Chevron

Letter of Transmittal

Chevron U.S.A. Products Company
6001 Bollinger Canyon Rd., Bldg. L
P.O. Box 5004
San Ramon, CA 94583-0804

Site Assessment & Remediation Group
Phone (510) 842-9500

August 2, 1995

Mr. Ravi Arulanantham
San Francisco RWQCB

Subject: Work Plan for Well Restoration at
Former Chevron Bulk Asphalt Terminal No. 1001067
Powell St. @ Landgren St.
Emeryville, California

Mr. Arulanantham:

Attached is a work plan to restore one monitoring well damaged during the paving of the Amtrak Station Parking Lot and to move another well that was in the way some street repairs being done by the city of Emeryville. Please review and approve this plan as soon as possible. Please call if you have any questions. My phone number is (510) 842-9655.

I wish to thank you for giving Chevron permission to do an emergency abandonment of MW-19 during our phone conversation on July 26, 1995. This abandonment was completed on July 31, 1995.

R. J.(Bob) Cochran
Project Manager

rjco: (amtrak)
cc: **Susan Hugo - Alameda County Health Department**

Contact Log

7/27/95 Argy, Gettler-Ryan, and Juliet Shin

Argy called regarding the Chevron site at 1520 Powell Street. It appears that the off-site Well MW-19 needs to be destroyed because the City of Emeryville will need to build a support structure on top of Well MW-19. I stated that, if the City of Emeryville has no choice but to build on top of Well MW-19, and cannot build around it, then Chevron would have no choice but to properly destroy the well, with Zone 7 permit. Chevron would have to work with the regulators (Ravi Arulananthanam and Susan Hugo) later to determine the most appropriate location for the replacement well.

I also stated that the City of Emeryville needs to be made aware of the contaminants that they may be running across during construction, not only for Health & Safety issues for their employees, but also to assure proper disposal of any potentially contaminated soil or water.

GETTLER-RYAN INC.

WELL RESTORATION
at
Former Chevron Bulk Asphalt Terminal
Powell Street Overpass At Landgren
Emeryville, California

5161.01

Prepared for

Chevron USA Product Company
P.O. Box 5004
San Ramon, California 94583

Prepared by

Gettler-Ryan, Inc.
6747 Sierra Court, Suite J
Dublin, California 94568

Argy Leyton
Environmental Project Manager

Stephen J. Carter
Senior Geologist
RG #5577

REGISTERED GEOLOGIST
STEPHEN J. CARTER
No. 5577
STATE OF CALIFORNIA

July 21, 1995

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WORKPLAN FOR
WELL ABANDONMENT AND WELL INSTALLATION
for
Former Chevron Bulk Asphalt Terminal #1001067
Powell Street @ Landgren Street
Emeryville, California

INTRODUCTION

Gettler-Ryan, Inc. (G-R) is pleased to present this workplan for the abandonment and installation of the replacement well for two groundwater monitoring wells at the above-referenced location (Figure 1). The groundwater monitoring well will be restored to continue to assess the absence or presence of dissolved hydrocarbons in groundwater and to verify the groundwater flow direction and gradient beneath the site.

SITE HISTORY

The following site history information was obtained from Chevron project files.

The site is a former Chevron bulk asphalt plant terminal located at Landgren Street beneath the Powell Street overpass in Emeryville, California. The site encompasses approximately 3 acres. The site is bordered to the east and south by Landgren Street and Powell Street, respectively, and to the west by the Southern Pacific Railroad right-of-way. The plant was used previously as a storage and transfer facility for petroleum products. The site has recently been converted to an Amtrak Passenger terminal.

Beginning in the early 1950s, the Chevron asphalt plant operated as a laboratory and test facility. It was closed in June 1987. The laboratory tested aspahlt composition and experimented with asphalt-based surface coats. A portion of the land was leased to a solvent handler during this same period. Information regarding Chevron's tenants' use of on-site chemicals is not available.

In 1985, Chevron's Marketing Department conducted a field investigation to assess potential soil and groundwater contamination at the site. Nine groundwater monitoring wells were installed and sampled by McKesson Environemtnal Services. Several VOCs, including benzene, chlorobenzene, trans-1,2-dichloroethene, trichloroethene, and vinyl chloride were detected in monitoring well MW-1, and polycyclic aromatic hydrocarbons (PAHs) were detected in MW-5. The other wells did not contain any constituents.

In October 1987, the above-ground fuel tanks and associated piping were removed to allow for subsurface

analysis. Blaine Tech Services sampled monitoring wells MW-1 through MW-9. (Monitoring wells MW-4, MW-5 and MW-6 were destroyed in 1989, during a soil remediation effort; MW-9 was destroyed earlier). Chloroethane was detected in monitoring well MW-4, and benzene, trans-1,2-dichloroethene, and vinyl chloride were detected in MW-1. The other monitoring wells did not show any contamination.

In 1988, both the loading dock and barrel storage area were removed to allow for further subsurface analysis. Soil was sampled to identify any petroleum contamination at the above-ground tanks, truck loading ramp, or drum staging/storage platforms. Soil samples contained xylenes and trichloroethene as well as petroleum hydrocarbons other than gasoline, diesel and kerosene within the C6 to C15 boiling range. Groundwater was also sampled and analyzed for VOCs, total petroleum hydrocarbons and inorganics. Monitoring well MW-1 contained benzene, 1,2-dichloroethene, trichloroethene, vinyl chloride and the inorganics, barium, molybdenum, nickel and zinc. 1,2-Dichloroethene and trichloroethene were detected in MW-10. Tetrachloroethene was found in MW-11 and MW-12. Trace levels of trichloroethene were found in MW-11. Petroleum hydrocarbons were detected in MW-1, MW-4, MW-5 and MW-6.

Approximately 10,400 cubic yards of soil containing hydrocarbons were excavated to a depth of 6 feet. Soil was removed until halocarbons were no longer detected using a portable gas chromatograph. Excavated soil was transported to the American Rock and Asphalt Facility in Richmond, California. The excavated area was lined with visqueen sheeting; then it was backfilled with 1.5 inches of clean crushed rock and covered with graded sub-base material.

An additional 256 cubic yards of contaminated soil were excavated and removed from four other locations. Three were within the southwest office/lab building, and the other one was just outside the building area. The excavated areas were backfilled and covered in the manner previously discussed.

The former laboratory building was demolished in late 1991. The garage, paint shop, and office/lab building were demolished in May 1992. Due to the presence of stained soils, soil samples were collected from beneath the garage. The presence of hydrocarbons was verified and soil excavation was conducted. Approximately 15 cubic yards of soil were removed.

A USEPA Superfund site owned by Westinghouse is directly north of the site at 6121 Hollis Street. The site contains soils contaminated with polychlorinated bipheyls (PCBs). The soil is covered with a clay and aspahlt cap. A remeidal action has been initiated that includes surrounding the contaminated soils with a continuous slurry cutoff wall tied into the underlying bay mud. Groundwater is monitored quarterly at the Westinghouse site and does not show any migration of PCBs into groundwater offsite. This is verified by historical sampling results conducted at the former Chevron asphalt plant indicating PCBs were not detected.

During the April 1995 groundwater sampling event, a black oily substance was observed in monitoring well MW-2. In addition, this well was observed to be filled with sandy gravel-type material. The sounded depth during this event was 2.87 feet below ground surface (bgs). There currently is no known source area that could generate the reported oily substance. It is therefore assumed that the substance inadvertantly entered the well during asphalt paving of the newly created parking lot.

GEOLOGIC SETTING

The site is located in Alameda County, in the City of Emeryville. The topography in the site vicinity is relatively flat. Regionally, the Berkeley Hills lie to the east and grade westerly into flat lands ending at San Francisco Bay. The closest surface water is the San Francisco Bay located approximately 1/2 mile west of the site.

The site is located within the California Coast Ranges. The Coast Ranges have a Franciscan basement composed of graywackes, limestone, shale and radiolarian chert[1]. Tectonically, the site is bounded by the Hayward Fault approximately 5 miles to the east and the San Andreas Fault approximately 5 miles to the west.

Locally, the site is generally underlain by sand and silty sand. Previous groundwater sampling events indicate that groundwater is encountered approximately 1 to 8 feet (bgs). Based on historical sampling data from the site, groundwater flow direction beneath the subject site is westerly.

PROPOSED WORK

The proposed well abandonment and replacement is to: 1) restore MW-2 to continue to monitor the groundwater conditions in the site vicinity and 2) re-locate well MW-19 due to continuing site work. Historic groundwater analytic results are presented in Tables 1 and 2 (Appendix). G-R proposes the following scope of work:

1. Prepare a site-specific health safety plan for the proposed work.

2. Completely drill out two on-site monitoring wells (MW-2 and MW-19) to approximately 13 feet below ground surface to remove the well casing and sealing material.

3. Drill one off-site soil boring (MW-19A) to a depth of approximately 20 feet below ground surface. The soil samples from the boring will be surveyed in the field with an organic vapor meter (OVM)

Norris, Robert M. and Webb, Robert W., 1990, *Geology of California*, John Wiley and Sons, 537 pages.

to determine whether volatile hydrocarbons are present in the samples. OVM readings and field observations will be used to select soil samples from the monitoring well boring for analysis. At a minimum, one soil sample for chemical analysis will be collected from above the capillary fringe. Selected soil samples will be analyzed for TPPH(G), BTEX and HVOCs.

4. Install one two-inch monitoring well in the borings. Based on previous well construction details for well MW-2 installation, the well MW-2A will be constructed to the same specifications. Well MW-19A will be constructed according to conditions encountered in the field.

5. Develop the newly installed wells. Sample the wells. Analyze the groundwater samples from the newly installed well for TPPH(G), BTEX and HVOCs.

6. Survey the top of casing elevation of the newly installed well. Measure depth to groundwater and product thickness (if present) in all wells. The survey and water level data will be used to verify the groundwater flow direction and gradient beneath the site.

7. Arrange for disposal of the drill cuttings from the boring, the steam-cleaning rinseate and the monitoring well purge water.

8. Report the results.

Each of these tasks is described below.

Task 1 - Site Safety Plan

Using available site history information, G-R will prepare a site-specific safety plan. The safety plan will identify potential site hazards and specify procedures to protect site workers and surrounding community. The safety plan will be on-site during field operations.

Task 2 - Well Abandonment

Monitoring wells MW-2 and MW-19 will be abandoned by overdrilling to remove the existing well casing and associated sealing materials. Well MW-19 will be grouted to existing grade with protland cement with 3-5% bentonite powder. Well abandonment activities will be performed by Bay Area Exploration, Inc. of Cordelia, California, C57 #522125. Soil cuttings generated during well abandonment activities will remain on-site on visqueen sheeting, and will be covered with visqueen pending disposal by Integrated Waste Management of Milpitas, California.

Tasks 3 - Monitoring Well Installation

One two-inch monitoring well will be installed in the boring from the well abandonment activities of MW-2. The well will be constructed by Bay Area Exploration, Inc. Information from the previous subsurface investigations performed at the site indicate that the soils in the site vicinity are relatively fine-grained. The well will be constructed with 0.010-inch machine-slotted well screen for the monitoring well and #2/12 sand for gravel pack around the well screen.

