

Chevron U.S.A. Inc.

2410 Camino Ramon, San Ramon, California • Phone (415) 842-9500 Mail Address: P.O. Box 5004, San Ramon, CA 94583-0804

Marketing Operations D. Moller Division Manager, Operations S. L. Patterson Area Manager, Operations C. G. Trimbach Manager, Engineering

July 14, 1989

Dennis Byrne Alameda County Division of Environmental Health 470 27th Street, Room 324 Oakland, California 94612

Former Chevron Bulk Plant #1001067

1520 Powell Street Emeryville, California

Dear Mr. Byrne:

Enclosed are the results of the soil sampling conducted by Western Geologic Resources, Inc. (WGR) at the former Chevron Asphalt Plant. The scope of work included drilling 40 to 50 soil boring beneath and in the immediate vicinity of the former barrel platform at depths of 3 and 5 ft.

I declare under penalty of perjury that the information contained in the attached report is true and correct, and that any recommended actions are appropriate under the circumstances, to the best of my knowledge. If you have any questions or require additional information, please contact Lisa Marinaro at (415) 842-9527.

> Sincerely, D. Moller

Lisa Marinaro, Engineer

Tom Callaghan cc:

California Regional Water Quality Control Board 1111 Jackson Street Oakland, California 94607 WESTERN GEOLOGIC RESOURCES, INC.

2364c. FRANCISCO BOULEVARD, SUITE B SAN RAFAEL. CALIFORNIA 94901 415/457-7595 FAX: 415/457-8521

27 February 1989

Lisa Marinaro Chevron USA 2410 Camino Ramon San Ramon, CA 94583

> Re: Chevron Asphalt Plant 1520 Powell Street Emeryville, CA WGR Job# 1-045.02

Dear Ms. Marinaro:

This letter presents the results of soil sampling conducted by Western Geologic Resources, Inc. (WGR) at the former Chevron Asphalt Plant located at 1520 Powell Street in Emeryville California (Figures 1 and 2).

As requested the following scope of work was performed:

- Drill 40 to 50 soil borings beneath and in the immediate vicinity of the former barrel platform (Figure 2);
- Collect soil samples at 3 and 5 ft intervals and analyze the soil samples by EPA methods 8015/8020; and
- Review results and prepare a report.

BACKGROUND

- March 1985 9 groundwater monitoring wells installed by Harding Lawson Associates (HLA). Low levels of hydrocarbons detected in groundwater samples.
- October 1987 Above ground tanks and associated piping removed.
- July 1988 2 additional wells installed by HLA; soil sampling indicates hydrocarbons and trichloroethylene (TCE) present in soil. Hydrocarbons and other regulated compounds were present in water samples from some wells.

<u>August-September 1988</u> - Loading dock removed, additional piping removed.

SOIL BORINGS AND HYDROGEOLOGY

Barrel Storage Area

Twenty one soil borings were drilled with 6 in diameter solid flight stem augers by Exploration Geoservices on 7 September 1988. Borings were logged by WGR geologist Thomas Howard. Borings were spaced on 20 ft centers in a grid pattern across the former barrel platform. The WGR standard operating procedure for soil sampling is included in Attachment A. A lead auger was used to drill to 3 ft, then clean, 2-in split barrel samplers were advanced from 3 to 4.5 ft and from 4.5 to 6 ft for the purpose of collecting soil samples. For borings B-1 to B-20, one clean lead auger was used for each set of five borings which were grouped for compositing. The 2-in split barrel samplers were cleaned in a solution of Tri-Sodium-Phosphate (TSP) between sampling runs. Locations of these borings are shown in Figure 3.

The site is predominantly underlain by fill and bay mud (low estimated-permeability clayey silts and silty clays, with occasional sands). Groundwater was encountered in most borings at approximately 3.5 ft below ground surface. The borings were allowed to stand open until the end of the day at which time they were checked for fluid levels and any indication of product(see below). All borings were then backfilled with Hole-Plug (unrefined bentonite chips).

