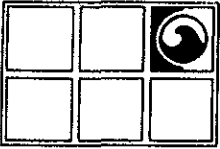


SEP 27 '93 PWM



# GROUNDWATER TECHNOLOGY, INC.

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

FAX: (415) 685-9148

September 21, 1993

Project No. 020204088

Mr. Ken Kan  
Chevron U.S.A. Products Company  
2410 Camino Ramon  
San Ramon, CA 94583-0804

**SUBJECT:** *Groundwater Monitoring and Sampling Activities*  
Chevron Service Station No. 9-3356  
19201 Center Street, Castro Valley, California

93 OCT 18 AM 11:53


Dear Mr. Kan:


Groundwater Technology, Inc. presents the attached quarterly groundwater monitoring and sampling data collected on July 26, 1993. Three groundwater monitoring wells at the site were gauged to measure depth to groundwater (DTW) and to check for the presence of separate-phase hydrocarbons. Separate-phase hydrocarbons were not detected in the monitoring wells. A potentiometric surface map (Figure 1) and a summary of groundwater monitoring data (Table 1) are presented in Attachments 1 and 2, respectively. After the DTW was measured, each monitoring well was purged and sampled. The groundwater samples were analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX) and for total petroleum hydrocarbons-as-gasoline. Results of the chemical analyses are summarized in Table 1. The laboratory report and chain-of-custody record are included in Attachment 3. Monitoring-well purge water was transported by Groundwater Technology 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 contact our Concord office at (510) 671-2387.

Sincerely,  
Groundwater Technology, Inc.  
Written/Submitted by

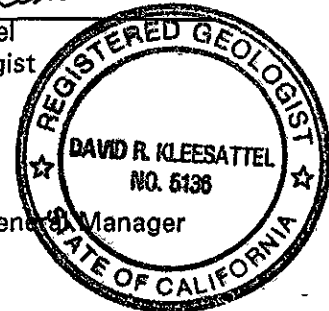
Groundwater Technology, Inc.  
Reviewed/Approved by

