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Transmittal

Date: February 28, 1995

To: Mr. Lynn Walker
Shell Oil Company
P.O. Box 4023
Concord, California 94524

From: Joe Neely

RE: **Corrected Boring Log S-10 for**
Site Investigation Report and Quarterly Monitoring Report - First Quarter 1995
Former Shell Service Station
461 Eighth Street
Oakland, California
WIC #204-5508-6205

Comments:

Transmitted herewith is a copy of the corrected boring log for the above referenced Report. An error on Boring Log S-10 was identified and has been corrected. Please replace Boring Log S-10 (in Appendix A) with the attached corrected Boring Log. We apologize for any inconvienence this may have caused.

cc: Ms. Jennifer Eberle, Alameda County Health Care Services Agency
Mr. Richard Hiett, Regional Water Quality Control Board
Mr. Jim Matthews, Shell Oil Company
Mr. Steven Schulman, Wells Fargo Bank
Mr. Rory Campbell, Hansen, Bridgett, Marcus, Vlahos & Rudy

Enviros, Inc. *270 Perkins Street* *Post Office Box 259* *Sonoma* *California 95476* *Tel 707 / 935-4850* *Fax 707 / 935-6649*

Revised

Field Exploratory Boring Log S-10

OVM PPM	Blows/ 6"	Sample Number	Depth (ft)	Materials Description
				0-3" Asphalt Silty Sand (SC) - Fill Dark Brown (10YR 3/3); moist, 65-75% fine to medium sand, 15-20% fine to medium gravel and construction debris.
13.8	13 20 30	S-10-6.5	5	@ 5': As above, very dense, moist.
1420	3 4 5	S-10-11.5	10	Sand (SP) Very dark gray (5Y 3/1); loose, moist, 85-95% fine to medium sand, 5-10% fines.
24.2	15 20 35	S-9-16.5	15	Clayey Sand (SC) Dark olive gray (5Y 3/2); very dense, moist, 80-90% fine to medium sand, 10-20% clayey fines, slight iron staining noted.
19.0	15 30 50	S-10-21.5	20	Sand (SP) Olive gray (5Y 4/2); very dense, moist, 85-95% fine to medium sand, 5-10% fines.
18.5	30 50	S-10-26.5	25	@ 25': As above, very dense, wet.
12.2	30 50		30	@ 30': As above, color change to dark olive brown (2.5Y 3/3) very dense, wet.

Wellbox 0 - 1 ft.
Cement 1 - 8 ft.
Bentonite 8 to 9 ft.
Lonestar #3 Sand
4-in. Sch. 40 PVC
4-in. Sch. 40 PVC - 0.02-in. Slot 10 to 30 ft.

BORING
S-10

SHELL OIL COMPANY
Former Shell Service Station
461 8th Street
Oakland, California

Borehole Diameter:	10 inches
Logged by:	J. Neely
Driller:	Gregg Drilling
Date Started:	08-Dec-94
Date Completed:	08-Dec-94

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94216.05

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Transmittal

Date: February 14, 1995

To: Mr. Lynn Walker
Shell Oil Company
P.O. Box 4023
Concord, California 94524

From: Diane Lundquist

RE: **Site Investigation Report and Quarterly Monitoring Report - First Quarter 1995**
Former Shell Service Station
461 Eighth Street
Oakland, California
WIC #204-5508-6205

Comments:

Transmitted herewith is a copy of the referenced document.

cc: Ms. Jennifer Eberle, Alameda County Health Care Services Agency
Mr. Richard Hiett, Regional Water Quality Control Board
Mr. Jim Matthews, Shell Oil Company
Mr. Steven Schulman, Wells Fargo Bank
Mr. Rory Campbell, Hansen, Bridgett, Marcus, Vlahos & Rudy

Enviros, Inc. *19411 Riverside Drive* *Post Office Box 259* *Sonoma* *California 95476* *Tel 707 / 935-4850* *Fax 707 / 935-4855*

enviros®

February 14, 1995

Mr. Lynn Walker
Shell Oil Company
P. O. Box 4023
Concord, California 94524

RE: **Site Investigation Report and Quarterly Monitoring Report - First Quarter 1995**
Former Shell Service Station
461 8th Street
Oakland, California
WIC 204-5508-6205

Dear Mr. Walker:

This report presents the results of the groundwater investigation conducted by Enviros, Inc. (Enviros) at the above referenced site (Plates 1 and 2). This site investigation was performed to assess the extent of petroleum hydrocarbons in soil and groundwater onsite and to aid in determining the source of hydrocarbons found offsite to the south. This investigation was performed in accordance with the October 3, 1994 Work Plan prepared by Enviros, and approved by the Alameda County Health Care Services Agency in their October 6, 1994 letter. Groundwater monitoring and sampling performed as part of this investigation will serve as the first quarter of 1995 groundwater monitoring and sampling event.

1.0 SITE DESCRIPTION

The subject property is located on the southwest corner of the intersection of 8th Street and Broadway in Oakland, California (Plate 2). The site is a former Shell service station currently occupied by a parking lot. The site's former layout included underground storage tanks (USTs), dispenser islands, and a service station building (Plate 2). The history of previous work performed at the site is summarized in the October 3, 1994 Work Plan prepared for this investigation.

2.0 FIELD PROCEDURES

2.1 Exploratory Soil Borings

Three exploratory soil borings (S-8, S-9, and S-10) were drilled and sampled using a hollow-stem auger drilling rig on December 7 and 8, 1994. The lithology of these borings was logged by an Enviros geologist using the Unified Soils Classification System and Munsell Color chart. The locations of these borings are presented on Plate 2.

Soil samples were collected using a modified California split-spoon sampler for lithologic description, head-space analysis, and chemical analysis at five-foot intervals and at significant lithologic changes.

Each sampling interval was screened for the presence of organic vapors using a photo ionization detector (PID). PID readings are shown on the exploratory boring logs. Encountered lithology is described on the exploratory boring logs presented in Appendix A.

Soil sample tubes retrieved from the borings were covered with Teflon tape, capped, labeled, entered onto a Chain-of-Custody record, and stored in a cooler with ice. The samples were transported to National Environmental Testing, Inc. (NET) of Santa Rosa, California, a state-certified environmental laboratory, for analysis.

Selected soil samples from the borings were analyzed for Total Petroleum Hydrocarbons calculated as Gasoline (TPH-G) according to EPA Method 8015 (Modified), and benzene, toluene, ethylbenzene and xylenes (BTEX) according to EPA Method 8020.

Decontamination Procedures

Drilling and sampling equipment were decontaminated prior to beginning work and between activities performed at each boring. Drilling equipment was inspected prior to drilling each boring.

Soil Stockpile

Approximately 3 to 4 cubic yards of soil were generated as a result of drilling activities. This soil was placed in a 4 cubic yard bin located in the southwestern corner of the site. Samples of this soil were collected and analyzed for TPH-G, BTEX as described above, and STLC Lead (according to EPA Method 7421) to aid in determining a proper disposal method for the soil.

2.2 Monitoring Well Installations

The three exploratory soil borings were completed as groundwater monitoring wells (S-8, S-9, and S-10). Each well was constructed of 4-inch diameter, threaded, Schedule 40 PVC well casing. Well screen consisted of 0.020-inch slot placed from 10 to 30 feet below grade (fbg) in the Wells S-8 and S-9, and from 16.5 to 36.5 fbg in Well S-10. The locations of the newly installed monitoring wells are shown on Plate 2. Well construction included the placement of Lonestar #3 sand to one foot above the top of the screen intervals. A one-foot thick bentonite seal was placed above the sandpack followed by a concrete seal to approximately 1/2-foot below grade. Each well was secured with a locking well plug and a traffic-rated vault box. Well completion details are presented on the exploratory boring logs contained in Appendix A.

Following well completion, the top of the well casing and the rim of the vault box for each new and existing monitoring well were surveyed relative to Mean Sea Level by a state of

California registered Land Surveyor. Measurements made by the surveyor were to the nearest ± 0.01 foot.

2.3 Groundwater Sampling and Well Development

Well S-5 was gauged on November 29, 1994 and found to contain 1.13 feet of separate phase hydrocarbon (SPH). Approximately 85 gallons of a water/SPH mixture were removed from this well by Crosby and Overton.

On December 20, 1994, Blaine Tech, Inc. (Blaine) of San Jose, California developed the three newly installed wells. Well development procedures are described in the attached Blaine Well Development Report (Appendix C). On December 22, 1994, Blaine conducted groundwater monitoring and sampling activities that included collecting samples from the newly installed wells as well as from two of the existing offsite wells (S-4 and S-6). Well S-5 was not sampled because it contained 0.99 feet of SPH.

Each groundwater sample was analyzed for TPH-G and BTEX. Quality control samples including a duplicate (from Well S-6), a trip blank, and an equipment blank were also analyzed for TPH-G and BTEX.

3.0 FINDINGS

3.1 Geology and Hydrogeology

Lithology encountered during the drilling of the exploratory soil borings consisted primarily of poorly graded sand (SP), with some clayey sand (SC), and silty sand (SM). The lithology of Borings S-8 and S-9 consisted entirely of poorly graded sand to the total depth explored of 30 fbg. The lithology of Boring S-10 consisted of silty sand from the surface to approximately 7 fbg, poorly graded sand to approximately 13 fbg, clayey sand to approximately 18 fbg, poorly graded sand to approximately 36 fbg, and clayey sand to 36.5 fbg (the bottom of the boring).

In Borings S-8 and S-9 groundwater was first encountered at approximately 16 fbg and in Boring S-10 first groundwater was approximately 25.5 fbg. Groundwater stabilized in the wells at 24 to 25 fbg. The groundwater flow direction appears to be southwesterly at an approximate gradient of 0.007.

Offsite Well S-4 was noted to have a high groundwater elevation relative to the other wells. This well is located between two of the underground BART tunnels, which are located underneath Broadway, east of the Shell site. These tunnels may be influencing groundwater flow between Well S-4 and the other site investigation wells as they are located at a depth approximately at and below the groundwater table. Therefore, Well S-4 was not used in constructing the groundwater contour map (Plate 4).

3.2 Soil Chemical Analytical Data

Selected soil samples from each boring were analyzed by NET for TPH-G and BTEX. The results of the chemical analysis are summarized in Table 1. The distribution of petroleum hydrocarbons in soils is shown on Plate 3. The Certified analytical reports for soils are contained in Appendix B. A summary of chemical analytical results for each boring is presented below.

3.2.1 Boring S-8

Soil Boring S-8 was drilled in the northeast corner of the site near the intersection of Eighth Street and Broadway. Three soil samples from this boring were selected for analysis. The samples were collected from 6.5 fbg, 11.5 fbg, and 21.5 fbg. TPH-G and BTEX were not detected (ND) in these samples with the exception of benzene in the sample from 21.5 fbg at a concentration of 0.014 parts per million (ppm).

3.2.2 Boring S-9

Soil Boring S-9 was drilled in the southeastern corner of the site near Broadway. Three soil samples from this boring were selected for analysis. The samples were collected from 6.5 fbg, 11.5 fbg, and 21.5 fbg. TPH-G and BTEX were ND in these samples.

3.2.3 Boring S-10

Soil Boring S-10 was drilled in the northwestern portion of the site in the former underground storage tank complex location. Four soil samples from this boring were selected for analysis. The samples were collected from 6.5 fbg, 11.5 fbg, 16.5 fbg, and 21.5 fbg. TPH-G and BTEX were identified in the samples from 11.5 fbg and 16.5 fbg. The concentration of TPH-G in the 11.5 fbg sample was 760 ppm and the benzene concentration was 0.0032 ppm. Only ethylbenzene was detected in the sample from 16.5 fbg, at a concentration of 0.0031 ppm. Soil samples from 6.5 fbg and 21.5 fbg were ND for TPH-G and BTEX.

3.3 Groundwater Chemical Analytical Data

Groundwater chemical analytical data for this investigation are presented on Table 2 and the Historical Groundwater Quality Database is presented as Table 3. The distribution of petroleum hydrocarbons in groundwater is shown on Plate 5. The Blaine Quarterly Groundwater Sampling and Well Development Reports are contained in Appendix C. A summary of the groundwater chemical analytical data is presented below.

3.3.1 Onsite Wells

None of the onsite wells contained SPH. TPH-G, and BTEX were detected in the three newly installed wells (S-8, S-9, and S-10). The concentrations of TPH-G and benzene in Well S-8 were 600 and 120 parts per billion (ppb), respectively. The concentrations of

TPH-G and benzene in Well S-9 were 2,600 and 400 ppb, respectively. The concentrations of TPH-G and benzene in Well S-10 were 420 and 27 ppb, respectively.

3.3.2 Offsite Wells

The three offsite wells (S-4, S-5, and S-6) were also monitored and sampled during this site investigation. Well S-5 contained SPH at thicknesses ranging from 0.99 to 1.13 feet. This well has historically contained SPH and was not sampled this quarter. Well S-4 was ND for TPH-G and BTEX. TPH-G was identified in Well S-6 at a concentration of 32,000 ppb and benzene at a concentration of 7,000 ppb.

4.0 CONCLUSIONS

The concentrations of TPH-G and benzene in soil were found to be ND in samples collected from all three onsite soil borings, with the exception of the sample collected from Boring S-10 at 11.5 fbg, which contained concentrations of TPH-G and benzene at 760 ppm and 0.0032 ppm, respectively, and the sample collected from Boring S-8 at 21.5 fbg which contained a benzene concentration of 0.014 ppm. Boring S-10 is located in the former underground storage tank complex backfill.

Groundwater samples from the three newly installed onsite wells were found to contain TPH-G concentrations ranging from 420 to 2,600 ppb. Benzene concentrations in these samples ranged from 27 to 400 ppb in these wells. None of these wells contained SPH. Groundwater flow was calculated to be southwesterly at an approximate hydraulic gradient of 0.007.

Offsite Well S-5 contained SPH at thicknesses ranging from 0.99 to 1.13 feet. Offsite Wells S-4 and S-6 contained TPH-G concentrations of ND and 32,000 ppb, and benzene concentrations of ND and 7,000 ppb, respectively. This quarter's findings for the offsite wells are consistent with historical data.

