples were collected from soil 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 groundwater monitoring wells MW1, MW2 and MW3 were installed on site. Groundwater samples were analyzed for TPHd, TPHg, BTEX, and MTBE. Analytical results indicated that downgradient well MW1 was contaminated with 57,000 ug/L TPHd, 170,000 ug/L TPHg, 320,000 ug/L MTBE and 6,400 ug/L Benzene. Groundwater in crossgradient well MW2 contained 4,500 ug/L TPHg, 3,000 ug/L MTBE and 220 ug/L Benzene; upgradient well MW3 contained traces of TPHd and TPHg, and no BTEX or MTBE above detection limits.

On 10/19/00 the monitoring wells were sampled as part of a quarterly sampling program. MW1 remained impacted with 17,000 ug/L TPHd, 170,000 ug/L TPHg, 200,000 ug/L MTBE and 8,400 ug/L Benzene. Crossgradient well MW2 contained 1,300 ug/L TPHd, 3,400 ug/L TPHg, 1,900 ug/L MTBE and 150 ug/L Benzene; upgradient well MW3 contained no TPHd, TPHg, BTEX or MTBE above detection limits. As directed by Ms. Chu of the ACEHS, the samples were also analyzed for fuel oxygenates. Cumulative analytical results are presented in Table 1. Fuel oxygenate analytical results are presented in Table 2.

3.0 SITE CONTACTS

The following is a list 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

Engineering:

Geo-Environmental Technologies Attention: Costas Orountiotis

3275 Stevens Creek Blvd., Suite 208

San Jose, CA 95117 Phone: (408) 241-1798

4.0 METHODS AND PROCEDURES

The groundwater gradient in the general area is westerly, as shown in the attached Zone 7 Water Agency 1999 draft figure presented in Appendix B. The site vicinity groundwater gradient is due west by northwest, towards Hanson Park, directly across Holmes Street from the subject site. Beyond the park is South S Street and Valley Memorial Hospital; Noah's Bagels is to the northwest and a shopping center is to the north; to the east and northeast is the Livermore Inn, to the south (upgradient) is Second Street and to the southeast are residences.

Figure 1, is the Site Vicinity Map showing the location of the site with respect to major streets and highways; Figure 2, is the Site Plan with the location of former USTs, existing monitoring wells and groundwater gradient; Figure 3, shows the proposed sampling locations on and off the site.

The investigation will concentrate on the property itself and downgradient area proximate to Hanson Park, Noah's Bagels, the Livermore Inn and if necessary on South S Street. The investigation of off-site areas will be performed under a street encroachment permit and traffic control plan.

A City of Livermore Encroachment Permit was obtained on 1/17/01 and is presented in Appendix C. Access agreements with the property managers/owners of Noah's Bagels and the Livermore Inn are being negotiated. Letters requesting access are presented in Appendix D.

4.1 Soil borings

Groundwater is expected to be found at a depth of about 20 below ground surface (bgs). Seven to nine borings (B1 to B9) will be advanced to groundwater using direct push technology (geoprobe) during one full day of drilling. At least one of these borings will be continuously logged in the field in order to characterize the actual soil lithology of deposits in the downgradient direction.

Three borings will be placed on the property, 160 Holmes Street as follows:

- Boring B1 will be located on the corner of Second and Holmes Streets, past crossgradient well MW2 and parallel to non-impacted, upgradient well MW3; it is expected to provide a zero contamination point in the southwest direction.
- Boring B2 will be located northeast of impacted well MW1 and northwest (downgradient) of the former UST pit, along Holmes Street.
- Boring B3 will be placed at the northernmost corner of the property, north (crossgradient) of the former UST pit and adjacent to the Livermore Motel.

Three or four borings will be advanced on the Hanson Park periphery as follows:

 Boring B4 will be located on the corner of South S and Holmes Streets, directly across from well MW2 and in the general downgradient direction.

- Boring B5 will be located directly across from impacted well MW1, along the likely axis of
 the contaminant plume. Should field screening of samples indicate that groundwater in
 boring B5 is contaminated, then another boring will be advanced along the same axis, but
 farther downgradient from the site, either within the park or within South S Street.
- Boring B6 will be located directly across from boring B2 and impacted well MW1, to the north of the likely axis of the contaminant plume.

