SIERRA
Environmental Services

June 27, 1995

STID3160

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

Re: Subsurface Investigation Report
Telegraph Business Park
5427 Telegraph Avenue
Oakland, California
SES Project #4-719-02

Dear Mr. Legallet:

Sierra Environmental Services (SES) is pleased to provide this report which documents the results of the subsurface investigation at the above-referenced site (Figure 1, Appendix A).

INTRODUCTION

Scope of Work

The objective of the investigation was to further evaluate the extent of petroleum hydrocarbons in ground water both on- and off-site. The scope of work for the investigation was to:

1. Prepare a site safety plan specific to this investigation based on past and present site use.

2. Drill five on-site and three off-site small-diameter borings. Collect grab ground water samples from the borings. Analyze the ground water samples for Stoddard Solvent [TPH(S)]; benzene, toluene, ethylbenzene and xylenes (BTEX); volatile organic compounds (VOCs); and non-polar oil and grease (O&G) by EPA Methods 8015, 8020, 8240, and 5520 respectively.

3. Dispose of drill cuttings and equipment rinseate.

4. Report the results.

P.O. Box 2546 • Martinez, California 94553 • (510) 370-1280

Background

The site was formerly a large-scale dry-cleaning establishment. The on-site underground storage tanks were used by previous occupants to store Stoddard Solvent, Stoddard Solvent waste and vehicle fuel.

In May 1992, SES personnel supervised the removal of 17 underground storage tanks from the site. Hydrocarbons as gasoline, diesel, Stoddard Solvent, and BTEX were detected in sidewall samples taken from the tank excavations. Analytic results are reported in the 1992 SES report.[1]

On December 13 and 14, 1993, SES supervised the drilling of twelve on-site soil borings. Ground water monitoring wells (MW-1 through MW-3) were installed in three of the soil borings. The monitoring well and soil boring locations are shown on Figure 2 (Appendix A). Results of the investigation are discussed in the SES report dated April 15, 1994.[2]

Since the installation of the monitoring wells, SES has conducted monthly water level measurements and quarterly ground water sampling. Results of the monthly water level measurements and the quarterly ground water sampling are presented in the most recent ground water monitoring report, dated February 23, 1995.[3] Analytic results for ground water are presented in Tables 1 and 2 (Appendix B).

---

1 Sierra Environmental Services, 1992, Consultant's Report of Tank Removal Activities, prepared for Telegraph Business Properties, July 21, 1992, 9 pages and 4 appendices.

2 Sierra Environmental Services, 1994, Subsurface Investigation Report, prepared for Telegraph Business Properties, April 15, 1994, 6 pages and 5 appendices.

3 Sierra Environmental Services, 1995, Quarterly Ground Water Monitoring Report, prepared for Telegraph Business Properties, February 23, 1995, 2 pages and 4 appendices.

SUBSURFACE INVESTIGATION

On November 11, 1994, SES supervised the drilling of five on-site borings (B-10 through B-14). On January 23, 1995, SES supervised the drilling of three off-site borings (B-15 through B-17). The borings were drilled by Gregg Drilling and Testing, Inc. of Martinez, California (C-57#485165). Boring locations are shown on Figure 2 (Appendix A).

Soil Borings

Soils were logged in accordance with SES Standard Operating Procedures for Logging Method (Appendix C). The ASTM Soil Classification System used for logging is included in Appendix D. Detailed descriptions of subsurface sediments are shown on the boring logs (Appendix D).

ANALYTIC RESULTS

Grab ground water samples were collected from each of the borings and analyzed for TPH(S) and BTEX by EPA Methods 8015/5030 and 8020; for VOCs by EPA Method 8240; and for O&G by EPA Method 5520. All analyses were performed by Precision Analytical Laboratory, Inc. of Richmond, California. SES is not responsible for laboratory omissions or errors.

Analytic results for ground water are presented in Tables 1 and 2 (Appendix B). Chain of custody documents and laboratory analytic reports are included in Appendix E.

O&G was not detected in any of the ground water samples collected from the borings. Stoddard Solvent was detected in ground water samples collected from seven of the eight borings at concentrations ranging from 0.15 parts per billion (ppb) (B-12) to 9,100 ppb (B-15). BTEX compounds were detected in ground water samples collected from four of the eight borings at concentrations ranging from 0.8 ppb to 60 ppb. VOCs/HVOCs (including trichloroethene,

tetrachloroethene, vinyl chloride, 1,1-dichloroethane, trans-1,2-dichloroethene, and cis-1,2-dichloroethene) were detected in ground water samples collected from five of the eight borings.

CONCLUSIONS

Based on analytic data collected during this and previous investigations SES has prepared the following summary of conditions at the site.

- A plume of stoddard solvent is present in ground water beneath the site;
- The source of the stoddard solvent plume was the several underground stoddard solvent product/waste tanks located on the site;
- The lateral extent of the stoddard solvent plume has been largely defined in the up- and down-gradient directions;
- The extent of the plume in the cross-gradient directions is not defined due to physical barriers to further investigation (California Hwy 24 to the west, and site structures to the east);
- The on-site stoddard solvent plume should be stabilized/reduced by a ground water extraction/treatment system. This system was previously permitted and should be operating within 90 days.
- There are no documented instances of regular use of VOCs/HVOCs in historic site operations. The VOCs/HVOCs detected in isolated ground water samples do not appear to represent a single plume. The relatively limited extent, irregular distribution and make-up (degradation products of other solvents) of the VOCs indicate that the VOCs/HVOCs in ground water probably result from small, isolated spill or disposal incidents on-site.
- The elevated concentrations of stoddard solvent in the ground water sample from boring B-15 (9,100 ppb) is likely anomalous or indicative of a release from some as yet undiscovered off-site source.

RECOMMENDATIONS

1. Install a ground water treatment system on-site as outlined in the SES work plan of July 19, 1994.

2. Continue quarterly monitoring for stoddard solvent, BTEX, and HVOCs. Monitoring should document the effectiveness of the ground water treatment system in reducing downgradient concentrations.

Thank you for the opportunity to provide environmental consulting services to Telegraph Business Park. Please call if you have any questions.

REGISTERED GEOLOGIST
WAYNE S. AKIYAMA
No. 6009
STATE OF CALIFORNIA

Sincerely,
Sierra Environmental Services

J. Green

Jim Green
Staff Scientist

Wayne S. Akiyama

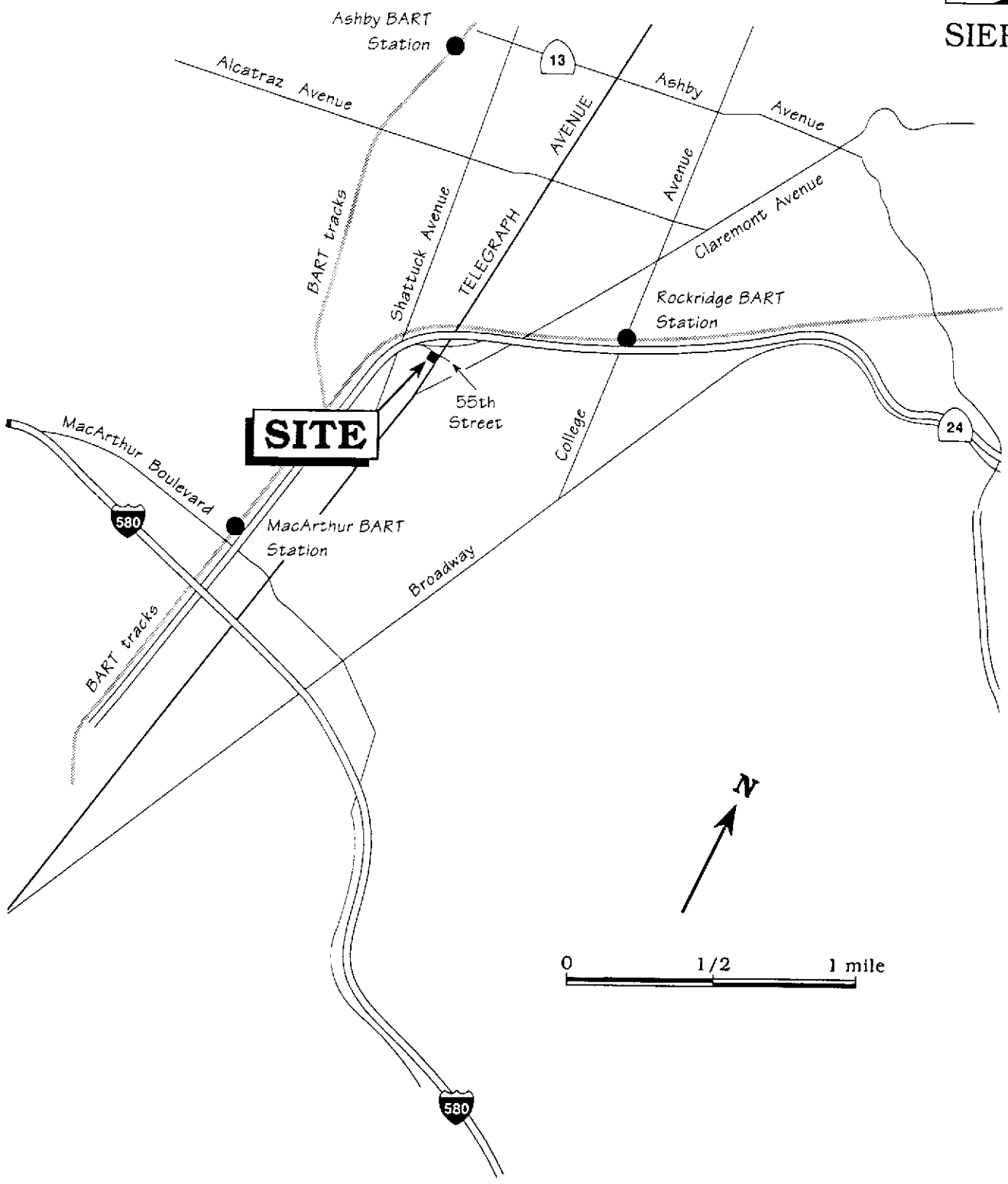
Wayne S. Akiyama
Registered Geologist #6009

JG/WSA/lmo
71902rep.JN5

Attachments: Appendix A - Figures
Appendix B - Tables
Appendix C - SES Standard Operating Procedures
Appendix D - ASTM Soil Classification System Chart and Boring Logs
Appendix E - Chain of Custody Documents and Laboratory Analytic Reports

cc: Susan Hugo, Alameda County Department of Environmental Health
Wyman Hong, Alameda County - Zone 7

SIERRA



Base map ref: California State Automobile Association (AAA)

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

4-719-02 4/6/94

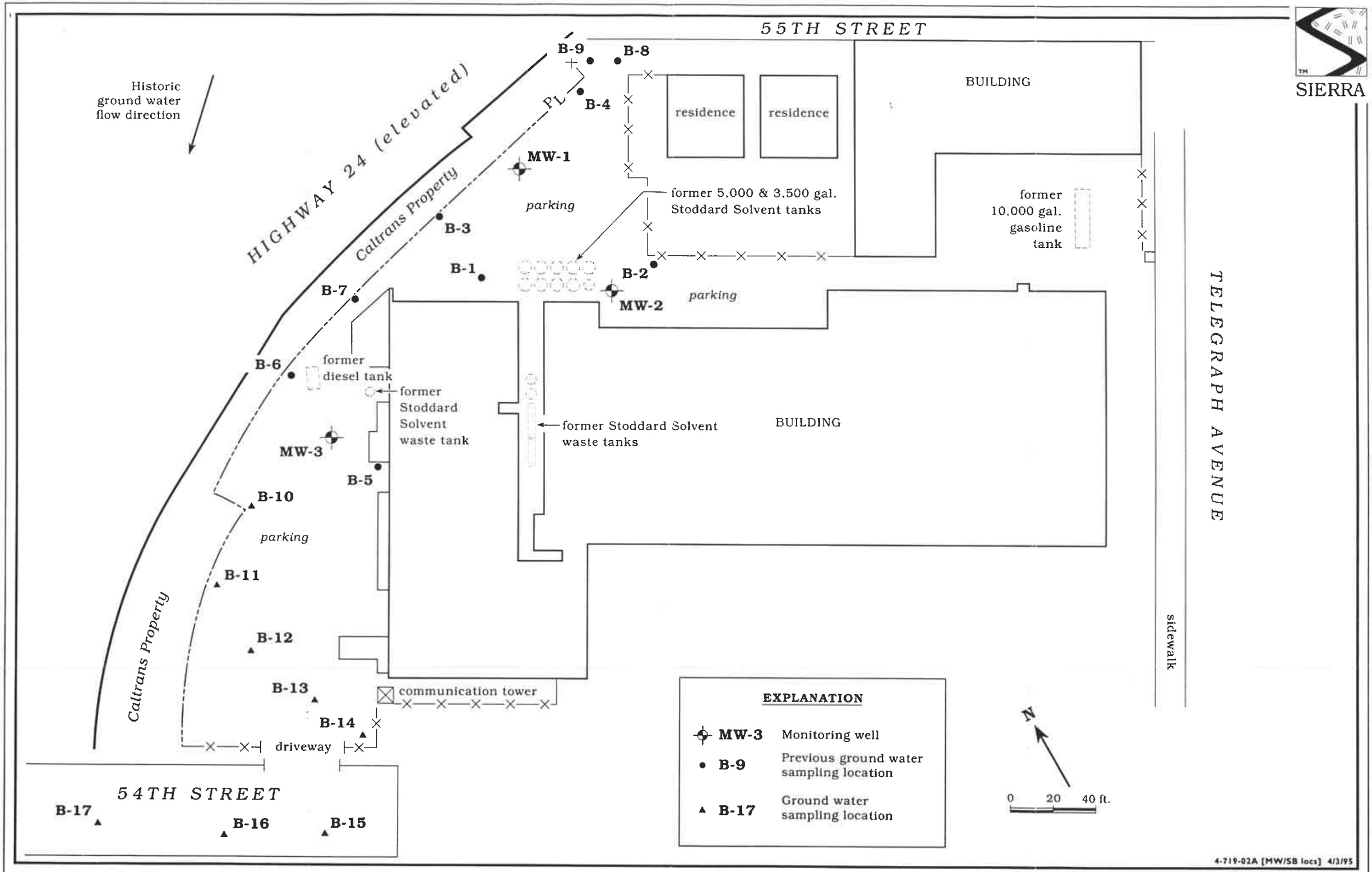


Figure 2. Monitoring Well and Grab Ground Water Sampling Locations – Telegraph Business Park, 5427 Telegraph Avenue, Oakland, California

