Chevron

Chevron

Chevron Products Company
6001 Bollinger Canyon Road
Building L
San Ramon, CA 94583
P.O. Box 6004
San Ramon, CA 94583-0904
Marketing – Sales West
Phone 510 842-9500

March 23, 1998

① Need computer printouts
② why no soil to indoor air for onsite - check soil ft, may not a concern → do calc. up to 50 ppm in soil
③ Consider risk using onsite wells for onsite scenario and off site conc. for offsite scenario
60 ppm in soil + tank pit
had assumed worst case scenario → passed ∴ no need to do offsite scenario
④ Add Brett for UST document for 1990 removal.

Ms. Eva Chu
Alameda County Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

Re: Chevron Station # 9-5542, 7007 San Ramon Valley Rd., Dublin, CA
Attached Tier 2 Risk-Based Corrective Action (Pacific, 3/4/98)

Dear Ms. Chu:

Please find attached a report dated March 4, 1998 that was prepared by Chevron's consultant, Pacific Environmental Group, Inc. (Pacific), to describe the results of a Tier 2 risk analysis and to recommend the most appropriate corrective action for the subject site.

The analysis performed by Pacific evaluated the potential health risk to commercial building occupants posed by petroleum hydrocarbons in the subsurface. The results of the analysis determined there was no risk to human health or safety. In addition, the present site conditions were found to meet the low-risk groundwater case criteria that were published by the Regional Water Quality Control Board in 1995. Accordingly, Pacific recommended that no further active remediation be required and that a groundwater monitoring plan be implemented to verify plume stability and intrinsic bioremediation effectiveness. Chevron endorses Pacific's recommendations and will implement the recommended monitoring plan immediately unless, notified otherwise by your agency.

If you have any questions or comments, I can be reached at ~~(510)~~ 925 842-8695.

Sincerely,

Brett L. Hunter

Brett L. Hunter
Environmental Engineer
Site Assessment and Remediation

Attachment

cc: Mary Diamond, See's Candy, 3423 S. La Cienega Blvd., Los Angeles, CA 90016-4401
Rich Hiett, San Francisco Bay RWQCB, Oakland, CA (w/o attachments)
See's Real Estate, 210 El Camino Real, S. San Francisco, CA 94080 (w/o attachments)

PACIFIC
ENVIRONMENTAL
GROUP, INC.

March 4, 1998
Project 320-170.7A

Mr. Brett Hunter
Chevron Products Company
P.O. Box 6004
San Ramon, California 94583-0904

Re: **Tier 2 Risk-Based Corrective Action**
Chevron Service Station 9-5542
7007 San Ramon Valley Boulevard
Dublin, California

Dear Mr. Hunter:

Pacific Environmental Group, Inc. (PEG), is pleased to present the results of the Tier 2 Risk-Based Corrective Action (RBCA) analysis for Chevron Products Company (Chevron) at the site referenced above (Figure 1). As specified in Chevron's letter to the Alameda County Environmental Health (ACEH) dated February 16, 1996, PEG conducted the Tier 2 RBCA modeling for vapor intrusion from groundwater to buildings in a commercial zone. Prior to performing the Tier 2 RBCA modeling, the total purgeable petroleum hydrocarbons calculated as gasoline (TPPH-g), benzene, toluene, ethylbenzene, xylenes (BTEX compounds), and methyl tert-butyl ether (MtBE) plume was defined by the installation and groundwater monitoring of downgradient Well MW-10 (Figure 1). Additionally, to aid in Tier 2 modeling, site-specific physical soil data was collected by the advancement of two soil borings. This work was documented by Gettler Ryan, Inc. in the *Soil Boring and Well Installation Report* dated August 29, 1996.

SITE BACKGROUND

Four, underground, steel tanks were installed at the site in 1965. Three of the underground storage tanks (USTs) contained fuel, two 10,000 and one 4,000 gallon. The fourth tank was a 500-gallon waste oil tank. In 1983, a hole was discovered in the regular leaded tank and the tank was lined with fiberglass.

In December 1983, five monitoring wells were installed at the site to approximately 20 feet below ground surface (bgs). Groundwater was not encountered in any of these wells. In January 1984, Monitoring Well MW-3 was deepened to a depth of 25 feet bgs. Motor oil was observed and bailed from the well. No further separate-phase hydrocarbons (SPH) were observed during biweekly monitoring through October 1984.

In September 1984, a corroded section of piping was replaced and cathodic protection was installed. In November 1984, the regular leaded product line failed a leak test and was subsequently repaired.

In February 1990, the station was rebuilt and the USTs and product lines were excavated, then replaced. Three, 12,000-gallon fiberglass USTs were installed. During the removal of the old USTs, soil was overexcavated to a depth of 22 feet bgs at the southern end of the UST complex. Soil samples, collected from 22 feet bgs in the southern portion of the UST excavation, reported a maximum of 3,100 milligrams per kilogram (mg/kg) TPPH-g and 60 mg/kg benzene. Samples collected during the removal of the product piping reported maximum concentrations of 3.9 mg/kg TPPH-g and 0.0095 mg/kg benzene. During the station remodeling, the waste oil tank was removed, but not replaced. The sample collected at the maximum extent of excavation (10.5 feet bgs) beneath the waste oil tank reported 12 mg/kg total oil and grease.

In March 1990, the five existing monitoring wells were abandoned and four new wells were installed at the site. Minor concentrations of petroleum hydrocarbons were detected in the soil samples collected at 25 feet bgs during the installation of Monitoring Wells MW-3 and MW-4. The highest concentrations of TPPH-g and benzene were reported in the soil sample collected from Well MW-1 at 25 feet bgs, 1,300 mg/kg TPPH-g and 38 mg/kg benzene.

25' bgs is at or below GWE

In June 1991, three off-site groundwater monitoring wells (MW-5, MW-6, and MW-7) were installed to further define the extent of petroleum hydrocarbons in groundwater. Low concentrations of petroleum hydrocarbons (5 mg/kg TPPH-g and 0.006 mg/kg benzene) were detected in the soil sample collected from Monitoring Well MW-6 at 26 feet bgs, downgradient of the former UST area. No other soil samples reported detectable concentrations of petroleum hydrocarbons.

MW-6

In 1991, an additional off-site groundwater monitoring well (MW-8) was installed downgradient distal from the site on Regional Street. Initial groundwater samples collected from Well MW-8 did not report detectable concentrations of TPPH-g or BTEX compounds.

In November 1992, one groundwater/soil vapor extraction (SVE) well was installed by deepening existing Monitoring Well MW-1. In addition, two SVE wells (VW-1 and

VW-2) were installed. TPPH-g and benzene concentrations were detected in the soil samples collected from both SVE wells at a maximum concentration of 990 and 2.7 mg/kg, respectively at approximately 25 feet bgs.

In June 1994, two on-site soil borings and one monitoring well were completed (Borings B-1 and B-2, and Well MW-9). Boring B-1 contained a maximum concentration of 1,600 mg/kg TPPH-g and 5.6 mg/kg benzene.

In July 1995, three geoprobes (SB-1 through SB-3) were drilled to define the downgradient extent of petroleum hydrocarbons in groundwater.

In August 1996, two soil borings were drilled (Borings B-3 and B-4) to obtain data for the RBCA evaluation. An additional off-site, downgradient, monitoring well, (Well MW-10) was also installed at this time to define the downgradient extent of the petroleum hydrocarbons in the groundwater.

Groundwater monitoring has been performed on a quarterly basis since April 1990. The historical groundwater flow direction has been to the east and the historical depth to water beneath the site has ranged from a high of 19.72 feet bgs (Well MW-3, March 22, 1993) to a low of 28.12 feet bgs (Well MW-1, December 19, 1991). The hydrocarbon plume is represented by elevated concentrations of petroleum hydrocarbons in Wells MW-1, MW-4, and MW-9. Concentrations of petroleum hydrocarbons within the plume during the most recent sampling event (October 1997) reported elevated concentrations in Monitoring Well MW-1 at 48,000 micrograms per liter (µg/L) TPPH-g and 8,400 µg/L benzene. MtBE was not reported in Well MW-1 above the detection limit of 500 µg/L. Monitoring Well MW-4 reported 21,000 µg/L TPPH-g and 3,600 µg/L benzene. MtBE was not detected in Well MW-4. Monitoring Well MW-9 reported 7,000 µg/L TPPH-g, 770 µg/L benzene, and 99 µg/L MtBE. The remaining wells have low to non-detectable concentrations of petroleum hydrocarbons.

