

ENVIRONMENTAL
PROTECTION

96 SEP -4 AM 8: 26



August 30, 1996

Jon Legallet
Telegraph Business Properties
1401 Griffith Street
San Francisco, CA 94124

Re: Telegraph Business Park
5427 Telegraph Avenue
Oakland, California

SES Project #4-719-04

Dear Mr. Legallet:

Sierra Environmental Services (SES) is pleased to submit this report summarizing the results of the ground water sampling at Telegraph Business Park, located at 5427 Telegraph Avenue in Oakland, California (Figure 1, Attachment 1).

On July 25, 1996, SES personnel visited the site. Water levels were measured in all wells and all wells 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 (Attachment 2) and ground water elevation contours are included on Figure 2 (Attachment 1).

Ground water samples were collected from MW-1, MW-2 and MW-3 on July 25, 1996 in accordance with SES Standard Operating Procedure - Ground Water Sampling (Attachment 3). All analyses were performed by Superior Analytical Laboratory, of Martinez, California. Analytic results for ground water are presented in Table 2 (Attachment 2). The chain of custody document and laboratory analytic reports are presented in Attachment 4 and field Water Sampling Forms are included in Attachment 5. SES is not responsible for laboratory omissions or errors.

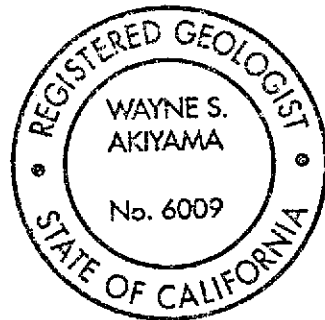


Thank you for allowing us to provide services to Telegraph Business Properties. Please call if you have any questions.

Sincerely,
Sierra Environmental Services

J. Gran for Dave Beardsley

David M. Beardsley
Senior Environmental Technician

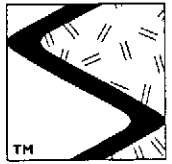


Wayne S. Akiyama
Wayne S. Akiyama R.G. R.E.A.
Senior Hydrogeologist #6009

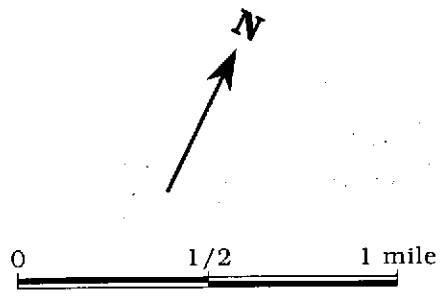
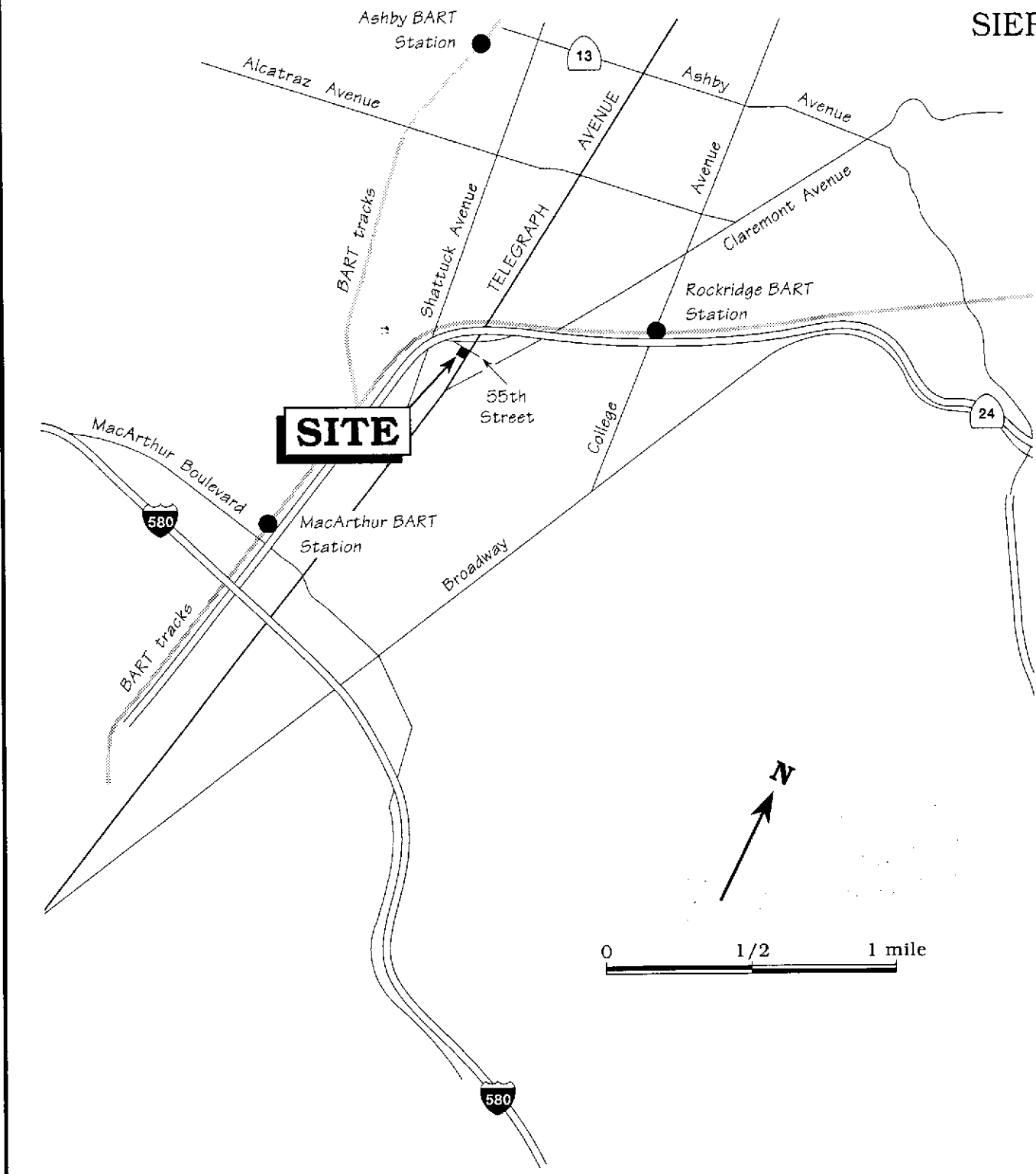
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Attachments: Figures
Tables
SES Standard Operating Procedure
Chain of Custody Document and Laboratory Analytic Reports
Water Sampling Forms

cc: Susan Hugo - Alameda County Health Care Services Agency ✓

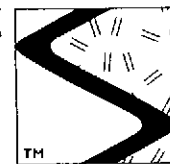


SIERRA



Base map ref: California State Automobile Association (AAA)

Figure 1. Site Location Map - Telegraph Business Park, 5427 Telegraph Avenue, Oakland, California



SIERRA

TELEGRAPH AVENUE

sidewalk

55TH STREET

BUILDING

residence residence

former 10,000 gal. gasoline tank

parking

BUILDING

Approximate ground water flow direction at a gradient of 0.032 ft/ft

HIGHWAY 24 (elevated)

Caltrans Property PL

107.95 MW-1

parking

former 5,000 gal. Stoddard Solvent tanks

106.87 MW-2

105.00

106.00

former tank IIIA

former tank IIIB

103.08 MW-3

former tank IIA

former tank IIB

former tank IIC

former tank IID

104.00

105.00

parking

communication tower

N

0 25 50 ft.

