



Chevron U.S.A. Products Company

2410 Camino Ramon, San Ramon, California • Phone (510) 842-9500
Mail Address: P.O. Box 5004, San Ramon, CA 94583-0804

92 007-7 01 01 83

September 16, 1992

Mr. Edgar Howell
Alameda County Health Care Services
Department of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

Re: **Chevron Service Station #9-0076**
4625 Foothill Boulevard, Oakland
4265

Dear Mr. Howell:

Enclosed we are forwarding the Groundwater Monitoring and Sampling Activities report dated August 28, 1992, prepared by our consultant Groundwater Technology, Inc. for the above referenced site. As indicated in the report, groundwater samples collected were analyzed for total petroleum hydrocarbons as gasoline (TPH-G) and BTEX. Benzene was detected in monitor wells C-1, C-4, C-6, and C-7 only at concentrations of 480, 14,000, 2,200, and 12,000 ppb, respectively. Monitor well C-2 was not sampled due to the groundwater extraction pump in this well.

Upgradient monitor well C-1 has traditionally monitored low concentrations of TPH-G and BTEX. The increase in the current levels may be associated with an off-site source. Chevron has instructed its consultant to survey the surrounding area for possible off-site sources. The investigation will include locating utility trenches and conducting a file search of the upgradient BP station.

Depth to groundwater was measured at approximately 27 to 28 feet below grade on-site and 39 feet off-site. The groundwater elevations of the on-site monitor wells appear to define the potentiometric surface of a shallow water bearing zone, and/or a perched ground water table. The monitoring data presented in the enclosed report has not been contoured on the potentiometric surface map because of the uncertainty of the hydrogeology of the site. It is uncertain at this time whether the wells located on-site are monitoring the same water bearing zone as those wells located off-site. Based on these findings, Chevron has directed its consultant to evaluate the site data and provide recommendations on determining if these two water bearing zones are connected.

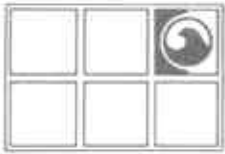
If you have any questions or comments, please do not hesitate to contact me at (510) 842-8134.

Very truly yours,
CHEVRON U.S.A. PRODUCTS COMPANY

Mark A. Miller
Site Assessment and Remediation Engineer

Enclosure

cc: Mr. Rich Hiatt, RWQCB-Bay Area
Mr. Matt Derby, Weiss Associates
Ms. B.C. Owen
File (9-0076 M1)



GROUNDWATER TECHNOLOGY, INC.

4057 Port Chicago Highway, Concord, CA 94520 (415) 671-2387

FAX: (415) 685-9148

August 27, 1992

Job No. 020302227

Ms. Nancy Vukelich
Chevron U.S.A. Products Company
P. O. Box 5004
San Ramon, CA 94583-0804

**SUBJECT: GROUNDWATER MONITORING AND SAMPLING ACTIVITIES
CHEVRON SERVICE STATION NO. 9-0076
4625 FOOTHILL BLVD., OAKLAND, CALIFORNIA**

Dear Ms. Vukelich:

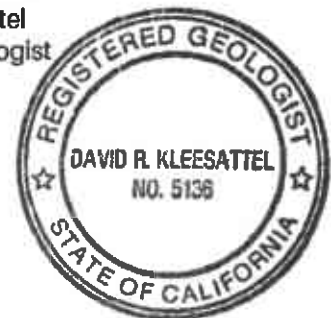
Groundwater Technology, Inc. presents the attached quarterly groundwater monitoring and sampling data collected on July 14, 1992. Seven of the eight groundwater monitoring wells at this site were gauged to determine depth to groundwater (DTW) and to check for separate-phase hydrocarbons. A pump installed in well C-2 prevented monitoring. A potentiometric surface map (Figure 1) and a summary of groundwater monitoring data (Table 1) are presented in Attachments A and B, respectively. After measuring the DTW, each monitoring well was purged and sampled. The groundwater samples were analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX), and total petroleum hydrocarbons (TPH)-as-gasoline. Results of the chemical analyses are summarized in Table 1. The laboratory report and chain-of-custody record are included in Attachment C. Monitoring well purge water was transported by Groundwater Technology, Inc. to the Chevron terminal in Richmond, California for recycling.

