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Chevron

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

Marketing – Northwest Region
Phone 510 842 9500

September 8, 1994

Ms. Jennifer Eberle
Alameda County Health Care Services
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Chevron Service Station #9-4587
609 Oak Street, Oakland, CA

Dear Ms. Eberle:

Enclosed is the Groundwater Monitoring and Sampling Activities report dated August 24, 1994, prepared by our consultant Groundwater Technology, Inc. for the above referenced site. As indicated in the report, ground water samples collected were analyzed for total petroleum hydrocarbons as gasoline and BTEX.

Concentrations of dissolved hydrocarbon constituents in the ground water samples collected were consistent with previous observations at the site. Separate-phase hydrocarbons were detected in monitor well C-1 and tank pit backfill wells C-B and C-C at measured thicknesses of 0.02, 0.02, and 0.03 feet, respectively. Depth to ground water was measured at approximately 8.4 to 10.1 feet below grade and the direction of flow is to the southeast.

The ground water extraction system was restarted on April 28, 1994, following carbon changeout activities. To date the system has removed approximately 167,000 gallons of hydrocarbon impacted ground water. Currently the system is fully operational.

Removal of the underground storage tanks and product lines has been tentatively scheduled for September 28, 1994. I will continue to update your office as this schedule develops. Chevron will continue to monitor and sample this site on a quarterly basis.

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

Sincerely,
CHEVRON U.S.A. PRODUCTS COMPANY

Mark A. Miller
Site Assessment and Remediation Engineer

Enclosure

cc: Mr. Kevin Graves, RWQCB - Bay Area
Ms. Kate McCutchen, Geraghty & Miller - Richmond
Ms. B.C. Owen

Mr. Dewey Bargiacchi
The Paris Company
8520 Pardee
Oakland, CA 94621

Mr. James Kimberlin
1100 Howe Avenue #415
Sacramento, CA 94825

Mr. William Kimberlin
51 Eureka Street
Kensington, CA 94707

File: 9-4587 QM6

GROUNDWATER TECHNOLOGY, INC.
4057 Port Chicago Highway, Concord, CA 94520 (415) 671-2387
FAX: (415) 685-9148

August 24, 1994

Project No. 020104111

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

SUBJECT: *Groundwater Monitoring and Sampling Activities*
Chevron Service Station No. 9-4587
609 Oak Street, Oakland, California

Dear Mr. Miller:

Groundwater Technology, Inc. presents the attached quarterly groundwater monitoring and sampling data collected on June 17, 1994. Ten of the eleven groundwater monitoring wells at this site were gauged to measure depth to groundwater (DTW) and to check for the presence of separate-phase hydrocarbons. Measurable thickness of separate-phase hydrocarbons were detected in monitoring wells C-1, C-B, and C-C at a thickness of 0.02, 0.02 and 0.03 feet respectively. The thickness of separate-phase hydrocarbons could to be measured in CR-1 due to a pump inside the well. A potentiometric surface map and a summary of groundwater monitoring data are presented in attachments 1 and 2, respectively. After the DTW was measured, each monitoring well, except monitoring wells CR-1, C-1, C-B, and C-C, was purged and sampled. Groundwater monitoring and sampling protocol and field data sheets are presented in attachment 3. The groundwater samples were analyzed for benzene, toluene, ethylbenzene, xylenes, and for total petroleum hydrocarbons-as-gasoline. Results of the chemical analyses are summarized in attachment 2. The laboratory report and chain-of-custody record are included in attachment 4. The results of a monthly product bailing program for monitoring wells CR-1, C-1, C-C, and C-B are presented in Table 2. 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