RBCA TIER 1 EVALUATION

A Tier 1 RBCA uses very conservative default parameters, such as depth to groundwater, total porosity, and moisture content, to calculate allowable BTEX compounds in the soil and groundwater. Based on the contents of the letter dated February 16, 1996 from Chevron to Ms. Eva Chu of ACEH, no Tier 1 RBCA evaluation was conducted. The letter discussed a meeting between the Regional Water Quality Control Board, San Francisco Bay Region (RWQCB), ACEH, and Chevron which took place on January 29, 1996. During the meeting, RBCA strategies for the site were discussed. One of the five tasks determined during this meeting was that Tier 2 RBCA modeling would be used to evaluate the risk posed from groundwater volatilization to indoor air. It was assumed

that the risk from groundwater volatilization to indoor air would have exceeded the allowable groundwater concentrations in a Tier 1 RBCA evaluation.

RBCA TIER 2 EVALUATION

PEG used Groundwater Services, Inc.'s (GSI) RBCA software to model the risk to human health and safety from groundwater volatilization of BTEX compounds and MtBE to indoor air. The GSI software, widely recognized and utilized across the United States for RBCA modeling, closely follows the procedures outlined in the *Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites, E 1739-95* written by the American Society for Testing and Materials (ASTM). TPPH-g was not considered in the RBCA evaluation because there is not sufficient toxicological data for TPPH-g in order to complete a RBCA. However, using BTEX compounds as representative toxins for TPPH-g is a widely used and accepted procedure.

In order to conduct the Tier 2 RBCA evaluation, site-specific data replaced the very conservative default parameters in order to provide a more realistic representation of the risk posed by BTEX compounds at the site. The Tier 2 RBCA evaluation reduced the uncertainty of a Tier 1 RBCA and is still conservative, however not overly conservative as a Tier 1 RBCA.

Site-Specific Data

In order to conduct the Tier 2 RBCA analysis, site-specific data were collected from two soil borings, B-3 and B-4, which were drilled on June 12, 1996. The site-specific data obtained from the two borings included total porosity, volumetric water and air content, and fraction of organic carbon. This data is presented as Attachment A. Other site-specific data used in the calculation of the Tier 2 RBCA, such as depth to groundwater and thickness of the capillary fringe, were estimated using the groundwater monitoring data and the boring logs. When site-specific data were unavailable, GSI's Tier 1 RBCA default values were employed. Table 1 presents the default and site-specific data used in the Tier 2 RBCA modeling.

OK

The site-specific data were averaged in order to obtain the following physical soil parameters: fraction of organic carbon = 0.29, air and moisture contents = 0.001 and 0.322, respectively, and total porosity = 0.323. These averages are presented in the site-specific values column presented in Table 1. Other site-specific data such as the depth to groundwater, vadose zone thickness, and capillary zone thickness are also presented in Table 1.

OK

Representative Groundwater Concentrations

The maximum concentrations of the BTEX compounds collected during the last four quarters of groundwater analytical data (December 30, 1996, March 11, June 10, and October 1, 1997) were used as the representative groundwater concentrations. The representative groundwater concentration chosen for MtBE was one-half the highest detection limit; this data is presented in Table 2. Historical groundwater data are presented as Attachment B. The maximum concentrations are as follows:

- Benzene: 25,000 µg/L in Well MW-1 (December 30, 1996)
- Toluene: 32,000 µg/L in Well MW-1 (December 30, 1996)
- Ethylbenzene: 2,900 µg/L in Well MW-1 (December 30, 1996)
- Xylenes: 15,000 µg/L in Well MW-1 (December 30, 1996)

One-half the highest detection limit for MtBE was 250 µg/L in Well MW-1 (October 1, 1997). These representative concentrations were then compared to GSI's Site-Specific Target Limits (SSTL). The SSTLs represent the maximum allowable groundwater BTEX compounds and MtBE concentrations (µg/L) which will not pose a risk to human health through indoor inhalation at the prescribed target level and hazard quotient. It is important to note that SSTLs are calculated on the basis of allowable excess risk (i.e. additional risk above the risk that would normally be associated with the exposure activity if the site constituents were not present). Consequently, SSTL values correspond to allowable levels in excess of the background concentration of each constituent of concern normally present in the source medium (i.e. cleanup goal = minimum SSTL + background concentration). For many organic compounds, such as BTEX compounds, natural background concentrations in soil and groundwater are essentially zero; therefore, the risk-based cleanup goal is equal to the calculated SSTL value.

Target Level and Hazard Quotient

Since the current use of the site is commercial and the planned future use of the site is also commercial, an individual excess lifetime cancer risk or target level of 10^{-5} was used for the carcinogenic compound benzene, while a hazard quotient of 1 was used to analyze the non-carcinogenic risks from MtBE, toluene, ethylbenzene, and xylenes.

Exposure Parameters

The risk evaluation was also conducted using commercial exposure parameters. These parameters, such as exposure duration, body weight, and inhalation rate, were obtained from many sources including the American Industrial Health Council's *Exposure Factors*

Sourcebook and the US EPA's *Risk Assessment Guidance for Superfund, Volume I, Human Health Evaluation Manual Supplemental Guidance: Standard Default Exposure Factors*. These exposure parameters are presented in Table 3.

Slope Factor

The groundwater volatilization to indoor air model used to evaluate benzene's carcinogenic risk utilizes a slope factor, also called a cancer potency factor. The slope factor is used to estimate the upper-bound probability of an individual's risk of developing cancer as a result of a lifetime exposure to a particular level of a potential carcinogen. In order to comply with the State of California's stricter cancer slope factor values, a separate SSTL was calculated for benzene using a slope factor of 0.1 $(mg/kg\text{-}day)^{-1}$ (California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, April 10, 1995). The Federal slope factor is 0.029 $(mg/kg\text{-}day)^{-1}$. The California slope factor results in a more conservative calculation than does the Federal slope factor. The results of the Tier 2 RBCA present both the federal and California benzene SSTLs based on the different slope factors.

(calEPA)

Calculation of the SSTLs

The SSTLs dictate the allowable groundwater MtBE and BTEX compounds concentrations which will not cause a risk to human health and safety indoors based on the groundwater volatilization to indoor air model developed by Johnson and Ettinger in 1991. Therefore, all groundwater concentrations equal to or below the SSTLs are acceptable. The model incorporates the steady-state ratio of the concentration of an organic constituent in indoor air to the source concentration in the underlying affected groundwater. The model is modified to address vapor diffusion through a building floor and enclosed space accumulation. Key assumptions used in this model are as follows:

1. Vapor Equilibrium: Soil vapor concentrations reach immediate equilibrium with groundwater source.
2. No Decay: No biodegradation or other loss mechanism in groundwater or vapor phase.
3. Infinite Source: Mass in source area is constant over time.
4. Default Building Parameters: Conservative default values for foundation crack area and air exchange rate.

All of the above assumptions decrease the allowable MtBE and BTEX compounds concentrations in groundwater, thus making the model very conservative.

Tier 2 RBCA Results

As shown below, none of the representative concentrations for the BTEX compounds or MtBE are above the applicable Tier 2 RBCA SSTLs.

Groundwater

	Representative Concentrations	SSTLs	
Constituent of Concern	Measured Maximum Concentration (µg/L)	Modeled Volatilization to Indoor Air (µg/L)	SSTL Exceeded (Yes/No)
Benzene	25,000	99,000	No
Benzene – CA	25,000	29,000	No
Ethylbenzene	2,900	>Sol	No
Toluene	3,200	>Sol	No
Xylenes	15,000	>Sol	No
MtBE	250	13,000,000	No

µg/L = Micrograms per liter
>Sol = Selected risk level is not exceeded for all possible dissolved levels

All maximum BTEX compounds concentrations and the highest one-half detection limit for MtBE are below the applicable SSTLs, thus the risk to human health and safety from inhalation of groundwater vapors indoors is below the target risk of 1 in 100,000 for benzene and below the hazard quotient of 1 for the other compounds.

