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ENVIRONMENTAL
MANAGEMENT, INC.

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Delta
Environmental
Consultants, Inc.

Alameda County

MAY 29 2003

Environmental Health

May 27, 2003
KHM Project C85-318 Livermore

Mr. Scott Seery
Alameda County Health Care Services Agency
Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: **Site Assessment Work Plan**
Shell Service Station
318 South Livermore Ave.
Alameda, California

Dear Mr. Seery,

KHM Environmental Management, Inc. (KHM), on behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell), has prepared a groundwater assessment work plan for the site referenced above (Figure 1). In a letter dated March 7, 2003, the Alameda County Health Care Services Agency (ACHCSA) notified Shell that the above referenced site had been placed in the Local Oversight Program. Shell was identified as the primary Responsible Party.

BACKGROUND

The following sections present a description of the current service station and a brief summary of previous site soil and groundwater investigations.

Site Description

The site is located on the eastern corner of South Livermore Avenue and Third Street in Livermore, California (Figure 1). The site is currently the location of an active Shell-branded service station. The service station consists of a building containing vehicle service bays and small convenience store, three fuel dispensers, three underground fuel storage tanks (USTs), and one waste oil UST. A station plan is presented on Figure 2.

6284 San Ignacio Avenue • Suite E
San Jose, California 95119 USA
408.224.4724 • Fax: 408.224.4518

800.477.7411

911 South Primrose Avenue • Suite K
Monrovia, California 91016 USA
626.256.6662 • Fax: 626.256.6263

Previous Release Case

In March 1989, a sample of the backfill around the fill pipe of the regular unleaded UST was collected. The samples was found to contain total petroleum hydrocarbons as gasoline (TPH-g) at 37,000 parts per million (ppm). Four borings were drilled adjacent to the USTs. TPH-g and benzene, toluene, ethylbenzene, and xylene (BTEX compounds) were not detected in any of the soil samples collected from the borings. Four groundwater monitoring wells (MW-1 through MW-4) were installed in May of 1990. The wells were monitored through 1995 when the case was closed and the wells destroyed. The highest concentration of TPH-g detected was 90 micrograms per liter (ug/l).

GRASP Well Installations

Shell's Groundwater Assessment Program (GRASP) activities, initiated at the above referenced site on September 13, 2001, revealed detectable concentrations of methyl tert-butyl ether (MTBE) in groundwater. GRASP is a voluntary initiative by Shell to install groundwater monitoring wells at numerous retail service stations nationwide that do not have any active release cases but have been identified to be in close proximity to one or more public water supply wells.

On September 13 through 18, 2001, IT Corporation (IT) supervised the drilling and installation of four groundwater monitoring wells (MW-5, MW-6, MW-7 and MW-8). Borings for wells encountered primarily gravels, silts, and clays to their total depths ranging from 56.5 to 51.5 feet below grade (bg). Groundwater was encountered in borings at a depth of approximately 40 feet bg. The location and elevation of the four site wells was established by a licensed surveyor. Depth to water in wells was measured on December 8, 2001. The groundwater flow direction was determined to be to the northwest consistent with data from the previous site wells in 1990 through 1995.

PID readings for all soil samples were less than the field screening level of 10 parts per million by volume (ppmv). One soil sample was retained from Well MW-7 at 35 to 35.5 feet bg for laboratory analyses. Petroleum hydrocarbons were not detected in the sample. MTBE was detected in the initial groundwater sample (9/18/01) from Well MW-7 at 1.2 ug/l (Figure 2).

Groundwater Monitoring

Site wells have been sampled four times since they were installed in September 2001. MTBE has been the only compound detected. MTBE has been detected in samples from site wells at a maximum concentration of 6.9 ug/l (Well MW-8). MTBE was detected in only one water sample collected from the four site wells on January 24, 2003, the most recent sampling event. MTBE was detected in the groundwater sample from well MW-7 at 0.89 ug/l.

WORK PLAN

KHM, on behalf of Shell, has prepared the following work plan to address the presence of MTBE in groundwater.