Based on water level data collected during this investigation, Well S-9 is located downgradient of potential hydrocarbon sources on the Shell site, and upgradient of the SPH detected in Well S-5. While dissolved TPH-G and BTEX concentrations were detected in groundwater samples from this well, no SPH were detected. Additionally, no TPH-G or BTEX concentrations were detected in soil samples analyzed from this well boring. Well S-10, located within the tank backfill also did not contain SPH. TPH-G and BTEX concentrations in soil samples from the Well S-10 boring were present only in the sample from 11.5 fbg, and were ND in soil samples from the capillary fringe areas.

Based on the described distribution of SPH and dissolved hydrocarbons in groundwater, and the absence of hydrocarbon concentrations within capillary fringe soils, it appears that other sources may have contributed to the SPH plume identified to the south of the Shell site. Several potential hydrocarbon sources were identified in the *"Phase I Preliminary Site Assessment"* dated June 30, 1993, prepared on behalf of Shell by GeoStrategies, Inc.

If you have any questions regarding the contents of this document, please call.

Sincerely,

Enviros, Inc.

Joe W. Neely
Project Geologist

Diane M. Lundquist, P.E.
Senior Engineer
C46725

Attachments:

Table 1.	Soil Chemical Analytical Data
Table 2.	Groundwater Chemical Analytical Data
Table 3.	Historical Groundwater Quality Database
Plate 1.	Vicinity Map
Plate 2.	Site Plan
Plate 3.	Soil Chemical Analytical Map
Plate 4.	Groundwater Contour Map
Plate 5.	Groundwater Chemical Analytical Map
Appendix A:	Exploratory Boring Logs
Appendix B:	NET Laboratory Reports & Chain-of Custody Records
Appendix C:	Blaine Tech Services Inc. Quarterly Groundwater Sampling and Well Development Reports

cc: Ms. Jennifer Eberle, Alameda County Health Care Services Agency
Mr. Richard Hiett, Regional Water Quality Control Board, San Francisco Region
Mr. Jim Matthews, Shell Oil Company
Mr. Steven Schulman, Wells Fargo Bank
Mr. Rory Campbell, Hanson, Bridgett, Marcus, Vlahos & Rudy

TABLE 1
SOIL CHEMICAL ANALYTICAL DATA

FORMER SHELL SERVICE STATION
461 8TH STREET,
OAKLAND, CALIFORNIA
WIC 204-5508-6205

WELL NUMBER	SAMPLE NO.	DEPTH (FT.)	SAMPLE DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYL BENZENE (PPM)	XYLENES (PPM)
S-8	S-8-6.5	6.5	7-Dec-94	<1	<0.0025	<0.0025	<0.0025	<0.0025
	S-8-11.5	11.5	7-Dec-94	<1	<0.0025	<0.0025	<0.0025	<0.0025
	S-8-21.5	21.5	7-Dec-94	<1	**0.014**	<0.0025	<0.0025	<0.0025
S-9	S-9-6.5	6.5	7-Dec-94	<1	<0.0025	<0.0025	<0.0025	<0.0025
	S-9-11.5	11.5	7-Dec-94	<1	<0.0025	<0.0025	<0.0025	<0.0025
	S-9-21.5	21.5	7-Dec-94	<1	<0.0025	<0.0025	<0.0025	<0.0025
S-10	S-10-6.5	6.5	7-Dec-94	<1	<0.0025	<0.0025	<0.0025	<0.0025
	S-10-11.5	11.5	7-Dec-94	**760**	**0.0032**	0.028	6.4	6.9
	S-10-16.5	16.5	7-Dec-94	<1	<0.0025	<0.0025	0.0031	<0.0025
	S-10-21.5	21.5	7-Dec-94	<1	<0.0025	<0.0025	<0.0025	<0.0025

Abbreviations:

FT = Measurements in feet
TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline.
PPM = Parts Per Million.
<x = Not Detected at detection limit of x

TABLE 2
GROUNDWATER CHEMICAL ANALYTICAL DATA
FORMER SHELL SERVICE STATION
461 8TH STREET
OAKLAND, CALIFORNIA
WIC# 204-5508-6205

Well Number	DATE	Top of Vault Box Elevation[a] (ft)	Depth to Water (ft)	Groundwater Elevation (ft)	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYL BENZENE (PPB)	XYLENES (PPB)
S-4	22-Dec-94	25.77	22.25	3.52	<50	<0.5	<0.5	<0.5	<0.5
S-5	29-Nov-94	22.94[b]	23.00	0.84[c]	Not Sampled - 1.13' SPH				
	22-Dec-94	22.94[b]	22.88	0.85[c]	Not Sampled - 0.99' SPH				
S-6	22-Dec-94	22.08	21.92	0.16	32,000	7,000	2,900	790	2,400
S-8	22-Dec-94	27.21	24.87	2.34	600	120	32	5.2	34
S-9	22-Dec-94	26.06	24.37	1.69	2,600	400	150	42	310
S-10	22-Dec-94	28.04	25.84	2.20	420	27	8.0	18	45
S-6 (Dup)	22-Dec-94	--	--	--	32,000	8,000	3,800	1,100	3,400

Abbreviations:

ft = Measurements in feet
TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline.
PPB = Parts Per Billion.
SPH = Separate Phase Hydrocarbon
<x = Not Detected at detection limit of x
a = All wells resurveyed December 1994.
b = Not top of vault box elevation. This well is referenced to ground surface.
c = Groundwater elevation corrected for the presence of SPH using a 0.8 correction factor.

TABLE 3

HISTORICAL GROUNDWATER QUALITY DATABASE

FORMER SHELL SERVICE STATION
461 EIGHTH STREET
OAKLAND, CALIFORNIA
WIC 204-5508-6205

WELL DESIGNATION	SAMPLE DATE	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
S-4	26-Oct-88	130	3.8	13	4	30
	14-Feb-89	<50	0.5	<1	<1	3
	1-May-89			Dry		
	27-Jul-89			Dry		
	5-Oct-89			Dry		
	9-Jan-90			Dry		
	30-Apr-90	<50	<0.5	<0.5	<5	<1
	31-Jul-90			Dry		
	30-Oct-90			Dry		
	6-May-91			Dry		
	27-Jun-91	<50	<0.5	<0.5	<0.5	<0.5
	24-Sep-91			Dry		
	7-Nov-91			Dry		
	13-Feb-92	<50	<0.5	<0.5	<0.5	3
	11-May-92			Dry		
	3-Dec-92			Inaccessible		
	13-May-93			Inaccessible		
	22-Jul-93			Inaccessible		
	20-Oct-93			Inaccessible		
	25-Jan-94			Inaccessible		
	25-Apr-94			Inaccessible		
	21-Jul-94	<50	<0.5	<0.5	<0.5	<0.5
	24-Oct-94	<500	<0.3	<0.3	<0.3	<0.6
	22-Dec-94	,50	<0.5	<0.5	<0.5	<0.5
S-5	16-Apr-87	130,000	15,000	16,000	---	14,000
	26-Oct-88	110,000	20,000	25,000	2,300	10,000
	14-Feb-89	94,000	16,000	21,000	1,800	10,000
	1-May-89	120,000	29,000	35,000	3,100	15,000
	27-Jul-89	110,000	20,000	29,000	2,400	14,000
	5-Oct-89			Floating Product 0.01 ft		
	9-Jan-90			Floating Product 0.01 ft		
	30-Apr-90	100,000	13,000	22,000	2,100	11,000
	31-Jul-90	53,000	8,300	14,000	1,200	7,400
	30-Oct-90			Floating Product 0.03 ft		
	6-May-91			Floating Product 0.13 ft		
	27-Jun-91			Floating Product 0.03 ft		
	24-Sep-91			Floating Product 0.06 ft		
	7-Nov-91			Floating Product 0.25 ft		
	13-Feb-92			Floating Product 0.31 ft		
	11-May-92			Floating Product 0.58 ft		

TABLE 3

HISTORICAL GROUNDWATER QUALITY DATABASE

FORMER SHELL SERVICE STATION
461 EIGHTH STREET
OAKLAND, CALIFORNIA
WIC 204-5508-6205

WELL DESIGNATION	SAMPLE DATE	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
S-5	3-Dec-92			Inaccessible		
	13-May-93			Floating Product 0.27 ft		
	22-Jul-93			Floating Product 0.25 ft		
	20-Oct-93			Floating Product 0.23 ft		
	25-Jan-94			Floating Product 0.18 ft		
	25-Apr-94			Floating Product 0.35 ft		
	26-May-94			Floating Product 0.35 ft		
	10-Jun-94			Floating Product 0.32 ft		
	21-Jul-94			Floating Product 0.47 ft		
	25-Aug-94			Floating Product 0.44 ft		
	22-Sep-94			Floating Product 0.15 ft		
	24-Oct-94			Floating Product 0.56 ft		
	29-Nov-94			Floating Product 1.13 ft		
	22-Dec-94			Floating Product 0.99 ft		
S-6	16-Apr-87	81,000	16,000	9,000	---	6,400
	26-Oct-88	110,000	29,000	18,000	2,500	8,200
	14-Feb-89	54,000	18,000	4,500	1,400	4,000
	1-May-89	93,000	43,000	9,900	3,000	8,000
	27-Jul-89	52,000	20,000	3,200	1,700	5,500
	5-Oct-89	55,000	20,000	2,900	1,600	5,500
	9-Jan-90	76,000	35,000	9,100	2,300	8,600
	30-Apr-90	39,000	13,000	2,300	900	2,800
	31-Jul-90	48,000	20,000	4,600	1,500	4,900
	30-Oct-90	27,000	7,400	900	600	1,400
	6-May-91	35,000	3,900	2,700	2,300	3,500
	27-Jun-91	51,000	19,000	5,600	1,700	6,300
	24-Sep-91	42,000	14,000	4,300	1,200	4,000
	7-Nov-91	39,000	11,000	2,000	800	2,300
	13-Feb-92	64,000	21,000	6,200	1,600	5,100
	11-May-92	57,000	22,000	7,600	2,200	7,700
	3-Dec-92	110,000	26,000	9,400	2,100	8,700
	13-May-93	58,000	21,000	6,800	2,500	9,800
	22-Jul-93	70,000	31,000	14,000	3,000	13,000
	20-Oct-93	48,000	28,000	9,800	3,200	12,000
	25-Jan-94	70,000	23,000	7,500	2,500	8,000
	25-Apr-94	61,000	16,000	4,000	1,800	5,100
	21-Jul-94	44,000	8,200	3,600	1,400	3,900
	24-Oct-94	2,936	1,184	440.6	163.4	648.4
	22-Dec-94	[redacted],000	7,000	2,900	790	2,400

TABLE 3

HISTORICAL GROUNDWATER QUALITY DATABASE

FORMER SHELL SERVICE STATION
461 EIGHTH STREET
OAKLAND, CALIFORNIA
WIC 204-5508-6205

WELL DESIGNATION	SAMPLE DATE	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)
S-6 DUP	21-Jul-94	32,000	7,800	3,400	1,300	3,700
	24-Oct-94	2,968	770.8	325.3	144.1	622
	22-Dec-94	32,000	8,000	3,800	1,100	3,400
S-8	22-Dec-94	600	120	32	5.2	34
S-9	22-Dec-94	2,600	400	150	42	310
S-10	22-Dec-94	420	27	8.0	18	45

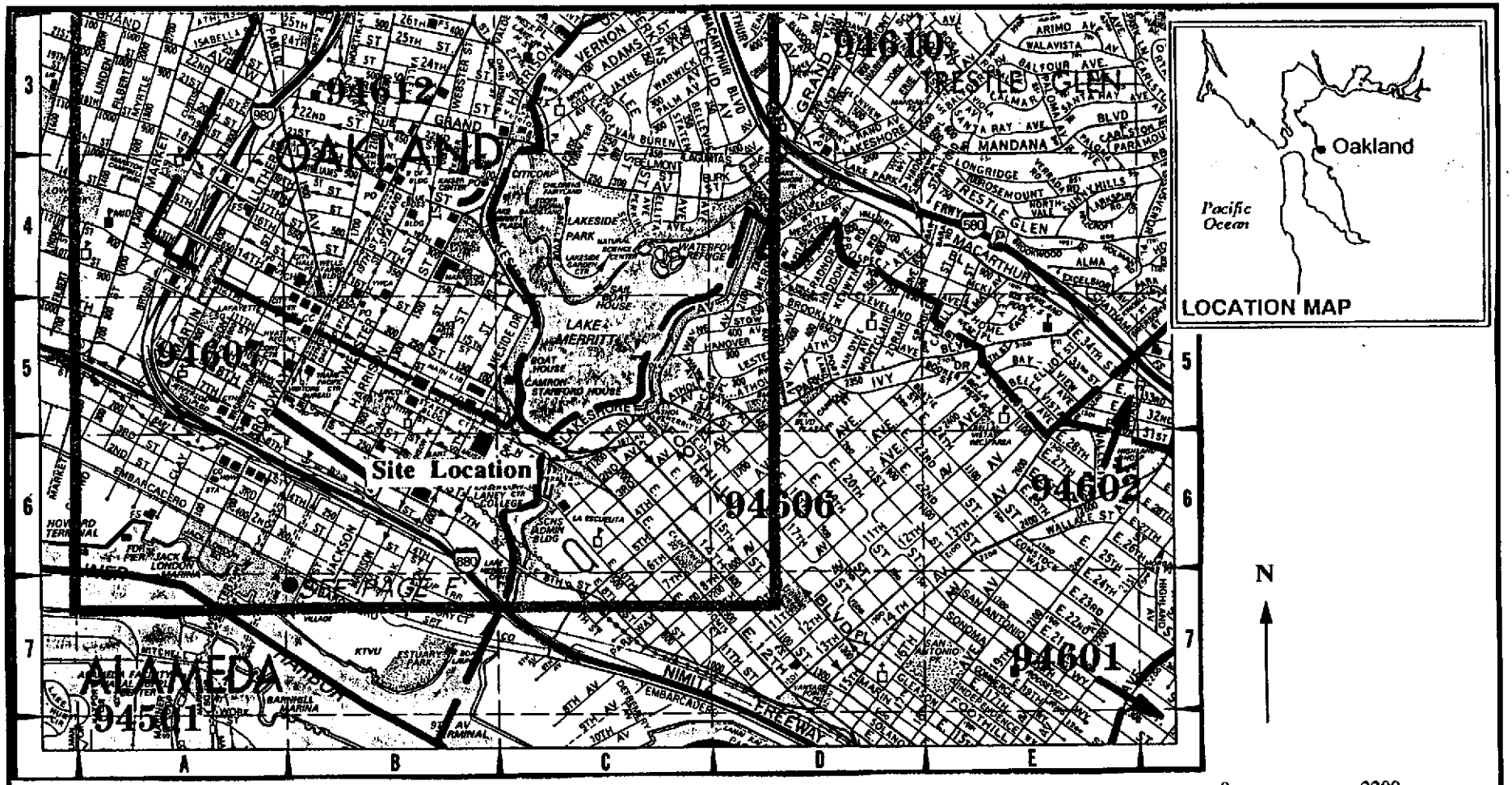
Abbreviations:

TPH-G = Total petroleum hydrocarbons as gasoline by Modified EPA Method 8015

Benzene, Toluene, Ethylbenzene, and Xylenes analyzed by EPA Method 8020

--- = Ethylbenzene and Xylenes were combined prior to May 1987

<x = Not detected at detection limit of x



Base Map: 1993 Thomas Guide

PLATE

1

VICINITY MAP
Former Shell Service Station
461 Eighth Street
Oakland, California

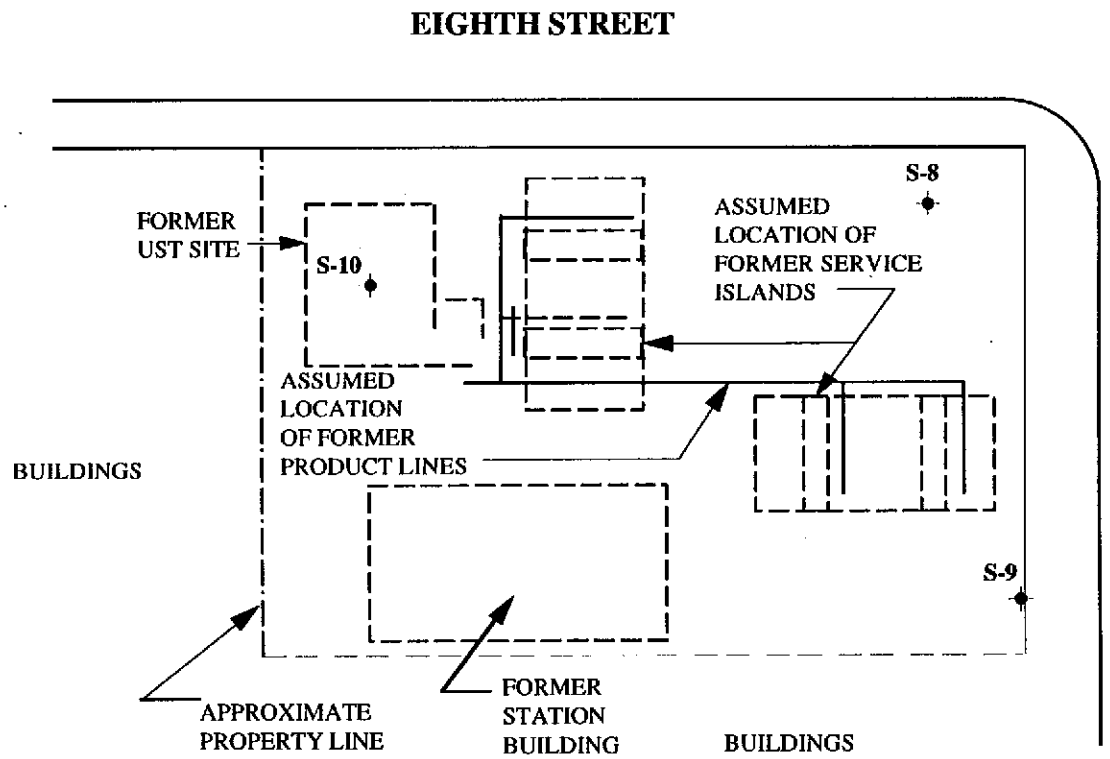
enviros®
E49307216

Drawn By: CJG Date: 12/6/93

Approved By: _____ Date: 14-Feb-95

EXPLANATION

♦ Monitoring Well Location



Base Map: GeoStrategies, Inc. Site Plan 9/93

PLATE
2

SITE PLAN
Former Shell Service Station
461 Eighth Street
Oakland, California

enviros®
95 216.05

Drawn By: JWN Date: 1-18-95

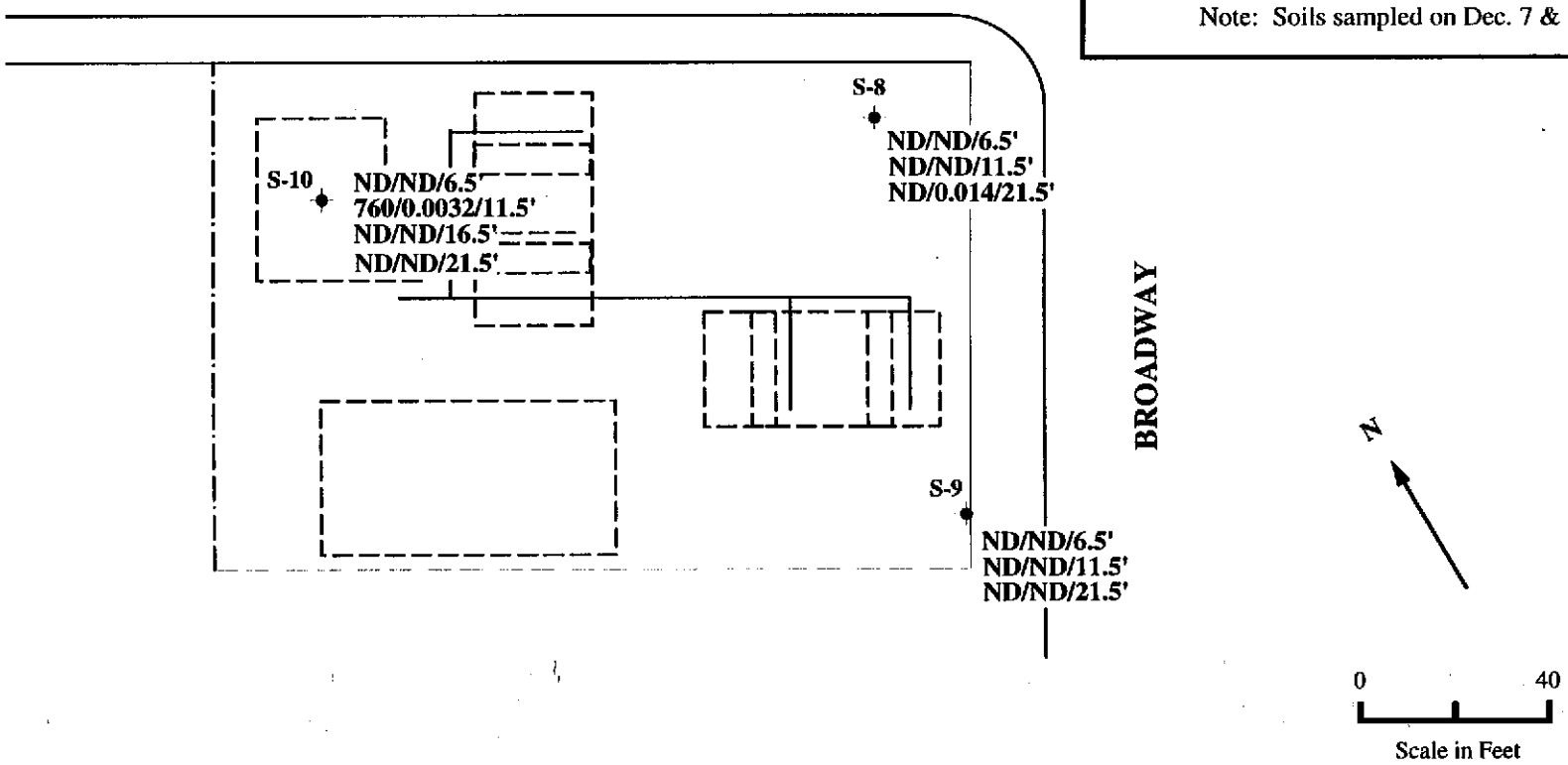
Approved By: JM Date: 14-Feb-95

EXPLANATION

♦ Monitoring Well Location

ND/0.014/21.5' TPH-Gasoline/Benzene/Depth in feet. Concentrations in parts per million (ppm).

Note: Soils sampled on Dec. 7 & 8, 1994.



Base Map: GeoStrategies, Inc. Site Plan 9/93

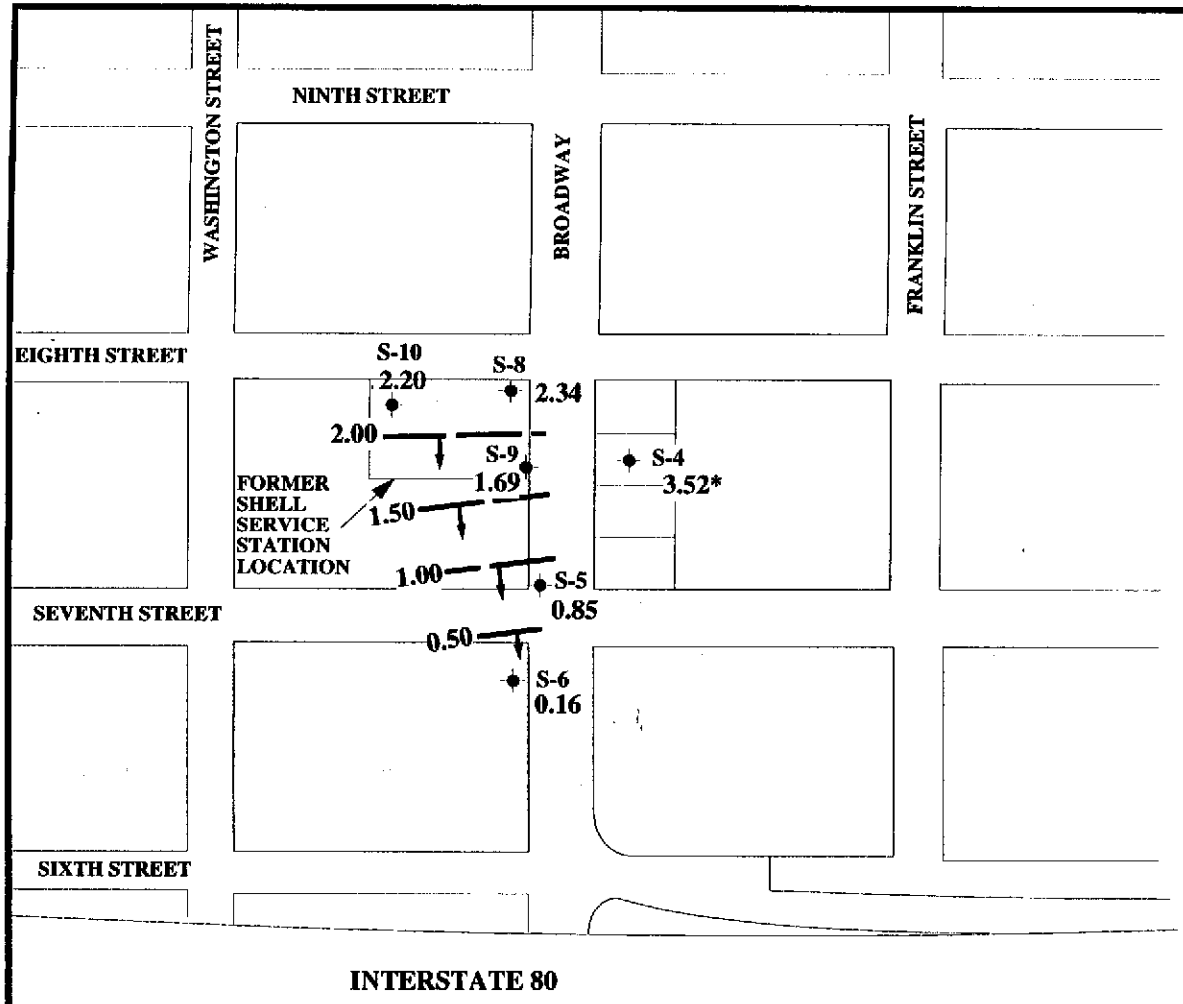
PLATE
3

SOIL CHEMICAL ANALYTICAL MAP
Former Shell Service Station
461 Eighth Street
Oakland, California

enviros®
95 216.05

Drawn By: JWN Date: 1-18-95

Approved By: JM Date: 14-Feb 95



EXPLANATION

- Groundwater MonitoringWell
- 2.34 Groundwater Elevation in feet Referenced to Mean Sea Level
- 0.50 Groundwater Elevation Contour