CONCLUSIONS AND RECOMMENDATIONS

The RBCA evaluation of indoor inhalation has shown that groundwater volatilization of MtBE and BTEX compounds to indoor air, even at the site's maximum BTEX concentrations and one-half the highest detection limit of MtBE, poses no risk to human health and safety at the site. Since the December 1996 groundwater sampling event, Monitoring Well MW-1 has had decreasing concentrations of benzene (8,400 µg/L, October 1997), thus the benzene concentrations are falling further below the above stated Benzene-CA SSTL of 29,000 µg/L. This decreasing benzene trend affirms that the site poses no risk to commercial employees from indoor air inhalation from volatilizing petroleum hydrocarbons.

Based on the above results, it is apparent that subsurface petroleum hydrocarbons pose no long-term threat to human health and safety. In fact, the present site conditions fall

within the low-risk groundwater case criteria as defined within the RWQCB's *Supplemental Instructions to SWRCB December 6, 1995 Interim Guidance on Required Clean-Up at Low Risk Sites*. Therefore, PEG recommends that no further active remediation be required and that a groundwater monitoring plan be implemented to verify plume stability and the effectiveness of remediation by natural attenuation. PEG recommends the groundwater monitoring plan include gauging and sampling Monitoring Wells MW-2, MW-3, MW-6, MW-9, and MW-10 on a semi-annual basis for the next 2 years and annually thereafter. All monitoring and sampling of other wells should be discontinued immediately.

If you have any questions or comments regarding this letter, please call.

Sincerely,

Pacific Environmental Group, Inc.

Ron Tinline

Michelle Shipp South Carolina - 803-782-9932
Senior Staff Scientist

still contact for RBCA

Ron Tinline

REGISTERED GEOLOGIST
ROSS W.N. TINLINE
No. 5860
EXP. 5/31/99
STATE OF CALIFORNIA

Ross W.N. Tinline
Project Geologist
RG 5860

Attachments:
- Table 1 - Default/Site-Specific Data
- Table 2 - Groundwater Analytical Data - Total Petroleum Hydrocarbons (BTEX Compounds and MtBE)
- Table 3 - Commercial Exposure Parameters
- Figure 1 - Potentiometric Map - Gettler-Ryan Inc.
- Attachment A - Physical Soil Data from Borings B-3 and B-4
- Attachment B - Historic Groundwater Data

Table 1
Default/Site-Specific Data

Chevron Service Station 9-5542
7007 San Ramon Valley Boulevard
Dublin, California

Characteristics	Default Values	Site Specific Values
Vadose Zone		
Vadose zone thickness (ft)	9.68	631 cm 20.7
Capillary zone thickness (ft)	0.164	70 cm 2.3
Depth to Groundwater (ft)	9.844	761 cm 23
Affected Soils		
Surficial soil depth (ft)	3.28	*
Depth to uppermost affected soil (ft)	3.28	*
Depth to base of affected soil (ft)	9.844	*
Contaminated soil area (sq. ft)	2420	*
Length of affected soil parallel to assumed wind direction (ft)	49.2	*
Length of affected soil zone parallel to groundwater flow direction (ft)	49.2	*
Soil density (g/cu.cm)	1.7	*
Soil/GW pH	6.5	*
Soil Parameters		
Foc in vadose zone	0.01	0.29
Soil porosity	0.38	0.323
Volumetric Water Content		
Capillary fringe	0.342	0.322
Vadose zone	0.12	0.322
Volumetric Air Content		
Capillary fringe	0.038	0.001
Vadose zone	0.26	0.001
Groundwater		
Gradient		*
Saturated hydraulic conductivity		*
Longitudinal dispersivity (ft)		*
Transverse dispersivity (ft)		*
Vertical dispersivity (ft)		*
Groundwater mixing zone depth (ft)	6.56	*
Water Infiltration rate (ft/yr)	0.984	*
GW Darcy velocity (ft/yr)	82	*
GW transport velocity (ft/yr)	216	*
Foc in water zone	0.001	*
Building Parameters		
Building volume/area ratio (cm)	300	300
Building air exchange rate (1/s)	0.00023	0.00023
Foundation crack thickness (cm)	15	15
Foundation crack fraction	0.01	0.01

* = Parameter not used in Tier 2 RBCA Evaluation

Table 2

Groundwater Analytical Data

Total Petroleum Hydrocarbons

(BTEX Compounds and MtBE)

Chevron Service Station 9-5422

7007 San Ramon Valley Boulevard

Dublin, California

Monitoring Well	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MtBE (µg/L)
MW-1	06/27/96	6,900	8,700	830	4,000	<120
	09/30/96	24,000	31,000	2,900	14,000	380
	12/30/96	25,000	32,000	2,900	15,000	<500
	03/11/97	11,000	13,000	1,000	6,500	<500
	06/10/97	9,900	15,000	1,400	7,000	<500
	10/01/97	8,400	12,000	1,200	5,700	<500
MW-2	06/27/96	<0.5	<0.5	<0.5	<0.5	<5.0
	09/30/96	<0.5	<0.5	<0.5	<0.5	<5.0
	12/30/96	<0.5	<0.5	<0.5	<0.5	<5.0
	03/11/97	<0.5	<0.5	<0.5	<0.5	<5.0
	06/10/97	<0.5	<0.5	<0.5	<0.5	<5.0
	10/01/97	1.0	1.2	<0.5	1.7	<5.0
MW-3	06/27/96	<0.5	<0.5	2	2	13
	09/30/96	<0.5	<0.5	<0.5	1	10
	12/30/96	0.6	<0.5	0.6	0.7	12
	03/11/97	<0.5	3.1	<0.5	0.7	32
	06/10/97	1.8	4.8	0.8	1.1	18
	10/01/97	0.6	2.2	2.0	1.3	7.8
MW-4	06/27/96	2,600	1,500	740	2,400	<50
	09/30/96	3,200	1,200	710	2,200	87
	12/30/96	2,300	1,000	600	1,900	84
	03/11/97	2,600	920	780	1,200	84
	06/10/97	2,900	790	750	1,700	<100
	10/01/97	3,600	1,400	1,300	2,700	<50
MW-5	06/27/96	<0.5	<0.5	<0.5	<0.5	5.7
	09/30/96	<0.5	<0.5	<0.5	<0.5	6.3
	12/30/96	<0.5	<0.5	<0.5	<0.5	5.5
	03/11/97	<0.5	<0.5	<0.5	<0.5	<5.0
	06/10/97	1.6	2.3	<0.5	1.2	<5.0
	10/01/97	<0.5	<0.5	<0.5	<0.5	<5.0
MW-9	06/27/96	1,200	46	340	1,000	66
	09/30/96	1,300	36	390	950	100
	12/30/96	1,200	54	470	1,300	100
	03/11/97	850	37	310	930	63
	06/10/97	880	7.7	220	360	86
	10/01/97	770	13	270	540	99
MW-10	06/27/96	<0.5	<0.5	<0.5	<0.5	<5.0
	09/30/96	<0.5	<0.5	<0.5	<0.5	<5.0
	12/30/96	<0.5	<0.5	<0.5	<0.5	<5.0
	03/11/97	<0.5	<0.5	<0.5	<0.5	7.0
	06/10/97	<0.5	<0.5	<0.5	<0.5	5.3
	10/01/97	<0.5	<0.5	<0.5	<0.5	<5.0

µg/L = Micrograms per liter

MtBE = Methyl tert-butyl ether

Table 3
Commercial Exposure Parameters

Chevron Service Station 9-5542
7007 San Ramon Valley Boulevard
Dublin, California

Target Risk =	1 in 100,000		
Hazard Quotient =	1		
Reference Dose =	Oral	Inhalation	$(mg/kg\text{-}day)^{-1}$
Benzene	NA	0.0017	
Toluene	0.1	0.114	
Ethylbenzene	0.2	0.286	
Xylenes	2.0	2.0	
Body Weight =	70 kilograms		
Averaging Time			
for Carcinogens =	70 years		
for Non-Carcinogens =	25 years		
California Benzene Slope Factor =	0.1		
Inhalation Rate for Indoors =	20 cubic meters per day		
Exposure Frequency =	250 days per year		
Exposure Duration =	25 years		