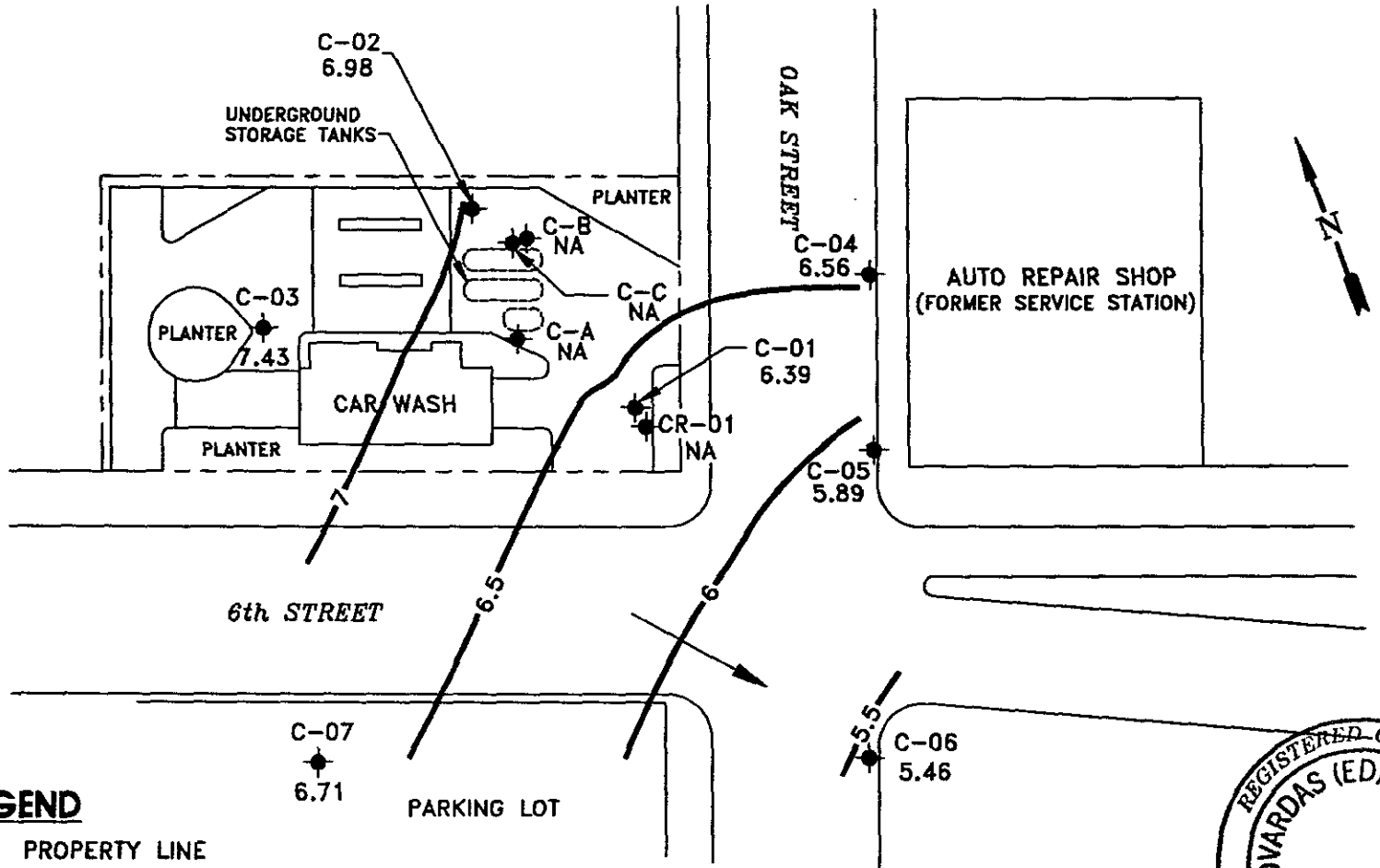
Kenneth P. Johnson
Project Manager
For:
Wendell C. Lattz
Vice President, General Manager
West Region

PR

Attachment 1 Figure
Attachment 2 Table
Attachment 3 Protocol and Field Data Sheets
Attachment 4 Laboratory Report

ATTACHMENT 1

Figure



LEGEND

— — — —	PROPERTY LINE
✦	MONITORING WELL
NA	NOT AVAILABLE
X.XX	POTENTIOMETRIC SURFACE ELEVATION (FT)
⌒	POTENTIOMETRIC SURFACE CONTOUR
←	GROUNDWATER FLOW DIRECTION

NOTE:
1. CONTOURS REPRESENT APPROXIMATE ELEVATIONS ABOVE MEAN SEA LEVEL.

REGISTERED GEOLOGIST
EDVARDAS (ED) K. SIMONIS
No. 4422
Exp 2/28/96
STATE OF CALIFORNIA

GROUNDWATER TECHNOLOGY

0 FEET 40
SCALE

CLIENT: CHEVRON U.S.A. PRODUCTS CO.
SERVICE STATION No. 9-4587

LOCATION: 609 OAK STREET
OAKLAND, CALIFORNIA

POTENTIOMETRIC SURFACE MAP (6/17/94)

FILE:	PROJECT NO.:	REV.:	DES.:	DET.:	DATE:	PM:	PE/RG:	FIGURE:
4111PSM, (1:40)	02010-4111		SS	SS	7/11/94	KS	EKS	1

ATTACHMENT 2

Table

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-4587
609 Oak Street, Oakland, California

Well ID/ Elevation	Sample Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
C-A	12/06/89	44,000	20,000	66	1,600	2,220	---	0.00	---
	10/30/90	31,000	23,000	110	1,100	160	11.20	Sheen	---
	10/30/90	30,000	23,000	150	1,000	180	11.20	Sheen	---
	01/14/91	12,000	30,000	540	1,400	560	11.25	0.00	---
	04/03/91	59,000	33,000	2,400	2,200	3,100	9.82	0.00	---
	07/17/91	52,000	38,000	380	1,300	500	10.93	0.00	---
	10/07/91	---	---	---	---	---	---	---	---
	06/25/92	---	---	---	---	---	---	---	---
	09/17/92	---	---	---	---	---	---	---	---
	12/16/92	---	---	---	---	---	---	---	---
	03/18/93	---	---	---	---	---	---	---	---
	06/11/93	---	---	---	---	---	---	---	---
	09/08/93	---	---	---	---	---	---	---	---
	09/17/93	---	---	---	---	---	10.02	0.00	---
	12/23/93	---	---	---	---	---	---	---	---
	03/07/94	---	---	---	---	---	---	---	---
	06/17/94	77,000	32,000	3,600	3,200	14,000	10.05	0.00	---
C-B	12/06/89	---	---	---	---	---	---	0.01	---
	10/30/90	---	---	---	---	---	11.19	0.01	---
	01/14/91	---	---	---	---	---	11.40	0.01	---
	04/03/91	---	---	---	---	---	9.55	1.00	---
	04/04/91	---	---	---	---	---	10.54	1.06	---
	07/17/91	---	---	---	---	---	10.84	0.03	---
	10/07/91	---	---	---	---	---	11.10	0.04	---
	02/04/92	---	---	---	---	---	10.78	0.01	---
	03/06/92	---	---	---	---	---	---	---	---
	04/01/92	---	---	---	---	---	10.33	1.02	---
	06/25/92	---	---	---	---	---	11.20	0.68	---
	09/17/92	---	---	---	---	---	11.07	0.13	---
	12/16/92	---	---	---	---	---	10.41	0.38	---
	03/18/93	---	---	---	---	---	9.19	0.05	---
	06/11/93	---	---	---	---	---	9.54	0.70	---
	09/08/93	---	---	---	---	---	---	---	---
	09/17/93	---	---	---	---	---	9.85	0.52	---
	12/23/93	---	---	---	---	---	9.37	0.20	---
	03/07/94	---	---	---	---	---	9.24	0.85	---
	06/17/94	---	---	---	---	---	9.38	0.02	---

