Chevron

Chevron U.S.A. Products Company
2410 Camino Ramon
San Ramon, CA 94583
P.O. Box 5004
San Ramon, CA 94583-0804

Marketing Department
Phone 510 842 9500

October 22, 1993

Ms. Eva Chu
Alameda County Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

Re: Chevron Station # 9-5542, 7007 San Ramon Valley Blvd., Dublin, CA
Attached groundwater monitoring report (Sierra, 4/22/93)
Attached groundwater monitoring report (Sierra, 8/11/93)

93 OCT 27 PM 2:15

Dear Ms. Chu:

Attached are reports dated April 22, 1993 and August 11, 1993, which were prepared by Chevron's consultant, Sierra Environmental Services (Sierra), to describe groundwater monitoring performed at the subject site on March 22, 1993 and July 25, 1993.

The direction of the groundwater gradient measured during the March monitoring event was toward the east. Six of the eight groundwater monitoring wells were sampled and analyzed for the presence of TPHGas and BTEX constituents. Monitoring well MW-4 was also analyzed for oil and grease constituents. Dissolved hydrocarbons were detected in monitoring wells MW-3, -4, -6, and MW-8. Dissolved hydrocarbons were not detected in monitoring wells MW-2 and MW-5. Downhole equipment present in MW-1 prevented Sierra from gauging and sampling this well. Monitoring well MW-7 could not be located.

During the July site monitoring event the direction of groundwater flow was measured to be toward the east-northeast. Dissolved hydrocarbons were detected in monitoring wells MW-3, -4, and MW-6. Dissolved hydrocarbons were not present above detection limits in wells MW-2, -5, and MW-8. Monitoring wells MW-1 and MW-7 were not gauged or sampled. The levels of dissolved hydrocarbons detected in MW-4 were higher than those measured during previous site monitoring events. Chevron will continue to evaluate groundwater conditions at this location during the third quarter groundwater monitoring event.

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

Sincerely,

Brett L Newton

Chevron

Brett L. Hunter
Environmental Engineer
Site Assessment and Remediation

Attachments

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

APR 30 '93 J.M.M.

SIERRA
Environmental Services

April 22, 1993

Clint Rogers
Chevron USA
P.O. Box 5004
San Ramon, CA 94583

Re: Chevron Service Station #9-5542
7007 San Ramon Road
Dublin, California
SES Project #1-214-04

Dear Mr. Rogers:

This report presents the results of the quarterly ground water sampling at Chevron Service Station #9-5542, located at 7007 San Ramon Road in Dublin, California. Six wells, MW-2 through MW-6 and MW-8, were sampled (Figure 1).

On March 10 and 22, 1993, SES personnel visited the site. Water level measurements were collected from six wells and all were checked for the presence of free-phase hydrocarbons. Free-phase hydrocarbons were not present in any of the site wells. Water level data are shown in Table 1 and ground water elevation contours are included on Figure 1.

The ground water samples were collected on March 10 and 22, 1993 in accordance with SES Standard Operating Procedure - Ground Water Sampling (attached). All analyses were performed by GTEL of Concord, California. Analytic results for ground water are presented in Table 2. The chain of custody document and laboratory analytic reports are attached. SES is not responsible for laboratory omissions or errors.

Thank you for allowing us to provide services to Chevron. Please call if you have any questions.

REGISTERED PROFESSIONAL ENGINEER
CHRIS J. BRAMER
C 048846
CIVIL
STATE OF CALIFORNIA

Sincerely,
Sierra Environmental Services

Argy Mena
Staff Geologist

Chris J. Bramer
Professional Engineer #C48846

93 OCT 27 PM 2:16

AJM/CJB/dcp
21404QM.AP3

Attachments: Figure
Tables
SES Standard Operating Procedure
Chain of Custody Document and Laboratory Analytic Reports

