



GETTLER-RYAN INC.

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TRANSMITTAL

AG

TO: Ms. Karen Streich
Chevron Products Company
P.O. Box 2400
San Ramon, CA 94568

DATE: January 17, 2002
PROJ. #: DG94612.4C01
SUBJECT: Report, Fmr Chevron 9-4612
3616 San Leandro Street
Oakland, California

FROM:

Geoffrey D. Risse
Project Geologist
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Alameda County
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Environmental Health

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COMMENTS:

On your behalf, Delta Environmental Consultants Inc. network associate Gettler-Ryan Inc. will also be submitting a copy of the above referenced report to the following:

- Mr. James Brownell, Delta Environmental Consultants Inc., 3164 Gold Camp Dr. Ste 200, Rancho Cordova, CA 95670
- Mr. Barney Chan, Alameda County Health Care Services Agency-Environmental Health Department, 1131 Harbor Bay Parkway, Ste 250, Alameda, CA 94502
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OFFSITE SOURCE SURVEY REPORT

at
Former Chevron Service Station No. 9-4612
3616 San Leandro Street
Oakland, California

Report No. DG94612G.4C01-1
Delta Project No. DG94-612-G

Prepared for:

Ms. Karen Streich
Chevron Products Company
P.O. Box 2400
San Ramon, California 94568

Prepared by:

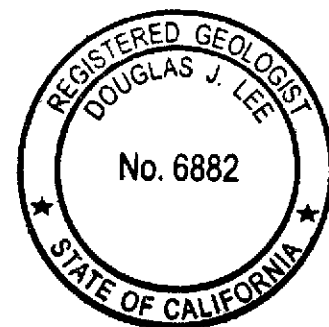
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A handwritten signature in black ink, appearing to read "Geoffrey D. Risse", written over a horizontal line.

Geoffrey D. Risse
Project Geologist

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Douglas J. Lee
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January 17, 2003

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OFFSITE SOURCE SURVEY REPORT

At

Former Chevron Service Station No. 9-4612
3616 San Leandro Street
Oakland, California

Report No. DG94612G.4C01-1
Delta Project No. DG94-612-G

INTRODUCTION

This report summarizes the results of an off-site source survey performed by Delta Environmental Consultants Inc. (Delta) network associate Getter-Ryan Inc. (GR) at the above referenced site. At the request of Chevron Products Company (Chevron), GR evaluated information on the extent of petroleum hydrocarbon impact to soil and groundwater beneath nearby sites. The scope of work included: conducting a site walk of the subject site's vicinity to identify potential sources of petroleum hydrocarbons; conducting a file review at Alameda County Environmental Health Department (ACEHD) for service stations near the subject site; and preparing a report documenting the work.

SITE DESCRIPTION

The subject site is located on the northwestern corner of the intersection of San Leandro Street and 37th Avenue in Oakland, California (Figure 1). All former station facilities including station building, gasoline underground storage tanks (USTs), associated product lines, one waste oil UST, and two dispenser islands were removed from the site in 1976. Currently a warehouse occupies the western portion of the site while the eastern portion is fenced and vacant. Pertinent former and current site features are shown on Figure 2.

The subject site is located on the East Bay Plain, approximately 0.5 mile northeast of Oakland-Alameda Estuary. The local topography is relatively flat at an elevation of approximately 68 feet above mean sea level (MSL). As mapped by E.J. Helley and others (1979, Flatland Deposits of the San Francisco Bay Region, California: U.S. Geological Survey Professional Paper 943), deposits in the site vicinity are Holocene-age Bay Mud consisting of unconsolidated, saturated, plastic, carbonaceous clay and silty clay. These materials are underlain by late Pleistocene-age alluvium consisting of weakly consolidated, slightly weathered, poorly sorted, irregularly interbedded clay, silt, sand, and gravel.

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The nearest surface water is Oakland-Alameda Estuary located approximately 0.5-mile southwest of the subject site. Based on groundwater monitoring data, the groundwater flow direction in the vicinity of the subject site has been toward the southwest.

PREVIOUS ENVIRONMENTAL ACTIVITIES

- 1976 September – All aboveground and underground station structures including a station building, three gasoline USTs, one waste oil UST and two dispenser islands were removed.
- 1988: March – Rogers/Pacific drilled three geotechnical borings (B-1 through B-3). A strong gasoline odor was detected in borings B-1 and B-2 at 20 feet below ground surface (bgs).
 August – Vonder Haar Hydrogeology (VHH) installed one groundwater monitoring well (VH-1; VHH Well Installation Report dated September 16, 1988).
- 1993: February – Groundwater Technology Inc. (GTI) installed two groundwater monitoring wells (MW-2 and MW-3). A well and utility survey was also performed. Well and utility survey results are presented in *GR Site Conceptual Model Report* dated December 14, 2000 (GR Report No. 346473.04-1).
- 1995: August – GTI installed one groundwater monitoring well and drilled one soil boring (MW-4 and SB-1).
- 1999: February – GR advanced two Geoprobe borings to collect soil vapor samples (VB-1 and VB-2; *GR Limited Soil Vapor Survey Report* dated March 31, 1999, GR Report No. 346473.01).
- 2000: December – GR prepared and submitted a Site Conceptual Model report. This report summarized current site conditions, conclusions, and recommendations (GR Report No. 346473.04-1, *Site Conceptual Model Report*, dated December 14, 2000).
- 2001: July — GR advanced three onsite Geoprobe borings to collect soil samples for a Risk-Based Corrective Action (RBCA) evaluation (GP-1, GP-2, GP-3, Delta Report No. DG94612.4C01, *Additional Site Investigation Report*, dated May 3, 2002).
- 2002: March — GR advanced three offsite hand auger borings in San Leandro Street to collect soil and groundwater samples (HA-1, HA-2, HA-3, Delta Report No. DG94612G.4C01, *Additional Site Investigation Report*, dated May 3, 2002).
 June — GR conducted a RBCA evaluation to determine whether petroleum hydrocarbons in soil and groundwater beneath the site posed a risk to human health and the environment. The RBCA evaluation concluded that the current site conditions did not pose a risk to human health and the environmental with the exception of groundwater ingestion (Delta Report, *Risk-Based Corrective Action Evaluation Letter Report*, dated June 13, 2002).

