



**GeoStrategies Inc.**

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March 26, 1993

Ms. Pam Evans  
Alameda County Health Agency  
Department of Environmental Health  
80 Swan Way, Room 200  
Oakland, California 94621

Reference: Former Shell Service Station  
15275 Washington Street  
San Leandro, California  
WIC 204-6852-1008

Ms. Evans:

As requested by Mr. Dan Kirk of Shell Oil Company, we are forwarding the March 26, 1993 Quarterly Report prepared for the referenced location. The report presents the results of the ground-water sampling conducted during the first quarter of 1993.

If you have any questions, please call.

Sincerely,

A handwritten signature in cursive script that reads "Ellen Fostersmith".

Ellen Fostersmith  
Geologist

EF/

Enclosure

cc: Mr. Dan Kirk, Shell Oil Company  
Mr. Jeff Holland, Shell Oil Company  
Mr. Lester Feldman, Regional Water Quality Control Board

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**GeoStrategies Inc.**

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March 26, 1993

Shell Oil Company  
P.O. Box 5278  
Concord, California

Attn: Mr. Dan Kirk

Re: QUARTERLY REPORT  
Former Shell Service Station  
15275 Washington Avenue  
San Leandro, California  
WIC# 204-6852-1008

Mr. Kirk:

This Quarterly Report by GeoStrategies Inc. (GSI) presents the results of the 1993 first quarter sampling for the above referenced site (Plate 1). Sampling data were furnished by the Shell Oil Company sampling contractor.

**EXECUTIVE SUMMARY**

- First quarter groundwater monitoring was conducted on January 13 and 14, 1993.
- The dissolved hydrocarbon plume appears to be defined east, south and west of the former underground storage tanks.
- Groundwater elevations beneath the site rose by approximately 1.75 to 6.75 feet between October 1992 and January 1993. The rise in groundwater elevations appears to have changed the groundwater flow direction beneath the site.
- The service station was demolished and the USTs removed in 1987.

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### SITE DESCRIPTION

There are currently sixteen monitoring wells and one recovery well at the site; Wells S-1, S-3, S-5 through S-18, and SR-1 (Plate 2). These wells were installed between 1985 and 1991 by EMCON Associates, Woodward-Clyde Consultants and GSI. Wells S-2 and S-4 were destroyed during construction activities in 1987.

### CURRENT QUARTER SAMPLING RESULTS

Depth to water-level measurements were obtained in each monitoring well on January 13, 1993. Static ground-water levels were measured from the surveyed top of each well box and recorded to the nearest  $\pm 0.01$  foot. Water-level elevations, referenced to Mean Sea Level (MSL) datum, and the stabilized values of measured physical parameters are presented in Table 1. Water-level data were used to construct a quarterly potentiometric map (Plate 2). Historically, shallow ground-water flow is generally to the south, at an approximate hydraulic gradient of 0.003.

Each well was checked for the presence of floating product. Floating product was not observed in the wells this quarter.

Ground-water samples were collected on January 13 and 14, 1993. Monitoring Wells S-6, S-11, S-13, S-14, and S-17 are sampled on a semi-annual schedule, and were not sampled this quarter. Samples were analyzed for Total Petroleum Hydrocarbons calculated as Gasoline (TPH-Gasoline), according to EPA Method 8015 (Modified) and for Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) according to EPA Method 8020. The ground-water samples were analyzed by Anametrix Inc., a California State-certified laboratory located in San Jose, California. The laboratory analytical report and Chain-of-Custody form are included in Appendix A. These data are summarized with the historical chemical analytical data presented in Table 2. A chemical isoconcentration map for benzene is presented on Plate 3.

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### DISCUSSION

The dissolved hydrocarbon plume appears to be defined east, south and west of the former underground storage tank by Wells S-7, S-10, S-15, and S-18. The source of hydrocarbons was removed when the service station was demolished in 1987.

Groundwater elevations beneath the site rose by approximately 1.75 to 6.75 feet between October 1992 and January 1993. In the first quarter of 1993, groundwater flow was to the east, south, and west from a groundwater high located in the western portion of the site. Historically, shallow groundwater flow has generally been to the south at a hydraulic gradient ranging from 0.001 to 0.01. The change in groundwater flow appears to be the result of rising groundwater levels.

If you have any questions, please call.

GeoStrategies Inc. by,

*Ellen C. Fostersmith*

Ellen C. Fostersmith  
Geologist

*Michael C. Carey*

Michael C. Carey  
Engineering Geologist EGP: 6-30-94  
C.E.G. 1351



ECF/MCC/rmt

- Plate 1. Vicinity Map
- Plate 2. Site Plan/Potentiometric Map
- Plate 3. Benzene Isoconcentration Map

Appendix A. Blaine Monitoring Report and Chain-of-Custody Form  
QC Review: *[Signature]*

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**TABLE 1**  
**FIELD MONITORING DATA**

WELL NO.	MONITORING DATE	CASING DIA. (IN)	TOTAL WELL DEPTH (FT)	WELL ELEV. (FT)	DEPTH TO WATER (FT)	PRODUCT THICKNESS (FT)	STATIC WATER ELEV. (FT)
S-1	13-Jan-93	3	19.99	21.55	5.91	---	15.64
S-3	13-Jan-93	3	15.50	21.14	5.16	---	15.98
S-5	13-Jan-93	4	18.52	21.41	5.22	---	16.19
S-6	13-Jan-93	3	24.72	22.02	6.43	---	15.59
S-7	13-Jan-93	3	24.38	21.47	5.84	---	15.63
S-8	13-Jan-93	3	24.32	20.72	5.32	---	15.40
S-9	13-Jan-93	3	17.98	20.96	6.80	---	14.16
S-10	13-Jan-93	3	18.26	20.69	3.78	---	16.91
S-11	13-Jan-93	3	23.88	21.26	6.52	---	14.74
S-12	13-Jan-93	3	23.98	21.05	6.38	---	14.67
S-13	13-Jan-93	3	23.88	20.57	5.06	---	15.51
S-14	13-Jan-93	3	23.44	20.44	5.07	---	15.37
S-15	13-Jan-93	3	23.54	22.22	6.64	---	15.58
S-16	13-Jan-93	3	24.36	21.82	5.78	---	16.04
S-17	13-Jan-93	3	24.38	20.95	3.43	---	17.52
S-18	13-Jan-93	3	18.10	21.03	5.86	---	15.17
SR-1	13-Jan-93	6	21.24	21.45	5.46	---	15.99

- Notes: 1. Static water elevations referenced to Mean Sea Level (MSL).  
2. Physical parameter measurements represent stabilized values.

TABLE 2  
HISTORICAL GROUND-WATER QUALITY DATABASE

Sample Date	Sample Point	TPH-G (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
08-Jul-85	S-1	520	N/A	N/A	N/A	N/A
06-Sep-88	S-1	<50	<0.5	<1	<1	<3
16-Nov-88	S-1	<50	<0.5	<1	<1	<3
27-Feb-89	S-1	<50	0.5	<1	<1	<3
04-May-89	S-1	<50	1	<1	<1	<3
10-Aug-89	S-1	<50	0.7	<1	<1	<3
10-Oct-89	S-1	<50	<0.5	<1	<1	<3
25-Jan-90	S-1	<50	<0.5	<0.5	<0.5	<1
18-Apr-90	S-1	<50	<0.5	<0.5	<0.5	<1
23-Jul-90	S-1	<50	<0.5	<0.5	<0.5	<0.5
18-Oct-90	S-1	80	5	<0.5	<0.5	3
28-Jan-91	S-1	<50	4.5	<0.5	<0.5	2
25-Apr-91	S-1	80&	3.7	<0.5	0.7	2
09-Jul-91	S-1	200	16	<0.5	1.3	5.8
08-Oct-91	S-1	<50	2.3	<0.5	<0.5	<0.5
05-Feb-92	S-1	160	8.9	<0.5	<0.5	6
28-Apr-92	S-1	<50	2.4	<0.5	<0.5	0.9
27-Jul-92	S-1	<50	<0.5	<0.5	<0.5	<0.5
26-Oct-92	S-1	57	3	1.6	1.4	1.7
14-Jan-93	S-1	490	53	1.2	20	33
06-Sep-88	S-3	96,000	3,400	9,500	2,700	17,000
16-Nov-88	S-3	70,000	4,600	8,400	2,500	13,000
27-Feb-89	S-3	32,000	2,400	3,100	1,500	6,400
04-May-89	S-3	47,000	4,400	6,300	2,400	15,000
09-Aug-89	S-3	110,000	5,700	5,700	3,200	19,000
10-Oct-89	S-3	52,000	4,600	3,300	2,600	15,000
25-Jan-90	S-3	420,000	5,200	4,100	6,700	34,000
18-Apr-90	S-3	58,000	3,800	1,400	2,400	12,000
23-Jul-90	S-3	49,000	3,400	1,800	2,300	12,000
18-Oct-90	S-3	44,000	3,500	650	2,400	11,000
28-Jan-91	S-3	64,000	4,090	570	1,940	8,090
25-Apr-91	S-3	120,000	3,900	3,600	2,400	8,900
09-Jul-91	S-3	50,000	3,600	2,300	1,800	10,000
08-Oct-91	S-3	130,000	3,600	1,000	2,800	8,400

**TABLE 2**  
**HISTORICAL GROUND-WATER QUALITY DATABASE**

Sample Date	Sample Point	TPH-G (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
05-Feb-92	S-3	150,000	2,500	670	2,700	10,000
28-Apr-92	S-3	120,000	2,200	1,200	2,000	5,800
27-Jul-92	S-3	190,000	1,400	<1,250	<1,250	3,400
26-Oct-92	S-3	950,000	2,000	8,400	16,000	36,000
14-Jan-93	S-3	41,000	2,700	2,500	1,800	6,900
08-Jan-87	S-5	7,800	380	510	---	1,000
06-Sep-88	S-5	7,000	2,600	60	400	700
16-Nov-88	S-5	3,000	660	60	120	220
27-Feb-89	S-5	5,700	2,000	220	260	320
04-May-89	S-5	9,000	3,000	600	630	1,700
09-Aug-89	S-5	5,100	1,100	<50	270	400
10-Oct-89	S-5	15,000	3,300	160	830	2,200
25-Jan-90	S-5	12,000	2,400	360	570	1,400
18-Apr-90	S-5	5,200	1,100	40	300	460
23-Jul-90	S-5	5,500	1,300	140	320	730
18-Oct-90	S-5	12,000	3,200	40	720	900
28-Jan-91	S-5	2,550	410	15	110	60
25-Apr-91	S-5	67,000	5,100	3,100	2,800	11,000
09-Jul-91	S-5	4,900	480	36	360	1,000
08-Oct-91	S-5	6,600	370	7	190	380
05-Feb-92	S-5	44,000	4,800	850	2,700	8,400
28-Apr-92	S-5	33,000	1,400	320	1,600	5,200
27-Jul-92	S-5	20,000	2,400	<125	1,800	5,300
26-Oct-92	S-5	21,000	1,600	140	1,500	2,800
14-Jan-93	S-5	54,000	1,900	1,000	2,700	16,000
16-Nov-88	S-6	50	0.7	<1	<1	<3
27-Feb-89	S-6	<50	<0.5	<1	<1	<3
04-May-89	S-6	<50	<0.5	<1	<1	<3
10-Aug-89	S-6	<50	<0.5	<1	<1	<3
10-Oct-89	S-6	<50	<0.5	<1	<1	<3
25-Jan-90	S-6	<50	<0.5	<0.5	<0.5	<1
18-Apr-90	S-6	<50	<0.5	0.6	<0.5	1
23-Jul-90	S-6	<50	<0.5	0.9	<0.5	1.8
18-Oct-90	S-6	<50	<0.5	0.7	<0.5	0.8