One boring will be placed in the landscape area in front of Noah's Bagels, 1412 First Street, on the northwest side of Holmes Street.

One boring will be placed in the landscape area by the pool of the Livermore Inn, 1421 First Street, adjacent to the subject property. Data from this boring is expected to provide a zero contamination point in the northeast direction.

The last two off-site soil borings will be advanced on private properties, Noah's Bagels to the north and Livermore Inn to the east by northeast. The exact locations for these borings will not be finalized until underground utilities are located using a private locator and the property owners agree to provide access for purposes of this investigation.

Soil samples for laboratory analysis will be collected in the vadose zone above groundwater at about 17-18 feet below ground surface.

Groundwater grab samples will be collected from all borings and contained in 1-liter, amber glass bottles and 40-ml preserved VOA containers. These will be properly labeled and placed in a cooler on crushed ice.

Samples will be analyzed by a State certified laboratory for hazardous materials analysis, on a 5-day turnaround timeline. Samples will be transported to the laboratory using signed chain of custody procedures.

Proposed boring locations are shown in Figure 3.

4.2 Lab analysis

Chromalab Inc, a State-certified laboratory for hazardous materials analysis will analyze soil and groundwater samples for TPHd, TPHg and BTEX using EPA Methods 8015/8020. All groundwater samples containing petroleum hydrocarbons will also be analyzed for Fuel Oxygenates using EPA Method 8260.

Soil samples from beneath Hanson Park will be collected from 15 and 21 feet bgs (vadose and saturated zones respectively) and analyzed at a soils laboratory for porosity, grain density and total organic carbon; this will aid in determining future corrective action and projected attenuation rates.

4.3 Technical report

Upon completion of the investigation, a technical report will be prepared and copies submitted to the client and ACEHS. The technical report will commin evaluation and discussion of data and recommendations.

5.0 SCHEDULE

Assuming workplan approval by the ACEHS. Geo-Environmental Technologies has scheduled Vironex, a C-57 driller to implement the workplan on February 1, 2001. It is expected that drilling will be completed on the same day. The following schedule is anticipated.

2 days	client, Zone 7 and ACEHS interaction	(dine)
l day	mark site, USA number	(dme)
8 days	encroachment permit, access agreements	(dine)
1 day	drill borings and collect samples	•
5 days	laboratory analysis	
21-35 days	report to client and ACEHS	

Should you have any questions or comments regarding this workplan, please contact the undersigned at (408) 241-1798.

Costas Orountiotis Program Manager

Keineth Meleen P. E.

Licensed Civil Engineer No. C17487

Expires 6 30/01

TABLES

TABLE 1 - Groundwater Analytical Results

Exempre Gas and Minimart, 160 Holmes, Livermore, California

Well ID.	Date	GNE	TPHd	TPHg	Benzene	Toluene	Ethyl-Benzene	Xylenes	MtBE
		∉ feet)	(µ g/L)	(μ g/L)	(μ g/L)	(µg/L)	(μ g/L)	(μ g/L)	(μ g/L)
MW1	08/11/0		57,000	170,000	6,400	7,600	4,200	9,700	320,000
	10/19/20		17,000	170,000	8,400	3,200	2,700	10,000	200,000
MW2	08/11/20		1.900	4,500	220	52	160	170	3,000
	10/19/20		1,300	3,400	150	21	100	70	1,900
MW3	02/11/80		260	59	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
	10/19:0		< 65	< 50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0

Notes: GWE Groundwater Elevation (to mean sea level)