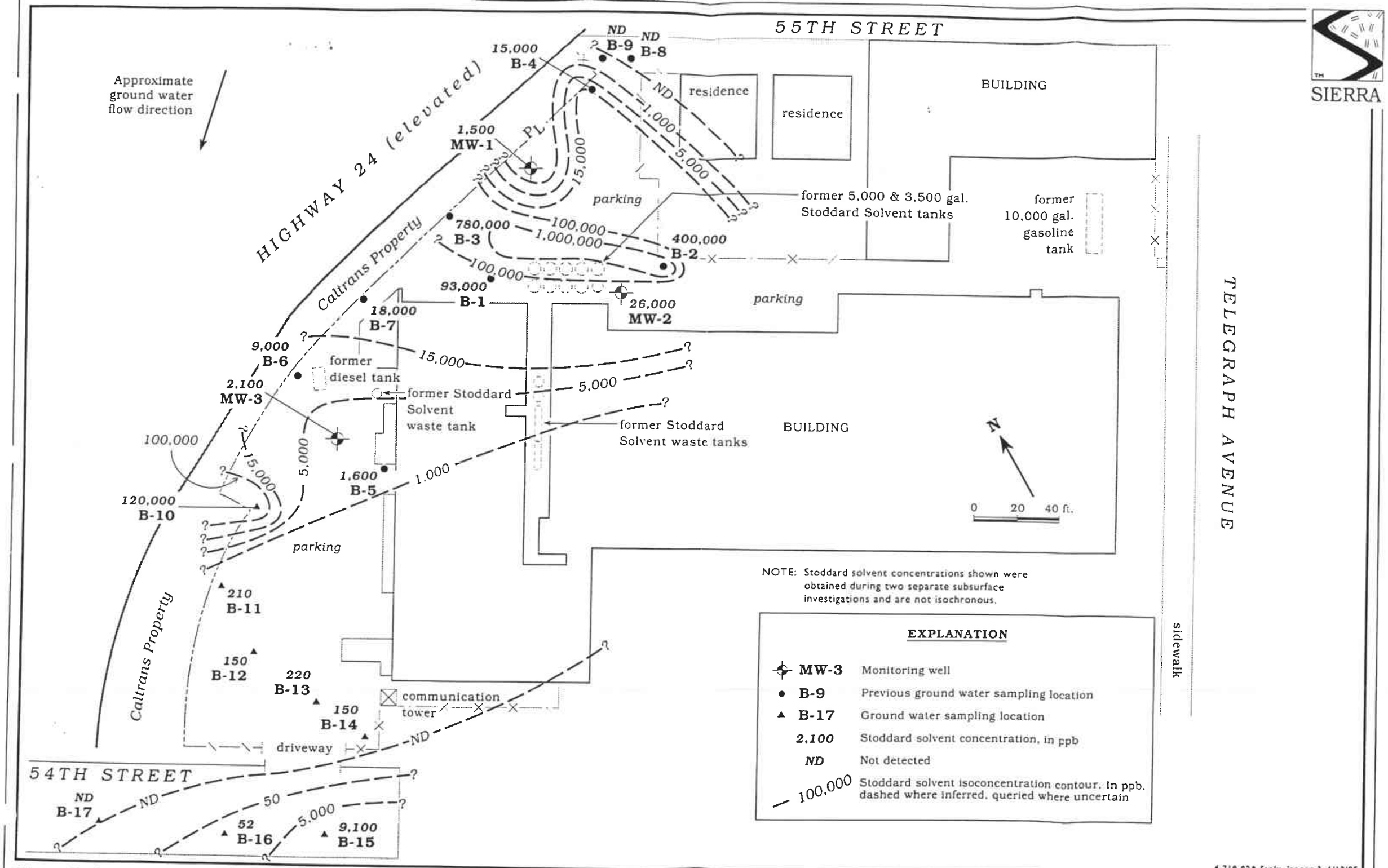


Figure 3. Isoconcentration Contour Map for Stoddard Solvent in Ground Water – Telegraph Business Park, 5427 Telegraph Avenue, Oakland, California

SIERRA

Table 1. Analytic Results for Ground Water - Petroleum Hydrocarbons - Telegraph Business Park, 5427 Telegraph Avenue, Oakland, California

Sample ID	Date Sampled	Analytic Method	TPH(D)	Stoddard Solvent	O&G	B	T	E	X
			<----------			ppb			---------->
B-1	12/13/93	LUFT	1,200	93,000	---	---	---	---	---
B-2	12/13/93	LUFT	4,000	1,400,000	---	---	---	---	---
B-3	12/13/93	LUFT	3,700	780,000	---	---	---	---	---
B-4	12/13/93	LUFT	90	15,000	---	---	---	---	---
B-5	12/14/93	LUFT	100	1,600	---	---	---	---	---
B-6	12/14/93	LUFT	460	9,000	---	---	---	---	---
B-7	12/14/93	LUFT	390	18,000	---	---	---	---	---
B-8	12/14/93	LUFT	<50	<50	---	---	---	---	---
B-9	12/14/93	LUFT	<50	60	---	---	---	---	---
B-10	**11/30/94**	**LUFT/5520/602**	---	**120,000**	**<10,000**	**<0.3**	**<0.3**	**<0.3**	**<0.3**
B-11	**11/30/94**	**LUFT/5520/602**	---	**210**	**<10,000**	**<0.3**	**<0.3**	**<0.3**	**<0.3**
B-12	**11/30/94**	**LUFT/5520/602**	---	**150**	**<10,000**	**<0.3**	**<0.3**	**<0.3**	**<0.3**
B-13	**11/30/94**	**LUFT/5520/602**	---	**220**	**<10,000**	**2.3**	**0.80**	**<0.3**	**4**
B-14	**11/30/94**	**LUFT/5520/602**	---	**150**	**<10,000**	**<0.3**	**<0.3**	**<0.3**	**0.80**
B-15	**1/23/95**	**LUFT/5520/602**	---	**9,100**	**<10,000**	**40**	**<3.0**	**60**	**<3.0**
B-16	**1/23/95**	**LUFT/5520/602**	---	**52[1]**	**<13,000**	**<0.3**	**<0.3**	**<0.3**	**1.3**
B-17	**1/23/95**	**LUFT/5520/602**	---	**<50**	**<10,000**	**<0.3**	**<0.3**	**<0.3**	**<0.3**

SIERRA

Table 1. Analytic Results for Ground Water - Petroleum Hydrocarbons - Telegraph Business Park, 5427 Telegraph Avenue, Oakland, California (continued)

Sample ID	Date Sampled	Analytic Method	TPH(D)	Stoddard Solvent	O&G	B	T	E	X
			<----------			ppb			---------->
MW-1	1/5/94	LUFT/602	500	1,000	6,300*	3.3	1.6	<0.3	6
	4/6/94	LUFT/602/5520	800	1,400	<5,000	5.6	4.5	<0.3	11
	7/7/94	LUFT/602/5520	400	1,200	8,300*	1.5	0.80	<0.3	1.9
	10/11/94	LUFT/602/5520	<5.0	700	<5,000	<0.3	<0.3	<0.3	<0.3
	1/20/95	LUFT/602	---	1,500	---	3.9	2	<0.3	3.9
MW-2	1/5/94	LUFT/602	200	35,000	<5,000	12	38	<3.0	150
	4/6/94	LUFT/602/5520	2,200	94,000	15,600	21	22	<6.0	110
	7/7/94	602	---	---	---	16	16	<1.5	1,510
	7/11/94	LUFT/5520	800	43,000	14,500*	---	---	---	---
	10/11/94	LUFT/5520/602	<5.0	31,000	<5,000	17	13	14	0.3
	1/20/95	LUFT/602	---	26,000	---	18	13	12	50
MW-3	1/5/94	LUFT/5520/602	70	1,100	<5,000	180	20	85	10
	4/6/94	LUFT/5520/602	<50	1,000	<5,000	140	13	60	<12
	7/7/94	602	---	---	---	120	7.5	8.0	<3.0
	7/11/94	LUFT/5520	270	1,000	<5,000*	---	---	---	---
	10/11/94	LUFT/5520/602	<5.0	1,100	<5,000	200	11	23	<0.3
	1/20/95	LUFT/602	---	2,100	---	36	3.5	4.8	<0.3
Trip Blank									
TB-LB	1/5/94	602	---	---	---	<0.3	<0.3	<0.3	<0.3
	4/6/94	602	---	---	---	<0.3	<0.3	<0.3	<0.6
	7/7/94	602	---	---	---	<0.3	<0.3	<0.3	<0.3
	10/11/94	602	---	---	---	<0.3	<0.3	<0.3	<0.3
	11/30/94	602	---	---	---	<0.3	<0.3	<0.3	<0.3
	1/20/95	LUFT/602	---	<50	---	<0.3	<0.3	<0.3	<0.3
	1/23/95	LUFT/602	---	<50	---	<0.3	<0.3	<0.3	<0.3
Bailer Blank									
BB	1/5/94	602	---	---	---	<0.3	<0.3	<0.3	<0.3
	4/6/94	602	---	---	---	<0.3	0.8	<0.3	<0.6
	7/11/94	602	---	---	---	<0.3	<0.3	<0.3	<0.3
	11/30/94	602	---	---	---	<0.3	<0.3	<0.3	<0.3
	1/20/95	LUFT/602	---	<50	---	<0.3	<0.3	<0.3	<0.3
	1/23/95	LUFT/602	---	<50	---	<0.3	<0.3	<0.3	<0.3

SIERRA

Table 1. Analytic Results for Ground Water - Petroleum Hydrocarbons - Telegraph Business Park, 5427 Telegraph Avenue, Oakland, California (continued)

EXPLANATION:

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

ANALYTIC LABORATORY:

All samples analyzed by Precision Analytical Laboratory, Inc. of Richmond, California.

ANALYTIC METHODS:

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

NOTES:

* This result represents both naturally occurring organics and petroleum hydrocarbons due to its analysis by Standard Methods Method 5520B.

[1] Stoddard gas range hydrocarbon does not match with stoddard gas standard.

71904TGW.ALL

SIERRA

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

Sample ID	Date Sampled	Analytic Method	VC	1,1-DCA	t-1,2-DCE	c-1,2-DCE	C	1,2-DCA	TCE	PCE	1,2-DCB	Other HVOCs	Other VOCs
			<----------ppb---------->										
B-10	**11/30/94**	**8240**	**<2**	**<3**	**<3**	**<3**	**<3**	**<2**	**<3**	**<2**	**<4**	---	**ND[10]**
B-11	**11/30/94**	**8240**	**<2**	**<3**	**<3**	**<3**	**<3**	**<2**	**<3**	**<2**	**<4**	---	**ND[10]**
B-12	**11/30/94**	**8240**	**<2**	**<3**	**<3**	**<3**	**<3**	**<2**	**<3**	**<2**	**<4**	---	**ND[10]**
B-13	**11/30/94**	**8240**	**430**	**32**	**7.9**	**810**	**<3**	**<2**	**340**	**360**	**<4**	---	**ND[10]**
B-14	**11/30/94**	**8240**	**<2**	**12**	**<3**	**35**	**<3**	**<2**	**21**	**59**	**<4**	---	**ND[10]**
B-15	**1/23/95**	**8240**	**<2**	**<3**	**<3**	**<3**	**<3**	**<2**	**<3**	**<2**	**<4**	---	**ND[10]**
B-16	**1/23/95**	**8240**	**<2**	**<3**	**<3**	**<3**	**<3**	**<2**	**8**	**290**	**<4**	---	**ND[10]**
B-17	**1/23/95**	**8240**	**<2**	**<3**	**<3**	**14**	**<3**	**<2**	**13**	**53**	**<4**	---	**ND[10]**
MW-1	1/5/94	8010	<1	<0.3	<0.2	0.44	0.35	<0.2	<0.3	<2	0.36	ND[1]	---
	4/6/94	8010	<1	<0.3	<0.2	0.32	<0.2	<0.2	<0.3	<2	0.21	ND[4]	---
	7/7/94	8010	<1	<0.2	<0.2	<0.2	<0.1	<0.5	<0.2	<2	<0.2	ND[7]	---
	10/11/94	8240	<2	<3	<3	<3	<3	<2	<3	<2	<4	---	ND[10]
	1/20/95	8240	<2	<3	<3	<3	<3	<2	<3	<2	<1	---	ND[11]
MW-2	1/5/94	8010	<1	10	1.1	130	5.6	2.7	2.6	<2	0.90	ND[2]	---
	4/6/94	8010	<1	0.40	<0.2	4.3	<0.2	<0.2	<0.3	<2	0.80	ND[5]	---
	7/7/94	8010	<1	3.4	<0.2	15	<0.1	0.60	0.60	<2	0.40	ND[8]	---
	10/11/94	8240	<2	<3	<3	31	<3	<2	<3	<2	<4	---	ND[10]
	1/20/95	8240	<2	5	<3	14	<3	<2	<3	<2	<1	---	ND[11]
MW-3	1/5/94	8010	<1	0.70	<0.2	5.2	1.3	0.20	<0.3	<2	1.5	ND[3]	---
	4/6/94	8010	<1	0.40	<0.2	4.2	<0.2	<0.2	<0.3	<2	0.80	ND[6]	---
	7/7/94	8010	<1	0.30	<0.2	2.9	<0.1	<0.5	<0.2	<2	1.3	ND[9]	---
	10/11/94	8240	<2	<3	<3	<3	<3	<2	<3	<2	<4	---	ND[10]
	1/20/95	8240	<2	<3	<3	6	<3	<2	<3	<2	1	---	ND[11]

SIERRA

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

EXPLANATION:

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

ANALYTIC LAB:

All samples analyzed by Precision Analytic Laboratory, Inc. of Richmond, California.

ANALYTIC METHODS:

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

NOTES:

1 1,4-Dichlorobenzene was detected at 0.34 ppb. Other HVOCs not detected at detection limits of 0.2 to 2.0 ppb.

2 1,2-Dichloropropene, T-1,3-Dichloropropene, and 1,4-Dichlorobenzene were detected at 18, 1.0 and 1.0 ppb, respectively. Other HVOCs not detected at detection limits of 0.2 to 2.0 ppb.

3 Chlorobenzene and 1,4-Dichlorobenzene were detected at 0.70 and 0.30 ppb, respectively. Other HVOCs not detected at detection limits of 0.2 to 2.0 ppb.

4 1,4-Dichlorobenzene was detected at 0.21 ppb. Other HVOCs not detected at detection limits of 0.2 to 2.2 ppb.

5 Chlorobenzene was detected at 1.7 ppb. Other HVOCs not detected at detection limits of 0.2 to 2.2 ppb.

6 Chlorobenzene was detected at 1.6 ppb. Other HVOCs not detected at detection limits of 0.2 to 2.2 ppb.

7 1,4-Dichlorobenzene was detected at 0.26 ppb. Other HVOCs not detected at detection limits of 0.2 to 2.0 ppb.

8 1,2-Dichloropropene, tetrachloroethene and 1,4-Dichlorobenzene were detected at 6.5, 1.4 and 0.34 ppb, respectively. Other HVOCs not detected at detection limits of 0.2 to 2.0 ppb.

9 Other HVOCs not detected at detection limits of 0.2 to 2.0 ppb.

10 Benzene, toluene, ethylbenzene and xylene results are included on Table 1. Other VOCs not detected at detection limits of 2 to 50 ppb.

11 Benzene, toluene, ethylbenzene and xylene results are included on Table 1. Other VOCs not detected at detection limits of 1 to 7 ppb.

SIERRA

APPENDIX C
SIERRA ENVIRONMENTAL SERVICES
STANDARD OPERATING PROCEDURES

SIERRA

SES STANDARD OPERATING PROCEDURE

LOGGING METHOD

Unconsolidated soil is classified and described by trained SES field personnel. All available information is used, including the following: soil recovered in the sampler, including the soil visible on both ends of the sample retained for possible analysis; soil cuttings generated during drilling; and the drilling contractor's observations of the drill rig's behavior.

Classification and description of unconsolidated soil is accomplished using the American Society of Testing and Materials (ASTM) Methods D2487-85 (Unified Soil Classification System (USCS)) and/or D2488-69 (Description and Identification of Soils (Visual-Manual Procedure)).

The soil classification and description is recorded on the field log sheet by SES field personnel and includes the following information:

1) Soil type;
2) Soil classification;
3) Soil color, including mottling;
4) Moisture content;
5) Plasticity and consistency (fine-grained material) or density (coarse-grained material);
6) Percentages of clay, silt, sand and gravel;
7) Grain size range of sands and gravels;
8) Angularity and largest diameter of gravel component;
9) Estimated permeability;
10) Odor; and
11) Any other observations which would assist in the interpretation of the depositional environment and/or differentiation between the various geologic units expected to be encountered.

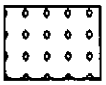
In addition to the above, the ground water levels encountered during drilling and measured after the water stabilized is also recorded on the field log.