  
\_\_\_\_\_  
Tim Watchers  
Project Geologist

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

Attachment 1 Figure  
Attachment 2 Table  
Attachment 3 Laboratory Report

For:  
Wendell Lattz  
Vice President, General Manager  
West Region



4088R033.020

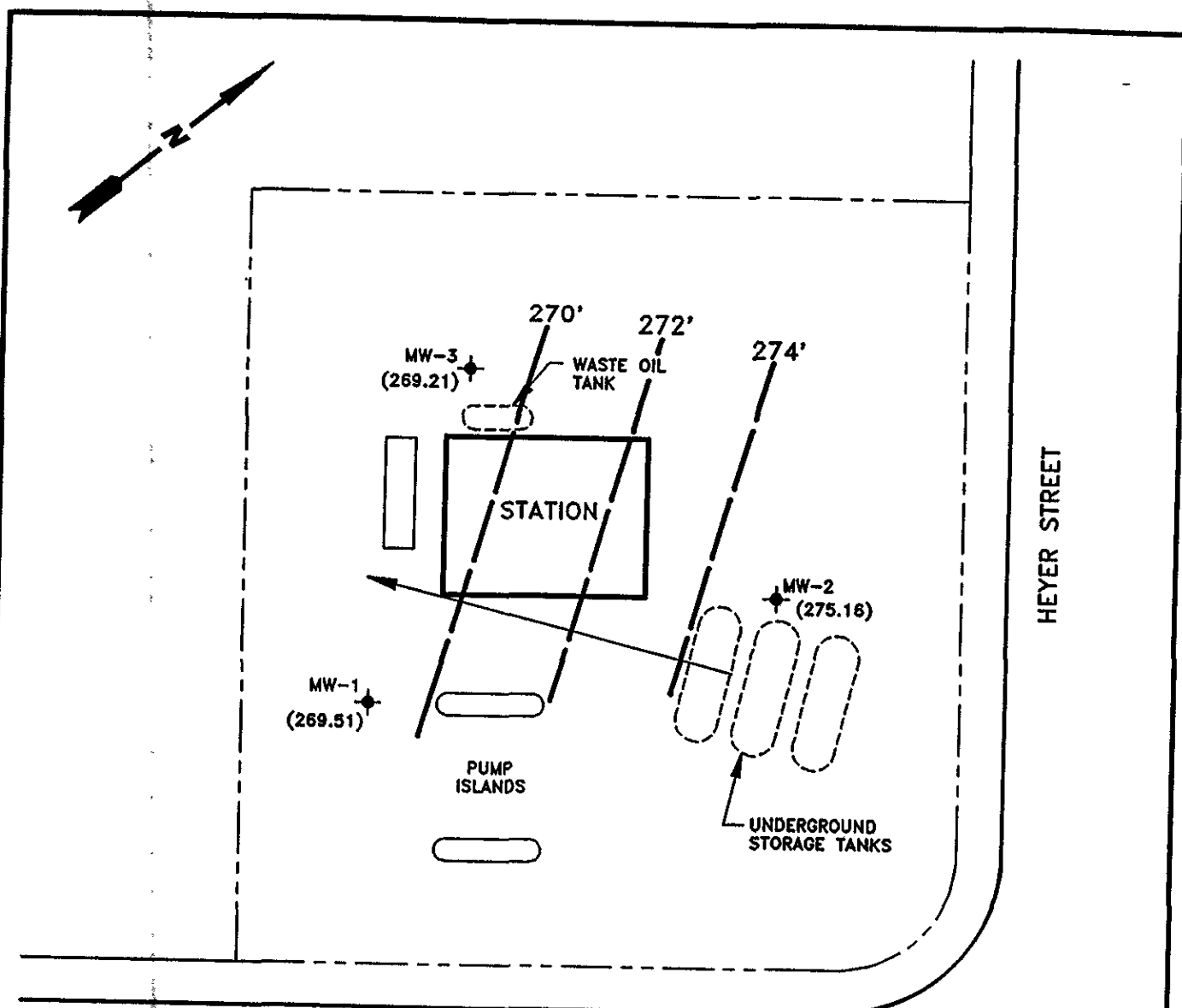
**ATTACHMENT 1**

**Figure**

4088R033.020



**GROUNDWATER  
TECHNOLOGY, INC.**



**LEGEND**

- ◆ MONITORING WELL
- ( ) POTENTIOMETRIC SURFACE ELEVATION (FT MSL)
- POTENTIOMETRIC SURFACE CONTOUR
- ← GROUNDWATER FLOW DIRECTION



		<b>GROUNDWATER TECHNOLOGY</b> 4057 PORT CHICAGO HWY. CONCORD, CA 94520 (510) 671-2387		<b>POTENTIOMETRIC SURFACE MAP</b> <b>(7/1/93)</b>	
<b>CLIENT:</b> CHEVRON U.S.A PRODUCTS CO. SERVICE STATION No. 9-3356		<b>LOCATION:</b> 19201 CENTER STREET CASTRO VALLEY, CALIFORNIA		<b>REV. NO.:</b> 0	<b>DATE:</b> 8/30/93
<b>PM</b> <i>Jaw</i>	<b>PE/RG</b> DRK	<b>DESIGNED</b> SCH	<b>DETAILED</b> ML	<b>ACAD FILE:</b> PSM7193/SP693	<b>PROJECT NO.:</b> 020204115
					<b>FIGURE:</b> 1

**ATTACHMENT 2**

**Table**

4088R033.020



**GROUNDWATER  
TECHNOLOGY, INC.**

**TABLE 1**  
**HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA**  
**Chevron Service Station No. 9-3356**  
**19201 Center Street, Castro Valley, California**