TPHg Tota Petroleum Hydrocarbons as gasoline

TPHo Total Petroleum Hydrocarbons as diesel

µg/L Micrograms per liter

MtBE Metryl tertiary butyl ether

TABLE 2 - Fuel Oxygenates

Livermore Gas and Minimart, 160 Holmes, Livermore, California

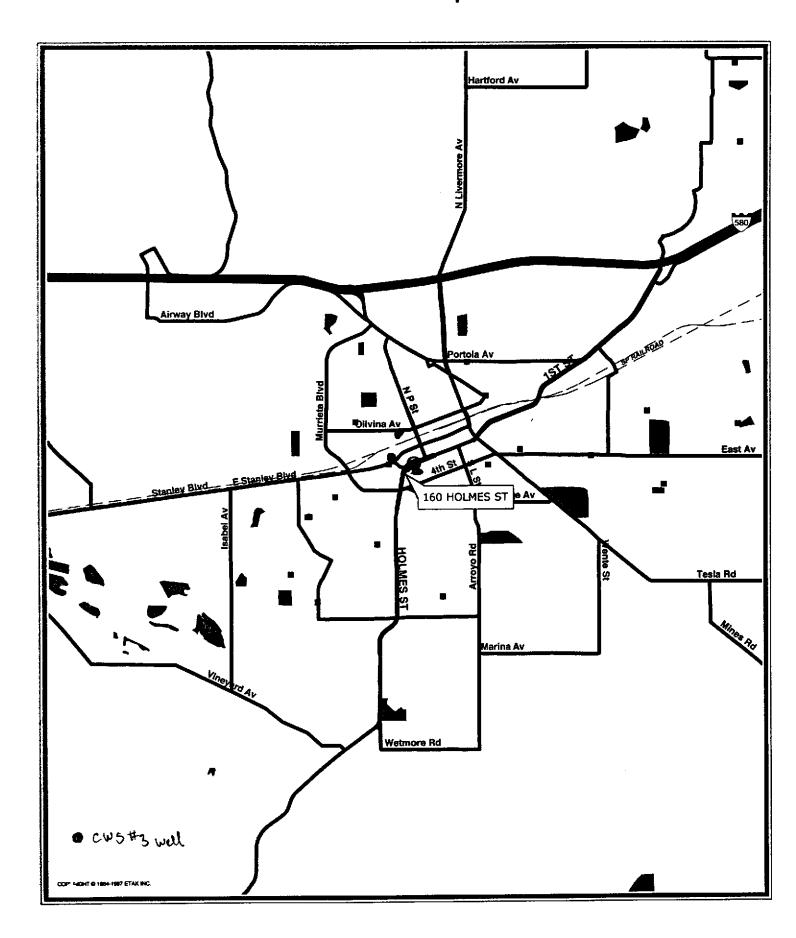
Date Diisopropyl Ethyl-t-butyl Methyl-t-butyl Ter-Amyl Methyl tert-Butanol
Ether Ether Ether Ether