The well will be drilled by Bay Area Exploration, Inc. of Cordelia, California, C57 license #522125. Prior to drilling, Underground Service Alert (USA) will be notified and a private utility locator will locate non-member utlitiies at the site.

All drilling equipment will be steam-cleaned prior to use and all sampling equipment will be washed between samples using an EPA-approved detergent such as Alconox and rinsed with potable water.

The boring will be logged in accordance with Gettler-Ryan standard operating procedures.

Soil samples will be collected at 5 foot intervals, at a minimum, or at changes of soil type or if hydrocarbon staining is present. Soil samples will be collected in clean or new stainless steel or brass sleeves. A soil sample will be collected from the capillary fringe in the boring.

The soil samples will be screened in the field with an OVM. If hydrocarbons are detected with the OVM or product odor is noted by the field geologist in the soil sample from the bottom of the proposed well/boring, G-R personnel will attempt to collect sufficient samples to define the vertical extent of hydrocarbons in the boring.

Drill cuttings will be stored on-site on visqueen sheeting and covered with visqueen pending disposal by Integrated Waste Management of Milpitas, California.

The soil samples from the boring will be analyzed for TPPH(G), BTEX and HVOCs by EPA Methods 5030/8015, 8020 and 8010, respectively. All quality assurance/quality control (QA/QC) data from the laboratory will be included in the final report.

Information from previous subsurface investigation work at the site indicates that the soils in the site vicinity are relatively fine-grained. The well will be constructed with 0.010-inch machine-slotted well screen for the monitoring well and #2/12 sand for gravel pack around the well screen.

Task 4 - Well Development, Groundwater Sampling and Analysis

The monitoring wells will be developed no sooner than 72 hours after drilling with a vented surge block and bailing. Groundwater will be removed using steam-cleaned polyvinyl-chloride (PVC) bailers. Groundwater removed from the wells will be transported to the Chevron Refinery in Richmond, California.

Groundwater samples will be collected from the newly installed wells no sooner than 24 hours after development of the wells. Groundwater samples will be collected according to G-R Standard Operating Procedure - Quarterly Groundwater Sampling. The evacuated water will be transported to the Chevron Refinery in Richmond, California.

The water samples will be collected using Chevron-approved disposable bailers. Sample containers will be provided by the analytic laboratory prior to sampling. After water samples are collected in the sample containers, they will be labeled and maintained at 4 C prior to delivery at the analytic laboratory. Chain-of-custody records will be maintained for the samples. A trip blank will accompany the samples to the laboratory.

Groundwater samples from the wells and the trip blank will be analyzed for TPPH(G), BTEX and HVOCs by EPA Methods 5030/8015, 8020 and 8010, respectively. All QA/QC data from the laboratory will be included in the final report.

Task 5 - Surveying and Groundwater Gradient

The top of casing elevation of the new wells will be surveyed by a licensed land-surveyor. The casing will be surveyed relative to mean sea level.

Water and separate-phase hydrocarbon levels (if present) will be measured in all site wells using an MMC flexi-dip interface probe. Water and separate-phase levels (if present) will be reported to the nearest 1/100th of a foot.

A potentiometric map will be prepared using survey and water level data.

Task 6 - Drill Cutting, Steam-cleaning Rinseate and Monitoring Well Purge Water Disposal

The soil cuttings will be stored on-site on visqueen sheeting and covered pending disposal by Integrated Waste Management of Milpitas, California.

The steam-cleaning rinseate and well development and purge water will be transported to the Chevron Refinery in Richmond, California.

Task 7 - Report

The report will be prepared and the field work conducted under the supervision of Stephen J. Carter, a California Registered Geologist (R.G. #5577).

A report presenting the results of the well installation and groundwater sampling will be prepared. The report will include:

TEXT:

- Executive Summary
- Site Background and History
- Geologic Setting
- Description of Soil Sampling and Subsurface Sediments
- Monitoring Well Installation Details
- Depth to Groundwater and Groundwater Flow Direction and Gradient
- Groundwater Analytical Data
- Conclusions

TABLES:

- Tabulated Soil Analytic Results
- Tabulated Groundwater Analytic Results
- Groundwater Elevation Data and Well Construction Data

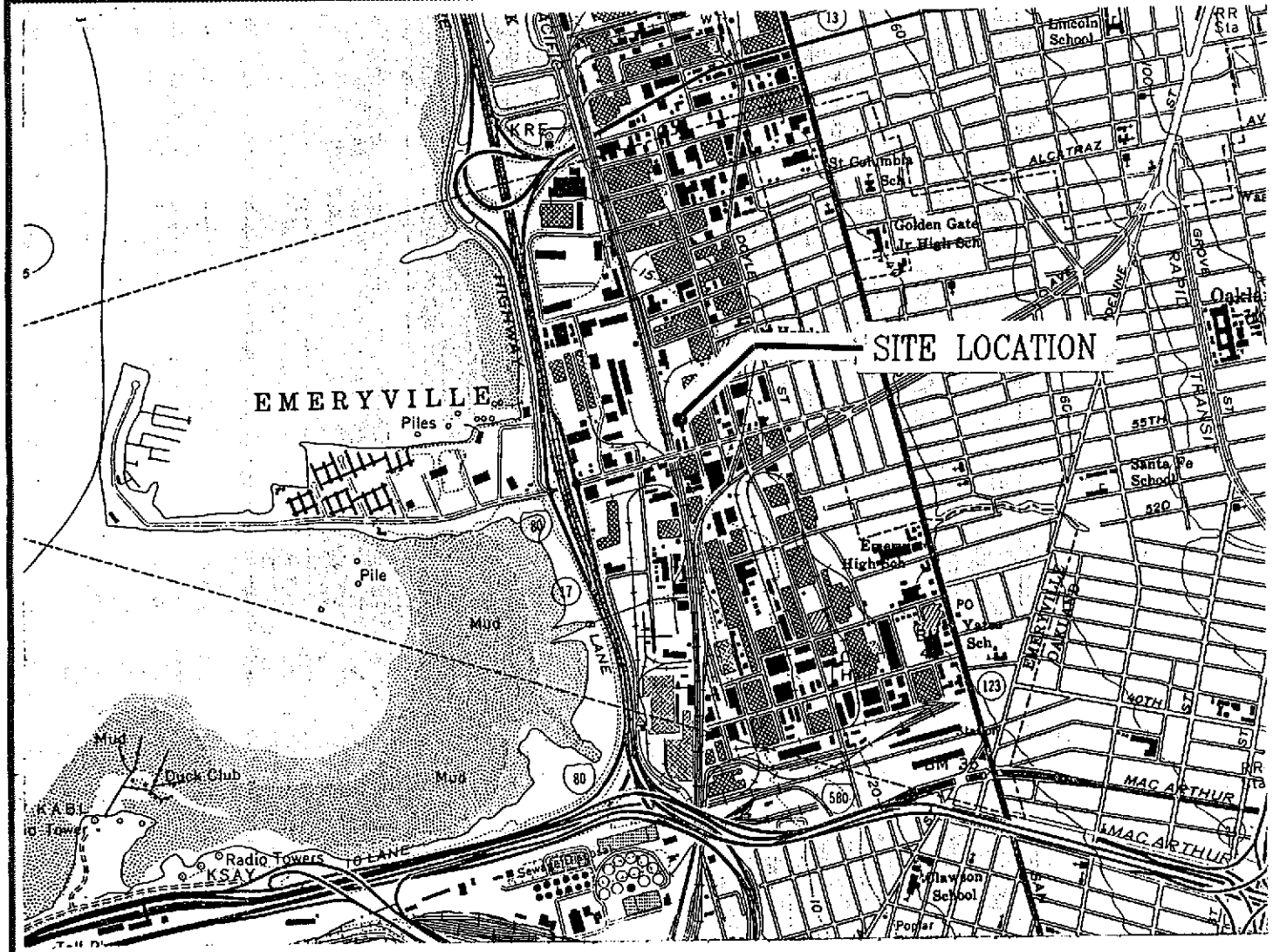
FIGURES:

- Site Vicinity Map
- Monitoring Well Location and Potentiometric Map

APPENDIX:

- Boring Log and Well Construction Details
- Chain-of-Custody Documents and Laboratory Analytic Results
- Field Methods and Procedures
- G-R Field Data Sheets

FIGURES



Base Map: USGS Topographic Map

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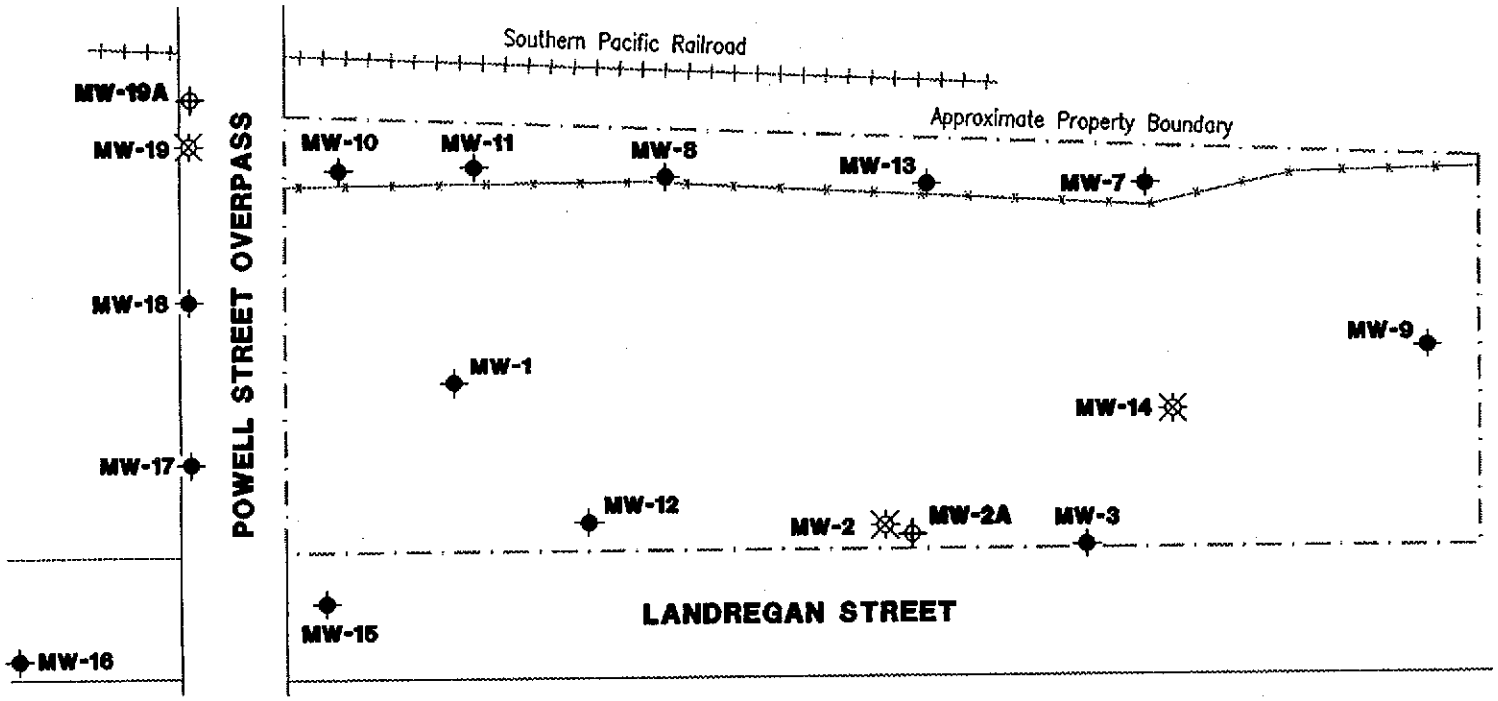
VICINITY MAP
Former Chevron Asphalt Plant
and Terminal No. 1001067
Emeryville, California