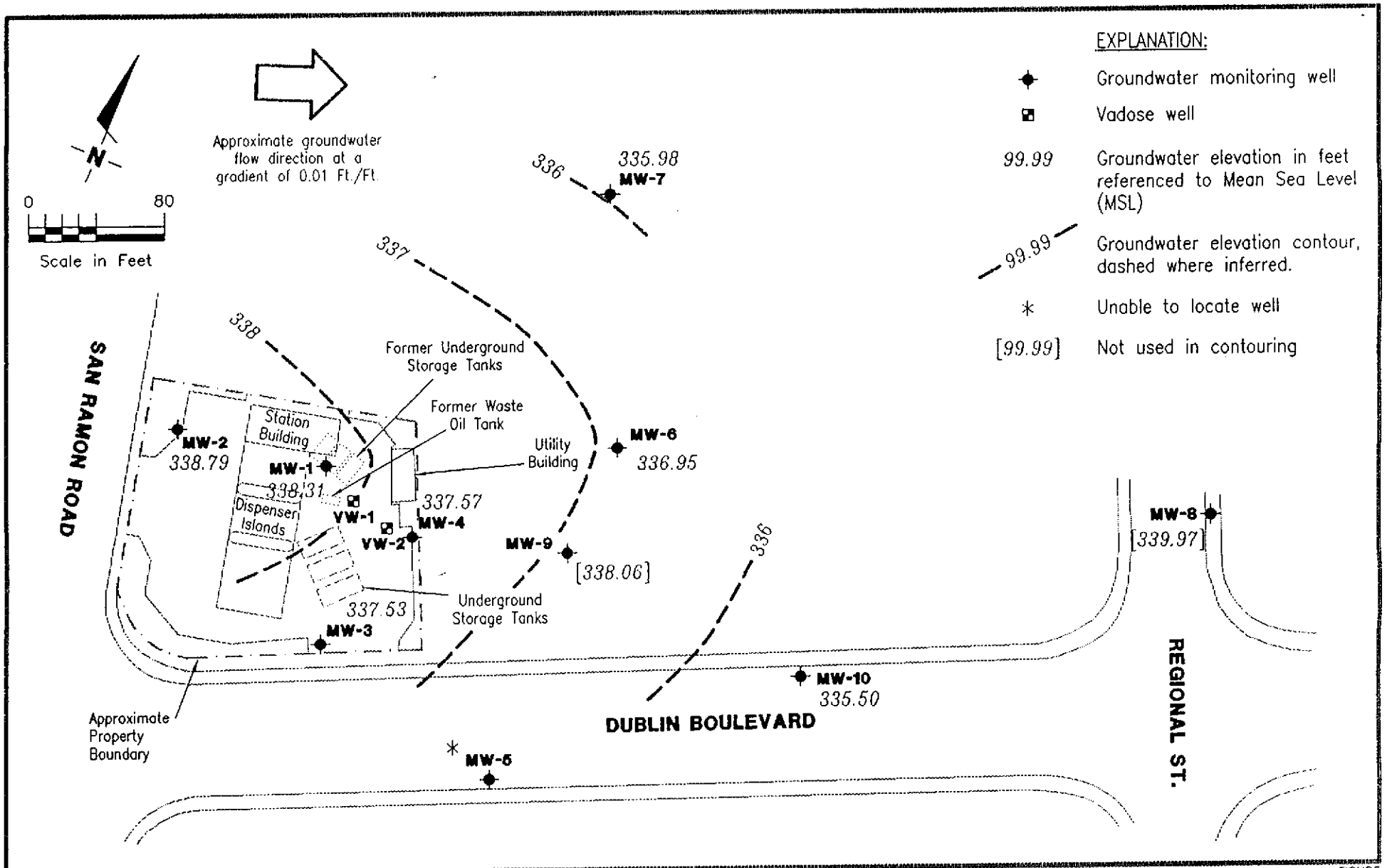

FIGURE 1

Gettler - Ryan Inc.

6747 Sierra Ct., Suite J
Dublin, CA 94568
(510) 551-7555

POTENTIOMETRIC MAP
Chevron Service Station No. 9-5542
7007 San Ramon Road
Dublin, California

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
5290		October 1, 1997	

ATTACHMENT A

PHYSICAL SOIL DATA FROM BORINGS B-3 AND B-4

CORE LABORATORIES

Sequoia Analytical
SA Project No. 9606885

CL File No. 57111-96172

Geotechnical Analysis Results

Sample ID	Bulk Density		Total Porosity	Volumetric Gas	Volumetric Water	Description
	Dry gm/cc	Wet gm/cc	%	V_{gas}/V_{bulk}	V_{water}/V_{bulk}	
B3-6	1.65	2.03	38.0	0.0003	0.3796	Clay tan v silty
B3-12	1.87	2.17	30.2	0.0076	0.3016	Clay tan vf-fgr sd v silty
B3-16	1.87	2.17	29.9	0.0007	0.2982	Sand tan vf-fgr v silty v clay
B3-18	1.81	2.13	32.3	0.0005	0.3226	Silt tan vfgr sd v clay
B4-6	1.76	2.10	33.6	0.0010	0.3351	Clay tan vfgr sd v silty
B4-12	1.87	2.17	30.1	0.0004	0.3002	Sand tan vf-gran v silty v cly

Volumetric gas = gas volume/sample bulk volume

Volumetric water = water volume/sample bulk volume

Total porosity and bulk densities were determined as described in API RP-40, API Recommended Practice for Core-Analysis Procedure, 1960.

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Gettler Ryan/Geostrategies
6747 Sierra Court Suite G
Dublin, CA 94568

Attention: Barbara Sleminski

Client Proj. ID: Chevron 9-5542, Dublin

Lab Proj. ID: 9606885

Sampled: 06/12/96
Received: 06/14/96
Analyzed: see below

Reported: 12/02/96

LABORATORY ANALYSIS

Analyte	Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9606885-01 Sample Desc : SOLID,B3-6				
Bulk Density	mg/L	06/21/96	0.020	Attached
Fraction Organic Carbon	%			0.49
Porosity	-			Attached
Lab No: 9606885-02 Sample Desc : SOLID,B3-12				
Bulk Density	mg/L	06/21/96	0.020	Attached
Fraction Organic Carbon	%			0.21
Porosity	-			Attached
Lab No: 9606885-03 Sample Desc : SOLID,B3-16				
Bulk Density	mg/L	06/21/96	0.020	Attached
Fraction Organic Carbon	%			0.12
Porosity	-			Attached
Lab No: 9606885-04 Sample Desc : SOLID,B3-18				
Bulk Density	mg/L	06/21/96	0.020	Attached
Fraction Organic Carbon	%			0.13
Porosity	-			Attached
Lab No: 9606885-06 Sample Desc : SOLID,B4-6				
Bulk Density	mg/L	06/21/96	0.020	Attached
Fraction Organic Carbon	%			0.67
Porosity	-			Attached

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

680-364-9600

Gettler Ryan/Geostrategies
6747 Sierra Court Suite G
Dublin, CA 94568

Attention: Barbara Sieminski

Client Proj. ID: Chevron 9-5542, Dublin

Lab Proj. ID: 9606885

Sampled: 06/12/96
Received: 06/14/96
Analyzed: see below

Reported: 12/02/96

LABORATORY ANALYSIS

Analyte	Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9606885-07				
Sample Desc : SOLID,B4-12				
Bulk Density	mg/L			Attached
Fraction Organic Carbon	%	06/21/96	0.020	0.21
Porosity	-			Attached
Lab No: 9606885-08				
Sample Desc : SOLID,B4-18				
Fraction Organic Carbon	%	06/21/96	0.020	0.21

$\bar{X} = 30$

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210

Mike Gregory
Project Manager

Sequoia Analytical

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Client Proj. ID: Chevron 9-5542, Dublin

Lab Proj. ID: 9606885

Received: 06/14/96

Reported: 12/02/96

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of_____ pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

For sample: #5 (TPHGBW) the detection limit was raised by a factor of 1000

FOC note: these data were re-reported at a lower detection limit on 12/01/96.