Approximate Hydrulic Gradient = 0.007

Note: Water level Measurement taken December 22, 1994

* Well S-4 not used for contouring

N

0 200

Scale in Feet

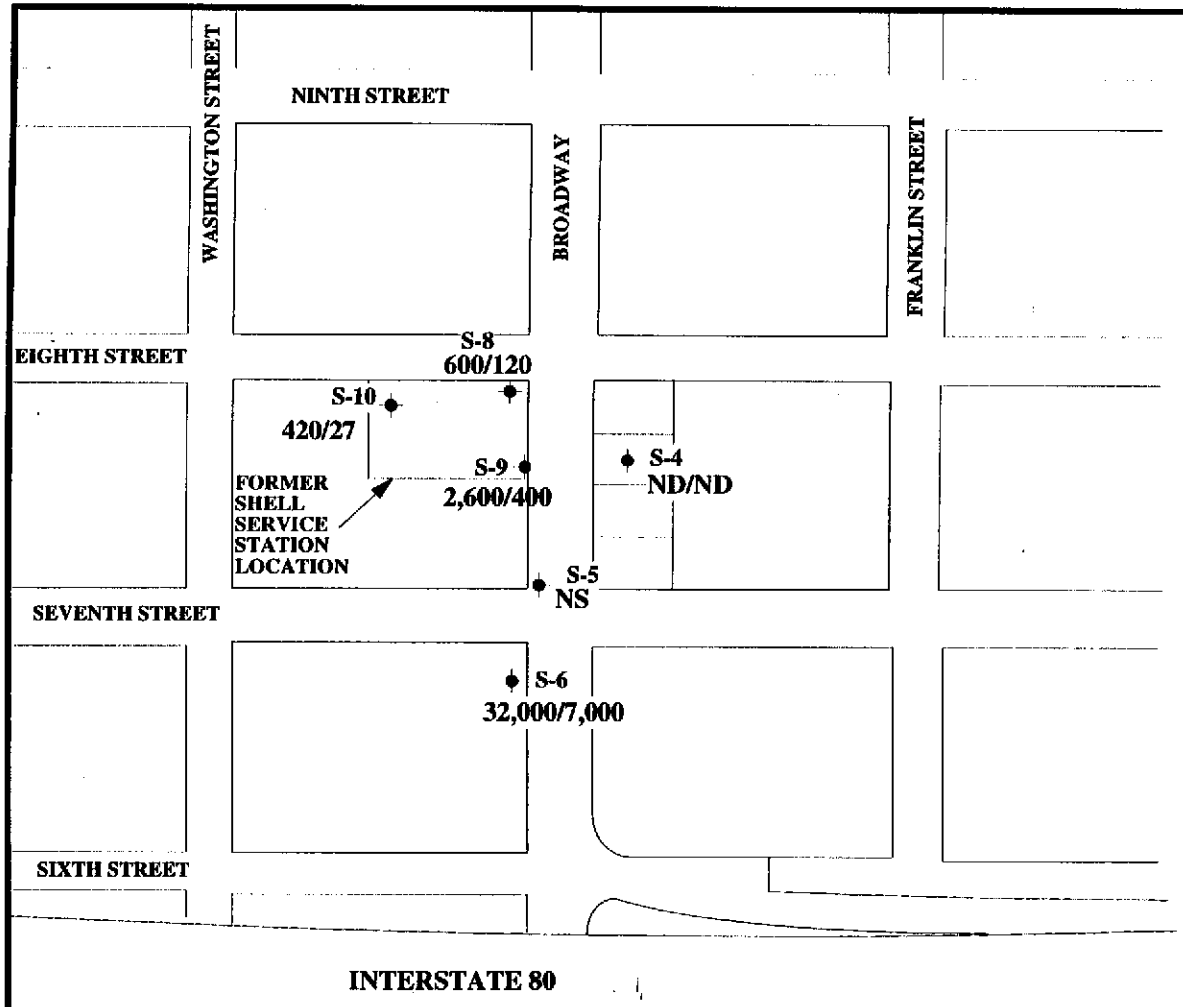
Note: Base Map taken from GeoStrategies Inc. Report dated 10-4-93.

PLATE **4**

GROUNDWATER CONTOUR MAP
Former Shell Service Station
461 Eighth Street
Oakland, California

enviros®
95 216.05

Drawn By: JWN | Date: 1/19/95 | Approved By: Jm | Date: 14-Feb 95



EXPLANATION

✦	Groundwater MonitoringWell
600/120	TPH-G/Benzene Concentration in Groundwater in Parts Per Billion
ND	Not Detected
NS	Not Sampled

Note: Groundwater sampled December 22, 1994

N

0 200

Scale in Feet

Note: Base Map taken from GeoStrategies Inc. Report dated 10-4-93.

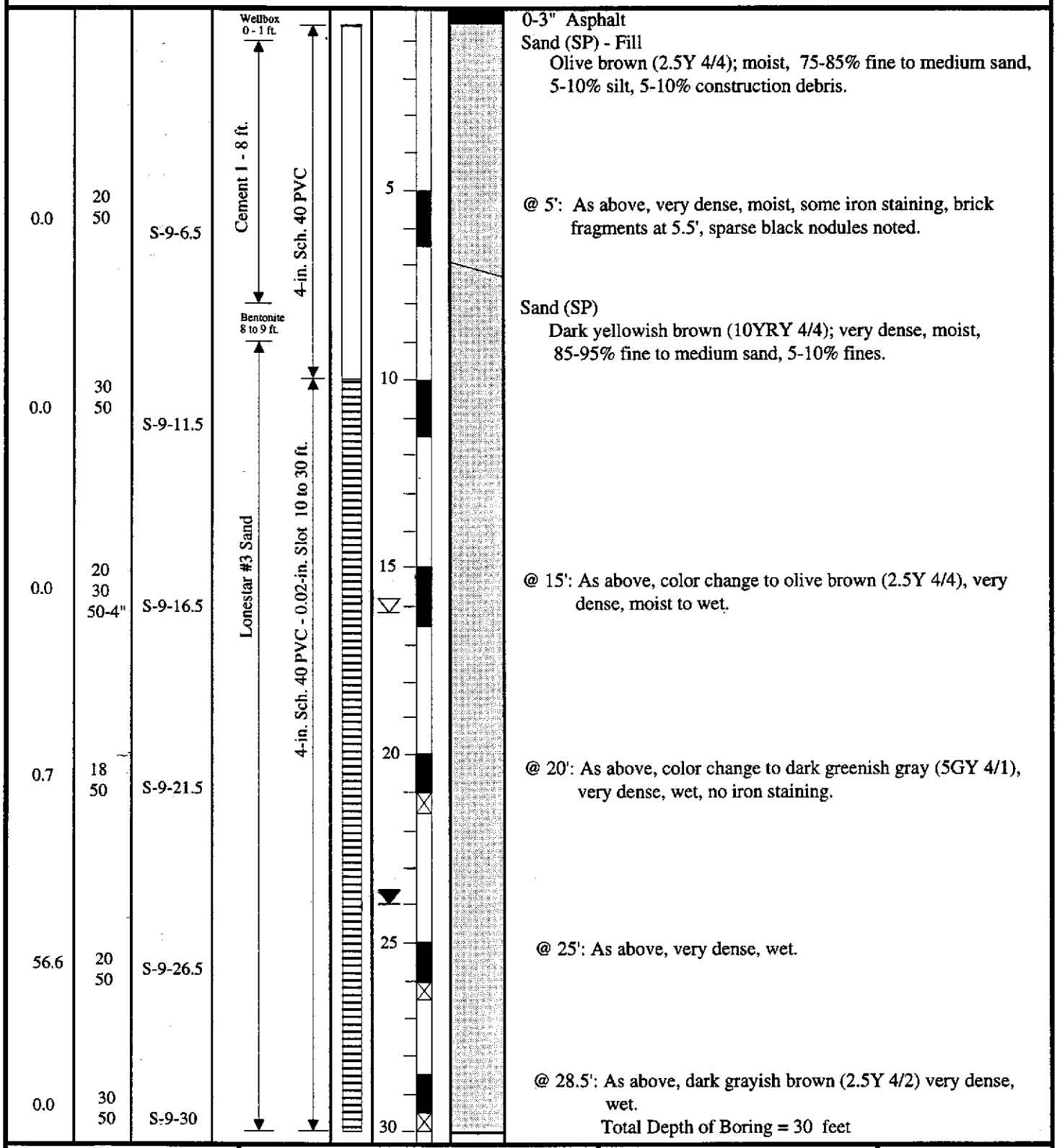
PLATE **5**

GROUNDWATER CHEMICAL ANALYTICAL MAP
Former Shell Service Station
461 Eighth Street
Oakland, California

enviros®
95 216.05

Drawn By: JWN | Date: 1/19/95 | Approved By: JM | Date: 14 Feb 95

Field Exploratory Boring Log S-9



OVM PPM	Blows/ 6"	Sample Number	Materials Description
			0-3" Asphalt Sand (SP) - Fill Olive brown (2.5Y 4/4); moist, 75-85% fine to medium sand, 5-10% silt, 5-10% construction debris.
0.0	20 50	S-9-6.5	@ 5': As above, very dense, moist, some iron staining, brick fragments at 5.5', sparse black nodules noted.
			Sand (SP) Dark yellowish brown (10YRY 4/4); very dense, moist, 85-95% fine to medium sand, 5-10% fines.
0.0	30 50	S-9-11.5	
0.0	20 30 50-4"	S-9-16.5	@ 15': As above, color change to olive brown (2.5Y 4/4), very dense, moist to wet.
0.7	18 50	S-9-21.5	@ 20': As above, color change to dark greenish gray (5GY 4/1), very dense, wet, no iron staining.
56.6	20 50	S-9-26.5	@ 25': As above, very dense, wet.
0.0	30 50	S-9-30	@ 28.5': As above, dark grayish brown (2.5Y 4/2) very dense, wet. Total Depth of Boring = 30 feet

BORING
S-9

SHELL OIL COMPANY
Former Shell Service Station
461 8th Street
Oakland, California

Borehole Diameter:	10 inches
Logged by:	J. Neely
Driller:	Gregg Drilling
Date Started:	07-Dec-94
Date Completed:	07-Dec-94

enviros®
94216.05

Field Exploratory Boring Log S-10

OVM PPM	Blows/ 6"	Sample Number	Well Construction	Depth (ft)	Soil Group (USCS)	Materials Description
			Wellbox 0 - 1 ft.			0-3" Asphalt Silty Sand (SC) - Fill Dark Brown (10YR 3/3); moist, 65-75% fine to medium sand, 15-20% fine to medium gravel and construction debris.
13.8	13 20 30	S-10-6.5	Cement 1 - 8 ft. 4-in. Sch. 40 PVC	5		@ 5': As above, very dense, moist.
			Bentonite 8 to 9 ft.			
1420	3 4 5	S-10-11.5	Lonestar #3 Sand 4-in. Sch. 40 PVC - 0.02-in. Slot 10 to 30 ft.	10		Sand (SP) Very dark gray (5Y 3/1); loose, moist, 85-95% fine to medium sand, 5-10% fines.
24.2	15 20 35	S-9-16.5		15		Clayey Sand (SC) Dark olive gray (5Y 3/2); very dense, moist, 80-90% fine to medium sand, 10-20% clayey fines, slight iron staining noted. Incorrect
19.0	15 30 50	S-10-21.5		20		Sand (SP) Olive gray (5Y 4/2); very dense, moist, 85-95% fine to medium sand, 5-10% fines.
18.5	30 50	S-10-26.5		25		@ 25': As above, very dense, wet. 1st encountered
12.2	30 50			30		@ 30': As above, color change to dark olive brown (2.5Y 3/3) very dense, wet.

BORING
S-10

SHELL OIL COMPANY
Former Shell Service Station
461 8th Street
Oakland, California

Borehole Diameter:	10 inches
Logged by:	J. Neely
Driller:	Gregg Drilling
Date Started:	08-Dec-94
Date Completed:	08-Dec-94

enviros®
94216.05

Field Exploratory Boring Log S-10

OVM PPM	Blows/ 6"	Sample Number	Well Construction	Depth (ft)	Soil Group (USCS)	Materials Description
9.0	40 50-4"	S-10-36.5	Lonestar #3 Sand 4-in. Sch. 40 PVC - 0.02-in. Slot.	35 40 45 50 55 60		@ 35': As above, very dense, wet. Clayey Sand (SC) Olive Brown (2.5Y 4/4); very dense, wet, 70-80% fine to medium sand, 10-20% clayey fines. Total Depth of Boring = 36.5 feet

BORING
S-10

SHELL OIL COMPANY
Former Shell Service Station
461 8th Street
Oakland, California

Borehole Diameter:	10 inches
Logged by:	J. Neely
Driller:	Gregg Drilling
Date Started:	08-Dec-94
Date Completed:	08-Dec-94

enviros®
94216.05

Appendix C

Blaine Tech Services, Inc.

Quarterly Groundwater Sampling and Well Development Reports

BLAINE
TECH SERVICES INC.

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

RECEIVED
JAN 19 1995

January 13, 1995

Shell Oil Company
P.O. Box 4023
Concord, CA 94524

Attn: Lynn Walker

SITE:
Shell WIC #204-5508-6200
461 8th Street
Oakland, California

QUARTER:
1st quarter of 1995

QUARTERLY GROUNDWATER SAMPLING REPORT 941222-L-1

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 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.

recovered free product is measured and logged in the VOLUME OF IMMISCIBLES REMOVED column. Gauging at such sites 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.

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 National Environmental Testing, Inc. in Santa Rosa, California. NET is a California Department of Health Services certified Hazardous Materials Testing Laboratory and is listed as DOHS HMTL #178.

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/lp

attachments: table of well gauging data
chain of custody
certified analytical report

cc: Enviros, Inc.
P.O. Box 259
Sonoma, CA 95476-0259
ATTN: Diane Lundquist

Appendix A

Exploratory Boring Logs

Field Exploratory Boring Log S-8

OVM PPM	Blows/ 6"	Sample Number	Depth (ft)	Materials Description
0.0	7 14 30	S-8-6.5	5	0-3" Asphalt Sand (SP) - Fill Olive brown (2.5Y 4/4); moist, 75-85% fine to medium sand, 5-10% silt, 5-10% gravel and construction debris. Sand (SP) Olive brown (2.5Y 4/4); dense, moist, 85-95% fine to medium sand, 5-10% fines, iron staining beginning at 5.5'.
0.0	15 30 30	S-8-11.5	10	@ 10': As above, very dense, moist, some iron staining - less than at 6'.
0.0	15 30 40	S-8-16.5	15	@ 15': As above, very dense, moist to wet. 1st encountered
0.2	30 50-5"	S-8-21.5	20	@ 20': As above, color change to dark greenish gray (5GY 4/1), very dense, wet, no iron staining. stabilized
0.0	30 50	S-8-26.5	25	@ 25': As above, color change to olive brown (2.5Y 4/3), very dense, wet, some iron staining.
0.0	20 50	S-8-30	30	@ 28.5': As above, very dense, wet. Total Depth of Boring = 30 feet

Well Construction: Wellbox 0 - 1 ft.; Cement 1 - 8 ft.; Bentonite 8 to 9 ft.; Lonestar #3 Sand; 4-in. Sch. 40 PVC; 4-in. Sch. 40 PVC - 0.02-in. Slot 10 to 30 ft.

BORING
S-8

SHELL OIL COMPANY
Former Shell Service Station
461 8th Street
Oakland, California

Borehole Diameter:	10 inches
Logged by:	J. Neely
Driller:	Gregg Drilling
Date Started:	07-Dec-94
Date Completed:	07-Dec-94

enviros®
94216.05

STANDARD PROCEDURES

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 are removed in cases where more evacuation is needed to achieve stabilization of water parameters and when requested by the local implementing agency. Less water may be obtained in cases where the well dewaters 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. Effluent water from purging and on-site equipment cleaning is collected and transported to Shell's Martinez Manufacturing Complex in Martinez, California.