EXPLANATION

MW-3

103.08

107.00

Monitoring well
Ground water elevation, in feet above mean sea level
Ground water elevation contour, dashed where inferred, queried where uncertain

Figure 2. Monitoring Well Location and Ground Water Elevation Contour Map - July 25, 1996 - Telegraph Business Park, 5427 Telegraph Avenue, Oakland, California



Table 1. Water Level Data and Well Construction Details - Telegraph Business Park, 5427 Telegraph Avenue, Oakland, California

Well ID	Date Measured	DTW (ft)	TOC (ft)	GWE (msl)	Product Thickness* (ft)	Screen Interval	Sand Pack Interval	Bentonite/Grout Interval
						-----feet below grade----->		
MW-1	1/5/94	6.40	115.05	108.65	0	5 - 20	4 - 20	0 - 4
	2/1/94	5.93		109.12	0			
	3/2/94	5.09		109.96	0			
	4/6/94	5.85		109.20	0			
	5/4/94	6.37		108.68	0			
	6/3/94	6.95		108.10	0			
	7/7/94	7.00		108.05	0			
	8/3/94	7.30		107.75	0			
	9/7/94	7.70		107.35	0			
	10/11/94	7.62		107.43	0			
	1/20/95	4.78		110.27	0			
	4/7/95	5.96		109.09	0			
	7/26/95	7.19		107.86	0			
	10/25/95	7.74		107.31	0			
	1/29/96	4.67		110.38	0			
	4/26/96	5.92		109.13	0			
7/25/96	7.10	107.95	0					
MW-2	1/5/94	9.42	117.60	108.18	0	7 - 27	6 - 27	0 - 6
	2/1/94	9.15		108.45	0			
	3/2/94	9.55		108.05	0			
	4/6/94	9.09		108.51	0			
	5/4/94	9.18		108.42	0			
	6/3/94	9.44		108.16	0			
	7/7/94	10.21		107.39	0			
	8/3/94	10.96		106.64	0			
	9/7/94	10.20		107.40	0			
	10/11/94	10.18		107.42	0			
	1/20/95	8.64		108.96	0			
	4/7/95	9.84		107.76	0			
	7/26/95	10.55		107.05	0			
	10/25/95	10.15		107.45	0			
	1/29/96	9.35		108.25	0			
	4/26/96	8.57		109.03	0			
7/25/96	10.73	106.87	0					



Table 1. Water Level Data and Well Construction Details - Telegraph Business Park, 5427 Telegraph Avenue, Oakland, California, (continued).

Well ID	Date Measured	DTW (ft)	TOC (ft)	GWE (msl)	Product Thickness* (ft)	Screen Interval	Sand Pack Interval	Bentonite/Grout Interval
MW-3	1/5/94	10.14	115.33	105.19	0	5 - 20	4 - 20	0 - 4
	2/1/94	8.92		106.41	0			
	3/2/94	7.56	115.14 ¹	107.58	0			
	4/6/94	10.24		104.90	0			
	5/4/94	9.67		105.47	0			
	6/3/94	10.38		104.76	0			
	7/7/94	11.55		103.59	0			
	8/3/94	11.76		103.38	0			
	9/7/94	12.20		102.94	0			
	10/11/94	12.02		103.12	0			
	1/20/95	6.47		108.67	0			
	4/7/95	7.98		107.16	0			
	7/26/95	11.33		103.81	0			
	10/25/95	12.29		102.85	0			
	1/29/96	6.28		108.86	0			
	4/26/96	9.09		106.05	0			
7/25/96	12.06		103.08	0				

EXPLANATION:

DTW = Depth to water
 TOC = Top of casing elevation
 GWE = Ground water elevation
 msl = Measurements referenced relative to mean sea level

NOTES:

All top of casing elevations were surveyed by Ronald C. Miller, Professional Engineer #15816 on January 13, 1994.

* Product thickness was measured with an MMC flexi-dip interface probe.

¹ Well resurveyed March 4, 1994 by Ronald C. Miller, Professional Engineer #15816.



Table 2. Analytic Results for Ground Water - Petroleum Hydrocarbons - Telegraph Business Park, 5427 Telegraph Avenue, Oakland, California

Sample ID	Date Sampled	Analytic Method	TPH(D)	Stoddard Solvent	ppb				
					O&G	B	T	E	X
B-1	12/13/93	LUFT	1,200	93,000	---	---	---	---	---
B-2	12/13/93	LUFT	4,000	1,400,000	---	---	---	---	---
B-3	12/13/93	LUFT	3,700	780,000	---	---	---	---	---
B-4	12/13/93	LUFT	90	15,000	---	---	---	---	---
B-5	12/14/93	LUFT	100	1,600	---	---	---	---	---
B-6	12/14/93	LUFT	460	9,000	---	---	---	---	---
B-7	12/14/93	LUFT	390	18,000	---	---	---	---	---
B-8	12/14/93	LUFT	<50	<50	---	---	---	---	---
B-9	12/14/93	LUFT	<50	60	---	---	---	---	---
B-10	11/30/94	LUFT/5520/602	---	120,000	<10,000	<0.3	<0.3	<0.3	<0.3
B-11	11/30/94	LUFT/5520/602	---	210	<10,000	<0.3	<0.3	<0.3	<0.3
B-12	11/30/94	LUFT/5520/602	---	150	<10,000	<0.3	<0.3	<0.3	<0.3
B-13	11/30/94	LUFT/5520/602	---	220	<10,000	2.3	0.80	<0.3	4
B-14	11/30/94	LUFT/5520/602	---	150	<10,000	<0.3	<0.3	<0.3	0.80
B-15	1/23/95	LUFT/5520/602	---	9,100	<10,000	40	<3.0	60	<3.0
B-16	1/23/95	LUFT/5520/602	---	52'	<13,000	<0.3	<0.3	<0.3	1.3
B-17	1/23/95	LUFT/5520/602	---	<50	<10,000	<0.3	<0.3	<0.3	<0.3



Table 2. Analytic Results for Ground Water - Petroleum Hydrocarbons - Telegraph Business Park, 5427 Telegraph Avenue, Oakland, California (continued)

Sample ID	Date Sampled	Analytic Method	TPH(D)	Stoddard Solvent	ppb				
					O&G	B	T	E	X
MW-1	1/5/94	LUFT/602	500	1,000	6,300*	3.3	1.6	<0.3	6
	4/6/94	LUFT/602/5520	800	1,400	<5,000	5.6	4.5	<0.3	11
	7/7/94	LUFT/602/5520	400	1,200	8,300*	1.5	0.80	<0.3	1.9
	10/11/94	LUFT/602/5520	<5.0	700	<5,000	<0.3	<0.3	<0.3	<0.3
	1/20/95	LUFT/602	---	1,500	---	3.9	2	<0.3	3.9
	4/7/95	602/5030	2,500	500	---	3.2	1.1	<0.3	1.7
	7/26/95 ^{2,3}	8015/8020	---	1,500	---	3.1	3.2	12	16
	10/25/95	8015/8020	---	660	---	0.6	1.4	20	14
	1/29/96	8015/8020/5030	---	2,500	---	1.8	0.7	8.0	13
	4/26/96	8015/8020/5030	---	4,600	---	<2.5	<2.5	9.5	21
	7/25/96 ⁵	8015/8020/5030	---	2,200 ⁴	---	1.6	1.6	11	51
MW-2	1/5/94	LUFT/602	200	35,000	<5,000	12	38	<3.0	150
	4/6/94	LUFT/602/5520	2,200	94,000	15,600	21	22	<6.0	110
	7/7/94	602	---	---	---	16	16	<1.5	1,510
	7/11/94	LUFT/5520	800	43,000	14,500*	---	---	---	---
	10/11/94	LUFT/5520/602	<5.0	31,000	<5,000	17	13	14	0.3
	1/20/95	LUFT/602	---	26,000	---	18	13	12	50
	4/7/95	602/5030	900	70,000	---	17.5	11	<0.6	74.6
	7/26/95	8015/8020	---	21,000	---	17	<0.5	26	94
	10/25/95	8015/8020	---	38,000	---	63	70	440	1,100
	1/29/96	8015/8020/5030	---	74,000	---	7.4	8.6	66	330
	4/26/96	8015/8020/5030	---	81,000	---	<250	<250	3,100	15,000
7/25/96 ⁵	8015/8020/5030	---	48,000	---	17	9.4	59	200	
MW-3	1/5/94	LUFT/5520/602	70	1,100	<5,000	180	20	85	10
	4/6/94	LUFT/5520/602	<50	1,000	<5,000	140	13	60	<12
	7/7/94	602	---	---	---	120	7.5	8.0	<3.0
	7/11/94	LUFT/5520	270	1,000	<5,000*	---	---	---	---
	10/11/94	LUFT/5520/602	<5.0	1,100	<5,000	200	11	23	<0.3
	1/20/95	LUFT/602	---	2,100	---	36	3.5	4.8	<0.3
4/7/95	602/5030	90	600	---	32.7	1.7	4.7	1.9	