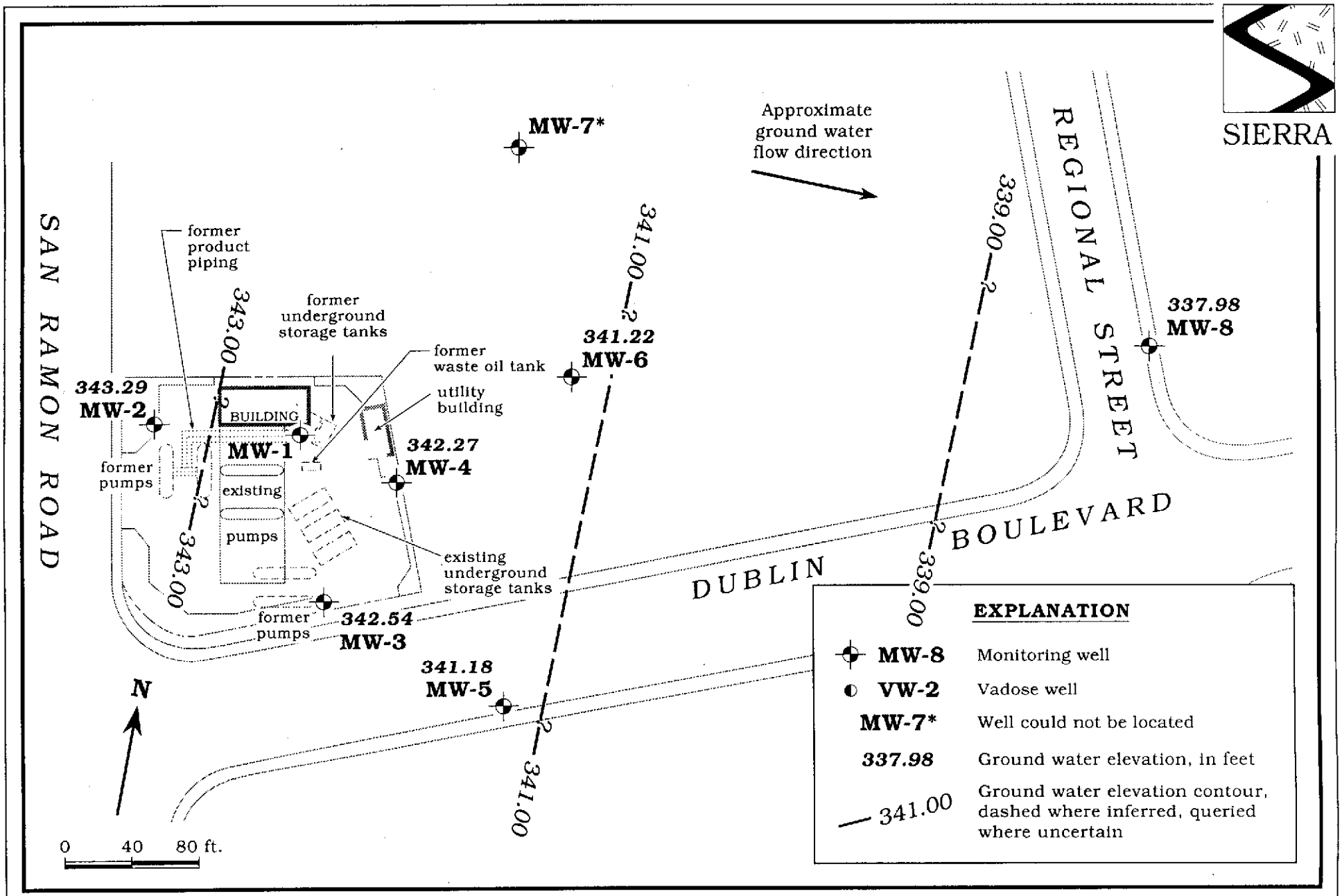

Figure 1. Monitoring Well Location and Ground Water Elevation Contour Map - March 22, 1993 - Chevron Service Station #9-5542, 7007 San Ramon Road, Dublin, California

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Table 1. Water Level Data and Well Construction Details - Chevron Service Station #9-5542, 7007 San Ramon Road, Dublin, California

Well ID	Date Measured	DTW (ft)	TOC (msl)	GWE (msl)	Product Thickness* (ft)	Screen Interval	Sand Pack Interval	Bentonite/Grout Interval
						<----------*feet below grade*---------->		
MW-1	5/31/91	25.67	363.98[1]	338.31	0	20.0 - 35.0	19.5 - 35.5	0 - 19.5
	6/21/91	26.23		337.75	0			
	7/17/91	26.53		337.45	0			
	10/4/91	27.90		336.08	0			
	12/19/91	28.12		335.86	0			
	3/19/92	24.63		339.35	0			
	6/19/92	26.23	364.32[2]	338.09	0			
	9/22/92	27.73		336.59	0			
	12/18/92	26.76		337.56	0			
	3/22/93[4]	---		---	---			
MW-2	5/31/91	25.51	364.19[1]	338.68	0	22.0 - 37.0	20.0 - 37.0	0 - 20.0
	6/21/91	26.13		338.06	0			
	7/17/91	26.46		337.73	0			
	10/4/91	27.79		336.40	0			
	12/19/91	28.06		336.13	0			
	3/19/92	24.46		339.73	0			
	6/19/92	26.10	364.64[2]	338.54	0			
	9/22/92	27.60		337.04	0			
	12/18/92	26.32		338.32	0			
	3/22/93	**21.39**		**343.29**	**0**			
MW-3	5/31/91	23.20	361.92[1]	338.72	0	20.0 - 35.0	19.0 - 35.0	0 - 19.0
	6/21/91	24.13		337.79	0			
	7/17/91	24.59		337.73	0			
	9/20/91	25.98		335.94	0			
	12/19/91	26.24		335.68	0			
	3/19/92	22.46		339.46	0			
	6/19/92	24.32	362.26[2]	337.94	0			
	9/22/92	25.84		336.42	0			
	12/18/92	24.40		337.86	0			
	3/22/93	**19.72**		**342.54**	**0**			

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Table 1. Water Level Data and Well Construction Details - Chevron Service Station #9-5542, 7007 San Ramon Road, Dublin, California