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

ATTACHMENT B

HISTORICAL GROUNDWATER DATA

Table 1. Water Level Data and Groundwater Analytical Results - Chevron Service Station #9-5542, 7007 San Ramon Valley Road, Dublin, California

Well ID/ TOC (ft)	Date	DTW (ft)	GWE (msl)	Product Thickness* (ft)	TPH(G)	O&G	B	T	E	X	MTBE	Other HVOCs	1,2-DCA	EDB
						<			ppb					>
MW-1/	4/3-4/90	---	---	---	46,000	---	8,400	7,400	860	5,600	---	---	---	1.04
(D)	4/3-4/90	---	---	---	43,000	---	8,400	7,200	840	5,200	---	---	---	1.1
363.98[1]	5/31/91	25.67	338.31	0	31,000	---	7,400	2,500	630	2,100	---	ND[8]	2	---
	5/31/91	---	---	---	---	<5,000	---	---	---	---	---	---	---	---
	6/21/91	26.23	337.75	0	---	---	---	---	---	---	---	---	---	---
	7/17/91	26.53	337.45	0	---	---	---	---	---	---	---	---	---	---
	9/20/91	---	---	---	31,000	---	3,000	2,800	610	3,100	---	ND[8]	0.6	---
	10/4/91	27.90	336.08	0	---	---	---	---	---	---	---	---	---	---
	12/19/91	28.12	335.86	0	20,000	---	5,200	1,700	560	2,000	---	ND[8]	3.3	---
	3/19/92	24.63	339.35	0	30,000	---	8,500	3,600	590	2,400	---	ND[8]	2.7	---
364.32[2]	6/19/92	26.23	338.09	0	25,000	---	1,100	2,000	520	1,800	---	---	---	---
	9/22/92	27.73	336.59	0	21,000	---	8,000	3,500	670	2,900	---	---	---	---
	12/18/92	26.76	337.56	0	79,000	---	12,000	12,000	1,600	8,500	---	---	---	---
	3/10/93[6,13]	---	---	---	45,000	---	16,000	14,000	1,100	5,500	---	---	---	---
	3/22/93[4]	---	---	---	---	---	---	---	---	---	---	---	---	---
	6/14/93[4]	---	---	---	---	---	---	---	---	---	---	---	---	---
	7/25/93[4]	---	---	---	---	---	---	---	---	---	---	---	---	---
	9/23/93[4]	---	---	---	---	---	---	---	---	---	---	---	---	---
	3/21/94	26.16	338.16	0	5,900	---	1,600	560	140	330	---	---	---	---
	7/6/94	27.20	337.12	0	---	---	---	---	---	---	---	---	---	---
	8/26/94	---	---	---	20,000	---	5,300	4,900	610	2,900	---	---	---	---
	9/22/94	27.44	336.88	0	42,000	---	10,000	8,300	1,000	4,900	---	---	---	---
	12/8/94	26.70	337.62	---	38,000	---	9,000	7,700	830	3,800	---	---	---	---
	3/6/95	23.68	340.64	0	47,000	---	9,400	7,100	750	3,400	---	---	---	---
	6/8/95	22.68	341.64	0	170,000	---	29,000	29,000	2,600	13,000	---	---	---	---
	9/13/95	25.10	339.22	0	39,000	---	11,000	10,000	1,100	4,900	---	---	---	---
	12/16/95	26.08	338.24	0	40,000	---	7,000	6,300	570	2,500	<2.5	---	---	---
	3/28/96	22.20	342.12	0	16,000	---	3,700	3,200	330	1,500	<120	---	---	---
	6/27/96	24.20	340.12	0	40,000	---	6,900	8,700	830	4,000	<120	---	---	---
	9/30/96	25.62	338.70	0	190,000	---	24,000	31,000	2,900	14,000	380	---	---	---
	12/30/96	24.21	340.11	0	130,000	---	25,000	32,000	2,900	15,000	<500	---	---	---
	3/11/97	23.72	340.60	0	76,000	---	11,000	13,000	1,000	6,500	<500	---	---	---
	6/10/97	25.32	339.00	0	63,000	---	9,900	15,000	1,400	7,000	<500	---	---	---
	10/1/97	**26.01**	**338.31**	**0**	**48,000**	---	**8,400**	**12,000**	**1,200**	**5,700**	**<500**	---	---	---
MW-2/	4/3-4/90	---	---	---	<50	---	<0.3	<0.3	<0.3	<0.6	---	---	---	<0.02
364.19[1]	5/31/91	25.51	338.68	0	100	---	3.1	4.2	0.7	2.0	---	ND[8]	<0.5	---
	5/31/91	---	---	---	---	<5,000	---	---	---	---	---	---	---	---
	6/21/91	26.13	338.06	0	---	---	---	---	---	---	---	---	---	---
	7/17/91	26.46	337.73	0	---	---	---	---	---	---	---	---	---	---
	9/20/91	---	---	---	68	---	1.3	1.6	0.8	3.0	---	---	---	---
	10/4/91	27.79	336.40	0	---	---	---	---	---	---	---	---	---	---
	12/19/91	28.06	336.13	0	<50	---	0.6	1.2	0.8	2.5	---	---	---	---

Table 1. Water Level Data and Groundwater Analytical Results - Chevron Service Station #9-5542, 7007 San Ramon Valley Road, Dublin, California (continued)

Well ID/ TOC (ft)	Date	DTW (ft)	GWE (msl)	Product Thickness* (ft)	TPH(G)	O&G	B	T	E	X	MTBE	Other HVOCs	1,2-DCA	EDB
						<---	---	---	---	ppb ---	---	---	--->	
MW-2	3/19/92	24.46	339.73	0	<50	---	2.5	2.0	1.1	2.4	---	---	---	---
(cont)364.64[2]	6/19/92	26.10	338.54	0	<50	---	<0.5	0.6	0.7	1.2	---	---	---	---
	9/22/92	27.60	337.04	0	200	---	16	42	6.1	32	---	---	---	---
	12/18/92	26.32	338.32	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	3/22/93	21.39	343.29	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	6/14/93	25.15	339.49	0	---	---	---	---	---	---	---	---	---	---
	7/25/93	24.52	340.12	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	9/23/93	25.63	339.01	0	72	---	12	4	6	8	---	---	---	---
	12/22/93	26.34	338.30	0	1,600	---	25	<0.5	3.8	4.8	---	---	---	---
	3/21/94	25.83	338.81	0	<50	---	0.7	3.3	<0.5	1.9	---	---	---	---
	6/29/94	---	---	---	52	---	0.8	0.9	0.8	1.9	---	---	---	---
	7/6/94	26.70	337.94	0	---	---	---	---	---	---	---	---	---	---
	9/22/94	26.82	337.82	0	<50	---	0.7	<0.5	<0.5	0.6	---	---	---	---
	12/8/94	26.28	338.36	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	3/6/95	23.27	341.37	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	6/8/95	22.38	342.26	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	9/13/95	24.95	339.95	0	<50	---	<0.5	0.8	<0.5	0.8	---	---	---	---
	12/16/95	25.78	338.86	0	<50	---	<0.5	<0.5	<0.5	<0.5	<2.5	---	---	---
	3/28/96	21.34	343.30	0	<50	---	0.8	5.6	1.0	6.2	<5.0	---	---	---
	6/27/96	23.99	340.65	0	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---
	9/30/96	25.14	339.50	0	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---
	12/30/96	23.61	341.03	0	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---
	3/11/97	23.17	341.47	0	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---
	6/10/97	24.72	339.92	0	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---
	10/1/97	**25.85**	**338.79**	**0**	**<50**	---	**1.0**	**1.2**	**<0.5**	**1.7**	**<5.0**	---	---	---
MW-3/	4/3-4/90	---	---	---	2,200	---	36	5	6	17	---	---	---	<0.02
361.92[1]	5/31/91	23.20	338.72	0	2,200	---	130	11	31	78	---	ND[4]	19	---
	5/31/91	---	---	---	---	<5,000	---	---	---	---	---	---	---	---
	6/21/91	24.13	337.79	0	---	---	---	---	---	---	---	---	---	---
	7/17/91	24.59	337.73	0	---	---	---	---	---	---	---	---	---	---
	9/20/91	25.98	335.94	0	2,200	---	190	6.0	24	32	---	---	---	---
	12/19/91	26.24	335.68	0	640	---	73	27	17	56	---	---	---	---
	3/19/92	22.46	339.46	0	4,500	---	1,000	15	91	240	---	---	---	---
362.26[2]	6/19/92	24.32	337.94	0	1,100	---	89	3.3	9.1	13	---	---	---	---
	9/22/92	25.84	336.42	0	1,400	---	81	51	15	49	---	---	---	---
	12/18/92	24.40	337.86	0	1,100	---	2.0	1.1	53	38	---	---	---	---
	3/22/93	19.72	342.54	0	1,600	---	96	9	14	91	---	---	---	---
	6/14/93	23.52	338.74	0	---	---	---	---	---	---	---	---	---	---
	7/25/93	23.21	339.05	0	1,200	---	19	6	2	5	---	---	---	---
	9/23/93	24.02	338.24	0	1,500	---	35	<0.5	5	13	---	---	---	---
	12/22/93	24.67	337.59	0	1,500	---	26	<0.5	3.9	4.9	---	---	---	---
	3/21/94	24.05	338.21	0	1,400	---	22	14	1.1	5.3	---	---	---	---