Groundwater Technology is pleased to assist Chevron on this project. If you have any questions or comments, please call our Concord, California office at (510) 671-2387.

Sincerely,
GROUNDWATER TECHNOLOGY, INC.

Sandra L. Lindsey
Sandra L. Lindsey
Project Manager

David R. Kleesattel
David R. Kleesattel
Registered Geologist
No. 5136



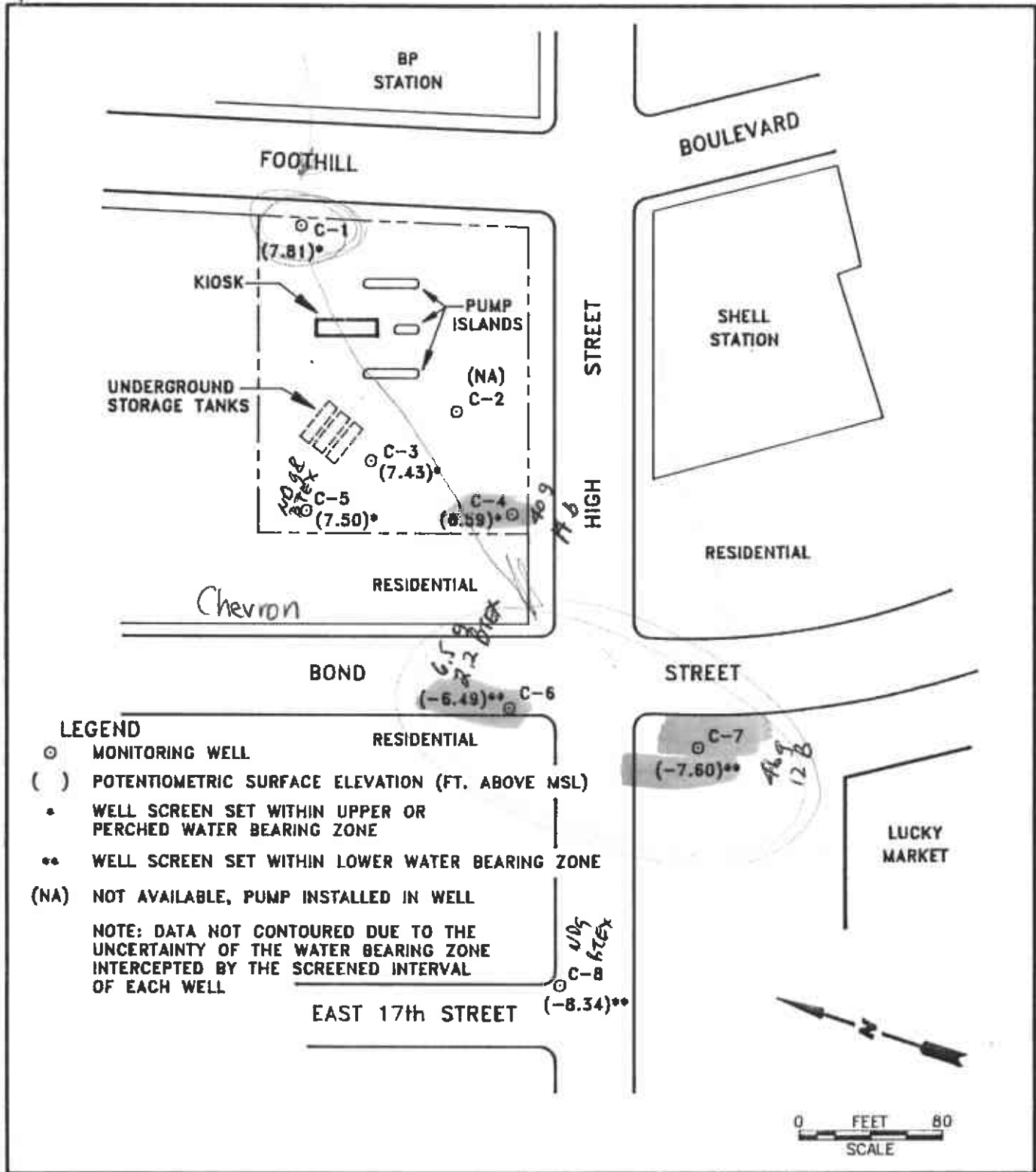
SLL:DRK:nm

Attachments: Attachment A - Figure 1
Attachment B - Table 1
Attachment C - Laboratory Report

LR2227A1.NM
(061022)

ATTACHMENT A

FIGURE 1



LEGEND

- MONITORING WELL
- () POTENTIOMETRIC SURFACE ELEVATION (FT. ABOVE MSL)
- WELL SCREEN SET WITHIN UPPER OR PERCHED WATER BEARING ZONE
- ** WELL SCREEN SET WITHIN LOWER WATER BEARING ZONE
- (NA) NOT AVAILABLE, PUMP INSTALLED IN WELL

NOTE: DATA NOT CONTOURED DUE TO THE UNCERTAINTY OF THE WATER BEARING ZONE INTERCEPTED BY THE SCREENED INTERVAL OF EACH WELL

		GROUNDWATER TECHNOLOGY 4057 PORT CHICAGO HWY CONCORD, CA 94520 (510) 671-2387		POTENTIOMETRIC SURFACE MAP (7/14/92)	
CLIENT: CHEVRON U.S.A. PRODUCTS Co. SERVICE STATION No. 9-0076		LOCATION: 4625 FOOTHILL BLVD. OAKLAND, CALIFORNIA		REV. NO.: 1	DATE: 8/21/92
PM GAM	PE/RG DRK	DESIGNED FH	DETAILED GWS	ACAD FILE: PSM71492/SP392	PROJECT NO.: 020302227
				FIGURE: 1	

ATTACHMENT B

TABLE 1

TABLE 1
 HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
 CHEVRON SERVICE STATION NO. 9-0076
 4625 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