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-4587
609 Oak Street, Oakland, California

Well ID/ Elevation	Sample Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
C-C	12/06/89	---	---	---	---	---	---	0.15	---
	10/30/90	---	---	---	---	---	10.84	0.03	---
	01/14/91	---	---	---	---	---	11.01	0 11	---
	04/03/91	---	---	---	---	---	9.19	0 02	---
	07/17/91	---	---	---	---	---	10.53	0.03	---
	10/07/91	---	---	---	---	---	10.98	0 08	---
	02/04/92	---	---	---	---	---	10.45	0.09	---
	03/06/92	---	---	---	---	---	8.83	0.09	---
	04/01/92	---	---	---	---	---	9 23	0 16	---
	06/25/92	---	---	---	---	---	10.40	0 12	---
	09/17/92	---	---	---	---	---	10.84	0.12	---
	12/16/92	---	---	---	---	---	10 02	0 12	---
	03/18/93	---	---	---	---	---	8 70	0 15	---
	06/11/93	---	---	---	---	---	9.25	0.13	---
	09/08/93	---	---	---	---	---	---	---	---
	09/17/93	---	---	---	---	---	9.83	Sheen	---
	12/23/93	---	---	---	---	---	9.66	0.07	---
	03/07/94	---	---	---	---	---	8.93	0.28	---
	06/17/94	---	---	---	---	---	10.13	0.03	---
C-1	12/06/89	---	---	---	---	---	---	0.20	---
	10/30/90	---	---	---	---	---	10.79	0.02	5 30
16 07	01/14/91	---	---	---	---	---	11.39	0.02	4.70
	04/03/91	---	---	---	---	---	9.43	0.02	6 66
	07/17/91	---	---	---	---	---	10.46	0.04	5.64
	10/07/91	---	---	---	---	---	10.74	0 04	5.36
	02/04/92	---	---	---	---	---	10 37	0 01	5.71
	03/06/92	---	---	---	---	---	9.20	0.00	6 87
	04/01/92						9.28	0.00	6.79
	06/25/92	100,000	8,800	7,000	2,800	19,000	9 98	0 01	6.10
	09/17/92	---	---	---	---	---	10.51	Sheen	5.56
	12/16/92	---	---	---	---	---	9.81	Sheen	6.26
	03/18/93	---	---	---	---	---	8.88	Sheen	7 19
	06/11/93	---	---	---	---	---	9.31	0.02	6.78
	09/08/93	---	---	---	---	---	---	---	---
	09/17/93	---	---	---	---	---	9.72	0.02	6.37
	12/23/93	41,000	5,400	590	710	5,600	9.49	0.00	6 58
	03/07/94	---	---	---	---	---	8.96	0.26	7 32
	06/17/94						9.70	0.02	6.39

GROUNDWATER TECHNOLOGY ®

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-4587
609 Oak Street, Oakland, California