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

TABLE OF WELL GAUGING DATA

WELL I.D.	DATA COLLECTION DATE	MEASUREMENT REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLES LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLES LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
S-4	12/22/94	TOB	–	NONE	–	–	22.25	28.89
S-5	11/29/94	TOB	FREE PRODUCT	21.87	1.13	–	23.00	–
	12/22/94	TOB	FREE PRODUCT	21.89	0.99	–	22.88	–
S-6 *	12/22/94	TOB	ODOR	NONE	–	–	21.92	36.86
S-8	12/22/94	TOB	–	NONE	–	–	24.87	29.20
S-9	12/22/94	TOB	–	NONE	–	–	24.37	30.25
S-10	12/22/94	TOB	ODOR	NONE	–	–	25.84	36.70

* Sample DUP was a duplicate sample taken from well S-6.

4685

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 94122-L1

Date: 12-22-94
Page 1 of 1

Site Address: 461 8th Street, Oakland

WIC#: 204-5508-6200

Shell Engineer: Lynn Walker
Phone No.: (510) 675-6169
Fax #: 675-6172

Consultant Name & Address:
Blaine Tech Services, Inc.
985 Timothy Drive, San Jose, CA 95133

Consultant Contact: Jim Keller
Phone No.: (408) 995-5535
Fax #: 293-8773

Comments:

Sampled by: L A B

Printed Name: LAD B OLVER

LAB: NET

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020			Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
S-4	12/22			X		3						X								
S-6				X		3						X								
S-8				X		3						X								
S-9				X		3						X								
S-10				X		3						X								
DUP.				X		3						X								
E.B.				X		3						X								
T.B.	↓			X		2						X								

CUSTODY SEAL 12/22/94 LAD
Seal intact
S.S.

CHECK ONE (1) BOX ONLY

		CT/DT
Quarterly Monitoring	XX	6441
Site Investigation		6441
Soil Classify/Disposal		6442
Water Classify/Disposal		6443
Soil/Air Rem. or Sys. O & M		6462
Water Rem. or Sys. O & M		6463
Other		

TURN-AROUND TIME

- 24 hours
- 48 hours
- 16 days XX (Normal)
- Other

NOTE: Notify me soon as Possible of 24/48 hr. TAT.

	Printed Name:	Date:	Time:	Received (signature):	Printed Name:	Date:	Time:
Relinquished By (signature):	LAD B OLVER	12/22	10:25		GP LUMBRE	12/22/94	10:25
Relinquished By (signature):	GP LUMBRE	12/22	16:00		J. Sorensen	12/23/94	07:00
Relinquished By (signature):							

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

Shell Oil Chain of Custody

NATIONAL ENVIRONMENTAL TESTING, INC.

Santa Rosa Division
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

Jim Keller
Blaine Tech Services
985 Timothy Dr.
San Jose, CA 95133

Date: 01/10/1995
NET Client Acct. No: 1821
NET Pacific Job No: 94.06313
Received: 12/28/1994

Client Reference Information

Shell 461 8th St., Oakland/941222-L1

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Judy Ridley
Project Coordinator

Jim Hoch
Operations Manager

Enclosure(s)

Ref: Shell 461 8th St., Oakland/941222-L1

SAMPLE DESCRIPTION: S-4
Date Taken: 12/22/1994
Time Taken:
NET Sample No: 232297

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Liquid)								
METHOD 5030/M8015	--						01/04/1995	2449
DILUTION FACTOR*	1						01/04/1995	2449
as Gasoline	ND		50	ug/L	5030		01/04/1995	2449
Carbon Range:	--						01/04/1995	2449
METHOD 8020 (GC,Liquid)	--						01/04/1995	2449
Benzene	ND		0.5	ug/L	8020		01/04/1995	2449
Toluene	ND		0.5	ug/L	8020		01/04/1995	2449
Ethylbenzene	ND		0.5	ug/L	8020		01/04/1995	2449
Xylenes (Total)	ND		0.5	ug/L	8020		01/04/1995	2449
SURROGATE RESULTS	--						01/04/1995	2449
Bromofluorobenzene (SURR)	107			% Rec.	5030		01/04/1995	2449

Client Name: Blaine Tech Services
Client Acct: 1821
NET Job No: 94.06313

Date: 01/10/1995
ELAP Cert: 1386
Page: 3

Ref: Shell 461 8th St., Oakland/941222-L1

SAMPLE DESCRIPTION: S-6
Date Taken: 12/22/1994
Time Taken:
NET Sample No: 232298

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Liquid)								
METHOD 5030/M8015	--						01/04/1995	2449
DILUTION FACTOR*	10						01/04/1995	2449
as Gasoline	32,000		500	ug/L	5030		01/04/1995	2449
Carbon Range:	C5-C14						01/04/1995	2449
METHOD 8020 (GC,Liquid)	--						01/04/1995	2449
Benzene	7,000	FG	5	ug/L	8020		01/06/1995	2461
Toluene	2,900	FG	5	ug/L	8020		01/06/1995	2461
Ethylbenzene	790	FG	5	ug/L	8020		01/06/1995	2461
Xylenes (Total)	2,400	FG	5	ug/L	8020		01/06/1995	2461
SURROGATE RESULTS	--						01/04/1995	2449
Bromofluorobenzene (SURR)	108			% Rec.	5030		01/04/1995	2449

FG : Compound quantitated at a 200X dilution factor.

Ref: Shell 461 8th St., Oakland/941222-L1

SAMPLE DESCRIPTION: TB
Date Taken: 12/22/1994
Time Taken:
NET Sample No: 232299

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Liquid)								
METHOD 5030/M8015	--						01/04/1995	2449
DILUTION FACTOR*	1						01/04/1995	2449
as Gasoline	ND		50	ug/L	5030		01/04/1995	2449
Carbon Range:	--						01/04/1995	2449
METHOD 8020 (GC,Liquid)	--						01/04/1995	2449
Benzene	ND		0.5	ug/L	8020		01/04/1995	2449
Toluene	ND		0.5	ug/L	8020		01/04/1995	2449
Ethylbenzene	ND		0.5	ug/L	8020		01/04/1995	2449
Xylenes (Total)	ND		0.5	ug/L	8020		01/04/1995	2449
SURROGATE RESULTS	--						01/04/1995	2449
Bromofluorobenzene (SURR)	95			% Rec.	5030		01/04/1995	2449

Ref: Shell 461 8th St., Oakland/941222-L1

SAMPLE DESCRIPTION: S-8
Date Taken: 12/22/1994
Time Taken:
NET Sample No: 232300

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Liquid)								
METHOD 5030/M8015	--						01/05/1995	2452
DILUTION FACTOR*	10						01/05/1995	2452
as Gasoline	600		500	ug/L	5030		01/05/1995	2452
Carbon Range:	C5-C12						01/05/1995	2452
METHOD 8020 (GC,Liquid)	--						01/05/1995	2452
Benzene	120		5	ug/L	8020		01/05/1995	2452
Toluene	32		5	ug/L	8020		01/05/1995	2452
Ethylbenzene	5.2		5	ug/L	8020		01/05/1995	2452
Xylenes (Total)	34		5	ug/L	8020		01/05/1995	2452
SURROGATE RESULTS	--						01/05/1995	2452
Bromofluorobenzene (SURR)	85			% Rec.	5030		01/05/1995	2452

Client Name: Blaine Tech Services
Client Acct: 1821
NET Job No: 94.06313

Date: 01/10/1995
ELAP Cert: 1386
Page: 6

Ref: Shell 461 8th St., Oakland/941222-L1

SAMPLE DESCRIPTION: S-9
Date Taken: 12/22/1994
Time Taken:
NET Sample No: 232301

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Liquid)								
METHOD 5030/M8015	--						01/04/1995	2449
DILUTION FACTOR*	1						01/04/1995	2449
as Gasoline	2,600		50	ug/L	5030		01/04/1995	2449
Carbon Range:	C5-C14						01/04/1995	2449
METHOD 8020 (GC,Liquid)	--						01/04/1995	2449
Benzene	400	FF	0.5	ug/L	8020		01/06/1995	2461
Toluene	150	FC	0.5	ug/L	8020		01/05/1995	2452
Ethylbenzene	42	FC	0.5	ug/L	8020		01/05/1995	2452
Xylenes (Total)	310	FC	0.5	ug/L	8020		01/05/1995	2452
SURROGATE RESULTS	--						01/04/1995	2449
Bromofluorobenzene (SURR)	108			% Rec.	5030		01/04/1995	2449

FC : Compound quantitated at a 10X dilution factor.
FF : Compound quantitated at a 100X dilution factor.

Ref: Shell 461 8th St., Oakland/941222-L1

SAMPLE DESCRIPTION: S-10
Date Taken: 12/22/1994
Time Taken:
NET Sample No: 232302

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Liquid)								
METHOD 5030/M8015	--						01/04/1995	2449
DILUTION FACTOR*	1						01/04/1995	2449
as Gasoline	420		50	ug/L	5030		01/04/1995	2449
Carbon Range:	C5-C14						01/04/1995	2449
METHOD 8020 (GC,Liquid)	--						01/04/1995	2449
Benzene	27		0.5	ug/L	8020		01/04/1995	2449
Toluene	8.0		0.5	ug/L	8020		01/04/1995	2449
Ethylbenzene	18		0.5	ug/L	8020		01/04/1995	2449
Xylenes (Total)	45		0.5	ug/L	8020		01/04/1995	2449
SURROGATE RESULTS	--						01/04/1995	2449
Bromofluorobenzene (SURR)	114			% Rec.	5030		01/04/1995	2449

Client Name: Blaine Tech Services
Client Acct: 1821
NET Job No: 94.06313

Date: 01/10/1995
ELAP Cert: 1386
Page: 8

Ref: Shell 461 8th St., Oakland/941222-L1

SAMPLE DESCRIPTION: DUP
Date Taken: 12/22/1994
Time Taken:
NET Sample No: 232303

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Liquid)								
METHOD 5030/M8015	--						01/05/1995	2452
DILUTION FACTOR*	10						01/05/1995	2452
as Gasoline	32,000		500	ug/L	5030		01/05/1995	2452
Carbon Range:	C5-C12						01/05/1995	2452
METHOD 8020 (GC,Liquid)	--						01/05/1995	2452
Benzene	8,000	FG	5	ug/L	8020		01/06/1995	2461
Toluene	3,800	FG	5	ug/L	8020		01/06/1995	2461
Ethylbenzene	1,100	FG	5	ug/L	8020		01/06/1995	2461
Xylenes (Total)	3,400	FG	5	ug/L	8020		01/06/1995	2461
SURROGATE RESULTS	--						01/05/1995	2452
Bromofluorobenzene (SURR)	77			% Rec.	5030		01/05/1995	2452

FG : Compound quantitated at a 200X dilution factor.

Ref: Shell 461 8th St., Oakland/941222-L1

SAMPLE DESCRIPTION: EB
Date Taken: 12/22/1994
Time Taken:
NET Sample No: 232304

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Liquid)								
METHOD 5030/M8015	--						01/04/1995	2449
DILUTION FACTOR*	1						01/04/1995	2449
as Gasoline	ND		50	ug/L	5030		01/04/1995	2449
Carbon Range:	--						01/04/1995	2449
METHOD 8020 (GC,Liquid)	--						01/04/1995	2449
Benzene	ND		0.5	ug/L	8020		01/04/1995	2449
Toluene	ND		0.5	ug/L	8020		01/04/1995	2449
Ethylbenzene	ND		0.5	ug/L	8020		01/04/1995	2449
Xylenes (Total)	ND		0.5	ug/L	8020		01/04/1995	2449
SURROGATE RESULTS	--						01/04/1995	2449
Bromofluorobenzene (SURR)	105			% Rec.	5030		01/04/1995	2449

Ref: Shell 461 8th St., Oakland/941222-L1

CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV Standard % Recovery	CCV Standard Amount Found	CCV Standard Amount Expected	Units	Date Analyzed	Analyst Initials	Run Batch Number
TPH (Gas/BTXE,Liquid)							
as Gasoline	108.0	1.08	1.00	mg/L	01/05/1995	dfw	2449
Benzene	87.2	4.36	5.00	ug/L	01/05/1995	dfw	2449
Toluene	86.6	4.33	5.00	ug/L	01/05/1995	dfw	2449
Ethylbenzene	96.8	4.84	5.00	ug/L	01/05/1995	dfw	2449
Xylenes (Total)	96.0	14.4	15.0	ug/L	01/05/1995	dfw	2449
Bromofluorobenzene (SURR)	111.0	111	100	% Rec.	01/05/1995	dfw	2449
TPH (Gas/BTXE,Liquid)							
as Gasoline	108.0	1.08	1.00	mg/L	01/05/1995	lss	2452
Benzene	99.0	4.95	5.00	ug/L	01/05/1995	lss	2452
Toluene	99.4	4.97	5.00	ug/L	01/05/1995	lss	2452
Ethylbenzene	103.2	5.16	5.00	ug/L	01/05/1995	lss	2452
Xylenes (Total)	101.3	15.2	15.0	ug/L	01/05/1995	lss	2452
Bromofluorobenzene (SURR)	113.0	113	100	% Rec.	01/05/1995	lss	2452
TPH (Gas/BTXE,Liquid)							
as Gasoline	97.0	0.97	1.00	mg/L	01/06/1995	dfw	2461
Benzene	94.2	4.71	5.00	ug/L	01/06/1995	dfw	2461
Toluene	97.4	4.87	5.00	ug/L	01/06/1995	dfw	2461
Ethylbenzene	106.4	5.32	5.00	ug/L	01/06/1995	dfw	2461
Xylenes (Total)	104.7	15.7	15.0	ug/L	01/06/1995	dfw	2461
Bromofluorobenzene (SURR)	105.0	105	100	% Rec.	01/06/1995	dfw	2461