**TABLE 2**  
**HISTORICAL GROUND-WATER QUALITY DATABASE**

Sample Date	Sample Point	TPH-G (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	
28-Jan-91	S-6	<50	<0.5	<0.5	<0.5	<0.5	
25-Apr-91	S-6	<50	<0.5	<0.5	<0.5	0.7	
09-Jul-91	S-6	<50	<0.5	<0.5	<0.5	<0.5	
08-Oct-91	S-6	<50	0.7	<0.5	<0.5	<0.5	
05-Feb-92	S-6	N/A	N/A	N/A	N/A	N/A	
28-Apr-92	S-6	<50	<0.5	<0.5	<0.5	<0.5	
27-Jul-92	S-6	N/A	N/A	N/A	N/A	N/A	
26-Oct-92	S-6	<50	<0.5	<0.5	<0.5	<0.5	
13-Jan-93	S-6	Not Sampled					
16-Nov-88	S-7	100	5.1	15	2	13	
27-Feb-89	S-7	50	0.5	3	1	11	
04-May-89	S-7	<50	<0.5	<1	<1	<3	
10-Aug-89	S-7	<50	<0.5	<1	<1	<3	
10-Oct-89	S-7	<50	<0.5	<1	<1	<3	
25-Jan-90	S-7	<50	<0.5	<0.5	<0.5	<1	
18-Apr-90	S-7	<50	<0.5	<0.5	<0.5	<1	
23-Jul-90	S-7	<50	<0.5	<0.5	<0.5	<0.5	
18-Oct-90	S-7	<50	<0.5	<0.5	0.5	4.1	
28-Jan-91	S-7	<50	<0.5	<0.5	<0.5	<0.5	
25-Apr-91	S-7	60&	<0.5	<0.5	<0.5	<0.5	
09-Jul-91	S-7	<50	<0.5	<0.5	<0.5	<0.5	
08-Oct-91	S-7	<50	<0.5	<0.5	<0.5	<0.5	
05-Feb-92	S-7	<50	<0.5	<0.5	<0.5	<0.5	
28-Apr-92	S-7	<50	<0.5	<0.5	<0.5	<0.5	
27-Jul-92	S-7	<50	<0.5	<0.5	<0.5	<0.5	
26-Oct-92	S-7	57*	<0.5	<0.5	<0.5	<0.5	
14-Jan-93	S-7	56*	<0.5	<0.5	<0.5	<0.5	
16-Nov-88	S-8	210	5	<1	1	5	
27-Feb-89	S-8	<50	2.4	<1	<1	<3	
03-May-89	S-8	<50	7.5	<1	2	<3	
09-Aug-89	S-8	<50	0.6	<1	<1	<3	
09-Oct-89	S-8	<50	<0.5	<1	<1	<3	
25-Jan-90	S-8	<50	<0.5	<0.5	<0.5	<1	
18-Apr-90	S-8	<50	<0.5	<0.5	<0.5	<1	



TABLE 2  
HISTORICAL GROUND-WATER QUALITY DATABASE

Sample Date	Sample Point	TPH-G (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
23-Jul-90	S-8	<50	<0.5	<0.5	<0.5	<0.5
18-Oct-90	S-8	<50	<0.5	<0.5	<0.5	<0.5
28-Jan-91	S-8	<50	55	0.5	<0.5	1.4
25-Apr-91	S-8	130&	19	<0.5	1.3	1.1
09-Jul-91	S-8	200	33	<0.5	1.8	2.8
08-Oct-91	S-8	580	95	2.2	4.9	6.5
05-Feb-92	S-8	90&	18	<0.5	6.2	1.8
28-Apr-92	S-8	<50	5.9	<0.5	2.5	<0.5
27-Jul-92	S-8	<50	<0.5	<0.5	<0.5	<0.5
26-Oct-92	S-8	<50	<0.5	<0.5	<0.5	<0.5
14-Jan-93	S-8	270	74	0.9	25	5.5
16-Nov-88	S-9	1,400	69	3	52	180
27-Feb-89	S-9	1,600	240	4	130	180
03-May-89	S-9	2,600	470	10	240	480
09-Aug-89	S-9	520	73	<10	40	<30
09-Oct-89	S-9	380	82	<1	46	13
25-Jan-90	S-9	750	140	1.2	69	75
18-Apr-90	S-9	680	150	1.7	50	37
23-Jul-90	S-9	490	94	1.2	32	24
18-Oct-90	S-9	390	140	0.7	3.3	24
28-Jan-91	S-9	1,040	450	4.6	85	97
25-Apr-91	S-9	5,800	880	9	360	500
09-Jul-91	S-9	1,400	220	2.8	82	100
08-Oct-91	S-9	890	960	<2.5	16	29
05-Feb-92	S-9	950	240	<2.5	28	55
28-Apr-92	S-9	1,400&	290	3	100	81
27-Jul-92	S-9	890	190	<2.5	66	68
26-Oct-92	S-9	650	160	<2.5	63	89
13-Jan-93	S-9	19,000	2,400	38	1,700	2,200
16-Nov-88	S-10	330	0.5	<1	1	11
27-Feb-89	S-10	140	<0.5	<3	2	6
03-May-89	S-10	220	<0.5	1	2	7
09-Aug-89	S-10	<50	<0.5	<1	<1	<3
09-Oct-89	S-10	170	<0.5	<1	<1	<3

TABLE 2

## HISTORICAL GROUND-WATER QUALITY DATABASE

Sample Date	Sample Point	TPH-G (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
25-Jan-90	S-10	<50	<0.5	<0.5	1.1	4
18-Apr-90	S-10	<50	<0.5	0.9	<0.5	2
23-Jul-90	S-10	590	<0.5	<0.5	1.9	19
18-Oct-90	S-10	140	<0.5	0.7	<0.5	7
28-Jan-91	S-10	<50	<0.5	<0.5	<0.5	<0.5
25-Apr-91	S-10	<50	<0.5	<0.5	1.1	0.8
09-Jul-91	S-10	<50	<0.5	<0.5	<0.5	<0.5
08-Oct-91	S-10	140^	<0.5	<0.5	<0.5	<0.5
05-Feb-92	S-10	<50	<0.5	<0.5	<0.5	<0.5
28-Apr-92	S-10	<50	<0.5	<0.5	<0.5	<0.5
27-Jul-92	S-10	<50	<0.5	<0.5	<0.5	<0.5
26-Oct-92	S-10	<50	<0.5	<0.5	<0.5	<0.5
13-Jan-93	S-10	88	<0.5	0.6	<0.5	<0.5
16-Nov-88	S-11	<50	<0.5	<1	<1	<3
27-Feb-89	S-11	<50	<0.5	<1	<1	<3
03-May-89	S-11	<50	<0.5	<1	<1	<3
09-Aug-89	S-11	<50	<0.5	<1	<1	<3
09-Oct-89	S-11	<50	<0.5	<1	<1	<3
25-Jan-90	S-11	<50	<0.5	<0.5	<0.5	<1
18-Apr-90	S-11	<50	<0.5	<0.5	<0.5	<1
23-Jul-90	S-11	<50	<0.5	0.6	<0.5	1.1
18-Oct-90	S-11	<50	<0.5	<0.5	<0.5	0.5
28-Jan-91	S-11	63	<0.5	3.3	0.9	7
25-Apr-91	S-11	<50	<0.5	<0.5	0.8	<0.5
09-Jul-91	S-11	<50	<0.5	<0.5	<0.5	<0.5
08-Oct-91	S-11	<50	<0.5	<0.5	<0.5	<0.5
05-Feb-92	S-11	N/A	N/A	N/A	N/A	N/A
28-Apr-92	S-11	<50	<0.5	<0.5	<0.5	<0.5
27-Jul-92	S-11	N/A	N/A	N/A	N/A	N/A
26-Oct-92	S-11	<50	<0.5	<0.5	<0.5	<0.5
13-Jan-93	S-11	Not Sampled				
16-Nov-88	S-12	50	3.5	<1	<1	<3
27-Feb-89	S-12	<50	0.8	<1	<1	<3
03-May-89	S-12	<50	<0.5	<1	<1	<3

TABLE 2

## HISTORICAL GROUND-WATER QUALITY DATABASE

Sample Date	Sample Point	TPH-G (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
09-Aug-89	S-12	<50	<0.5	<1	<1	<3
09-Oct-89	S-12	<50	<0.5	<1	<1	<3
25-Jan-90	S-12	<50	<0.5	<0.5	<0.5	<1
18-Apr-90	S-12	<50	<0.5	<0.5	<0.5	<1
23-Jul-90	S-12	<50	<0.5	<0.5	<0.5	<0.5
18-Oct-90	S-12	<50	<0.5	<0.5	<0.5	<0.5
28-Jan-91	S-12	<50	<0.5	<0.5	<0.5	<0.5
25-Apr-91	S-12	90	5.4	<0.5	1.1	0.7
09-Jul-91	S-12	<50	2.9	<0.5	<0.5	<0.5
08-Oct-91	S-12	50	<0.5	<0.5	<0.5	<0.5
05-Feb-92	S-12	50&	<0.5	<0.5	<0.5	<0.5
28-Apr-92	S-12	<50	<0.5	<0.5	<0.5	<0.5
27-Jul-92	S-12	94*	<0.5	<0.5	<0.5	<0.5
26-Oct-92	S-12	88*	<0.5	<0.5	<0.5	<0.5
14-Jan-93	S-12	120	2.0	<0.5	<0.5	<0.5
03-May-89	S-13	150	4.9	4	2	14
09-Aug-89	S-13	110	2.9	<1	<1	<3
09-Oct-89	S-13	77	1.4	<1	<1	<3
25-Jan-90	S-13	51	0.5	<0.5	<0.5	<1
18-Apr-90	S-13	85	8.7	<0.5	<0.5	<1
23-Jul-90	S-13	80	0.8	<0.5	<0.5	<0.5
18-Oct-90	S-13	130	<0.5	<0.5	<0.5	<0.5
28-Jan-91	S-13	<50	<0.5	0.9	<0.5	1
25-Apr-91	S-13	440&	3.8	<0.5	1.2	0.6
09-Jul-91	S-13	320&	0.6	<0.5	<0.5	<0.5
08-Oct-91	S-13	310	<0.5	<0.5	<0.5	<0.5
05-Feb-92	S-13	N/A	N/A	N/A	N/A	N/A
28-Apr-92	S-13	<50	<0.5	<0.5	<0.5	<0.5
27-Jul-92	S-13	N/A	N/A	N/A	N/A	N/A
26-Oct-92	S-13	180*	<0.5	<0.5	<0.5	<0.5
13-Jan-93	S-13	Not Sampled				
03-May-89	S-14	5,300	750	400	200	800
09-Aug-89	S-14	1,800	540	140	42	50
09-Oct-89	S-14	1,000	360	60	20	30