Well ID/ Elevation	Sample Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
C-2	12/06/89	16,000	250	1,200	550	1,400	---	0.00	---
	10/30/90	28,000	3,700	1,900	1,200	4,300	11.16	0.00	5 68
16.84	01/14/91	24,000	3,300	1,200	1,100	4,100	11.11	0.00	5 73
	01/14/91	30,000	3,900	1,500	1,500	5,000	11.11	0.00	5.73
	04/03/91	12,000	1,100	840	650	1,800	9.53	0.00	7.31
	04/03/91	14,000	1,100	990	680	1,800	9.53	0.00	7.31
	07/17/91	13,000	1,700	560	650	1,700	10.68	0.00	6.16
	07/17/91	14,000	1,700	640	720	1,900	10.68	0.00	6 16
	10/07/91	25,000	3,700	1,300	1,400	3,800	11.02	0.00	5 82
	02/04/92	16,000	2,600	300	880	1,900	10.60	0.00	6.24
	04/01/92	15,000	1,900	300	700	1,500	9.30	0.00	7 54
	06/25/92	23,000	3,400	740	1,300	3,400	10.45	0.00	6.39
	09/17/92	18,000	3,500	550	1,400	3,900	10.78	0.00	6 06
	12/16/92	12,000	1,200	120	460	1,100	9.94	0.00	6 90
	03/18/93	5,200	990	130	290	430	8.80	0.00	8.04
	06/11/93	34,000	8,200	910	2,400	6,600	9 43	0.00	7.41
	09/08/93	3,400	690	26	190	330	---	---	---
	09/17/93	---	---	---	---	---	9.91	0.00	6.93
	12/23/93	2,500	830	26	130	260	9 69	0.00	7.15
	03/07/94	1,100	420	6.5	110	69	8.97	0.00	7.87
	06/17/94	1,400	290	8 6	60	63	9.86	0.00	6 98
C-3	12/06/89	<500	<0.5	<0.5	<0 5	0 74	---	0.00	---
	10/30/90	410	4	4	2	9	10 44	0 00	6.04
16.48	01/14/91	80	<0 5	<0.5	<0.5	1	10.34	0.00	6.14
	04/03/91	53	<0 5	<0.5	<0.5	2	9.01	0.00	7 47
	07/17/91	<50	5.9	<0 5	<0.5	<0.5	10.00	0.00	6.48
	10/07/91	<50	<0 5	<0 5	<0.5	<0.5	10.38	0.00	6 10
	02/04/92	<50	<0.5	<0.5	<0 5	<0.5	10 00	0 00	6 48
	04/01/92	<50	<0.5	<0 5	<0 5	<0.5	8.83	0.00	7.65
	06/25/92	<50	<0.5	<0.5	<0 5	<0 5	9.85	0.00	6 63
	09/17/92	<50	<0.5	<0 5	<0 5	<0.5	10 20	0.00	6.28
	12/16/92	<50	<0.5	<0.5	<0.5	<0 5	9.40	0 00	7.08
	03/18/93	<50	<0.5	<0.5	<0.5	<1.5	8 12	0 00	8.36
	06/11/93	<50	<0.5	<0.5	<0 5	<0 5	8 59	0.00	7 89
	09/08/93	<50	<0.5	<0.5	<0.5	<1 5	---	---	---
	09/17/93	---	---	---	---	---	9 00	0 00	7.48
	12/23/93	<50	<0.5	0.8	<0.5	2 9	8.83	0.00	7.65
	03/07/94	<50	<0.5	<0.5	<0 5	<0.5	8 19	0 00	8 29
	06/17/94	<50	<0.5	<0 5	<0.5	<0 5	9.05	0.00	7.43

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-4587
609 Oak Street, Oakland, California

Well ID/ Elevation	Sample Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
C-4	12/06/89	---	---	---	---	---	---	0.00	---
	10/30/90	<50	<0.5	<0.5	<0.5	<0 5	11.56	0.00	4 97
16.53	01/14/91	<50	<0.5	<0 5	<0.5	<0.5	11.44	0.00	5.09
	04/03/91	150	3	<0.5	12	9	10.00	0.00	6.53
	07/17/91	290	2.3	0.4	52	0 4	11.16	0.00	5 37
	10/07/91	<50	<0.5	<0.5	4.6	<0 5	11.39	0.00	5.14
	02/04/92	<50	<0 5	<0 5	2.8	<0.5	11 02	0.00	5.51
	02/04/92	<50	<0.5	<0 5	2.5	0.5	11.02	0.00	5 51
	04/01/92	480	4.9	<0.5	64	4 3	9.83	0.00	6.70
	06/25/92	<50	<0 5	<0.5	<0.5	<0.5	10.88	0.00	5.65
	09/17/92	<50	<0.5	<0 5	<0 5	<0 5	11.24	0.00	5.29
	12/16/92	56	<0.5	<0.5	1.0	<0 5	10.40	0.00	6.13
	03/18/93	<50	<0.5	<0.5	<0.5	<1.5	9.48	0.00	7.05
	06/11/93	<50	<0.5	<0.5	<0.5	<1.5	9.61	0.00	6.92
	09/08/93	<50	<0.5	<0.5	<0.5	<1.5	---	---	---
	09/17/93	---	---	---	---	---	10.07	0.00	6.46
	12/23/93	<50	1 2	1.5	<0.5	3.2	9 83	0 00	6.70
	03/07/94	60	0.7	1 1	6 7	1 8	9.20	0 00	7.33
	06/17/94	<50	<0 5	<0.5	<0.5	<0.5	9 97	0.00	6.56
C-5	12/06/89	---	---	---	---	---	9.97	0.00	4 73
	10/30/90	<50	0 8	<0.5	<0.5	0.5	---	0.00	---
14.70	01/14/91	54	<0 5	<0.5	<0.5	<0.5	9.87	0 00	4.83
	04/03/91	1,800	330	200	52	170	8 72	0 00	5.98
	07/17/91	170	120	5 3	12	20	9 63	0.00	5.07
	10/07/91	<50	1 1	<0.5	<0 5	<0 5	9.83	0.00	4.87
	02/04/92	91	16	<0.5	2.4	2 0	9.53	0.00	5.17
	04/01/92	960	200	5.4	21	33	8.57	0.00	6.13
	06/25/92	800	2 5	<0.5	1.3	7.3	9.44	0.00	5 26
	09/17/92	<50	<0.5	<0.5	<0.5	<0.5	9.72	0.00	4 98
	12/16/92	81	5.4	1.2	1.5	4.3	9.07	0.00	5.63
	03/18/93	<50	<0.5	<0.5	<0.5	<1.5	8.44	0.00	6 26
	06/11/93	<50	1 6	<0 5	<0.5	<1.5	8 53	0 00	6.17
	09/08/93	<50	<0 5	<0 5	<0.5	<1 5	---	---	---
	09/17/93	---	---	---	---	---	8.89	0.00	5 81
	12/23/93	<50	5.5	1.3	0.7	4.0	8.68	0.00	6 02
	03/07/94	460	180	21	27	70	8 18	0 00	6 52
	06/17/94	<50	10	0 5	1.4	3.3	8.81	0 00	5.89