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Discussion

Groundwater monitoring and sampling has been conducted quarterly since August 1988. During the latest monitoring and sampling event on November 7, 2002, depth to water during this monitoring event ranged from 10.42 to 11.27 feet below top of casing (btoc), and groundwater flow was to the southwest at a gradient of approximately 0.02, which is consistent with historical data. Total Petroleum Hydrocarbons as gasoline (TPHg), benzene, and Methyl tert-butyl ether (MtBE) concentrations appear to be stable in well MW-2 and MW-3. Concentrations of benzene have been decreasing in VH-1 over the last three quarters of 2002. Benzene and MtBE have not been detected in well MW-4 during 2002. Current and historical groundwater analytical results are presented in Table 1.

Residual petroleum hydrocarbon impacted soil beneath the subject site is very limited in the vicinity of the former USTs from approximately 5 to 21 feet bgs. Historical soil analytical data are presented in Table 2.

Boring logs from previous environmental investigations indicate that native soil beneath the site consists of clay and silt overlying coarse units consisting of silty sand and gravel. Groundwater is first encountered at a depth of approximately 8.5 feet bgs.

SITE VICINITY SURVEY

On June 4, 2002, GR conducted a survey of the area around the subject site to identify potential off-site sources. Two operating gas stations were identified during the site vicinity survey and are depicted on Figure 3 as Tony's Express Auto Services and Guy's Service Station. Also, numerous auto repair facilities were observed along San Leandro Street south of the subject site.

ALAMEDA COUNTY FILE REVIEW

On June 21 and July 26, 2002, GR reviewed the files of Tony's Express Auto Services and Guy's Service Station at ACEHD offices in Alameda, California. The results of the file review are summarized below by site.

Tony's Express Auto Services

This station is located at 3609 International Boulevard, approximately 750 feet northeast of the subject site. The station is currently an operating service station. Station facilities consist of station building, two dispenser islands, and two USTs located near the western site boundary. Historically, the depth to water at the site has ranged from 7.00 to 16.74 feet btoc with a flow direction towards the southwest at gradient of 0.014 feet/feet.

In July 1993, three USTs were removed and replaced. Soil samples were collected from the bottom and sidewalls of the UST pit and also from beneath the product piping. These soil samples were analyzed for TPHg and benzene, toluene, ethylbenzene, and total xylenes (BTEX). The soil samples collected from the bottom of the UST pit contained up to 480 ppm of TPHg. The soil samples collected from beneath

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the product piping contained up to 4,100 ppm of TPHg. In August 1993, ten soil borings and three groundwater monitoring wells were drilled at the site. In addition, four 6-inch diameter soil vapor extraction probes were drilled and two horizontal perforated pipes were installed to allow for future in-situ remediation of impacted soils. Quarterly groundwater monitoring was initiated at the site.

In August 1995, five additional monitoring wells were installed at the site. In August 1996, two additional soil borings and three additional monitoring wells were installed at the site. In December 1997, a slug test was conducted. The slug test results indicated that the hydraulic conductivity of the saturated sediments ranges between 0.4 and 10.4 feet per day.

In April 1999, a RBCA evaluation was conducted and a Corrective Action Plan (CAP) was prepared. The RBCA evaluation results indicated that on and off site soil and groundwater remediation was warranted. The CAP recommended that the installation of a gravel-filled groundwater extraction trench or French drain connected to a groundwater pump and treat system (GPTS) and a vapor extraction system (VES) would be the most cost effective alternative for the site's remediation.

In late August 1999, the GPTS was installed. The GPTS became operational in early December 1999 and uses well casings in the French drain as extraction points. In July 2000, the VES was installed and became operational.

Groundwater monitoring and sampling has been conducted quarterly since October 1994. During the latest monitoring and sampling event on February 21, 2002, dissolved petroleum hydrocarbons were detected in all wells at concentrations of up to 260,000 ppb of TPHg, 6,000 ppb of benzene, and 23,000 ppb of MtBE. MtBE was detected in the two furthest downgradient wells, MW-10 and MW-12 at concentrations of 500 and 95 ppb, respectively. Depth to water during this monitoring event ranged from 8.28 to 10.11 feet btoc, and groundwater flow was towards the center well casing of the French drain at a gradient of approximately 0.05. Beyond the radius of influence to the south, the groundwater flow direction was to the southwest at a gradient of approximately 0.002. Currently, the VES and GPTS are being monitored and sampled monthly and the wells are monitored and sampled on a quarterly basis. According to the ACEHD files, no further assessment work has been proposed.

Guy's Service Station

This site is located at 3820 San Leandro Street, approximately 600 feet southeast of the subject site. The station is currently an operating service station. Historically, the depth to water at the site has ranged from 7.77 to 11.00 feet btoc with an assumed flow direction towards the southwest based upon local topography (wells at this site were never surveyed).

In January 1998, two 8,000-gallon diesel, one 8,000-gallon gasoline, and one 4,000-gallon gasoline USTs were removed from the site. Five soil samples were collected from the bottom of the UST pit. These soil samples were analyzed for TPHg, TPHd, and BTEX. The soil samples collected from the bottom of the UST pit contained up to 3,700 ppm of TPHg, 2,600 ppm of TPHd, and 34 ppm of benzene.

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In July 1998, six soil borings were drilling and three groundwater monitoring were installed at the site. Results of this investigation indicated that soil beneath the site is impacted with TPHg, TPHd, benzene and MtBE with the highest concentrations of these constituents concentrated in the southern portion of the site near the corner of San Leandro Street and 39th Avenue. Initial sampling of the three monitoring wells indicated that groundwater beneath the site is impacted with the BTEX constituents and MtBE.

According to ACEHD files, only one groundwater monitoring and sampling event occurred at the site. During this event, conducted on August 10, 2000, dissolved petroleum hydrocarbon were detected in all wells at concentrations of up to 20,000 ppb of TPHg, 4,200 ppb of TPHd, 9,200 ppb of benzene, and 6,400 ppb of MtBE. Depth to water in the monitoring wells was measured at approximately 11 feet btoc. Groundwater beneath the site is assumed to flow to the west based upon local topography. Currently, this site is out of compliance with the ACEHD and numerous notices of violation for failing to submit technical reports were found in the ACEHD files. This case has been referred to the Alameda County District Attorney's Office for enforcement of the ACEHD's directives.