Well ID	Date Measured	DTW (ft)	TOC (msl)	GWE (msl)	Product Thickness* (ft)	Screen Interval	Sand Pack Interval	Bentonite/Grout Interval
						<----------*feet below grade*---------->		
MW-4	5/31/91	24.67	362.70[1]	338.03	0	20.0 - 35.0	19.0 - 35.0	0 - 19.0
	6/21/91	25.31		337.39	0			
	7/17/91	25.73		336.97	0			
	10/4/91	27.08		335.62	0			
	12/19/91	27.24		335.46	0			
	3/19/92	23.66		339.04	0			
	6/19/92	25.33	363.07[2]	337.74	0			
	9/22/92	26.90		336.17	0			
	12/18/92	25.62		337.45	0			
	3/22/93	**20.80**		**342.27**	**0**			
MW-5	6/21/91	23.17	359.95[1]	336.78	0	21.0 - 36.0	19.5 - 36.0	0 - 19.5
	7/17/91	23.68		336.27	0			
	10/4/91	25.20		334.75	0			
	12/19/91	25.20		334.75	0			
	3/19/92	21.21		338.74	0			
	6/19/92	23.42	360.28[2]	336.86	0			
	9/22/92	24.97		335.31	0			
	12/18/92	23.52		336.76	0			
	3/22/93	**19.10**		**341.18**	**0**			
MW-6	6/21/91	23.55	360.22[1]	336.67	0	20.0 - 35.0	18.5 - 35.0	0 - 18.5
	7/17/91	24.00		336.22	0			
	10/4/91	25.29		334.93	0			
	12/19/91	25.34		334.88	0			
	3/19/92	22.05		338.17	0			
	6/19/92	23.52	360.58[2]	337.06	0			
	9/22/92	25.60		334.98	0			
	12/18/92	24.18		336.40	0			
	3/22/93	**19.36**		**341.22**	**0**			

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Table 1. Water Level Data and Well Construction Details - Chevron Service Station #9-5542, 7007 San Ramon Road, Dublin, California

Well ID	Date Measured	DTW (ft)	TOC (msl)	GWE (msl)	Product Thickness* (ft)	Screen Interval	Sand Pack Interval	Bentonite/Grout Interval
						<----------*feet below grade*---------->		
MW-7	6/21/91	23.45	360.63[1]	337.18	0	20.0 - 35.0	18.5 - 35.0	0 - 18.5
	7/17/91	23.90		336.73	0			
	10/4/91	25.03		335.60	0			
	12/19/91	25.10		335.53	0			
	3/19/92	22.74		337.89	0			
	6/19/92[3]	---	360.99[2]	---	---			
	9/22/92[3]	---		---	---			
	12/18/92[3]	---		---	---			
	3/22/93[5]	**---**		**---**	**---**			
MW-8	12/12/91	22.54	---	---	0	---	---	---
	6/19/92	20.47	354.89[2]	334.42	0			
	9/22/92	29.80		325.09	0			
	12/18/92	21.18		333.71	0			
	3/22/93	**16.91**		**337.98**	**0**			

EXPLANATION:

DTW = Depth to water
TOC = Top of casing elevation
GWE = Ground water elevation
msl = Measurements referenced relative to mean sea level
--- = Not available/not applicable

NOTES:

Well construction details for MW-1 through MW-4 were compiled from a draft report prepared by Chempro, undated.

* 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 inaccessible due to downhole equipment, therefore no water level measurement was collected.

5 Monitoring well not located since March 1992 sampling event.

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Table 2. Analytic Results for Ground Water - Chevron Service Station #9-5542, 7007 San Ramon Road, Dublin, California

Sample ID	Date	Analytic Method	Analytic Lab	TPPH(G)	O&G	B	T	E	X	Other HVOCs	1,2-DCA	EDB	OL
				<----------ppb---------->									
MW-1	4/3-4/90	8015/602/504	*	46,000	---	8,400	7,400	860	5,600	---	---	1.04	---
(D)	4/3-4/90	8015/602/504	*	43,000	---	8,400	7,200	840	5,200	---	---	1.1	---
	5/31/91	8015/8020/8010	SAL	31,000	---	7,400	2,500	630	2,100	ND[1]	2	---	---
	5/31/91	503E	SAL	---	<5,000	---	---	---	---	---	---	---	---
	9/20/91	8015/8020/8010	SAL	31,000	---	3,000	2,800	610	3,100	ND[1]	0.6	---	---
	12/19/91	8015/8020/8010	SPA	20,000	---	5,200	1,700	560	2,000	ND[1]	3.3	---	---
	3/19/92	8015/8020/8010	SPA	30,000	---	8,500	3,600	590	2,400	ND[1]	2.7	---	---
	6/19/92	8015/8020	SPA	25,000	---	1,100	2,000	520	1,800	---	---	---	---
	9/22/92	8015/8020	SPA	21,000	---	8,000	3,500	670	2,900	---	---	---	---
	12/18/92	8015/8020	SPA	79,000	---	12,000	12,000	1,600	8,500	---	---	---	---
	3/10/93[e]	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	4/3-4/90	8015/602/504	*	<50	---	<0.3	<0.3	<0.3	<0.6	---	---	<0.02	---
	5/31/91	8015/8020/8010	SAL	100	---	3.1	4.2	0.7	2.0	ND[1]	<0.5	---	---
	5/31/91	503E	SAL	---	<5,000	---	---	---	---	---	---	---	---
	9/20/91	8015/8020	SAL	68	---	1.3	1.6	0.8	3.0	---	---	---	---
	12/19/91	8015/8020	SPA	<50	---	0.6	1.2	0.8	2.5	---	---	---	---
	3/19/92	8015/8020	SPA	<50	---	2.5	2.0	1.1	2.4	---	---	---	---
	6/19/92	8015/8020	SPA	<50	---	<0.5	0.6	0.7	1.2	---	---	---	---
	9/22/92	8015/8020	SPA	200	---	16	42	6.1	32	---	---	---	---
	12/18/92	8015/8020	SPA	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	3/22/93	**8015/8020**	**GTEL**	**<50**	---	**<0.5**	**<0.5**	**<0.5**	**<0.5**	---	---	---	---
MW-3	4/3-4/90	8015/602/504	*	2,200	---	36	5	6	17	---	---	<0.02	---
	5/31/91	8015/8020/8010	SAL	2,200	---	130	11	31	78	ND[1]	19	---	---
	5/31/91	503E	SAL	---	<5,000	---	---	---	---	---	---	---	---
	9/20/91	8015/8020	SAL	2,200	---	190	6.0	24	32	---	---	---	---
	12/19/91	8015/8020	SPA	640	---	73	27	17	56	---	---	---	---
	3/19/92	8015/8020	SPA	4,500	---	1,000	15	91	240	---	---	---	---
	6/19/92	8015/8020	SPA	1,100	---	89	3.3	9.1	13	---	---	---	---
	9/22/92	8015/8020	SPA	1,400	---	81	51	15	49	---	---	---	---
	12/18/92	8015/8020	SPA	1,100	---	2.0	1.1	53	38	---	---	---	---
	3/22/93	**8015/8020**	**GTEL**	**1,600**	---	**96**	**9**	**14**	**91**	---	---	---	---