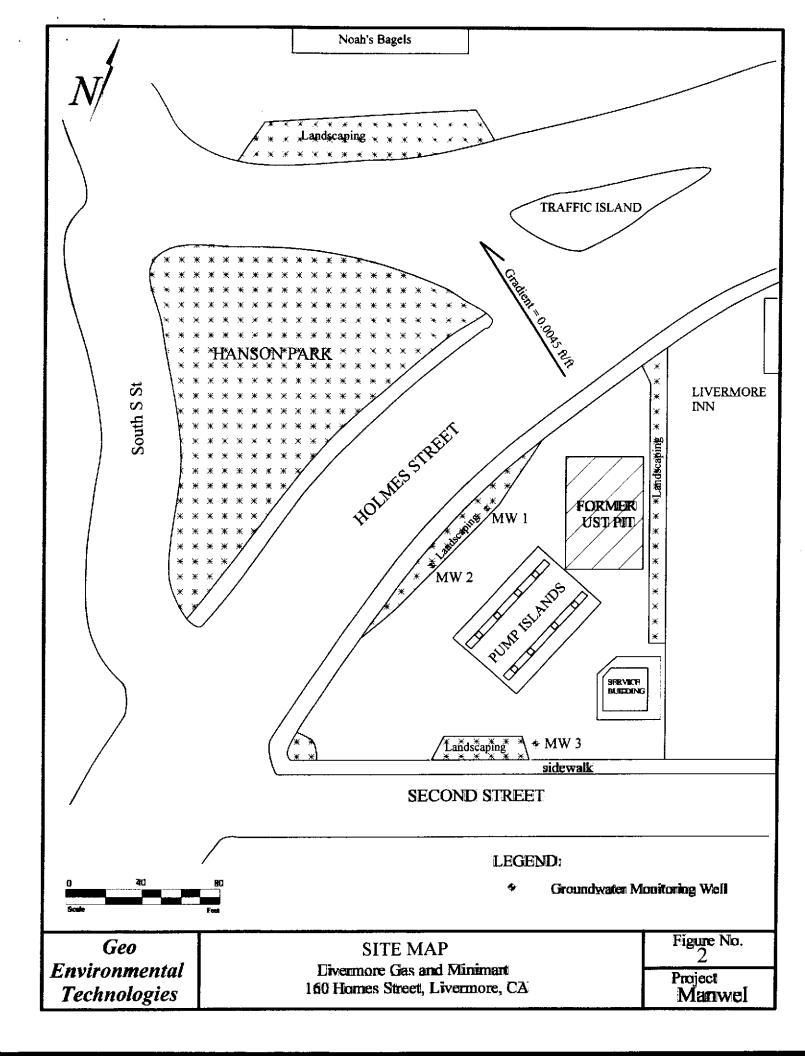
		Ether	Ether	Ether	Ether	tore Balanor	
		(μg/L)	_(μ g/L)	(μ g/L)	(μ g/L)	(μg/L)	
MW1	10/19/00	< 2000	< 2000	180,000	< 2000	< 2000	
MW2	10/19/00	< 40	< 40	1,800	< 40	< 40	
MW3	10/19/00	< 1	< 1	< 1	< 1	< 1	