ppb

WELL ID/ ELEV	DATE	TPH-AS- GASOLINE	BENZENE	TOLUENE	ETHYL- BENZENE	XYLENES	DTW (ft)	SPT (ft)	WTE (ft)
C-1 35.42	04/28/89a	940	30	1.3	11	13	20.05	0.0	15.37
	08/08/89a	820	45	2	13	13	24.07	0.0	11.35
	12/21/89	—	—	—	—	—	22.81	0.0	12.61
	08/27/90	440	15	1	6	13	22.12	0.0	13.30
	11/04/90	—	—	—	—	—	25.56	0.0	9.86
	06/18/91	74	5.6	0.6	1.9	1.3	21.64	0.0	13.78
	09/19/91	150	7.1	<0.5	2.3	3	24.58	0.0	10.84
	12/20/91	250	10	<0.5	3.7	1.6	26.17	0.0	9.25
	03/18/92	190	16	<0.5	8.5	2.9	18.25	0.0	17.17
07/14/92	20,000	480	2,200	510	2,900	27.61	0.0	7.81	
C-2 35.18	04/28/89a	120,000	30,000	22,000	3,000	17,000	26.44	0.0	8.74
	08/08/89a	—	—	—	—	—	29.90	0.01	5.29
	12/21/89	—	—	—	—	—	29.32	0.0	5.86
	08/27/90	—	—	—	—	—	29.55	0.17	5.77
	11/04/90	—	—	—	—	—	30.47	0.0	4.71
	06/18/91	—	—	—	—	—	28.33	0.06	6.90
	09/19/91	—	—	—	—	—	29.39	0.06	5.84
	12/20/91	170,000	20,000	10,000	2,800	19,000	29.23	0.0	5.95
	03/18/92	—	—	—	—	—	13.60	0.09	21.58
07/14/92	—	—	—	—	—	—	—	—	
C-3 35.28 35.30	04/28/89a	<500	1.7	<0.5	<0.5	<0.5	28.00	0.0	7.28
	08/08/89a	<500	1	<0.5	<0.5	<0.5	30.00	0.0	5.28
	12/21/89	—	—	—	—	—	30.53	0.0	4.75
	08/27/90	<50	<0.3	<0.3	<0.3	<0.6	29.68	0.0	5.60
	11/04/90	—	—	—	—	—	30.36	0.0	4.94
	06/18/91	52	1.1	<0.5	<0.5	1.2	28.46	0.0	6.84
	09/19/91	73	1.2	<0.5	<0.5	<0.5	29.33	0.0	5.97
	12/20/91	<50	0.7	<0.5	<0.5	<0.5	29.77	0.0	5.53
	03/18/92	<50	<0.5	<0.5	<0.5	<0.5	25.75	0.0	9.55
07/14/92	<50	<0.5	<0.5	<0.5	<0.5	27.87	0.0	7.43	