FIGURE
1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
5161		July, 1995	



EXPLANATION:

- Groundwater monitoring well
- Abandoned groundwater monitoring well
- Proposed groundwater monitoring well

NOTE:

Proposed well MW-2A is to be drilled in same location as abandoned well MW-2

N

0 100

Scale in Feet

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MONITORING WELL LOCATION MAP
Former Chevron Asphalt Plant
and Terminal No. 1001067
Emeryville, California

FIGURE
1

JOB NUMBER 5161.01 | REVIEWED BY | DATE July, 1995 | REVISED DATE

APPENDIX

Table 1. Water Level Data and Groundwater Analytic Results - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California

Well ID/ TOC (ft)[1]	Date	DTW (ft)	GWE[1] (msl)	Product Thickness[2] (ft)	Analytic Method	TPPH(G)	B	T	E	X	O&G
						<ppb>					<ppm>
MW-1/ 10.67	4/26/85	—	—	—	—	—	99	—	—	6.0	—
	9/11/87	—	—	—	—	—	63	—	—	—	—
	7/7/88	—	—	—	—	<100	55	—	—	—	—
	4/13/89	3.72	6.95	—	—	—	—	—	—	—	—
	4/14/89	—	—	—	8260	<5,000	34	<5.0	<5.0	<10	—
	7/31/89	5.72	4.95	0	8260	7,000	57	1.2	<0.2	1.6	—
	12/8/89	4.80	5.87	0	8015/8020	—	26	0.4	0.9	2.0	—
	3/21/90	4.74	5.93	0	8015/8020	3,500	120	9.0	3.0	3.0	—
	6/19/90	4.75	5.92	0	8015/8020	2,700	100	<0.3	<0.3	7.0	—
	9/20/90	5.07	5.60	—	—	—	—	—	—	—	—
	9/21/90	—	—	—	8015/8020	2,200	120	2.0	2.0	0.79	—
	12/28/90	4.91	5.76	0	8015/8020	720	44	2.0	<0.5	9.0	—
	5/10/91	5.30	5.37	0	8015/8020	530	47	2.0	0.5	8.0	—
	8/8/91	5.85	4.82	0	8015/8020	1,400	37	8.3	3.7	12	—
	11/27/91	5.13	5.54	0	8015/8020	840	16	7.1	4.5	11	—
	1/29/92	4.82	5.85	0	8015/8020	350	18	9.3	3.7	7.7	—
	3/26/92	4.32	6.35	0	8015/8020	420[11]	19	2.2	1.2	4.0	—
	7/23/92	5.42	5.25	0	8015/8020	4,000[12]	50	82	40	160	—
	10/28/92	5.56	5.11	0	8015/8020	980	36	6.7	3.0	10	—
	5/4/93	6.30	4.37	0	8015/8020	650	9.4	2.4	1.2	4.5	—
	1/5/94[10]	—	—	—	—	—	—	—	—	—	—
MW-2/ 13.78	4/26/85	—	—	—	—	—	<10	—	—	—	—
	9/11/87	—	—	—	—	—	—	—	—	—	—
	7/7/88	—	—	—	—	<100	<5.0	—	—	—	—
	4/13/89	2.62	11.16	—	—	—	—	—	—	—	—
	4/14/89	—	—	—	8260	<100	<0.2	<0.2	<0.2	<0.4	<3,000
	7/31/89	4.63	9.15	0	8260	<100	<0.2	<1.0	<0.2	<0.4	—
	12/8/89	5.98	7.80	0	8015/8020	—	<0.3	<0.3	<0.3	<0.6	—
	3/21/90	5.85	7.93	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	6/19/90	5.95	7.83	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	9/20/90	6.86	6.92	—	—	—	—	—	—	—	—
	9/21/90	—	—	—	8015/8020	<50	<1.5	<1.5	<1.5	<4.5	—
	12/28/90	6.34	7.44	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	5/10/91	5.96	7.82	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	8/8/91	7.66	6.12	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	11/27/91	8.04	5.74	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	1/29/92	6.01	7.77	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—

Table 1. Water Level Data and Groundwater Analytic Results - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

Well ID/ TOC (ft)[1]	Date	DTW (ft)	GWE[1] (msl)	Product Thickness[2] (ft)	Analytic Method	TPPH(G)	B	T	E	X	O&G
						<----------ppb---------->					<ppm>
MW-2 (cont)	3/26/92	6.10	7.68	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	7/23/92	7.39	6.39	0	8015/8020	<50	<0.5	<0.5	<0.5	0.8	—
	10/28/92	7.51	6.27	0	8015/8020	55	1.3	6.9	1.1	5.1	—
	5/4/93[8]	—	—	—	—	—	—	—	—	—	—
	1/5/94[10]	—	—	—	—	—	—	—	—	—	—
	10/24/94	Dry	—	—	—	—	—	—	—	—	—
	4/19/95	2.51	11.28[14]	0.01	—	—	—	—	—	—	—
MW-3/ 11.73	4/26/85	—	—	—	—	—	<10	—	—	—	—
	9/11/87	—	—	—	—	—	<0.5	—	—	—	—
	7/7/88	—	—	—	—	<100	<5.0	—	—	—	—
	4/13/89	2.34	9.39	—	—	—	—	—	—	—	—
	4/14/89	—	—	—	8260	<100	<0.2	<0.2	<0.2	<0.4	<3,000
	7/31/89	4.79	6.94	0	8260	<100	<0.2	<1.0	<0.2	<0.4	—
	12/8/89	3.03	8.70	0	8015/8020	—	<0.3	<0.3	<0.3	<0.6	—
	3/21/90	2.55	9.18	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	6/19/90	2.76	8.97	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	9/20/90	4.43	7.30	—	—	—	—	—	—	—	—
	9/21/90	—	—	—	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	12/28/90	3.67	8.06	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	5/10/91	2.83	8.90	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	8/8/91	5.09	6.64	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	11/27/91	5.37	6.36	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	1/29/92	3.46	8.27	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	3/26/92	2.10	9.63	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	7/23/92	4.60	7.13	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	10/28/92	5.07	6.66	0	8015/8020	92	1.8	12	2.0	10	—
	5/4/93[8]	—	—	—	—	—	—	—	—	—	—
	1/5/94[10]	—	—	—	—	—	—	—	—	—	—
MW-4	4/26/85	—	—	—	—	3,100	<10	—	—	—	—
	9/11/87	—	—	—	—	—	<0.5	—	—	—	—
	7/7/88	—	—	—	—	<100	<5.0	—	—	—	—
	4/13/89[3]	2.12	—	—	—	—	—	—	—	—	—
	4/14/89[4]	—	—	—	8260	380[13]	<0.5	<1.0	<1.0	<1.0	<3,000

Table 1. Water Level Data and Groundwater Analytic Results - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

Well ID/ TOC (ft)[1]	Date	DTW (ft)	GWE[1] (msl)	Product Thickness[2] (ft)	Analytic Method	TPPH(G)	B	T	E	X	O&G
						<-------ppb------->					<ppm>
MW-5	4/26/85	—	—	—	—	1,600	<100	—	—	—	—
	9/11/87	—	—	—	—	—	<10	—	—	—	—
	7/7/88	—	—	—	—	<100	<5.0	—	—	—	—
	4/13/89[3]	2.79	—	—	—	—	—	—	—	—	—
	4/14/89[4]	—	—	—	8260	4,300[13]	<0.5	<1.0	<1.0	<1.0	<3,000
MW-6	4/26/85	—	—	—	—	580	<100	—	—	—	—
	9/11/87	—	—	—	—	—	<10	—	—	—	—
	7/7/88	—	—	—	—	8,000	<5.0	—	—	—	—
	4/13/89[3]	1.90	—	—	—	—	—	—	—	—	—
	4/14/89[4]	—	—	—	8260	3,300[13]	<0.5	<1.0	<1.0	<1.0	<3,000
MW-7/ 10.47	4/26/85	—	—	—	—	700	ND	—	—	—	—
	9/11/87	—	—	—	—	—	<10	—	—	—	—
	7/7/88	—	—	—	—	17,000	<5.0	—	—	—	—
	4/13/89	1.90	8.57	—	—	—	—	—	—	—	—
	4/14/89	—	—	—	8260	<50	<0.5	<1.0	<1.0	<1.0	<3,000
	7/31/89	4.24	6.23	—	8260	160[13]	<0.1	<0.5	<0.1	<0.2	—
	7/31/89	—	—	—	8260	100[13]	<0.1	<0.5	<0.1	<0.2	—
	12/8/89	2.65	7.82	0	8015/8020	—	<0.3	<0.3	<0.3	<0.6	—
	3/21/90	2.76	7.71	0	8015/8020	<50	<0.3	<0.3	<0.3	0.6	—
	6/19/90	3.24	7.23	0	8015/8020	<50	<0.3	<0.3	<0.3	0.6	—
	9/20/90	4.57	5.90	—	—	—	—	—	—	—	—
	9/21/90	—	—	—	8015/8020	<50	1.5	<0.3	<0.3	<0.6	—
	12/28/90	3.12	7.35	0	8015/8020	<50	0.7	<0.5	<0.5	0.7	—
	5/10/91	3.53	6.94	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	8/8/91	4.64	5.83	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	11/27/91	3.66	6.81	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	1/29/92	3.24	7.23	0	8015/8020	<50	<0.5	<0.5	<0.5	0.9	—
	3/26/92	2.61	7.86	0	8015/8020	<50	<0.5	<0.5	<0.5	0.9	—
	7/23/92	4.19	6.28	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	10/28/92	4.39	6.08	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	5/4/93[8]	—	—	—	—	—	—	—	—	—	—
	1/5/94[10]	—	—	—	—	—	—	—	—	—	—
	5/13/94	4.41	6.06	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	10/24/94	5.03	5.44	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	4/19/95	4.53	5.94	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—

Table 1. Water Level Data and Groundwater Analytic Results - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