Table 2. Analytic Results for Ground Water - Petroleum Hydrocarbons - Telegraph Business Park, 5427 Telegraph Avenue, Oakland, California (continued)

Sample ID	Date Sampled	Analytic Method	TPH(D)	Stoddard Solvent	O&G	ppb			
						B	T	E	X
MW-3	7/26/95 ³	8015/8020	---	1,200	---	98	3.2	12	16
(cont.)	10/25/95	8015/8020	---	2,300	---	32	3.4	4.7	9.6
	1/29/96	8015/8020/5030	---	1,100	---	22	1.2	6.4	12
	4/26/96	8015/8020/5030	---	1,300	---	5.6	0.6	4.6	14
	7/25/96 ⁴	8015/8020/5030	---	2,900	---	120	6.4	23	36
Trip Blank									
TB-LB	1/5/94	602	---	---	---	<0.3	<0.3	<0.3	<0.3
	4/6/94	602	---	---	---	<0.3	<0.3	<0.3	<0.6
	7/7/94	602	---	---	---	<0.3	<0.3	<0.3	<0.3
	10/11/94	602	---	---	---	<0.3	<0.3	<0.3	<0.3
	11/30/94	602	---	---	---	<0.3	<0.3	<0.3	<0.3
	1/20/95	LUFT/602	---	<50	---	<0.3	<0.3	<0.3	<0.3
	1/23/95	LUFT/602	---	<50	---	<0.3	<0.3	<0.3	<0.3
	4/7/95	602	---	---	---	<0.3	<0.3	<0.3	<0.3
	7/26/95	8020	---	---	---	<0.5	<0.5	<0.5	<0.5
	10/25/95	8020	---	---	---	<0.5	<0.5	<0.5	<0.5
	1/29/96	8020	---	---	---	<0.5	<0.5	<0.5	<0.5
	4/26/96	8020	---	---	---	<0.5	<0.5	<0.5	<0.5
	7/25/96	8020	---	---	---	<0.5	<0.5	<0.5	<0.5
Bailer Blank									
BB	1/5/94	602	---	---	---	<0.3	<0.3	<0.3	<0.3
	4/6/94	602	---	---	---	<0.3	0.8	<0.3	<0.6
	7/11/94	602	---	---	---	<0.3	<0.3	<0.3	<0.3
	11/30/94	602	---	---	---	<0.3	<0.3	<0.3	<0.3
	1/20/95	LUFT/602	---	<50	---	<0.3	<0.3	<0.3	<0.3
	1/23/95	LUFT/602	---	<50	---	<0.3	<0.3	<0.3	<0.3
	4/7/95	602	---	---	---	<0.3	<0.3	<0.3	<0.3
	7/26/95	8020	---	---	---	<0.5	<0.5	<0.5	<0.5



Table 2. Analytic Results for Ground Water - Petroleum Hydrocarbons - Telegraph Business Park, 5427 Telegraph Avenue, Oakland, California (continued)

Sample ID	Date Sampled	Analytic Method	TPH(D)	Stoddard Solvent	O&G	ppb			
						B	T	E	X
BB	10/25/95	8020	---	---	---	<0.5	<0.5	<0.5	<0.5
(cont)	1/29/96	---	---	---	---	---	---	---	---
	4/26/96	8020	---	---	---	<0.5	<0.5	<0.5	<0.5
	7/25/96	---	---	---	---	---	---	---	---

EXPLANATION:

TPH(D) = Total Petroleum Hydrocarbons as Diesel
 O&G = Oil and Grease
 B = Benzene
 T = Toluene
 E = Ethylbenzene
 X = Xylenes
 ppb = Parts per billion
 --- = Not analyzed/Not applicable

ANALYTIC LABORATORY:

Samples were analyzed by Precision Analytical Laboratory, of Richmond, California, prior to July 1995.

Samples were analyzed by Chromolab Environmental Services, of Pleasanton, California July 26, 1995.

Samples were analyzed by Superior Analytical Laboratory of Martinez, California from October, 1995 to present.

ANALYTIC METHODS:

LUFT = Department of Health Services LUFT Manual Method for TPH(D), Stoddard Solvent, and O&G
 602 = EPA Method 602 for BTEX.
 8020/5030 = EPA Method 8020/5030 for BTEX.
 8015 = EPA Method 8015 modified for Diesel.
 8015 = EPA Method 8015 modified for Stoddard.
 5520 = Standard Methods Method 5520 F for non-polar O&G

NOTES:

- * This result represents both naturally occurring organics and petroleum hydrocarbons due to its analysis by Standard Methods Method 5520B.
- ¹ Stoddard gas range hydrocarbon does not match with stoddard gas standard.
- ² Unknown hydrocarbons in the diesel range were observed in sample.
- ³ Unknown compounds in the motor oil range were observed in sample.
- ⁴ Sample appears to be a mixture of stoddard and heavier unknown hydrocarbons.
- ⁵ Hydrocarbons were found in the range of gasoline, but do not resemble a gasoline fingerprint. Possible Stoddard.



Table 3. Analytic Results for Ground Water - Volatile Organic Compounds - Telegraph Business Park, 5427 Telegraph Avenue, Oakland, California

Sample ID	Date Sampled	Analytic Method	VC	1,1-DCA	t-1,2-DCE	c-1,2-DCE	C	1,2-DCA	TCE	PCE	1,2-DCB	Other HVOCs	Other VOCs
B-10	11/30/94	8240	<2	<3	<3	<3	<3	<2	<3	<2	<4	---	ND ¹⁰
B-11	11/30/94	8240	<2	<3	<3	<3	<3	<2	<3	<2	<4	---	ND ¹⁰
B-12	11/30/94	8240	<2	<3	<3	<3	<3	<2	<3	<2	<4	---	ND ¹⁰
B-13	11/30/94	8240	430	32	7.9	810	<3	<2	340	360	<4	---	ND ¹⁰
B-14	11/30/94	8240	<2	12	<3	35	<3	<2	21	59	<4	---	ND ¹⁰
B-15	1/23/95	8240	<2	<3	<3	<3	<3	<2	<3	<2	<4	---	ND ¹⁰
B-16	1/23/95	8240	<2	<3	<3	<3	<3	<2	8	290	<4	---	ND ¹⁰
B-17	1/23/95	8240	<2	<3	<3	14	<3	<2	13	53	<4	---	ND ¹⁰
MW-1	1/5/94	8010	<1	<0.3	<0.2	0.44	0.35	<0.2	<0.3	<2	0.36	ND ¹	---
	4/6/94	8010	<1	<0.3	<0.2	0.32	<0.2	<0.2	<0.3	<2	0.21	ND ¹	---
	7/7/94	8010	<1	<0.2	<0.2	<0.2	<0.1	<0.5	<0.2	<2	<0.2	ND ⁷	---
	10/11/94	8240	<2	<3	<3	<3	<3	<2	<3	<2	<4	---	ND ¹⁰
	1/20/95	8240	<2	<3	<3	<3	<3	<2	<3	<2	<1	---	ND ¹¹
	4/7/95	8010	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	ND ¹⁴	---
	7/26/95	8010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND ¹⁴	---
	10/25/95	8010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	---	---
	1/29/96	8010	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND	ND
	4/26/96	8010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND	ND
	7/25/96	8010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND	ND
MW-2	1/5/94	8010	<1	10	1.1	130	5.6	2.7	2.6	<2	0.90	ND ²	---
	4/6/94	8010	<1	0.40	<0.2	4.3	<0.2	<0.2	<0.3	<2	0.80	ND ⁵	---
	7/7/94	8010	<1	3.4	<0.2	15	<0.1	0.60	0.60	<2	0.40	ND ⁸	---
	10/11/94	8240	<2	<3	<3	31	<3	<2	<3	<2	<4	---	ND ¹⁰
	1/20/95	8240	<2	5	<3	14	<3	<2	<3	<2	<1	---	ND ¹¹
	4/7/95	8010	4.9	4.3	<0.5	18	<0.5	1.4	<0.5	0.8	<0.5	ND ^{12,14}	---
	7/26/95	8010	8.1	5.1	<0.5	20	<0.5	<0.5	<0.5	1.6	<0.5	ND ¹⁴	---