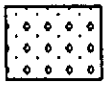
SIERRA

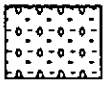
APPENDIX D
ASTM SOIL CLASSIFICATION SYSTEM CHART
BORING LOG EXPLANATION
AND BORING LOGS

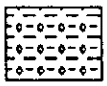
SIERRA

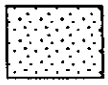
EXPLANATION FOR SES BORING LOGS

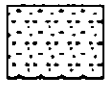

GRAVEL

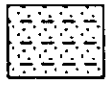

Sandy GRAVEL

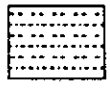

Silty GRAVEL

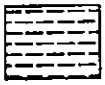

Clayey GRAVEL

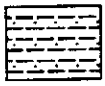

SAND

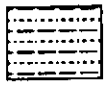

Silty SAND/Sandy SILT

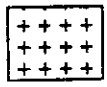

Clayey SAND

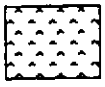

SILT


CLAY

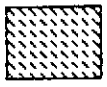

Sandy CLAY


Silty CLAY/Clayey SILT


Organics


Hard Rock


Slough


Asphalt


Concrete
Cement/Grout


Bentonite

K = Field estimation of soil hydraulic conductivity

Drive sample interval

Drive sample collected for possible chemical analysis

Contact between sedimentary or lithologic units; dotted where approximate, dashed where uncertain, hatched where gradational

Initial water level measured during drilling (date in italics)

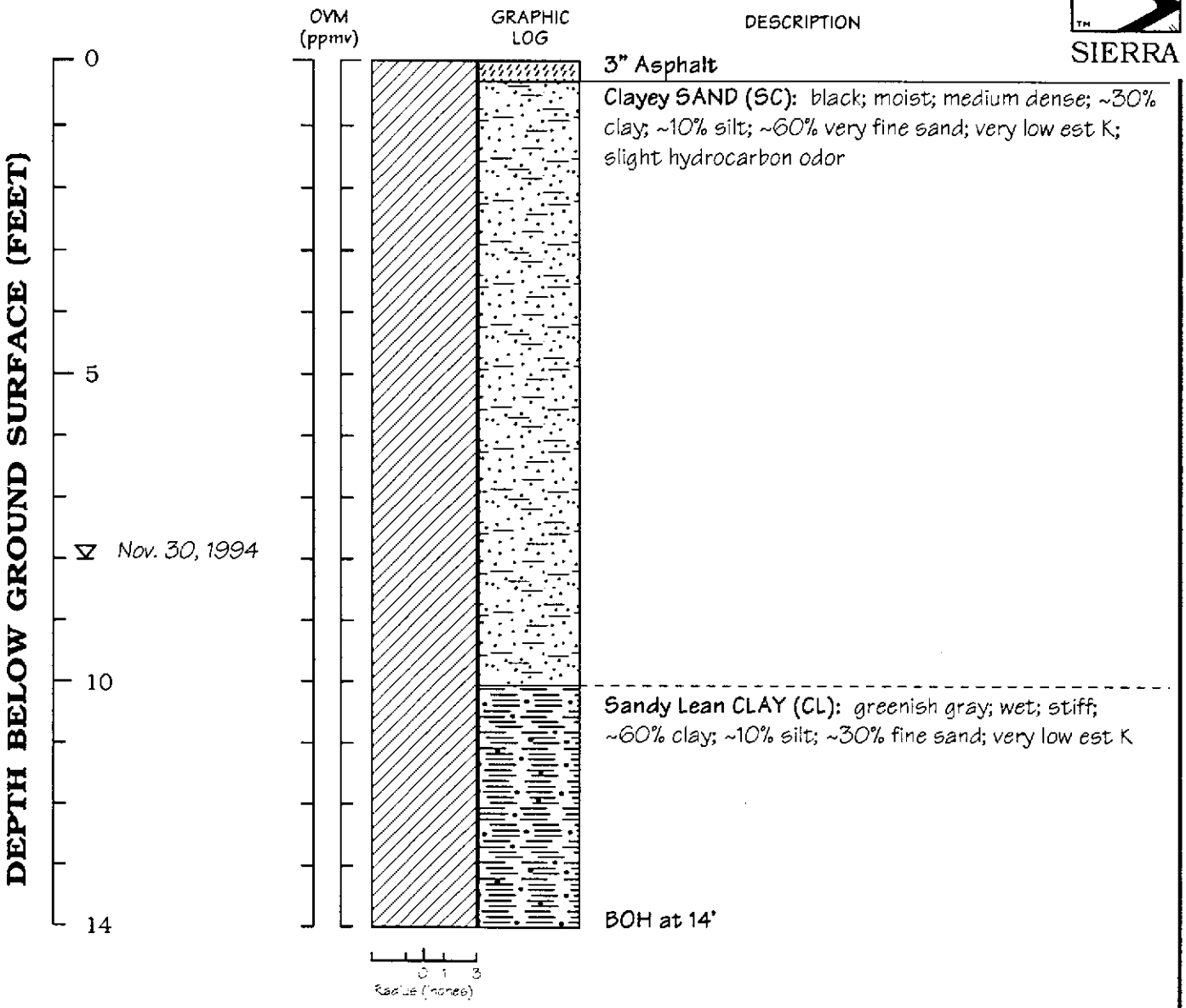
Static water level, measured after well development (date in italics)

Note: Soils are logged using ASTM D2487 Soil Classification System

					Group Symbol				Group Name
>50% Sand & Gravel	GRAVEL % gravel > % sand	≤5% fines	Well-graded		GW	<15% sand			Well-graded GRAVEL
						≥15% sand			Well-graded GRAVEL with Sand
			Poorly graded		GP	<15% sand			Poorly graded GRAVEL
						≥15% sand			Poorly graded GRAVEL with Sand
		10% fines	Well-graded	fines=ML or MH	GW-GM	<15% sand			Well-graded GRAVEL with Silt
						≥15% sand			Well-graded GRAVEL with Silt and Sand
				fines=CL or CH	GW-GC	<15% sand			Well-graded GRAVEL with Clay
						≥15% sand			Well-graded GRAVEL with Clay and Sand
			Poorly graded	fines=ML or MH	GP-GM	<15% sand			Poorly graded GRAVEL with Silt
						≥15% sand			Poorly graded GRAVEL with Silt and Sand
				fines=CL or CH	GP-GC	<15% sand			Poorly graded GRAVEL with Clay
						≥15% sand			Poorly graded GRAVEL with Clay and Sand
		≥15% fines		fines=ML or MH	GM	<15% sand			Silty GRAVEL
						≥15% sand			Silty GRAVEL with Sand
				fines=CL or CH	GC	<15% sand			Clayey GRAVEL
						≥15% sand			Clayey GRAVEL with Sand
	SAND % sand ≥ % gravel	≤5% fines	Well-graded		SW	<15% gravel			Well-graded SAND
						≥15% gravel			Well-graded SAND with Gravel
			Poorly graded		SP	<15% gravel			Poorly graded SAND
						≥15% gravel			Poorly graded SAND with Gravel
		10% fines	Well-graded	fines=ML or MH	SW-SM	<15% gravel			Well-graded SAND with Silt
						≥15% gravel			Well-graded SAND with Silt and Gravel
				fines=CL or CH	SW-SC	<15% gravel			Well-graded SAND with Clay
						≥15% gravel			Well-graded SAND with Clay and Gravel
			Poorly graded	fines=ML or MH	SP-SM	<15% gravel			Poorly graded SAND with Silt
						≥15% gravel			Poorly graded SAND with Silt and Gravel
				fines=CL or CH	SP-SC	<15% gravel			Poorly graded SAND with Clay
						≥15% gravel			Poorly graded SAND with Clay and Gravel
		≥15% fines		fines=ML or MH	SM	<15% gravel			Silty SAND
						≥15% gravel			Silty SAND with Gravel
				fines=CL or CH	SC	<15% gravel			Clayey SAND
						≥15% gravel			Clayey SAND with Gravel
>50% or More Fines	Low-Plasticity Clay				CL	<30% sand & gravel	<15% Sand and Gravel		Lean CLAY
							15-25% sand & gravel	% sand ≥ % gravel	Lean CLAY with Sand
								% sand < % gravel	Lean CLAY with Gravel
						≥30% sand & gravel	% sand ≥ % of gravel	<15% gravel	Sandy lean CLAY
								≥15% gravel	Sandy lean CLAY with Gravel
							% sand < % gravel	<15% sand	Gravelly lean CLAY
								≥15% sand	Gravelly lean CLAY with Sand
	Low-Permeability Silt				ML	<30% sand & gravel	<15% sand & gravel		SILT
							15-25% sand & gravel	% sand ≥ % gravel	SILT with Sand
								% sand < % gravel	SILT with Gravel
						≥30% sand & gravel	% sand ≥ % of gravel	<15% gravel	Sandy SILT
								≥15% gravel	Sandy SILT with Gravel
							% sand < % gravel	<15% sand	Gravelly SILT
								≥15% sand	Gravelly SILT with Sand
	Plastic Clay				CH	<30% sand & gravel	<15% sand & gravel		Fat CLAY
							15-25% sand & gravel	% sand ≥ % gravel	Fat CLAY with Sand
								% sand < % gravel	Fat CLAY with Gravel
						≥30% sand & gravel	% sand ≥ % of gravel	<15% gravel	Sandy fat CLAY
								≥15% gravel	Sandy fat CLAY with Gravel
							% sand < % gravel	<15% sand	Gravelly fat CLAY
								≥15% sand	Gravelly fat CLAY with Sand
	Plastic Silt				MH	<30% sand & gravel	<15% sand & gravel		Elastic SILT
							15-25% sand & gravel	% sand ≥ % gravel	Elastic SILT with Sand
								% sand < % gravel	Elastic SILT with Gravel
						≥30% sand & gravel	% sand ≥ % of gravel	<15% gravel	Sandy elastic SILT
								≥15% gravel	Sandy elastic SILT with Gravel
							% sand < % gravel	<15% sand	Gravelly elastic SILT
								≥15% sand	Gravelly elastic SILT with Sand
	Organics (Peat or Bay Mud)				OL/OH	<30% sand & gravel	<15% sand & gravel		Organic SOIL
							15-25% sand & gravel	% sand ≥ % gravel	Organic SOIL with Sand
								%sand < % gravel	Organic SOIL with Gravel
						≥30% sand & gravel	% sand ≥ % gravel	<15% gravel	Sandy Organic SOIL
								≥15% gravel	Sandy Organic SOIL with Gravel
							% sand < % gravel	<15% sand	Gravelly Organic SOIL
								≥15% sand	Gravelly Organic SOIL with Sand

BORING B-10

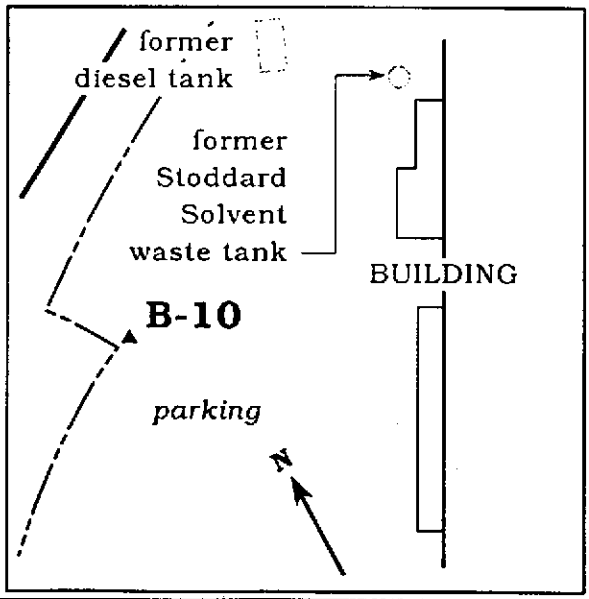
SIERRA



Boring Log – Boring B-10

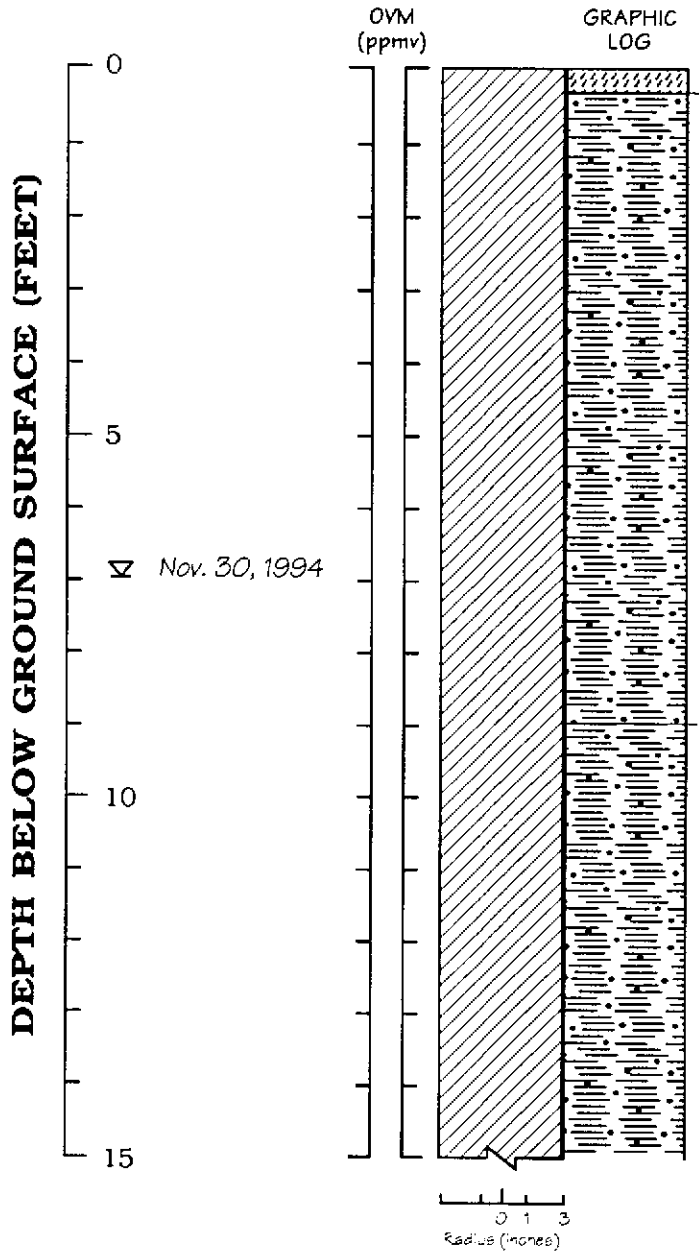
Normandy Associates
Telegraph Business Park
5427 Telegraph Avenue
Oakland, California

Logged By:	Jim Green
Supervisor:	C. Bramer P.E. #C48846
Drilling Company:	Gregg Drilling
C-57#:	485165
Driller:	Mike Branan
Drilling Method:	Hollow stem auger
Date Drilled:	November 30, 1994
Well Head Completion:	Grouted to surface
Type of Sampler:	Split barrel (2" ID)