TABLE 2

## HISTORICAL GROUND-WATER QUALITY DATABASE

Sample Date	Sample Point	TPH-G (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
25-Jan-90	S-14	640	160	77	17	39
18-Apr-90	S-14	1,200	200	110	30	96
23-Jul-90	S-14	5,000	430	340	140	660
19-Oct-90	S-14	1,800	770	13	17	120
28-Jan-91	S-14	720	200	36	21	78
25-Apr-91	S-14	14,000	930	430	250	970
09-Jul-91	S-14	160	30	5.3	5	16
08-Oct-91	S-14	5,400	81	57	95	380
05-Feb-92	S-14	N/A	N/A	N/A	N/A	N/A
28-Apr-92	S-14	2,000	270	140	48	170
27-Jul-92	S-14	N/A	N/A	N/A	N/A	N/A
26-Oct-92	S-14	920	33	12	25	88
13-Jan-93	S-14	Not Sampled				
03-May-89	S-15	<50	<0.5	<1	<1	<3
09-Aug-89	S-15	<50	<0.5	<1	<1	<3
09-Oct-89	S-15	<50	<0.5	<1	<1	<3
25-Jan-90	S-15	<50	<0.5	<0.5	<0.5	<1
18-Apr-90	S-15	<50	<0.5	<0.5	<0.5	<1
23-Jul-90	S-15	<50	<0.5	<0.5	<0.5	<0.5
18-Oct-90	S-15	<50	<0.5	<0.5	<0.5	<0.5
28-Jan-91	S-15	<50	<0.5	0.6	<0.5	0.8
25-Apr-91	S-15	<50	<0.5	<0.5	<0.5	<0.5
09-Jul-91	S-15	<50	<0.5	<0.5	<0.5	<0.5
08-Oct-91	S-15	<50	<0.5	<0.5	<0.5	<0.5
05-Feb-92	S-15	<50	<0.5	<0.5	<0.5	<0.5
28-Apr-92	S-15	50	0.8	0.9	<0.5	1.4
27-Jul-92	S-15	<50	<0.5	<0.5	<0.5	<0.5
26-Oct-92	S-15	<50	<0.5	<0.5	<0.5	<0.5
14-Jan-93	S-15	<50	<0.5	<0.5	<0.5	<0.5
04-May-89	S-16	380	44.0	3	2	<3
10-Aug-89	S-16	<50	0.6	<1	<1	<3
10-Oct-89	S-16	<50	<0.5	<1	<1	<3
25-Jan-90	S-16	240	160	3.3	0.8	11
18-Apr-90	S-16	<50	1	<0.5	<0.5	<1

TABLE 2

## HISTORICAL GROUND-WATER QUALITY DATABASE

Sample Date	Sample Point	TPH-G (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
23-Jul-90	S-16	<50	1.1	<0.5	<0.5	<0.5
18-Oct-90	S-16	<50	<0.5	<0.5	<0.5	<0.5
28-Jan-91	S-16	<50	<0.5	0.6	<0.5	0.9
25-Apr-91	S-16	60*	21	0.5	3.2	4.8
09-Jul-91	S-16	<50	1	<0.5	<0.5	<0.5
08-Oct-91	S-16	50	17	1.4	1.2	5.5
05-Feb-92	S-16	150	65	0.7	<0.5	8.4
28-Apr-92	S-16	<50	13	<0.5	<0.5	<0.5
27-Jul-92	S-16	510	130	<2.5	<2.5	21
26-Oct-92	S-16	<50	<0.5	<0.5	<0.5	<0.5
13-Jan-93	S-16	100	25	0.9	1.9	8.4
03-May-89	S-17	<50	<5	<1	<1	<3
09-Aug-89	S-17	<50	<0.5	<1	<1	<3
09-Oct-89	S-17	<50	<0.5	<1	<1	<3
25-Jan-90	S-17	<50	<0.5	<0.5	<0.5	<1
18-Apr-90	S-17	<50	<0.5	<0.5	<0.5	<1
23-Jul-90	S-17	<50	<0.5	<0.5	<0.5	<0.5
18-Oct-90	S-17	390	10	62	22	110
28-Jan-91	S-17	<50	<0.5	<0.5	<0.5	<0.5
25-Apr-91	S-17	<50	<0.5	<0.5	<0.5	<0.5
09-Jul-91	S-17	<50	<0.5	<0.5	<0.5	<0.5
08-Oct-91	S-17	<50	<0.5	<0.5	<0.5	<0.5
05-Feb-92	S-17	N/A	N/A	N/A	N/A	N/A
28-Apr-92	S-17	<50	<0.5	<0.5	<0.5	<0.5
27-Jul-92	S-17	N/A	N/A	N/A	N/A	N/A
26-Oct-92	S-17	<50	<0.5	<0.5	<0.5	<0.5
13-Jan-93	S-17	Not Sampled				
31-May-91	S-18	<50	<0.5	<0.5	<0.5	<0.5
09-Jul-91	S-18	<50	<0.5	<0.5	<0.5	<0.5
08-Oct-91	S-18	<50	<0.5	<0.5	<0.5	<0.5
05-Feb-92	S-18	<50	<0.5	<0.5	<0.5	<0.5
28-Apr-92	S-18	<50	<0.5	<0.5	<0.5	<0.5
27-Jul-92	S-18	<50	<0.5	<0.5	<0.5	<0.5
26-Oct-92	S-18	<50	<0.5	<0.5	<0.5	<0.5

TABLE 2

## HISTORICAL GROUND-WATER QUALITY DATABASE

Sample Date	Sample Point	TPH-G (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)	
13-Jan-93	S-18	<50	<0.5	<0.5	<0.5	<0.5	
22-Mar-89	SR-1	5,400	1,100	230	350	1,300	
25-Jan-90	SR-1	2,200	470	120	110	510	
18-Apr-90	SR-1	1,000	130	47	47	220	
23-Jul-90	SR-1	3,200	470	320	170	870	
18-Oct-90	SR-1	1,300	280	6.6	110	130	
28-Jan-91	SR-1	1,100	120	12	51	110	
09-Jul-91	SR-1	1,400	200	27	130	340	
08-Oct-91	SR-1	980	79	1.5	44	52	
05-Feb-92	SR-1	3,800	580	36	320	400	
28-Apr-92	SR-1	38,000	1,800	460	1,900	7,500	
27-Jul-92	SR-1	Floating Product 0.01 ft					
26-Oct-92	SR-1	1,800	370	10	130	130	
13-Jan-93	SR-1	47,000	1,000	1,100	1,700	13,000	

## CURRENT REGIONAL WATER QUALITY CONTROL BOARD MAXIMUM CONTAMINANT LEVELS

Benzene 1 ppb    Xylenes 1750 ppb    Ethylbenzene 680 ppb

## CURRENT DHS ACTION LEVELS

Toluene 100 ppb

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline

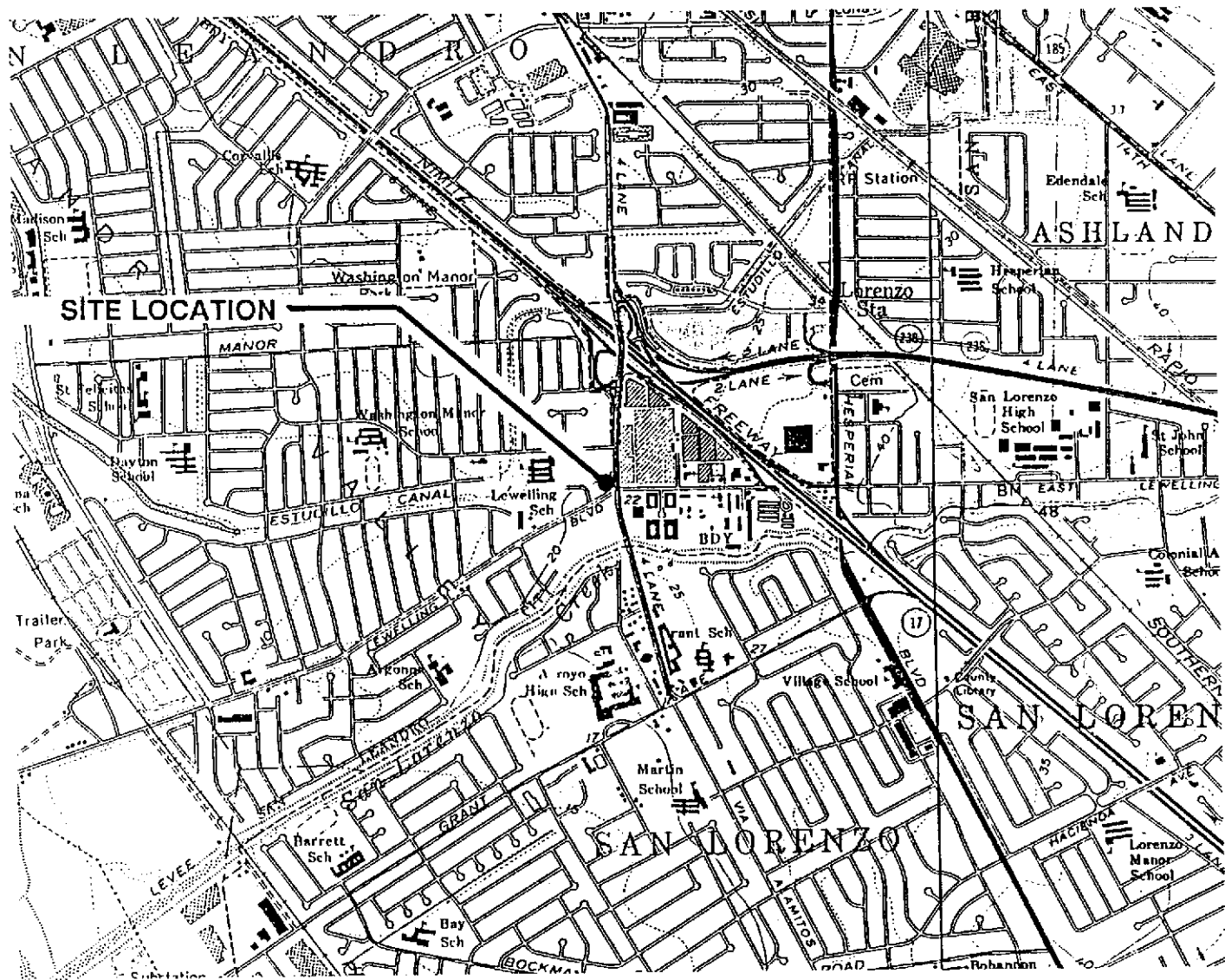
PPB = Parts Per Billion

\* Compounds detected and calculated as low boiling hydrocarbons are due to the volatile aromatics (BETX) present in the sample. Gasoline was not detected.

& Compounds detected and calculated as low boiling hydrocarbons consist of compounds eluting within the chromatographic range of gasoline, but are not characteristic of the standard gasoline pattern.