Table 3. Analytic Results for Ground Water - Volatile Organic Compounds - Telegraph Business Park, 5427 Telegraph Avenue, Oakland, California, (continued).

Sample ID	Date Sampled	Analytic Method	←-----ppb-----→										Other HVOCs	Other VOCs
			VC	1,1-DCA	t-1,2-DCE	c-1,2-DCE	C	1,2-DCA	TCE	PCE	1,2-DCB			
MW-2	10/25/95	8010	17	5.4	<0.5	40	<0.5	<0.5	1.7	9.4	<0.5	ND ¹⁶	---	
	1/29/96	8010	4.2	4.1	<0.5	27	<0.5	<0.5	1.3	0.9	0.7	ND	ND ¹⁸	
	4/26/96	8010	3.3	0.8	<0.5	4.4	<0.5	<0.5	<0.5	<0.5	1.0	¹⁹	ND	
	7/25/96	8010	0.8	2.3	<0.5	1.5	<0.5	<0.5	<0.5	<0.5	0.5	²¹	ND ¹⁸	
MW-3	1/5/94	8010	<1	0.70	<0.2	5.2	1.3	0.20	<0.3	<2	1.5	ND ³	---	
	4/6/94	8010	<1	0.40	<0.2	4.2	<0.2	<0.2	<0.3	<2	0.80	ND ⁶	---	
	7/7/94	8010	<1	0.30	<0.2	2.9	<0.1	<0.5	<0.2	<2	1.3	ND ⁹	---	
	10/11/94	8240	<2	<3	<3	<3	<3	<2	<3	<2	<4	---	ND ¹⁰	
	1/20/95	8240	<2	<3	<3	6	<3	<2	<3	<2	1	---	ND ¹¹	
	4/7/95	8010	8.8	<0.5	<0.5	13	<0.5	0.7	<0.5	<0.5	2	ND ^{13,14}	---	
	7/26/95	8010	9.6	<0.5	<0.5	6.3	<0.5	<0.5	<0.5	<0.5	<0.5	ND ¹⁵	---	
	10/25/95	8010	4.2	<0.5	<0.5	4.1	<0.5	<0.5	<0.5	<0.5	1.6	ND ¹⁷	---	
	1/29/96	8010	2.0	<0.5	<0.5	2.8	<0.5	<0.5	<0.5	<0.5	1.5	¹⁸	ND ¹⁸	
	4/26/96	8010	3.6	<0.5	<0.5	3.4	<0.5	<0.5	<0.5	<0.5	2.7	²⁰	ND	
	7/25/96	8010	1.5	<0.5	<0.5	1.0	<0.5	<0.5	<0.5	<0.5	2.0	²²	ND ¹⁸	

EXPLANATION:

VC = Vinyl Chloride
 1,1-DCA = 1,1-Dichloroethane
 t-1,2-DCE = trans-1,2-Dichloroethene
 c-1,2-DCE = cis-1,2-Dichloroethene
 C = Chloroform
 1,2-DCA = 1,2-Dichloroethane
 TCE = Trichloroethene
 PCE = Tetrachloroethene
 1,2-DCB = 1,2-Dichlorobenzene
 HVOCs = Halogenated Volatile Organic Compounds
 VOCs = Volatile Organic Compounds
 ppb = Parts per billion
 ND = Not detected

ANALYTIC LAB:

Samples collected prior to July 1995 were analyzed by Precision Analytical Laboratory, Richmond,

California.

Samples collected in July 1995 were analyzed by Chromalab Environmental Services, of Pleasanton, California.

Samples collected from October 1995 to present were analyzed by Superior Analytical Laboratory of Martinez, California.

ANALYTIC METHODS:

8010 = EPA Method 5030/8010 for HVOCs
 8240 = EPA Method 8240 for VOCs

NOTES:

- 1,4-Dichlorobenzene was detected at 0.34 ppb. Other HVOCs not detected at detection limits of 0.2 to 2.0 ppb.
- 1,2-Dichloropropene, T-1,3-Dichloropropene, and 1,4-Dichlorobenzene were detected at 18,

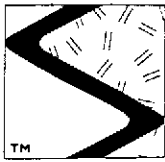


Table 3. Analytic Results for Ground Water - Volatile Organic Compounds - Telegraph Business Park, 5427 Telegraph Avenue, Oakland, California (continued)

1.0 and 1.0 ppb, respectively. Other HVOCs not detected at detection limits of 0.2 to 2.0 ppb.
3 Chlorobenzene and 1,4-Dichlorobenzene were detected at 0.70 and 0.30 ppb, respectively.
Other HVOCs not detected at detection limits of 0.2 to 2.0 ppb.
4 1,4-Dichlorobenzene was detected at 0.21 ppb. Other HVOCs not detected at detection limits
of 0.2 to 2.2 ppb.
5 Chlorobenzene was detected at 1.7 ppb. Other HVOCs not detected at detection limits of 0.2
to 2.2 ppb.
6 Chlorobenzene was detected at 1.6 ppb. Other HVOCs not detected at detection limits of 0.2
to 2.2 ppb.
7 1,4-Dichlorobenzene was detected at 0.26 ppb. Other HVOCs not detected at detection limits
of 0.2 to 2.0 ppb.
8 1,2-Dichloropropane, tetrachloroethene and 1,4-Dichlorobenzene were detected at 6.5, 1.4 and
0.34 ppb, respectively. Other HVOCs not detected at detection limits of 0.2 to 2.0 ppb.
9 Other HVOCs not detected at detection limits of 0.2 to 2.0 ppb.
10 Benzene, toluene, ethylbenzene and xylene results are included on Table 1. Other VOCs not
detected at detection limits of 2 to 50 ppb.
11 Benzene, toluene, ethylbenzene and xylene results are included on Table 1. Other VOCs not
detected at detection limits of 1 to 7 ppb.
12 1,2-dichloropropane was detected at 8.0 ppb.
13 Chlorobenzene was detected at 7.3 ppb.
14 Other HVOCs were not detected at a detection limit of 0.5 ppb.

22 Chlorobenzene was detected at 3.2 ppb.

15 Chlorobenzene was detected at 4.0 ppb.
16 1,2 Dichloropropane was detected at 9.0 ppb.
17 Chlorobenzene was detected at 1.7 ppb.
18 Benzene, toluene, ethylbenzene and xylene results included in Table 2.
19 1,2-Dichloropropane was detected at 2.0 ppb.
20 Chlorobenzene was detected at 6.1 ppb.
21 1,2-Dichloropropane was detected at 4.1 ppb.



TM
SIERRA

SES STANDARD OPERATING PROCEDURE GROUND WATER SAMPLING - QUARTERLY MONITORING

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 three well casing volumes of water using a steam-cleaned PVC bailer, or a pre-cleaned pump. Temperature, pH and electrical conductivity are measured during purging. Purging is continued until these parameters have stabilized for consecutive readings.