Extractor pump →

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
CHEVRON SERVICE STATION NO. 9-0076
4625 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

WELL ID/ ELEV	DATE	TPH-AS- GASOLINE	BENZENE	TOLUENE	ETHYL- BENZENE	XYLENES	DTW (ft)	SPT (ft)	WTE (ft)
C-4	01/12/89a	--	--	--	--	--	29.49	0.0	3.96
	04/12/89a	--	--	--	--	--	27.44	0.0	6.01
33.45	04/28/89	20,000	6,300	550	230	1,500	29.49	0.0	3.96
	08/08/89a	8,000	7,500	340	88	1,000	29.55	0.0	3.90
33.48	12/21/89	--	--	--	--	--	30.02	0.0	3.43
	08/27/90	26,000	10,000	280	410	1,400	29.02	0.0	4.46
	11/04/90	--	--	--	--	--	29.81	0.0	3.67
	06/18/91	34,000	14,000	410	450	1,300	27.45	0.0	6.03
	09/19/91	16,000	7,400	90	110	460	28.65	0.0	4.83
	12/20/91	24,000	12,000	120	260	740	28.84	0.0	4.64
	03/18/92	48,000	6,000	1,300	1,300	2,400	24.43	0.0	11.05
	07/14/92	40,000	14,000	920	550	2,400	26.89	0.0	6.59
C-5	08/27/90	<50	<0.3	<0.3	<0.3	<0.6	29.83	0.0	5.67
	11/14/90	--	--	--	--	--	30.56	0.0	4.94
35.50	06/18/91	<50	<0.5	<0.5	<0.5	<0.5	28.52	0.0	6.98
	09/19/91	<50	<0.5	<0.5	<0.5	<0.5	29.51	0.0	5.99
	12/20/91	<50	<0.5	<0.5	<0.5	<0.5	29.96	0.0	5.54
	03/18/92	<50	<0.5	<0.5	<0.5	<0.5	25.92	0.0	9.58
	07/14/92	<50	<0.5	<0.5	<0.5	<0.5	28.00	0.0	7.50
C-6	08/27/90	7,200	2,100	6	41	300	44.11	0.0	-11.71
	11/14/90	--	--	--	--	--	44.03	0.0	-11.63
32.40	06/18/91	4,400	2,500	18	160	77	43.49	0.0	-11.09
	09/19/91	3,100	1,600	8.3	73	8	34.32	0.0	-1.92
	12/20/91	4,400	1,300	3.2	74	10	41.35	0.0	-8.95
	03/18/92	9,800	3,200	34	250	500	40.69	0.0	-8.29
	07/14/92	6,800	2,200	100	96	240	38.89	0.0	-6.49

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
CHEVRON SERVICE STATION NO. 9-0076
4625 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