Work Plan for Site Assessment

No additional assessment activities are proposed at this time. The MTBE concentration in groundwater is well below the State secondary maximum contaminant level (MCL) of 5.0 ug/l (0.89 ug/l, well MW-7). Water supply wells do not appear to be threatened. Shallow groundwater has been documented to be moving west to northwest, away from the nearest water supply well located approximately 1,192 feet

northeast of the site. Based on the sensitive receptor survey done by IT in 2002, there appears to be no sensitive receptors within 2,000 feet downgradient (west-northwest) of the site (Figure 3).

KHM proposes to continue the sampling and analysis of groundwater from the four site wells on a quarterly basis for the remainder of 2003. Samples will be analyzed for TPH-g, BTEX compounds, and the fuel oxygenate MTBE, using EPA Method 8260B. A quarterly monitoring report will be issued to ACHCSA. At the end of 2003, KHM will make a recommendation regarding the frequency of future sampling events.

Record Owners

KHM has identified the property owner as:

Equilon Enterprises LLC
Care of Stewart Title Company
1980 Post Oak Blvd. #110
Houston, TX 77056

Equilon Enterprises LLC dba Shell Oil Products US will be represented by Ms. Karen Petryna, the Shell environmental engineer for the site area. Ms. Petryna will receive copies of all documents related to the existence of petroleum hydrocarbons in soil and groundwater beneath the subject property.

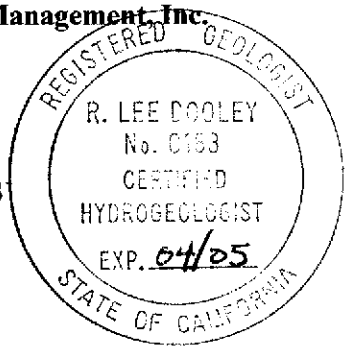
If you have any questions regarding this site, please contact Lee Dooley (KHM) at (408) 224-4724.

Sincerely,

KHM Environmental Management, Inc.

R Lee Dooley

R. Lee Dooley, CHG 183
Senior Hydrogeologist



ATTACHMENTS:

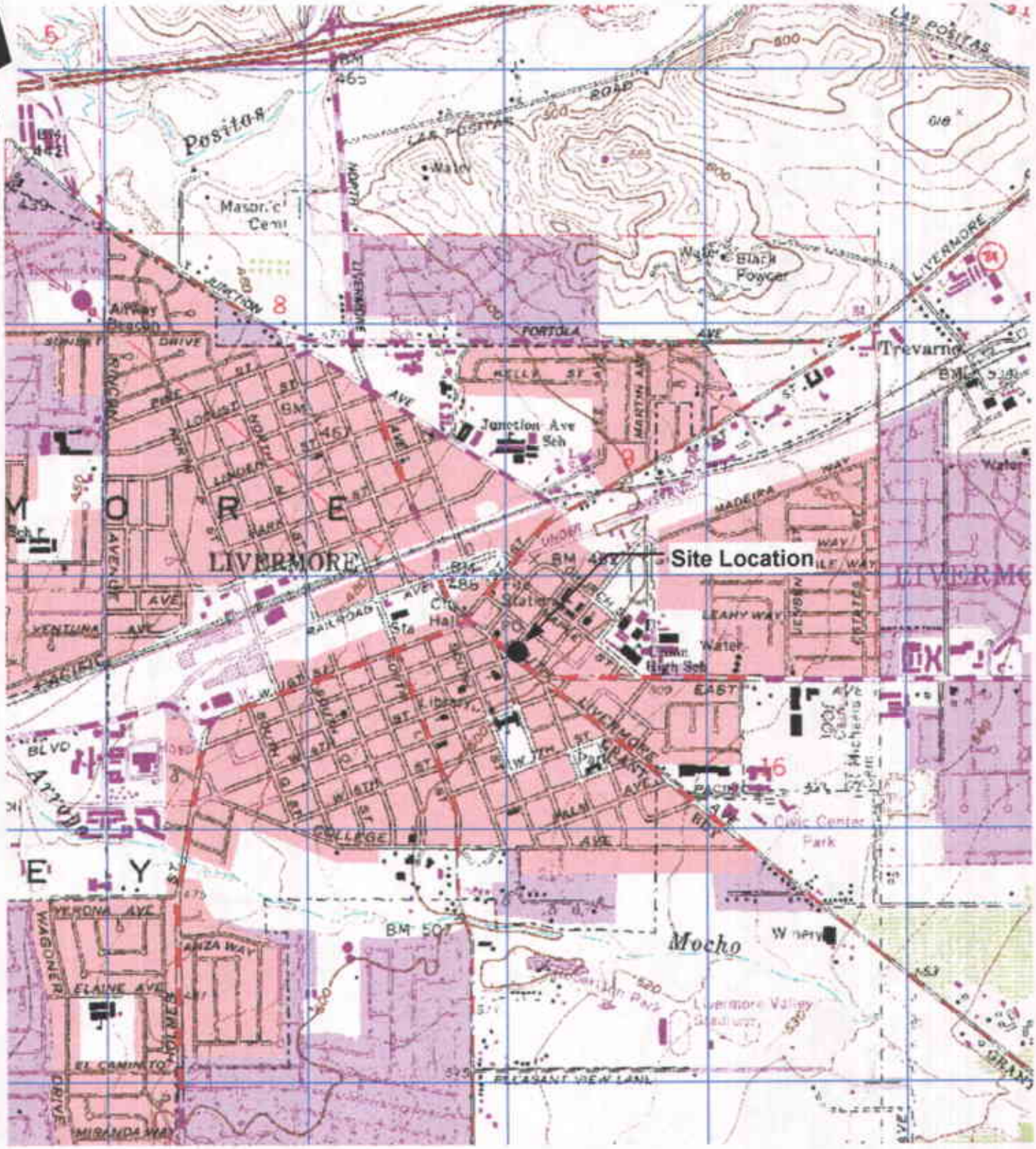
Table 1 – Groundwater Gauging and Analytical Data
Figure 1 – Site Location Map
Figure 2 – Hydrocarbon Distribution in Groundwater Map
Figure 3 – Site Area Map

cc. Karen Petryna, Shell Oil Products US

Table 1
Groundwater Gauging and Analytical Data
Shell Service Station
318 South Livermore Avenue
Livermore, California

Well Designation	Date Sampled	TPH-g (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethlybenzene (ug/l)	Xylene (ug/l)	MTBE (ug/l)	DIPE (ug/l)	ETBE (ug/l)	TAME (ug/l)	TBA (ug/l)	TOC (MSL)	Depth to Water (ft.)	GW Elev. (MSL)
MW-5	9/18/2001	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0	<50	NM	NM	NM
	7/9/2002	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0	<50	495.47	34.85	460.62
	10/25/2002	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0	<50	495.47	37.26	458.21
	1/24/2003	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0	<50	495.47	27.30	468.17
MW-6	9/18/2001	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0	<50	NM	NM	NM
	7/9/2002	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0	<50	497.57	35.41	462.16
	10/25/2002	<50	<0.50	<0.50	<0.50	<0.50	**2.5**	<2.0	<2.0	<2.0	<50	497.57	37.92	459.65
	1/24/2003	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0	<50	497.57	27.71	469.86
MW-7	9/18/2001	NA	<0.50	<0.50	<0.50	<0.50	**1.2**	<2.0	<2.0	<2.0	<50	NM	NM	NM
	7/9/2002	<50	<0.50	<0.50	<0.50	<0.50	**2.0**	<2.0	<2.0	<2.0	<50	495.58	34.29	461.29
	10/25/2002	<50	<0.50	<0.50	<0.50	<0.50	**1.9**	<2.0	<2.0	<2.0	<50	495.58	36.80	458.78
	1/24/2003	<50	<0.50	<0.50	<0.50	<0.50	**0.89**	<2.0	<2.0	<2.0	<50	495.58	26.75	468.83
MW-8	9/18/2001	NA	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0	<50	NM	NM	NM
	7/9/2002	<50	<0.50	<0.50	<0.50	<0.50	**6.9**	<2.0	<2.0	<2.0	<50	494.90	34.46	460.44
	10/25/2002	**140**	<0.50	<0.50	<0.50	<0.50	**2.2**	**3.3**	<2.0	<2.0	<50	494.90	36.98	457.92
	1/24/2003	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<2.0	<2.0	<2.0	<50	494.90	27.35	467.55