Ground water samples are collected from the wells with pre-cleaned Disposable bailers or Teflon bailers. The Teflon bailers are cleaned with a Liquinox solution then double rinsed to remove any chemical residue present. 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.

GWS-QMP2.SOP

21654

Chain-of-Custody Record

Facility No. _____ Facility Address <u>5427 TELEGRAPH AVE, OAKLAND</u> Consultant Project Number <u>4-719-04</u> Consultant Name <u>SIERRA ENVIRONMENTAL SERVICES</u> Address <u>P.O. Box 2546, Martinez, CA 94553</u> Project Contact (Name) <u>DAVID BEARDSLEY</u> (Phone) <u>(510) 370-1280</u> (FAX Number) <u>(510) 370-7959</u>	Client Contact (Name) <u>JON LEGALLET</u> (Company) <u>NORMUNDY ASSOCIATES</u> (Phone) _____ Laboratory Name <u>SAL</u> Samples Collected by (Name) <u>MARIO STERNAD</u> Collection Date <u>7-25-96</u> Signature <u>Mario Sternad</u>
--	--

Laboratory Number	Sample Identification	# size of Container(s)	Matrix S = Soil W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (yes or no)	ANALYSIS TO BE PERFORMED											Remarks
								BTEX + TPH Gas (602/8020 + 8015/5030)	TPH Diesel (8015/3550/3510)	Oil and Grease (Non-polar) (5520 B/E/F)	Halogenated Hydrocarbons (601/8010)	Volatile Organic Compounds (624/8240)	Total Lead (AA)	Metals: Cd, Cr, Ni, Pb, Zn (ICAP or AA)	Organic lead (DHS LUFT)	TPH - STORAGE SOLVENT			
MW-1	6VOA	W	G	10:15	HCL		X			X									
MW-1	2ANLT			10:15	COOL														
MW-2	6VOA			11:55	HCL		X			X									
MW-2	2ANLT			11:55	COOL														
MW-3	6VOA			11:10	HCL		X			X									
MW-3	2ANLT			11:10	COOL														
TB	3 VOA			-	HCL		X												

Please Initial:

Samples Stored in Ice: yes

Appropriate containers: yes

Samples preserved: yes

VOA's without headspace: yes

Comments: _____

T = 10.6°C

Relinquished By (Signature) <u>Mario Sternad</u>	Organization <u>SES</u>	Date/Time <u>7/25/96 1:10</u>	Received By (Signature) _____	Organization _____	Date/Time _____	Turn Around Time (Circle One) 24 hours 48 hours <u>5 days</u> 10 days As Contracted
Relinquished By (Signature) _____	Organization _____	Date/Time _____	Received By (Signature) _____	Organization _____	Date/Time _____	
Relinquished By (Signature) _____	Organization _____	Date/Time _____	Received for Laboratory by (Signature) <u>W. Paulson</u>	Organization <u>SAL</u>	Date/Time <u>7/25/96 1:15</u>	



Superior

Analytical Laboratory

CASE NARRATIVE

Sierra Environmental - Martinez
Project Number/Name: 4-719-04
Laboratory Number: 21654

Sample Receipt

Four water samples were received by
Superior Analytical Laboratory on July 25, 1996.

Cooler temperature was 18.6°C

No abnormalities were noted with sample receiving.

Sample Analysis

The samples were analysed for methods 8010, 8015M and 8020.

I / I

Customer Service: (800) 521-6109 • Laboratory: (510) 313-0850 • Facsimile: (510) 229-0916
Post Office Box 2648 • 835 Arnold Drive • Suite #106 • Martinez, California 94553
1555 Burke Street • Suite A • San Francisco, California 94124



Superior

Analytical Laboratory

Sierra Environmental - Martinez
ctn: David Beardsley

Project 4-719-04
Reported on July 31, 1996

Total Extractable Petroleum Hydrocarbons
by EPA SW-846 Method 8015M

Chronology

Laboratory Number 21654

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
MW-1	07/25/96	07/25/96	07/25/96	07/30/96	CG251.21	01
MW-2	07/25/96	07/25/96	07/25/96	07/30/96	CG251.21	02
MW-3	07/25/96	07/25/96	07/25/96	07/30/96	CG251.21	03

QC Samples

QC Batch #	QC Sample ID	TypeRef.	Matrix	Extract.	Analyzed
CG251.21-01	Method Blank	MB	Water	07/25/96	07/25/96
CG251.21-02	Laboratory Spike	LS	Water	07/25/96	07/25/96
CG251.21-03	Laboratory Spike Duplicate	LSD	Water	07/25/96	07/25/96



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Analytical Laboratory

Tierra Environmental - Martinez
ctn: David Beardsley

Project 4-719-04
Reported on July 31, 1996

Total Extractable Petroleum Hydrocarbons
by EPA SW-846 Method 8015M

LAB ID	Sample ID	Matrix	Dil. Factor	Moisture
21654-01	MW-1	Water	5.0	-
21654-02	MW-2	Water	100.0	-
21654-03	MW-3	Water	10.0	-

RESULTS OF ANALYSIS

Compound	21654-01		21654-02		21654-03	
	Conc.	RL	Conc.	RL	Conc.	RL
	ug/L		ug/L		ug/L	
Stoddard	2200@	250	48000	5000	2900	500
Diesel:	NA	250	NA	5000	NA	500
> Surrogate Recoveries (%) <<						
Tetracosane	111		78		111	



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Analytical Laboratory

Total Extractable Petroleum Hydrocarbons
by EPA SW-846 Method 8015M

Quality Assurance and Control Data

Laboratory Number: 21654

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
For Water Matrix (ug/L)						
CG251.21 ^m 02 / 03 - Laboratory Control Spikes						
Diesel:	-	1000	1010/1110	101/111	50-150	9
>> Surrogate Recoveries (%) <<						
Tetracosane				96/102	50-150	

» - Sample appears to be a mixture of stoddard and heavier unknown hydrocarbons.

Definitions:

ND = Not Detected

RL = Reporting Limit

NA = Not Analysed

RPD = Relative Percent Difference

ug/L = parts per billion (ppb)

mg/L = parts per million (ppm)

ug/kg = parts per billion (ppb)

mg/kg = parts per million (ppm)



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Analytical Laboratory

Total Extractable Petroleum Hydrocarbons
by EPA SW-846 Method 8015M

Quality Assurance and Control Data

Laboratory Number: 21654
Method Blank(s)

CG251.21-01

Conc. RL

ug/L

Stoddard	ND	50
Diesel:	ND	50

> Surrogate Recoveries (%) <<
Tetracosane 98



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Analytical Laboratory

Sierra Environmental - Martinez
Attn: David Beardsley

Project 4-719-04
Reported on August 1, 1996
Revised on August 7, 1996

Gasoline Range Petroleum Hydrocarbons and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

Chronology

Laboratory Number 21654

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
MW-1	07/25/96	07/25/96	07/26/96	07/26/96	CG261.05	01
MW-2	07/25/96	07/25/96	07/30/96	07/30/96	CG301.37	02
MW-3	07/25/96	07/25/96	07/29/96	07/29/96	CG291.37	03
TB	07/25/96	07/25/96	07/26/96	07/26/96	CG261.05	04