Notes:

1. DHS Action Levels and MCLs are subject to change pending State of California review.
2. All data shown as <x are reported as ND (none detected).



Approximate Scale : 1" = 2000'

Base Map: USGS Topographic Map

**GSI** GeoStrategies Inc.

**Vicinity Map**  
 Former Shell Service Station  
 15275 Washington Avenue  
 San Leandro, California

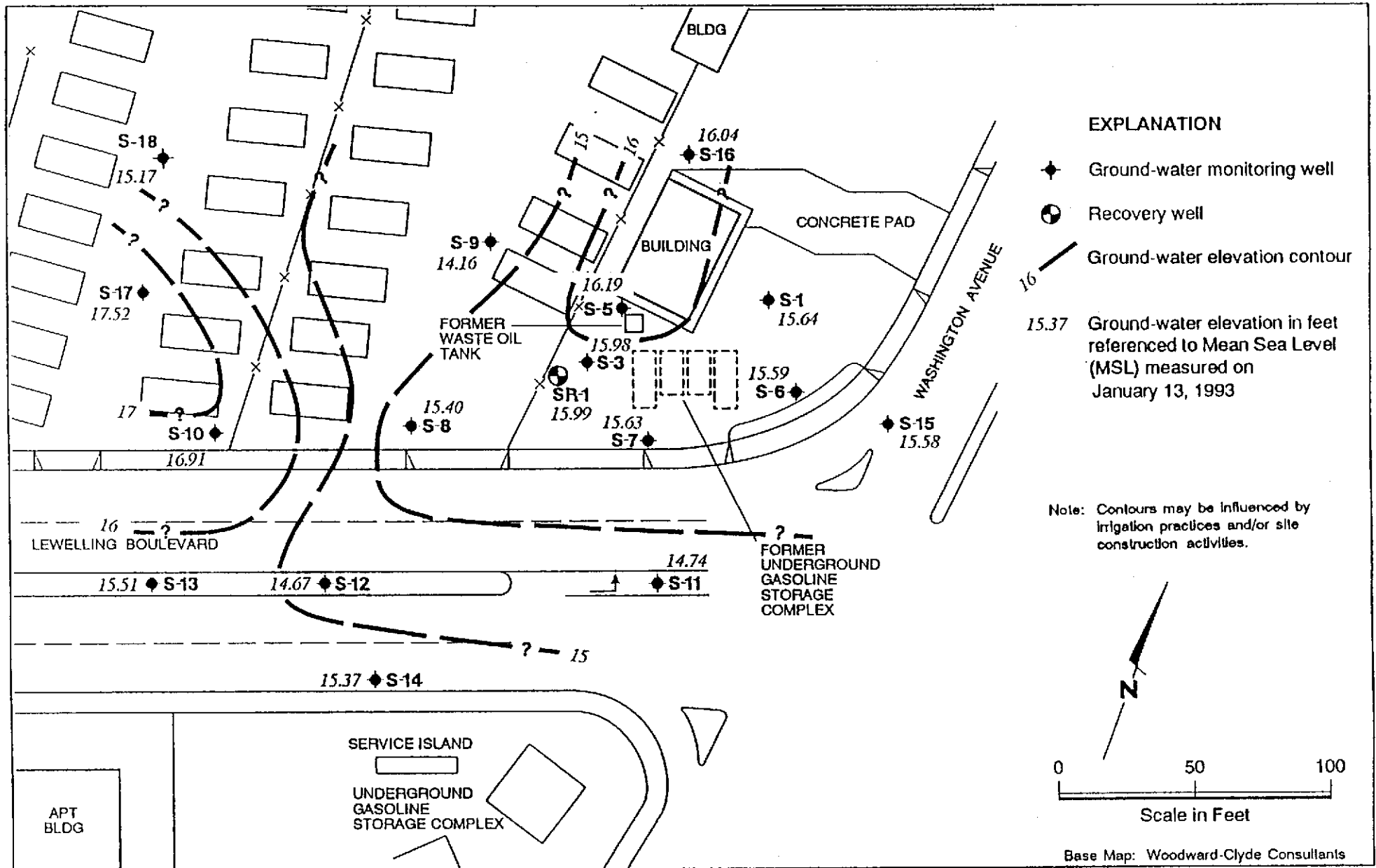
PLATE

**1**

JOB NUMBER 7615      REVIEWED BY RG/CEG

DATE 11/89

REVISED DATE      REVISED DATE



Site Plan/Potentiometric Map  
 Former Shell Service Station  
 15275 Washington Avenue  
 San Leandro, California

PLATE

2

JOB NUMBER  
761501-20

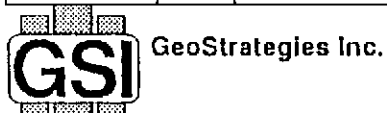
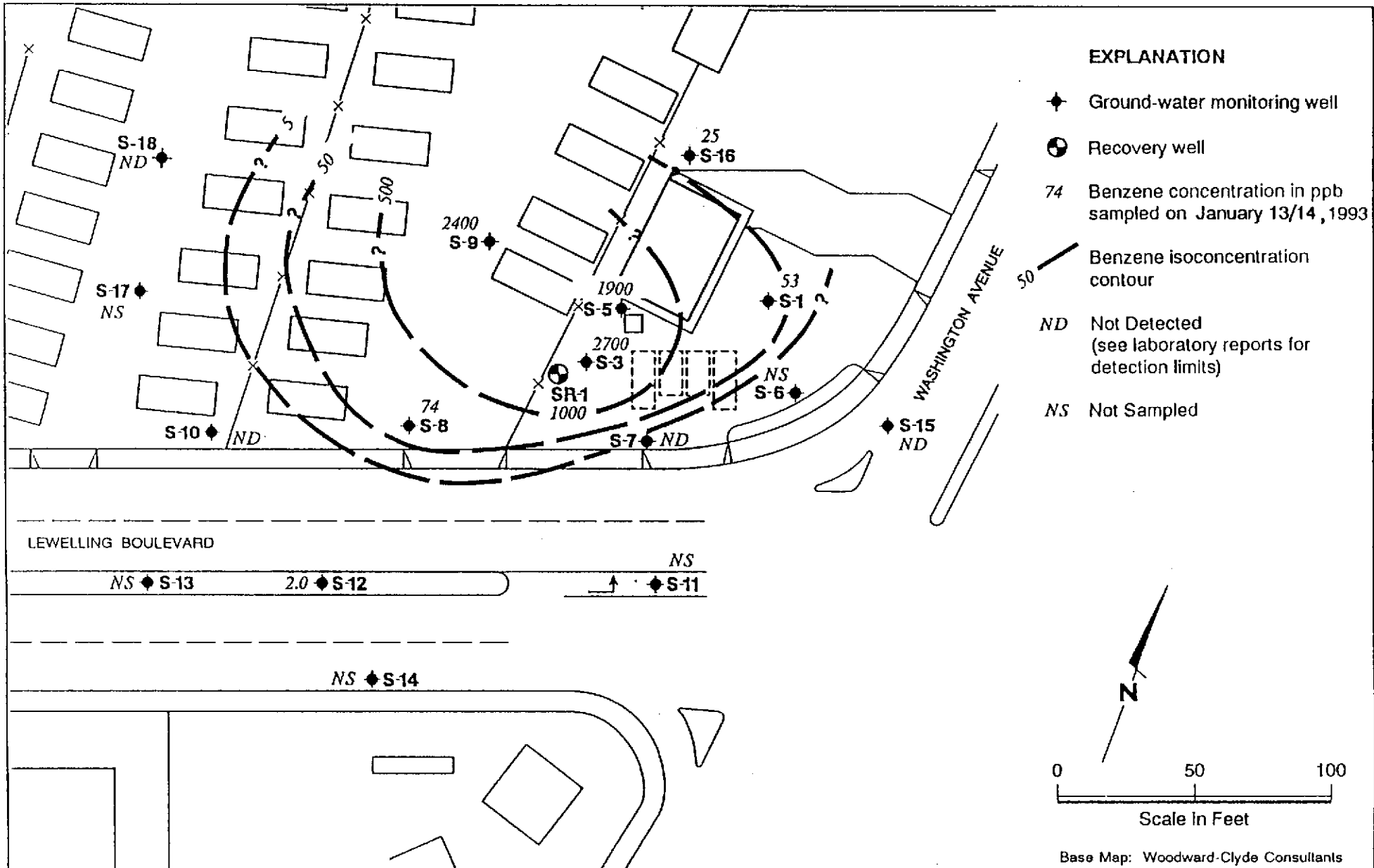
REVIEWED BY  
MCC

DATE  
3/93

REVISED DATE

REVISED DATE





**Benzene Isoconcentration Map**  
 Former Shell Service Station  
 15275 Washington Avenue  
 San Leandro, California

PLATE

**3**

K013 NUMBER  
761501-20

REVIEWED BY  
MCC

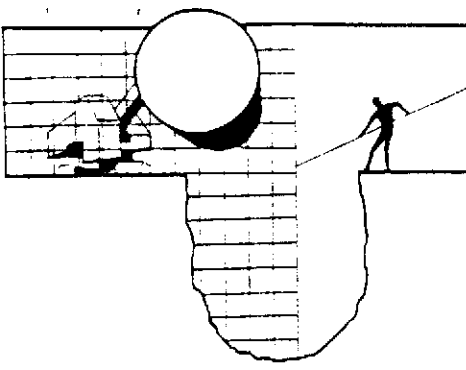
DATE  
3/93

REVISED DATE

REVISED DATE

**GeoStrategies Inc.**

**APPENDIX A  
BLAINE MONITORING REPORT  
AND  
CHAIN-OF-CUSTODY FORM**



# BLAINE TECH SERVICES INC.

985 TIMOTHY DRIVE  
SAN JOSE, CA 95133  
(408) 995-5535  
FAX (408) 293-8773

February 3, 1993

Shell Oil Company  
P.O. Box 5278  
Concord, CA 94520-9998

Attn: Daniel T. Kirk

SITE:  
Shell WIC # 204-6852-1008  
15275 Washington Ave.  
San Leandro, California

QUARTER:  
1st quarter of 1993

## QUARTERLY GROUNDWATER SAMPLING REPORT 930113-N-1

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This report contains data collected during routine inspection, gauging and sampling of groundwater monitoring wells performed by Blaine Tech Services, Inc. in response to the request of the consultant who is overseeing work at this site on behalf of our mutual client, Shell Oil Company. Data collected in the course of our field work is presented in a **TABLE OF WELL GAUGING DATA**. The field information was collected during our preliminary gauging and inspection of the wells, the subsequent evacuation of each well prior to sampling, and at the time of sampling.

Measurements taken include the total depth of the well and the depth to water. The surface of the water was further inspected for the presence of immiscibles which may be present as a thin film (a sheen on the surface of the water) or as a measurable free product zone (FPZ). At intervals during the evacuation phase, the purge water was monitored with instruments that measure electrical conductivity (EC), potential hydrogen (pH), temperature (degrees Fahrenheit), and turbidity (NTU). In the interest of simplicity, fundamental information is tabulated here, while the bulk of the information is turned over directly to the consultant who is making professional interpretations and evaluations of the conditions at the site.