CONCLUSIONS

The ACEHD file review revealed that the cases involving the nearby Tony's Express Auto Services and Guy's Service Station are open and active.

The current conditions of the Guy's Service Station plume is unknown since no groundwater monitoring and sampling reports or additional site assessment reports have been submitted to ACEHD. However, it is unlikely that this plume is contributing to the hydrocarbon plume beneath the subject site given that the regional groundwater flow direction is to the southwest.

The dissolved petroleum hydrocarbon plume from Tony's Express Auto Service is being remediated by a groundwater pump and treatment system. Overall, concentrations of dissolved petroleum hydrocarbons in groundwater have decreased. However, MtBE is still being detected in well MW-12. In addition, the radius of influence of the groundwater pump and treatment system appears not to extend past well MW10. Beyond the radius of influence, the groundwater flow direction is to the southwest towards MW-12. Given the regional groundwater flow direction to the southwest, the presence of MtBE in the furthest downgradient well at Tony's Express Auto Services, and the presence of MtBE in the subject site's wells, the Tony's Express Auto Service plume may be the source of MtBE observed in groundwater beneath the subject site.

The source of the MtBE at the subject site is not known as service station operation ceased 1976. The MtBE concentrations that are present in the subject site's wells are consistent with the MtBE concentrations present in Tony's Express Auto Service well MW-12. Based upon this information, it appears that further assessment between Tony's Express Auto Service well MW-12 and the subject site may be warranted.

Table 1
Groundwater Monitoring Data and Analytical Results
Former Chevron Service Station #9-4612
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WELL ID/ DATE	TOC* (ft.)	GWE (msl)	DTW (ft.)	TPH-D (ppb)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppb)
VH-1											
08/10/88	--	--	13.00	--	11,000	3,300	200	520	540	--	--
06/01/89	--	--	10.32	--	15,000	2,200	120	540	310	--	--
09/15/89	--	--	15.69	--	5,600	1,900	90	350	160	--	--
12/08/89	--	--	14.77	--	11,000	1,900	69	270	99	--	--
03/07/91	--	--	11.26	--	4,500	820	39	120	77	--	--
09/24/91	--	--	12.98	--	3,300	520	19	39	27	--	--
01/08/92	--	--	13.77	--	5,000	600	34	81	76	--	--
04/20/92	--	--	8.18	--	7,400	670	60	110	140	--	--
03/26/93	27.85	21.14	6.71	--	4,900	600	40	72	94	--	--
05/27/93	27.85	19.27	8.58	--	13,000	1,600	120	230	220	--	--
08/18/93	27.85	17.39	10.46	--	2,700	210	10	8.1	18	--	--
11/03/93	27.85	15.28	12.57	--	4,600	680	42	35	68	--	--
02/10/94	27.85	18.77	9.08	--	1,900	260	19	22	29	--	--
05/12/94	27.85	19.76	8.09	--	2,000	390	28	3.9	29	--	--
08/26/94	27.85	17.10	10.75	--	4,900	500	<5.0	23	31	--	--
11/14/94	27.85	18.40	9.45	300	760	69	<2.0	<2.0	2.2	--	--
02/01/95	27.85	21.88	5.97	--	1,300	120	5.9	<0.5	13	--	--
05/12/95	27.85	20.14	7.71	--	4,400	460	31	45	49	--	--
08/22/95	27.85	18.59	9.26	--	2,900	310	15	28	32	--	--
12/19/95	27.85	19.05	8.80	--	930	53	<2.5	<2.5	<2.5	39	--
01/31/96	27.85	22.35	5.50	--	3,700	320	<10	41	40	180	--
04/30/96	27.85	19.81	8.04	--	3,900	270	<20	<20	<20	120	--
08/01/96	27.85	18.67	9.18	--	2,700	140	11	18	28	200	--
10/30/96	27.85	18.67	10.76	--	2,700	140	<12	<12	<12	280	--
02/07/97	27.85	19.75	8.10	--	220	13	0.6	<0.5	1.6	15	--
05/07/97	27.85	18.33	9.52	--	5,200	33	12	21	26	330	--
07/22/97	27.85	17.43	10.42	--	4,200	80	<10	16	24	400	--
11/03/97	27.85	16.85	11.00	--	2,400	150	6.8	6.5	9.5	510	--
01/28/98	27.85	20.75	7.10	--	850	69	4.8	5.0	11	38/48 ¹²	--
05/08/98	27.85	20.14	7.71	--	4,200	200	30	40	42	310/200 ¹²	--
07/29/98	27.85	18.40	9.45	--	3,800	54	10	27	30	35/290 ¹²	--