Table 1. Water Level Data and Groundwater Analytical Results - Chevron Service Station #9-5542, 7007 San Ramon Valley Road, Dublin, California (continued)

Well ID/ TOC (ft)	Date	DTW (ft)	GWE (msl)	Product Thickness* (ft)	TPH(G)	O&G	B	T	E	X	MTBE	Other HVOCs	1,2-DCA	EDB
						<--------			ppb					-------->
MW-3	6/29/94	---	---	---	1,700	---	90	6.1	20	81	---	---	---	---
(cont)	7/6/94	25.08	337.18	0	---	---	---	---	---	---	---	—	—	---
	9/22/94	24.78	337.48	0	2,600	---	72	7.6	110	370	---	---	---	---
	12/8/94	24.35	337.91	0	2,700	---	32	<0.5	100	140	---	---	---	---
	3/6/95	21.47	340.79	0	1,000	---	4.0	9.9	8.8	7.7	---	—	—	---
	6/8/95	20.99	341.27	0	1,500	---	13	3.2	12	17	---	—	—	---
	9/13/95	23.51	338.75	0	2,100	---	12	79	76	420	---	---	---	---
	12/16/95	24.00	338.26	0	650	---	<0.5	<0.5	4.4	6.5	12	—	—	---
	3/28/96	19.90	342.36	0	1,500	---	4.3	6.5	60	100	15	---	---	---
	6/27/96	21.98	340.28	0	1,200	---	<0.5	<0.5	1.9	2.0	13	---	---	---
	9/30/96	23.82	338.44	0	620	---	<0.5	<0.5	<0.5	0.8	10	—	—	---
	12/30/96	22.30	339.96	0	1,200	---	0.6	<0.5	0.6	0.7	12	---	---	---
	3/11/97	21.51	340.75	0	1,400	---	<0.5	3.1	<0.5	0.7	32	—	—	---
	6/10/97	23.60	338.66	0	1,400	---	1.8	4.8	0.8	1.1	18	—	---	---
	10/1/97	24.73	337.53	0	1,100	---	0.6	2.2	1.0	1.3	7.8	—	—	---
MW-4/	4/3-4/90	---	---	---	43,000	18,000	4,000	5,000	790	5,500	---	—	—	<0.02
	4/3-4/90	---	---	---	---	---	6,000	8,200	1,500	---	---	---	---	---
362.70[1]	5/31/91	24.67	338.03	0	34,000	---	2,900	2,900	680	3,300	---	ND[4]	<0.5	---
	5/31/91	---	---	---	<5,000	---	---	---	---	---	---	—	---	---
	6/21/91	25.31	337.39	0	---	---	---	---	---	---	---	—	---	---
	7/17/91	25.73	336.97	0	---	---	---	---	---	---	---	—	—	---
	9/20/91	---	---	---	37,000	---	4,000	3,200	580	3,000	---	ND[6]	9.2	---
	10/4/91	27.08	335.62	0	---	---	---	---	---	---	---	---	—	---
	12/19/91	27.24	335.46	0	41,000	---	5,500	4,900	1,000	4,400	---	ND[8]	17	---
	3/19/92	23.66	339.04	0	21,000	---	3,800	2,900	500	3,200	---	ND[9]	15	---
363.07[2]	6/19/92	25.33	337.74	0	27,000	<5,000	1,800	1,600	570	1,900	---	—	—	---
	9/22/92	26.90	336.17	0	20,000	<5,000	4,100	2,700	670	3,200	---	—	---	---
	12/18/92	25.62	337.45	0	15,000	<5,000	2,200	2,000	370	1,600	---	—	---	---
	3/22/93	20.80	342.27	0	41,000	5,000	3,900	5,100	840	4,500	---	—	—	---
	6/14/93	25.73	337.34	0	---	---	---	---	---	---	---	---	---	---
	7/25/93	24.02	339.05	0	94,000	<5,000	18,000	30,000	2,400	14,000	---	—	—	---
	9/23/93	25.00	338.07	0	23,000	<5,000	4,700	2,000	900	4,600	---	—	---	---
	12/22/93	25.72	337.35	0	18,000	<5,000	2,800	1,300	420	1,700	---	—	—	---
	3/21/94	25.09	337.98	0	21,000	<5,000	2,800	1,700	540	1,900	---	—	---	---
	6/29/94	—	---	---	25,000	<5,000	4,000	2,600	960	3,300	---	—	---	---
	7/6/94	26.11	336.96	0	---	---	—	---	---	---	---	---	—	---
	9/22/94	26.54	336.53	0	45,000	<5,000	11,000	8,800	1,000	5,100	---	—	---	---
	12/8/94[14]	25.55	337.52	0	6,700	<5,000	1,200	720	34	1,100	---	—	---	---
	3/6/95	22.64	340.43	0	8,900	---	1,400	540	350	940	---	—	—	---
	6/8/95	22.01	341.06	0	15,000	---	2,000	1,500	400	1,500	---	—	---	---
	9/13/95	24.42	338.65	0	10,000[15]	---	3,100	670	500	1,400	---	—	---	---
	12/16/95	25.18	337.89	0	15,000	---	2,900	960	420	1,200	<2.5	—	---	---

Table 1. Water Level Data and Groundwater Analytical Results - Chevron Service Station #9-5542, 7007 San Ramon Valley Road, Dublin, California (continued)

Well ID/ TOC (ft)	Date	DTW (ft)	GWE (msl)	Product Thickness* (ft)	TPH(G)	O&G	B	T	E	X	MTBE	Other HVOCs	1,2-DCA	EDB
						<-----			ppb					----->
MW-4	3/28/96	20.97	342.10	0	8,600	---	1,300	920	330	1,100	<10	---	---	---
(cont)	6/27/96	21.63	341.44	0	18,000	---	2,600	1,500	740	2,400	<50	---	---	---
363.07[16]	9/30/96	24.85	338.22	0	24,000	---	3,200	1,200	710	2,200	87	---	---	---
	12/30/96	23.28	339.79	0	15,000	---	2,300	1,000	600	1,900	84	---	---	---
	3/11/97	22.62	340.45	0	23,000	---	2,600	920	780	2,200	84	---	---	---
	6/10/97	24.49	338.58	0	17,000	---	2,900	790	750	1,700	<100	---	---	---
	10/1/97	**25.50**	**337.57**	**0**	**21,000**	---	**3,600**	**1,400**	**1,300**	**2,700**	<50	---	---	---
MW-5/														
359.95[1]	6/21/91	23.17	336.78	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	6/21/91	---	---	---	---	---	---	---	---	---	---	ND[8]	<0.5	---
	7/17/91	23.68	336.27	0	---	---	---	---	---	---	---	---	---	---
	9/20/91	---	---	---	170[10]	---	0.8	0.9	<0.5	1.5	---	---	---	---
	10/4/91	25.20	334.75	0	---	---	---	---	---	---	---	---	---	---
	12/19/91	25.20	334.75	0	<50	---	0.7	0.7	<0.5	1.4	---	---	---	---
	3/19/92	21.21	338.74	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
360.28[2]	6/19/92	23.42	336.86	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	9/22/92	24.97	335.31	0	150	---	13	34	5.0	26	---	---	---	---
	12/18/92	23.52	336.76	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	3/10/93	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	3/22/93	19.10	341.18	0	---	---	---	---	---	---	---	---	---	---
	6/14/93	22.71	337.57	0	---	---	---	---	---	---	---	---	---	---
	7/25/93	21.99	338.29	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	9/23/93	23.48	336.80	0	<50	---	3	1	1	2	---	---	---	---
	12/22/93	23.98	336.30	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	3/21/94	23.18	337.10	0	<50	---	2.4	1.4	<0.5	2	---	---	---	---
	6/29/94	---	---	---	<50	---	<0.5	<0.5	<0.5	1.0	---	---	---	---
	7/6/94	24.41	335.87	0	---	---	---	---	---	---	---	---	---	---
	9/22/94	24.78	335.50	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	12/8/94	23.42	336.86	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	3/6/95	20.65	339.63	0	67	---	1.9	2.5	4.7	19	---	---	---	---
	6/8/95	20.76	339.52	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	9/13/95	23.16	337.12	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	12/16/95	Unable to locate		---	---	---	---	---	---	---	---	---	---	---
	3/28/96	Unable to locate		---	---	---	---	---	---	---	---	---	---	---
	6/27/96	Unable to locate		---	---	---	---	---	---	---	---	---	---	---
	9/30/96	Unable to locate		---	---	---	---	---	---	---	---	---	---	---
	12/30/96	Unable to locate		---	---	---	---	---	---	---	---	---	---	---
	3/11/97	Unable to locate		---	---	---	---	---	---	---	---	---	---	---
	6/10/97	Unable to locate		---	---	---	---	---	---	---	---	---	---	---
	10/1/97	**Unable to locate**		---	---	---	---	---	---	---	---	---	---	---