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-4587
609 Oak Street, Oakland, California

Well ID/ Elevation	Sample Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
C-6	12/06/89	---	---	---	---	---	---	0 00	---
	10/30/90	<50	<0.5	<0.5	<0.5	<0.5	9.43	0.00	4.44
13.87	01/14/91	<0.5	<0.5	<0 5	<0.5	<0.5	9.41	0.00	4 46
	04/03/91	<0.5	<0 5	<0.5	<0 5	<0 5	8.66	0 00	5.21
	07/17/91	<0 5	<0.5	<0.5	<0.5	<0.5	9.25	0.00	4.62
	10/07/91	67	<0.5	0 6	<0.5	0.6	9.34	0.00	4 53
	02/04/92	<50	<0.5	<0 5	<0.5	<0 5	9.16	0.00	4.71
	04/01/92	<50	<0.5	<0.5	<0.5	<0 5	8.59	0.00	5.28
	06/25/92	<50	<0.5	<0.5	<0.5	<0.5	9.11	0.00	4 76
	09/17/92	<50	<0.5	<0.5	<0.5	<0.5	9.28	0.00	4 59
	12/16/92	120	9.3	1.9	2 7	7 4	8.88	0.00	4.99
	03/18/93	<50	<0 5	<0.5	<0.5	<1.5	8.35	0.00	5 52
	06/11/93	<50	<0.5	0 7	<0.5	<1.5	8.21	0 00	5 66
	09/08/93	<50	<0.5	<0 5	<0 5	<1.5	---	---	---
	09/17/93	---	---	---	---	---	8.37	0.00	5.50
	12/23/93	<50	1.4	1.0	<0.5	3.5	8.29	0.00	5.58
	03/07/94	<50	0.8	<0.5	<0.5	<0.5	8 00	0.00	5.87
	06/17/94	<50	<0.5	<0.5	<0.5	<0.5	8 41	0.00	5.46
C-7	02/07/91	<50	<0.5	0 8	<0 5	<0.5	9.88	0.00	5.90
	04/03/91	<50	<0.5	<0.5	<0.5	<0.5	9.04	0.00	6.74
15.78	07/17/91	<50	<0 5	<0.5	<0.5	<0.5	9.86	0 00	5.92
	10/07/91	<50	<0.5	<0.5	<0.5	<0.5	10.10	0.00	5.68
	02/04/92	<50	<0.5	<0.5	<0.5	<0 5	9 74	0.00	6.04
	04/01/92	<50	<0 5	<0.5	<0.5	<0.5	8.96	0.00	6.82
	06/25/92	<50	<0.5	<0.5	<0.5	<0 5	9 62	0.00	6 16
	09/17/92	<50	<0.5	<0 5	<0 5	<0 5	9.75	0.00	6 03
	12/16/92	---	---	---	---	---	9.41	0.00	6 37
	03/18/93	<50	<0.5	<0.5	<0.5	<1.5	8.45	0.00	7.33
	06/11/93	<50	<0.5	<0 5	<0.5	<1.5	8.71	0 00	7.07
	09/08/93	<50	<0 5	<0.5	<0.5	<1.5	---	---	---
	09/17/93	---	---	---	---	---	9.05	0.00	6.73
	12/23/93	<50	1.9	1.4	<0.5	3.6	8 85	0 00	6.93
	03/07/94	<50	2.4	1.3	<0.5	0.6	8 43	0.00	7.35
	06/17/94	<50	<0.5	<0.5	<0.5	1.2	9.07	0 00	6.71

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-4587
609 Oak Street, Oakland, California

Well ID/ Elevation	Sample Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
CR-1	10/30/90	9,600	7,100	65	610	190	10 51	0.00	---
	01/14/91	1,500	3,200	52	190	77	10.29	0 00	---
	07/17/91	15,000	9,300	220	680	530	10.19	0 00	---
	10/07/91	17,000	7,600	50	440	68	10.46	0.00	---
	10/07/91	14,000	9,400	52	430	110	10.46	0.00	---
	02/04/92	19,000	6,100	32	350	100	10.12	0.00	---
	04/01/92	29,000	5,300	820	380	1,200	9.24	0.00	---
	06/25/92	12,000	3,300	280	210	460	10.03	0 00	---
	09/17/92	---	---	---	---	---	10.30	0.00	---
	12/16/92	---	---	---	---	---	9.59	Sheen	---
	03/18/93	---	---	---	---	---	8.82	0.05	---
	06/11/93	---	---	---	---	---	9.58	0.67	---
	09/08/93	---	---	---	---	---	---	---	---
	09/17/93	---	---	---	---	---	---	---	---
	12/23/93	---	---	---	---	---	9 02	0 02	---
	03/07/94	---	---	---	---	---	8 41	0.04	---
	06/17/94	---	---	---	---	---	---	*	---
TBLB	10/30/90	---	---	---	---	---	---	---	---
	01/14/91	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	02/07/91	<50	<0.5	<0 5	<0.5	<0.5	---	---	---
	04/03/91	<50	<0 5	<0 5	<0.5	<0 5	---	---	---
	07/17/91	<50	<0 5	<0.5	<0 5	<0 5	---	---	---
	10/07/91	<50	<0.5	<0 5	<0 5	<0 5	---	---	---
	02/04/92	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	04/01/92	<50	<0.5	<0.5	<0 5	<0.5	---	---	---
	06/25/92	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	09/17/92	<50	<0.5	<0.5	<0.5	<0 5	---	---	---
	12/16/92	<50	<0 5	<0.5	<0.5	<0.5	---	---	---
	03/18/93	<50	<0 5	<0 5	<0.5	<1.5	---	---	---
	06/11/93	<50	<0.5	<0 5	<0.5	<0 5	---	---	---
	09/08/93	<50	<0 5	<0.5	<0.5	<1.5	---	---	---
	09/17/93	---	---	---	---	---	---	---	---
	12/23/93	<50	<0.5	<0 5	<0 5	<0 5	---	---	---
	03/07/94	<50	<0 5	<0.5	<0.5	<0 5	---	---	---
	06/17/94	<50	<0.5	<0 5	<0.5	<0 5	---	---	---