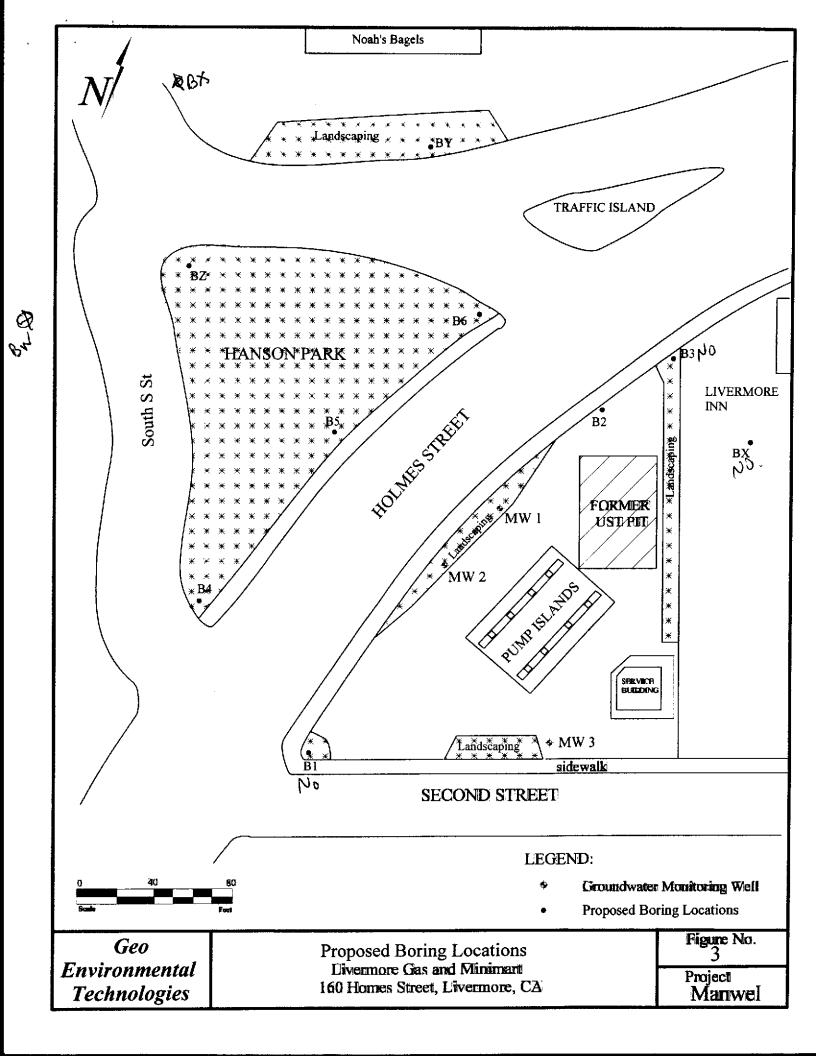
Note: $\mu g/L = Micrograms per liter$

FIGURES

Current Map







APPENDIX A

AGENCY DAVID J. KEARS, Agent Create



StID 4130

October 16, 2000

Mr. Manwel Shuwayhat Livermore Gas and Mini Mart 160 Holmes Street Livermore, CA 94550 ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda CA 94302-6577
(510) 567-6700
FAX 510) 337-9365

RE: Expedited Site Assessment Work Pan for 160 Holmes Street, Livermore, CA

Dear Mr. Shuwayhat:

I have completed review of ETIC's September 2000 Preliminary Site Assessment report prepared for the above referenced site. That report summarized findings during the installation and sampling of three groundwater manitoring wells at the site. Groundwater analytical results identified up to 170,000cpb TPHg, 57,000ppb TPHd, 6,400ppb benzene, and 320,000ppb MTBE in Well MW-1.

Clearly, there has been a fuel release at the site that could potentially impact water supply wells in the Livermore Valley. A California Water Services well is located approximately 1,000 feet downgradient of the site. For this reason, the cleanup priority determined for the site is Class A, a high priority case. In other words, expedited site assessment (ESA) should be conducted at the site. A workplan for continued site assessment on- and off-site is due within 45 days of the date of this letter, or by December 1, 2000. A flowchart depicting the EAS process is enclosed. The outcome of the ESA should demonstrate an understanding of the 3-dimensional distribution of contamination, define the geological/hydrogeological site conditions, and identify migration pathways and points of exposure. With this information, an appropriate corrective and/or remedial action plan can be prepared for the site.

If you have any questions, I can be reached at (510) 567-6762.

eva chu

c:

Hazardous Materials Specialist

Shari Knieriem, UST Cleanup Fund (w/o)

Matt Katen, Zone 7 (QIC 80201) (w/o)

Sam Palermo, CWS, 195 South N Street, Livermore, CA 94550 (w/o)

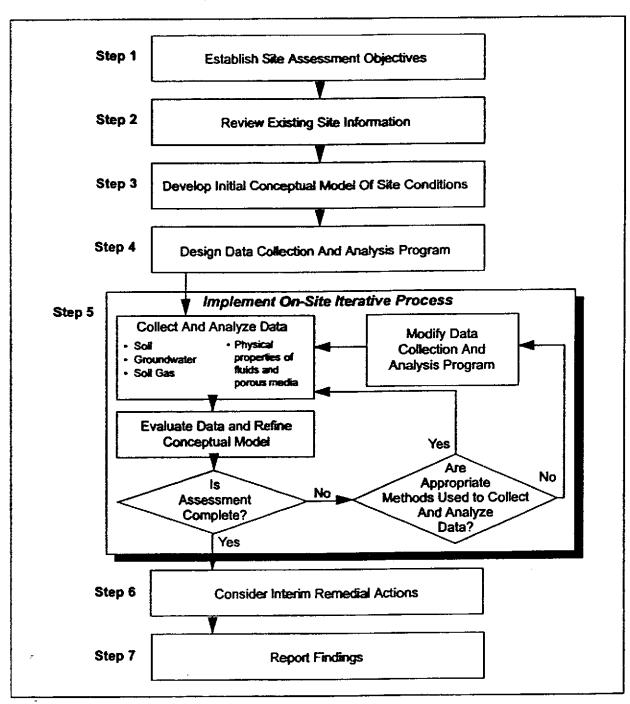
Chuck Headlee, SF-RWQCB w/o)

Danielle Stefani, Livermore-Pleasantin Fire Department (w/o)

Costas Orountiotis, ETIC, 3275 Stevens Creek Blvd, #315, San Jose, CA 95117

holmes5

Exhibit II-2
Expedited Site Assessment Process



Source: Modified from ASTM, 1995c.