Table 1. Water Level Data and Groundwater Analytical Results - Chevron Service Station #9-5542, 7007 San Ramon Valley Road, Dublin, California (continued)

Well ID/ TOC (ft)	Date	DTW (ft)	GWE (msl)	Product Thickness* (ft)	TPH(G)	O&G	B	T	E	X	MTBE	Other HVOCs	1,2-DCA	EDB
						<----------ppb---------->								
MW-6/														
360.22[1]	6/21/91	23.55	336.67	0	3,700	---	50	2.6	150	340	---	---	---	---
	6/21/91	---	---	---	---	---	---	---	---	---	---	ND[8]	<0.5	---
	7/17/91	24.00	336.22	0	---	---	---	---	---	---	---	---	---	---
	9/20/91	---	---	---	3,200	---	28	<0.5	140	100	---	---	---	---
	10/4/91	25.29	334.93	0	---	---	---	---	---	---	---	---	---	---
	12/19/91	25.34	334.88	0	380	---	2.7	4.0	15	10	---	---	---	---
	3/19/92	22.05	338.17	0	3,400	---	57	4.5	330	360	---	---	---	---
360.58[2]	6/19/92	23.52	337.06	0	980	---	11	4.2	57	38	---	---	---	---
	9/22/92	25.60	334.98	0	1,100	---	22	41	77	58	---	---	---	---
	12/18/92	24.18	336.40	0	1,900	---	3.2	1.3	58	47	---	---	---	---
	3/10/93	---	---	---	1,400	---	30	9	8	22	---	---	---	---
	3/22/93	19.36	341.22	0	---	---	---	---	---	---	---	---	---	---
	6/14/93	23.48	337.10	0	---	---	---	---	---	---	---	---	---	---
	7/25/93	22.30	338.28	0	83[11]	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	9/23/93	23.20	337.38	0	200	---	6	2	3	3	---	---	---	---
	12/22/93	23.91	336.67	0	130	---	<0.5	1.8	1.2	1.5	---	---	---	---
	3/21/94	23.27	337.31	0	290	---	3	10	1.6	4.7	---	---	---	---
	6/29/94	---	---	---	300	---	0.6	1.2	2.4	4.6	---	---	---	---
	7/6/94	24.27	336.31	0	---	---	---	---	---	---	---	---	---	---
	9/22/94	24.84	335.74	0	2,300	---	58	3.6	100	290	---	---	---	---
	12/8/94	23.85	336.73	0	<50	---	<0.5	<0.5	<0.5	0.9	---	---	---	---
	3/6/95	20.91	339.67	0	360	---	2.0	3.6	0.9	2.3	---	---	---	---
	6/8/95	20.18	340.40	0	230	---	<0.5	<0.5	1.0	1.6	---	---	---	---
	9/13/95	23.53	337.05	0	88	---	<0.5	<0.5	<0.5	1.1	---	---	---	---
	12/16/95	23.38	337.20	0	<50	---	<0.5	<0.5	<0.5	<0.5	7.3	---	---	---
	3/28/96	19.37	341.21	0	130	---	<0.5	<0.5	<0.5	<0.5	9.2	---	---	---
	6/27/96	21.66	338.92	0	<50	---	<0.5	<0.5	<0.5	<0.5	5.7	---	---	---
	9/30/96	23.06	337.52	0	50	---	<0.5	<0.5	<0.5	<0.5	6.3	---	---	---
	12/30/96	21.46	339.12	0	90	---	<0.5	<0.5	<0.5	<0.5	5.5	---	---	---
	3/11/97	20.91	339.67	0	80	---	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---
	6/10/97	22.65	337.93	0	<50	---	1.6	2.3	<0.5	1.2	<5.0	---	---	---
	10/1/97	**23.63**	**336.95**	**0**	**<50**	**--**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	**---**	**---**	**---**
MW-7/														
360.63[1]	6/21/91	23.45	337.18	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	6/21/91	---	---	---	---	---	---	---	---	---	---	ND[8]	<0.5	---
	7/17/91	23.90	336.73	0	---	---	---	---	---	---	---	---	---	---
	9/20/91	---	---	---	69	---	4.4	3.3	1.2	3.9	---	---	---	---
	10/4/91	25.03	335.60	0	---	---	---	---	---	---	---	---	---	---
	12/19/91	25.10	335.53	0	<50	---	0.9	2.8	1.7	5.9	---	---	---	---
	3/19/92	22.74	337.89	0	<50	---	1.1	0.6	0.9	2.5	---	---	---	---
360.99[2]	6/19/92[3]	---	---	---	---	---	---	---	---	---	---	---	---	---
	9/22/92[3]	---	---	---	---	---	---	---	---	---	---	---	---	---

Table 1. Water Level Data and Groundwater Analytical Results - Chevron Service Station #9-5542, 7007 San Ramon Valley Road, Dublin, California (continued)

Well ID/ TOC (ft)	Date	DTW (ft)	GWE (msl)	Product Thickness* (ft)	TPH(G)	O&G	B	T	E	X	MTBE	Other HVOCs	1,2-DCA	EDB
						<----------ppb---------->								
MW-7	12/18/92[5]	---	---	---	---	---	---	---	---	---	---	---	---	---
(cont)	3/22/93[5]	---	---	---	---	---	---	---	---	---	---	---	---	---
	6/14/93[5]	---	---	---	---	---	---	---	---	---	---	---	---	---
	7/25/93[5]	---	---	---	---	---	---	---	---	---	---	---	---	---
361.68[6]	12/23/93	23.67	338.01	0	<50	---	0.9	0.5	<0.5	<0.5	---	---	---	---
	3/21/94	24.13	337.55	0	<50	---	0.5	1.1	<0.5	1.4	---	---	---	---
	6/29/94	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	7/6/94	26.45	335.23	0	---	---	---	---	---	---	---	---	---	---
	9/22/94	27.40	334.28	0	11,000	---	1,900	230	310	970	---	---	---	---
	12/8/94	26.23	335.45	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	3/6/95	23.19	338.49	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	6/8/95	22.14	339.54	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	9/13/95	24.55	337.13	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	12/16/95	25.74	335.94	0	<50	---	<0.5	<0.5	<0.5	<0.5	<2.5	---	---	---
	3/28/96	21.72	339.96	0	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---
	6/27/96	23.50	338.18	0	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---
	9/30/96	25.20	336.48	0	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---
	12/30/96	23.88	337.80	0	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---
	3/11/97	22.99	338.69	0	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---
	6/10/97	24.70	336.98	0	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---
	10/1/97	**25.70**	**335.98**	**0**	**<50**	---	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	---	---	---
MW-8/														
---	12/12/91	22.54	---	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
354.89[2]	6/19/92	20.47	334.42	0	<50	---	1.2	1.4	0.5	2.9	---	---	---	---
	9/22/92	29.80	325.09	0	180	---	17	42	6.0	31	---	---	---	---
	12/18/92	21.18	333.71	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	3/10/93	---	---	---	<50	---	0.8	2	<0.5	2	---	---	---	---
	3/22/93	16.91	337.98	0	---	---	---	---	---	---	---	---	---	---
	6/14/93	24.30	330.59	0	---	---	---	---	---	---	---	---	---	---
	7/25/93	23.77	331.12	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	9/23/93	20.40	334.49	0	<50	---	1	0.9	0.7	1	---	---	---	---
	12/22/93	20.92	333.97	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	3/21/94	20.19	334.70	0	<50	---	0.9	1.5	<0.5	2	---	---	---	---
	6/29/94	---	---	---	<50	---	<0.5	<0.5	<0.5	0.8	---	---	---	---
	7/6/94	21.05	333.84	0	---	---	---	---	---	---	---	---	---	---
	9/22/94	21.84	333.05	0	9,600	---	1,600	180	260	840	---	---	---	---
	10/14/94	21.84	333.05	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	12/8/94	20.71	334.18	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	3/6/95	18.11	336.78	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	6/8/95	17.79	337.10	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	9/13/95	19.80	335.09	0	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	12/16/95	20.46	334.43	0	<50	---	<0.5	<0.5	<0.5	<0.5	<2.5	---	---	---
	3/28/96	15.42	339.47	0	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---