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Table 2. Analytic Results for Ground Water - Chevron Service Station #9-5542, 7007 San Ramon Road, Dublin, California (continued)

Sample ID	Date	Analytic Method	Analytic Lab	TPPH(G)	O&G	B	T	E	X	Other HVOCs	1,2-DCA	EDB	OL
				<----------ppb---------->									
MW-4	4/3-4/90	8015/413.1/602/504	*	43,000	18,000	4,000	5,000	790	5,500	---	---	<0.02	---
	4/3-4/90	624**	*	---	---	6,000	8,200	1,500	---	---	---	---	---
	5/31/91	8015/8020/8010	SAL	34,000	---	2,900	2,900	680	3,300	ND[1]	<0.5	---	---
	5/31/91	503E	SAL	---	<5,000	---	---	---	---	---	---	---	---
	9/20/91	8015/8020/8010	SAL	37,000	---	4,000	3,200	580	3,000	ND[1]	9.2	---	---
	12/19/91	8015/8020/8010	SPA	41,000	---	5,500	4,900	1,000	4,400	ND[1]	17	---	---
	3/19/92	8015/8020/8010	SPA	21,000	---	3,800	2,900	500	3,200	ND[2]	15	---	---
	6/19/92	8015/5520/8020	SPA	27,000	<5,000	1,800	1,600	570	1,900	---	---	---	---
	9/22/92	8015/5520/8020	SPA	20,000	<5,000	4,100	2,700	670	3,200	---	---	---	---
	12/18/92	8015/5520/8020	SPA	15,000	<5,000	2,200	2,000	370	1,600	---	---	---	---
	3/22/93	**8015/5520/8020**	**GTEL**	**41,000**	**5,000**	**3,900**	**5,100**	**840**	**4,500**	**---**	**---**	**---**	**---**
MW-5	6/21/91	8015/8020	SAL	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	6/21/91	8010/LUFT	SAL	---	---	---	---	---	---	ND[1]	<0.5	---	<4,000
	9/20/91	8015/8020	SAL	170[3]	---	0.8	0.9	<0.5	1.5	---	---	---	---
	12/19/91	8015/8020	SPA	<50	---	0.7	0.7	<0.5	1.4	---	---	---	---
	3/19/92	8015/8020	SPA	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	6/19/92	8015/8020	SPA	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	9/22/92	8015/8020	SPA	150	---	13	34	5.0	26	---	---	---	---
	12/18/92	8015/8020	SPA	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	3/10/93	**8015/8020**	**GTEL**	**<50**	**---**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**---**	**---**	**---**	**---**
MW-6	6/21/91	8015/8020	SAL	3,700	---	50	2.6	150	340	---	---	---	---
	6/21/91	8010/LUFT	SAL	---	---	---	---	---	---	ND[1]	<0.5	---	<4,000
	9/20/91	8015/8020	SAL	3,200	---	28	<0.5	140	100	---	---	---	---
	12/19/91	8015/8020	SPA	380	---	2.7	4.0	15	10	---	---	---	---
	3/19/92	8015/8020	SPA	3,400	---	57	4.5	330	360	---	---	---	---
	6/19/92	8015/8020	SPA	980	---	11	4.2	57	38	---	---	---	---
	9/22/92	8015/8020	SPA	1,100	---	22	41	77	58	---	---	---	---
	12/18/92	8015/8020	SPA	1,900	---	3.2	1.3	58	47	---	---	---	---
	3/10/93	**8015/8020**	**GTEL**	**1,400**	**---**	**30**	**9**	**8**	**22**	**---**	**---**	**---**	**---**