QC Samples

QC Batch #	QC Sample ID	TypeRef.	Matrix	Extract.	Analyzed
CG261.05-06	Laboratory Spike	LS	Water	07/26/96	07/26/96
CG261.05-27	Laboratory Spike Duplicate	LSD	Water	07/27/96	07/27/96
CG291.37-03	Laboratory Spike	LS	Water	07/29/96	07/29/96
CG291.37-08	MW-1	MS 21657-01	Water	07/29/96	07/29/96
CG291.37-09	MW-1	MSD 21657-01	Water	07/29/96	07/29/96
CG301.37-02	Laboratory Spike	LS	Water	07/30/96	07/30/96
CG301.37-05	MW1	MS 21661-01	Water	07/30/96	07/30/96
CG301.37-06	MW1	MSD 21661-01	Water	07/30/96	07/30/96
CG261.05-01	Method Blank	MB	Water	07/26/96	07/26/96
CG291.37-01	Method Blank	MB	Water	07/29/96	07/29/96
CG301.37-01	Method Blank	MB	Water	07/30/96	07/30/96
CG261.05-14	MW-3	MS 21654-03	Water	07/26/96	07/26/96
CG261.05-15	MW-3	MSD 21654-03	Water	07/26/96	07/26/96
CG261.05-18	Laboratory Spike	LS	Water	07/26/96	07/26/96
CG291.37-05	Laboratory Spike	LS	Water	07/29/96	07/29/96
CG291.37-10	MW-1	MS 21657-01	Water	07/29/96	07/29/96
CG291.37-11	MW-1	MSD 21657-01	Water	07/29/96	07/29/96
CG301.37-03	Laboratory Spike	LS	Water	07/30/96	07/30/96
CG301.37-07	MW1	MS 21661-01	Water	07/30/96	07/30/96
CG301.37-08	MW1	MSD 21661-01	Water	07/30/96	07/30/96



Superior

Analytical Laboratory

Sierra Environmental - Martinez
attn: David Beardsley

Project 4-719-04
Reported on August 1, 1996
Revised on August 7, 1996

Gasoline Range Petroleum Hydrocarbons and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

Table with 5 columns: LAB ID, Sample ID, Matrix, Dil.Factor, Moisture. Rows include 21654-01 to 21654-04 with corresponding sample IDs and matrices.

RESULTS OF ANALYSIS

Table with 5 columns: Compound, 21654-01, 21654-02, 21654-03, 21654-04. Each of the last four columns has sub-columns for Conc. and RL. Rows include Gasoline_Range, Benzene, Toluene, Ethyl Benzene, and Total Xylenes.

>> Surrogate Recoveries (%) <<

Table with 4 columns: Trifluorotoluene (SS), 65, 109, 123, 67



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Analytical Laboratory

Gasoline Range Petroleum Hydrocarbons and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

Quality Assurance and Control Data

Laboratory Number: 21654
Method Blank(s)

	CG261.05-01		CG291.37-01		CG301.37-01	
	Conc.	RL	Conc.	RL	Conc.	RL
	ug/L		ug/L		ug/L	
Gasoline_Range	ND	50	ND	50	ND	50
Benzene	ND	0.5	ND	0.5	ND	0.5
Toluene	ND	0.5	ND	0.5	ND	0.5
Ethyl Benzene	ND	0.5	ND	0.5	ND	0.5
Total Xylenes	ND	0.5	ND	0.5	ND	0.5
>> Surrogate Recoveries (%) <<						
Trifluorotoluene (SS)	66		107		109	



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Analytical Laboratory

Gasoline Range Petroleum Hydrocarbons and BTXE
 by EPA SW-846 5030/8015M/8020
 Gasoline Range quantitated as all compounds from C6-C10

Quality Assurance and Control Data

Laboratory Number: 21654

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
----------	--------------	-----------	------------	------------	----------	-------

For Water Matrix (ug/L)

CG261.05 06 / 27 - Laboratory Control Spikes

Benzene		20	16/18	80/90	65-125	12
Toluene		20	16/18	80/90	65-125	12
Ethyl Benzene		20	17/19	85/95	65-125	11
Total Xylenes		60	57/61	95/102	65-125	7

> Surrogate Recoveries (%) <<

Trifluorotoluene (SS)				58/73	50-150	
-----------------------	--	--	--	-------	--------	--

For Water Matrix (ug/L)

CG291.37 03 / - Laboratory Control Spikes

Benzene		20	20	100	65-125	
Toluene		20	21	105	65-125	
Ethyl Benzene		20	23	115	65-125	
Total Xylenes		60	62	103	65-125	

> Surrogate Recoveries (%) <<

Trifluorotoluene (SS)				105	50-150	
-----------------------	--	--	--	-----	--------	--

For Water Matrix (ug/L)

CG301.37 02 / - Laboratory Control Spikes

Benzene		20	21	105	65-125	
Toluene		20	25	125	65-125	
Ethyl Benzene		20	22	110	65-125	
Total Xylenes		60	60	100	65-125	

> Surrogate Recoveries (%) <<

Trifluorotoluene (SS)				108	50-150	
-----------------------	--	--	--	-----	--------	--



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Analytical Laboratory

Gasoline Range Petroleum Hydrocarbons and BTXE
 by EPA SW-846 5030/8015M/8020
 Gasoline Range quantitated as all compounds from C6-C10

Quality Assurance and Control Data

Laboratory Number: 21654

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
For Water Matrix (ug/L)						
	CG261.05	18 /	- Laboratory Control Spikes			
Gasoline_Range		2000	1500	75	65-135	
For Water Matrix (ug/L)						
	CG291.37	05 /	- Laboratory Control Spikes			
Gasoline_Range		2000	1900	95	65-135	
For Water Matrix (ug/L)						
	CG301.37	03 /	- Laboratory Control Spikes			
Gasoline_Range		2000	2100	105	65-135	
For Water Matrix (ug/L)						
	CG291.37	08 / 09	- Sample Spiked: 21657 - 01			
Benzene	1.1	20	21/20	100/95	65-125	5
Toluene	4.2	20	21/20	84/79	65-125	6
Ethyl Benzene	ND	20	23/21	115/105	65-125	9
Total Xylenes	ND	60	63/59	105/98	65-125	7
>> Surrogate Recoveries (%) <<						
	Trifluorotoluene (SS)			102/101	50-150	
For Water Matrix (ug/L)						
	CG301.37	05 / 06	- Sample Spiked: 21661 - 01			
Benzene	ND	20	21/21	105/105	65-125	0



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Analytical Laboratory

Gasoline Range Petroleum Hydrocarbons and BTXE
by EPA SW-846 5030/8015M/8020
Gasoline Range quantitated as all compounds from C6-C10

Quality Assurance and Control Data

Laboratory Number: 21654

Table with 7 columns: Compound, Sample conc., SPK Level, SPK Result, Recovery %, Limits %, RPD %. Rows include Toluene, Ethyl Benzene, Total Xylenes, and Trifluorotoluene (SS).

For Water Matrix (ug/L)
CG261.05 14 / 15 - Sample Spiked: 21654 - 03

Table row for Gasoline_Range with values: 3300, 2000, 5200/5300, 95/100, 65-135, 5

For Water Matrix (ug/L)
CG291.37 10 / 11 - Sample Spiked: 21657 - 01

Table row for Gasoline_Range with values: ND, 2000, 1800/1800, 90/90, 65-135, 11

For Water Matrix (ug/L)
CG301.37 07 / 08 - Sample Spiked: 21661 - 01

Table row for Gasoline_Range with values: ND, 2000, 2100/2100, 105/105, 65-135, 0



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Analytical Laboratory

Narrative:

!!- Hydrocarbons were found in the range of gasoline, but do not resemble a gasoline fingerprint. Possible Stoddard.