Table 1
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WELL ID/ DATE	TOC* (ft.)	GWE (msl)	DTW (ft.)	TPH-D (ppb)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppb)
VH-1 (cont)											
11/06/98	27.85	17.15	10.70	--	4,800	100	20	12	23	360/210 ¹²	--
02/09/99 ⁵	27.85	21.87	5.98	--	2,950	79.5	<10	<10	<10	435/312 ¹²	--
05/13/99	27.85	19.71	8.14	--	4,180	147	12.8	16.5	20.3	433245 ¹²	--
09/07/99	27.85	17.94	9.91	--	2,750	57.6	<5.0	6.53	<5.0	297/233 ¹²	--
11/24/99	27.85	17.36	10.49	--	2,550	38	3.18	2.54	5.21	--/216 ^{1,12}	--
02/25/00	27.85	21.20	6.65	--	120	2.7	<0.5	<0.5	<0.5	20.5/11.9 ¹²	--
05/10/00	27.85	19.76	8.09	--	1,400 ⁸	63	3.3	3.1	4.9	230/110 ¹²	--
7/31/00 ¹¹	27.85	18.30	9.55	--	360 ⁸	22	2.7	1.6	3.1	100/88 ¹²	--
10/30/00 ¹¹	27.85	17.91	9.94	--	987 ¹⁰	47.0	1.00	<0.500	1.80	153/130 ¹²	--
02/05/01	27.91	19.23	8.68	--	2,670	42.7	<5.00	<5.00	<5.00	225/160 ¹²	--
05/07/01 ¹¹	27.91	19.61	8.30	--	1,800 ⁶	100	8.2	10	7.9	440/110 ¹²	--
08/06/01 ¹¹	27.91	18.09	9.82	--	1,000 ⁶	67	6.1	2.1	7.1	270/140 ¹²	--
11/12/01 ¹¹	27.91	17.29	10.62	--	220	1.2	<0.50	<0.50	<1.5	63/61 ¹²	--
02/11/02 ¹¹	27.91	19.83	8.08	--	1,700	33	<5.0	6.3	3.8	64/52 ¹²	--
05/13/02 ¹¹	27.91	19.21	8.70	--	2,700	54	4.1	5.6	6.2	100/80 ¹²	--
08/09/02 ¹¹	27.91	18.50	9.41	--	2,400	37	2.4	1.2	3.4	86/89 ¹²	--
11/07/02 ¹¹	27.91	17.34	10.57	--	150	1.3	<0.50	<0.50	<1.5	56/50 ¹²	--
MW-2											
02/16/93	27.51	--	--	--	9,200	720	110	250	170	--	--
03/26/93	27.51	19.89	7.62	--	--	--	--	--	--	--	--
05/27/93	27.51	18.04	9.47	--	360	5.3	2.1	1.8	2.5	--	--
08/18/93	27.51	16.46	11.05	--	9,400	1,100	76	110	100	--	--
11/03/93	27.51	14.56	12.95	--	8,600	390	20	2.7	120	--	--
02/10/94	27.51	17.72	9.79	--	2,700	370	38	44	41	--	--
05/12/94	27.51	18.59	8.92	--	3,800	650	76	15	62	--	--
08/26/94	27.51	16.14	11.37	--	16,000	1,300	270	28	120	--	--
11/14/94	27.51	17.48	10.03	--	5,100	390	10	43	27	--	--
02/01/95	27.51	20.47	7.04	--	6,900	520	82	170	110	--	--
05/12/95	27.51	18.76	8.75	--	7,700	510	83	110	100	--	--
08/22/95	27.51	17.35	10.16	--	4,500	220	16	61	47	--	--

Table 1
Groundwater Monitoring Data and Analytical Results
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Oakland, California

WELL ID/ DATE	TOC* (ft.)	GWE (msl)	DTW (ft.)	TPH-D (ppb)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppb)
MW-2 (cont)											
12/19/95	27.51	18.05	9.46	--	2,900	240	<10	19	18	220	--
01/31/96	27.51	21.91	5.60	--	3,900	320	18	72	39	<25	--
04/30/96	27.51	18.68	8.83	--	5,600	200	36	55	47	170	--
08/01/96	27.51	17.25	10.26	--	6,200	190	15	62	59	220	--
10/30/96	27.51	17.25	11.48	--	5,700	190	<25	67	36	260	--
02/07/97	27.51	18.11	9.40	--	8,300	210	34	70	59	330	--
05/07/97	27.51	17.57	9.94	--	6,900	190	12	38	37	530	--
07/22/97	27.51	16.36	11.15	--	10,000	18	25	62	41	630	--
11/03/97	27.51	15.93	11.58	--	6,500	260	8.5	26	14	590/9.6 ^{4,12}	--
01/28/98	27.51	19.38	8.13	--	6,700	65	13	67	54	280/94 ¹²	--
05/08/98	27.51	18.89	8.62	--	5,500	91	38	43	61	220/62 ¹²	--
07/29/98	27.51	17.06	10.45	--	3,600	41	8.9	3.6	14	16/94 ¹²	--
11/06/98	27.51	15.89	11.62	--	6,900	77	<5.0	14	17	290/110 ¹²	--
02/09/99 ⁵	27.51	20.61	6.90	--	8,070	75.6	<10	<10	<10	397/144 ¹²	--
05/13/99	27.51	18.21	9.30	--	5,890	120	<5.0	12.5	26.6	401/69.4 ¹²	--
09/07/99	27.51	16.57	10.94	--	5,820	41.2	<5.0	14.6	<5.0	260/145 ¹²	--
11/24/99	27.51	15.98	11.53	--	5,940	40.9	<10	10.8	<10	-/120 ^{1,12}	--
02/25/00	27.51	21.00	6.51	--	6,370	101	9.37	39.8	33.2	321/121 ¹²	--
05/10/00	27.51	18.49	9.02	--	6,100 ⁸	110	13	27	31	560/120 ¹²	--
07/31/00 ¹¹	27.51	17.18	10.33	--	3,000 ⁸	75	14	28	28	200/130 ¹²	--
10/30/00 ¹¹	27.51	16.95	10.56	--	6,810 ¹⁰	162	<5.00	8.05	<15.0	372/140 ¹²	--
02/05/01 ¹¹	28.05	18.47	9.58	--	5,860	28.4	6.86	16.2	11.8	285/140 ¹²	--
05/07/01 ¹¹	28.05	18.85	9.20	--	4,700 ⁶	120	15	30	42	540/88 ¹²	--
08/06/01 ¹¹	28.05	17.31	10.74	--	3,700 ⁶	120	<20	28	33	490/110 ¹²	--
11/12/01 ¹¹	28.05	16.60	11.45	--	7,000	29	<10	27	22	93/98 ¹²	--
02/11/02 ¹¹	28.05	18.99	9.06	--	5,900	43	15	24	27	90/86 ¹²	--
05/13/02 ¹¹	28.05	18.41	9.64	--	5,500	26	5.2	23	26	120/47 ¹²	--
08/09/02 ¹¹	28.05	17.76	10.29	--	5,700	26	3.7	26	50	100/69 ¹²	--
11/07/02 ¹¹	28.05	16.78	11.27	--	5,900	33	4.4	23	21	<100/69 ¹²	--

Table 1
Groundwater Monitoring Data and Analytical Results
Former Chevron Service Station #9-4612
3616 San Leandro Street
Oakland, California