Well ID/ TOC (ft)[1]	Date	DTW (ft)	GWE[1] (msl)	Product Thickness[2] (ft)	Analytic Method	TPPH(G)	B	T	E	X	O&G
						<-------ppb------->					<ppm>
MW-8/ 10.46	4/26/85	—	—	—	—	—	ND	—	—	—	—
	9/11/87	—	—	—	—	—	<10	—	—	—	—
	7/7/88	—	—	—	—	20,000	<5.0	—	—	—	—
	4/13/89	2.80	7.66	—	—	—	—	—	—	—	—
	4/14/89	—	—	—	8260	<50	<0.5	<1.0	<1.0	<1.0	<3,000
	7/31/89	5.70	4.76	0	8260	<50	<0.1	<0.5	<0.1	<0.2	—
	12/8/89	4.13	6.33	0	8015/8020	—	<0.3	<0.3	<0.3	<0.6	—
	3/21/90	4.07	6.39	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	6/19/90	4.25	6.21	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	9/20/90	4.99	5.47	—	—	—	—	—	—	—	—
	9/21/90	—	—	—	8015/8020	<50	6.0	<0.3	<0.3	<0.6	—
	12/28/90	4.39	6.07	—	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	5/10/91	4.13	6.33	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	8/8/91	5.53	4.93	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	11/27/91	4.59	5.87	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	1/29/92	5.30	5.16	0	8015/8020	<50	<0.5	<0.5	<0.5	0.7	—
	3/26/92	3.59	6.87	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	7/23/92	5.06	5.40	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	10/28/92[7]	—	—	—	—	—	—	—	—	—	—
	5/4/93[8]	—	—	—	—	—	—	—	—	—	—
	1/5/94[8]	—	—	—	—	—	—	—	—	—	—
	5/13/94	5.59	4.87	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	10/24/94[7]	—	—	—	—	—	—	—	—	—	—
	4/19/95[4]	—	—	—	—	—	—	—	—	—	—
MW-9	4/26/85	—	—	—	—	—	—	—	—	—	—
	9/11/87	—	—	—	—	—	—	—	—	—	—
	7/7/88	—	—	—	—	400	—	—	—	—	—
	5/10/91[5]	—	—	—	—	—	—	—	—	—	—
MW-10/ 10.82	7/7/88	—	—	—	—	—	<5.0	—	—	—	—
	4/14/89	—	—	—	8260	<50	<0.5	<1.0	<1.0	<1.0	<3,000
	7/31/89	—	—	—	8260	<50	<0.1	<0.5	<0.1	<0.2	—
	12/8/89	—	—	—	8015/8020	—	<0.3	<0.3	<0.3	<0.6	—
	3/21/90	4.60	6.22	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	6/19/90	4.89	5.93	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—

Table 1. Water Level Data and Groundwater Analytic Results - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

Well ID/ TOC (ft)[1]	Date	DTW (ft)	GWE[1] (msl)	Product Thickness[2] (ft)	Analytic Method	TPPH(G)	B	T	E	X	O&G
						<----------ppb---------->					<ppm>
MW-10 (cont)	9/20/90	5.77	5.05	—	—	—	—	—	—	—	—
	9/21/90	—	—	—	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	12/28/90	4.99	5.83	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	5/10/91	5.80	5.02	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	8/8/91	5.86	4.96	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	11/27/91	5.39	5.43	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	1/29/92	5.44	5.38	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	3/26/92	4.96	5.86	0	8015/8020	<50	<0.5	1.8	0.5	1.9	—
	7/23/92	5.80	5.02	0	8015/8020	<50	0.6	0.7	<0.5	1.2	—
	10/28/92	6.06	4.76	0	—	—	—	—	—	—	—
	5/4/93[8]	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	0.6	—
	1/5/94	5.92	4.90	0	8015/8020	140	<0.5	<0.5	<0.5	1.3	—
	5/13/94	5.09	5.73	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	10/24/94	6.24	4.58	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	4/19/95	**5.26**	**5.56**	**0**							
MW-11/ 11.38	7/7/88	—	—	—	—	—	<5.0	—	—	—	—
	4/14/89	—	—	—	8260	<50	<0.5	<1.0	<1.0	<1.0	<3,000
	7/31/89	—	—	—	8260	<100	<0.2	<0.2	<0.2	<0.2	—
	12/8/89	—	—	—	8015/8020	—	<0.3	<0.3	<0.3	<0.6	—
	3/21/90	4.82	6.56	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	6/19/90	5.14	6.24	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	9/20/90	6.11	5.27	—	—	—	—	—	—	—	—
	9/21/90	—	—	—	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	12/28/90	5.16	6.22	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	5/10/91	7.83	3.55	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	8/8/91	6.32	5.06	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	11/27/91	5.67	5.71	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	1/29/92	5.83	5.55	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	3/26/92	4.09	7.29	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	7/23/92	6.19	5.19	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	10/28/92	6.51	4.87	0	—	—	—	—	—	—	—
	5/4/93[8]	—	—	—	—	—	—	—	—	—	—
	1/5/94[8]	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	5/13/94	5.67	5.71	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	10/24/94	6.79	4.59	0	8015/8020	58[15]	0.6	<0.5	<0.5	0.5	—
	4/19/95	**5.69**	**5.69**	**0**							

Table 1. Water Level Data and Groundwater Analytic Results - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

Well ID/ TOC (ft)[1]	Date	DTW (ft)	GWE[1] (msl)	Product Thickness[2] (ft)	Analytic Method	TPPH(G)	B	T	E	X	O&G
						<-------ppb------->					<ppm>
MW-12/ 13.03	7/7/88	—	—	—	—	<100	<5.0	—	—	—	—
	4/14/89	—	—	—	8260	<50	<0.5	<1.0	<1.0	<1.0	<3,000
	7/31/89	—	—	—	8260	<100	<0.1	<0.5	<0.1	<0.2	—
	12/8/89	—	—	—	8015/8020	—	<0.3	<0.3	<0.3	<0.6	—
	3/21/90	6.76	6.27	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.3	—
	6/19/90	6.62	6.41	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.3	—
	9/20/90	5.00	8.03	—	—	—	—	—	—	—	—
	9/21/90	—	—	—	8015/8020	<50	<0.3	<0.3	<0.3	<0.3	—
	12/28/90	6.62	6.41	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	5/10/91	6.48	6.55	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	8/8/91	8.01	5.02	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	11/27/91	7.95	5.08	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	1/29/92	7.68	5.35	0	8015/8020	<50	<0.5	<0.5	<0.5	1.0	—
	3/26/92	6.60	6.43	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	7/23/92[6]	—	—	—	—	—	—	—	—	—	—
MW-13/ 11.15	3/21/90	4.08	7.07	0	8015/8020	480	<0.3	<0.3	1.0	5.0	—
	6/19/90	4.34	6.81	0	8015/8020	180	<0.3	<0.3	0.8	3.0	—
	9/20/90	5.31	5.84	0	8015/8020	150	<0.3	<0.3	<0.3	0.54	—
	12/28/90	4.79	6.36	0	8015/8020	160	<0.5	<0.5	<0.5	1.0	—
	5/10/91	4.20	6.95	0	8015/8020	110	<0.5	<0.5	<0.5	2.0	—
	8/8/91	5.13	6.02	0	8015/8020	220[4]	<0.5	<0.5	<0.5	1.8	—
	11/27/91	4.72	6.43	0	8015/8020	70	<0.5	<0.5	<0.5	1.2	—
	1/29/92	4.69	6.46	0	8015/8020	150	<0.5	<0.5	3.1	7.1	—
	3/26/92	4.04	7.11	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	7/23/92	5.12	6.03	0	8015/8020	190	<0.5	<0.5	<0.5	2.1	—
	10/28/92	5.30	5.85	0	8015/8020	190	<0.5	<0.5	<0.5	2.0	—
	5/4/93[8]	—	—	—	—	—	—	—	—	—	—
	1/5/94[8]	—	—	—	—	—	—	—	—	—	—
	5/13/94	5.28	5.87	0	8015/8020	220	<0.5	1.2	<0.5	1.7	—
	10/24/94	6.04	5.11	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	4/19/95	5.37	5.78	0	8015/8020	140[15]	<0.5	<0.5	<0.5	1.2	—
MW-14/ 9.78	3/21/90	0.91	8.87	0	8015/8020	170	<0.3	<0.3	<0.4	2.0	—
	6/19/90	1.03	8.75	0	8015/8020	77	<0.3	<0.3	<0.3	<0.6	—

Table 1. Water Level Data and Groundwater Analytic Results - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

Well ID/ TOC (ft)[1]	Date	DTW (ft)	GWE[1] (msl)	Product Thickness[2] (ft)	Analytic Method	TPPH(G)	B	T	E	X	O&G
						<----------ppb---------->					<ppm>
MW-14 (cont)	9/20/90	2.53	7.25	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	12/28/90	1.61	8.17	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	5/10/91	1.22	8.56	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	8/8/91	2.45	7.33	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	11/27/91	2.59	7.19	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	1/29/92	1.10	8.68	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	3/26/92	0.74	9.04	0	8015/8020	<50	<0.5	<0.5	<0.5	0.8	—
	7/23/92	2.30	7.48	0	8015/8020	<50	0.6	<0.5	<0.5	3.8	—
	10/28/92	2.76	7.02	0	8015/8020	56	0.7	4.0	0.8	—	—
	5/4/93[9]	—	—	—	—	—	—	—	—	—	—
MW-15/ 11.01	3/21/90	4.72	6.29	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	6/19/90	4.78	6.23	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	9/20/90	4.98	6.03	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	12/28/90	4.84	6.17	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	5/10/91	4.58	6.43	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	8/8/91	5.03	5.98	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	11/27/91	5.88	5.13	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	1/29/92	4.82	6.19	0	8015/8020	<50	1.9	2.6	0.8	2.6	—
	3/26/92	4.35	6.66	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	7/23/92	5.04	5.97	0	8015/8020	<50	<0.5	<0.5	<0.5	0.5	—
	10/28/92	5.17	5.84	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	5/4/93[8]	—	—	—	—	—	—	—	—	—	—
	1/5/94[10]	—	—	—	—	—	—	—	—	—	—
	5/13/94	4.50	6.51	0	8015/8020	110	<0.5	0.7	<0.5	2.0	—
	10/24/94	5.17	5.84	0	8015/8020	<50	2.3	1.1	<0.5	<0.5	—
	4/19/95	4.77	6.24	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
MW-16/ 11.11	3/21/90	5.84	5.27	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	6/19/90	5.90	5.21	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	9/20/90	6.36	4.75	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	12/28/90	5.98	5.13	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	5/10/91	5.89	5.22	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	8/8/91	6.28	4.83	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	11/27/91	5.62	5.49	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	1/29/92	5.88	5.23	0	8015/8020	65	3.6	6.2	1.9	6.6	—

Table 1. Water Level Data and Groundwater Analytic Results - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