Soil samples were collected at 3 and 5 ft in all borings except B-19 and B-19A. No samples were recovered from B-19 and only one sample was recovered from 6 ft in B-19A, which was drilled adjacent to B-19. These borings were drilled in the vicinity of a rusted out pipe (product line).

Odors were noted in 11 borings except B-9, B-10, B-11, and B-12. Soil staining was noted in borings B-18 and B-19A. Some free-phase material was observed as a spotty, oily sheen or foam on top of the water in borings B-3, B-7, and B-8.

Periphery and Offsite Area

In an attempt to define the lateral extent of the hydrocarbons detected beneath the barrel storage area, an additional twenty two soil borings, B-21 - B-28, B-30, B-31, B-33, B-34, B-37, B-38,

045L1Fe9

B-42, B-45 - B-47, were drilled by Exploration Geoservices and logged by WGR geologist Thomas Howard on 30 September 1988 (Figure4). As before, the borings were drilled with 6-in solid stem flight augers to approximately 3 ft, and then advanced by 2in continuous sampling to 6 ft. Soil samples were collected from approximately 3 ft and 5 ft whenever possible. For these borings, a clean lead auger was used for each boring, since the samples were not to be composited. All 2-in samplers were cleaned before use, each time, in TSP solution. The borings were spaced on 20 ft center grids, where possible, outside the original grid on the former barrel platform, and as far out as determined by field personnel. Fourteen borings were drilled on site and the remaining 8 were drilled offsite, approximately 10 ft west of the west property line. Many of the samples became damp or wet at approximately 3.5 ft. The boreholes were allowed to stand open until the end of the day. Fluid did not appear to fill any of the open boreholes. Again the boreholes were backfilled with Hole-Similar lithologic materials were encountered on site as those in the initial set of borings. However more gravel and fill (probably railroad bed) was encountered in the offsite borings. Samples were collected from all borings except B-39; samples could not be collected in B-39 because of caving. Boring logs are included in Attachment B.

Odors were noted in samples from borings B-24, B-25, B-26, B-27, B-28, B-30, B-31, B-33, B-34, B-37, B-38, B-41, and B-47. Odors were noted in cuttings from B-39.

Miscellaneous Observations

Product, which had an odor and registered in the 100's of parts per million by volume (ppmv) on a Thermoenvironmental OVM 580A photo-ionization detector (PID) meter, was observed in the unsaturated zone approximately 1 ft. below ground surface, on the walls of two shallow trenches dug in the former barrel platform (See figure 4) during its removal.

ANALYTIC RESULTS

Soil samples were collected according to WGR SOP-1. They were sent to Brown and Caldwell Analytical Laboratory of Emeryville, California (B&C), under strict chain-of-custody. The chain-of-custody forms and laboratory reports are included in Attachments C and D, respectively.

045L1Fe9

WESTERN GEOLOGIC RESOURCES, INC.

Lisa Marinaro/27 Feb 1989

Barrel Storage Area

Analytic results for soil borings are tabulated in Table 1 and 2. Soil samples from B-1 to B-20, beneath the former barrel platform, were composited in groups of five for the 3.0 and 5.0 ft samples. TFH ranged from <10 ppm (detection limit) to 2100 ppm, characterized as diesel and gas. Benzene, toluene, ethylbenzene and xylenes (BTEX) concentrations ranged from <0.3 to 20 ppm.

Periphery and Offsite Area

Samples from all other borings were analyzed individually; fuel characterizations were predominantly diesel and oil, with concentrations ranging from <10 to 2700 ppm. BTX concentrations ranged form <0.3 to 20 ppm.