Notes:
All analysis performed by EPA Method 8260B
ug/l = micrograms per liter
TPH-g = Total petroleum hydrocarbons as gasoline
MTBE = Methyl tert-butyl ether
DIPE = Diisopropyl ether
ETBE = Ethyl-t-butyl ether
TAME = Tert-amyl methyl ether
TBA = Tert-Butanol
TOC = Top of Well Casing
NM = Not measured
NA = Not analyzed



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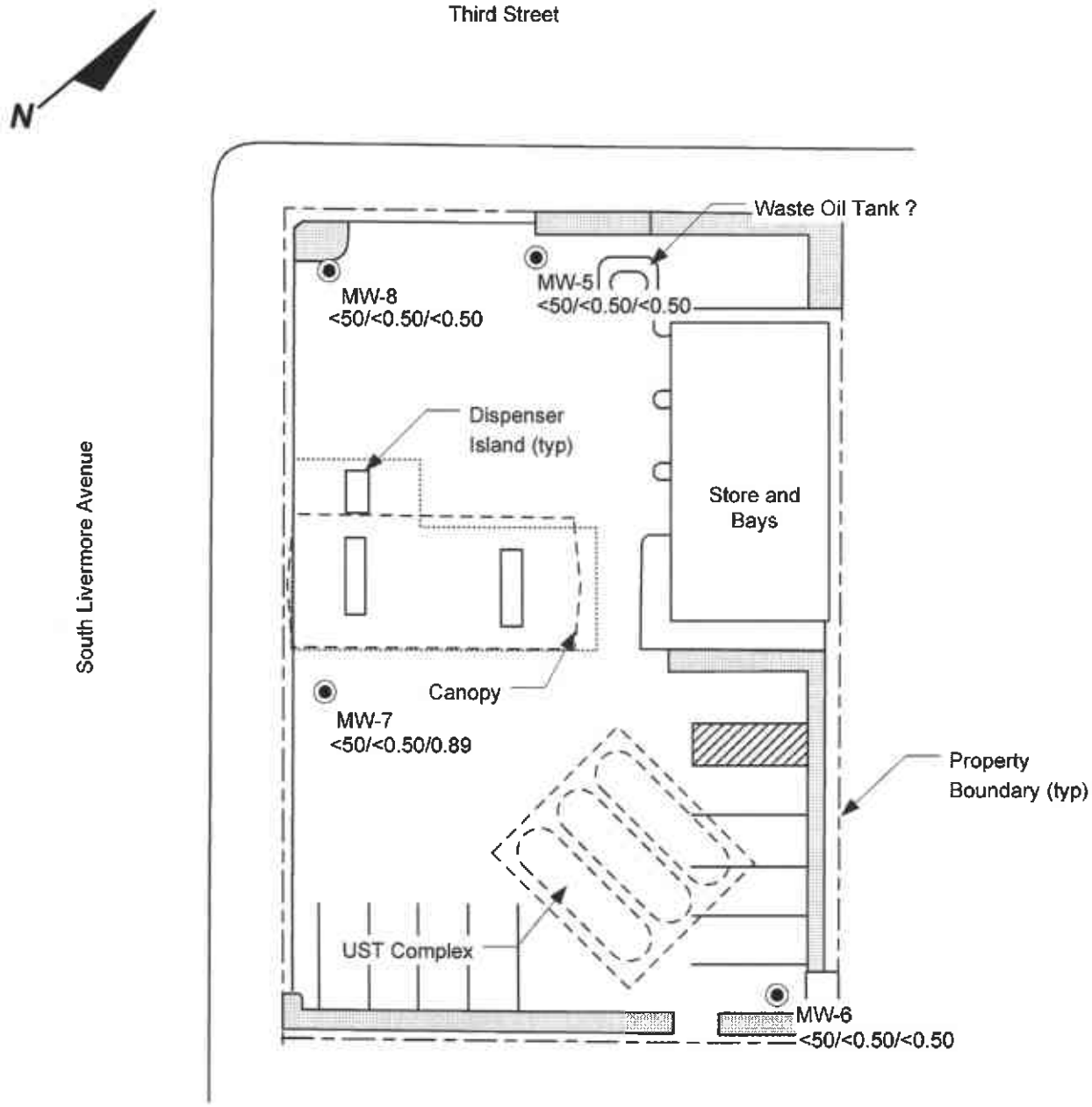
SITE LOCATION MAP