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Table 2. Analytic Results for Ground Water - Chevron Service Station #9-5542, 7007 San Ramon Road, Dublin, California (continued)

Sample ID	Date	Analytic Method	Analytic Lab	TPPH(G)	O&G	B	T	E	X	Other HVOCs	1,2-DCA	EDB	OL
				<----------ppb---------->									
MW-7	6/21/91	8015/8020	SAL	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	6/21/91	8010/LUFT	SAL	---	---	---	---	---	---	ND[1]	<0.5	---	<4,000
	9/20/91	8015/8020	SAL	69	---	4.4	3.3	1.2	3.9	---	---	---	---
	12/19/91	8015/8020	SPA	<50	---	0.9	2.8	1.7	5.9	---	---	---	---
	3/19/92	8015/8020	SPA	<50	---	1.1	0.6	0.9	2.5	---	---	---	---
	6/19/92[4]	---	---	---	---	---	---	---	---	---	---	---	---
	9/22/92[4]	---	---	---	---	---	---	---	---	---	---	---	---
	12/18/92[4]	---	---	---	---	---	---	---	---	---	---	---	---
	3/22/93[7]	---	---	---	---	---	---	---	---	---	---	---	---
MW-8	12/12/91	8015/8020	SPA	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	6/19/92	8015/8020	SPA	<50	---	1.2	1.4	0.5	2.9	---	---	---	---
	9/22/92	8015/8020	SPA	180	---	17	42	6.0	31	---	---	---	---
	12/18/92	8015/8020	SPA	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	3/10/93	**8015/8020**	**GTEL**	**<50**	---	**0.8**	**2**	**<0.5**	**2**	---	---	---	---
Trip Blank (MW-AA)	5/31/91	8015/8020	SAL	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	6/21/91	8015/8020	SAL	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	9/20/91	8015/8020	SAL	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	12/19/91	8015/8020	SPA	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	3/19/92	8015/8020	SPA	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
(TB-LB)	6/19/92	8015/8020	SPA	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	9/22/92	8015/8020	SPA	92[5]	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	12/18/92	8015/8020	SPA	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	3/10/93	**8015/8020**	**GTEL**	**<50**	---	**<0.5**	**<0.5**	**<0.5**	**<0.5**	---	---	---	---
	3/22/93	**8015/8020**	**GTEL**	**<50**	---	**<0.5**	**<0.5**	**<0.5**	**<0.5**	---	---	---	---
Bailer Blank (MW-BB)	5/31/91	8015/8020	SAL	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	6/21/91	8015/8020	SAL	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	9/20/91	8015/8020	SAL	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	12/19/91	8015/8020	SPA	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	3/19/92	8015/8020	SPA	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---

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Table 2. Analytic Results for Ground Water - Chevron Service Station #9-5542, 7007 San Ramon Road, Dublin, California (continued)

Sample ID	Date	Analytic Method	Analytic Lab	TPPH(G)	O&G	B	T	E	X	Other HVOCs	1,2-DCA	EDB	OL
				<----------ppb---------->									
Bailer Blank	6/19/92	8015/8020	SPA	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
(MW-BB)	9/22/92	8015/8020	SPA	<50	---	<0.5	<0.5	<0.5	0.8	---	---	---	---
(cont)	12/21/92	8015/8020	SPA	<50	---	<0.5	<0.5	<0.5	<0.5	---	---	---	---
	3/10/93	**8015/8020**	**GTEL**	**<50**	**---**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**---**	**---**	**---**	**---**
	3/22/93	**8015/8020**	**GTEL**	**<50**	**---**	**<0.5**	**<0.5**	**<0.5**	**0.6**	**---**	**---**	**---**	**---**

EXPLANATION:

TPPH(G) = Total Purgeable Petroleum Hydrocarbons as Gasoline
O&G = Oil and Grease
B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylenes
HVOCs = Halogenated Volatile Organic Compounds
1,2-DCA = 1,2-Dichloroethane
EDB = Ethylene dibromide
OL = Organic lead
ppb = Parts per billion
D = Duplicate sample
--- = Not analyzed/not applicable
ND = Not detected (see notes)

ANALYTIC METHODS:

8015 = EPA Method 8015/5030 for TPPH(G)
602 = EPA Method 602 for BTEX
504 = EPA Method 504 for EDB
8020 = EPA Method 8020 for BTEX
8010 = EPA Method 8010 for HVOCs
503E = Standards Methods Method 503E for O&G

ANALYTIC METHODS: (continued)

413.1 = EPA Method 413.1 for total O&G
624 = EPA Method 624 for BTEX and VOCs
5520 = Standard Methods Method 5520 for O&G
LUFT = DHS LUFT Manual Method for OL

ANALYTIC LABORATORIES:

SAL = Superior Analytic Laboratory, Inc. of San Francisco and Martinez, California
SPA = Superior Precision Analytical, Inc. of San Francisco and Martinez, California
GTEL = Groundwater Technology Environmental Laboratory, Inc., of Concord, California

NOTES:

Analytic data was compiled from a draft report prepared by Chempro, undated.
* Analytic laboratory was not shown.
** 624 compounds other than BTE were not reported
[1] Other HVOCs were not detected at detection limits ranging from 0.5 to 1 ppb.
[2] 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.
[3] A non-standard gasoline pattern was observed in the chromatogram.
[4] This well could not be located; therefore it was not sampled.
[5] Gasoline range concentration reported. The chromatogram shows only a single peak in the gasoline range.
[6] Monitoring well deleted from sampling program per Chevron Project Engineer.
[7] Monitoring well not located since March 1992 sampling event.