Well/ID Elev	Date	TPH-as- Gasoline	Benzene	Toluene	Ethyl- benzene	Xylenes	TOG	ORG-Pb	DTW (ft)	SPT (ft)	WTE (ft)
MW-1 285.22	09/06/89	<1.0	<0.5	<0.5	<0.5	<0.5	—	<50	18.25	—	266.97
	09/12/89	—	—	—	—	—	—	—	18.39	—	266.83
	11/20/89	<500	<0.3	<0.3	<0.3	<0.6	—	<50	18.06	—	267.16
	02/22/90	<50	<0.3	<0.3	<0.3	<0.6	—	<50	18.04	—	267.18
	05/29/90	<50	0.3	<0.3	<0.3	<0.6	—	<50	18.55	—	266.67
	09/27/90	<50	<0.3	<0.3	<0.3	<0.6	—	—	19.13	—	266.09
	01/16/91	<50	<0.5	<0.5	<0.5	<0.5	—	—	19.32	—	265.90
	09/19/91	<50	<0.5	<0.5	<0.5	<0.5	—	—	19.36	—	265.86
	01/23/92	<50	<0.5	<0.5	<0.5	<0.5	—	—	19.81	—	265.41
	01/23/92	<50	<0.5	<0.5	<0.5	<0.5	—	—	19.81	—	265.41
	04/15/92	<50	<0.5	<0.5	<0.5	<0.5	—	—	18.04	—	267.18
	07/22/92	<50	<0.5	<0.5	<0.5	<0.5	—	—	18.75	—	266.47
	10/14/92	<50	<0.5	<0.5	<0.5	<0.5	—	—	19.25	—	265.97
	01/13/93	<50	<0.5	0.8	<0.5	0.8	—	—	17.12	—	268.10
04/29/93	<50	<0.5	<0.5	<0.5	<1.5	—	—	15.38	0.00	269.84	
07/26/93	<50	<0.5	<0.5	<0.5	<1.5	—	—	15.71	0.00	269.51	
MW-2 286.16	09/06/89	23	1	4	1	4	—	<50	13.72	—	272.44
	09/12/89	—	—	—	—	—	—	—	13.97	—	272.19
	11/20/89	<500	<0.3	<0.3	<0.3	<0.6	—	—	13.81	—	272.35
	02/22/90	<50	<0.3	<0.3	<0.3	<0.6	—	<50	13.68	—	272.48
	05/29/90	<50	2	<0.3	<0.3	<0.6	—	<50	13.92	—	272.24
	09/27/90	<50	<0.3	<0.3	<0.3	<0.6	—	<50	14.75	—	271.41
	01/16/91	<50	9	<0.5	<0.5	2	—	—	14.44	—	271.72
	09/19/91	<50	<0.5	<0.5	<0.5	<0.5	—	—	14.46	—	271.70
	09/19/91	<50	<0.5	<0.5	<0.5	<0.5	—	—	14.46	—	271.70
	01/23/92	<50	<0.5	<0.5	<0.5	<0.5	—	—	14.73	—	271.43
	04/15/92	<50	<0.9	<0.5	<0.5	<0.5	—	—	13.03	—	273.13
	07/22/92	<50	<0.5	<0.5	<0.5	<0.5	—	—	13.83	—	272.33
	10/14/92	<50	<0.5	<0.5	<0.5	<0.5	—	—	14.35	—	271.81
	01/13/93	<50	<0.5	<0.5	<0.5	<0.5	—	—	12.34	—	273.82
04/29/93	<50	<0.5	<0.5	<0.5	<1.5	—	—	11.36	0.00	274.80	
07/26/93	*830	<0.5	<0.5	<0.5	<1.5	—	—	11.00	0.00	275.16	

**TABLE 1**  
**HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA**  
**Chevron Service Station No. 9-3356**  
**19201 Center Street, Castro Valley, California**