WELL ID/ DATE	TOC* (ft.)	GWE (msl)	DTW (ft.)	TPH-D (ppb)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppb)
MW-3											
02/16/93	28.50	--	--	--	3,500	<0.5	8.1	4.6	7.7	--	--
03/26/93	28.50	21.32	7.18	--	--	--	--	--	--	--	--
05/27/93	28.50	19.17	9.33	--	4,200	580	84	150	100	--	--
08/18/93	28.50	16.50	12.00	1,400	910	12	3.7	6.2	3.8	--	<5,000
11/03/93	28.50	15.21	13.29	--	5,300	29	1.9	0.6	27	--	--
02/10/94	28.50	18.87	9.63	<50	63	<0.5	0.7	<0.5	<0.5	--	--
05/12/94	28.50	19.73	8.77	84	<50	<0.5	0.5	<0.5	<0.5	--	--
08/26/94	28.50	17.08	11.42	--	2,100	12	<0.5	5.0	0.5	--	--
11/14/94	28.50	18.43	10.07	--	140	0.78	<0.5	<0.5	<0.5	--	--
02/01/95	28.50	22.21	6.29	<50	<50	<0.5	<0.5	<0.5	<0.5	--	--
05/12/95	28.50	20.43	8.07	540 ²	330	13	1.1	1.9	0.69	--	--
08/22/95	28.50	18.55	9.95	550 ²	980	32	<1.0	<1.0	<1.0	--	--
12/19/95	28.50	19.10	9.40	<50	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
01/31/96	28.50	23.45	5.05	<50	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
04/30/96	28.50	20.10	8.40	240 ²	320	2.4	<0.5	0.75	<0.5	7.8	--
08/01/96	28.50	18.70	9.80	470 ²	980	9.6	<0.5	0.98	2.2	54	--
10/30/96	28.50	18.70	11.48	760 ²	2,000	14	<10	<10	<10	140	--
02/07/97	28.50	19.90	8.60	61 ²	200 ²	<0.5	<0.5	<0.5	<0.5	8.9	--
05/07/97	28.50	19.49	9.01	550 ²	3,500	14	3.9	3.6	8.0	160	--
07/22/97	28.50	17.38	11.12	800 ²	3,500	55	<10	<10	<10	150	--
11/03/97	28.50	16.99	11.51	910 ²	4,100	140	<5.0	<5.0	<5.0	380	--
01/28/98	28.50	21.16	7.34	--	1,100	24	<1.2	<1.2	2.8	33/6.1 ¹²	--
05/08/98	28.50	20.44	8.06	250 ²	990	3.6	7.7	0.7	2.2	37/7.5 ¹²	--
07/29/98	28.50	18.25	10.25	290 ²	-1,200	13	<0.5	<0.5	1.4	11/28 ¹²	--
11/06/98	28.50	17.11	11.39	390 ²	2,600	5.3	<2.5	<2.5	3.0	91/41 ¹²	--
02/09/99 ⁵	28.50	22.40	6.10	184 ²	406	<1.0	4.03	<1.0	<1.0	17.7/1.97 ¹²	--
05/13/99	28.50	19.38	9.12	--	615	13.8	1.05	<0.5	<0.5	43.5/21.2 ¹²	--
09/07/99	28.50	17.77	10.73	528 ²	2,710	<5.0	<5.0	<5.0	<5.0	96.3/57.9 ¹²	--
11/24/99	28.50	17.37	11.13	1,070 ²	5,530	<5.0	<5.0	5.59	<5.0	-/66 ^{1,12}	--
02/25/00	28.50	22.22	6.28	--	189	4.68	<0.5	<0.5	<0.5	11.9/<2.0 ¹²	--
03/01/00	28.50	21.80	6.70	380 ²	--	--	--	--	--	--	--

Table 1
Groundwater Monitoring Data and Analytical Results
Former Chevron Service Station #9-4612
3616 San Leandro Street
Oakland, California

WELL ID/ DATE	TOC* (ft.)	GWE (msl)	DTW (ft.)	TPH-D (ppb)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppb)
MW-3 (cont)											
05/10/00	28.50	19.90	8.60	830 ⁷	1,600 ⁶	22	<10	<10	<10	'100/51 ¹²	--
07/31/00 ¹¹	28.50	18.43	10.07	490 ⁷	2,200 ⁶	76	10	<5.0	13	230/52 ¹²	--
10/30/00 ¹¹	28.50	17.97	10.53	580 ⁹	3,320 ¹⁰	<5.00	<5.00	<5.00	<15.0	147/64 ¹²	--
02/05/01 ¹¹	29.04	19.78	9.26	--	3,960	<5.00	6.02	<5.00	<5.00	159/70 ¹²	--
05/07/01 ¹¹	29.04	20.29	8.75	--	2,800 ⁶	61	12	<10	20	230/49 ¹²	--
05/10/01 ¹¹	29.04	20.21	8.83	390 ¹³	--	--	--	--	--	--	--
08/06/01 ¹¹	29.04	18.59	10.45	870 ⁷	1,600 ⁶	39	14	1.3	5.6	130/43 ¹²	--
11/12/01 ¹¹	29.04	17.82	11.22	1,400	3,100	3.6	23	2.3	5.6	40/46 ¹²	--
02/11/02 ¹¹	29.04	20.66	8.38	700	4,000	10	<5.0	4.2	5.5	44/42 ¹²	--
05/13/02 ¹¹	29.04	19.84	9.20	730	2,500	18	<5.0	<5.0	5.2	44/32 ¹²	--
08/09/02 ¹¹	29.04	18.87	10.17	560	2,700	17	<5.0	<5.0	<10	45/33 ¹²	--
11/07/02 ¹¹	29.04	17.91	11.13	660	2,600	24	<5.0	2.0	4.8	51/37 ¹²	--
MW-4											
08/22/95	27.27	18.16	9.11	--	9,600	100	<10	<10	<10	--	--
12/19/95	27.27	18.97	8.30	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
01/31/96	27.27	21.67	5.60	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
04/30/96	27.27	20.27	7.00	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
08/01/96	27.27	18.12	9.15	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
10/30/96	27.27	18.12	10.74	--	110	<0.5	<0.5	<0.5	<0.5	<2.5	--
02/07/97	27.27	19.47	7.80	--	80	<0.5	<0.5	<0.5	<0.5	4.1	--
05/07/97	27.27	21.42	5.85	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
07/22/97	27.27	17.22	10.05	--	150	<0.5	<0.5	<0.5	<0.5	<2.5	--
11/03/97	27.27	16.55	10.72	--	52	0.9	<0.5	<0.5	<0.5	-- ³	--
01/28/98	27.27	20.76	6.51	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5/<2.0 ¹²	--
05/08/98	27.27	20.25	7.02	--	56	<0.5	<0.5	<0.5	<0.5	<2.5/<2.0 ¹²	--
07/29/98	27.27	18.32	8.95	--	<50	0.9	<0.5	<0.5	<0.5	<2.5/<2.0 ¹²	--
11/06/98	27.27	16.68	10.59	--	72	<0.5	<0.5	<0.5	<0.5	<2.5/<2.0 ¹²	--
02/09/99	27.27	21.41	5.86	--	<50	<0.5	<0.5	<0.5	<0.5	<2.0/<1.1 ¹²	--
05/13/99	27.27	19.32	7.95	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0/<2.0 ¹²	--
09/07/99	27.27	17.79	9.48	--	70.2	<0.5	<0.5	<0.5	<0.5	<2.0/<1.0 ¹²	--