BORING B-11

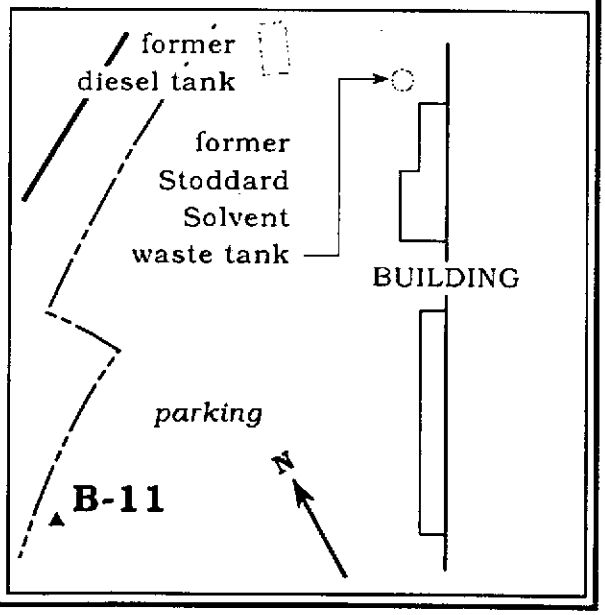
SIERRA



Boring Log - Boring B-11

Normandy Associates
Telegraph Business Park
5427 Telegraph Avenue
Oakland, California

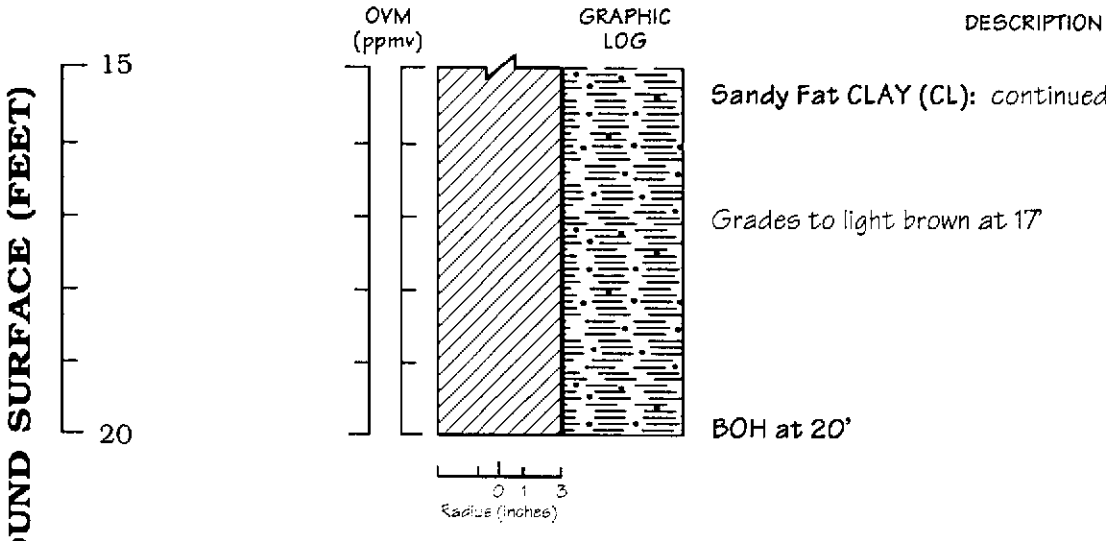
Logged By:	Jim Green
Supervisor:	C. Bramer P.E. #C48846
Drilling Company:	Gregg Drilling
C-57#:	485165
Driller:	Mike Branan
Drilling Method:	Hollow stem auger
Date Drilled:	November 30, 1994
Well Head Completion:	Grouted to surface
Type of Sampler:	Split barrel (2" ID)



BORING B-11

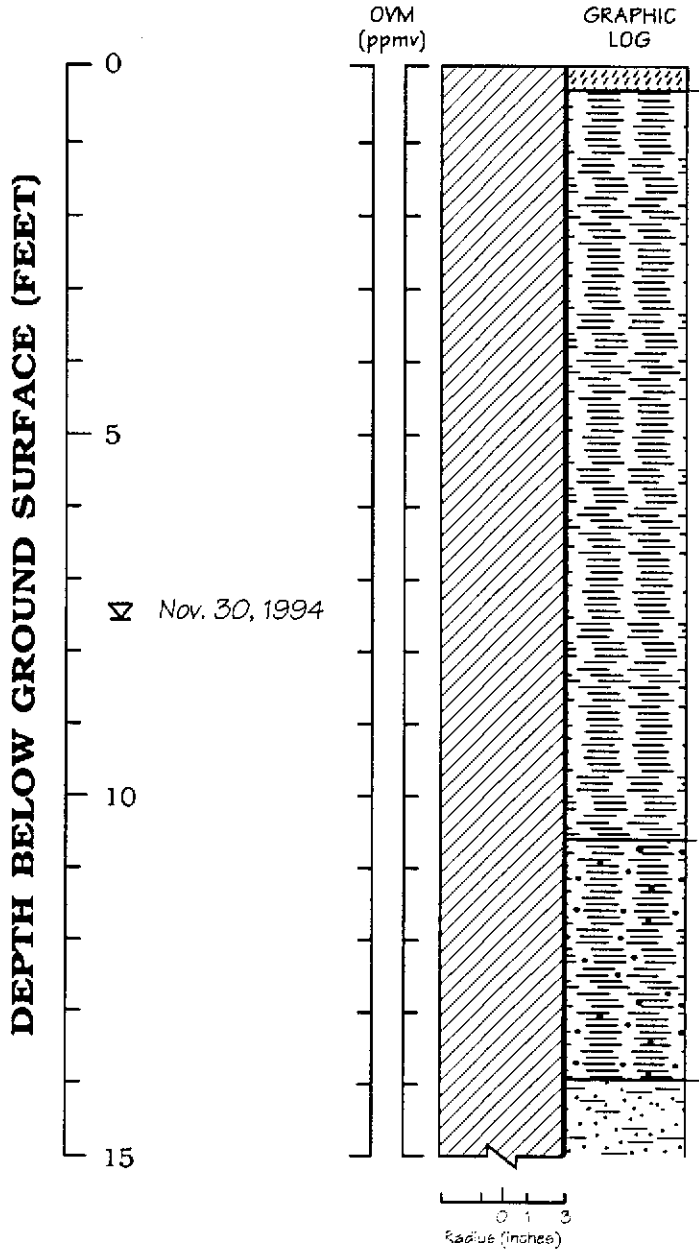
(continued)

SIERRA



BORING B-12

SIERRA



3" Asphalt

Lean CLAY with Sand (CL): dark brown mottled light yellow; wet; stiff; ~60% clay; ~10% silt; ~25% fine sand; ~5% subangular gravel to 1/2" diameter; very low est K

Sandy Fat CLAY (CL): light brown mottled gray; wet; stiff; ~65% clay; ~5% silt; ~30% fine sand; very low est K

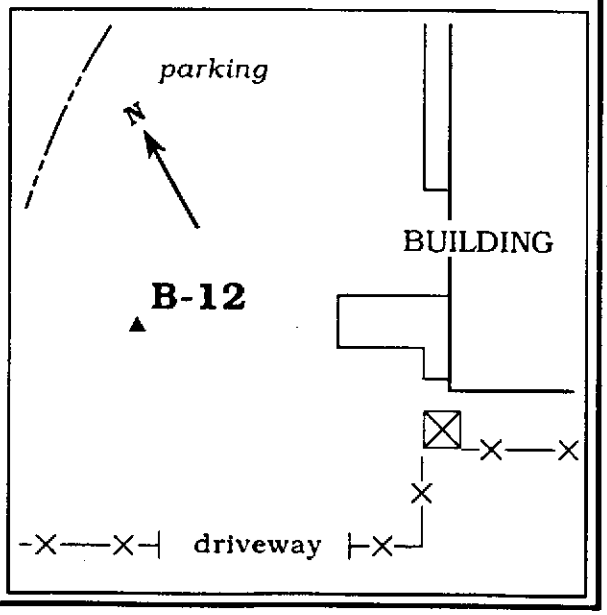
Contact from cuttings

CLAYEY SAND (SM): light red; wet; medium dense; ~15% clay; ~10% silt; ~75% medium to coarse sand; very low est K

Boring Log - Boring B-12

Normandy Associates
Telegraph Business Park
5427 Telegraph Avenue
Oakland, California

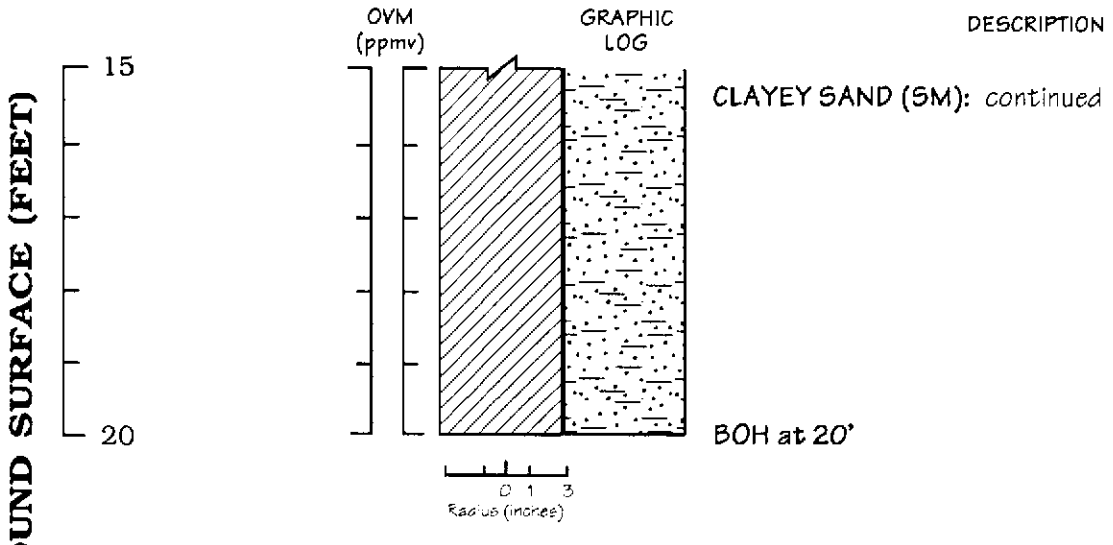
Logged By:	Jim Green
Supervisor:	C. Bramer P.E. #C48846
Drilling Company:	Gregg Drilling
C-57#:	485165
Driller:	Mike Branan
Drilling Method:	Hollow stem auger
Date Drilled:	November 30, 1994
Well Head Completion:	Grouted to surface
Type of Sampler:	Split barrel (2" ID)



BORING B-12

(continued)

SIERRA

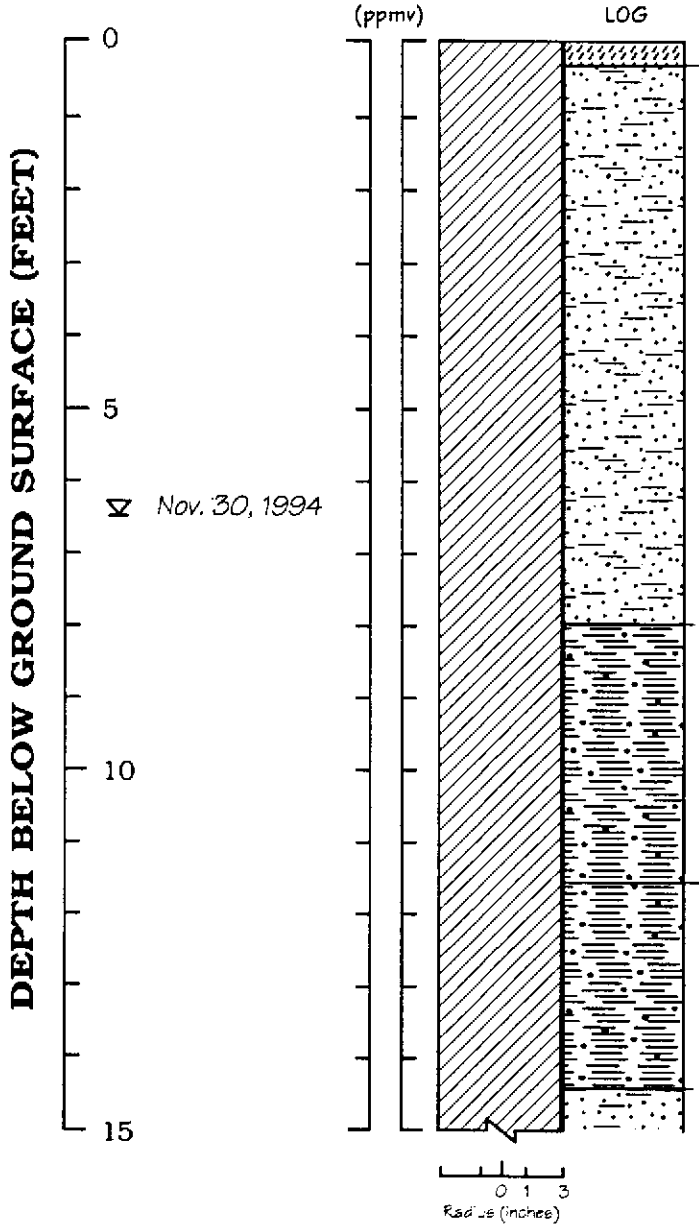


Boring Log – Boring B-12

Normandy Associates
Telegraph Business Park
5427 Telegraph Avenue Oakland, California

BORING B-13

SIERRA



3" Asphalt

Clayey SAND (SC): dark brown; moist; dense; ~15% clay; ~10% silt; ~75% fine sand; very low est K

Sandy Lean CLAY with Gravel (CL): grayish green; wet; stiff; ~50% clay; ~10% silt; ~10% fine sand; ~30% subangular gravel to 1/2" diameter; very low est K

Sandy Lean CLAY (CL): greenish brown; wet; stiff; ~70% clay; ~10% silt; ~20% sand; very low est K

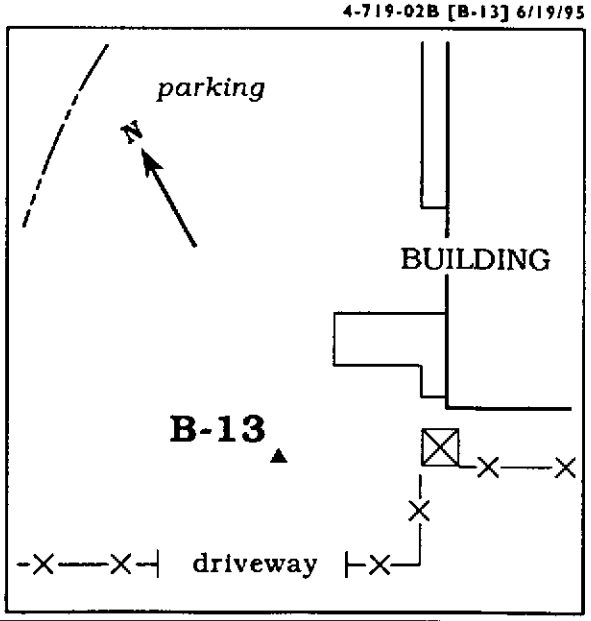
Clayey SAND (SM): light red; wet; medium dense; ~15% clay; ~10% silt; ~75% medium to coarse sand; very low est K

4-719-02B [B-13] 6/19/95

Boring Log - Boring B-13

Normandy Associates
Telegraph Business Park
5427 Telegraph Avenue
Oakland, California