Ref: Shell 461 8th St., Oakland/941222-L1

METHOD BLANK REPORT

Parameter	Method Blank Amount Found	Reporting Limit	Units	Date Analyzed	Analyst Initials	Run Batch Number
TPH (Gas/BTXE,Liquid)						
as Gasoline	ND	0.05	mg/L	01/05/1995	dfw	2449
Benzene	ND	0.5	ug/L	01/05/1995	dfw	2449
Toluene	ND	0.5	ug/L	01/05/1995	dfw	2449
Ethylbenzene	ND	0.5	ug/L	01/05/1995	dfw	2449
Xylenes (Total)	ND	0.5	ug/L	01/05/1995	dfw	2449
Bromofluorobenzene (SURR)	104		% Rec.	01/05/1995	dfw	2449
TPH (Gas/BTXE,Liquid)						
as Gasoline	ND	0.05	mg/L	01/05/1995	lss	2452
Benzene	ND	0.5	ug/L	01/05/1995	lss	2452
Toluene	ND	0.5	ug/L	01/05/1995	lss	2452
Ethylbenzene	ND	0.5	ug/L	01/05/1995	lss	2452
Xylenes (Total)	ND	0.5	ug/L	01/05/1995	lss	2452
Bromofluorobenzene (SURR)	99		% Rec.	01/05/1995	lss	2452
TPH (Gas/BTXE,Liquid)						
as Gasoline	ND	0.05	mg/L	01/06/1995	dfw	2461
Benzene	ND	0.5	ug/L	01/06/1995	dfw	2461
Toluene	ND	0.5	ug/L	01/06/1995	dfw	2461
Ethylbenzene	ND	0.5	ug/L	01/06/1995	dfw	2461
Xylenes (Total)	ND	0.5	ug/L	01/06/1995	dfw	2461
Bromofluorobenzene (SURR)	103		% Rec.	01/06/1995	dfw	2461

Ref: Shell 461 8th St., Oakland/941222-L1

MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix Spike % Rec.	Matrix Spike Dup % Rec.	RPD	Spike Amount	Sample Conc.	Matrix Spike Conc.	Matrix Spike Dup. Conc.	Units	Date Analyzed	Run Batch	Sample Spiked
TPH (Gas/BTXE,Liquid)											232296
as Gasoline	111.0	119.0	7.0	1.00	ND	1.11	1.19	mg/L	01/04/1995	2449	232296
Benzene	106.2	110.0	3.5	21.0	ND	22.3	23.1	ug/L	01/04/1995	2449	232296
Toluene	101.1	106.0	4.7	80.2	ND	81.1	85.0	ug/L	01/04/1995	2449	232296
TPH (Gas/BTXE,Liquid)											232458
as Gasoline	114.0	111.0	2.7	1.00	ND	1.14	1.11	mg/L	01/05/1995	2452	232458
Benzene	108.1	100.5	7.3	20.9	ND	22.6	21.0	ug/L	01/05/1995	2452	232458
Toluene	103.7	101.0	2.6	81.8	ND	84.8	82.6	ug/L	01/05/1995	2452	232458
TPH (Gas/BTXE,Liquid)											232680
as Gasoline	114.0	108.0	5.4	1.00	ND	1.14	1.08	mg/L	01/06/1995	2461	232680
Benzene	116.1	110.9	4.6	19.3	ND	22.4	21.4	ug/L	01/06/1995	2461	232680
Toluene	117.8	116.3	1.3	71.9	ND	84.7	83.6	ug/L	01/06/1995	2461	232680

NET®

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
*	:	Reporting Limits are a function of the dilution factor for any given sample. Actual reporting limits and results have been multiplied by the listed dilution factor. **Do not** multiply the reporting limits or reported values by the dilution factor.
dw	:	Result expressed as dry weight.
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than the applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, Rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, Rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986., Rev. 1, December 1987.

SM: see "Standard Methods for the Examination of Water & Wastewater, 17th Edition, APHA, 1989.

Revised September, 1993
abb.93

COOLER RECEIPT FORM

Project: 941222-L1 Log No: 4685
Cooler received on: 12/28/94 and checked on 12/28/94 by Pam Greene
(signature) Pam Greene

Were custody papers present?..... (YES) NO

Were custody papers properly filled out?..... (YES) NO

Were the custody papers signed?..... (YES) NO

Was sufficient ice used?..... (YES) NO 0.5°C

Did all bottles arrive in good condition (unbroken)?..... (YES) NO

Did bottle labels match COC?..... (YES) NO

Were proper bottles used for analysis indicated?..... (YES) NO

Correct preservatives used?..... (YES) NO

VOA vials checked for headspace bubbles?..... (YES) NO
Note which voas (if any) had bubbles:*

Sample descriptor:	Number of vials:

*All VOAs with headspace bubbles have been set aside so they will not be used for analysis.....YES NO

List here all other jobs received in the same cooler:

Client Job #	NET log #

(coolerrec)

BLAINE
TECH SERVICES INC.

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

January 13, 1995

Shell Oil Company
P.O. Box 4023
Concord, CA 94524

Attention: Lynn Walker

SITE:
Shell Wic #204-5508-6200
461 8th Street
Oakland, California

PROJECT:
Well Development

PROJECT INITIATED ON:
December 20, 1994

WELL DEVELOPMENT REPORT 941220-L-1

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. does not participate in the interpretation of analytical results or become involved with the marketing or installation of remedial systems. The interpretation of results should be performed by representatives of the interested regulatory agencies and those certified professionals who are engaged as paid consultants in the business of providing professional opinions along with recommendations and proposals for further investigative or remedial activities.

As an independent third party, Blaine Tech Services, Inc. routinely performs evacuation and sampling of groundwater wells. In addition, we are frequently asked to provide specialized personnel, instruments and equipment for well development work. Similar standards of care and cleanliness are required in all these activities and our personnel are accustomed to the safety measures that must be taken.

Scope of Requested Services

Blaine Tech Services, Inc. was asked to provide specialized equipment, instruments and personnel for a well development project being overseen by Shell Oil Company.

Execution of the Recent Work

Our personnel arrived at the site on Tuesday, December 20, 1994 and developed three wells in accordance with our client's specifications communicated to us by Ms. Diane Lundquist. A summary of the well development actions is presented in the tables of field data which follow.

S-8 WELL DEVELOPMENT LOG

Well Designation	Well Diameter (inches)	Well Depth (feet)	Initial Depth to Water (feet)	Volume of single case (gallons)
S-8	4	28.60	24.67	2.6

Equipment Used: Middleburg/4" Surge Block

Data collection during well development:

Date	Time	Gallons Removed	Temp. (F)	pH	EC (micromhos)	Turbidity (NTU)	Notes
12/20/94	10:01	3.0	69.5	7.6	1920	>200	Cloudy brown.
	10:04	6.0	69.3	7.6	1900	>200	Very turbid.
	10:08	9.0	67.4	7.5	890	>200	Sand and cuttings removed from well bottom until hard and clean.
	10:12	11.0	66.6	7.5	760	>200	
	10:27	13.0	64.1	7.4	850	>200	
	10:33	16.0	64.6	7.4	750	>200	
	10:40	19.0	62.6	7.3	700	>200	Depth to water @ 25.60' during purging.
	10:47	21.0	62.5	7.3	690	137	
	10:52	24.0	64.4	7.3	670	140	
	11:00	26.0	63.5	7.3	690	82	Total well depth @ 28.99'. Final depth to water @ 24.88'.

S-9 WELL DEVELOPMENT LOG

Well Designation	Well Diameter (inches)	Well Depth (feet)	Initial Depth to Water (feet)	Volume of single case (gallons)
S-9	4	29.97	24.10	3.8

Equipment Used: Middleburg/4" Surge Block

Data collection during well development:

Date	Time	Gallons Removed	Temp. (F)	pH	EC (micromhos)	Turbidity (NTU)	Notes
12/20/94	11:26	4.0	60.3	7.4	450	>200	Cloudy brown.
	11:31	8.0	60.8	7.4	460	>200	
	11:37	12.0	60.2	7.3	450	>200	Sand removed from well bottom. Surged well for 10 min.
	11:55	16.0	60.7	7.4	500	>200	Slight odor.
	12:00	19.0	62.2	7.5	490	>200	Bottom of well is hard and clean.
	12:05	23.0	62.2	7.5	470	>200	
	12:10	27.0	64.2	7.5	450	>200	Depth to water @ 25.50' during purging.
	12:15	31.0	62.1	7.4	420	>200	
	12:20	35.0	62.5	7.4	430	197	
	12:25	38.0	61.4	7.4	430	115	
	11:30	42.0	62.0	7.4	420	68	Total well depth @ 29.98'. Final depth to water @ 24.35'.

S-10 WELL DEVELOPMENT LOG

Well Designation	Well Diameter (inches)	Well Depth (feet)	Initial Depth to Water (feet)	Volume of single case (gallons)
S-10	4	36.16	25.24	7.1

Equipment Used: Middleburg/Electric Submersible/4" Surge Block

Data collection during well development:

Date	Time	Gallons Removed	Temp. (F)	pH	EC (micromhos)	Turbidity (NTU)	Notes
12/20/94	13:27	8.0	61.6	7.3	1250	>200	Very sandy.
	13:45	15.0	61.8	7.3	1270	>200	Silty brown.
	13:56	22.0	60.0	7.3	1180	>200	Sand removed from well bottom.
	14:05	29.0	60.4	7.3	1080	>200	
	14:13	36.0	63.2	7.3	1120	>200	Surged well for 10 min.
	14:18	43.0	63.1	7.3	1060	>200	
	14:23	50.0	63.1	7.3	990	>200	Well bottom is hard and clean.
	14:30	57.0	62.7	7.2	960	>200	
	14:38	64.0	61.5	7.3	980	132	Depth to water @ 26.60' during purging.
	14:46	71.0	61.2	7.3	1000	69	Total well depth @ 36.18'. Final depth to water @ 25.84'.

STANDARD PROCEDURES

Overview

Because formations vary in their geologic composition, transmissivity and water production capability, well development cannot be reduced to a set of fixed procedures that will always produce a complete and satisfactory result if just repeated for a predetermined period of time. Instead, well development is accomplished by selecting procedures that (a.) repair that portion of the native formation that was disrupted by the cutting action of the well drilling tool, and (b.) promote the flow of water out of the native formation into the newly installed well (through the granular filter pack and well screen). Execution of development actions that are not appropriate to the native formation will be inefficient and in some cases even deleterious.

Time constraints usually prevent a precise classification of the saturated zone materials by analysis of soil samples for physical characteristics at a laboratory equipped to do physical testing. Physical tests cannot usually be completed during the brief timespan of a project that combines exploration, design, and well installation into a one day effort. Instead, the subjective judgments of the field geologist are recorded in the boring log and well installation log. The field geologist must quickly evaluate soil types by their appearance and observable characteristics and record his or her estimation of the material in the log according to the categorical definitions provided by the Unified Soil Classification System. These categorical judgments are also the basis for determining the final construction specifications of the well.

The well's total depth, the length of the screened interval, the slot size, and the size of the sand used in the filter pack are all decided on the *appearance* of soil cuttings and whatever quick tests the field geologist can perform. Because the physical specifications for the well are set at that moment and cannot be corrected later, any misclassification of soil that results in a mismatching of the well to the native formation will have to be addressed and corrected (to whatever extent is possible) with well development actions, alone.

Well development work can be directed in two ways:

> First, specific well development actions can be called for by the geologist who installed the wells or by another professional reviewing that installation work. Typically, consultants specify the use of certain equipment and techniques.
>
> Second, the consultant or client can define the goal which is being sought and place limits on the amount of effort which should be taken to achieve the goal.

Of the two types of direction, the second is far more common and also more important. Defining the extent of effort which can be expended is vital to controlling costs on a project and scheduling personnel and equipment to complete the work. Moreover, it is possible to undertake and complete work without the added and frequently unnecessary effort of working out very detailed specification which may be impractical or unwarranted.

This does not mean that our personnel cannot make use of well installation logs when they are available or are not receptive to very specific directions from the consultant. It does, however, mean that when very detailed directions are given, rapid communications between our personnel and the geologist become very important. This is especially true of sites where multiple wells have been installd, because wells even a short distance apart may demonstrate quite different characteristics which may require a rapid reevaluation of what well development procedures are appropriate in light of the hydrologic condition presented by the native formation at that location on the site.

In most cases, tightly controlled action sequences are less productive than more general directions combined with plain statements of what evaluation criteria should be used for judging the progress and completeness of the well development work. The most common standards are volumetric (removal of set volumes of water), recharge rate, and water clarity (measured as nephelometric turbidity units). Given these goals and limitations, our personnel can work independently of the project geologist. In most cases, our personnel can proceed with the work without supervision or direction by relying on empirical information obtained directly from the water in the well.

Selection of Development Equipment

Each Blaine Tech Services, Inc. vehicle provided for a well development project will have a wide assortment of development tools including stainless steel surgeblocks and swabs, several types of pumps, and complete instrumentation for determining standard parameters. Special equipment which includes certain types of winches, jetting heads, and drop surging pumps can be provided.

General Policy

Truly difficult conditions which can only be resolved by the application of massive force or large volumes of high pressure air should be addressed by a drilling or pump installation contractor. Blaine Tech Services, Inc. is not in the heavy salvage business and has a general policy against the use of tools or techniques which provide enough mechanical advantage to pose a serious risk of damaging the well. The same policy prohibits introducing foreign materials into a well which could carry contaminants into the groundwater. In keeping with this policy, our personnel avoid surging with slugs of effluent water, or jetting with unfiltered air unless these actions are specifically requested by a registered professional who is cognizant of the problems and hazards that accompany the action. In a similar vein, our personnel will, whenever possible, avoid development actions that are likely to seal clay formations or promote bridging, and make every attempt to call obvious indications of such conditions to the attention of the project geologist so that a different regimen can be selected.

Effluent Materials

Groundwater well sampling protocols call for the evacuation of a sufficient volume of water from the well to insure that the sample is collected from water that has been newly drawn into the well from the surrounding geologic formation.

Well development routinely generates as much or more effluent water as does routine evacuation prior to monitoring. In some cases very large amounts of water must be removed from the well before a satisfactory level of development has been achieved. The effluent water from these development actions must be contained. Blaine Tech Services, Inc. will place this water in appropriate containers of the client's choice or bring new DOT 17 E drums to the site which are appropriate for the containment of the effluent materials. The determination of how to properly dispose of the effluent water must usually await the results of laboratory analyses of subsequent samples collected from each individual groundwater well. If those individual samples do not establish whether or not the effluent water is contaminated, or if effluent from more than one source has been combined in the same container, it may be necessary to conduct additional analyses on the effluent material.

Decontamination

All apparatus is brought to the site in clean and serviceable condition. The equipment will be decontaminated after use in each well and before leaving the site. Decontamination consists of complete disassembly of the device to a point where a jet of steam cleaner water can be directed onto all the internal surfaces. Blaine Tech Services, Inc. frequently modifies apparatus to allow complete disassembly and proper cleaning.