Table 1
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Former Chevron Service Station #9-4612
3616 San Leandro Street
Oakland, California

WELL ID/ DATE	TOC* (ft.)	GWE (msl)	DTW (ft.)	TPH-D (ppb)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppb)
MW-4 (cont)											
11/24/99	27.27	17.22	10.05	--	227	<0.5	<0.5	<0.5	<0.5	--/ <0.5 ¹²	--
02/25/00	27.27	INACCESSIBLE		--	--	--	--	--	--	--	--
03/01/00	27.27	21.10	6.17	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5/ <2.0 ¹²	--
05/10/00	27.27	INACCESSIBLE - CAR PARKED OVER WELL				--	--	--	--	--	--
07/31/00	27.27	17.90	9.37	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5/ <2.0 ¹²	--
10/30/00	27.27	17.80	9.47	--	54.0 ¹⁰	<0.500	<0.500	<0.500	<1.50	<2.50/ <2.0 ¹²	--
02/05/01	27.27	INACCESSIBLE - CAR PARKED OVER WELL				--	--	--	--	--	--
05/07/01	27.27	19.46	7.81	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5/ <2.0 ¹²	--
08/06/01	27.27	17.49	9.78	--	<50	1.1	0.52	<0.50	1.1	6.0/ <2.0 ¹²	--
11/12/01	27.27	16.86	10.41	--	93	<0.50	<0.50	<0.50	<1.5	<2.5/ <2 ¹²	--
02/11/02	27.27	19.63	7.64	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5/ <2 ¹²	--
05/13/02	27.27	18.95	8.32	--	54	<0.50	0.84	<0.50	<1.5	<2.5/ <2 ¹²	--
08/09/02	27.27	18.02	9.25	--	54	<0.50	<0.50	<0.50	<1.5	<2.5/ <2 ¹²	--
11/07/02	27.27	16.85	10.42	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5/ <2 ¹²	--
TRIP BLANK											
05/27/93	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	--	--
08/18/93	--	--	--	1,400	<50	<0.5	<0.5	<0.5	<1.5	--	<5,000
11/03/93	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
02/10/94	--	--	--	<50	<50	<0.5	<0.5	<0.5	<0.5	--	--
05/12/94	--	--	--	84	<50	<0.5	<0.5	<0.5	<0.5	--	--
08/26/94	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
11/14/94	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
02/01/95	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
05/12/95	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
08/22/95	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--	--
12/19/95	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
01/31/96	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
04/30/96	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
08/01/96	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
10/30/96	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--

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Oakland, California

WELL ID/ DATE	TOC* (ft.)	GWE (msl)	DTW (ft.)	TPH-D (ppb)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppb)
TRIP BLANK (cont)											
02/07/97	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
05/07/97	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
07/22/97	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
01/28/98	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--/ <2.0 ¹²	--
05/08/98	--	--	--	--	--	--	--	--	--	--/ <2.0 ¹²	--
07/29/98	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	--/ <2.0 ¹²	--
11/06/98	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
02/09/99	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.0	--
05/13/99	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0/ <2.0 ¹²	--
09/07/99	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.0	--
11/24/99	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
02/25/00	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--
03/01/00	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<2.5	--
05/10/00	--	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--
07/31/00	--	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--
10/30/00	--	--	--	--	<50.0	<0.500	<0.500	<0.500	<1.50	<2.50	--
02/05/01	--	--	--	--	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	--
05/07/01	--	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--
05/10/01	--	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--
08/06/01	--	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5	--
QA											
11/12/01	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--
02/11/02	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--
05/13/02	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--
08/09/02	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--
11/07/02	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5	--

Table 1
Groundwater Monitoring Data and Analytical Results
 Former Chevron Service Station #9-4612
 3616 San Leandro Street
 Oakland, California

EXPLANATIONS:

Groundwater monitoring data and laboratory analytical results prior to May 10, 2000, were compiled from reports prepared by Blaine Tech Services, Inc.

TOC = Top of Casing

(ft.) = Feet

GWE = Groundwater Elevation

(msl) = Mean sea level

DTW = Depth to Water

TPH-D = Total Petroleum Hydrocarbons as Diesel

TPH-G = Total Petroleum Hydrocarbons as Gasoline

B = Benzene

T = Toluene

E = Ethylbenzene

X = Xylenes

MTBE = Methyl tertiary butyl ether

TOG = Total Oil and Grease

(ppb) = Parts per billion

-- = Not Measured/Not Analyzed

QA = Quality Assurance/Trip Blank

* TOC elevations were re-surveyed on March 8, 2001, by Virgil Chavez Land Surveying. The benchmark for the survey was a City of Oakland benchmark, being a cut square top of curb at the centerline return at the northwest corner of East 14th and 37th Avenue, (Benchmark Elevation = 38.21 feet, NGVD 29).

¹ Lab could not get a good ion chromatogram match for MTBE. See laboratory report.

² Chromatogram pattern indicates an unidentified hydrocarbon.

³ No value for MTBE could be determined; see lab report for analyses.

⁴ Confirmation run.

⁵ ORC was installed.

⁶ Laboratory report indicates gasoline C6-C12.

⁷ Laboratory report indicates unidentified hydrocarbons <C16.

⁸ Laboratory report indicates gasoline C6-C12 + unidentified hydrocarbons <C6.

⁹ Laboratory report indicates unidentified hydrocarbons >C16.

¹⁰ Laboratory report indicates hydrocarbon pattern present in the requested fuel quantitation range but does not resemble the pattern of the requested fuel.

¹¹ ORC in well.

¹² MTBE by EPA Method 8260.

¹³ Laboratory report indicates unidentified hydrocarbons C9-C17.