## TABLE OF WELL GAUGING DATA

WELL I.D.	WELL DIAMETER (inches)	DATA COLLECTION DATE	MEASUREMENTS REFERENCED TO	QUALITATIVE OBSERVATIONS (seen)	DEPTH TO FIRST IMMISCIBLE LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLE LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
S-1	3	01-13-93	GRADE	--	NONE	--	--	5.91	19.99
S-3	3	01-13-93	GRADE	--	NONE	--	--	5.16	15.50
S-5	4	01-13-93	GRADE	--	NONE	--	--	5.22	18.52
S-6	3	01-13-93	GRADE	--	NONE	--	--	6.43	24.72
S-7	3	01-13-93	GRADE	--	NONE	--	--	5.84	24.38
S-8	3	01-13-93	GRADE	--	NONE	--	--	5.32	24.32
S-9	3	01-13-93	GRADE	--	NONE	--	--	6.80	17.98
S-10	3	01-13-93	GRADE	--	NONE	--	--	3.78	18.26

## TABLE OF WELL GAUGING DATA

WELL I.D.	WELL DIAMETER (inches)	DATA COLLECTION DATE	MEASUREMENTS REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLE LIQUID (FFZ) (feet)	THICKNESS OF IMMISCIBLE LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
S-11	3	01-13-93	GRADE	--	NONE	--	--	6.52	23.88
S-12	3	01-13-93	GRADE	--	NONE	--	--	6.38	23.98
S-13	3	01-13-93	GRADE	--	NONE	--	--	5.06	23.88
S-14	3	01-13-93	GRADE	--	NONE	--	--	5.07	23.44
S-15	3	01-13-93	GRADE	--	NONE	--	--	6.64	23.54
S-16	3	01-13-93	GRADE	--	NONE	--	--	5.78	24.36
S-17	3	01-13-93	GRADE	--	NONE	--	--	3.43	24.38
S-18	4	01-13-93	GRADE	--	NONE	--	--	5.86	18.10
SR-1	6	01-13-93	GRADE	SHEEN/ODOR	NONE	--	--	5.46	21.24

## STANDARD PROCEDURES

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### Evacuation

Groundwater wells are thoroughly purged before sampling to insure that the sample is collected from water that has been newly drawn into the well from the surrounding geologic formation. The selection of equipment to evacuate each well is based on the physical characteristics of the well and what is known about the performance of the formation in which the well has been installed. There are several suitable devices which can be used for evacuation. The most commonly employed devices are air or gas actuated pumps, electric submersible pumps, and hand or mechanically actuated bailers. Our personnel frequently employ USGS/Middleburg positive displacement pumps or similar air actuated pumps which do not agitate the water standing in the well.

Normal evacuation removes three case volumes of water from the well. More than three case volumes of water may be removed in cases where more evacuation is needed to achieve stabilization of water parameters. Less than three case volumes of water may be obtained in cases where the well dewateres and does not recharge to 80% of its original volume within two hours and any additional time our personnel have reason to remain at the site. In such cases, our personnel return to the site within twenty four hours and collect sample material from the water which has recharged into the well case.

### Decontamination

All apparatus is brought to the site in clean and serviceable condition. The equipment is decontaminated after each use and before leaving the site.

### Free Product Skimmer

The column headed, VOLUME OF IMMISCIBLES REMOVED (ml) is included in the TABLE OF WELL GAUGING DATA to cover situations where a free product skimming device must be removed from the well prior to gauging. Skimmers are installed in wells with a free product zone on the surface of the water. The skimmer is a free product recovery device which often prevents normal well gauging and free product zone measurements. The 2.0" and 3.0" PetroTraps fall into the category of devices that obstruct normal gauging. In cases where the consultant elects to have our personnel pull the skimmers out of the well and gauge the well, our personnel perform the additional task of draining the accumulated free product out of the PetroTrap before putting it back in the well. This recovered free product is measured and logged in the VOLUME OF IMMISCIBLES REMOVED column. Gauging at such site is performed in accordance with specific directions from the professional consulting firm overseeing work at the site on Shell's behalf.

## **Sample Containers**

Sample material is collected in specially prepared containers which are provided by the laboratory that performs the analyses.

## **Sampling**

Sample material is collected in stainless steel bailer type devices normally fitted with both a top and a bottom check valve. Water is promptly decanted into new sample containers in a manner which reduces the loss of volatile constituents and follows the applicable EPA standard for handling volatile organic and semi-volatile compounds.

Following collection, samples are promptly placed in an ice chest containing prefrozen blocks of an inert ice substitute such as Blue Ice or Super Ice. The samples are maintained in either an ice chest or a refrigerator until delivered into the custody of the laboratory.

## **Sample Designations**

All sample containers are identified with a site designation and a discrete sample identification number specific to that particular groundwater well. Additional standard notations (e.g. time, date, sampler) are also made on the label. Either the requested analyses or the specific analytes are written on the sample label (e.g. TPH-G, BTEX).

## **Chain of Custody**

Samples are continuously maintained in an appropriate cooled container while in our custody and until delivered to the laboratory under a standard Shell Oil Company chain of custody. If the samples are taken charge of by a different party (such as another person from our office, a courier, etc.) prior to being delivered to the laboratory, appropriate release and acceptance records are made on the chain of custody (time, date, and signature of the person releasing the samples followed by the time, date and signature of the person accepting custody of the samples).

## **Hazardous Materials Testing Laboratory**

The samples obtained at this site were delivered to Anametrix, Inc. in San Jose, California. Anametrix, Inc. is a California Department of Health Services certified Hazardous Materials Testing Laboratory and is listed as DOHS HMTL #1234.

## **Objective Information Collection**

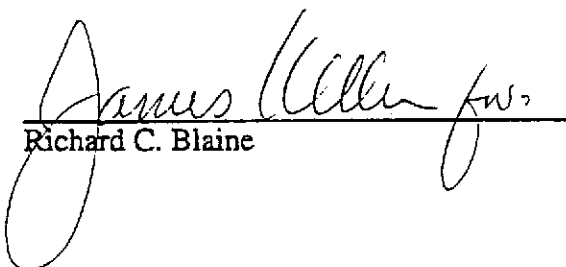
Blaine Tech Services, Inc. performs specialized environmental sampling and documentation as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc.

performs no consulting and does not become involved in the marketing or installation of remedial systems of any kind. Blaine Tech Services, Inc. is concerned only with the generation of objective information, not with the use of that information to support evaluations and recommendations concerning the environmental condition of the site. Even the straightforward interpretation of objective analytical data is better performed by interested regulatory agencies, and those engineers and geologists who are engaged in the work of providing professional opinions about the site and proposals to perform additional investigation or design remedial systems.

### Reportage

Submission of this report and the attached laboratory report to interested regulatory agencies is handled by the consultant in charge of the project. Any professional evaluations or recommendations will be made by the consultant under separate cover.

Please call if we can be of any further assistance.

  
Richard C. Blaine

RCB/kkl

attachments: chain of custody  
certified analytical report

cc: GeoStrategies, Inc.  
2140 W. Winton Ave.  
Hayward, CA 94545  
ATTN: Ellen Fostersmith





**SHELL OIL COMPANY**  
RETAIL ENVIRONMENTAL ENGINEERING - WEST

**CHAIN OF CUSTODY RECORD**

Date: 7-14-93  
Page 1 of 2

9301146 (18)

Silo Address:  
15275 WASHINGTON, SAN LEANDRO, CA

WICP:  
204-6852-1008

Shell Engineer:  
DAN KIRK  
Phone No.:(610)  
Fax #: 675-6171

Consultant Name & Address: BLAINE TECH SERVICES  
785 TIMOTHY DR. SAN JOSE CA 95122

Consultant Contact:  
GLEN BENNETT  
Phone No.: 408  
Fax #: 795-6539

Comments:  
BTS # 930113-N-1

Sampled by: *Nate Overmeyer*

Printed Name: NATE OVERMEYER

**Analysis Required**

LAB: ANAMETRIX

CHECK ONE (1) BOX ONLY	CI/DI	TURN AROUND TIME
Quarterly Monitoring <input checked="" type="checkbox"/>	6441	24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/>	6442	48 hours <input type="checkbox"/>
Soil Classfy/D'sposal <input type="checkbox"/>	6447	14 days <input checked="" type="checkbox"/> (Normal)
Water Classfy/D'sposal <input type="checkbox"/>	6443	Other <input type="checkbox"/>
Soil/Air Em. of Syr. O & M <input type="checkbox"/>	6411	
Water Em. of Syr. O & M <input type="checkbox"/>	6443	
Other <input type="checkbox"/>		

NOTE: Hottly lab as soon as possible of 24/48 hrs. 1AL.

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. GCs)	TPH (EPA 8015 Mod. Diesel)	STEX (EPA 8020/802)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & STEX 8020	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
1 S-1	7/14/93			X		3					X		N	F	HCL	N	GROUNDWATER	
2 S-3				X							X							
3 S-5				X							X							
4 S-7				X							X							
5 S-8	7/13/93			X							X							
6 S-9				X							X							
7 S-10				X							X							
8 S-12	7/14/93			X							X							

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8

Relinquished By (signature): *Nate Overmeyer*  
Printed Name: NATE OVERMEYER  
Relinquished By (signature): *Simon Hoopie*  
Printed Name: SIMON HOOPIE  
Relinquished By (signature):  
Printed Name:


Date: 7-13-93  
Time: 1:30  
Received (signature): *Simon Hoopie*  
Printed Name: SIMON HOOPIE  
Date: 7-13-93  
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Time: 1:30

9301146 (18)