Well/ID Elev	Date	TPH-as- Gasoline	Benzene	Toluene	Ethyl- benzene	Xylenes	TOG	ORG-Pb	DTW (ft)	SPT (ft)	WTE (ft)
MW-3 284.46	09/06/89	<1.0	<0.5	<0.5	<0.5	<0.5	1000	<50	18.73	---	265.73
	09/12/89	---	---	---	---	---	---	---	17.78	---	266.68
	11/20/89	<500	<0.3	<0.3	<0.3	<0.6	<1000	<50	17.65	---	266.81
	02/22/90	<50	<0.3	<0.3	<0.3	<0.6	<1000	<50	16.84	---	267.62
	05/29/90	<50	<0.3	<0.3	<0.3	<0.3	<1000	<50	17.13	---	267.33
	09/27/90	<50	<5	<5	<5	<5	---	---	18.38	---	266.08
	09/27/90	<50	---	---	---	---	<1000	---	18.38	---	266.08
	01/16/91	<50	<0.5	<0.5	<0.5	<0.5	---	---	18.28	---	266.18
	01/16/91	<50	<0.5	<0.5	<0.5	<0.5	---	---	18.28	---	266.18
	09/19/91	<50	<0.5	<0.5	<0.5	<0.5	---	---	17.62	---	266.84
	01/23/92	<50	<0.5	<0.5	<0.5	<0.5	---	---	17.62	---	266.84
	04/15/92	<50	<0.5	<0.5	<0.5	<0.5	---	---	15.22	---	269.24
	07/22/92	<50	<0.5	<0.5	<0.5	<0.5	---	---	16.66	---	267.80
	10/14/92	<50	<0.5	<0.5	<0.5	<0.5	---	---	17.57	---	266.89
	01/13/93	<50	<0.5	<0.5	<0.5	<0.5	---	---	14.12	---	270.34
	04/29/93	<50	<0.5	<0.5	<0.5	<0.5	<1.5	---	14.04	0.00	270.42
07/26/93	<50	<0.5	<0.5	<0.5	<0.5	<1.5	---	15.25	0.00	269.21	
TB-LB	11/20/89	<500	<0.3	<0.3	<0.3	<0.3	---	---	---	---	---
	02/22/90	<50	<0.3	<0.3	<0.3	<0.3	---	---	---	---	---
	05/29/90	<50	<0.3	<0.3	<0.3	<0.3	---	---	---	---	---
	09/27/90	<50	---	---	---	---	---	---	---	---	---
	01/16/91	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---
	09/19/91	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---
	01/23/92	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---
	04/15/92	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---
	07/22/92	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---
	10/14/92	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---
	01/13/93	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---
	04/29/93	<50	<0.5	<0.5	<0.5	<0.5	<1.5	---	---	---	---
07/26/93	<50	<0.5	<0.5	<0.5	<0.5	<1.5	---	---	---	---	

**TABLE 1**  
**HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA**  
**Chevron Service Station No. 9-3356**  
**19201 Center Street, Castro Valley, California**

Well/ID Elev	Date	TPH-as- Gasoline	Benzene	Toluene	Ethyl- benzene	Xylenes	TOG	ORG-Pb	DTW (ft)	SPT (ft)	WTE (ft)
RINSATE	09/27/90	<50	---	---	---	---	---	---	---	---	---
	01/16/91	---	---	---	---	---	---	---	---	---	---
	09/19/91	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---
	01/23/92	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---
	04/15/92	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---
	07/22/92	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---
	10/14/92	<50	<0.5	<0.5	<0.5	<0.5	---	---	---	---	---

Concentrations in parts per billion

TPH = Total petroleum hydrocarbons

TOG = Total oil and grease

ORG-Pb = Organic lead

--- = Not applicable/not measured/not sampled

DTW = Depth to water

SPT = Separate-phase hydrocarbons

WTE = Water table elevation measure by mean sea level

TB-LB = Laboratory trip blank

\* = Gasoline range concentration reported. The pattern of peaks observed in the chromatogram shows only single peak in the gasoline range.

Data before April 1993 was provided by Alton GeoScience.