StID 4130

January 17, 2001

Mr. Manwel Shuwayhat Livermore Gas and Mini Mart 160 Holmes Street Livermore, CA 94550

SECOND NOTICE OF VIOLATION

Dear Mr. Shuwayhat:

On October 16, 2000, the Alameda County Department of Environmental Health, Hazardous Materials Division, sent you a letter requesting a technical report for expedited site assessment to determine the extent of soil and water contamination on- and offsite due to the unauthorized release of fuel products at **160 Holmes Street, Livermore, CA**. As of the date of this letter, however, we have not received the required workplan. Therefore, this letter constitutes a **Second Notice** that you are in violation of specific laws and that the technical report is due.

According to Section 25298 of the California Health and Safety Code, underground storage tank closure is incomplete until the responsible party characterizes and remediates the contamination resulting from product discharge. Therefore, you, as the responsible party, are in violation of this section of the Code, for which Section 25299 specifies civil penalties of up to \$5,000, for each day of violation. Also, failure to furnish technical reports regarding documented or potential groundwater contamination violates Section 13267(b) of the California Water Code.

You are required to submit the technical report for the site to this office within 15 days from the date of this letter. Modification of required tasks or extensions of stated deadlines must be confirmed in writing by this agency.

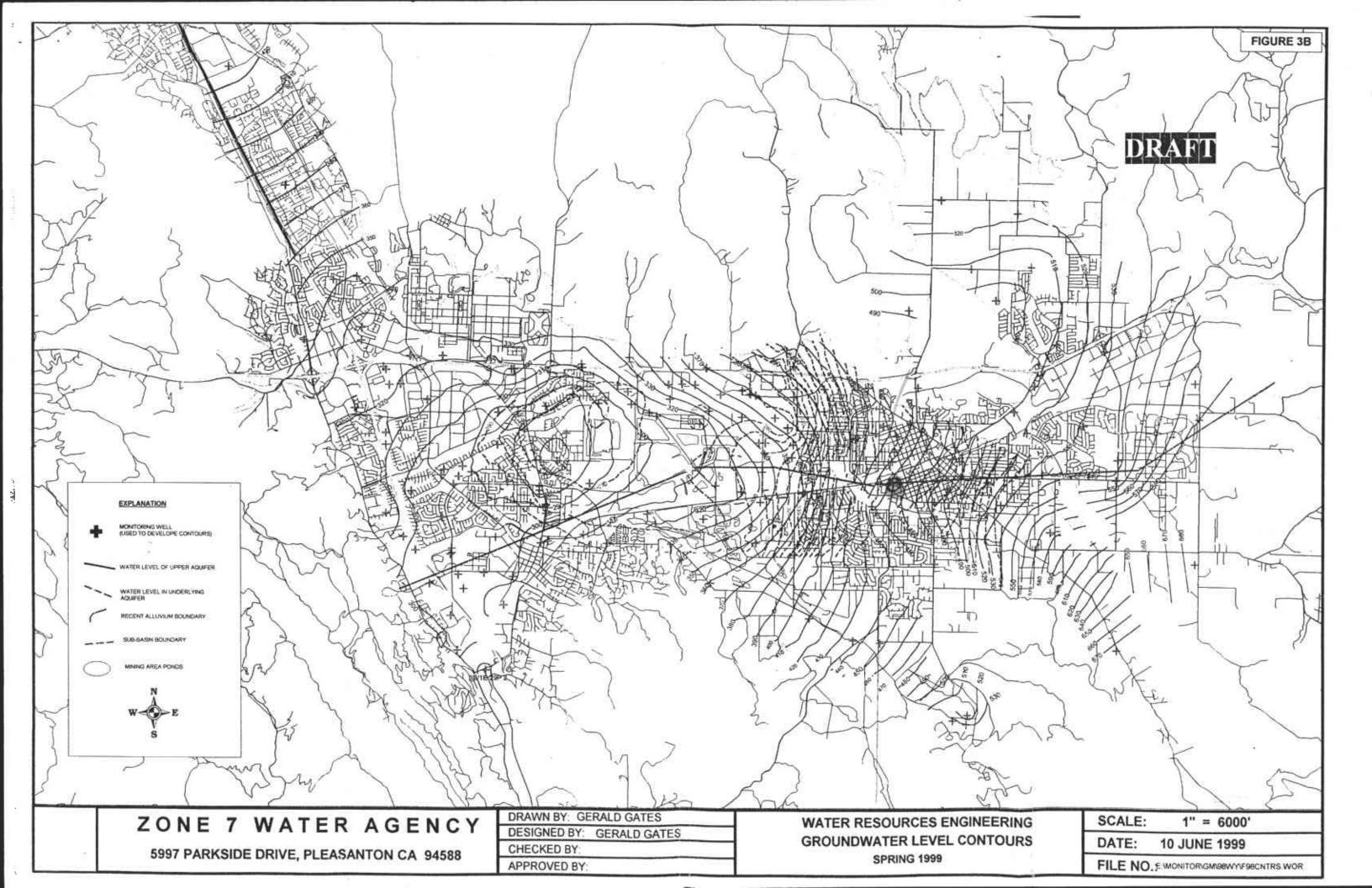
Be advised that failure to be in compliance with corrective action directives may jeopardize your eligibility to remain in the UST Cleanup Fund. If you have any questions, I can be reached at (510) 567-6762.