Well ID/ TOC (ft)[1]	Date	DTW (ft)	GWE[1] (msl)	Product Thickness[2] (ft)	Analytic Method	TPPH(G)	B	T	E	X	O&G
						<-------ppb------->					<gm>
MW-16 (cont)	3/26/92	5.56	5.55	0	8015/8020	270[9]	21	27	9.5	41	—
	7/23/92	6.29	4.82	0	8015/8020	<50	<0.5	<0.5	<0.5	0.7	—
	10/28/92	6.29	4.82	0	8015/8020	<50	0.9	1.4	<0.5	1.1	—
	5/4/93	5.75	5.36	0	8015/8020	51	<0.5	1.0	0.6	1.7	—
	1/5/94[10]	—	—	—	—	—	—	—	—	—	—
MW-17/ 10.41	3/21/90	5.61	4.80	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	6/19/90	—	—	—	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	9/20/90	6.02	4.39	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	12/28/90	5.73	4.68	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	5/10/91	5.65	4.76	0	8015/8020	<50	<0.5	<0.5	<0.5	0.8	—
	8/8/91	5.94	4.47	0	8015/8020	82	1.9	2.5	0.9	5.4	—
	11/27/91	6.00	4.41	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	1/29/92	5.61	4.80	0	8015/8020	<50	<0.5	0.9	<0.5	0.5	—
	3/26/92	5.31	5.10	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	7/23/92	5.97	4.44	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	10/28/92	5.96	4.45	0	8015/8020	78	1.0	7.1	1.4	6.5	—
	5/4/93	7.53	2.88	0	8015/8020	60	0.8	1.7	1.1	3.0	—
	1/5/94	5.50	4.91	0	8015/8020	<50	<0.5	0.7	<0.5	<0.5	—
	5/13/94	5.17	5.24	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	10/24/94	6.08	4.33	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	4/19/95	5.48	4.93	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
MW-18/ 9.80	3/21/90	5.15	4.65	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	6/19/90	5.19	4.61	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	9/20/90	5.54	4.26	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	12/28/90	5.26	4.54	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	5/10/91	5.18	4.62	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	8/8/91	5.45	4.35	0	8015/8020	52	<0.5	<0.5	<0.5	<0.5	—
	11/27/91	5.24	4.56	0	8015/8020	<50	0.6	1.5	0.6	2.1	—
	1/29/92	5.12	4.68	0	8015/8020	67	3.7	5.2	1.5	5.0	—
	3/26/92	4.84	4.96	0	8015/8020	80[5]	<0.5	<0.5	<0.5	0.8	—
	7/23/92	5.49	4.31	0	8015/8020	50[5]	1.3	2.1	0.5	3.0	—
	10/28/92	5.47	4.33	0	8015/8020	54	<0.5	1.3	<0.5	1.1	—
	5/4/93	5.07	4.73	0	8015/8020	<50	<0.5	<0.5	<0.5	<1.5	—
	1/5/94	5.05	4.75	0	8015/8020	<50	<0.5	0.5	<0.5	0.6	—

Table 1. Water Level Data and Groundwater Analytic Results - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

Well ID/ TOC (ft)[1]	Date	DTW (ft)	GWE[1] (msl)	Product Thickness[2] (ft)	Analytic Method	TPPH(G)	B	T	E	X	O&G
						<----------ppb---------->					<ppm>
MW-18 (cont)	5/13/94	4.76	5.04	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	10/24/94	5.65	4.15	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	4/19/95	5.10	4.70	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
MW-19/ 8.45	3/21/90	5.00	3.45	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	6/19/90	5.06	3.39	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	9/20/90	5.25	3.20	0	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	12/28/90	5.07	3.38	0	8015/8020	66	<0.5	<0.5	<0.5	<0.5	—
	5/10/91	5.02	3.43	0	8015/8020	60[4]	<0.5	<0.5	<0.5	<0.5	—
	8/8/91	5.17	3.28	0	8015/8020	58	<0.5	<0.5	<0.5	<0.5	—
	11/27/91	5.06	3.39	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	1/29/92	4.93	3.52	0	8015/8020	<50	1.7	2.6	0.7	2.1	—
	3/26/92	4.79	3.66	0	8015/8020	80[5]	<0.5	<0.5	<0.5	<0.5	—
	7/23/92	5.22	3.23	0	8015/8020	70[5]	0.6	0.5	<0.5	1.5	—
	10/28/92	5.16	3.29	0	8015/8020	170	4.3	28	5.1	24	—
	5/4/93	4.93	3.52	0	8015/8020	120	2.0	4.7	2.8	8.1	—
	1/5/94	4.91	3.54	0	8015/8020	<50	2.0	1.4	1.7	2.5	—
	5/13/94	4.18	4.27	0	8015/8020	<50	<0.5	0.9	<0.5	<0.5	—
	10/24/94	4.85	3.60	0	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	4/19/95	4.20	4.25	0	8015/8020	270[15]	<0.5	<0.5	<0.5	<0.5	—
Trip Blank AA	4/14/89	—	—	—	8260	<50	<0.5	<1.0	<1.0	<1.0	—
	7/31/89	—	—	—	8260	<50	<0.1	<0.5	<0.5	<0.2	—
	12/8/89	—	—	—	8015/8020	—	<0.3	<0.3	<0.3	<0.6	—
	3/21/90	—	—	—	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	3/26/90	—	—	—	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	6/19/90	—	—	—	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	9/21/90	—	—	—	8015/8020	<50	<0.3	<0.3	<0.3	<0.6	—
	12/28/90	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<0.6	—
	5/10/91	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	8/8/91	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	11/27/91	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	1/29/92	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	3/26/92	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
TB-LB	7/23/92	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	10/28/92	—	—	—							

Table 1. Water Level Data and Groundwater Analytic Results - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

Well ID/ TOC (ft)[1]	Date	DTW (ft)	GWE[1] (msl)	Product Thickness[2] (ft)	Analytic Method	TPPH(G)	B	T	E	X	O&G
						<-------ppb------->					<ppm>
TB-LB (cont)	5/4/93	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<1.5	—
	1/5/94	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	5/13/94	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	10/24/94	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	4/19/95	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
Bailer Blank BB	5/10/91	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	8/8/91	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	11/27/91	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	1/29/92	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	3/26/92	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	7/23/92	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	10/28/92	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	5/4/93	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<1.5	—
	1/5/94	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—
	5/13/94	—	—	—	8015/8020	<50	<0.5	<0.5	<0.5	<0.5	—

Table 1. Water Level Data and Groundwater Analytic Results - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

EXPLANATION:

DTW = Depth to water
TOC = Top of casing elevation
GWE = Groundwater elevation
msl = Measurements referenced relative to mean sea level
TPPH(G) = Total Purgeable Petroleum Hydrocarbons as Gasoline
B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylenes
O&G = Oil and Grease
ppb = Parts per billion
ppm = Parts per million
--- = Not available/not applicable

ANALYTIC METHODS:

8260 = EPA Method 8260 for TPPH(G) & BTEX
8015 = EPA Method 8015/8030 for TPPH(G)
8020 = EPA Method 8020 for BTEX

NOTES:

Water level elevation data and laboratory analytic results prior to April 19, 1995 were compiled from the quarterly groundwater monitoring reports prepared for Chevron by Sierra Environmental Services.

NOTES (continued):

1 Top of casing elevations shown prior to 3/21/90 were surveyed to an arbitrary datum point set at 100 feet. The GWEs shown for dates prior to 3/21/90 were corrected using new TOC elevations which were surveyed to a USGS benchmark (relative to mean sea level) in April 1990.
2 Product thickness measurements on and after May 10, 1991 were made using an MMC flexi-dip interface probe. Product thickness information prior to May 10, 1991 was not available for inclusion in this report.
3 Well construction details for this well is not available for inclusion in this report.
4 Monitoring well was destroyed during soil excavation in 1989.
5 Well MW-9 was not measured after 5/10/91 because it could not be located. Previous water level data was not available for inclusion in this report.
6 Well MW-12 could not be located after building demolition.
7 Well was obstructed.
8 Monitoring well obstructed due to on-site construction activities.
9 Monitoring well abandoned on March 10, 1993 by Soils Exploration Services of Benicia, California.
10 Well covered with asphalt during construction activities.
11 Does not match a typical gasoline pattern.
12 Gasoline range concentration reported. Chromatogram shows only a single peak in the gasoline range.
13 TPH was reported as Diesel #2.
14 GWE was corrected for the presence of separate-phase hydrocarbons using: GWE = [(TOC-DTW) + (Prod Thickness)(0.8)]. 0.8 is the assumed specific gravity of separate-phase hydrocarbons.
15 Laboratory report indicates that hydrocarbons were found in the range of gasoline, but do not resemble a gasoline fingerprint.

Table 2. Analytic Results for Groundwater - Halogenated Volatile Organic Compounds - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California

Well ID	Date Sampled	Analytic Lab	Analytic Method	1,1-DCE	1,2-DCE	t-1,2-DCE	c-1,2-DCE	1,1-DCA	1,1,1-TCA	TCE	PCE	CF	VC	Other HVOCs
				<-------					ppb					------->
MW-1	4/14/89	CCAS	8010	<5.0	—	19	720	<5.0	<5.0	11	<5.0	<20	340	ND[1]
	7/31/89	CCAS	8010	6.8	—	54	2,600	2.7	7.2	57	<0.2	<1.0	760	ND[2]
	12/8/89	GTEL	8010	4.3	2,700	—	—	1.7	1.4	59	<0.5	<0.5	520	—
	3/21/90	GTEL	8010	7.1	7,000	—	—	2.1	1.1	130	<0.5	<0.5	1,100	—
	6/19/90	GTEL	8010	12	6,100	—	—	3.1	<0.5	81	<0.5	<0.5	1,200	—
	9/21/90	GTEL	8010	1.8	2,400	—	—	2.2	1.7	60	<0.5	<0.5	1,100	ND[3]
	12/28/90	SAL	8010	2.0	—	28	1,500	1.0	0.6	15	<0.5	<0.5	510	ND[4]
	5/10/91	SAL	8010	10	—	69	5,500	2.0	<0.5	280	<0.5	<0.5	1,800	ND[5]
	8/8/91	SAL	8010	2.9	—	45	2,300	1.5	<0.5	110	<0.5	<0.5	<1.0	ND[6]
	11/27/91	SPA	8010	<25	—	<25	5,900	<25	<25	<25	<25	<25	540	ND[20]
	1/29/92	SPA	8010	<25	—	26	1,900	<25	<25	<25	<25	<25	320	ND[20]
	3/26/92	SPA	8010	<50	—	<50	1,500	<50	<50	<50	<50	<50	260	ND[21]
	7/23/92	SPA	8010	<50	—	<50	2,300	<50	<50	<50	<50	<50	170	ND[21]
	10/28/92	SPA	8010	4.2	—	30	1,600	3.6	<0.5	16	<0.5	<0.5	810	ND
	5/4/93	SPA	8010	1.0	—	16	670	0.5	<0.5	9.2	<0.5	<0.5	110	ND[18]
	1/5/94[24]	—	—	—	—	—	—	—	—	—	—	—	—	—
	5/13/94[27]	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-2	4/14/89	CCAS	8010	<0.2	<0.2	—	—	<0.2	<0.2	<0.2	<0.2	<1.0	<0.2	—
	7/31/89	CCAS	8010	<0.2	<0.2	—	—	<0.4	0.5	<0.2	<0.2	<1.0	<0.2	—
	12/8/89	GTEL	8010	<0.2	<0.5	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	3/21/90	GTEL	8010	<0.2	<0.5	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	6/19/90	GTEL	8010	<0.2	<0.5	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	9/21/90	GTEL	8010	<0.2	<0.5	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	12/28/90	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	5/10/91	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	8/8/91	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	11/27/91	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	1/29/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	3/26/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	7/23/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND[18]
	10/28/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	5/4/93[24]	—	—	—	—	—	—	—	—	—	—	—	—	—
	1/5/94[24]	—	—	—	—	—	—	—	—	—	—	—	—	—
	5/13/94[28]	—	—	—	—	—	—	—	—	—	—	—	—	—
	10/24/94[30]	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-3	4/14/89	CCAS	8010	<0.2	<0.2	—	—	<0.2	<0.2	<0.2	<0.2	<1.0	<0.2	—
	7/31/89	CCAS	8010	<0.2	<0.2	—	—	<0.4	0.5	<0.2	<0.2	<1.0	<0.2	—
	12/8/89	GTEL	8010	<0.2	<0.5	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	3/21/90	GTEL	8010	<0.2	<0.5	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—