TABLE 1
HISTORICAL GROUNDWATER ANALYTICAL RESULTS AND MONITORING DATA
Chevron Service Station No. 9-4587
609 Oak Street, Oakland, California

Well ID/ Elevation	Sample Date	TPH-G	Benzene	Toluene	Ethyl-benzene	Xylenes	DTW (ft)	SPT (ft)	WTE (ft)
Rinsate	10/30/90	<50	<0.5	0 6	<0.5	<0.5	---	---	---
	10/07/91	<50	<0.5	0.5	<0.5	<0.5	---	---	---
	02/04/92	<50	<0.5	<0.5	<0.5	<0 5	---	---	---
	04/01/92	<50	<0.5	<0 5	<0 5	<0.5	---	---	---
	06/25/92	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	09/17/92	<50	<0.5	<0 5	<0 5	<0.5	---	---	---
	12/16/92	<50	<0.5	<0.5	<0 5	<0.5	---	---	---
	06/11/93	<50	<0.5	<0.5	<0.5	<0.5	---	---	---
	12/23/93	<50	0.8	1.0	<0 5	0.6	---	---	---
	03/07/94	<50	<0.5	<0.5	<0.5	<0 5	---	---	---

TPH-G = Total petroleum hydrocarbons-as-gasoline
DTW = Depth to water
SPT = Separate-phase hydrocarbon thickness
WTE = Water table elevation
--- = Not applicable, not sampled, not measured
* = Depth to product 9.27 feet on 06/17/94, unable to determine thickness due to pumping equipment inhibiting access.

Concentrations in parts per billion
Data from December 6, 1989, to December 16, 1992, are from Alton GeoSciences report dated January 26, 1993.

GROUNDWATER TECHNOLOGY ®

TABLE 2
PRODUCT RECOVERY PROGRAM
Chevron Service Station No. 9-4587
609 Oak Street, Oakland, California

Date	Well ID	Amount Product Bailed (gallons)	Total Product Bailed (gallons)
10/01/93	CR1*	0	0
10/01/93	C-1	0.01	0.01
10/01/93	C-C	0.01	0.01
10/01/93	C-B	0.03	0.03

* Pumping well, unable to bail product.

ATTACHMENT 3

Groundwater Monitoring and Sample Collection Protocol
and
Field Data Sheets

GROUNDWATER TECHNOLOGY GROUNDWATER MONITORING AND SAMPLE COLLECTION PROTOCOL

Groundwater Monitoring

Groundwater monitoring is accomplished using a INTERFACE PROBE™ Well Monitoring System. The INTERFACE PROBE™ Well Monitoring System is a hand held, battery operated device for measuring the depth to separate-phase hydrocarbons and depth to water. The INTERFACE PROBE™ Well Monitoring System consists of a dual-sensing probe which utilizes an optical liquid sensor and electrical conductivity to distinguish between water and petroleum products.

Monitoring is accomplished by measuring from the surveyed top of well casing or grade to groundwater and separate-phase hydrocarbons if present. The static water elevation is then calculated for each well and a potentiometric surface map is constructed. If separate-phase hydrocarbons are detected the water elevation is adjusted by the following calculation:

(Product thickness) x (0.8) + (Water elevation) = Corrected water elevation

Groundwater monitoring wells are monitored in order of wells with lowest concentrations of volatile organic compounds to wells with the highest concentrations, based upon historical concentrations. If separate-phase hydrocarbons are encountered in a well, the product is visually inspected to confirm and note color, amount, and viscosity. Monitoring equipment is washed with laboratory grade detergent and rinsed with distilled or deionized water before monitoring each well.

Groundwater Sampling

Before groundwater samples are collected, sufficient water is purged from each well to ensure representative formation water is entering the well. Wells are purged and sampled in the same order as monitoring, from wells with the lowest concentrations of volatile organic compounds to wells with the highest concentrations. Wells are purged using either a polyvinyl chloride (PVC) bailer fitted with a check valve or with a stainless steel submersible Grundfos pump. The purge equipment is decontaminated before use in each well by washing with laboratory grade detergent and tripled rinsing with deionized or distilled water. A minimum of 3 well-casing volumes of water are removed from each well while pH, electrical conductivity, and temperature are recorded to verify that "fresh" formation water is being sampled and the parameters have stabilized. If the well is low yielding, it may be purged dry and sampled before 3 casing volumes are purged. The wells are then allowed to recharge to approximately 80 percent of the initial water level before a sample is collected.