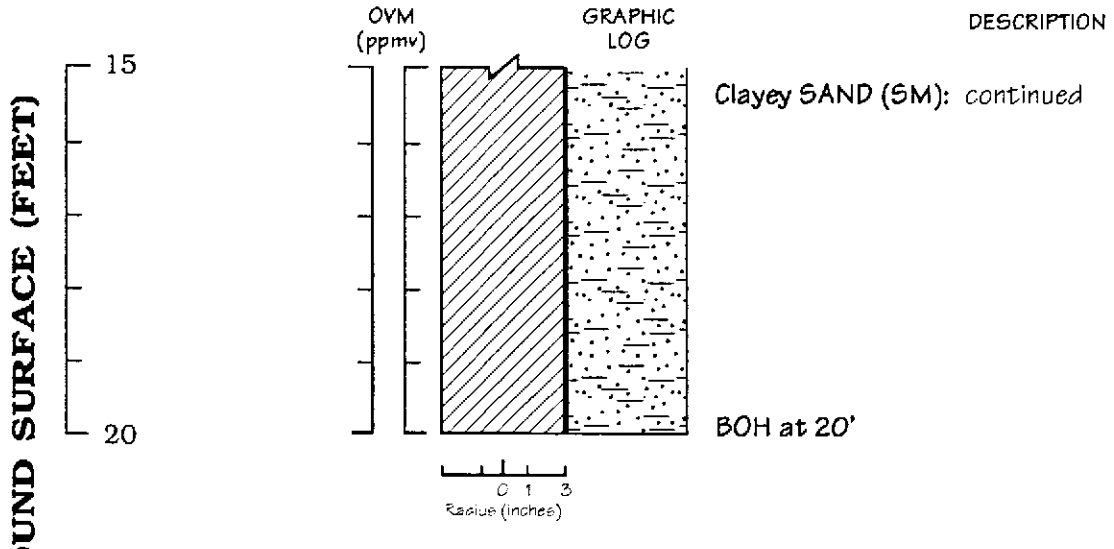
Logged By:	Jim Green
Supervisor:	C. Bramer P.E. #C48846
Drilling Company:	Gregg Drilling
C-57#:	485165
Driller:	Mike Branan
Drilling Method:	Hollow stem auger
Date Drilled:	November 30, 1994
Well Head Completion:	Grouted to surface
Type of Sampler:	Split barrel (2" ID)



BORING B-13

(continued)

SIERRA



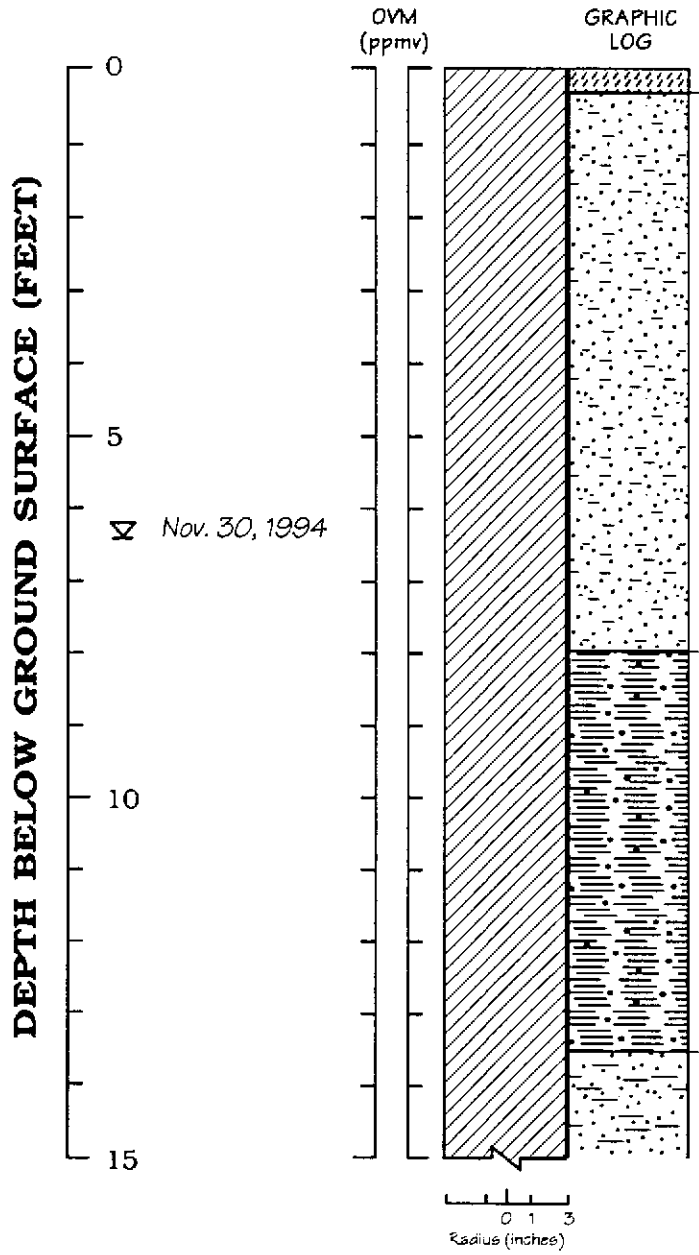
DEPTH BELOW GROUND SURFACE (FEET)

Boring Log – Boring B-13

Normandy Associates
Telegraph Business Park
5427 Telegraph Avenue Oakland, California

BORING B-14

SIERRA

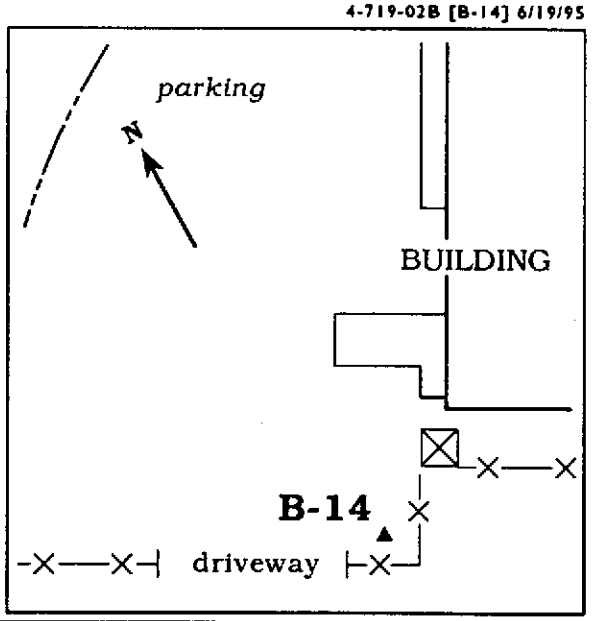


4-719-02B [B-14] 6/19/95

Boring Log - Boring B-14

Normandy Associates
Telegraph Business Park
5427 Telegraph Avenue
Oakland, California

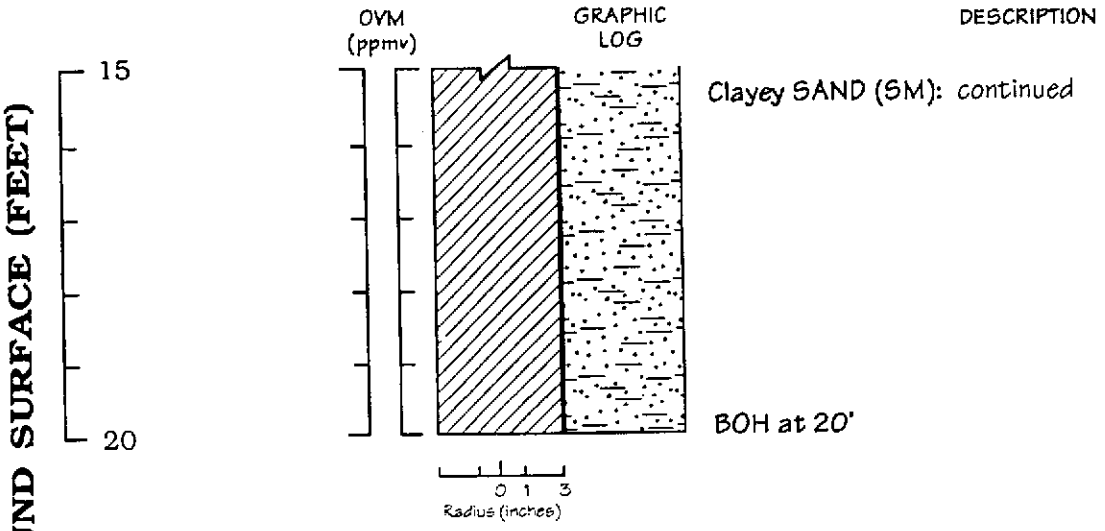
Logged By:	Jim Green
Supervisor:	C. Bramer P.E. #C48846
Drilling Company:	Gregg Drilling
C-57#:	485165
Driller:	Mike Branan
Drilling Method:	Hollow stem auger
Date Drilled:	November 30, 1994
Well Head Completion:	Grouted to surface
Type of Sampler:	Split barrel (2" ID)



BORING B-14

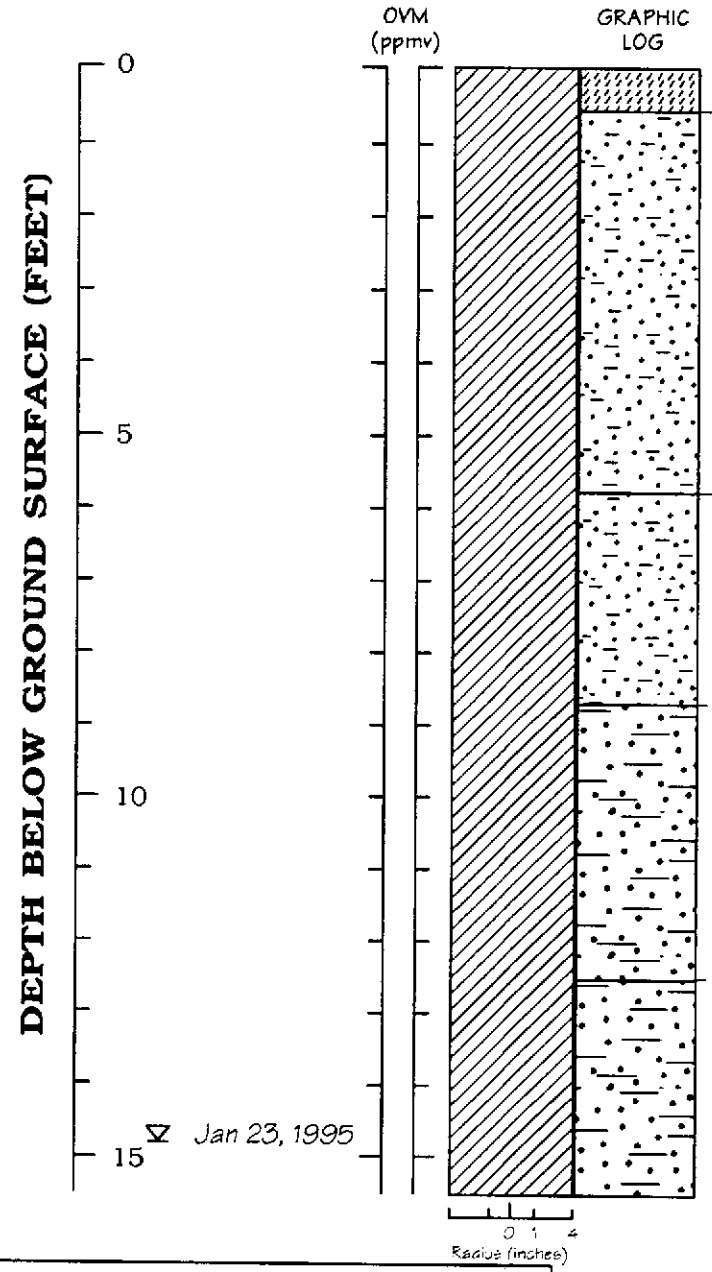
(continued)

SIERRA



BORING B-15

SIERRA



6" Asphalt

Silty SAND (SM): dark brown; loose to medium dense; moist; ~15% clay; ~30% silt; ~55% very fine sand; low est K

Silty SAND (SM): dark gray; medium dense; moist; ~10% clay; ~20% silt; ~70% very fine sand; low est K; slight hydrocarbon odor

Clayey SAND (SC): light gray mottled light yellow; loose to medium dense; wet; ~40% clay; ~10% silt; ~50% very fine sand; low est K

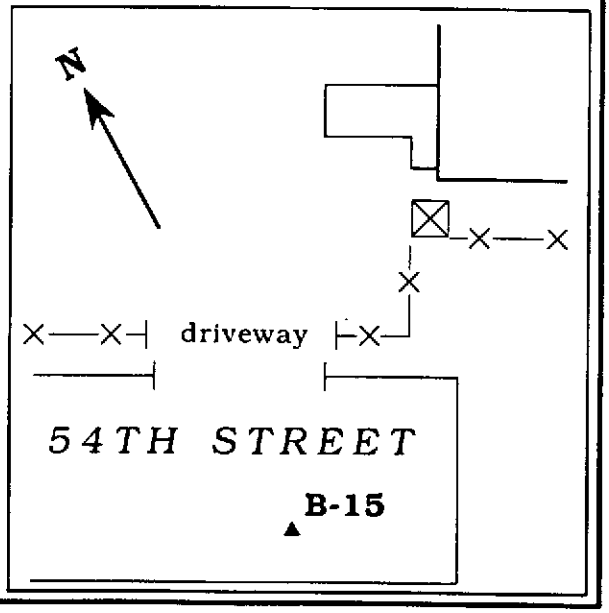
Clayey SAND with Gravel (SC): light brown mottled yellowish brown; medium dense; wet; ~30% clay; ~10% silt; ~30% very fine sand; ~30% fine, subrounded gravel to 1/2" diameter; low est K

BOH at 15.5'

Boring Log - Boring B-15

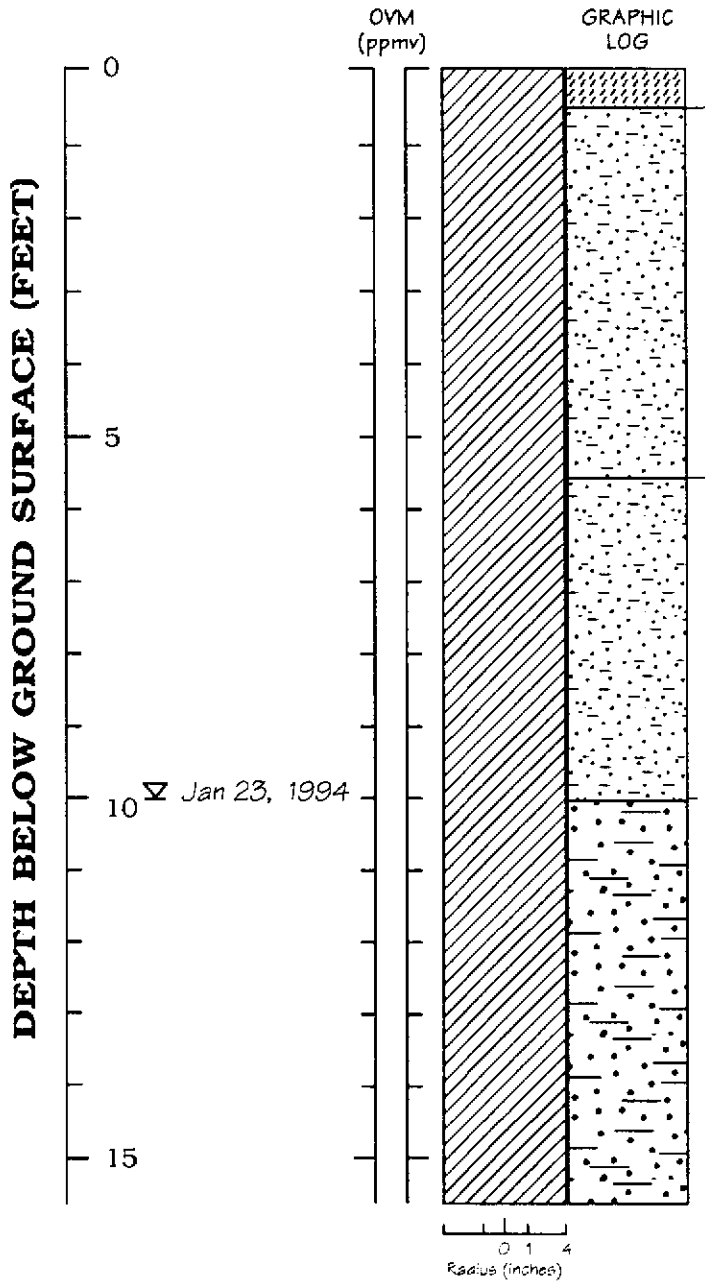
Telegraph Business Park
5427 Telegraph Avenue
Oakland, California