Personnel

All Blaine Tech Services, Inc. personnel receive 29 CFR 1910.120 training as soon after being hired as is practical. In addition, many of our personnel have additional certifications that include specialized training in level B supplied air apparatus and the supervision of employees working on hazardous materials sites. Employees are not sent to a site unless we are confident they can adhere to any site safety provisions in force at the site and unless we know that they can follow the written provisions of an SSP and the verbal directions of an SSO.

In general, employees sent to a site to perform groundwater well sampling will assume an OSHA level D (wet) environment exists unless otherwise informed. The use of gloves and double glove protocols protects both our employees and the integrity of the samples being collected. Additional protective gear and procedures for higher OSHA levels of protection are available.

Please call if we can be of any further assistance.

James C. Allen Jr.

Richard C. Blaine

RCB/lp

WELL DEVELOPMENT DATA SHEET

Project #: 941220-L1	Client: SHELL WIC# 204 5508 6200
Developer: LAD	Date Developed: 12-20-94
Well I.D.: S-8	Well Diameter: (circle one) 2 3 (4) 6 ___
Total Well Depth: Before 28.60 TOC After 28.99 TOC	Depth to Water: Before 24.67 TOC ~~After~~ 24.88 TOB
Reason not developed:	If Free Product, thickness:
Additional Notations:	

Volume Conversion Factor (VCF):

$(12 \times (d^2/4) \times \pi)/231$

Where
12 = in/foot
d = diameter (in.)
π = 3.1416
231 = in³/gal

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

2.6	x	10	=	26.
1 Case Volume		Specified Volumes		gallons

Purging Device: Bailer ☐ Electric Submersible ☐
Middleburg ☑ Suction Pump ☐

Type of Installed Pump _____

Other equipment used 4.0" SURGE BLOCK

TIME	TEMP. (F)	pH	COND.	TURBIDITY	VOLUME REMOVED:	NOTATIONS:
1001	69.5	7.6	1920.	>200.	3.	-CLOUDY BROWN,
1004	69.3	7.6	1900.	>200.	6.	VERY TURBID WATER
1008	67.4	7.5	890.	>200.	9.	-SAND + CUTTINGS
1012	66.6	7.5	760.	>200.	11.	REMOVED FROM
-SURGED WELL (10. min)					13.	WELL BOTTOM
1027	64.1	7.4	850.	>200.	16.13	UNTIL HARD +
1033	64.6	7.4	750.	>200.	19.16	CLEAN.
1040	62.6	7.3	700.	>200.	19.	-DTW @ 25.60'
1047	62.5	7.3	690.	137.	21.	DURING PURGING
1052	64.4	7.3	670.	140.	24.	
1100	63.5	7.3	690.	82.	26.	T.D. - 28.99' TOC
						29.20 TOB

Did Well Dewater? NO If yes, note above. Gallons Actually Evacuated: 26.

WELL DEVELOPMENT DATA SHEET

Project #: 941220-L1	Client: SHELL WIC # 204550806200
Developer: LAD	Date Developed: 12-20-94
Well I.D.: S-9	Well Diameter: (circle one) 2 3 (4) 6 ___
Total Well Depth: Before 29.97 (TOC) After 29.98 (TOC)	Depth to Water: Before 24.10 (TOC) After 24.35 (TOB)
Reason not developed:	If Free Product, thickness:
Additional Notations:	

Volume Conversion Factor (VCF):

$(12 \times (d^2/4) \times \pi)/231$

Where

12 = in/foot

d = diameter (in.)

π = 3.1416

231 = in3/gal

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

3.8	x	11		42.0
1 Case Volume		Specified Volumes	=	gallons

Purging Device: Bailer ☐ Electric Submersible ☐
Middleburg ☒ Suction Pump ☐

Type of Installed Pump _____

Other equipment used SURGE BLOCK (4.0")

TIME	TEMP. (F)	pH	COND.	TURBIDITY	VOLUME REMOVED:	NOTATIONS:
1126	60.3	7.4	450.	>200	4.	- CLOUDY BROWN
1131	60.8	7.4	460.	>200.	8.	WATER
1137	60.2	7.3	450.	>200.	12.	- SAND REMOVED
- SURGED WELL (10 min.)						FROM BOTTOM
1155	60.7	7.4	500.	>200.	16.	- SLIGHT ODOR
1200	62.2	7.5	490.	>200.	19.	- BOTTOM OF WELL
1205	62.2	7.5	470.	>200.	23.	IS HARD + CLEAN
1210	64.2	7.5	450.	>200.	27.	- DTW @ 25.50'
1215	62.1	7.4	420.	>200.	31.	DURING PURGING
1220	62.5	7.4	430.	197.	35.	
1225	61.4	7.4	430.	115.	38.	TOC
1230	62.0	7.4	420.	68.	42.	T.D. @ 29.98'

Did Well Dewater? NO If yes, note above. Gallons Actually Evacuated: 42.

NATIONAL ENVIRONMENTAL TESTING, INC.

Santa Rosa Division
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

RECEIVED
DEC 21 1994

Diane Lundquist
Enviros
PO Box 259
19411 Riverside Dr.
Sonoma, CA 95476-0259

Date: 12/20/1994
NET Client Acct. No: 1826
NET Pacific Job No: 94.05974
Received: 12/09/1994

Client Reference Information

461 8th St., Oakland

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Judy Ridley
Project Coordinator

Jim Hoch
Operations Manager

Enclosure(s)

OCEAN GROUP

Ref: 461 8th St., Oakland

SAMPLE DESCRIPTION: S-8-6.5
Date Taken: 12/07/1994
Time Taken:
NET Sample No: 227400

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Solid)								
METHOD 5030/M8015	--						12/16/1994	1563
DILUTION FACTOR*	1						12/16/1994	1563
as Gasoline	ND		1	mg/kg	5030		12/16/1994	1563
Carbon Range:	--						12/16/1994	1563
METHOD 8020 (GC,Solid)	--						12/16/1994	1563
Benzene	ND		0.0025	mg/kg	8020		12/16/1994	1563
Toluene	ND		0.0025	mg/kg	8020		12/16/1994	1563
Ethylbenzene	ND		0.0025	mg/kg	8020		12/16/1994	1563
Xylenes (Total)	ND		0.0025	mg/kg	8020		12/16/1994	1563
SURROGATE RESULTS	--						12/16/1994	1563
Bromofluorobenzene (SURR)	93			% Rec.	5030		12/16/1994	1563

Client Name: Enviros
Client Acct: 1826
NET Job No: 94.05974

Date: 12/20/1994
ELAP Cert: 1386
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Ref: 461 8th St., Oakland

SAMPLE DESCRIPTION: S-8-11.5
Date Taken: 12/07/1994
Time Taken:
NET Sample No: 227401

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Solid)								
METHOD 5030/M8015	--						12/16/1994	1563
DILUTION FACTOR*	1						12/16/1994	1563
as Gasoline	ND		1	mg/kg	5030		12/16/1994	1563
Carbon Range:	--						12/16/1994	1563
METHOD 8020 (GC,Solid)	--						12/16/1994	1563
Benzene	ND		0.0025	mg/kg	8020		12/16/1994	1563
Toluene	ND		0.0025	mg/kg	8020		12/16/1994	1563
Ethylbenzene	ND		0.0025	mg/kg	8020		12/16/1994	1563
Xylenes (Total)	ND		0.0025	mg/kg	8020		12/16/1994	1563
SURROGATE RESULTS	--						12/16/1994	1563
Bromofluorobenzene (SURR)	97			% Rec.	5030		12/16/1994	1563

Ref: 461 8th St., Oakland

SAMPLE DESCRIPTION: S-8-21.5
Date Taken: 12/07/1994
Time Taken:
NET Sample No: 227402

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Solid)								
METHOD 5030/M8015	--						12/18/1994	1567
DILUTION FACTOR*	1						12/18/1994	1567
as Gasoline	ND		1	mg/kg	5030		12/18/1994	1567
Carbon Range:	--						12/18/1994	1567
METHOD 8020 (GC,Solid)	--						12/18/1994	1567
Benzene	0.014	C	0.0025	mg/kg	8020		12/18/1994	1567
Toluene	ND		0.0025	mg/kg	8020		12/18/1994	1567
Ethylbenzene	ND		0.0025	mg/kg	8020		12/18/1994	1567
Xylenes (Total)	ND		0.0025	mg/kg	8020		12/18/1994	1567
SURROGATE RESULTS	--						12/18/1994	1567
Bromofluorobenzene (SURR)	99			% Rec.	5030		12/18/1994	1567

C : Positive result confirmed by secondary column or GC/MS analysis.

Ref: 461 8th St., Oakland

SAMPLE DESCRIPTION: S-9-6.5
Date Taken: 12/07/1994
Time Taken:
NET Sample No: 227403

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Solid)								
METHOD 5030/M8015	--						12/16/1994	1563
DILUTION FACTOR*	1						12/16/1994	1563
as Gasoline	ND		1	mg/kg	5030		12/16/1994	1563
Carbon Range:	--						12/16/1994	1563
METHOD 8020 (GC,Solid)	--						12/16/1994	1563
Benzene	ND		0.0025	mg/kg	8020		12/16/1994	1563
Toluene	ND		0.0025	mg/kg	8020		12/16/1994	1563
Ethylbenzene	ND		0.0025	mg/kg	8020		12/16/1994	1563
Xylenes (Total)	ND		0.0025	mg/kg	8020		12/16/1994	1563
SURROGATE RESULTS	--						12/16/1994	1563
Bromofluorobenzene (SURR)	97			% Rec.	5030		12/16/1994	1563

Client Name: Enviros
Client Acct: 1826
NET Job No: 94.05974

Date: 12/20/1994
ELAP Cert: 1386
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Ref: 461 8th St., Oakland

SAMPLE DESCRIPTION: S-9-11.5
Date Taken: 12/07/1994
Time Taken:
NET Sample No: 227404

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Solid)								
METHOD 5030/M8015	--						12/16/1994	1563
DILUTION FACTOR*	1						12/16/1994	1563
as Gasoline	ND		1	mg/kg	5030		12/16/1994	1563
Carbon Range:	--						12/16/1994	1563
METHOD 8020 (GC,Solid)	--						12/16/1994	1563
Benzene	ND		0.0025	mg/kg	8020		12/16/1994	1563
Toluene	ND		0.0025	mg/kg	8020		12/16/1994	1563
Ethylbenzene	ND		0.0025	mg/kg	8020		12/16/1994	1563
Xylenes (Total)	ND		0.0025	mg/kg	8020		12/16/1994	1563
SURROGATE RESULTS	--						12/16/1994	1563
Bromofluorobenzene (SURR)	94			% Rec.	5030		12/16/1994	1563

Client Name: Enviros
Client Acct: 1826
NET Job No: 94.05974

Date: 12/20/1994
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Ref: 461 8th St., Oakland

SAMPLE DESCRIPTION: S-9-21.5
Date Taken: 12/07/1994
Time Taken:
NET Sample No: 227405

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Solid)								
METHOD 5030/M8015	--						12/16/1994	1563
DILUTION FACTOR*	1						12/16/1994	1563
as Gasoline	ND		1	mg/kg	5030		12/16/1994	1563
Carbon Range:	--						12/16/1994	1563
METHOD 8020 (GC,Solid)	--						12/16/1994	1563
Benzene	ND		0.0025	mg/kg	8020		12/16/1994	1563
Toluene	ND		0.0025	mg/kg	8020		12/16/1994	1563
Ethylbenzene	ND		0.0025	mg/kg	8020		12/16/1994	1563
Xylenes (Total)	ND		0.0025	mg/kg	8020		12/16/1994	1563
SURROGATE RESULTS	--						12/16/1994	1563
Bromofluorobenzene (SURR)	96			% Rec.	5030		12/16/1994	1563

Client Name: Enviros
Client Acct: 1826
NET Job No: 94.05974

Date: 12/20/1994
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SAMPLE DESCRIPTION: S-10-6.5
Date Taken: 12/07/1994
Time Taken:
NET Sample No: 227406

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Solid)								
METHOD 5030/M8015	--						12/16/1994	1563
DILUTION FACTOR*	1						12/16/1994	1563
as Gasoline	ND		1	mg/kg	5030		12/16/1994	1563
Carbon Range:	--						12/16/1994	1563
METHOD 8020 (GC,Solid)	--						12/16/1994	1563
Benzene	ND		0.0025	mg/kg	8020		12/16/1994	1563
Toluene	ND		0.0025	mg/kg	8020		12/16/1994	1563
Ethylbenzene	ND		0.0025	mg/kg	8020		12/16/1994	1563
Xylenes (Total)	ND		0.0025	mg/kg	8020		12/16/1994	1563
SURROGATE RESULTS	--						12/16/1994	1563
Bromofluorobenzene (SURR)	81			% Rec.	5030		12/16/1994	1563

Client Name: Enviros
Client Acct: 1826
NET Job No: 94.05974

Date: 12/20/1994
ELAP Cert: 1386
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Ref: 461 8th St., Oakland

SAMPLE DESCRIPTION: S-10-11.5
Date Taken: 12/07/1994
Time Taken:
NET Sample No: 227407

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Solid)								
METHOD 5030/M8015	--						12/16/1994	1563
DILUTION FACTOR*	1						12/16/1994	1563
as Gasoline	760	FE	1	mg/kg	5030		12/18/1994	1567
Carbon Range:	C5-C14						12/18/1994	1567
METHOD 8020 (GC,Solid)	--						12/16/1994	1563
Benzene	0.0032		0.0025	mg/kg	8020		12/16/1994	1563
Toluene	0.028		0.0025	mg/kg	8020		12/16/1994	1563
Ethylbenzene	6.4	FE	0.0025	mg/kg	8020		12/18/1994	1567
Xylenes (Total)	6.9	FE	0.0025	mg/kg	8020		12/18/1994	1567
SURROGATE RESULTS	--						12/16/1994	1563
Bromofluorobenzene (SURR)	153	MI		% Rec.	5030		12/18/1994	1567

FE : Compound quantitated at a 50X dilution factor.
MI : Matrix Interference Suspected

Ref: 461 8th St., Oakland

SAMPLE DESCRIPTION: S-10-16.5
Date Taken: 12/08/1994
Time Taken:
NET Sample No: 227408

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Solid)								
METHOD 5030/M8015	--						12/16/1994	1563
DILUTION FACTOR*	1						12/16/1994	1563
as Gasoline	ND		1	mg/kg	5030		12/18/1994	1567
Carbon Range:	--						12/18/1994	1567
METHOD 8020 (GC,Solid)	--						12/16/1994	1563
Benzene	ND		0.0025	mg/kg	8020		12/16/1994	1563
Toluene	ND		0.0025	mg/kg	8020		12/18/1994	1567
Ethylbenzene	0.0031	C	0.0025	mg/kg	8020		12/18/1994	1567
Xylenes (Total)	ND		0.0025	mg/kg	8020		12/18/1994	1567
SURROGATE RESULTS	--						12/16/1994	1563
Bromofluorobenzene (SURR)	80			% Rec.	5030		12/16/1994	1563

C : Positive result confirmed by secondary column or GC/MS analysis.