SIERRA

SES STANDARD OPERATING PROCEDURE
GROUND WATER SAMPLING

The following describes sampling procedures used by SES field personnel to collect and handle ground water samples. Before samples are collected, careful consideration is given to the type of analysis to be performed so that precautions are taken to prevent loss of volatile components or contamination of the sample, and to preserve the sample for subsequent analysis. Wells will be sampled no less than 24 hours after well development. Collection methods specific to ground water sampling are presented below.

Prior to sampling, each well is checked for the presence of free-phase hydrocarbons using an MMC flexi-dip interface probe. Product thickness (measured to the nearest 0.01 foot) is noted on the sampling form. Water level measurements are also made using either a water level meter or the interface probe. The water level measurements are also noted on the sampling form.

Prior to sampling, each well is purged of a minimum of four well casing volumes of water using a steam-cleaned PVC bailer, or a pre-cleaned pump. Temperature, pH and electrical conductivity are measured at least three times during purging. Purging is continued until these parameters have stabilized (i.e., changes in temperature, pH or conductivity do not exceed ±0.5°F, 0.1 or 5%, respectively).

The purge water is taken to Chevron's Richmond Refinery for disposal.

Ground water samples are collected from the wells with steam-cleaned Teflon bailers. The water samples are decanted into the appropriate container for the analysis to be performed. Pre-preserved sample containers may be used or the analytic laboratory may add preservative to the sample upon arrival. Duplicate samples are collected from each well as a back-up sample and/or to provide quality control. The samples are labeled to include the project number, sample ID, date, preservative, and the field person's initials. The samples are placed in polyethylene bags and in an ice chest (maintained at 4°C with blue ice or ice) for transport under chain of custody to the laboratory.

The chain of custody form includes the project number, analysis requested, sample ID, date analysis and the SES field person's name. The form is signed and dated (with the transfer time) by each person who yields or receives the samples beginning with the field personnel and ending with the laboratory personnel.

A trip blank and bailer blank accompanies each sampling set, or 5% trip blanks and 5% bailer blanks are included for sets of greater than 20 samples. The bailer blank is prepared by pouring previously boiled water into a steam-cleaned Teflon bailer prior to sampling a well. The trip and bailer blanks are analyzed for some or all of the same compounds as the ground water samples.

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Northwest Region
4080-C Pike Lane
Concord, CA 94520
(510) 685-7852
(800) 544-3422 *from inside California*
(800) 423-7143 *from outside California*
(510) 825-0720 (FAX)

Client Number: SIE01CHV08
Project ID: Chevron, Dublin
Consultant Project Number: 1-215-04
Work Order Number: C3-03-0205

March 26, 1993

Argy Mena
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 03/11/93.

A formal Quality Assurance/Quality Control (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services, Laboratory certificate numbers 194 and 1075, to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Eileen F. Bullen

Eileen F. Bullen
Laboratory Director

Client Number: SIE01CHV08
Project ID: Chevron, Dublin
Consultant Project Number: 1-215-04
Work Order Number: C3-03-0205

Table 1

ANALYTICAL RESULTS

Aromatic Volatile Organics and Total Petroleum Hydrocarbons as Gasoline in Water

EPA Methods 5030, 8020, and Modified 8015[a]

GTEL Sample Number		01	02	03	04
Client Identification		TB-LB	BB	MW5	MW8
Date Sampled		03/10/93	03/10/93	03/10/93	03/10/93
Date Analyzed		03/22/93	03/21/93	03/21/93	03/21/93
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.5	<0.5	<0.5	<0.5	0.8
Toluene	0.5	<0.5	<0.5	<0.5	2
Ethylbenzene	0.5	<0.5	<0.5	<0.5	<0.5
Xylene, total	0.5	<0.5	<0.5	<0.5	2
BTEX, total	--	--	--	--	5
TPH as Gasoline	50	<50	<50	<50	<50
Detection Limit Multiplier		1	1	1	1
BFB surrogate, % recovery		118	94.8	95.3	94.3

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision.

GTEL ENVIRONMENTAL LABORATORIES, INC.

Client Number: SIE01CHV08
Project ID: Chevron, Dublin
Consultant Project Number: 1-215-04
Work Order Number: C3-03-0205

Table 1(continued)

ANALYTICAL RESULTS

Aromatic Volatile Organics and
Total Petroleum Hydrocarbons as Gasoline in Water

EPA Methods 5030, 8020, and Modified 8015[a]

GTEL Sample Number		05	032193 GCM		
Client Identification		MW6	METHOD BLANK		
Date Sampled		03/10/93	--		
Date Analyzed		03/21/93	03/21/93		
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.5	30	<0.5		
Toluene	0.5	9	<0.5		
Ethylbenzene	0.5	8	<0.5		
Xylene, total	0.5	22	<0.5		
BTEX, total	--	69	--		
TPH as Gasoline	50	1400	<50		
Detection Limit Multiplier		1	1		
BFB surrogate, % recovery		106	102		

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision.