 <b>SHELL OIL COMPANY</b> RETAIL ENVIRONMENTAL ENGINEERING - WEST		<b>CHAIN OF CUSTODY RECORD</b> Serial No: _____			Date: 1/14/93 Page 2 of 2																																													
Site Address: 15275 WASHINGTON, SAN LEANDRO CA		<b>Analysis Required</b>			LAB: <u>ANAMETRIX</u>																																													
WICK: 204-6852-1008		<table border="1"> <tr> <td>TPH (EPA 8015 Mod. Gas)</td> <td>TPH (EPA 8015 Mod. Diesel)</td> <td>STX (EPA 8020/602)</td> <td>Volatile Organics (EPA 8240)</td> <td>Test for Disposal</td> <td>Combination TPH 8015 &amp; 81EX 8020</td> <td>Asbestos</td> <td>Container Size</td> <td>Preparation Used</td> <td>Composite Y/N</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>			TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	STX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & 81EX 8020	Asbestos	Container Size	Preparation Used	Composite Y/N											<table border="1"> <tr> <td>CHECK ONE (IF BOX ONLY)</td> <td>CI/DI</td> <td>TURN AROUND TIME</td> </tr> <tr> <td>Quarterly Monitoring <input type="checkbox"/></td> <td>8421</td> <td>24 hours <input type="checkbox"/></td> </tr> <tr> <td>Site Investigation <input type="checkbox"/></td> <td>8421</td> <td>48 hours <input type="checkbox"/></td> </tr> <tr> <td>Soil Clarity/Disposal <input type="checkbox"/></td> <td>8422</td> <td>16 days <input type="checkbox"/> (Normal)</td> </tr> <tr> <td>Water Clarity/Disposal <input type="checkbox"/></td> <td>8423</td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Leach Rem. or 3yr. O &amp; M <input type="checkbox"/></td> <td>8423</td> <td></td> </tr> <tr> <td>Water Rem. or 3yr. O &amp; M <input type="checkbox"/></td> <td>8423</td> <td></td> </tr> <tr> <td>Other <input type="checkbox"/></td> <td></td> <td></td> </tr> </table>		CHECK ONE (IF BOX ONLY)	CI/DI	TURN AROUND TIME	Quarterly Monitoring <input type="checkbox"/>	8421	24 hours <input type="checkbox"/>	Site Investigation <input type="checkbox"/>	8421	48 hours <input type="checkbox"/>	Soil Clarity/Disposal <input type="checkbox"/>	8422	16 days <input type="checkbox"/> (Normal)	Water Clarity/Disposal <input type="checkbox"/>	8423	Other <input type="checkbox"/>	Leach Rem. or 3yr. O & M <input type="checkbox"/>	8423		Water Rem. or 3yr. O & M <input type="checkbox"/>	8423		Other <input type="checkbox"/>		
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Shell Engineer: DAN KIRK		Phone No.: 510 Fax #: 675-6171		HDT: Notify Lab as soon as possible of 24/28 hr. lab.																																														
Consultant Name & Address: BLAINE TECH SERVICES 985 TIMOTHY DR. SAN JOSE CA 95122																																																		
Consultant Contact: GLEN BENNETT		Phone No.: 408 Fax #: 915-5535																																																
Commons: BTS # 930113 - N - 1																																																		
Sampled by: <u>Nate Overmeyer</u>		Printed Name: <u>NATE OVERMEYER</u>																																																
Sample ID	Date	Sludge	Soil	Water	Air	No. of Contr.					MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS																																						
9 S-15	1/14/93			X		3					GROUNDWATER																																							
10 S-16	1/13/93			X		3																																												
11 S-18	"			X		3																																												
12 SR-1	1/14/93			X		3																																												
13 DUP.	1/13/93			X		3																																												
14 TB	1/13/93			X		2					TRIP BLANK																																							
Relinquished By (signature): <u>Nate Overmeyer</u>		Relinquished By (signature): <u>Simon Hoyle</u>		Relinquished By (signature): <u>Maria Parajas</u>		Relinquished By (signature): _____		Relinquished By (signature): _____		Relinquished By (signature): _____		Relinquished By (signature): _____																																						
Printed Name: <u>NATE OVERMEYER</u>		Printed Name: <u>Simon Hoyle</u>		Printed Name: <u>Maria Parajas</u>		Printed Name: _____		Printed Name: _____		Printed Name: _____		Printed Name: _____																																						
Date: 1/15/93 Time: 1:00		Date: 1/15/93 Time: 1:00		Date: 1/15/93 Time: 1:00		Date: _____ Time: _____		Date: _____ Time: _____		Date: _____ Time: _____		Date: _____ Time: _____																																						

- 9
- 10
- 11
- 12
- 13
- 14



MR. GLEN BENNETT  
BLAINE TECH  
985 TIMOTHY STREET  
SAN JOSE, CA 95133

Workorder # : 9301146  
Date Received : 01/15/93  
Project ID : 204-6852-1008  
Purchase Order: MOH-B813


The following samples were received at Anamatrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9301146- 1	S-1
9301146- 2	S-3
9301146- 3	S-5
9301146- 4	S-7
9301146- 5	S-8
9301146- 6	S-9
9301146- 7	S-10
9301146- 8	S-12
9301146- 9	S-15
9301146-10	S-16
9301146-11	S-18
9301146-12	SR-1
9301146-13	DUP
9301146-14	TB

This report consists of 8 pages not including the cover letter, and is organized in sections according to the specific Anamatrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anamatrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anamatrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anamatrix.

  
Sarah Schoen, Ph.D.  
Laboratory Director

1-28-93  
Date

REPORT SUMMARY  
ANAMETRIX, INC. (408)432-8192

MR. GLEN BENNETT  
BLAINE TECH  
985 TIMOTHY STREET  
SAN JOSE, CA 95133

Workorder # : 9301146  
Date Received : 01/15/93  
Project ID : 204-6852-1008  
Purchase Order: MOH-B813  
Department : GC  
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9301146- 1	S-1	WATER	01/14/93	TPHg/BTEX
9301146- 2	S-3	WATER	01/14/93	TPHg/BTEX
9301146- 3	S-5	WATER	01/14/93	TPHg/BTEX
9301146- 4	S-7	WATER	01/14/93	TPHg/BTEX
9301146- 5	S-8	WATER	01/13/93	TPHg/BTEX
9301146- 6	S-9	WATER	01/13/93	TPHg/BTEX
9301146- 7	S-10	WATER	01/13/93	TPHg/BTEX
9301146- 8	S-12	WATER	01/14/93	TPHg/BTEX
9301146- 9	S-15	WATER	01/14/93	TPHg/BTEX
9301146-10	S-16	WATER	01/13/93	TPHg/BTEX
9301146-11	S-18	WATER	01/13/93	TPHg/BTEX
9301146-12	SR-1	WATER	01/14/93	TPHg/BTEX
9301146-13	DUP	WATER	01/13/93	TPHg/BTEX
9301146-14	TB	WATER	01/14/93	TPHg/BTEX

REPORT SUMMARY  
ANAMETRIX, INC. (408)432-8192

MR. GLEN BENNETT  
BLAINE TECH  
985 TIMOTHY STREET  
SAN JOSE, CA 95133

Workorder # : 9301146  
Date Received : 01/15/93  
Project ID : 204-6852-1008  
Purchase Order: MOH-B813  
Department : GC  
Sub-Department: TPH

QA/QC SUMMARY :

- The concentrations reported as gasoline for samples S-7 and S-12 are primarily due to the presence of a discrete hydrocarbon peak not indicative of gasoline.

Cheryl Bauman 1/27/93  
Department Supervisor Date

Reggie Dawson 1/27/93  
Chemist Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS  
(GASOLINE WITH BTEX)  
ANAMETRIX, INC. - (408) 432-8192

Anamatrix W.O.: 9301146  
Matrix : WATER  
Date Sampled : 01/13 & 14/93

Project Number : 204-6852-1008  
Date Released : 01/27/93

Reporting Limit	Sample I.D.# S-1	Sample I.D.# S-3	Sample I.D.# S-5	Sample I.D.# S-7	Sample I.D.# S-8	
COMPOUNDS (ug/L)	-01	-02	-03	-04	-05	
Benzene	0.5	53	2700	1900	ND	74
Toluene	0.5	1.2	2500	1000	ND	0.9
Ethylbenzene	0.5	20	1800	2700	ND	25
Total Xylenes	0.5	33	6900	16000	ND	5.5
TPH as Gasoline	50	490	41000	54000	56	270
% Surrogate Recovery	96%	100%	100%	90%	105%	
Instrument I.D.	HP12	HP12	HP12	HP12	HP12	
Date Analyzed	01/22/93	01/22/93	01/22/93	01/22/93	01/22/93	
RLMF	1	100	250	1	1	

- ND - Not detected at or above the practical quantitation limit for the method.
- TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
- BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
- RLMF - Reporting Limit Multiplication Factor.

Anamatrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Peggie Davison 1/27/93  
Analyst Date

Cheryl Balmer 1/27/93  
Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS  
(GASOLINE WITH BTEX)  
ANAMETRIX, INC. - (408) 432-8192

Anamatrix W.O.: 9301146  
Matrix : WATER  
Date Sampled : 01/13 & 14/93

Project Number : 204-6852-1008  
Date Released : 01/27/93

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# S-9	Sample I.D.# S-10	Sample I.D.# S-12	Sample I.D.# S-15	Sample I.D.# S-16
Benzene	0.5	2400	ND	2.0	ND	25
Toluene	0.5	38	0.6	ND	ND	0.9
Ethylbenzene	0.5	1700	ND	ND	ND	1.9
Total Xylenes	0.5	2200	ND	ND	ND	8.4
TPH as Gasoline	50	19000	88	120	ND	100
% Surrogate Recovery		122%	92%	95%	97%	94%
Instrument I.D.		HP12	HP12	HP12	HP12	HP12
Date Analyzed		01/22/93	01/22/93	01/21/93	01/21/93	01/21/93
RLMF		50	1	1	1	1

ND - Not detected at or above the practical quantitation limit for the method.  
 TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.  
 BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.  
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Reggie Dawson 1/27/93  
Analyst Date

Cheryl Balmer 1/27/93  
Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS  
(GASOLINE WITH BTEX)  
ANAMETRIX, INC. - (408) 432-8192

Anamatrix W.O.: 9301146  
Matrix : WATER  
Date Sampled : 01/13 & 14/93

Project Number : 204-6852-1008  
Date Released : 01/27/93

Reporting Limit	Sample I.D.# S-18	Sample I.D.# SR-1	Sample I.D.# DUP	Sample I.D.# TB	Sample I.D.# BJ2101E3	
COMPOUNDS (ug/L)	-11	-12	-13	-14	BLANK	
Benzene	0.5	ND	1000	21	ND	ND
Toluene	0.5	ND	1100	0.7	ND	ND
Ethylbenzene	0.5	ND	1700	1.4	ND	ND
Total Xylenes	0.5	ND	13000	7.1	ND	ND
TPH as Gasoline	50	ND	47000	86	ND	ND
% Surrogate Recovery	94%	118%	96%	91%	96%	
Instrument I.D.	HP12	HP12	HP12	HP12	HP12	
Date Analyzed	01/21/93	01/22/93	01/21/93	01/21/93	01/21/93	
RLMF	1	250	1	1	1	

- ND - Not detected at or above the practical quantitation limit for the method.
- TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
- BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
- RLMF - Reporting Limit Multiplication Factor.

Anamatrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Reggie Dawson 1/27/93  
Analyst Date

Cheryl Balmer 1/27/93  
Supervisor Date



ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS  
(GASOLINE WITH BTEX)  
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9301146  
Matrix : WATER  
Date Sampled : N/A

Project Number : 204-6852-1008  
Date Released : 01/27/93

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# BJ2201E3 BLANK
Benzene	0.5	ND
Toluene	0.5	ND
Ethylbenzene	0.5	ND
Total Xylenes	0.5	ND
TPH as Gasoline	50	ND
% Surrogate Recovery		100%
Instrument I.D.		HP12
Date Analyzed		01/22/93
RLMF		1

- ND - Not detected at or above the practical quantitation limit for the method.
- TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
- BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
- RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Peggie Dawson 1/27/93  
Analyst Date

Cheryl Balman 1/27/93  
Supervisor Date

TOTAL VOLATILE HYDROCARBON MATRIX SPIKE REPORT  
 EPA METHOD 5030 WITH GC/FID  
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 204-6852-1008 S-12  
 Matrix : WATER  
 Date Sampled : 01/14/93  
 Date Analyzed : 01/21/93

Anamatrix I.D. : 9301146-08  
 Analyst : RD  
 Supervisor : MB  
 Date Released : 01/27/93  
 Instrument ID : HP12

COMPOUND	SPIKE AMT (ug/L)	SAMPLE AMT (ug/L)	REC MS (ug/L)	% REC MS	REC MD (ug/L)	% REC MD	RPD	% REC LIMITS
GASOLINE	250	120	271	60%	273	61%	1%	48-145
P-BFB				86%		91%		53-147

\* Limits established by Anamatrix, Inc.