Logged By:	Jim Green
Supervisor:	C. Bramer P.E. #C48846
Drilling Company:	Gregg Drilling Services, Inc.
C-57#:	485165
Driller:	Marvin Hoover
Drilling Method:	Hollow stem auger
Date Drilled:	January 23, 1994
Well Head Completion:	Grouted to surface
Type of Sampler:	Split barrel (2" ID)



BORING B-16

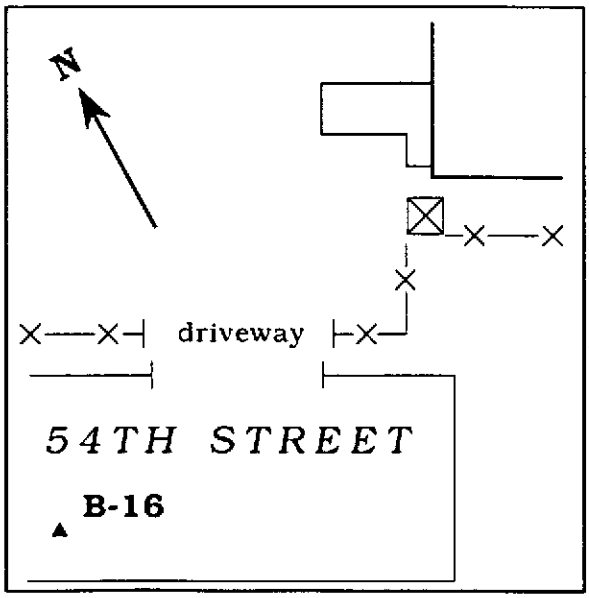
SIERRA



Boring Log – Boring B-16

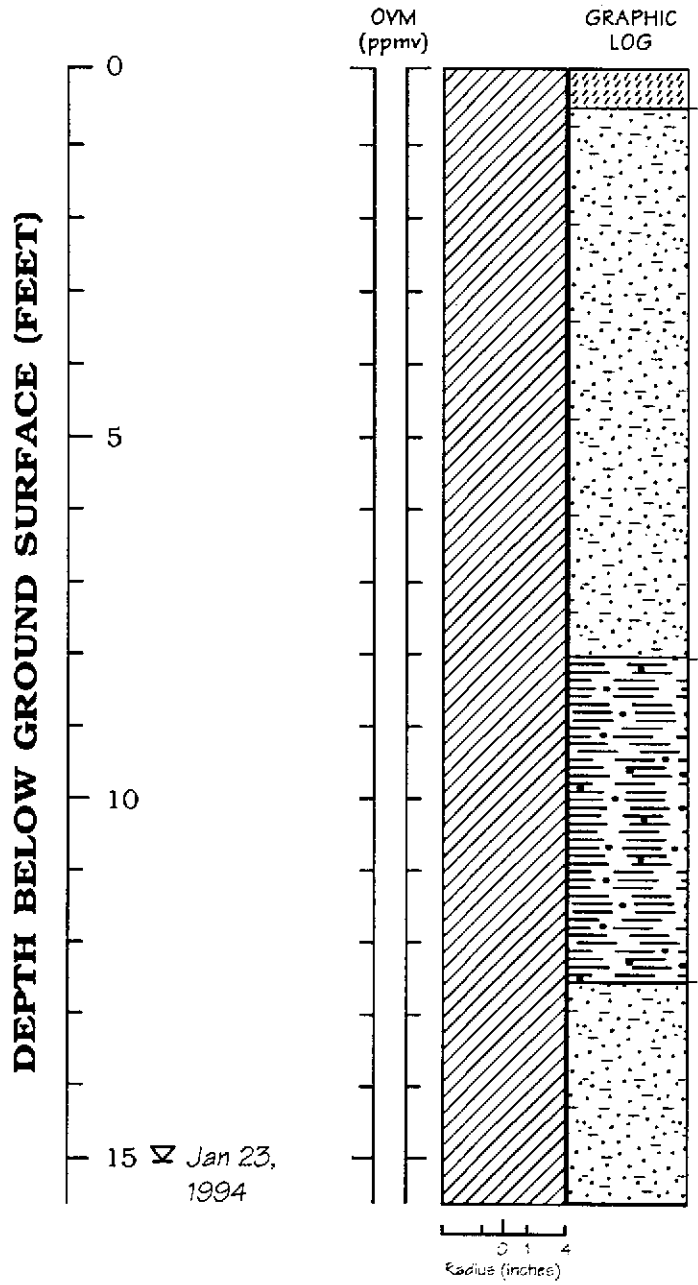
Telegraph Business Park
5427 Telegraph Avenue
Oakland, California

Logged By:	Jim Green
Supervisor:	C. Bramer P.E. #C48846
Drilling Company:	Gregg Drilling Services, Inc.
C-57#:	485165
Driller:	Marvin Hoover
Drilling Method:	Hollow stem auger
Date Drilled:	January 23, 1994
Well Head Completion:	Grouted to surface
Type of Sampler:	Split barrel (2" ID)



BORING B-17

SIERRA



6" Asphalt

Silty SAND (SM); dark brown; wet; medium dense; ~15% clay; ~25% silt; ~50% very fine sand; ~10% fine, subrounded gravel to 1/2" diameter; moderate est K

Sandy Fat CLAY (CH); yellowish gray; wet; firm; ~60% clay; ~10% silt; ~20% very fine to coarse sand; ~10% fine, subrounded gravel to 1/2" diameter; low est K

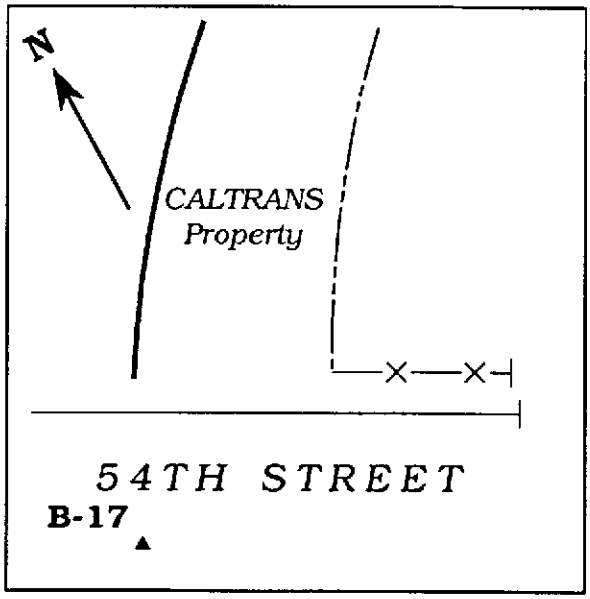
Silty SAND with Gravel (SM): brownish yellow mottled red; wet; medium dense; ~20% clay; ~10% silt; ~30% very fine to coarse sand; ~40% fine, subangular gravel to 3/4" diameter; low est K

BOH at 15.5'

Boring Log - Boring B-17

Telegraph Business Park
5427 Telegraph Avenue
Oakland, California

Logged By:	Jim Green
Supervisor:	C. Bramer P.E. #C48846
Drilling Company:	Gregg Drilling Services, Inc.
C-57#:	485165
Driller:	Marvin Hoover
Drilling Method:	Hollow stem auger
Date Drilled:	January 23, 1994
Well Head Completion:	Grouted to surface
Type of Sampler:	Split barrel (2" ID)



SIERRA

APPENDIX E
CHAIN OF CUSTODY DOCUMENTS AND
LABORATORY ANALYTIC REPORTS

Precision Analytical Laboratory, Inc.
4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Attn: Ed Morales
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Date Received: 12/01/94
Date Analyzed: 12/12/94
Date Reported: 12/12/94
Job #: 76455

Project: #4-719-02
Matrix: Water

Total Hydrocarbons Analysis
Standard Methods, 17th Edition, 5520 F
mg/L

Lab I.D.	Client I.D.	Total Hydrocarbons	MDL
76455-1	B-10	ND<10	10
76455-2	B-11	ND<10	10
76455-3	B-12	ND<10	10
76455-4	B-13	ND<10	10
76455-5	B-14	ND<10	10

QA/QC: Spike Recovery for Total Hydrocarbons: 90%

MDL: Method Detection Limit. Compound below this level would not be detected.

Jaime Chow
Laboratory Director

JC/dwc

Precision Analytical Laboratory, Inc.
4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Attn: Ed Morales
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Date Received: 12/01/94
Date Extracted: 12/06/94
Date Analyzed: 12/06/94
Date Reported: 12/12/94
Job #: 76455

Project: #4-719-02
Matrix: Water

Total Petroleum Hydrocarbon Analysis
DHS Extraction Method (LUFT)
mg/L

Lab I.D.	Client I.D.	Stoddard Range	MDL
76455-1	B-10	120	0.050
76455-2	B-11	0.21	0.050
76455-3	B-12	0.15	0.050
76455-4	B-13	0.22	0.050
76455-5	B-14	0.15	0.050
76455-MB	METHOD BLANK	ND<0.050	0.050

QA/QC: Matrix Spike Recovery for Stoddard: 79%
Matrix Spike Duplicate Recovery for Stoddard: 68%

MDL: Method Detection Limit. Compound below this level would not be detected.

Jaime Chow
Laboratory Director

JC/dwc

Precision Analytical Laboratory, Inc.
4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Attn: Ed Morales
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Date Received: 12/01/94
Date Analyzed: 12/05/94
Date Reported: 12/12/94
Job #: 76455

Project: #4-719-02
Matrix: Water

Aromatic Volatile Hydrocarbon Analysis
EPA Method 602
µg/L

Lab I.D.	Client I.D.	Benzene	MDL	Toluene	MDL
76455-1	B-10	ND<0.3	0.3	ND<0.3	0.3
76455-2	B-11	ND<0.3	0.3	ND<0.3	0.3
76455-3	B-12	ND<0.3	0.3	ND<0.3	0.3
76455-4	B-13	2.3	0.3	0.80	0.3
76455-5	B-14	ND<0.3	0.3	ND<0.3	0.3
76455-6	TB-LB	ND<0.3	0.3	ND<0.3	0.3
76455-7	BB	ND<0.3	0.3	ND<0.3	0.3

Lab I.D.	Client I.D.	Ethyl-benzene	MDL	Xylenes	MDL
76455-1	B-10	ND<0.3	0.3	ND<0.3	0.3
76455-2	B-11	ND<0.3	0.3	ND<0.3	0.3
76455-3	B-12	ND<0.3	0.3	ND<0.3	0.3
76455-4	B-13	ND<0.3	0.3	4.0	0.3
76455-5	B-14	ND<0.3	0.3	0.80	0.3
76455-6	TB-LB	ND<0.3	0.3	ND<0.3	0.3
76455-7	BB	ND<0.3	0.3	ND<0.3	0.3

QA/QC: Matrix Spike Recovery for Benzene: 79%
Matrix Spike Recovery for Toluene: 87%
Matrix Spike Recovery for Chlorobenzene: 92%

Matrix Spike Duplicate Recovery for Benzene: 82%
Matrix Spike Duplicate Recovery for Toluene: 90%
Matrix Spike Duplicate Recovery for Chlorobenzene: 96%

MDL: Method Detection Limit. Compound below this level would not be detected.

Jaime Chow
Laboratory Director

JC/dwc

Precision Analytical Laboratory, Inc.
4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Attn: Ed Morales
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Date Received: 12/01/94
Date Analyzed: 12/05/94
Date Reported: 12/12/94
Job #: 76455

Project: #4-719-02
Matrix: Water

EPA METHOD 8240
PURGEABLE ORGANICS
µg/L

Lab I.D.: 76455-1
Client I.D.: B-10

Compound	Concentration	Limit of Detection
Chloromethane	ND<2	2
Bromomethane	ND<2	2
Vinyl chloride	ND<2	2
Chloroethane	ND<4	4
Methylene chloride	ND<10	10
Trichlorofluoromethane	ND<3	3
1,1-dichloroethene	ND<2	2
1,1-dichloroethane	ND<3	3
Trans-1,2-dichloroethene	ND<3	3
Cis-1,2-dichloroethene	ND<3	3
Chloroform	ND<3	3
1,2-dichloroethane	ND<2	2
1,1,1-trichloroethane	ND<3	3
Carbon tetrachloride	ND<2	2
Bromodichloromethane	ND<3	3
1,2-dichloropropene	ND<2	2
Cis-1,3-dichloropropene	ND<3	3
Trichloroethene	ND<3	3
Benzene	ND<2	2
Dibromochloromethane	ND<4	4
1,1,2-trichloroethane	ND<3	3

ND = Not Detected

Jaime Chow
Laboratory Director

JC/dwc

Precision Analytical Laboratory, Inc.
4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

STATE LICENSE NO. 1150

Attn: Ed Morales
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Date Received: 12/01/94
Date Analyzed: 12/05/94
Date Reported: 12/12/94
Job #: 76455

Project: #4-719-02
Matrix: Water

EPA METHOD 8240
PURGEABLE ORGANICS
µg/L

Lab I.D.: 76455-1
Client I.D.: B-10

Compound	Concentration	Limit of Detection
Trans-1,3-dichloropropene	ND<3	3
2-chloroethyl vinyl ether	ND<3	3
Bromoform	ND<3	3
1,1,2,2-tetrachloroethane	ND<7	7
Tetrachloroethene	ND<2	2
Toluene	ND<2	2
Chlorobenzene	ND<3	3
Ethylbenzene	ND<3	3
1,3-Dichlorobenzene	ND<4	4
1,2-Dichlorobenzene	ND<4	4
1,4-Dichlorobenzene	ND<4	4
Freon 113	ND<3	3
M + P Xylene	ND<6	6
o-Xylene	ND<4	4
Acetone	ND<20	20
Carbon Disulfide	ND<3	3
4-Methyl-2-Pentanone	ND<20	20
2-Hexanone	ND<10	10
Styrene	ND<4	4
2-Butanone	ND<50	50
Vinyl Acetate	ND<10	10
Acrylonitrile	ND<10	10
Acrolein	ND<50	50

Precision Analytical Laboratory, Inc.
4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Attn: Ed Morales
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Date Received: 12/01/94
Date Analyzed: 12/05/94
Date Reported: 12/12/94
Job #: 76455

Project: #4-719-02
Matrix: Water

EPA METHOD 8240
PURGEABLE ORGANICS
µg/L

Lab I.D.: 76455-2
Client I.D.: B-11

Compound	Concentration	Limit of Detection
Chloromethane	ND<2	2
Bromomethane	ND<2	2
Vinyl chloride	ND<2	2
Chloroethane	ND<4	4
Methylene chloride	ND<10	10
Trichlorofluoromethane	ND<3	3
1,1-dichloroethene	ND<2	2
1,1-dichloroethane	ND<3	3
Trans-1,2-dichloroethene	ND<3	3
Cis-1,2-dichloroethene	ND<3	3
Chloroform	ND<3	3
1,2-dichloroethane	ND<2	2
1,1,1-trichloroethane	ND<3	3
Carbon tetrachloride	ND<2	2
Bromodichloromethane	ND<3	3
1,2-dichloropropene	ND<2	2
Cis-1,3-dichloropropene	ND<3	3
Trichloroethene	ND<3	3
Benzene	ND<2	2
Dibromochloromethane	ND<4	4
1,1,2-trichloroethane	ND<3	3