WELL ID/ ELEV	DATE	TPH-AS- GASOLINE	BENZENE	TOLUENE	ETHYL- BENZENE	XYLENES	DTW (ft)	SPT (ft)	WTE (ft)
C-7 32.17	08/27/90	110	26	0.8	4	6	44.23	0.0	-12.06
	11/14/90	—	—	—	—	—	44.11	0.0	-11.94
	06/18/91	23,000	5,700	420	1,000	2,800	42.05	0.0	-9.88
	09/19/91	26,000	4,600	330	970	2,400	41.72	0.0	-9.55
	12/20/91	33,000	5,500	270	1,000	2,100	41.67	0.0	-9.50
	03/18/92	27,000	5,800	410	1,300	3,300	41.20	0.0	-9.03
	07/14/92	46,000	12,000	720	1,700	4,600	39.77	0.0	-7.60
C-8 30.68	11/14/90	<50	<0.3	<0.3	<0.3	<0.6	43.29	0.0	-12.61
	06/18/91	<50	<0.5	<0.5	<0.5	<0.5	42.62	0.0	-11.94
	09/19/91	<50	<0.5	<0.5	<0.5	<0.5	41.72	0.0	-11.04
	12/20/91	<50	<0.5	<0.5	<0.5	<0.5	40.98	0.0	-10.30
	03/18/92	<50	<0.5	<0.5	<0.5	<0.5	40.02	0.0	-9.34
	07/14/92	<50	<0.5	<0.5	<0.5	<0.5	39.02	0.0	-8.34

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
CHEVRON SERVICE STATION NO. 9-0076
4625 FOOTHILL BOULEVARD, OAKLAND, CALIFORNIA

WELL ID/ ELEV	DATE	TPH-AS- GASOLINE	BENZENE	TOLUENE	ETHYL- BENZENE	XYLENES	DTW (ft)	SPT (ft)	WTE (ft)
TRIP BLANK	04/28/89	<500	<0.5	<0.5	<0.5	<0.5	--	--	--
	08/08/89	<500	<0.5	<0.5	<0.5	<0.5	--	--	--
	08/27/90	<50	<0.3	<0.3	<0.3	<0.6	--	--	--
	11/14/90	<50	<0.3	<0.3	<0.3	<0.6	--	--	--
	06/18/91	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
	09/19/91	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
	12/20/91	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
	03/18/92	<50	<0.5	<0.5	<0.5	<0.5	--	--	--
	07/14/92	<50	<0.5	<0.5	<0.5	<0.5	--	--	--

-- = Not applicable, not sampled, not measured
DTW = Depth to groundwater
SPT = Separate-phase hydrocarbon thickness
WTE = Water table elevation
a = Water elevations measured to grade

All elevations are given as feet above mean sea level.

Analytical results in micrograms per liter μ /L, or parts per billion

Top of casing surveyed 1/03/90 and 08/21/90

Data from 4/28/89 through 12/20/91 taken from Fourth Quarter 1991 Ground Water Monitoring Report dated January 30, 1992, (Weiss Associates).

ATTACHMENT C
LABORATORY ANALYTICAL REPORTS



Superior Precision Analytical, Inc.

835 Arnold Drive, Suite 106 • Martinez, California 94553 • (510) 229-0166 / fax (510) 229-0916

GROUNDWATER TECHNOLOGY, INC.
Attn: Gregory A. Mischel

Project 020302227
Reported 07/24/92

TOTAL PETROLEUM HYDROCARBONS

Lab #	Sample Identification	Sampled	Analyzed Matrix
86215- 1	TB-LB	07/14/92	07/21/92 Water
86215- 2	RBC-5	07/14/92	07/22/92 Water
86215- 3	C-5	07/14/92	07/21/92 Water
86215- 5	C-8	07/14/92	07/21/92 Water
86215- 7	C-3	07/14/92	07/22/92 Water
86215- 9	C-1	07/14/92	07/22/92 Water
86215-11	C-6	07/14/92	07/22/92 Water
86215-13	C-4	07/14/92	07/22/92 Water
86215-14	C-7	07/14/92	07/22/92 Water