TOTAL VOLATILE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT  
 EPA METHOD 5030 WITH GC/FID  
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE  
 Matrix : WATER  
 Date Sampled : N/A  
 Date Analyzed : 01/21/93

Anamatrix I.D. : LCSW0121  
 Analyst :  
 Supervisor :  
 Date Released : 01/27/93  
 Instrument I.D.: HP12

COMPOUND	SPIKE AMT. (ug/L)	REC LCS (ug/L)	%REC LCS	% REC LIMITS
GASOLINE	250	216	86%	56-116
SURROGATE			92%	53-147

\* Quality control established by Anamatrix, Inc.

WELL GAUGING DATA  
shell w/c # 204-6852-1008

Project # 930113-N-1 Date 1.13.93 Client SOC

Site 15275 WASHINGTON, SAN LEANDRO Sampler (N)

Well I.D.	Well Size (in.)	Sheen/Odor	Depth to Immissible Liquid (feet)	Thickness of Immissible Liquid (ft.)	Volume of Immissibles Removed (ml)	Depth to Water (feet)	Depth to Well Bottom (feet)	Measured to: Top of Pipe or Grade
S-1	3	—				5.91	19.99	GRADE
S-3	3	—				5.16	15.50	
S-5	4	—				5.22	18.52	
S-6	3	—				6.43	24.72	
S-7	3	—				5.84	24.38	
S-8	3	—				<del>5.32</del>	<del>24.32</del>	
S-9	3	—				6.80	17.98	
S-10	3	—				3.78	18.26	
S-11	3	—				6.52	23.88	
S-12	3	—				6.38	23.98	
S-13	3	—				5.06	23.88	
S-14	3	—				5.07	23.44	
S-15	3	—				6.64	23.54	
S-16	3	—				5.78	24.36	
S-17	3	—				8.43	24.38	



# WELL MONITORING DATA SHEET

Project #: 930113 - N - 1	Client: SOC
Sampler: (N)	Date Sampled: 1-14-93
Well I.D.: S-1	Well Diameter: (circle one) 2 (3) 4 6
Total Well Depth: Before 19.99 After	Depth to Water: Before 5.91 After
Reason not sampled:	If Free Product, thickness:

Volume Conversion Factor (VCF):

$$(12 \times (d^2/A) \times \pi) / 231$$

where

12 = in/foot

d = diameter (in.)

$\pi = 3.1416$

231 = in<sup>3</sup>/gal

Well dia. VCF

2" = 0.36

3" = 0.37

4" = 0.66

6" = 1.47

10" = 4.08

12" = 5.67

5.20	x	3	=	15.62
1 Case Volume		Specified Volumes		gallons

Purging: Bailer   
 Middleburg   
 Electric Submersible   
 Suction Pump   
 Type of Installed Pump \_\_\_\_\_

Sampling: Bailer   
 Middleburg   
 Electric Submersible   
 Suction Pump   
 Installed Pump

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	NOTATIONS:
10:09	62.0	7.3	1200	>200	5.0	
10:15	66.0	7.2	1200	>200	10.0	
10:22	66.0	7.2	1200	9.15	16.0	

Did Well Dewater?      If yes, gals.      Gallons Actually Evacuated: 16

Sampling Time: 10:25

Sample I.D.: S-1	Laboratory: ANA
Analyzed for: TPH - G, BTXE	
Duplicate I.D.:	Cleaning Blank I.D.:
Analyzed for:	
Shipping Notations:	
Additional Notations:	

# WELL MONITORING DATA SHEET

Project #: 930113 - N - 1	Client: SOC
Sampler: (N)	Date Sampled: 1-14-93
Well I.D.: S-3	Well Diameter: (circle one) 2 (3) 4 6
Total Well Depth: Before 5.50 After	Depth to Water: Before 5.16 After
Reason not sampled:	If Free Product, thickness:

Volume Conversion Factor (VCF):  
 $(12 = (d^2/4) \cdot \pi) / 231$   
 Where  
 12 = in/foot  
 d = diameter (in.)  
 $\pi = 3.1416$   
 231 = in<sup>3</sup>/gal

Well dia.	VCF
2"	= 0.34
3"	= 0.37
4"	= 0.66
6"	= 1.47
10"	= 4.08
12"	= 5.67

<u>3.82</u>	x	<u>3</u>	=	<u>11.46</u>
1 Case Volume		Specified Volumes		gallons

Purging: Bailer  Middleburg  Electric Submersible  Suction Pump  Type of Installed Pump \_\_\_\_\_

Sampling: Bailer  Middleburg  Electric Submersible  Suction Pump  Installed Pump

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	NOTATIONS:
12:00	64.2	7.0	1200	33.6	3.5	
12:05	64.8	7.0	1300	12.08	7.5	
12:09	65.8	7.0	1300	12.11	11.5	

Did Well Dewater?      If yes, gals.      Gallons Actually Evacuated: 11.5

Sampling Time: 12:15

Sample I.D.: S-3	Laboratory: ANA-
Analyzed for: TPH - GAS, BTX-E	
Duplicate I.D.:	Cleaning Blank I.D.:
Analyzed for:	
Shipping Notations:	
Additional Notations:	

# WELL MONITORING DATA SHEET

Project #: 930113-N-1	Client: SOC
Sampler: (N)	Date Sampled: 1-14-93
Well I.D.: S-5	Well Diameter: (circle one) 2 3 (4) 6
Total Well Depth: Before 18.52 After	Depth to Water: Before 5.22 After
Reason not sampled:	If Free Product, thickness:

Volume Conversion Factor (VCF):

$$VCF = (d^2/4) \times \pi / 2.31$$

where

12 = in/foot  
 d = diameter (in.)  
 $\pi = 3.1416$   
 2.31 = in<sup>3</sup>/gal

Well dia	VCF
2"	= 0.16
3"	= 0.37
4"	= 0.65
6"	= 1.47
10"	= 4.08
12"	= 5.67

8.64	x	3	=	25.92
1 Case Volume		Specified Volumes		gallons

Purging: Bailer <input type="checkbox"/> Middleburg <input checked="" type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Type of Installed Pump _____	Sampling: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Installed Pump <input type="checkbox"/>
--	--

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	NOTATIONS:
11:15	61.6	7.3	800	16.93	8.5	
11:24	61.6	7.1	800	10.02	17.0	
11:34	62.4	7.1	800	6.27	26.0	

Did Well Dewater?      If yes, gals.      Gallons Actually Evacuated: 26

Sampling Time: 11:40

Sample I.D.: S-5	Laboratory: ANA
Analyzed for: TPH - GAS, BTXE	
Duplicate I.D.:	Cleaning Blank I.D.:
Analyzed for:	
Shipping Notations:	
Additional Notations:	



# WELL MONITORING DATA SHEET

Project #: 930113 - N - 1	Client: SOC
Sampler: <u>(N)</u>	Date Sampled: 1.14.93
Well I.D.: S-7	Well Diameter: (circle one) 2 <u>(3)</u> 4 6
Total Well Depth: Before 24.38 After	Depth to Water: Before 5.84 After
Reason not sampled:	If Free Product, thickness:

Volume Conversion Factor (VCF):  
 $(12 \times (d^2/4) \times \pi) / 231$   
 Where  
 12 = in/foot  
 d = diameter (in.)  
 $\pi = 3.1416$   
 231 = in<sup>3</sup>/gal

Well dia.	VCF
2"	0.16
3"	0.37
4"	0.66
6"	1.47
10"	4.08
12"	5.67

6.85	x	3	=	20.57
1 Case Volume		Specified Volumes		gallons

Purging: Bailer <input type="checkbox"/> Middleburg <input checked="" type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Type of Installed Pump _____	Sampling: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Installed Pump <input type="checkbox"/>
--	--

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	NOTATIONS:
14:25	69.0	7.2	1100	71.2	7.0	
14:31	69.0	7.2	1200	38.2	14.0	
14:37	69.0	7.1	1200	14.42	21.0	

Did Well Dewater?      If yes, gals.      Gallons Actually Evacuated: 21

Sampling Time: 14:40

Sample I.D.: S-7	Laboratory: ANA.
Analyzed for: TPH - GAS, BTXE	
Duplicate I.D.:	Cleaning Blank I.D.:
Analyzed for:	
Shipping Notations:	
Additional Notations:	

# WELL MONITORING DATA SHEET

Project #: 930113 - N - 1	Client: SOC
Sampler: (N)	Date Sampled: 1.13.93
Well I.D.: S.8	Well Diameter: (circle one) 2 (3) 4 6
Total Well Depth: Before 24.32 After	Depth to Water: Before 5.32 After
Reason not sampled:	If Free Product, thickness:

Volume Conversion Factor (VCF)  
 $(12 \times (d^2/4) \times \pi) / 231$   
 where  
 12 = in/foot  
 d = diameter (in.)  
 $\pi = 3.1416$   
 231 = in<sup>3</sup>/gal

Well dia.	VCF
2"	= 0.16
3"	= 0.37
4"	= 0.66
6"	= 1.47
10"	= 4.08
12"	= 6.87

<u>7.03</u>	x	<u>3</u>	=	<u>21.09</u>
1 Case Volume		Specified Volumes		gallons

Purging: Bailer  Middleburg  Electric Submersible  Suction Pump  Type of Installed Pump \_\_\_\_\_

Sampling: Bailer  Middleburg  Electric Submersible  Suction Pump  Installed Pump

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	NOTATIONS:
13:31	66.8	7.3	1800	> 200	7.0	
13:39	65.4	7.1	1600	> 200	14.0	
13:46	65.8	7.2	1500	> 200	21.5	

Did Well Dewater?      If yes, gals.      Gallons Actually Evacuated: 21.5

Sampling Time: 13:55

Sample I.D.: S.8	Laboratory: ANA.
Analyzed for: TPH - G, BTXE	
Duplicate I.D.:	Cleaning Blank I.D.:
Analyzed for:	
Shipping Notations:	
Additional Notations:	

# WELL MONITORING DATA SHEET

Project #: 930113 - N - 1	Client: SOC
Sampler: (N)	Date Sampled: 1.13.93
Well I.D.: 5.9	Well Diameter: (circle one) 2 (3) 4 6
Total Well Depth: Before 17.98 After	Depth to Water: Before 6.80 After
Reason not sampled:	If Free Product, thickness:

Volume Conversion Factor (VCF):  
 $(12 \times (d^2/A) \times \pi) / 231$   
 where  
 12 = in/foot  
 d = diameter (in.)  
 $\pi = 3.1416$   
 231 = in<sup>3</sup>/gal