GTEL ENVIRONMENTAL LABORATORIES, INC.

Client Number: SIE01CHV08
Project ID: Chevron, Dublin
Consultant Project Number: 1-215-04
Work Order Number: C3-03-0205

QC Matrix Spike and Duplicate Spike Results

Matrix: Water

Analyte	Sample ID	Spike Amount	Units	Recovery, %	Duplicate Recovery, %	RPD, %	Control Limits
Modified EPA 8020:							
Benzene	Reagent Water	20.0	ug/L	99.5	85.5	15.1	70 - 147
Toluene	Reagent Water	20.0	ug/L	106	93.0	13.1	67 - 150
Ethylbenzene	Reagent Water	20.0	ug/L	99.5	89.5	10.6	69 - 145
Xylene, total	Reagent Water	60.0	ug/L	110	103	6.57	71 - 152

GTEL ENVIRONMENTAL LABORATORIES, INC.

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

Chain-of-Custody-Record

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

Chevron Facility Number: 9-5542
Facility Address: 7007 San Ramon Rd. Dublin
Consultant Project Number: 1-215-04
Consultant Name: ~~Jim Gro~~ Sierra Environmental Services
Address: Po Box 2546, Martinez, CA 94553
Project Contact (Name): Argy Mang
(Phone) 510-370-1240 (Fax Number) 510-370-7959

Chevron Contact (Name): Clint Rogers
(Phone) 842-8658
Laboratory Name: GTEL
Laboratory Release Number: 323620
Samples Collected by (Name): Jim Gro
Collection Date: 3-10-93
Signature: Jim Gro

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)					
TB-LB		3	W	NA		HCL	Y	✓												
BB		↓	↓	↓		↓	↓	✓												
MW-5								✓												
MW-8								✓												
MW-6							↓	✓												

Analyses To Be Performed

Note:
Do Not Bill
TB-LB Sample
Seals intact
5-6 HCl
Remarks LB

ANALYZE IN ORDER

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Jim Gro	SES	11:30 3-10-93	John Welch	GTEL	
John Welch	GTEL	1:45 3-11 93			
			Received For Laboratory By (Signature) Laurie Baskett 3/11/93		2:00

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

3/10/93

COC-3.DWG/03 91/HCH

GTEL
ENVIRONMENTAL
LABORATORIES, INC.

Northwest Region
4080-C Pike Lane
Concord, CA 94520
(510) 685-7852
(800) 544-3422 *from inside California*
(800) 423-7143 *from outside California*
(510) 825-0720 (FAX)

Client Number: SIE01CHV08
Consultant Project Number: 1-214-04
Project ID: Chevron, Dublin
Work Order Number: C3-03-0399

April 6, 1993

Argy Mena
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Enclosed please find the analytical results for samples received by GTEL Environmental Laboratories, Inc. on 03/23/93.

A formal Quality Assurance/Quality Control (QA/QC) program is maintained by GTEL, which is designed to meet or exceed the EPA requirements. Analytical work for this project met QA/QC criteria, unless otherwise stated in the footnotes.

GTEL is certified by the California State Department of Health Services, Laboratory certificate numbers 194 and 1075, to perform analyses for drinking water, wastewater, and hazardous waste materials according to EPA protocols.

If you have any questions concerning this analysis or if we can be of further assistance, please call our Customer Service Representative.

Sincerely,
GTEL Environmental Laboratories, Inc.

Eileen F. Bullen
Laboratory Director

Client Number: SIE01CHV08
Consultant Project Number: 1-214-04
Project ID: Chevron, Dublin
Work Order Number: C3-03-0399

Table 1

ANALYTICAL RESULTS

Total Oil and Grease in Water by Infrared Spectrometry

EPA Method 413.2[1](SM 5520 C[2])

1. Methods for Chemical Analysis of Water and Wastes, EPA 600/4-79-202, Revised March 1983, U.S. Environmental Protection Agency.
2. Standard Methods for the Examination of Water and Wastewater, 17th ed., 1989, American Public Health Association.

GTEL Sample Number		05	032693-1		
Client Identification		MW4	METHOD BLANK		
Date Sampled		03/22/93	--		
Date Prepared		03/26/93	03/26/93		
Date Analyzed		03/29/93	03/29/93		
Analyte	Detection Limit, mg/L	Concentration, mg/L			
Total Oil and Grease	1	5	<1		
Detection Limit Multiplier		1	1		

GTEL ENVIRONMENTAL LABORATORIES, INC.