eva chu Hazardous Materials Specialist

email: Costas Orountiotis (coetic@hotmail.com)
Danielle Stefani (dstefani@lpfire.org)
Matt Katen, Zone 7 (QIC 80201)
Chuck Headlee (cth@rb2.swrcb.ca.gov)

holmes6

APPENDIX B



APPENDIX C

July of Livermore	Encroacimie	
Community Development Department	Permit No.	EN010021
052 S. Livermore Avenue		
ivermore, CA 94550		
925) 373-5240	N. Same	
ر البلاد الله الله الله الله الله الله الله ا	and the state of t	
PERMIT TO DO WORK IN ACCORDANCE WITH CHAPTER 12.08 IS ADOPTED BY THE CITY OF LIVERMORE AND ANY SPECIAL R	OF THE LIVERMORI E QUIREM ENTS SHO	E MUNICIPAL CODE AND SPECIFICATION OWN OR LISTED HEREIN.
pplicant/Permittee:	Receipt N	
lame: GEO ENVIRONMENTAL	ヾ ぐご/♪Permit Fe	
Address: 3275 STEVENS CREEK BL #208	Inspection	Fee: \$60.00 \$0.00
SAN JOSE, CA 95117, 95117 Phone: (408) 241-1798 Total: \$125.00	Bond:	\$0.00
Phone: (408) 241-1798 Total: \$125.00	and a second second	
PLEASE READ THIS PERMIT CAREFULLY. KEEP IT AT TH 925) 373-5240 AT LEAST 24 HOURS BEFORE YOU START V	IE WORK SITE. TO WORK.) ARRANGE FOR INSPECTION, PHON
IOB LOCATION: , Hanson Park (see attached map માંત્ર	p)	
DESCRIPTION OF WORK: Bore feat 1 inch diameter t ylinder on Seond Street in sidewalk area; replace one sidewalk		d sidewalk in Park area and one test
ength of Excavation: _ L.F. Width: _ L.F.	-	L.F.
ttention is directed to the General Provisions printed on t equirements (to be determined as needed by the Engineeri	he reverse side of ng Division).	this permit and to the attached speci
rosecution of Work: All work authorized by the permit shall be performed in a watisfaction of the Director of Public Works.		
lability and Damages: The permittee shall be responsible for all liability imposed rork permitted and done by permittee under this permit, or which may arise out of ermit in respect to maintenance and encroachment. The permittee shall protect hem harmless in every way from all action at law for damage or injury to persons perations as provided in this permit.	or the railure on the part of and indemnify the City (of Livermore, its officers and employees, and save
ignature of Permittee:	City Engineer	. \
		wich A) 112
V. Vancon for GET	By:	vy v v v v v v v v v v v v v v v v v v
Date: 1/17/01	Date of Issue: _	Work Completed:
Date: Inspec	ctor:	
Date:Inspec	ctor:	