Shell-branded Service Station
318 South Livermore Avenue
Livermore, California

DATE	PROJECT	FIGURE
5/08/03	C85-318 Livermore	1

Map Source: DeLorme, Yarmouth, ME 04096, USGA Topo Map



LEGEND

MW-6 ◉ **GROUNDWATER MONITORING WELL**

▭ **PLANTER**

<50/<0.50/<0.50 **TPH-G/BENZENE/MTBE CONCENTRATIONS IN GROUNDWATER (UG/L), 1/24/03**

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HYDROCARBON DISTRIBUTION IN GROUNDWATER MAP, JANUARY 24, 2003

Shell Service Station
318 South Livermore Avenue
Livermore, California

DATE	PROJECT	FIGURE
5/8/03	C85-318 Livermore	2

N

GeoTracker help

◉ ZoomIn 2X ○ ZoomOut 2X ○ Pan ○ Identify LUFT Sites

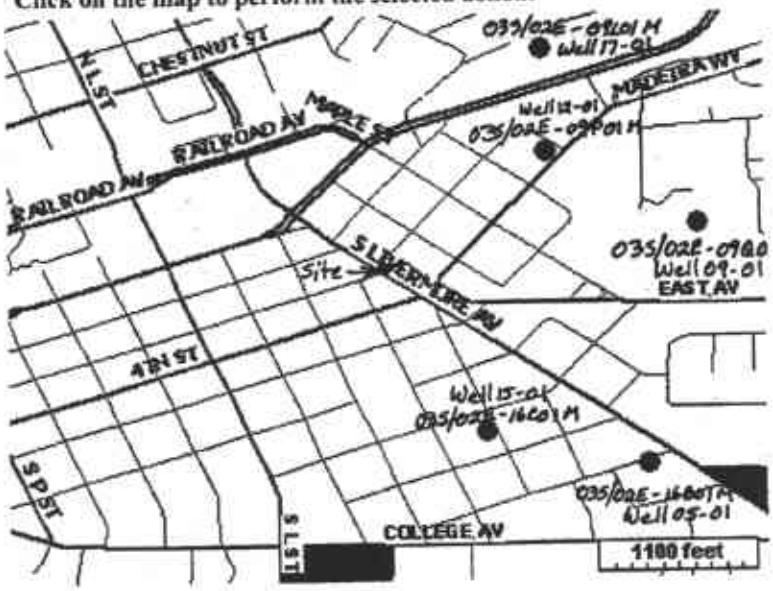
Show Open sites within Any of public wells.

Layers

- ☐ LUFT Sites
- ☐ UST Sites
- ☑ Public Wells
- ☑ Highways
- ☑ Major Roads
- ☑ Minor Roads
- ☐ USGS Quads
- ☑ Surface Water
- ☐ Watersheds
- ☐ GW Basins
- ☐ Vulnerability

Map Size: 1X

Click on the map to perform the selected action.



Street: 318 S. Livermore Avenue

City: Livermore Zip:

- LUFT SITES
- UST SITES
- PUBLIC WELLS
- HIGHWAYS
- MAJOR ROADS
- MINOR ROADS

Map and Well Information Source: GeoTracker Database
http://geotracker.swrcb.ca.gov

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SITE AREA MAP

Shell Service Station
318 South Livermore Avenue
Livermore, California

DATE	PROJECT	FIGURE
5/08/03	C85-318 Livermore	3