Definitions:

ND = Not Detected

RL = Reporting Limit

NA = Not Analysed

RPD = Relative Percent Difference

ug/L = parts per billion (ppb)

mg/L = parts per million (ppm)

ug/kg = parts per billion (ppb)

mg/kg = parts per million (ppm)



Superior

Analytical Laboratory

Sierra Environmental - Martinez
Attn: David Beardsley

Project 4-719-04
Reported on July 26, 1996

Halogenated Volatile Organics by EPA SW-846 Methods 5030/8010

Chronology

Laboratory Number 21654

Sample ID	Sampled	Received	Extract.	Analyzed	QC Batch	LAB #
MW-1	07/25/96	07/25/96	07/25/96	07/25/96	CG251.08	01
MW-2	07/25/96	07/25/96	07/25/96	07/25/96	CG251.08	02
MW-3	07/25/96	07/25/96	07/25/96	07/25/96	CG251.08	03

QC Samples

QC Batch #	QC Sample ID	TypeRef.	Matrix	Extract.	Analyzed
CG251.08-01	Method Blank	MB	Water	07/25/96	07/25/96
CG251.08-02	Laboratory Spike	LS	Water	07/25/96	07/25/96
CG251.08-03	MW-1	MS 21654-01	Water	07/25/96	07/25/96
CG251.08-04	MW-1	MSD 21654-01	Water	07/25/96	07/25/96



Superior

Analytical Laboratory

Sierra Environmental - Martinez
Attn: David Beardsley

Project 4-719-04
Reported on July 26, 1996

Halogenated Volatile Organics by EPA SW-846 Methods 5030/8010

LAB ID	Sample ID	Matrix	Dil. Factor	Moisture
21654-01	MW-1	Water	1.0	-
21654-02	MW-2	Water	1.0	-
21654-03	MW-3	Water	1.0	-

RESULTS OF ANALYSIS

Compound	21654-01		21654-02		21654-03	
	Conc.	RL	Conc.	RL	Conc.	RL
	ug/L		ug/L		ug/L	
Chloromethane	ND	0.5	ND	0.5	ND	0.5
Vinyl Chloride	ND	0.5	0.8	0.5	1.5	0.5
Bromomethane	ND	0.5	ND	0.5	ND	0.5
Chloroethane	ND	0.5	ND	0.5	ND	0.5
Trichlorofluoromethane	ND	0.5	ND	0.5	ND	0.5
1,1-Dichloroethene	ND	0.5	ND	0.5	ND	0.5
Dichloromethane	ND	0.5	ND	0.5	ND	0.5
t-1,2-Dichloroethene	ND	0.5	ND	0.5	ND	0.5
1,1-Dichloroethane	ND	0.5	2.3	0.5	ND	0.5
c-1,2-Dichloroethene	ND	0.5	1.5	0.5	1.0	0.5
Chloroform	ND	0.5	ND	0.5	ND	0.5
1,1,1-Trichloroethane	ND	0.5	ND	0.5	ND	0.5
Carbon tetrachloride	ND	0.5	ND	0.5	ND	0.5
1,2-Dichloroethane	ND	0.5	ND	0.5	ND	0.5
Trichloroethene	ND	0.5	ND	0.5	ND	0.5
c-1,3-Dichloropropene	ND	0.5	ND	0.5	ND	0.5
1,2-Dichloropropane	ND	0.5	4.1	0.5	ND	0.5
t-1,3-Dichloropropene	ND	0.5	ND	0.5	ND	0.5
Bromodichloromethane	ND	0.5	ND	0.5	ND	0.5
1,1,2-Trichloroethane	ND	0.5	ND	0.5	ND	0.5
Tetrachloroethene	ND	0.5	ND	0.5	ND	0.5
Dibromochloromethane	ND	0.5	ND	0.5	ND	0.5
Chlorobenzene	ND	0.5	ND	0.5	3.2	0.5
Bromoform	ND	0.5	ND	0.5	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5	ND	0.5	ND	0.5
1,3-Dichlorobenzene	ND	0.5	ND	0.5	ND	0.5
1,2-Dichlorobenzene	ND	0.5	0.5	0.5	2.0	0.5
1,4-Dichlorobenzene	ND	0.5	ND	0.5	ND	0.5
>> Surrogate Recoveries (%) <<						
Bromochloromethane	75		78		78	



Superior

Analytical Laboratory

Halogenated Volatile Organics by EPA SW-846 Methods 5030/8010

Quality Assurance and Control Data

Laboratory Number: 21654

Method Blank(s)

CG251.08-01

Conc. RL

ug/L

Chloromethane	ND	0.5
Vinyl Chloride	ND	0.5
Bromomethane	ND	0.5
Chloroethane	ND	0.5
Trichlorofluoromethane	ND	0.5
1,1-Dichloroethene	ND	0.5
Dichloromethane	ND	0.5
t-1,2-Dichloroethene	ND	0.5
1,1-Dichloroethane	ND	0.5
c-1,2-Dichloroethene	ND	0.5
Chloroform	ND	0.5
1,1,1-Trichloroethane	ND	0.5
Carbon tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Trichloroethene	ND	0.5
c-1,3-Dichloropropene	ND	0.5
1,2-Dichloropropane	ND	0.5
t-1,3-Dichloropropene	ND	0.5
Bromodichloromethane	ND	0.5
1,1,2-Trichloroethane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
Chlorobenzene	ND	0.5
Bromoform	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5

>> Surrogate Recoveries (%) <<

Bromochloromethane 102



Superior

Analytical Laboratory

Halogenated Volatile Organics by EPA SW-846 Methods 5030/8010

Quality Assurance and Control Data

Laboratory Number: 21654

Compound	Sample conc.	SPK Level	SPK Result	Recovery %	Limits %	RPD %
For Water Matrix (ug/L)						
CG251.08 02 / - Laboratory Control Spikes						
1,1-Dichloroethene		20	23	115	50-189	
Trichloroethene		20	21	105	53-161	
Chlorobenzene		20	23	115	57-171	
>> Surrogate Recoveries (%) <<						
Bromochloromethane				94	50-125	
For Water Matrix (ug/L)						
CG251.08 03 / 04 - Sample Spiked: 21654 - 01						
1,1-Dichloroethene	ND	20	20/20	100/100	50-189	0
Trichloroethene	ND	20	18/18	90/90	53-161	0
Chlorobenzene	ND	20	21/21	105/105	57-171	0
>> Surrogate Recoveries (%) <<						
Bromochloromethane				77/77	50-125	

Definitions:

ND = Not Detected

RL = Reporting Limit

NA = Not Analysed

RPD = Relative Percent Difference

ug/L = parts per billion (ppb)

mg/L = parts per million (ppm)

ug/kg = parts per billion (ppb)

mg/kg = parts per million (ppm)



WATER SAMPLING DATA

Job Name 5427 TELEGRAPH, DAK Job Number 4-719-04 Sampler MAS
 Well Number MW 1 Date 7-25-96 Well Diameter 2"
 Sample Point Location/Description PARKING LOT Well Depth (spec.) 20 ft
 Depth to Water (static) 7.10 Well Depth (sounded) 19.27
 Initial height of water in casing 12.17 Volume 1.98 gallons
 Volume to be purged 6.0 gallons
 Purged With BILGE PUMP Sampled With DISP. PE BAILEY
 Pumped or Bailed Dry? Yes No Time After gallons
 Water level at sampling 8.57" Percent Recovery 68%

Formulas/Conversions
 r = well radius in ft
 h = ht of water col. in ft
 vol. in cyl. = $\pi r^2 h$
 7.48 gal/ft³
 $V_{2"}$ casing = 0.163 gal/ft
 $V_{3"}$ casing = 0.367 gal/ft
 $V_{4"}$ casing = 0.653 gal/ft
 $V_{4.5"}$ casing = 0.826 gal/ft
 $V_{5"}$ casing = 1.47 gal/ft
 $V_{6"}$ casing = 2.61 gal/ft

CHEMICAL DATA

Purge Time		Purge Volume (gal.)	Cumulative (gal.)	pH	Temp ^o F	Specific Conductance	
Start	Stop					Measurement	x umhos/cm
9:30	9:32	2.0	2.0	6.35	70°F	1100	µmhos/cm
9:40	9:42	4.0	6.0	6.42	71°F	1300	
9:50	9:52	4.0	10.0	6.43	70°F	1280	✓