Table 2. Analytic Results for Groundwater - Halogenated Volatile Organic Compounds - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California

Well ID	Date Sampled	Analytic Lab	Analytic Method	1,1-DCE	1,2-DCE	t-1,2-DCE	c-1,2-DCE	1,1-DCA	1,1,1-TCA	TCE	PCE	CF	VC	Other HVOCs
				<----					ppb					---->
MW-3 (cont)	6/19/90	GTEL	8010	<0.2	<0.5	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	9/21/90	GTEL	8010	<0.2	<0.5	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	12/28/90	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	5/10/91	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	8/8/91	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	11/27/91	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	1/29/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	3/26/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	7/23/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND[18]
	10/28/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	5/4/93[24]	—	—	—	—	—	—	—	—	—	—	—	—	—
	1/5/94[24]	—	—	—	—	—	—	—	—	—	—	—	—	—
	5/13/94[27]	—	—	—	—	—	—	—	—	—	—	—		—
MW-4	4/14/89[7]	CCAS	8010	<1.0	<1.0	—	—	2.0	<1.0	<1.0	<1.0	<2.0	<1.0	—
MW-5	4/14/89[7]	CCAS	8010	<1.0	<1.0	—	—	2.0	<1.0	<1.0	<1.0	<2.0	<1.0	—
MW-6	4/14/89[7]	CCAS	8010	<1.0	<1.0	—	—	2.0	<1.0	<1.0	<1.0	<2.0	<1.0	—
MW-7	4/14/89	CCAS	8010	<1.0	<1.0	—	—	1.0	1.0	<1.0	<1.0	<2.0	<1.0	—
	7/31/89	CCAS	8010	<0.1	0.3	—	—	0.3	4.5	<0.1	<0.1	<0.5	<0.1	ND[8]
(D)	7/31/89	GTEL	8010	<0.1	0.4	—	—	0.2	2.6	<0.1	<0.1	<0.5	<0.1	ND[8]
	12/8/89	GTEL	8010	<0.2	<0.5	—	—	<0.5	0.67	<0.5	<0.5	<0.5	<1.0	—
	3/21/90	GTEL	8010	<0.2	<0.5	—	—	<0.5	1.4	<0.5	<0.5	<0.5	<1.0	—
	6/19/90	GTEL	8010	<0.2	<0.5	—	—	<0.5	0.67	<0.5	<0.5	<0.5	<1.0	—
	9/21/90	GTEL	8010	<0.2	<0.5	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	12/28/90	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	<0.5	<1.0	—
	5/10/91	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	8/8/91	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	11/27/91	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	1/29/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	3/26/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	7/23/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND[18]
	10/28/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	5/4/93[24]	—	—	—	—	—	—	—	—	—	—	—	—	—
	1/5/94[24]	—	—	—	—	—	—	—	—	—	—	—	—	—
	5/13/94	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND[29]
	10/24/94	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND[29]
	4/19/95	SPA	8010	**<0.5**	—	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	ND[18]

Table 2. Analytic Results for Groundwater - Halogenated Volatile Organic Compounds - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California

Well ID	Date Sampled	Analytic Lab	Analytic Method	1,1-DCE	1,2-DCE	t-1,2-DCE	c-1,2-DCE	1,1-DCA	1,1,1-TCA	TCE	PCE	CF	VC	Other HVOCs
				<			ppb							>
MW-8	4/14/89	CCAS	8010	<1.0	<1.0	—	—	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	—
	7/31/89	CCAS	8010	<0.1	—	0.6	1.9	1.7	1.7	0.4	<0.1	<0.5	1.2	ND
	12/8/89	GTEL	8010	<0.2	0.53	—	—	<0.5	0.84	<0.5	<0.5	<0.5	<1.0	—
	3/21/90	GTEL	8010	<0.2	0.96	—	—	<0.5	0.72	<0.5	<0.5	<0.5	<1.0	—
	6/19/90	GTEL	8010	<0.2	0.59	—	—	<0.5	0.67	<0.5	<0.5	<0.5	<1.0	—
	9/21/90	GTEL	8010	<0.2	<0.5	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	12/28/90	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	2.0	<0.5	<0.5	<0.5	<1.0	—
	5/10/91	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	8/8/91	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	11/27/91	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	1/29/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	3/26/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	7/23/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND[19]
	10/28/92[23]	—	—	—	—	—	—	—	—	—	—	—	—	—
	5/4/93[24]	—	—	—	—	—	—	—	—	—	—	—	—	—
	1/5/94[24]	—	—	—	—	—	—	—	—	—	—	—	—	—
	5/13/94	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND[29]
	10/24/94[28]	—	—	—	—	—	—	—	—	—	—	—	—	—
	4/19/95[28]	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-9	5/10/91[9]	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-10	4/14/89	CCAS	8010	<1.0	15	—	—	2.0	<1.0	5.0	<1.0	<2.0	<1.0	—
	7/31/89	CCAS	8010	0.7	—	6.3	27	2.9	<0.1	5.3	<0.1	<0.5	<0.1	ND
	12/8/89	GTEL	8010	<0.2	24	—	—	3.1	<0.5	4.9	<0.5	0.6	<1.0	—
	3/21/90	GTEL	8010	0.7	30	—	—	2.5	<0.5	3.5	<0.5	<0.5	<1.0	—
	6/19/90	GTEL	8010	0.3	33	—	—	2.6	<0.5	6.3	<0.5	<0.5	<1.0	—
	9/21/90	GTEL	8010	<0.2	32	—	—	5.0	<0.5	5.9	<0.5	<0.5	<1.0	—
	12/28/90	SAL	8010	<0.5	—	6.0	19	2.0	<0.5	5.0	<0.5	<0.5	<1.0	ND
	5/10/91	SAL	8010	0.6	—	7.0	24	2.0	<0.5	6.0	<0.5	<0.5	<1.0	ND
	8/8/91	SAL	8010	<0.5	—	7.0	33	3.1	<0.5	6.2	<0.5	<0.5	<1.0	ND
	11/27/91	SPA	8010	<0.5	—	6.8	100	<0.5	<0.5	8.5	<0.5	<0.5	<1.0	ND
	1/29/92	SPA	8010	<0.5	—	9.1	30	2.8	<0.5	7.4	<0.5	<0.5	<1.0	ND
	3/26/92	SPA	8010	0.7	—	9.2	29	2.5	<0.5	6.8	<0.5	<0.5	<0.5	ND[16]
	7/23/92	SPA	8010	<0.5	—	6.1	21	1.5	<0.5	4.7	<0.5	<0.5	<1.0	ND
	10/28/92	SPA	8010	<0.5	—	4.3	16	2.1	<0.5	4.1	<0.5	<0.5	—	—
	5/4/93[24]	—	—	—	—	—	—	—	—	—	—	—	—	—
	1/5/94	SPA	8010	<0.5	—	1.3	5.2	0.5	1.0	0.8	<0.5	<0.5	<1.0	ND[16]
	5/13/94	SPA	8010	<0.5	—	12	31	2.7	<0.5	4.8	<0.5	<0.5	<0.5	ND[29]
	10/24/94[33]	SPA	8010	<10	—	13	44	<10	<10	<10	<10	<10	<10	ND[31,33]
	4/19/95	SPA	8010	0.7	—	14	36	<0.5	<0.5	9.2	<0.5	<0.5	<0.5	ND[18]

Table 2. Analytic Results for Groundwater - Halogenated Volatile Organic Compounds - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California

Well ID	Date Sampled	Analytic Lab	Analytic Method	1,1-DCE	1,2-DCE	t-1,2-DCE	c-1,2-DCE	1,1-DCA	1,1,1-TCA	TCE	PCE	CF	VC	Other HVOCs
				<---------- ppb ----------										->
MW-11	4/14/89	CCAS	8010	<1.0	120	—	—	<1.0	<1.0	4.0	<1.0	<2.0	10	—
	7/31/89	CCAS	8010	0.9	—	40	110	2.2	1.4	2.9	<0.2	<0.2	<0.2	ND
	12/8/89	GTEL	8010	0.5	120	—	—	2.1	1.2	4.1	<0.5	<0.5	2.4	—
	3/21/90	GTEL	8010	1.3	150	—	—	1.2	1.7	3.5	<0.5	<0.5	4.3	ND[10]
	6/19/90	GTEL	8010	0.068	140	—	—	1.3	<0.5	5.0	<0.5	<0.5	1.0	—
	9/21/90	GTEL	8010	<0.2	100	—	—	1.1	<0.5	3.8	<0.5	<0.5	<1.0	—
	12/28/90	SAL	8010	<0.5	—	23	43	0.9	0.7	3.0	<0.5	<0.5	<1.0	—
	5/10/91	SAL	8010	0.9	—	44	110	0.5	<0.5	5.0	<0.5	<0.5	<1.0	ND
	8/8/91	SAL	8010	<0.5	—	29	77	0.9	<0.5	2.4	<0.5	<0.5	<1.0	ND
	11/27/91	SPA	8010	<0.5	—	34	240	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	1/29/92	SPA	8010	<5.0	—	33	91	<5.0	<5.0	<5.0	<5.0	<5.0	<10	ND
	3/26/92	SPA	8010	<2.5	—	21	51	<2.5	<2.5	<2.5	<2.5	<2.5	<5.0	ND
	7/23/92	SPA	8010	<0.5	—	18	46	0.6	<0.5	1.4	<0.5	<0.5	<0.5	ND[18]
	10/28/92	SPA	8010	0.5	—	36	80	<0.5	<0.5	4.6	<0.5	<0.5	<1.0	ND
	5/4/93[24]	—	—	—	—	—	—	—	—	—	—	—	—	—
	1/5/94[24]	—	—	—	—	—	—	—	—	—	—	—	—	—
	5/13/94	SPA	8010	<0.5	—	62	82	<0.5	<0.5	7.9	<0.5	<0.5	1.7	ND[29]
	10/24/94[25]	SPA	8010	<10	—	28	75	<10	<10	<10	<10	<10	<10	ND[31,35]
	4/19/95	SPA	8010	<0.5	—	18	39	<0.5	<0.5	6.5	<0.5	1.0	<0.5	ND[34]
MW-12	4/14/89	CCAS	8010	<1.0	1.0	—	—	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	—
	7/31/89	CCAS	8010	<0.1	1.7	—	—	<0.1	<0.1	0.8	<0.1	<0.5	<0.1	ND
	12/8/89	GTEL	8010	<0.2	<0.5	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	3/21/90	GTEL	8010	<0.2	<0.5	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	6/19/90	GTEL	8010	<0.2	<0.5	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	9/21/90	GTEL	8010	<0.2	<0.5	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	12/28/90	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	5/10/91	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	8/8/91	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	<1.0	ND
	11/27/91	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	1/29/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	3/26/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	7/23/92[22]	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-13	3/21/90	GTEL	8010	<0.2	<0.5	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	6/19/90	GTEL	8010	<0.2	<0.5	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	9/20/90	GTEL	8010	<0.2	<0.5	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	12/28/90	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND[11]
	5/10/91	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	8/8/91	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	11/27/91	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND

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Table 2. Analytic Results for Groundwater - Halogenated Volatile Organic Compounds - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California

Well ID	Date Sampled	Analytic Lab	Analytic Method	1,1-DCE	1,2-DCE	t-1,2-DCE	c-1,2-DCE	1,1-DCA	1,1,1-TCA	TCE	PCE	CF	VC	Other HVOCs
				<—					ppb					—>
MW-13 (cont)	1/29/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	3/26/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	7/23/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND[18]
	10/28/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	5/4/93[24]	—	—	—	—	—	—	—	—	—	—	—	—	—
	1/5/94[24]	—	—	—	—	—	—	—	—	—	—	—	—	—
	5/13/94	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND[29]
	10/24/94	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND[29]
	4/19/95	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND[18]
MW-14	3/21/90	GTEL	8010	<2.0	<0.5	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	6/19/90	GTEL	8010	<2.0	<0.5	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	9/20/90	GTEL	8010	<2.0	<0.5	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	12/28/90	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	5/10/91	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	8/8/91	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	11/27/91	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	1/29/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	3/26/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	7/23/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND[18]
	10/28/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	5/4/93[25]	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-15	3/21/90	GTEL	8010	<0.2	<0.5	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	6/19/90	GTEL	8010	<0.2	<0.5	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	9/20/90	GTEL	8010	<0.2	<0.5	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	12/28/90	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	5/10/91	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND[12]
	8/8/91	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	11/27/91	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	1/29/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	3/26/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	7/23/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND[18]
	10/28/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	5/4/93[24]	—	—	—	—	—	—	—	—	—	—	—	—	—
	1/5/94[24]	—	—	—	—	—	—	—	—	—	—	—	—	—
	5/13/94	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND[29]
	10/24/94	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	3.1	<0.5	3.8	<0.5	ND[29]
	4/19/95	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND[18]

Table 2. Analytic Results for Groundwater - Halogenated Volatile Organic Compounds - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California

Well ID	Date Sampled	Analytic Lab	Analytic Method	1,1-DCE	1,2-DCE	t-1,2-DCE	c-1,2-DCE	1,1-DCA	1,1,1-TCA	TCE	PCE	CF	VC	Other HVOCs
				<----					ppb					---->
MW-16	3/21/90	GTEL	8010	<0.2	0.8	—	—	<0.5	<0.5	27	8.0	2.0	<1.0	—
	6/19/90	GTEL	8010	<0.2	<0.5	—	—	<0.5	<0.5	35	7.0	2.0	<1.0	—
	9/20/90	GTEL	8010	<0.2	0.9	—	—	<0.5	<0.5	49	15	4.1	<1.0	—
	12/28/90	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	29	18	4.0	<1.0	ND[13]
	5/10/91	SAL	8010	<0.5	—	<0.5	0.5	<0.5	<0.5	32	10	4.0	<1.0	ND
	8/8/91	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	35	13	1.9	<1.0	ND
	11/27/91	SPA	8010	<0.5	—	<0.5	1.3	<0.5	<0.5	47	12	1.8	<1.0	ND[13]
	1/29/92	SPA	8010	<0.5	—	<0.5	0.9	<0.5	<0.5	31	11	1.8	<1.0	ND
	3/26/92	SPA	8010	<0.8	—	<0.8	<0.8	<0.8	<0.8	24	8.5	1.7	<1.7	ND[19]
	7/23/92	SPA	8010	<0.5	—	<0.5	0.9	<0.5	<0.5	37	12	1.0	<0.5	ND[18]
	10/28/92	SPA	8010	<0.5	—	<0.5	1.7	<0.5	<0.5	39	14	1.1	<1.0	ND
	5/4/93	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	32	10	1.1	<1	ND[18]
	1/5/94[24]	—	—	—	—	—	—	—	—	—	—	—	—	—
	5/13/94[27]	—	—	—	—	—	—	—	—	—	—	—	—	—
MW-17	3/21/90	GTEL	8010	<0.2	5.2	—	—	0.7	1.3	32	11	1.1	<1.0	—
	6/19/90	GTEL	8010	<0.2	3.1	—	—	<0.5	1.0	38	13	1.2	<1.0	—
	9/20/90	GTEL	8010	<0.2	2.4	—	—	<0.5	1.4	44	16	2.8	<1.0	—
	12/28/90	SAL	8010	<0.5	—	<0.5	2.0	<0.5	0.6	34	15	2.0	<1.0	—
	5/10/91	SAL	8010	<0.5	—	<0.5	3.0	<0.5	0.6	37	14	1.0	<1.0	ND
	8/8/91	SAL	8010	<0.5	—	<0.5	2.5	<0.5	<0.5	69	15	0.9	<1.0	ND
	11/27/91	SPA	8010	<0.5	—	<0.5	13	<0.5	<0.5	59	14	2.4	<1.0	ND
	1/29/92	SPA	8010	<0.5	—	<0.5	2.9	<0.5	0.8	35	15	1.1	<1.0	ND
	3/26/92	SPA	8010	<0.5	—	<0.5	1.5	<0.5	0.7	41	12	0.6	<1.0	ND
	7/23/92	SPA	8010	<0.5	—	<0.5	1.1	<0.5	<0.5	31	14	0.8	<0.5	ND[18]
	10/28/92	SPA	8010	<0.5	—	<0.5	1.6	<0.5	<0.5	42	11	0.8	<1.0	ND
	5/4/93	SPA	8010	<0.5	—	<0.5	1.1	<0.5	<0.5	26	12	0.6	<1.0	ND[18]
	1/5/94	SPA	8010	<0.5	—	<0.5	1.1	<0.5	<0.5	25	13	0.8	<1.0	ND[18]
	5/13/94	SPA	8010	<0.5	—	<0.5	1.0	<0.5	0.6	23	13	<0.5	<0.5	ND[29]
	10/24/94	SPA	8010	<0.5	—	<0.5	1.4	<0.5	<0.5	26	13	<0.5	<0.5	ND[29]
	4/19/95	SPA	8010	<0.5	—	<0.5	0.9	<0.5	1.1	21	12	1.2	<0.5	ND[18]
MW-18	3/21/90	GTEL	8010	<0.2	1.7	—	—	<0.5	2.4	33	20	0.9	<1.0	—
	6/19/90	GTEL	8010	<0.2	2.7	—	—	<0.5	0.9	63	20	0.73	<1.0	—
	9/20/90	GTEL	8010	<0.2	3.3	—	—	<0.5	1.6	76	25	1.7	<1.0	—
	12/28/90	SAL	8010	<0.5	—	<0.5	2.0	<0.5	0.8	44	21	1.0	<1.0	—
	5/10/91	SAL	8010	<0.5	—	<0.5	2.0	<0.5	0.7	47	20	2.0	<1.0	ND
	8/8/91	SAL	8010	<0.5	—	<0.5	2.0	<0.5	0.7	32	25	1.0	<1.0	ND
	11/27/91	SPA	8010	<0.5	—	<0.5	3.6	<0.5	0.5	60	18	1.5	<1.0	ND
	1/29/92	SPA	8010	<5.0	—	<5.0	<5.0	<5.0	<5.0	67	17	<5.0	<10	ND
	3/26/92	SPA	8010	<1.2	—	<1.2	6.4	<1.2	<1.2	130	19	1.7	<2.5	ND

Table 2. Analytic Results for Groundwater - Halogenated Volatile Organic Compounds - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California

Well ID	Date Sampled	Analytic Lab	Analytic Method	1,1-DCE	1,2-DCE	t-1,2-DCE	c-1,2-DCE	1,1-DCA	1,1,1-TCA	TCE	PCE	CF	VC	Other HVOCs
				<ppb>										
MW-18	7/23/92	SPA	8010	<0.5	—	<0.5	3.0	<0.5	0.5	67	19	0.8	<0.5	ND[16]
(cont)	10/28/92	SPA	8010	<0.5	—	<0.5	1.1	<0.5	<0.5	52	14	0.8	<1.0	ND
	5/4/93	SPA	8010	<0.5	—	<0.5	1.9	<0.5	0.7	48	18	2.5	<1.0	ND[26]
	1/5/94	SPA	8010	<0.5	—	<0.5	4.0	<0.5	0.8	94	17	1.0	<1.0	ND[18]
	5/13/94	SPA	8010	<0.5	—	<0.5	0.8	<0.5	0.8	16	15	0.8	<0.5	ND[29]
	10/27/94	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	22	15	1.2	<0.5	ND[29]
	4/19/95	**SPA**	**8010**	**<0.5**	**—**	**<0.5**	**2.2**	**<0.5**	**1.3**	**46**	**14**	**1.1**	**<0.5**	**ND[35]**
MW-19	3/21/90	GTEL	8010	<0.2	10	—	—	<0.5	2.5	41	53	3.2	<1.0	—
	6/19/90	GTEL	8010	<0.2	13	—	—	<0.5	1.5	46	47	2.8	<1.0	—
	9/20/90	GTEL	8010	<0.2	5.8	—	—	<0.5	2.5	39	32	3.1	<1.0	—
	12/28/90	SAL	8010	<0.5	—	0.8	22	<0.5	1.0	40	44	3.0	<1.0	—
	5/10/91	SAL	8010	<0.5	—	2.0	12	<0.5	1.0	47	47	3.0	<1.0	ND
	8/8/91	SAL	8010	<0.5	—	1.1	4.8	<0.5	1.1	41	35	2.8	<1.0	ND
	11/27/91	SPA	8010	<0.5	—	1.9	29	<0.5	0.9	59	31	2.7	<1.0	ND
	1/29/92	SPA	8010	<5.0	—	<5.0	8.9	<5.0	<5.0	51	44	3.0	<10	ND
	3/26/92	SPA	8010	<1.2	—	1.7	23	<1.2	1.5	68	130	1.4	<2.5	ND[17]
	7/23/92	SPA	8010	1.1	—	1.4	5.6	<0.5	1.0	61	38	3.3	<0.5	ND[18]
	10/28/92	SPA	8010	<0.5	—	0.9	5.3	<0.5	1.1	46	24	2.2	<1.0	ND
	5/4/93	SPA	8010	<0.5	—	2.5	8.7	0.5	1.1	69	32	3.9	<1.0	ND[18]
	1/5/94	SPA	8010	<0.5	—	1.7	1.7	<0.5	16	49	46	<0.5	<1.0	ND[18]
	5/13/94	SPA	8010	<0.5	—	1.8	22	<0.5	0.7	40	58	<0.5	<0.5	ND[29]
	10/24/94[33]	SPA	8010	<50	—	110	54	<50	<50	98	300	<50	<50	ND[32,33]
	4/19/95	**SPA**	**8010**	**<0.5**	**—**	**<0.5**	**65**	**<0.5**	**<0.5**	**130**	**670**	**<0.5**	**<0.5**	**ND[18]**
Trip Blank AA	4/14/89	CCAS	8010	<1.0	<0.5	—	—	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	—
	7/31/89	CCAS	8010	<0.1	<0.5	—	—	<0.1	<0.1	<0.1	<0.1	<0.5	<0.1	—
	12/8/89	GTEL	8010	<0.2	<0.5	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	3/21/90	GTEL	8010	<0.2	<0.5	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	3/26/90	GTEL	8010	<0.2	<0.5	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	6/19/90	GTEL	8010	<0.2	<0.5	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	9/21/90	GTEL	8010	<0.2	<0.5	—	—	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	—
	12/28/90	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	5/10/91	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND[14]
	8/8/91	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND[16]
	11/27/91	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	1/29/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	3/26/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND

Table 2. Analytic Results for Groundwater - Halogenated Volatile Organic Compounds - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California

Well ID	Date Sampled	Analytic Lab	Analytic Method	1,1-DCE	1,2-DCE	t-1,2-DCE	c-1,2-DCE	1,1-DCA	1,1,1-TCA	TCE	PCE	CF	VC	Other HVOCs
				<---------- ppb ----------										>
TB-LB	7/23/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND[18]
(cont)	10/28/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	5/4/93	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND[18]
Bailer Blank														
BB	5/10/91	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	8/8/91	SAL	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	11/27/91	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND[15]
	1/29/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	3/26/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	7/23/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND[18]
	10/28/92	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	ND
	5/4/93	SPA	8010	<0.5	—	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	ND[18]

Table 2. Analytic Results for Groundwater - Halogenated Volatile Organic Compounds - Former Chevron Asphalt Plant and Terminal #1001067, Emeryville, California (continued)

EXPLANATION:

1,1-DCE = 1,1-Dichloroethene
1,2-DCE = 1,2-Dichloroethene
t-1,2-DCE = trans-1,2-Dichloroethene
c-1,2-DCE = cis-1,2-Dichloroethene
1,1-DCA = 1,1-Dichloroethane
1,1,1-TCA = 1,1,1-Trichloroethane
TCE = Trichloroethene
PCE = Tetrachloroethene
CF = Chloroform
VC = Vinyl Chloride
Other HVOCs = Other Halogenated Volatile Organic Compounds
ppb = Parts per billion
--- = Not analyzed/not applicable
ND = Not detected at detection limits of 0.5 to 1 ppb
D = Duplicate analysis

ANALYTIC METHOD:

8010 = EPA Method 8010 for Volatile Organic Compounds

ANALYTIC LABORATORIES:

CCAS = Coast to Coast Analytical Services of San Luis Obispo, California
GTEL = Groundwater Technologies Environmental Laboratory of Concord, California
SAL = Superior Analytical Laboratory of Martinez and San Francisco, California
SPA = Superior Precision Analytical, Inc. of Martinez and San Francisco, California

NOTES:

Analytic results prior to April 19, 1995 were compiled from the quarterly groundwater monitoring reports prepared for Chevron by Sierra Environmental Services.

1 6 ppb 1,2-dichloropropane detected; other HVOCs not detected.
2 0.6 ppb 1,2-dichloroethane detected; other HVOCs not detected.
3 63 ppb chloromethane and 0.6 ppb methylene chloride detected; other HVOCs not detected; sample contained 1,250 ppb total dissolved solids.

NOTES: (continued)

4 0.9 ppb trans-1,3-dichloropropane detected; other HVOCs not detected; sample contained 810 ppb total dissolved solids.
5 0.9 ppb trichlorofluoromethane and 1 ppb trans-1,3-dichloropropane detected; other HVOCs not detected.
6 11 ppb trans-1,3-dichloropropane detected; other HVOCs not detected.
7 Monitoring well was destroyed during excavation in 1989.
8 0.1 ppb 1,2-dichlorobenzene detected; other HVOCs not detected.
9 Well MW-9 was not sampled after 5/10/91 because it could not be located. Previous analytic data were not available for inclusion in this report.
10 1.8 ppb 1,2-dichloroethane detected; other HVOCs not detected
11 3 ppb 1,1,2,2-tetrachloroethane detected; other HVOCs not detected.
12 0.9 ppb 1,2-dichlorobenzene detected; other HVOCs not detected.
13 0.5 ppb 1,2-dichloroethane detected; other HVOCs not detected.
14 3.1 ppb 1,2-dichlorobenzene detected; other HVOCs not detected.
15 0.9 ppb 1,2-dichloroethane detected; other HVOCs not detected.
16 Trace concentrations of trihalomethane compounds detected in bailer blank.
17 1,1,2,2-Tetrachloroethane detected at 1.8 ppb; other HVOCs not detected at detection limits of 1.2 to 2.5 ppb.
18 Other HVOCs not detected at detection limit of 0.5 ppb.
19 Other HVOCs not detected at detection limits ranging from 0.8 to 1.7 ppb.
20 Other HVOCs not detected at detection limits of 25 ppb.
21 Other HVOCs not detected at detection limits of 50 ppb.
22 Well MW-12 could not be located after building demolition.
23 Well MW-8 was obstructed, therefore ground water samples could not be taken.
24 Monitoring well obstructed due to on-site construction activities.
25 Monitoring well abandoned on March 10, 1993 by Soils Expoloration Services of Benicia, California.
26 Dichloromethane detected at 6.2 ppb; other HVOCs not detected at detection limits of 0.5 ppb.
27 Well paved over as a result of on-site construction activities.
28 Well obstructed.
29 Other HVOCs not detected at detection limits of 0.5 to 1.0 ppb.
30 Well was dry.
31 Other HVOCs not detected at detection limits of 10 to 20 ppb.
32 Other HVOCs not detected at detection limits of 50 to 100 ppb.
33 Detection limits raised due to sample dilution.
34 Chloromethane was detected at 2.4 ppb. Other HVOCs not detected at detection limits of 0.5 ppb.
35 Chloromethane was detected at 0.6 ppb. Other HVOCs not detected at detection limits of 0.5 ppb.

GETTLER - RYAN

FIELD METHODS AND PROCEDURES

Site Safety Plan

Field work performed by Gettler-Ryan, Inc. (G-R) is conducted in accordance with G-R's Health and Safety Plan and the Site Safety Plan. G-R personnel and subcontractors who perform work at the site are briefed on the contents of these plans prior to initiating site work. The G-R geologist or engineer at the site when the work is performed acts as the Site Safety Officer. G-R utilizes a organic vapor meter (OVM) to monitor ambient conditions as part of the Health and Safety Plan.

Collection of Soil Samples

Soil Borings are drilled by a California-licensed well driller. A G-R geologist is present to observe the drilling, collect soil samples for description, physical testing, and chemical analysis, and prepare a log of the exploratory soil boring. Soil samples are collected from the soil boring with a split-barrel sampling device fitted with 2-inch-diameter, clean brass stainless steel liners. The sampling device is driven approximately 18 inches with a 140-pound hammer falling 30 inches. The number of blows required to advance the sampler each successive 6 inches is recorded on the boring log. The encountered soils are described using the Unified Soil Classification System (ASTM2488-84) and the Munsell Soil Color Chart.

After removal from the sampling device, soil samples for chemical analysis are covered on both ends with teflon sheeting, capped, labeled, and placed in a cooler and maintained at 4 C for preservation. A chain-of-custody document is initiated in the field and accompanies the selected soil samples to analytical laboratory. Samples are selected for chemical analysis based on:

a. depth relative to underground storage tanks and existing surface
b. depth relative to known or suspected groundwater
c. presence or absence of contaminant pathways
d. presence or absence of discoloration or staining
e. presence or absence of obvious gasoline hydrocarbon odors
f. presence or absence of organic vapors detected by headspace analysis

Field Screening of Soil Samples

An OVM is used to perform head-space analysis in the field for the presence of organic vapors from the soil sample. This test procedure involves removing soil from the tip of the sampling device sample or sample liner into a clean glass jar, and immediately covering the jar with aluminum foil secured under a ring-type threaded lid. After approximately twenty minutes, the foil is pierced and the atmosphere within the jar is tested using an OVM. Headspace screening results are recorded on the boring log. Head-space screening procedures are performed and results recorded as reconnaissance data. G-R does not consider field screening techniques to be verification of the presence or absence of hydrocarbons.

Construction of Monitoring Wells

Monitoring wells are constructed in the exploratory soil borings with Schedule 40 polyvinyl chloride (PVC) casing. All joints are thread-joined; no glues, cements, or solvents are used in well construction. The screened interval is constructed of machine-slotted PVC well screen which extends from the total well depth to a point above the groundwater. An appropriately-sized sorted sand is placed in the annular space above the sand, and the remaining annular space is sealed with neat cement or cement grout.

Wellheads are protected with water-resistant traffic-rated vault boxes placed flush with the ground surface. The top of the well casing is sealed with a locking waterproof cap. A lock is placed on the well cap to prevent vandalism and unitentional introduction of materials into the well.

Measurement of Water Levels

The top of the newly installed well casing is surveyed by a California-licensed Land Surveyor to mean sea level (MSL). Depth-to-groundwater in the well is measured from the top of the well casing with an electronic water-level indicator. Depth-to-groundwater is measured to the nearest 0.01-foot, and referenced to MSL.

Well Development and Sampling

The purpose of well development is to improve hydraulic communication between the well and the surrounding aquifer. Prior to development, each well is monitored for the presence of separate-phase hydrocarbons and the depth-to-water is recorded. Wells are then developed by alternately surging the well with a bailer, then purging the well with a pump to remove accumulated sediments and draw groundwater into the well. Development continues until the groundwater parameters (temperature, pH, and conductivity) have stabilized. Wells are monitored and sampled on a quarterly basis by Chevron's monitoring and sampling contractor.