ND = Not Detected

Jaime Chow
Laboratory Director

JC/dwc

Precision Analytical Laboratory, Inc.
4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

STATE LICENSE NO. 1150

Attn: Ed Morales
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Date Received: 12/01/94
Date Analyzed: 12/05/94
Date Reported: 12/12/94
Job #: 76455

Project: #4-719-02
Matrix: Water

EPA METHOD 8240
PURGEABLE ORGANICS
µg/L

Lab I.D.: 76455-2
Client I.D.: B-11

Compound	Concentration	Limit of Detection
Trans-1,3-dichloropropene	ND<3	3
2-chloroethyl vinyl ether	ND<3	3
Bromoform	ND<3	3
1,1,2,2-tetrachloroethane	ND<7	7
Tetrachloroethene	ND<2	2
Toluene	ND<2	2
Chlorobenzene	ND<3	3
Ethylbenzene	ND<3	3
1,3-Dichlorobenzene	ND<4	4
1,2-Dichlorobenzene	ND<4	4
1,4-Dichlorobenzene	ND<4	4
Freon 113	ND<3	3
M + P Xylene	ND<6	6
o-Xylene	ND<4	4
Acetone	ND<20	20
Carbon Disulfide	ND<3	3
4-Methyl-2-Pentanone	ND<20	20
2-Hexanone	ND<10	10
Styrene	ND<4	4
2-Butanone	ND<50	50
Vinyl Acetate	ND<10	10
Acrylonitrile	ND<10	10
Acrolein	ND<50	50

Precision Analytical Laboratory, Inc.
4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Attn: Ed Morales
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Date Received: 12/01/94
Date Analyzed: 12/05/94
Date Reported: 12/12/94
Job #: 76455

Project: #4-719-02
Matrix: Water

EPA METHOD 8240
PURGEABLE ORGANICS
µg/L

Lab I.D.: 76455-3
Client I.D.: B-12

Compound	Concentration	Limit of Detection
Chloromethane	ND<2	2
Bromomethane	ND<2	2
Vinyl chloride	ND<2	2
Chloroethane	ND<4	4
Methylene chloride	ND<10	10
Trichlorofluoromethane	ND<3	3
1,1-dichloroethene	ND<2	2
1,1-dichloroethane	ND<3	3
Trans-1,2-dichloroethene	ND<3	3
Cis-1,2-dichloroethene	ND<3	3
Chloroform	ND<3	3
1,2-dichloroethane	ND<2	2
1,1,1-trichloroethane	ND<3	3
Carbon tetrachloride	ND<2	2
Bromodichloromethane	ND<3	3
1,2-dichloropropene	ND<2	2
Cis-1,3-dichloropropene	ND<3	3
Trichloroethene	ND<3	3
Benzene	ND<2	2
Dibromochloromethane	ND<4	4
1,1,2-trichloroethane	ND<3	3

ND = Not Detected

Jaime Chow
Laboratory Director

JC/dwc

Precision Analytical Laboratory, Inc.
4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

STATE LICENSE NO. 1150

Attn: Ed Morales
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Date Received: 12/01/94
Date Analyzed: 12/05/94
Date Reported: 12/12/94
Job #: 76455

Project: #4-719-02
Matrix: Water

EPA METHOD 8240
PURGEABLE ORGANICS
µg/L

Lab I.D.: 76455-3
Client I.D.: B-12

Compound	Concentration	Limit of Detection
Trans-1,3-dichloropropene	ND<3	3
2-chloroethyl vinyl ether	ND<3	3
Bromoform	ND<3	3
1,1,2,2-tetrachloroethane	ND<7	7
Tetrachloroethene	ND<2	2
Toluene	ND<2	2
Chlorobenzene	ND<3	3
Ethylbenzene	ND<3	3
1,3-Dichlorobenzene	ND<4	4
1,2-Dichlorobenzene	ND<4	4
1,4-Dichlorobenzene	ND<4	4
Freon 113	ND<3	3
M + P Xylene	ND<6	6
o-Xylene	ND<4	4
Acetone	ND<20	20
Carbon Disulfide	ND<3	3
4-Methyl-2-Pentanone	ND<20	20
2-Hexanone	ND<10	10
Styrene	ND<4	4
2-Butanone	ND<50	50
Vinyl Acetate	ND<10	10
Acrylonitrile	ND<10	10
Acrolein	ND<50	50

Precision Analytical Laboratory, Inc.
4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Attn: Ed Morales
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Date Received: 12/01/94
Date Analyzed: 12/05/94
Date Reported: 12/12/94
Job #: 76455

Project: #4-719-02
Matrix: Water

EPA METHOD 8240
PURGEABLE ORGANICS
µg/L

Lab I.D.: 76455-4
Client I.D.: B-13

Compound	Concentration	Limit of Detection
Chloromethane	ND<2	2
Bromomethane	ND<2	2
Vinyl chloride	430	2
Chloroethane	ND<4	4
Methylene chloride	ND<10	10
Trichlorofluoromethane	ND<3	3
1,1-dichloroethene	ND<2	2
1,1-dichloroethane	32	3
Trans-1,2-dichloroethene	7.9	3
Cis-1,2-dichloroethene	810	3
Chloroform	ND<3	3
1,2-dichloroethane	ND<2	2
1,1,1-trichloroethane	ND<3	3
Carbon tetrachloride	ND<2	2
Bromodichloromethane	ND<3	3
1,2-dichloropropene	ND<2	2
Cis-1,3-dichloropropene	ND<3	3
Trichloroethene	340	3
Benzene	ND<2	2
Dibromochloromethane	ND<4	4
1,1,2-trichloroethane	ND<3	3

ND = Not Detected

Jaime Chow
Laboratory Director

JC/dwc

Precision Analytical Laboratory, Inc.
4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

STATE LICENSE NO. 1150

Attn: Ed Morales
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Date Received: 12/01/94
Date Analyzed: 12/05/94
Date Reported: 12/12/94
Job #: 76455

Project: #4-719-02
Matrix: Water

EPA METHOD 8240
PURGEABLE ORGANICS
µg/L

Lab I.D.: 76455-4
Client I.D.: B-13

Compound	Concentration	Limit of Detection
Trans-1,3-dichloropropene	ND<3	3
2-chloroethyl vinyl ether	ND<3	3
Bromoform	ND<3	3
1,1,2,2-tetrachloroethane	ND<7	7
Tetrachloroethene	360	2
Toluene	ND<2	2
Chlorobenzene	ND<3	3
Ethylbenzene	ND<3	3
1,3-Dichlorobenzene	ND<4	4
1,2-Dichlorobenzene	ND<4	4
1,4-Dichlorobenzene	ND<4	4
Freon 113	ND<3	3
M + P Xylene	ND<6	6
o-Xylene	ND<4	4
Acetone	ND<20	20
Carbon Disulfide	ND<3	3
4-Methyl-2-Pentanone	ND<20	20
2-Hexanone	ND<10	10
Styrene	ND<4	4
2-Butanone	ND<50	50
Vinyl Acetate	ND<10	10
Acrylonitrile	ND<10	10
Acrolein	ND<50	50

Precision Analytical Laboratory, Inc.
4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Attn: Ed Morales
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Date Received: 12/01/94
Date Analyzed: 12/05/94
Date Reported: 12/12/94
Job #: 76455

Project: #4-719-02
Matrix: Water

EPA METHOD 8240
PURGEABLE ORGANICS
µg/L

Lab I.D.: 76455-5
Client I.D.: B-14

Compound	Concentration	Limit of Detection
Chloromethane	ND<2	2
Bromomethane	ND<2	2
Vinyl chloride	ND<2	2
Chloroethane	ND<4	4
Methylene chloride	ND<10	10
Trichlorofluoromethane	ND<3	3
1,1-dichloroethene	ND<2	2
1,1-dichloroethane	12	3
Trans-1,2-dichloroethene	ND<3	3
Cis-1,2-dichloroethene	35	3
Chloroform	ND<3	3
1,2-dichloroethane	ND<2	2
1,1,1-trichloroethane	ND<3	3
Carbon tetrachloride	ND<2	2
Bromodichloromethane	ND<3	3
1,2-dichloropropene	ND<2	2
Cis-1,3-dichloropropene	ND<3	3
Trichloroethene	21	3
Benzene	ND<2	2
Dibromochloromethane	ND<4	4
1,1,2-trichloroethane	ND<3	3

ND = Not Detected

Jaime Chow
Laboratory Director

JC/dwc

Precision Analytical Laboratory, Inc.
4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

STATE LICENSE NO. 1150

Attn: Ed Morales
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Date Received: 12/01/94
Date Analyzed: 12/05/94
Date Reported: 12/12/94
Job #: 76455

Project: #4-719-02
Matrix: Water

EPA METHOD 8240
PURGEABLE ORGANICS
µg/L

Lab I.D.: 76455-5
Client I.D.: B-14

Compound	Concentration	Limit of Detection
Trans-1,3-dichloropropene	ND<3	3
2-chloroethyl vinyl ether	ND<3	3
Bromoform	ND<3	3
1,1,2,2-tetrachloroethane	ND<7	7
Tetrachloroethene	59	2
Toluene	ND<2	2
Chlorobenzene	ND<3	3
Ethylbenzene	ND<3	3
1,3-Dichlorobenzene	ND<4	4
1,2-Dichlorobenzene	ND<4	4
1,4-Dichlorobenzene	ND<4	4
Freon 113	ND<3	3
M + P Xylene	ND<6	6
o-Xylene	ND<4	4
Acetone	ND<20	20
Carbon Disulfide	ND<3	3
4-Methyl-2-Pentanone	ND<20	20
2-Hexanone	ND<10	10
Styrene	ND<4	4
2-Butanone	ND<50	50
Vinyl Acetate	ND<10	10
Acrylonitrile	ND<10	10
Acrolein	ND<50	50

Precision Analytical Laboratory, Inc.
4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Attn: Ed Morales
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Date Received: 12/01/94
Date Analyzed: 12/05/94
Date Reported: 12/12/94
Job #: 76455

Project: #4-719-02
Matrix: Water

EPA METHOD 8240
PURGEABLE ORGANICS
µg/L

Lab I.D.: 76455-MB
Client I.D.: METHOD BLANK

Compound	Concentration	Limit of Detection
Chloromethane	ND<2	2
Bromomethane	ND<2	2
Vinyl chloride	ND<2	2
Chloroethane	ND<4	4
Methylene chloride	ND<10	10
Trichlorofluoromethane	ND<3	3
1,1-dichloroethene	ND<2	2
1,1-dichloroethane	ND<3	3
Trans-1,2-dichloroethene	ND<3	3
Cis-1,2-dichloroethene	ND<3	3
Chloroform	ND<3	3
1,2-dichloroethane	ND<2	2
1,1,1-trichloroethane	ND<3	3
Carbon tetrachloride	ND<2	2
Bromodichloromethane	ND<3	3
1,2-dichloropropene	ND<2	2
Cis-1,3-dichloropropene	ND<3	3
Trichloroethene	ND<3	3
Benzene	ND<2	2
Dibromochloromethane	ND<4	4
1,1,2-trichloroethane	ND<3	3

ND = Not Detected

Jaime Chow
Laboratory Director

JC/dwc

Precision Analytical Laboratory, Inc.
4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

STATE LICENSE NO. 1150

Attn: Ed Morales
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Date Received: 12/01/94
Date Analyzed: 12/05/94
Date Reported: 12/12/94
Job #: 76455

Project: #4-719-02
Matrix: Water

EPA METHOD 8240
PURGEABLE ORGANICS
µg/L

Lab I.D.: 76455-MB
Client I.D.: METHOD BLANK

Compound	Concentration	Limit of Detection
Trans-1,3-dichloropropene	ND<3	3
2-chloroethyl vinyl ether	ND<3	3
Bromoform	ND<3	3
1,1,2,2-tetrachloroethane	ND<7	7
Tetrachloroethene	ND<2	2
Toluene	ND<2	2
Chlorobenzene	ND<3	3
Ethylbenzene	ND<3	3
1,3-Dichlorobenzene	ND<4	4
1,2-Dichlorobenzene	ND<4	4
1,4-Dichlorobenzene	ND<4	4
Freon 113	ND<3	3
M + P Xylene	ND<6	6
o-Xylene	ND<4	4
Acetone	ND<20	20
Carbon Disulfide	ND<3	3
4-Methyl-2-Pentanone	ND<20	20
2-Hexanone	ND<10	10
Styrene	ND<4	4
2-Butanone	ND<50	50
Vinyl Acetate	ND<10	10
Acrylonitrile	ND<10	10
Acrolein	ND<50	50

Chain-of-Custody Record

Facility No. N.A.
Facility Address 5427 Telegraph Ave, Oakland
Consultant Project Number 4-719.02
Consultant Name SIERRA ENVIRONMENTAL SERVICES
Address P.O. Box 2546, Martinez, CA 94553
Project Contact (Name) Jim Green / Ed Morales
(Phone) (510) 370-1280
(FAX Number) (510) 370-7959

Client Contact (Name) John Legallet
(Company) Normandy Assoc.
(Phone)
Laboratory Name Precisison
Samples Collected by (Name) Jim Green
Collection Date 11/30/94
Signature J. Green

Laboratory Number	Sample Identification	# - size of Container(s)	Matrix S = Soil W = Water A = Air C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (yes or no)	ANALYSIS TO BE PERFORMED: BTEX + TPH Standard (602/8020 + 8015/5030)	TPH Diesel (8015/3550/3510)	Oil and Grease (Non-polar) (5520 B/E/F)	Halogenated Hydrocarbons (601/8010)	Volatile Organic Compounds (624/8240)	Total Lead (AA)	Metals: Cd, Cr, Ni, Pb, Zn (ICAP or AA)	Organic lead (DHS LUFT)	Hydrocarbons by SS20		Remarks
~~B-10~~	B-10	3	W	G	12:40	HCL	Y	✓				✓						B.11 Direct to
	!	1				H_2SO_4										✓		John Legallet
	B-11	3			1:30	HCL		✓				✓						
	↓	1				H_2SO_4										✓		
	B-12	3			1:15	HCL		✓				✓						
	↓	1				H_2SO_4										✓		
	B-13	3			1:00	HCL		✓				✓						
	↓	1				H_2SO_4										✓		
	B-14	3			12:50	HCL		✓				✓						
	↓	1	↓	↓		H_2SO_4	↓									✓		
	TB-LB	2	↓	↓		HCL	↓	✓										
	BB	3	↓	↓		HCL		✓										

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	Turn Around Time (Circle One)
J. Green	SES	12/1/94 11:45AM	Kirk Winters	P.A.L.I	12-1-94 11:45AM	24 hours
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	48 hours
						5 days
Relinquished By (Signature)	Organization	Date/Time	Received for Laboratory by (Signature)		Date/Time	(10 days)
						As Contracted

Precision Analytical Laboratory, Inc.
4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Attn: Ed Morales
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Date Received: 01/24/95
Date Analyzed: 02/03/95
Date Reported: 02/07/95
Job #: 76601

Project: #4-719-02A
Matrix: Water

Total Petroleum Hydrocarbon Analysis
EPA Method 5030
µg/L

Lab I.D.	Client I.D.	Stoddard Gas Range	MDL
76601-1	B-15	9,100	500
76601-2	B-16	52 *	50
76601-3	B-17	ND<50	50
76601-4	TB-LB	ND<50	50
76601-5	BB	ND<50	50

*** Stoddard Gas Range hydrocarbon does not match with Stoddard Gas standard.**

QA/QC: Matrix Spike Recovery for Stoddard: 99%
Matrix Spike Duplicate Recovery for Stoddard: 80%

MDL: Method Detection Limit. Compound below this level would not be detected.