Table 2
 Historical Soil Chemical Analytical Results
 Former Chevron Service Station No. 9-4612
 3616 San Leandro Street
 Oakland, California

Sample ID	Sample Depth (feet)	Sample Date	TPHg (ppm)	B (ppm)	T (ppm)	E (ppm)	X (ppm)	MtBE (ppm)	Lead (ppm)
VH-1	20.5	8/10/88	<0.5	0.042	<0.005	<0.005	<0.005	NA	6.0
VH-1	25.5	8/10/88	<0.5	0.036	<0.005	<0.005	<0.005	NA	6.0
MW-2	5.0	2/1/93	<1.0	<0.005	<0.005	<0.005	<0.005	NA	NA
MW-2	10	2/1/93	<1.0	<0.005	<0.005	<0.005	<0.005	NA	NA
MW-3	5.0	2/1/93	<1.0	<0.005	<0.005	<0.005	<0.005	NA	NA
MW-3	10	2/1/93	<1.0	<0.005	<0.005	<0.005	<0.005	NA	NA
MW 4-16.5	16.5	8/15/95	<1.0	<0.005	<0.005	<0.005	<0.005	NA	NA
MW 4-21.5	21.5	8/15/95	2.0	<0.005	0.014	0.007	0.01	NA	NA
SB 1-21.5	21.5	8/15/95	16	<0.005	0.12	0.21	1.1	NA	NA
GP1-6	6	7/3/01	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.20	NA
GP1-9	9	7/3/01	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.20	NA
GP2-6	6	7/3/01	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.20	NA
GP2-8.5	8.5	7/3/01	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.20	NA
GP3-5.5	5.5	7/3/01	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.20	NA
GP3-8.5	8.5	7/3/01	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.20	NA
HA1-5	5.0	3/5/02	<1.0	<0.0050	0.0098	0.016	0.089	<0.050	NA
HA2-5	5.0	3/5/02	<1.0	<0.0050	<0.0050	<0.0050	<0.015	<0.050	NA
HA3-5	5.0	3/5/02	<1.0	<0.0050	<0.0050	<0.0050	<0.015	<0.050	NA

EXPLANATIONS

NA = Not Analyzed

ppm = parts per million

TPHg = Total Petroleum Hydrocarbons as gasoline

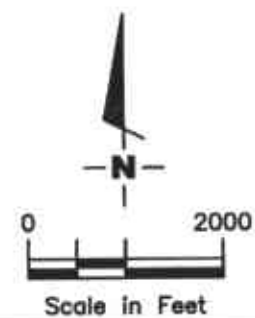
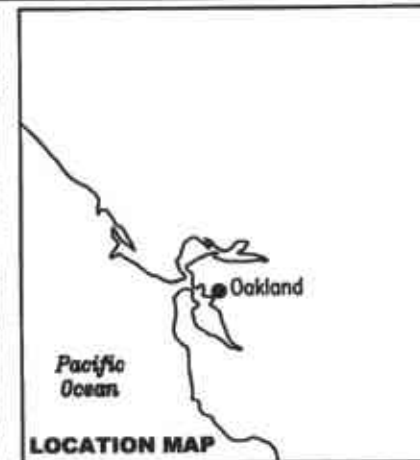
B = Benzene

T = Toluene

E = Ethylbenzene

X = Xylenes

MtBE = Methyl tert-butyl ether



Source: National Geographic California Seamless USGS Topographic Maps on CD-ROM.

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VICINITY MAP
 Former Chevron Service Station No. 9-4612
 3616 San Leandro Street
 Oakland, California