City of Livermore Community Development Department 1052 S. Livermore Avenue Livermore, CA 94550 (925) 373-5240

Encroachment Permit No. EN010021

SPECIAL REQUIREMENTS APPLICABLE TO WORK ASSOCIATED WITH

JOB LOCATION:	, Hanson Park (see attached map)
DESCRIPTION OF WORK: test cylinder on Seond Street in	Bore four 1 inch diameter test cylinders behind sidewalk in Park area and one n sidewalk area; replace one sidewalk flag
1: Lane closures on Holmes S	treet require a permit from the state

APPENDIX D



408-241-1798 FAX 408-248-7685

January 22, 2001

Gallagher and Miersch Attention: Tom Foley 1390 Willow Pass Road, #220 Concord, CA 94520

Dear Mr. Foley,

It was a pleasure talking with you on 1/19/01. As I indicated to you, Noah's Bagels, 1412 First Street, is near and downgradient of the Livermore Gas and Mini Mart, on 160 Holmes Street, Livermore, CA 94550. The Alameda County Environmental Health Services (ADEHS) has directed soil and groundwater investigation of the area surrounding the station on an expedited basis.

Per your request I have instructed Micor, our insurance agent, to issue you a hold harmless and additionally insured certificate; you should receive the letter by mail and by fax before 1/26/01.

Thank you for granting us permission to advance a boring in the subject property's lawn. The boring will not damage asphalt or cement. Upon completion, the boring will be backfilled with grout and the last 12 inches plugged with native soil. The whole operation will not exceed 45 minutes at no cost to you. The results of this investigation will be provided to you upon completion.

The following are contacts for this project:

Manwel Shuwayhat, station owner: (925) 455-4212

Costas Orountiotis, engineer: (408) 241-1798

Eva Chu, ACEHS: (510) 567-6762

Due to the expedited nature of this matter, drilling has been already been scheduled for February 1, 2001.

Thank you for your cooperation. Please feel free to call me anytime at (408) 241-1798 or my cellular number, (408) 316-4507.

Sincerely,

Costas Orountiotis Project Manager



3275 Stevens Creek Blvd. #208 San Jose, CA 95117

408-241-1798

FAX 408-248-7685

January 18, 2001

Patel Mahendra and Ramila Etal P. O. Box 1146 Menlo Park, CA 94026

Dear Mr. Mahendra, Ms. Etal.

Your property, the Livermore Inn, is adjacent to the Livermore Gas and Mini Mart, on 160 Holmes Street, Livermore, CA 94550. The Alameda County Environmental Health Services (ADEHS) has directed soil and groundwater investigation of the area surrounding the station on an expedited basis. This area includes your property, the Livermore Inn.

We request permission advance a single, narrow diameter (1.5-inches) boring within your property. The boring will be placed within a planter if possible, to not damage asphalt or cement. Upon collection of a groundwater sample, the boring will be backfilled with grout and the last 12 inches plugged with native soil. The whole operation will not exceed 45 minutes at no cost to you. The results of this investigation will be provided to you upon completion.

The following are contacts for this project:

Manwel Shuwayhat, station owner: (925) 455-4212 Costas Orountiotis, engineer: (408) 241-1798

Eva Chu, ACEHS: (510) 567-6762

Your cooperation will be appreciated. Due to the expedited nature of this matter, drilling has been already been scheduled for February 1, 2001.

Again I would like to assure you that this the information regarding your property will be available to you at no charge, the task will be completed in less than one hour and the boring will be grouted shut.

Please sign this letter to grant us access to your property and fax or mail to me as soon as possible.

Permission to drill granted:

Thank you for your cooperation. Please feel free to call me anytime at (408) 241-1798 or my cellular number, (408) 316-4507.

Sincerely,

Costas Orountiotis Project Manager