RESULTS OF ANALYSIS

Laboratory Number:	86215- 1	86215- 2	86215- 3	86215- 5	86215- 7
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Gasoline:	ND<50	ND<50	ND<50	ND<50	ND<50
Benzene:	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Toluene:	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Ethyl Benzene:	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Xylenes:	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Concentration:	ug/L	ug/L	ug/L	ug/L	ug/L

Laboratory Number:	86215- 9	86215-11	86215-13	86215-14
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Gasoline:	20000	6500	40000	46000
Benzene:	480	2200	14000	12000
Toluene:	2200	100	920	720
Ethyl Benzene:	510	96	550	1700
Xylenes:	2900	240	2400	4600
Concentration:	ug/L	ug/L	ug/L	ug/L



Superior Precision Analytical, Inc.

835 Arnold Drive, Suite 106 • Martinez, California 94553 • (510) 229-0166 / fax (510) 229-0916

C E R T I F I C A T E O F A N A L Y S I S

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS

Page 2 of 2
QA/QC INFORMATION
SET: 86215

NA = ANALYSIS NOT REQUESTED
ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT
ug/L = parts per billion (ppb)

OIL AND GREASE ANALYSIS By Standard Methods Method 5520F:
Minimum Detection Limit in Water: 5000ug/L

Modified EPA SW-846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Water: 50ug/L

EPA SW-846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Water: 50ug/L

EPA SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Water: 0.5ug/L

ANALYTE	SPIKE LEVEL	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Gasoline:	200 ng	100/100	0%	70-130
Benzene:	200 ng	104/115	10%	70-130
Toluene:	200 ng	97/104	7%	70-130
Ethyl Benzene:	200 ng	97/107	10%	70-130
Xylenes:	200 ng	98/104	6%	70-130

Richard Srna, Ph.D.

Charles Srna
Laboratory Director

Fax copy of Lab Report and COC to Chevron Contact: No 86413 **Chain-of-Custody-Record**

Chevron U.S.A. Inc.
 P.O. BOX 5004
 San Ramon, CA 94583
 FAX (415)842-9591

Chevron Facility Number 9-0076
 Facility Address 4625 Foothill Blvd, Oakland
 Consultant Project Number 020302227
 Consultant Name Groundwater Technology, Inc
 Address 4057 Port Chicago Hwy, Concord, CA
 Project Contact (Name) Mr. Greg A. Mischel
 (Phone) 671-2387 (Fax Number) 685-9148

Chevron Contact (Name) N. Yukelich
 (Phone) (510) 845-9581
 Laboratory Name Superior Laboratory
 Laboratory Release Number 450-8080
 Samples Collected by (Name) Chris McCormick
 Collection Date 7-14-92
 Signature [Signature]

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	Analytes To Be Performed										Remarks	
								BTX + TPH GAS (8020 + 8015)	TPH Diesel (8015)	Oil and Grease (8520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd, Cr, Pb, Zn, Ni (ICAP or AA)				
Tip Blank	1	1	W	G		HCL	YES	X											Pg. 1 of 1
RBC-5	2	1						X											
C-5	3	3						X											
RBC-8	④	1						X											
C-8	5	3						X											
RBC-3	④	1						X											
C-3	7	3						X											
RBC-1	②	1						X											
C-1	9	3						X											
RBC-6	⑩	1						X											
C-6	11	3						X											
RBC-4/RBC-7	⑫	2						X											
C-4	13	3	↓	↓				X											
C-7	14	3	W	G		HCL	YES	X											

Please Initial:
 Samples Stored in ice
 Appropriate containers
 Samples preserved
 Recommended headspace
 container

[Handwritten initials]

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	Turn Around Time (Circle Choice) 24 Hrs. 48 Hrs. 5 Days 10 Days <u>As Contracted</u>
<u>[Signature]</u>	<u>GTI</u>		<u>[Signature]</u>			

Relinquished For Laboratory By (Signature) [Signature] Superior Date/Time 7/14/92 3:30 PM