**ATTACHMENT 3**

**Laboratory Report**





# Superior Precision Analytical, Inc.

825 Arnold Drive, Suite 114 • Martinez, California 94553 • (510) 229-1512 / fax (510) 229-1526

GROUNDWATER TECHNOLOGY, INC.  
Attn: Nicole Merchant

Project 020204088  
Reported 08/03/93

## TOTAL PETROLEUM HYDROCARBONS

Lab #	Sample Identification	Sampled	Analyzed Matrix
89381- 1	TB-LB	07/26/93	07/30/93 Water
89381- 3	MW2	07/26/93	07/30/93 Water
89381- 5	MW3	07/26/93	07/30/93 Water
89381- 7	MW1	07/26/93	07/30/93 Water

## RESULTS OF ANALYSIS

Laboratory Number: 89381- 1 89381- 3 89381- 5 89381- 7

Gasoline:	ND<50	830*	ND<50	ND<50
Benzene:	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
Ethyl Benzene:	ND<0.5	ND<0.5	ND<0.5	ND<0.5
Xylenes:	ND<1.5	ND<1.5	ND<1.5	ND<1.5
Concentration:	ug/L	ug/L	ug/L	ug/L

\* Gasoline range concentration reported. The pattern of peaks observed in the chromatogram shows only single peak in the gasoline range.



# Superior Precision Analytical, Inc.

825 Arnold Drive, Suite 114 • Martinez, California 94553 • (510) 229-1512 / fax (510) 229-1526

## 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: 89381

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	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Gasoline:	85/77	10%	70-130
Benzene:	106/118	11%	70-130
Toluene:	97/109	12%	70-130
Ethyl Benzene:	97/109	12%	70-130
Xylenes:	98/110	12%	70-130

*Afsaneh Salimpo*  
Senior Chemist

Fax copy of Lab Report and COC to Chevron Contact:  Yes  No

8938)

Chain-of-Custody-Recu.

Chevron U.S.A. Inc. P.O. BOX 5004 San Ramon, CA 94583 FAX (415)842-9591	Chevron Facility Number <u>9-3356</u> Facility Address <u>19201 Center St, Castro Valley</u>	Chevron Contact (Name) <u>Ken Kan</u> (Phone) <u>842-8752</u>
	Consultant Project Number <u>020204088</u> Consultant Name <u>Groundwater Technology, Inc.</u>	Laboratory Name <u>Superior</u> Laboratory Release Number <u>921-6440</u>
	Address <u>4057 Port Chicago Hwy, Concord, CA 94520</u>	Samples Collected by (Name) <u>Greg MASON</u>
	Project Contact (Name) <u>Nicole Merchant</u> (Phone) <u>671-2387</u> (Fax Number) <u>685-9148</u>	Collection Date <u>7/26-93</u> Signature <u>[Signature]</u>

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil W = Water A = Air C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	Analyses To Be Performed										Remarks	
								BTEX + 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)	Hold			
TB-LB		2	W	D	12:10	HGI	Y	X											Do not Bill TB-LB
RBMW2		1			12:10													X	
MW2		3			12:10			X											
RBMW3		1			12:20													X	
MW3		3			12:20			X											
RBMW1		1			12:30													X	
MW1		3	W	W	12:30		W	X											

Please Initial: RF

Samples Stored in ice: yes

Appropriate containers: yes

Samples preserved: yes

VOA's without headspace: OK

Comments: OK

Relinquished By (Signature) <u>[Signature]</u>	Organization <u>GTL</u>	Date/Time <u>7/27/93 1020</u>	Received By (Signature) <u>[Signature]</u>	Organization	Date/Time	Turn Around Time (Circle Choice) 24 Hrs. 48 Hrs. 5 Days 10 Days <u>As Contracted</u>
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	
Relinquished By (Signature)	Organization	Date/Time	Received for Laboratory By (Signature) <u>[Signature]</u>		Date/Time <u>7/27/93 1020</u>	

COC-3.1/WG/US 21/1/1/1/1