FIGURE
1

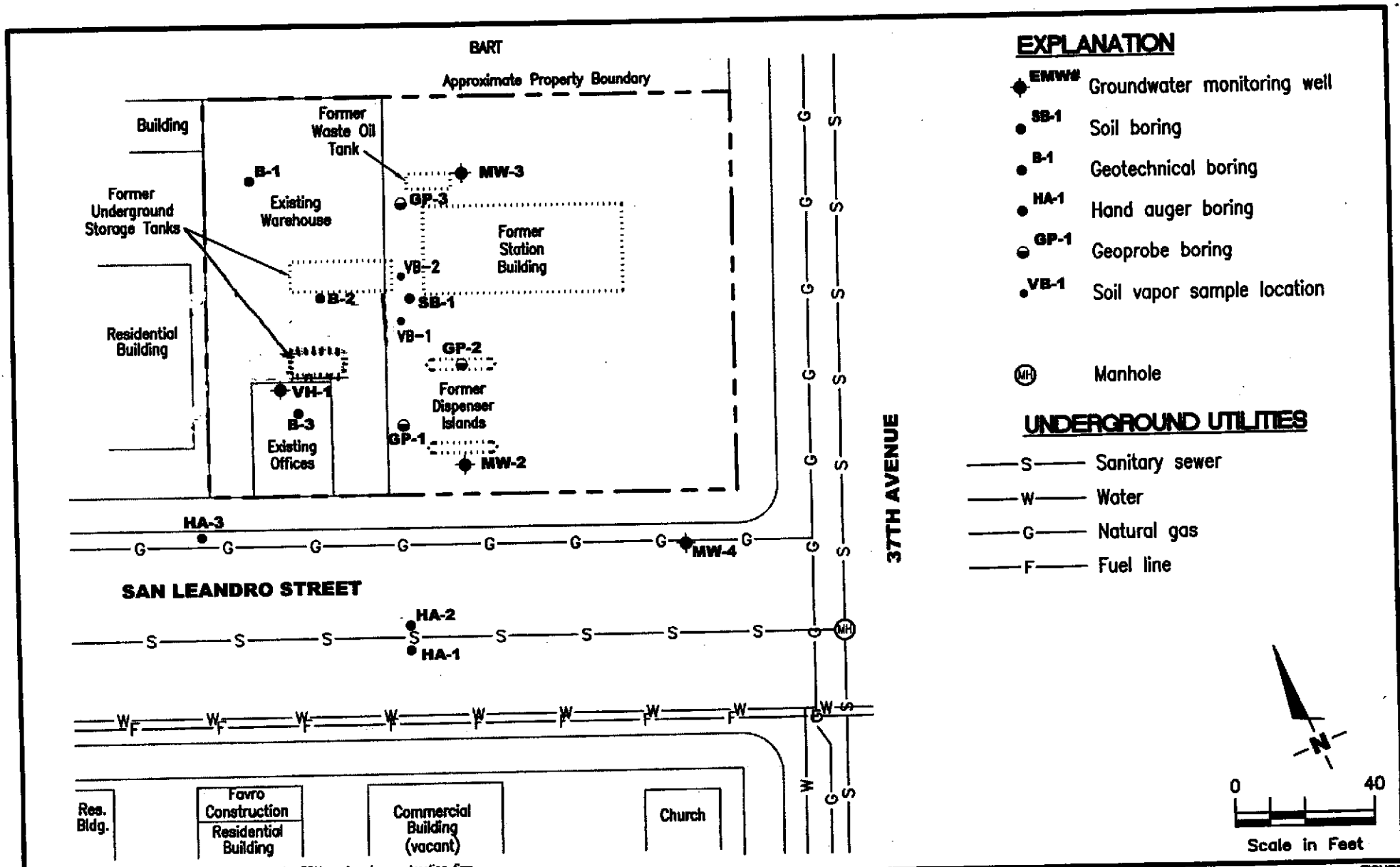
PROJECT NUMBER
 DG94612G.4C01

REVIEWED BY

DATE
 3/02

REVISED DATE

FILE NAME: P:\EMIRO\CHEVRON\9-4612\VIC-9-4612.DWG | Layout Tab: Vic Map

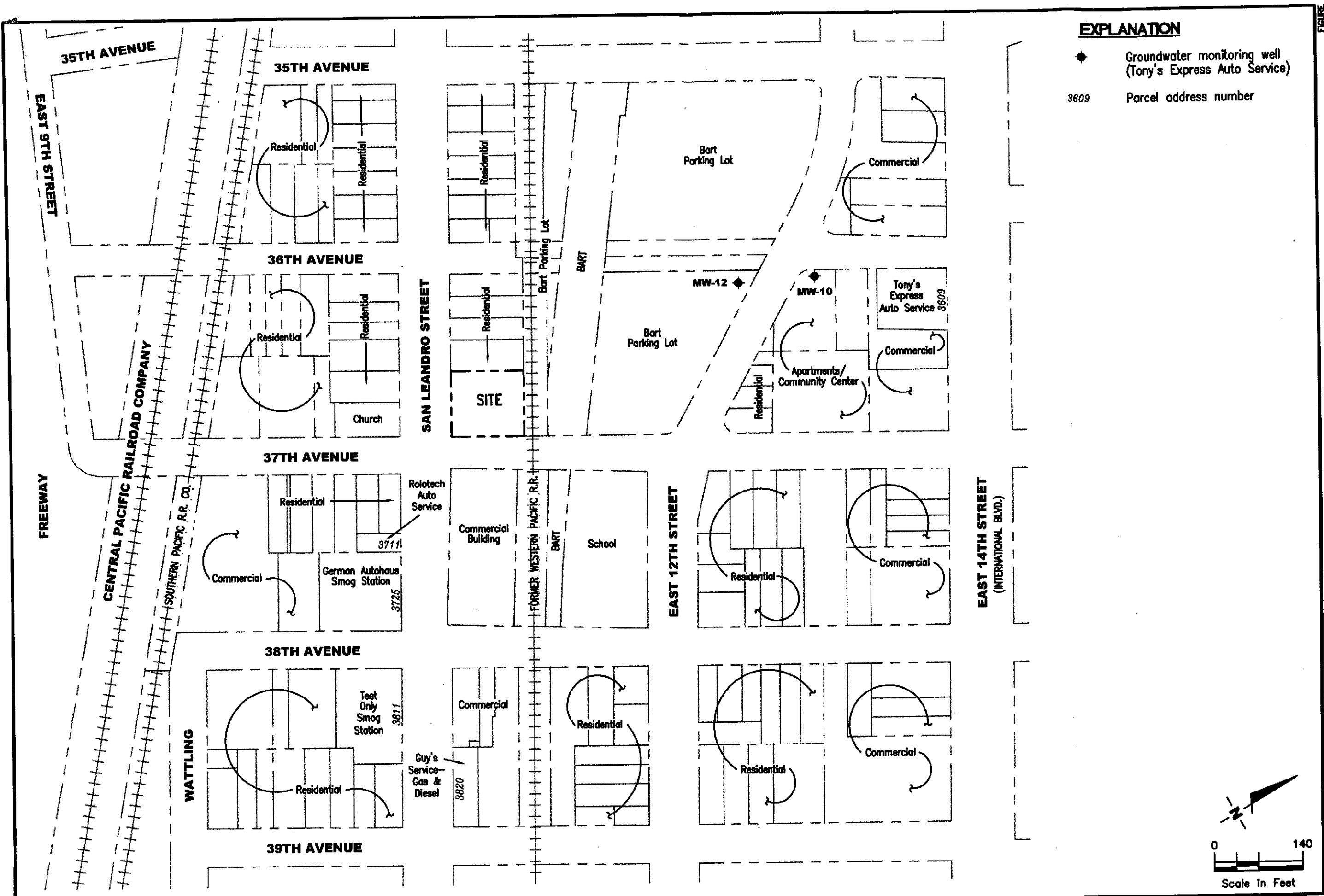


Source: Figure modified from drawing provided by RRM engineering contracting firm.

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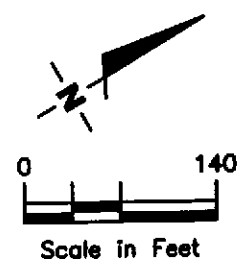
SITE PLAN/SAMPLE LOCATION MAP
 Former Chevron Service Station No. 9-4612
 3616 San Leandro Street
 Oakland, California

FIGURE
2



EXPLANATION

- ◆ Groundwater monitoring well (Tony's Express Auto Service)
- 3609 Parcel address number



Source: Figure modified from drawings provided by Alameda County Assessor's maps.

FIGURE **3**

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PROJECT NUMBER: **DC94612G.4C01**
 FILE NAME: P:\EMROD\CHEVRON\9-4612\A02-9-4612.DWG | Layout Tab: Parcel Map 10-02

REVIEWED BY: _____
 DATE: **10/02**
 REVISED DATE: _____

PARCEL MAP
 Former Chevron Service Station No. 9-4612
 3616 San Leandro Street
 Oakland, California

**LARGE
MAP
REMOVED**