SAMPLES COLLECTED Time 10:15 Total volume purged (gal.) 10.0 GALLONS
 Water color LIGHTLY CLOUDY Odor NO ODOR
 Description of sediments or material in sample: GRAY - BROWN
 Additional Comments:

Sample ID	# of Cont.	Container Type	Filtered (size, u)	Preservative (type)	Refrig. (Y/N)	Lab (Init)	Analysis Requested
MW-1	1	VOA	-	HCL	Y		8015/8022/8023
MW-1	2	AM LIT.	-	COOL	Y		8015 ST. 2015

Container Type Codes: 1 = 40 ml. clear VOA/Teflon; septa; 2 = Brown glass/teflon lined cap (specify size);
 3 = Clear glass/teflon lined cap (specify size); 4 = Polyethylene/polyethylene cap (specify size);
 5 = Other _____; 6 = Other _____



WATER SAMPLING DATA

Job Name 5427 TELEGRAPH, OAK Job Number 4-719-04 Sampler MS
 Well Number MW 2 Date 7-25-96 Well Diameter 2"
 Sample Point Location/Description Near Bldg Well Depth (spec.) 27
 Depth to Water (static) 10.73 Well Depth (sounded) 26.74
 Initial height of water in casing 16.01 Volume 2.61 gallons
 Volume to be purged 7.83 gallons
 Purged With BILGE PUMP Sampled With DISP. PL. BAILER
 Pumped or Bailed Dry? Yes No Time 11:42 After 8.0 gallons
 Water level at sampling 23.30' Percent Recovery 23%

Formulas/Conversions
 r = well radius in ft
 h = ht of water col. in ft
 vol. in cyl. = $\pi r^2 h$
 $V_{2"}$ casing = 0.163 gal/ft
 $V_{3"}$ casing = 0.367 gal/ft
 $V_{4"}$ casing = 0.653 gal/ft
 $V_{5"}$ casing = 0.826 gal/ft
 $V_{6"}$ casing = 1.47 gal/ft
 $V_{8"}$ casing = 2.61 gal/ft

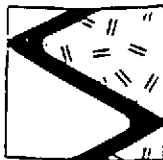
CHEMICAL DATA

Purge Time		Purge Volume (gal.)	Cumulative (gal.)	pH	Temp ^{°F}	Specific Conductance	
Start	Stop					Measurement	x umhos/cm
11:30	11:35	4.0	4.0	6.30	70°F	1629	umhos/cm
11:40	11:42	4.0	8.0	6.52	69°F	1588	
11:50	11:55	2.0	10.0	6.60	69°F	1587	↓

SAMPLES COLLECTED Time 11:55 AM Total volume purged (gal.) 10.0
 Water color SLIGHTLY CLOUDY Odor HEAVY PETROLEUM ODOR (SWEET)
 Description of sediments or material in sample: SHEEN; LIGHT GRAY-GREEN W/ SILT & SAND
 Additional Comments: _____

Sample ID	# of Cont.	Container Type	Filtered (size, u)	Preservative (type)	Refrig. (Y/N)	Lab (Init)	Analysis Requested
MW-2	6	VOX	-	HCL	Y		
MW2	2	Am Lit.	-	COOL	Y		

Container Type Codes: 1 = 40 ml clear VOA/Teflon; septa; 2 = Brown glass/teflon lined cap (specify size);
 3 = Clear glass/teflon lined cap (specify size); 4 = Polyethylene/polyethylene cap (specify size);
 5 = Other _____; 6 = Other _____



SIERRA

WATER SAMPLING DATA

Job Name 5427 TELEGRAPH OAKLAND Job Number 4-719-04

Sampler MA-S

Well Number MW3

Date 7-25-96

Well Diameter 2"

Sample Point Location/Description _____

Well Depth (spec.) 20 ft

Depth to Water (static) 12.06

Well Depth (sounded) 20.05

Initial height of water in casing 7.99

Volume 1.3 gallons

Volume to be purged _____

3.91 gallons

Purged With BILGE PUMP

Sampled With DISP. PE BAILED

Pumped or Bailed Dry? Yes No

Time _____ After _____ gallons

Water level at sampling 13.86

Percent Recovery 85%

Formulas/Conversions

- r = well radius in ft
- h = ht of water col. in ft
- vol. in cyl. = $\pi r^2 h$
- 7.48 gal/ft³
- V_{2"} casing = 0.163 gal/ft
- V_{3"} casing = 0.367 gal/ft
- V_{4"} casing = 0.653 gal/ft
- V_{4.5"} casing = 0.826 gal/ft
- V_{6"} casing = 1.47 gal/ft
- V_{8"} casing = 2.61 gal/ft

CHEMICAL DATA

Purge Time		Purge Volume (gal.)	Cumulative (gal.)	pH	Temp of (°F)	Specific Conductance	
Start	Stop					Measurement	x umhos/cm
10:35	10:37	2.0	2.0	7.13	71°F	720	umhos/cm
10:40	10:43	2.0	4.0	6.63	70°F	749	1
10:50	10:51	2.0	6.0	6.60	70°F	752	↓

SAMPLES COLLECTED Time 11:10 AM Total volume purged (gal.) 6.0

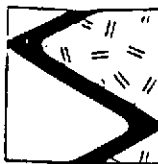
Water color SLIGHTLY CLOUDY Odor SLIGHT PETROLEUM ODOR (SWEET)

Description of sediments or material in sample: LIGHT GRAY-BROWN

Additional Comments: _____

Sample ID	# of Cont.	Container Type	Filtered (size, u)	Preservative (type)	Refrig. (Y/N)	Lab (Init)	Analysis Requested
MW3	6	VOA	-	HCL	Y		
MW3	2	AM.LIT.	-	COOL	Y		

Container Type Codes: 1 = 40 ml clear VOA/Teflon; septa; 2 = Brown glass/teflon lined cap (specify size); 3 = Clear glass/teflon lined cap (specify size); 4 = Polyethylene/polyethylene cap (specify size); 5 = Other _____; 6 = Other _____



SIERRA

WATER SAMPLING DATA

Job Name 5427 TELEGRAPH, OAK Job Number 4-719-04 Sampler MAS
 Well Number TB Date 7-25-96 Well Diameter N/A
 Sample Point Location/Description TRIP BLANK Well Depth (spec.) _____
 Depth to Water (static) _____ Well Depth (sounded) _____
 Initial height of water in casing _____ Volume _____ gallons
 Volume to be purged _____ gallons
 Purged With _____ Sampled With _____
 Pumped or Bailed Dry? Yes No Time _____ After _____ gallons
 Water level at sampling _____ Percent Recovery _____

Formulas/Conversions
 r = well radius in ft
 h = ht of water col. in ft
 vol. in cyl. = $\pi r^2 h$
 7.48 gal/ft³
 V_{2"} casing = 0.163 gal/ft
 V_{3"} casing = 0.367 gal/ft
 V_{4"} casing = 0.653 gal/ft
 V_{4.5"} casing = 0.826 gal/ft
 V_{6"} casing = 1.47 gal/ft
 V_{8"} casing = 2.61 gal/ft

CHEMICAL DATA

Purge Time		Purge Volume (gal.)	Cumulative (gal.)	pH	Temp (°C)	Specific Conductance	
Start	Stop					Measurement	x umhos/cm

SAMPLES COLLECTED Time _____ Total volume purged (gal.) _____
 Water color _____ Odor _____
 Description of sediments or material in sample: _____
 Additional Comments: _____

Sample ID	# of Cont.	Container Type	Filtered (size, u)	Preservative (type)	Refrig. (Y/N)	Lab (Init)	Analysis Requested
TB	3	VOA	-	HCl	Y		

Container Type Codes: 1 = 40 ml. clear VOA/Teflon septa; 2 = Brown glass/teflon lined cap (specify size);
 3 = Clear glass/teflon lined cap (specify size); 4 = Polyethylene/polyethylene cap (specify size);
 5 = Other _____; 6 = Other _____