Client Name: Enviros
Client Acct: 1826
NET Job No: 94.05974

Date: 12/20/1994
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SAMPLE DESCRIPTION: S-10-21.5
Date Taken: 12/08/1994
Time Taken:
NET Sample No: 227409

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Solid)								
METHOD 5030/M8015	--						12/18/1994	1567
DILUTION FACTOR*	1						12/18/1994	1567
as Gasoline	ND		1	mg/kg	5030		12/18/1994	1567
Carbon Range:	--						12/18/1994	1567
METHOD 8020 (GC,Solid)	--						12/18/1994	1567
Benzene	ND		0.0025	mg/kg	8020		12/18/1994	1567
Toluene	ND		0.0025	mg/kg	8020		12/18/1994	1567
Ethylbenzene	ND		0.0025	mg/kg	8020		12/18/1994	1567
Xylenes (Total)	ND		0.0025	mg/kg	8020		12/18/1994	1567
SURROGATE RESULTS	--						12/18/1994	1567
Bromofluorobenzene (SURR)	105			% Rec.	5030		12/18/1994	1567

Ref: 461 8th St., Oakland

SAMPLE DESCRIPTION: SP-1,2,3,4
Date Taken: 12/08/1994
Time Taken:
NET Sample No: 227410

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
Lead (GFAA,WET)	0.60		0.01	mg/L	EPA 7421	12/16/1994	12/16/1994	227
TPH (Gas/BTXE,Solid)								
METHOD 5030/M8015	--						12/16/1994	1563
DILUTION FACTOR*	1						12/16/1994	1563
as Gasoline	2.9		1	mg/kg	5030		12/16/1994	1563
Carbon Range:	C5-C14						12/16/1994	1563
METHOD 8020 (GC,Solid)	--						12/16/1994	1563
Benzene	ND		0.0025	mg/kg	8020		12/16/1994	1563
Toluene	ND		0.0025	mg/kg	8020		12/16/1994	1563
Ethylbenzene	ND		0.0025	mg/kg	8020		12/16/1994	1563
Xylenes (Total)	0.035		0.0025	mg/kg	8020		12/16/1994	1563
SURROGATE RESULTS	--						12/16/1994	1563
Bromofluorobenzene (SURR)	63	S2		% Rec.	5030		12/16/1994	1563

S2:Analyzed twice with low surrogate recovery, possible matrix interference

Ref: 461 8th St., Oakland

CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV Standard % Recovery	CCV Standard Amount Found	CCV Standard Amount Expected	Units	Date Analyzed	Analyst Initials	Run Batch Number
Lead (GFAA,WET)	99.8	0.02494	0.0250	mg/L	12/16/1994	djm	227
TPH (Gas/BTXE,Solid)							
as Gasoline	110.6	5.53	5.00	mg/kg	12/16/1994	dfw	1563
Benzene	95.6	23.9	25.0	ug/kg	12/16/1994	dfw	1563
Toluene	96.8	24.2	25.0	ug/kg	12/16/1994	dfw	1563
Ethylbenzene	94.8	23.7	25.0	ug/kg	12/16/1994	dfw	1563
Xylenes (Total)	101.9	76.4	75.0	ug/kg	12/16/1994	dfw	1563
Bromofluorobenzene (SURR)	102.0	102	100	% Rec.	12/16/1994	dfw	1563
TPH (Gas/BTXE,Solid)							
as Gasoline	110.0	5.50	5.00	mg/kg	12/18/1994	aal	1567
Benzene	110.0	27.5	25.0	ug/kg	12/18/1994	aal	1567
Toluene	102.0	25.5	25.0	ug/kg	12/18/1994	aal	1567
Ethylbenzene	94.4	23.6	25.0	ug/kg	12/18/1994	aal	1567
Xylenes (Total)	91.5	68.6	75.0	ug/kg	12/18/1994	aal	1567
Bromofluorobenzene (SURR)	115.0	115	100	% Rec.	12/18/1994	aal	1567
TPH (Gas/BTXE,Solid)							
as Gasoline	100.0	5.00	5.00	mg/kg	12/15/1994	aal	1570
Benzene	104.8	26.2	25.0	ug/kg	12/15/1994	aal	1570
Toluene	100.8	25.2	25.0	ug/kg	12/15/1994	aal	1570
Ethylbenzene	102.0	25.5	25.0	ug/kg	12/15/1994	aal	1570
Xylenes (Total)	100.4	75.3	75.0	ug/kg	12/15/1994	aal	1570
Bromofluorobenzene (SURR)	112.0	112	100	% Rec.	12/15/1994	aal	1570

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METHOD BLANK REPORT

Parameter	Method Blank Amount Found	Reporting Limit	Units	Date Analyzed	Analyst Initials	Run Batch Number
Lead (GFAA,WET)	ND	0.01	mg/L	12/16/1994	djm	227
TPH (Gas/BTXE,Solid)						
as Gasoline	ND	1	mg/kg	12/16/1994	dfw	1563
Benzene	ND	2.5	ug/kg	12/16/1994	dfw	1563
Toluene	ND	2.5	ug/kg	12/16/1994	dfw	1563
Ethylbenzene	ND	2.5	ug/kg	12/16/1994	dfw	1563
Xylenes (Total)	ND	2.5	ug/kg	12/16/1994	dfw	1563
Bromofluorobenzene (SURR)	99		% Rec.	12/16/1994	dfw	1563
TPH (Gas/BTXE,Solid)						
as Gasoline	ND	1	mg/kg	12/18/1994	aal	1567
Benzene	ND	2.5	ug/kg	12/18/1994	aal	1567
Toluene	ND	2.5	ug/kg	12/18/1994	aal	1567
Ethylbenzene	ND	2.5	ug/kg	12/18/1994	aal	1567
Xylenes (Total)	ND	2.5	ug/kg	12/18/1994	aal	1567
Bromofluorobenzene (SURR)	114		% Rec.	12/18/1994	aal	1567
TPH (Gas/BTXE,Solid)						
as Gasoline	ND	1	mg/kg	12/15/1994	aal	1570
Benzene	ND	2.5	ug/kg	12/15/1994	aal	1570
Toluene	ND	2.5	ug/kg	12/15/1994	aal	1570
Ethylbenzene	ND	2.5	ug/kg	12/15/1994	aal	1570
Xylenes (Total)	ND	2.5	ug/kg	12/15/1994	aal	1570
Bromofluorobenzene (SURR)	92		% Rec.	12/15/1994	aal	1570

Client Name: Enviros
Client Acct: 1826
NET Job No: 94.05974

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MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix Spike % Rec.	Matrix Spike Dup % Rec.	RPD	Spike Amount	Sample Conc.	Matrix Spike Conc.	Matrix Spike Dup. Conc.	Units	Date Analyzed	Run Batch	Sample Spiked
Lead (GFAA,WET)	94.1	93.0	1.2	0.125	0.06	0.1776	0.1762	mg/L	12/16/1994	227	230914
TPH (Gas/BTXE,Solid)											227094
as Gasoline	93.6	97.2	3.8	5.00	ND	4.68	4.86	mg/kg	12/16/1994	1563	227094
Benzene	93.4	94.7	1.4	100	ND	93.4	94.7	ug/kg	12/16/1994	1563	227094
Toluene	93.8	94.6	0.8	386	ND	362	365	ug/kg	12/16/1994	1563	227094
TPH (Gas/BTXE,Solid)											227409
as Gasoline	96.0	101.0	5.0	5.00	ND	4.80	5.05	mg/kg	12/18/1994	1567	227409
Benzene	73.9	85.2	14.2	176	ND	130	150	ug/kg	12/18/1994	1567	227409
Toluene	93.1	93.1	0.0	519	ND	483	483	ug/kg	12/18/1994	1567	227409
TPH (Gas/BTXE,Solid)											227150
as Gasoline	82.0	90.0	9.3	5.00	ND	4.10	4.50	mg/kg	12/15/1994	1570	227150
Benzene	144.0	119.0	19.0	100	ND	144	119	ug/kg	12/15/1994	1570	227150
Toluene	141.7	146.3	3.2	300	ND	425	439	ug/kg	12/15/1994	1570	227150

Client Name: Enviros
Client Acct: 1826
NET Job No: 94.05974

Date: 12/20/1994
ELAP Cert: 1386
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LABORATORY CONTROL SAMPLE REPORT

Parameter		LCS % Recovery	Duplicate LCS % Recovery	RPD	LCS Amount Found	Duplicate LCS Amount Found	LCS Amount Expected	Units	Date Analyzed	Analyst Initials	Run Batch
Lead	(GFAA,WET)	83.3			0.1041		0.125	mg/L	12/16/1994	djm	227

NET®

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
*	:	Reporting Limits are a function of the dilution factor for any given sample. Actual reporting limits and results have been multiplied by the listed dilution factor. Do not multiply the reporting limits or reported values by the dilution factor.
dw	:	Result expressed as dry weight.
mean	:	Average; sum of measurements divided by number of measurements.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed.
ND	:	Not detected; the analyte concentration is less than the applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, Rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, Rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986., Rev. 1, December 1987.

SM: see "Standard Methods for the Examination of Water & Wastewater, 17th Edition, APHA, 1989.

Revised September, 1993
abb.93

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: _____

Date: 9-Dec-94
Page 1 of 2

Site Address: 461 8th St., Oakland

WIC#: 204-5508-6205

Shell Engineer: Lynn Walker — Phone No.: 510 675-6169 Fax #: 675-6172

Consultant Name & Address: Enviros, Inc, P.O.Box 259, Sonoma

Consultant Contact: Joe Neely — Phone No.: 707 935-4850 Fax #: 935-4855

Comments:

Sampled by: J. Neely

Printed Name: Joe Neely

LAB: NET

UST AGENCY: _____

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020			Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
S-8-6.5	12-7-94		X			1						X				2x6 tube				
S-8-11.5												X								
S-8-21.5												X								
S-9-6.5												X								
S-9-11.5												X								
S-9-21.5												X								
S-10-6.5												X								
S-10-11.5												X								

CHECK ONE (1) BOX ONLY — CT/DI

- G.W. Monitoring ☐ 4461
- Site Investigation ☑ 4441
- Soil Classify/Disposal ☐ 4442
- Water Classify/Disposal ☐ 4443
- Soil/Air Rem. or Sys. O & M ☐ 4452
- Water Rem. or Sys. O & M ☐ 4453
- Other ☐

TURN AROUND TIME

- 24 hours ☐
- 48 hours ☐
- 15 days ☑ (Normal)
- Other ☐ ____

NOTE: Notify Lab as soon as Possible of 24/48 hrs. TAT.

Relinquished by (signature)	Printed Name	Date	Time	Received (signature)	Printed Name	Date	Time
Joe Neely	Joe Neely	9-Dec-94	16:17	Mike Dowling	Mike Dowling	12/9/94	16:17
Mike Dowling	Mike Dowling	12/9/94	17:08	Shil Prosser	Shil Prosser	12/9/94	17:08

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

Rev: 1/1/93 — Shell Oil Co. Chain of Custody

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: _____

Date: 9-Dec-94
Page 2 of 2

Site Address: 461 8th St., Oakland

WIC#: 204-5508-6205

Shell Engineer: Lynn Walker — **Phone No.:** 510 675-6169 **Fax #:** 675-6172

Consultant Name & Address: Enviros, Inc, P.O. Box 259, Sonoma

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Comments:

Sampled by: J. Neely

Printed Name: Joe Neely

LAB: _____

UST AGENCY: _____

CHECK ONE (1) BOX ONLY	CT/DI	TURN AROUND TIME
G.W. Monitoring	☐ 4441	24 hours ☐
Site Investigation	☑ 4441	48 hours ☐
Soil Classify/Disposal	☑ 4442	16 days ☑ (Normal)
Water Classify/Disposal	☐ 4443	Other ☐ ____
Soil/Air Rem. or Sys. O & M	☐ 4452	NOTE: Notify Lab as soon as Possible of 24/48 hr. TAT.
Water Rem. or Sys. O & M	☐ 4453	
Other	☐	

Analysis Required

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020	STLC lead		Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
S-10-16.5	12-8-94		X			1						X				8x6 Tube				
S-10-21.5	12-8-94		X			1						X								
SP-1,2,3,4	12-7+9-94		X			4						X	X			↓		X	composite all 4 in to 1 to run analyses	

Relinquished By (signature)	Printed Name	Date / Time	Received (signature)	Printed Name	Date / Time
Joe Neely	Joe Neely	Date: 9-Dec-94 Time: 16:17	Mike Dowling	Mike Dowling	Date: 12/9/94 Time: 16:17
Mike Dowling	Mike Dowling	Date: 12/9/94 Time: 17:08	Paul Prosser	Paul Prosser	Date: 12/9/94 Time: 17:08
		Date: Time:			Date: Time:

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

Rev: 7/93/93

Shell Oil Chn of Custody

COOLER RECEIPT FORM

Project: 461 8th St. OAKLAND Log No: 4344
Cooler received on: 12/9/94 and checked on 12/9/94 by PHIL PROSSER
Phil Prosser
(signature)

Were custody papers present?..... (YES) NO
Were custody papers properly filled out?..... (YES) NO
Were the custody papers signed?..... (YES) NO
Was sufficient ice used?..... (YES) NO TEMP.: 0.7°C
Did all bottles arrive in good condition (unbroken)?..... (YES) NO
Did bottle labels match COC?..... (YES) NO
Were proper bottles used for analysis indicated?..... (YES) NO
Correct preservatives used?..... (YES) NO
VOA vials checked for headspace bubbles?..... N/A ...YES NO
Note which voas (if any) had bubbles:*

Sample descriptor:	Number of vials:

*All VOAs with headspace bubbles have been set aside so they will not be used for analysis.....YES NO

List here all other jobs received in the same cooler:

Client Job #	NET log #

(coolerrec)