Client Number: SIE01CHV08
Consultant Project Number: 1-214-04
Project ID: Chevron, Dublin
Work Order Number: C3-03-0399

QC Matrix Spike and Duplicate Spike Results

Matrix: Water

Analyte	Sample ID	Spike Amount	Units	Recovery, %	Duplicate Recovery, %	RPD, %	Control Limits
Modified EPA 8020:							
Benzene	C3030405-03	20.0	ug/L	97.0	96.5	0.5	55 - 129
Toluene	C3030405-03	20.0	ug/L	92.5	91.5	1.1	72 - 149
Ethylbenzene	C3030405-03	20.0	ug/L	88.5	88.0	0.6	75 - 138
Xylene, total	C3030405-03	60.0	ug/L	79.3	95.3	18.3	74 - 147
TOG:	C3032693-02	5.04	mg/L	94.8	94.8	0	70 - 130

Sample and Sample Duplicate Results

Matrix: Water

Analyte	Sample ID	Date of Analysis	Sample Results	Sample Duplicate Results	Units	RPD[a], %
TOG:	C3032693-02	03/29/93	4.78	4.78	mg/L	NA

NA = Not Applicable.

GTEL ENVIRONMENTAL LABORATORIES, INC.

Client Number: SIE01CHV08
Consultant Project Number: 1-214-04
Project ID: Chevron, Dublin
Work Order Number: C3-03-0399

Table 1

ANALYTICAL RESULTS

Aromatic Volatile Organics and Total Petroleum Hydrocarbons as Gasoline in Water

EPA Methods 5030, 8020, and Modified 8015[a]

GTEL Sample Number		01	02	03	04
Client Identification		TB-LB	BB	MW-2	MW-3
Date Sampled		03/22/93	03/22/93	03/22/93	03/22/93
Date Analyzed		03/29/93	03/29/93	03/29/93	03/29/93
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.5	<0.5	<0.5	<0.5	96
Toluene	0.5	<0.5	<0.5	<0.5	9
Ethylbenzene	0.5	<0.5	<0.5	<0.5	14
Xylene, total	0.5	<0.5	0.6	<0.5	91
BTEX, total	--	--	0.6	--	210
TPH as Gasoline	50	<50	<50	<50	1600
Detection Limit Multiplier		1	1	1	1
BFB surrogate, % recovery		93.1	83.8	89.8	87.8

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision.

GTEL ENVIRONMENTAL LABORATORIES, INC.

Client Number: SIE01CHV08
Consultant Project Number: 1-214-04
Project ID: Chevron, Dublin
Work Order Number: C3-03-0399

Table 1 (Continued)

ANALYTICAL RESULTS

Aromatic Volatile Organics and Total Petroleum Hydrocarbons as Gasoline in Water

EPA Methods 5030, 8020, and Modified 8015[a]

HDR2 GTEL Sample Number		05	032993GCA		
Client Identification		MW-4	METHOD BLANK		
Date Sampled		03/22/93	--		
Date Analyzed		03/31/93	03/29/93		
Analyte	Detection Limit, ug/L	Concentration, ug/L			
Benzene	0.5	3900	<0.5		
Toluene	0.5	5100	<0.5		
Ethylbenzene	0.5	840	<0.5		
Xylene, total	0.5	4500	<0.5		
BTEX, total	--	14000	--		
TPH as Gasoline	50	41000	<50		
Detection Limit Multiplier		50	1		
BFB surrogate, % recovery		101	93.6		

a. Test Methods for Evaluating Solid Waste, SW-846, Third Edition, Revision 0, US EPA November 1986. Modification for TPH as gasoline as per California State Water Resources Control Board LUFT Manual protocols, May 1988 revision.

GTEL ENVIRONMENTAL LABORATORIES, INC.

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

Chain-of-Custody-Record

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

Chevron Facility Number 9-5542
Facility Address 7007 San Ramon Rd. Dublin
Consultant Project Number 1-214-04
Consultant Name Sierra Environmental Services
Address PO Box 2546 Martinez CA 94553
Project Contact (Name) Argy Mer...
(Phone) 510-370-1280 (Fax Number) 370-7959

Chevron Contact (Name) Clint Rogers
(Phone) 842-8658
Laboratory Name GTEL
Laboratory Release Number 3236620
Samples Collected by (Name) Jim Gre...
Collection Date 3-22-93
Signature [signature]

Note: Do Not Bill TB-LB Samples

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) IR	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd,Cr,Pb,Zn,Ni (ICAP or AA)						Remarks
TB-LB		3	W	NA		HCL	Y	✓													analyze in order
BB		↓	↓	↓		↓	↓	✓													↓
mw-2		↓	↓	↓		↓	↓	✓													
mw-3		↓	↓	↓		↓	↓	✓													
mw-4		↓	↓	↓		↓	↓	✓													↓
																					Seals Intact
mw-4		1	↓	↓		NONE	↓			✓											4°, HCl
~~D~~																					
~~D-1~~																					
~~D-2~~																					
~~D-3~~																					
~~D-~~																					
~~DI-D2-D3-DA~~		~~4~~	~~S~~	~~C~~																	

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Jim Gre...	SES	3/22/93 8:00	Carl Eaton	SES	3/22/93 8:00
Carl Eaton	SES	3/23/93 11:40	Joe Weber	GTEL	3-23 11:10
Joe Weber	GTEL	3/23 15:50	Received For Laboratory By (Signature) Jamie Dass 3/23/93		5:00

Turn Around Time (Circle Choice)
24 Hrs.
48 Hrs.
5 Days
10 Days
As Contracted
3/22/93

COC-3.DWG/03 91/HCH