Surinder Sidhu (For)
Jaime Chow
Laboratory Director

JC/dwc

Precision Analytical Laboratory, Inc.
4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Attn: Ed Morales
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Date Received: 01/24/95
Date Analyzed: 01/31/95
Date Reported: 02/07/95
Job #: 76601

Project: #4-719-02A
Matrix: Water

Total Hydrocarbons Analysis
Standard Methods, 17th Edition, 5520 F
mg/L

Lab I.D.	Client I.D.	Total Hydrocarbons	MDL
76601-1	B-15	ND<10	10
76601-2	B-16	ND<13	13
76601-3	B-17	ND<10	10

QA/QC: Spike Recovery for Total Hydrocarbons: 88%

MDL: Method Detection Limit. Compound below this level would not be detected.

Surinder Sidhu (For)
Jaime Chow
Laboratory Director

JC/dwc

Precision Analytical Laboratory, Inc.
4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Attn: Ed Morales
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Date Received: 01/24/95
Date Analyzed: 01/25/95
Date Reported: 02/07/95
Job #: 76601

Project: #4-719-02A
Matrix: Water

Aromatic Volatile Hydrocarbon Analysis
EPA Method 602
µg/L

Lab I.D.	Client I.D.	Benzene	MDL	Toluene	MDL
76601-1	B-15	40	3.0	ND<3.0	3.0
76601-2	B-16	ND<0.3	0.3	ND<0.3	0.3
76601-3	B-17	ND<0.3	0.3	ND<0.3	0.3
76601-4	TB-LB	ND<0.3	0.3	ND<0.3	0.3
76601-5	BB	ND<0.3	0.3	ND<0.3	0.3

Lab I.D.	Client I.D.	Ethyl-benzene	MDL	Xylenes	MDL
76601-1	B-15	60	3.0	ND<3.0	3.0
76601-2	B-16	ND<0.3	0.3	1.3	0.3
76601-3	B-17	ND<0.3	0.3	ND<0.3	0.3
76601-4	TB-LB	ND<0.3	0.3	ND<0.3	0.3
76601-5	BB	ND<0.3	0.3	ND<0.3	0.3

QA/QC: Matrix Spike Recovery for Benzene: 89%
Matrix Spike Recovery for Toluene: 106%
Matrix Spike Recovery for Chlorobenzene: 110%

Matrix Spike Duplicate Recovery for Benzene: 96%
Matrix Spike Duplicate Recovery for Toluene: 102%
Matrix Spike Duplicate Recovery for Chlorobenzene: 105%

MDL: Method Detection Limit. Compound below this level would not be detected.

Surinder Sidhu (for)
Jaime Chow
Laboratory Director

JC/dwc

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Attn: Ed Morales
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Date Received: 01/24/95
Date Analyzed: 01/30/95
Date Reported: 02/07/95
Job #: 76601

Project: #4-719-02A
Matrix: Water

EPA METHOD 8240
PURGEABLE ORGANICS
µg/L

Lab I.D.: 76601-1
Client I.D.: B-15

Compound	Concentration	Limit of Detection
Chloromethane	ND<2	2
Bromomethane	ND<2	2
Vinyl chloride	ND<2	2
Chloroethane	ND<4	4
Methylene chloride	ND<10	10
Trichlorofluoromethane	ND<3	3
1,1-dichloroethene	ND<2	2
1,1-dichloroethane	ND<3	3
Trans-1,2-dichloroethene	ND<3	3
Cis-1,2-dichloroethene	ND<3	3
Chloroform	ND<3	3
1,2-dichloroethane	ND<2	2
1,1,1-trichloroethane	ND<3	3
Carbon tetrachloride	ND<2	2
Bromodichloromethane	ND<3	3
1,2-dichloropropene	ND<2	2
Cis-1,3-dichloropropene	ND<3	3
Trichloroethene	ND<3	3
Benzene	44	2
Dibromochloromethane	ND<4	4
1,1,2-trichloroethane	ND<3	3

ND = Not Detected

Surinder Sidhu (for)
Jaime Chow
Laboratory Director

JC/dwc

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

STATE LICENSE NO. 1150

Attn: Ed Morales
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Date Received: 01/24/95
Date Analyzed: 01/30/95
Date Reported: 02/07/95
Job #: 76601

Project: #4-719-02A
Matrix: Water

EPA METHOD 8240
PURGEABLE ORGANICS
µg/L

Lab I.D.: 76601-1
Client I.D.: B-15

Compound	Concentration	Limit of Detection
Trans-1,3-dichloropropene	ND<3	3
2-chloroethyl vinyl ether	ND<3	3
Bromoform	ND<3	3
1,1,2,2-tetrachloroethane	ND<7	7
Tetrachloroethene	ND<2	2
Toluene	ND<2	2
Chlorobenzene	ND<3	3
Ethylbenzene	74	3
1,3-Dichlorobenzene	ND<4	4
1,2-Dichlorobenzene	ND<4	4
1,4-Dichlorobenzene	ND<4	4
Freon 113	ND<3	3
M + P Xylene	ND<6	6
o-Xylene	ND<4	4
Acetone	ND<20	20
Carbon Disulfide	ND<3	3
4-Methyl-2-Pentanone	ND<20	20
2-Hexanone	ND<10	10
Styrene	ND<4	4
2-Butanone	ND<50	50
Vinyl Acetate	ND<10	10
Acrylonitrile	ND<10	10
Acrolein	ND<50	50

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Attn: Ed Morales
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Date Received: 01/24/95
Date Analyzed: 01/30/95
Date Reported: 02/07/95
Job #: 76601

Project: #4-719-02A
Matrix: Water

EPA METHOD 8240
PURGEABLE ORGANICS
µg/L

Lab I.D.: 76601-2
Client I.D.: B-16

Compound	Concentration	Limit of Detection
Chloromethane	ND<2	2
Bromomethane	ND<2	2
Vinyl chloride	ND<2	2
Chloroethane	ND<4	4
Methylene chloride	ND<10	10
Trichlorofluoromethane	ND<3	3
1,1-dichloroethene	ND<2	2
1,1-dichloroethane	ND<3	3
Trans-1,2-dichloroethene	ND<3	3
Cis-1,2-dichloroethene	ND<3	3
Chloroform	ND<3	3
1,2-dichloroethane	ND<2	2
1,1,1-trichloroethane	ND<3	3
Carbon tetrachloride	ND<2	2
Bromodichloromethane	ND<3	3
1,2-dichloropropene	ND<2	2
Cis-1,3-dichloropropene	ND<3	3
Trichloroethene	8	3
Benzene	ND<2	2
Dibromochloromethane	ND<4	4
1,1,2-trichloroethane	ND<3	3

ND = Not Detected

Surinder Sidhu (for)
Jaime Chow
Laboratory Director

JC/dwc

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

STATE LICENSE NO. 1150

Attn: Ed Morales
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Date Received: 01/24/95
Date Analyzed: 01/30/95
Date Reported: 02/07/95
Job #: 76601

Project: #4-719-02A
Matrix: Water

EPA METHOD 8240
PURGEABLE ORGANICS
µg/L

Lab I.D.: 76601-2
Client I.D.: B-16

Compound	Concentration	Limit of Detection
Trans-1,3-dichloropropene	ND<3	3
2-chloroethyl vinyl ether	ND<3	3
Bromoform	ND<3	3
1,1,2,2-tetrachloroethane	ND<7	7
Tetrachloroethene	290	2
Toluene	ND<2	2
Chlorobenzene	ND<3	3
Ethylbenzene	ND<3	3
1,3-Dichlorobenzene	ND<4	4
1,2-Dichlorobenzene	ND<4	4
1,4-Dichlorobenzene	ND<4	4
Freon 113	ND<3	3
M + P Xylene	ND<6	6
o-Xylene	ND<4	4
Acetone	ND<20	20
Carbon Disulfide	ND<3	3
4-Methyl-2-Pentanone	ND<20	20
2-Hexanone	ND<10	10
Styrene	ND<4	4
2-Butanone	ND<50	50
Vinyl Acetate	ND<10	10
Acrylonitrile	ND<10	10
Acrolein	ND<50	50

Precision Analytical Laboratory, Inc.
4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Attn: Ed Morales
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Date Received: 01/24/95
Date Analyzed: 01/30/95
Date Reported: 02/07/95
Job #: 76601

Project: #4-719-02A
Matrix: Water

EPA METHOD 8240
PURGEABLE ORGANICS
µg/L

Lab I.D.: 76601-3
Client I.D.: B-17

Compound	Concentration	Limit of Detection
Chloromethane	ND<2	2
Bromomethane	ND<2	2
Vinyl chloride	ND<2	2
Chloroethane	ND<4	4
Methylene chloride	ND<10	10
Trichlorofluoromethane	ND<3	3
1,1-dichloroethene	ND<2	2
1,1-dichloroethane	ND<3	3
Trans-1,2-dichloroethene	ND<3	3
Cis-1,2-dichloroethene	14	3
Chloroform	ND<3	3
1,2-dichloroethane	ND<2	2
1,1,1-trichloroethane	ND<3	3
Carbon tetrachloride	ND<2	2
Bromodichloromethane	ND<3	3
1,2-dichloropropene	ND<2	2
Cis-1,3-dichloropropene	ND<3	3
Trichloroethene	13	3
Benzene	ND<2	2
Dibromochloromethane	ND<4	4
1,1,2-trichloroethane	ND<3	3

ND = Not Detected

Surinder Sidhu (For)
Jaime Chow
Laboratory Director

JC/dwc

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

STATE LICENSE NO. 1150

Attn: Ed Morales
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Date Received: 01/24/95
Date Analyzed: 01/30/95
Date Reported: 02/07/95
Job #: 76601

Project: #4-719-02A
Matrix: Water

EPA METHOD 8240
PURGEABLE ORGANICS
µg/L

Lab I.D.: 76601-3
Client I.D.: B-17

Compound	Concentration	Limit of Detection
Trans-1,3-dichloropropene	ND<3	3
2-chloroethyl vinyl ether	ND<3	3
Bromoform	ND<3	3
1,1,2,2-tetrachloroethane	ND<7	7
Tetrachloroethene	53	2
Toluene	ND<2	2
Chlorobenzene	ND<3	3
Ethylbenzene	ND<3	3
1,3-Dichlorobenzene	ND<4	4
1,2-Dichlorobenzene	ND<4	4
1,4-Dichlorobenzene	ND<4	4
Freon 113	ND<3	3
M + P Xylene	ND<6	6
o-Xylene	ND<4	4
Acetone	ND<20	20
Carbon Disulfide	ND<3	3
4-Methyl-2-Pentanone	ND<20	20
2-Hexanone	ND<10	10
Styrene	ND<4	4
2-Butanone	ND<50	50
Vinyl Acetate	ND<10	10
Acrylonitrile	ND<10	10
Acrolein	ND<50	50

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

CERTIFICATE OF ANALYSIS

STATE LICENSE NO. 1150

Attn: Ed Morales
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Date Received: 01/24/95
Date Analyzed: 01/30/95
Date Reported: 02/07/95
Job #: 76601

Project: #4-719-02A
Matrix: Water

EPA METHOD 8240
PURGEABLE ORGANICS
µg/L

Lab I.D.: 76601-MB
Client I.D.: METHOD BLANK

Compound	Concentration	Limit of Detection
Chloromethane	ND<2	2
Bromomethane	ND<2	2
Vinyl chloride	ND<2	2
Chloroethane	ND<4	4
Methylene chloride	ND<10	10
Trichlorofluoromethane	ND<3	3
1,1-dichloroethene	ND<2	2
1,1-dichloroethane	ND<3	3
Trans-1,2-dichloroethene	ND<3	3
Cis-1,2-dichloroethene	ND<3	3
Chloroform	ND<3	3
1,2-dichloroethane	ND<2	2
1,1,1-trichloroethane	ND<3	3
Carbon tetrachloride	ND<2	2
Bromodichloromethane	ND<3	3
1,2-dichloropropene	ND<2	2
Cis-1,3-dichloropropene	ND<3	3
Trichloroethene	ND<3	3
Benzene	ND<2	2
Dibromochloromethane	ND<4	4
1,1,2-trichloroethane	ND<3	3

ND = Not Detected

Surinder Sidhu (for)
Jaime Chow
Laboratory Director

JC/dwc

Precision Analytical Laboratory, Inc.

4136 LAKESIDE DRIVE, RICHMOND, CA 94806 PHONE (510) 222-3002 FAX (510) 222-1251

STATE LICENSE NO. 1150

Attn: Ed Morales
Sierra Environmental Services
P.O. Box 2546
Martinez, CA 94553

Date Received: 01/24/95
Date Analyzed: 01/30/95
Date Reported: 02/07/95
Job #: 76601

Project: #4-719-02A
Matrix: Water

EPA METHOD 8240
PURGEABLE ORGANICS
µg/L

Lab I.D.: 76601-MB
Client I.D.: METHOD BLANK

Compound	Concentration	Limit of Detection
Trans-1,3-dichloropropene	ND<3	3
2-chloroethyl vinyl ether	ND<3	3
Bromoform	ND<3	3
1,1,2,2-tetrachloroethane	ND<7	7
Tetrachloroethene	ND<2	2
Toluene	ND<2	2
Chlorobenzene	ND<3	3
Ethylbenzene	ND<3	3
1,3-Dichlorobenzene	ND<4	4
1,2-Dichlorobenzene	ND<4	4
1,4-Dichlorobenzene	ND<4	4
Freon 113	ND<3	3
M + P Xylene	ND<6	6
o-Xylene	ND<4	4
Acetone	ND<20	20
Carbon Disulfide	ND<3	3
4-Methyl-2-Pentanone	ND<20	20
2-Hexanone	ND<10	10
Styrene	ND<4	4
2-Butanone	ND<50	50
Vinyl Acetate	ND<10	10
Acrylonitrile	ND<10	10
Acrolein	ND<50	50

Chain-of-Custody Record

Facility No. N.A
Facility Address 5427 Telegraph Ave. Oakland
Consultant Project Number 4-719-02A
Consultant Name SIERRA ENVIRONMENTAL SERVICES
Address P.O. Box 2546, Martinez, CA 94553
Project Contact (Name) Jim Green / John Trigg
(Phone) (510) 370-1280
(FAX Number) (510) 370-7959

Client Contact (Name) John Legallet
(Company) Normandy Assoc
(Phone)
Laboratory Name Precision
Samples Collected by (Name) Jim Green
Collection Date 1/23/95
Signature Jim Green

Laboratory Number	Sample Identification	# - size of Container(s)	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (yes or no)	ANALYSIS TO BE PERFORMED: BTEX + TPH Gas (602/8020 + 8015/5030)	TPH Diesel (8015/3550/3510)	Oil and Grease (Non-polar) (5520 B/E/F)	Halogenated Hydrocarbons (601/8010)	Volatile Organic Compounds (624/8240)	Total Lead (AA)	Metals: Cd, Cr, Ni, Pb, Zn (ICAP or AA)	Organic lead (DHS LUFT)	Hydrocarbons by 5520	Remarks
	B-15	5	W	G	11:45	HCL	Y	✓				✓					Bill direct to John Legallet
		1				H_2SO_4										✓	
	B-16	5			11:15	HCL		✓				✓					
		1				H_2SO_4										✓	
	B-17	5			11:30	HCL		✓				✓					
		1	↓	↓		H_2SO_4	↓									✓	
	TB-LB	2	↓	↓		HCL		✓									
	BB	2	↓	↓	8:00	HCL		✓									

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
	SES	1/23/95 1600		SES	1/23/95 1600
	SES	1/24/95 0815	Donna Wojewski-Craig	PAL	1/24/95 8:15
Relinquished By (Signature)	Organization	Date/Time	Received for Laboratory by (Signature)		Date/Time

Turn Around Time (Circle One)
24 hours
48 hours
5 days
10 days
As Contracted