Well dia	VCF
2"	0.16
3"	0.37
4"	0.65
6"	1.47
10"	4.08
12"	6.87

<u>4.13</u>	x	<u>3</u>	=	<u>12.40</u>
1 Case Volume		Specified Volumes		gallons

Purging: Bailer  Middleburg  Electric Submersible  Suction Pump  Type of Installed Pump \_\_\_\_\_

Sampling: Bailer  Middleburg  Electric Submersible  Suction Pump  Installed Pump

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	NOTATIONS:
14:21	64.6	7.2	1400	90.2	4.0	
14:25	64.4	7.1	1400	78.0	8.0	
14:30	64.6	7.1	1400	84.3	12.5	

Did Well Dewater? If yes, gals. Gallons Actually Evacuated: 12.5

Sampling Time: 14:35

Sample I.D.: S.9	Laboratory: ANA-
Analyzed for: TPH-6, BTXE	
Duplicate I.D.:	Cleaning Blank I.D.:
Analyzed for:	
Shipping Notations:	
Additional Notations:	

# WELL MONITORING DATA SHEET

Project #: 930113-N-1	Client: SOC
Sampler: <u>N</u>	Date Sampled: 1.13.93
Well I.D.: S-10	Well Diameter: (circle one) 2 <u>3</u> 4 6
Total Well Depth: Before 18.26 After	Depth to Water: Before 3.78 After
Reason not sampled:	If Free Product, thickness:

Volume Conversion Factor (VCF):  
 $(12 \times (d^2/4) \times \pi) / 231$   
 where  
 12 = in/foot  
 d = diameter (in.)  
 $\pi = 3.1416$   
 231 = in<sup>3</sup>/gal

Well dia.	VCF
2"	= 0.16
3"	= 0.37
4"	= 0.66
6"	= 1.47
10"	= 4.08
12"	= 5.87

<u>5.35</u>	x	<u>3</u>	=	<u>16.07</u>
1 Case Volume		Specified Volumes		gallons

Purging: Bailer  Middleburg  Electric Submersible  Suction Pump  Type of Installed Pump \_\_\_\_\_

Sampling: Bailer  Middleburg  Electric Submersible  Suction Pump  Installed Pump

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	NOTATIONS:
15:42	60.6	7.3	400	73.3	5.0	
15:49	61.0	7.1	400	137.2	10.5	
15:57	60.6	7.1	400	105.3	16.5	

Did Well Dewater?      If yes, gals.      Gallons Actually Evacuated: 16.5

Sampling Time: 16:00

Sample I.D.: S-10	Laboratory: ANA
Analyzed for: TPH - 6, BTX ←	
Duplicate I.D.:	Cleaning Blank I.D.:
Analyzed for:	
Shipping Notations:	
Additional Notations:	

WELL MONITORING DATA SHEET

Project #: 930113-N-1	Client: SOC
Sampler: (N)	Date Sampled: 1.14.93
Well I.D.: S-12	Well Diameter: (circle one) 2 (3) 4 6
Total Well Depth: Before 23.98 After	Depth to Water: Before 6.38 After
Reason not sampled:	If Free Product, thickness:

Volume Conversion Factor (VCF):  
 $(12 \times (d^2/4) \times \pi) / 231$   
 Where  
 12 = in/foot  
 d = diameter (in.)  
 $\pi = 3.1416$   
 231 = in<sup>3</sup>/gal

Well dia.	VCF
2"	= 0.36
3"	= 0.57
4"	= 0.68
6"	= 1.47
10"	= 4.08
12"	= 5.67

C.51	x	3	=	19.53
1 Case Volume		Specified Volumes		gallons

Purging: Bailer <input type="checkbox"/> Middleburg <input checked="" type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Type of Installed Pump _____	Sampling: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Installed Pump <input type="checkbox"/>
--	--

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	NOTATIONS:
13:15	67.4	7.2	1100	14.96	6.5	
13:22	67.0	7.1	1200	3.66	13.0	
13:30	67.8	7.1	1200	4.22	20.0	

Did Well Dewater?      If yes, gals.      Gallons Actually Evacuated: 20

Sampling Time: 13:35

Sample I.D.: S-12	Laboratory: ANA
Analyzed for: TPH - GAS <del>BTX</del>	
Duplicate I.D.:	Cleaning Blank I.D.:
Analyzed for:	
Shipping Notations:	
Additional Notations:	

# WELL MONITORING DATA SHEET

Project #: 930113-N-1	Client: SOC
Sampler: (N)	Date Sampled: 1.14.93
Well I.D.: S-15	Well Diameter: (circle one) 2 (3) 4 6
Total Well Depth: Before 23.54 After	Depth to Water: Before 6.64 After
Reason not sampled:	If Free Product, thickness:

Volume Conversion Factor (VCF)  
 $(12 \times (d^2/4) \times \pi) / 231$   
 where  
 12 = in/foot  
 d = diameter (in.)  
 $\pi = 3.1416$   
 231 = in<sup>3</sup>/gal

Well dia.	VCF
2"	0.16
3"	0.37
4"	0.65
6"	1.47
10"	4.08
12"	5.67

6.25	x	3	=	18.75
1 Case Volume		Specified Volumes		gallons

Purging: Bailer <input type="checkbox"/> Middleburg <input checked="" type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Type of Installed Pump _____	Sampling: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Installed Pump <input type="checkbox"/>
--	--

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	NOTATIONS:
12:42	66.2	7.2	800	51.4	6.0	
12:48	66.8	7.2	800	12.69	12.5	
12:54	67.0	7.2	800	8.31	19.0	

Did Well Dewater?      If yes, gals.      Gallons Actually Evacuated: 19

Sampling Time: 13:00

Sample I.D.: S-15	Laboratory: ANA.
Analyzed for: TPH-GAS, BTXE	
Duplicate I.D.:	Cleaning Blank I.D.:
Analyzed for:	
Shipping Notations:	
Additional Notations:	

# WELL MONITORING DATA SHEET

Project #: 930113-N-1	Client: SOC
Sampler: (N)	Date Sampled: 1.13.93
Well I.D.: S-16	Well Diameter: (circle one) 2 (3) 4 6
Total Well Depth: Before 24.36 After	Depth to Water: Before 5.78 After
Reason not sampled:	If Free Product, thickness:

<p>Volume Conversion Factor (VCF):</p> $\left(12 \times \frac{d^2}{4} \times \pi\right) / 231$ <p>where</p> <p>12 = in/foot  d = diameter (in.)  <math>\pi = 3.1416</math>  231 = in<sup>3</sup>/gal</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Well dia.</th> <th>VCF</th> </tr> </thead> <tbody> <tr><td>2"</td><td>0.16</td></tr> <tr><td>3"</td><td>0.37</td></tr> <tr><td>4"</td><td>0.66</td></tr> <tr><td>6"</td><td>1.47</td></tr> <tr><td>10"</td><td>4.08</td></tr> <tr><td>12"</td><td>5.67</td></tr> </tbody> </table>	Well dia.	VCF	2"	0.16	3"	0.37	4"	0.66	6"	1.47	10"	4.08	12"	5.67
Well dia.	VCF														
2"	0.16														
3"	0.37														
4"	0.66														
6"	1.47														
10"	4.08														
12"	5.67														

<u>6.87</u>	x	<u>3</u>	=	<u>20.62</u>
1 Case Volume		Specified Volumes		gallons

Purging: Bailer <input type="checkbox"/> Middleburg <input checked="" type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Type of Installed Pump _____	Sampling: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Installed Pump <input type="checkbox"/>
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TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	NOTATIONS:
16:40	65.0	7.1	1200	105.8	6.5	
16:56	63.8	7.2	1200	>200	13.5	
17:04	64.2	7.2	1300	>200	21.0	

Did Well Dewater?      If yes, gals.      Gallons Actually Evacuated: 21.0

Sampling Time: 17:10

Sample I.D.: S-16	Laboratory: ANA.
Analyzed for: TPH-GAS, BTXE	
Duplicate I.D.: DUP.	Cleaning Blank I.D.:
Analyzed for: SAME	
Shipping Notations:	
Additional Notations:	

# WELL MONITORING DATA SHEET

Project #: 930113 - N - 1	Client: SOC
Sampler: (N)	Date Sampled: 1-13-93
Well I.D.: S-18	Well Diameter: (circle one) 2 (3) 4 6
Total Well Depth: Before 18.10 After	Depth to Water: Before 5.86 After
Reason not sampled:	If Free Product, thickness:

Volume Conversion Factor (VCF):  $(12 \times (d^2/4) \times \pi) / 231$

where  
 12 = in/foot  
 d = diameter (in.)  
 $\pi = 3.1416$   
 231 = in<sup>3</sup>/gal

Well dia.	VCF
2"	= 0.16
3"	= 0.37
4"	= 0.66
6"	= 1.47
10"	= 4.08
12"	= 5.87

<u>4.52</u>	x	<u>3</u>	=	<u>13.58</u>
1 Case Volume		Specified Volumes		gallons

Purging: Bailer <input type="checkbox"/> Middleburg <input checked="" type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Type of Installed Pump _____	Sampling: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Installed Pump <input type="checkbox"/>
--	--

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	NOTATIONS:
14:57	63.2	7.2	1100	47.5	4.5	
15:04	64.8	7.2	1200	112.5	9.0	
15:10	65.2	7.2	1200	114.1	13.5	

Did Well Dewater?      If yes, gals.      Gallons Actually Evacuated: 13.5

Sampling Time: 15 = 15

Sample I.D.: S-18	Laboratory: ANA.
Analyzed for: TPH - E, BTXE	
Duplicate I.D.:	Cleaning Blank I.D.:
Analyzed for:	
Shipping Notations:	
Additional Notations:	



# WELL MONITORING DATA SHEET

Project #: 930113 - N - 1	Client: SOC
Sampler: (N)	Date Sampled: 1.14.93
Well I.D.: SR-1	Well Diameter: (circle one) 2 3 4 (6)
Total Well Depth: Before 21.24 After	Depth to Water: Before 5.46 After
Reason not sampled:	If Free Product, thickness:

Volume Conversion Factor (VCF):  
 $(12 \times (d^2/4) \times \pi) / 231$   
 where  
 12 = in/foot  
 d = diameter (in.)  
 $\pi = 3.1416$   
 231 = in<sup>3</sup>/gal

Well dia.	VCF
2"	= 0.16
3"	= 0.37
4"	= 0.65
6"	= 1.47
10"	= 4.08
12"	= 5.87

23.19	x	3	=	69.57
1 Case Volume		Specified Volumes		gallons

Purging: Bailer <input type="checkbox"/> Middleburg <input checked="" type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Type of Installed Pump _____	Sampling: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Installed Pump <input type="checkbox"/>
--	--

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	NOTATIONS:
15:09	66.0	7.1	1100	5.09	23.0	FUEL ODOR
15:33	65.6	7.1	1200	2.23	46.0	
15:53	65.4	7.0	1200	2.03	70.0	

Did Well Dewater?      If yes, gals.      Gallons Actually Evacuated: 70

Sampling Time: 15:55

Sample I.D.: SR-1	Laboratory: ANA.
Analyzed for: TPH - GAS, BTX ←	
Duplicate I.D.:	Cleaning Blank I.D.:
Analyzed for:	
Shipping Notations:	
Additional Notations:	