Table 1. Water Level Data and Groundwater Analytical Results - Chevron Service Station #9-5542, 7007 San Ramon Valley Road, Dublin, California (continued)

Well ID/ TOC (ft)	Date	DTW (ft)	GWE (msl)	Product Thickness* (ft)	TPH(G)	O&G	B	T	E	X	MTBE	Other HVOCs	1,2-DCA	EDB
						<---	---	---	---	ppb	---	---	---	--->
MW-8(cont)	6/27/96	19.08	335.81	0	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---
360.58[16]	9/30/96	20.30	340.28	0	<50	---	<0.5	<0.5	<0.5	0.6	<5.0	---	---	---
	12/30/96	19.03	341.55	0	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---
	3/11/97	18.41	342.17	0	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---
	6/10/97	19.91	340.67	0	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---
	10/1/97	**20.71**	**339.87**	**0**	**<50**	---	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	---	---	---
MW-9/														
361.23[7]	7/6/94	25.15	336.08	0	---	---	---	---	---	---	---	---	---	---
	8/26/94	---	---	---	12,000	---	1,700	240	410	1,400	---	---	---	---
	9/22/94	25.74	335.49	0	10,000	---	1,900	290	320	1,200	---	---	---	---
	12/8/94	24.84	336.39	0	18,000	---	2,400	780	450	4,600	---	---	---	---
	3/6/95	21.83	339.40	0	6,100	---	1,400	260	420	1,500	---	---	---	---
	6/8/95	21.29	339.94	0	14,000	---	2,100	220	540	1,700	---	---	---	---
	9/13/95	23.65	337.85	0	11,000	---	1,900	120	490	1,400	---	---	---	---
	12/16/95	24.32	336.91	0	16,000	---	1,900	<0.5	680	1,200	<2.5	---	---	---
	3/28/96	20.45	340.78	0	960	---	120	5.9	33	70	18	---	---	---
	6/27/96	22.84	338.39	0	10,000	---	1,200	46	340	1,000	66	---	---	---
361.59[16]	9/30/96	24.12	337.47	0	15,000	---	1,300	36	390	950	100	---	---	---
	12/30/96	22.64	338.95	0	12,000	---	1,200	54	470	1,300	100	---	---	---
	3/11/97	22.09	339.50	0	13,000	---	850	37	310	930	63	---	---	---
	6/10/97	23.78	337.81	0	9,000	---	800	7.7	220	360	86	---	---	---
	10/1/97	**23.53**	**338.06**	**0**	**7,000**	---	**770**	**13**	**270**	**540**	**99**	---	---	---
MW-10	6/27/96	20.74	---	0	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---
358.02[16]	9/30/96	22.03	335.99	0	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---
	12/30/96	20.56	337.46	0	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---
	3/11/97	19.93	338.09	0	<50	---	<0.5	<0.5	<0.5	<0.5	7.0	---	---	---
	6/10/97	21.65	336.37	0	<50	---	<0.5	<0.5	<0.5	<0.5	5.3	---	---	---
	10/1/97	**22.52**	**335.50**	**0**	**<50**	---	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	---	---	---
Trip Blank														
MW-AA	5/31/91	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	6/21/91	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	9/20/91	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	12/19/91	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	3/19/92	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
TB-LB	6/19/92	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	9/22/92	---	---	---	92[12]	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	12/18/92	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	3/10/93	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	3/22/93	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	7/25/93	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---

Table 1. Water Level Data and Groundwater Analytical Results - Chevron Service Station #9-5542, 7007 San Ramon Valley Road, Dublin, California (continued)

Well ID/ TOC (ft)	Date	DTW (ft)	GWE (msl)	Product Thickness* (ft)	TPH(G)	O&G	B	T	E	X	MTBE	Other HVOCs	1,2-DCA	EDB
							ppb							
TB-LB (cont)	9/23/93	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	12/22/93	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	3/21/94	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	6/29/94	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	7/1/94	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	7/6/94	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	9/22/94	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	12/8/94	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	3/6/95	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	6/8/95	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	9/13/95	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	12/16/95	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	<2.5	---	---	---
	3/28/96	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---
	6/27/96	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---
	9/30/96	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---
	12/30/96	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---
	3/11/97	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---
	6/10/97	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---
	10/1/97	---	---	---	**<50**	---	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	---	---	---
Bailer Blank	5/31/91	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
MW-BB	6/21/91	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	9/20/91	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	12/19/91	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	3/19/92	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	6/19/92	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	9/22/92	---	---	---	<50	---	<0.5	<0.5	<0.5	0.8	---	---	---	---
	12/21/92	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	3/10/93	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	3/22/93	---	---	---	<50	---	<0.5	<0.5	<0.5	0.6	---	---	---	---
	7/25/93	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	9/23/93	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	12/22/93	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	3/21/94	---	---	---	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---

Table 1. Water Level Data and Groundwater Analytical Results - Chevron Service Station #9-5542, 7007 San Ramon Valley Road, Dublin, California (continued)

EXPLANATION:

TOC = Top of casing elevation
(ft) = feet
DTW = Depth to water
GWE = Groundwater elevation
msl = Measurements referenced relative to mean sea level
TPH(G) = Total Purgeable Petroleum Hydrocarbons as Gasoline
O&G = Oil and Grease
B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylenes
MTBE = Methyl tertiary-butyl ether
HVOCs = Halogenated Volatile Organic Compounds
1,2-DCA = 1,2-Dichloroethane
EDB = Ethylene dibromide
ppb = Parts per billion
--- = Not available/not applicable

ANALYTICAL METHODS:

EPA Method 8015/5030 for TPH(G)
EPA Method 602 for BTEX
EPA Method 504 for EDB
EPA Method 8020 for BTEX & MTBE
EPA Method 8010 for HVOCs
Standards Methods Method 503E for O&G
EPA Method 413.1 for total O&G
EPA Method 624 for BTEX and VOCs
Standard Methods Method 5520 for O&G
LUFT = DHS LUFT Manual Method for OL

NOTES:

Groundwater elevation data and laboratory analytical results prior to March 6, 1995, were compiled from the Quarterly Groundwater Monitoring Reports prepared for Chevron by Sierra Environmental Services.

* Product thickness was measured with an MMC flexi-dip interface probe.
1 Top of casing elevations for monitoring wells MW-1 through MW-7 were surveyed by Ron Miller, Professional Engineer #15816 on June 26, 1991.
2 Top of casing elevations for monitoring wells MW-1 through MW-8 were surveyed by Kier & Wright of Pleasanton, California on December 12, 1991. Survey data received by SES on April 30, 1992.
3 Well could not be located on this date due to surface conditions from recent discing.
4 Monitoring well part of remediation system.
5 Monitoring well not located since March 1992 sampling event.
6 Top of casing elevation surveyed by Ron Miller, PE #15816, on January 13, 1994.
7 Monitoring well surveyed by Ron Miller, PE #15816, on July 5, 1994.
8 Other HVOCs were not detected at detection limits ranging from 0.5 to 1 ppb.
9 Chloroform and bromodichloromethane were detected at 1.3 and 0.9 ppb, respectively. Other HVOCs were not detected at detection limits ranging from 0.5 to 1 ppb.
10 A non-standard gasoline pattern was observed in the chromatogram.
11 Uncategorized compound not included in gasoline total.
12 Gasoline range concentration reported. The chromatogram shows only a single peak in the gasoline range.
13 Analytical results provided by Chevron Project Manager.
14 TPH(G) and BTEX results are estimated concentrations. Due to laboratory error, sample was analyzed past the recommended holding time. (GTEL).
15 Laboratory report indicates uncategorized compound is not included in gasoline concentration.
16 Surveyed by Virgil Chavez Land Surveying on 10/15/96, elevations based on previous TOC data.

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