Groundwater samples are collected from each well using a new, prepackaged disposable bailer and string. The water sample is decanted from the bailer into laboratory-provided containers (appropriate for the analyses required) so that there is no headspace in the containers. Samples collected for benzene, toluene, ethylbenzene, xylene, and total petroleum hydrocarbons (TPH)-as-gasoline analyses are collected in 40-milliliter vials fitted with Teflon® septum lids. Samples are preserved with hydrochloric acid (HCL) to a pH of less than 2. Dissolved metals samples are filtered through a 0.45-micron paper filter in the field and preserved as required before submitting to the laboratory for analyses. All samples are labeled immediately upon collection and logged on the chain-of-custody record. Sample label and chain-of-custody recorded information includes the project name and number, sample identification, date and time of collection, analyses requested, and the sampler's name. Sample bottles are placed in plastic bags (to protect the bottles and labels) and on ice (frozen water) in an insulated cooler and are shipped under chain-of-custody protocol to the laboratory.

The chain-of-custody record documents who has possession of the samples until the analyses is performed. Other pertinent information is also noted for the laboratory use on the chain-of-custody record.

Trip blanks (TBLBs) are used for each project as a quality assurance/quality control measure. The TBLBs are prepared by the laboratory and are placed in the insulated cooler and accompany the field samples throughout the sampling event.

Project Name: Chevron - Oak. Date: 6/18/94

Site Address: 609 Oak St., Oakland Page 1 of 7

Project Number: 020104084.0610 Project Manager: Tim Watchers

Well ID: C-3

Well Diameter: 3

DTW Measurements:
Initial: 9.05 Calc Well Volume: 13 gal
Recharge: _____ Well Volume: _____ gal

Purge Method
Peristaltic_____
Gear Drive_____
Submersible X

Pump Depth_____ft.
Hand Bailed_____
Air Lift_____
Other_____

Instruments Used
YSI: X
Hydac: _____
Omega: _____
Other: _____

Time	Temp X C / F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
0855	16.7	.32	6.45	2		
0857	17.3	.35	5.69	6		
0858	17.3	.35	5.68	7	DRY	

Project Name: Chevron - Oak.

Site Address: 609 Oak St., Oakland

Project Number: 020104084.0610

Date: 6/18/94

Page 2 of 7

Project Manager: Tim Watchers

Well ID: C-7

Well Diameter: 2

DTW Measurements:
Initial: 9.07
Recharge:

Calc Well Volume: 10 gal
Well Volume: gal

Purge Method
Peristaltic
Gear Drive
Submersible X

Pump Depth ft.
Hand Bailed
Air Lift
Other

Instruments Used
YSI: X
Hydac:
Omega:

Other:

Time	Temp X C / F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
09:18	17.9	.39	6.00	1		
09:19	18.7	.40	6.25	3		
09:21	18.9	.40	6.30	7		
09:22	18.8	.40	6.32	10		

Project Name: Chevron - Oak

Site Address: 609 Oak St., Oakland

Project Number: 020104084.0610

Date: 9/18/94

Page 3 of 7

Project Manager: Tim Watchers

Well ID: C-4

Well Diameter: 2

DTW Measurements:
Initial: 9.97
Recharge: _____

Calc Well Volume: 10 gal
Well Volume: _____ gal

Purge Method
Peristaltic _____
Gear Drive _____
Submersible X

Pump Depth _____ ft.
Hand Bailed _____
Air Lift _____
Other _____

Instruments Used
YSI: X
Hydac: _____
Omega: _____
Other: _____

Time	Temp X C / F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
09:41	20.0	.38	6.35	2		
09:43	20.2	.38	6.38	5		
09:44	20.3	.41	6.38	7		
09:45	20.3	.41	6.39	10		

Project Name: Chevron - Oak. Date: 1/18/94

Site Address: 609 Oak St., Oakland Page 4 of 7

Project Number: 020104084.0610 Project Manager: Tim Watchers

Well ID: C-5

Well Diameter: 2

DTW Measurements:
Initial: 8.81 Calc Well Volume: 11 gal
Recharge: _____ Well Volume: _____ gal

Purge Method
Peristaltic_____
Gear Drive_____
Submersible X

Pump Depth _____ ft.
Hand Bailed_____
Air Lift_____
Other_____

Instruments Used
YSI: X
Hydac: _____
Omega: _____
Other: _____

Time	Temp X C / F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
10:02	20.5	.47	6.43	2		
10:03	20.5	.46	6.49	5		
10.04	20.6	.47	6.48	8		
10:06	20.6	.48	6.48	11		

Project Name: Chevron - Oak.

Site Address: 609 Oak St., Oakland

Project Number: 020104084.0610

Date: 4/18/14

Page 5 of 7

Project Manager: Tim Watchers

Well ID: C-6

Well Diameter: 2

DTW Measurements:
Initial: 8.41
Recharge:

Calc Well Volume: 11 gal
Well Volume: gal

Purge Method
Peristaltic
Gear Drive
Submersible X

Pump Depth ft.
Hand Bailed
Air Lift
Other

Instruments Used
YSI: X
Hydac:
Omega:

Other:

Time	Temp X C / F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
10:23	20.0	.42	6.53	2		
10:24	19.2	.48	6.61	5		
10:26	19.3	.48	6.62	8		
10:27	19.3	.48	6.62	11		

Project Name: Chevron - Oak.

Site Address: 609 Oak St., Oakland

Project Number: 020104084.0610

Date: 5/11/97

Page 6 of 7

Project Manager: Tim Watchers

Well ID: C-2

Well Diameter: 3

DTW Measurements:
Initial: 9.36
Recharge:

Calc Well Volume: 12 gal
Well Volume: gal

Purge Method
Peristaltic
Gear Drive
Submersible X

Pump Depth ft.
Hand Bailed
Air Lift
Other

Instruments Used
YSI: X
Hydac:
Omega:

Other:

Time	Temp X C / F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
10:44	19.1	.60	6.44	3		
10:46	19.3	.59	6.46	6		
10:47	19.2	.50	6.49	9	DRY	

Project Name: Chevron - Oak. Date: 1/11/99

Site Address: 609 Oak St., Oakland Page 1 of 7

Project Number: 020104084.0610 Project Manager: Tim Watchers

Well ID: C-A

Well Diameter: 2

DTW Measurements:
Initial: 10.05 Calc Well Volume: 5 gal
Recharge: _____ Well Volume: _____ gal

Purge Method
Peristaltic_____
Gear Drive_____
Submersible_____

Pump Depth_____ ft.
Hand Bailed X
Air Lift_____
Other_____

Instruments Used
YSI: X
Hydac: _____
Omega: _____
Other: _____

Time	Temp X C / F	Conductivity	pH	Purge Volume Gallons	Turbidity	Comments
11:03	19.2	.45	6.55	1		
11:04	19.3	.48	6.56	3	DRY	

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: TIM WATCHERS

Project 9-4587
Reported 07/05/94

TOTAL PETROLEUM HYDROCARBONS

Lab #	Sample Identification	Sampled	Analyzed	Matrix
30601- 1	TB-LB	06/17/94	06/27/94	Water
30601- 2	C-3	06/17/94	06/27/94	Water
30601- 3	C-7	06/17/94	06/27/94	Water
30601- 4	C-4	06/17/94	06/30/94	Water
30601- 5	C-5	06/17/94	06/27/94	Water
30601- 6	C-6	06/17/94	06/30/94	Water
30601- 7	C-2	06/17/94	06/27/94	Water
30601- 8	C-A	06/17/94	06/27/94	Water

RESULTS OF ANALYSIS

Laboratory Number:	30601- 1	30601- 2	30601- 3	30601- 4	30601- 5
Gasoline:	ND<50	ND<50	ND<50	ND<50	ND<50
Benzene:	ND<0.5	ND<0.5	ND<0.5	ND<0.5	10
Toluene:	ND<0.5	ND<0.5	ND<0.5	ND<0.5	0.5
Ethyl Benzene:	ND<0.5	ND<0.5	ND<0.5	ND<0.5	1.4
Total Xylenes:	ND<0.5	ND<0.5	1.2	ND<0.5	3.3
Concentration:	ug/L	ug/L	ug/L	ug/L	ug/L

Laboratory Number:	30601- 6	30601- 7	30601- 8
Gasoline:	ND<50	1400	77000
Benzene:	ND<0.5	290	32000
Toluene:	ND<0.5	8.6	3600
Ethyl Benzene:	ND<0.5	60	3200
Total Xylenes:	ND<0.5	63	14000
Concentration:	ug/L	ug/L	ug/L

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

QA/QC INFORMATION
SET: 30601

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:	93/93	0%	70-130
Benzene:	74/72	3%	70-130
Toluene:	95/98	3%	70-130
Ethyl Benzene:	109/112	3%	70-130
Total Xylenes:	119/122	2%	70-130

Michael R. Veron
Senior Chemist

Certified Laboratories

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

30601

Chain-of-Custody-Record

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

Chevron Facility Number 9-4587
Facility Address 609 OAK ST
Consultant Project Number 620104111 0610
Consultant Name Groundwater Technology, Inc.
Address 4057 Port Chicago Hwy, Concord, CA. 94520
Project Contact (Name) Tim Watchers
(Phone) 510-671-2387 (Fax Number)

Chevron Contact (Name) Mark Miller
(Phone) (510) 842-8134
Laboratory Name Superior
Laboratory Release Number 832-7510
Samples Collected by (Name) Greg MASON
Collection Date 6/17/94
Signature

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	BTEX + TPH GAS (8020 + 8015)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd,Cr,Pb,Zn,Ni (ICAP or AA)					Remarks
TBLB		2	W		11:10	HCl	Y	X												
C-3		3			11:25			X												
C-7		3			11:30			X												
C-4		3			11:35			X												
C-5		3			11:40			X												
C-6		3			11:45			X												
C-2		3			11:50			X												
C-A		3			11:55			X												

NOTE:
DO NOT BILL
TB-LB SAMPLES

Please Initial:
Samples Stored in ice. yes SC
Appropriate containers
Samples preserved
VOA's without headspace
Comments:

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
	GTI	4/17		AERO	4:45 4-22-94
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
	AERO	5:05 6-22-94			
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time
				Super	5:30 6-22-94

Turn Around Time (Circle Choice)
24 Hrs.
48 Hrs.
5 Days
10 Days
As Contracted