SUMMARY

Barrel Storage Area

TFH, reported predominantly as diesel, were detected in concentrations ranging from <10 ppm to 2100 ppm in composited soil samples from 21 borings beneath the former barrel platform from depths of 3 ft to 6 ft. BTEX were detected in concentrations ranging from <0.3 ppm to 18 ppm for samples from beneath the former barrel platform. Free product was observed in the soil beneath the former barrel platform.

Periphery and Offsite Area

TFH, also reported predominantly as diesel, were detected in concentrations ranging from <10 ppm to 2700 ppm in soil samples collected from depths of 3 ft to 6 ft in twenty one borings drilled on and off site. BTX were detected in concentrations from <0.3 ppm to 20 ppm and ethylbenzene was below detection limit <0.3 ppm for these samples.

045L1Fe9

4

Lisa Marinaro/21 Feb 89

We appreciate the opportunity to provide geologic and environmental consulting services to Chevron and trust this report meets your needs. If you have any questions please call us at (415)457-7595.

Sincerely Western Geologic Resources, Inc.

Thomas M. Howard Project Geologist

Sherwood Lovejoy, Jr. Senior Hydrogeologist

Don M. Eisenberg Senior Engineer

OF OF

36387

at/TMH/SL/DME

WESTERN GEOLOGIC RESOURCES, INC.

Lisa Marinaro/27 Feb 1989

FIGURES:

- 1. Site Location Map
- 2. Site Map
- 3. Boring Locations B-1 through B-20
- 4. Boring Locations B-21 through B-47

TABLES:

- Analytic Results for Composite Soil Samples
 Analytic Results for Soil Samples

ATTACHMENTS:

- A. SOP: Soil Sampling
- B. Boring Logs
- C. Chain-of-Custody Forms
- D. Laboratory Reports

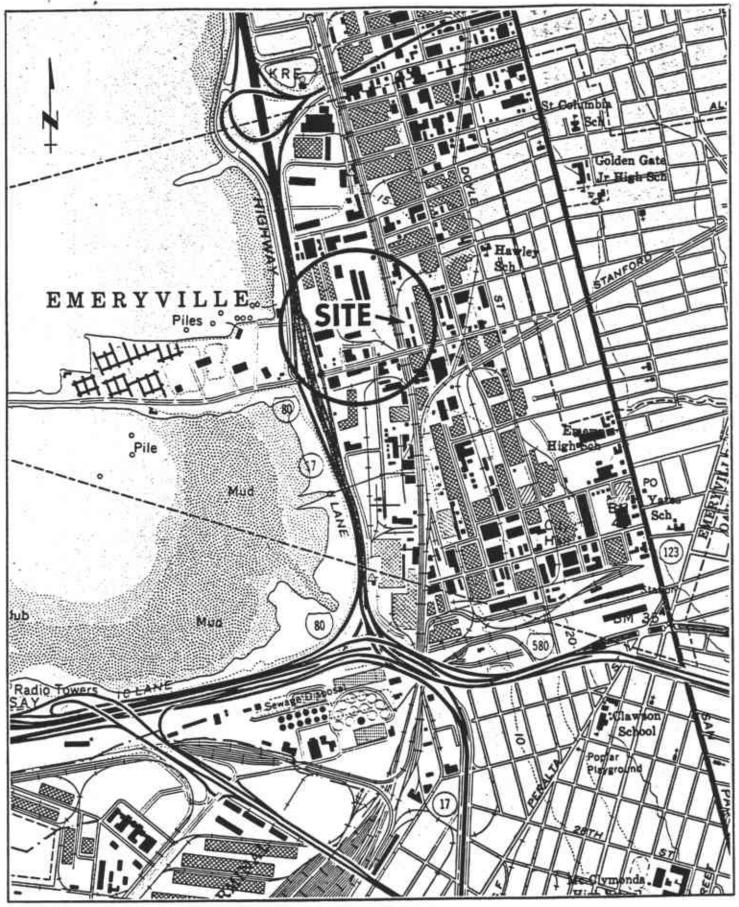
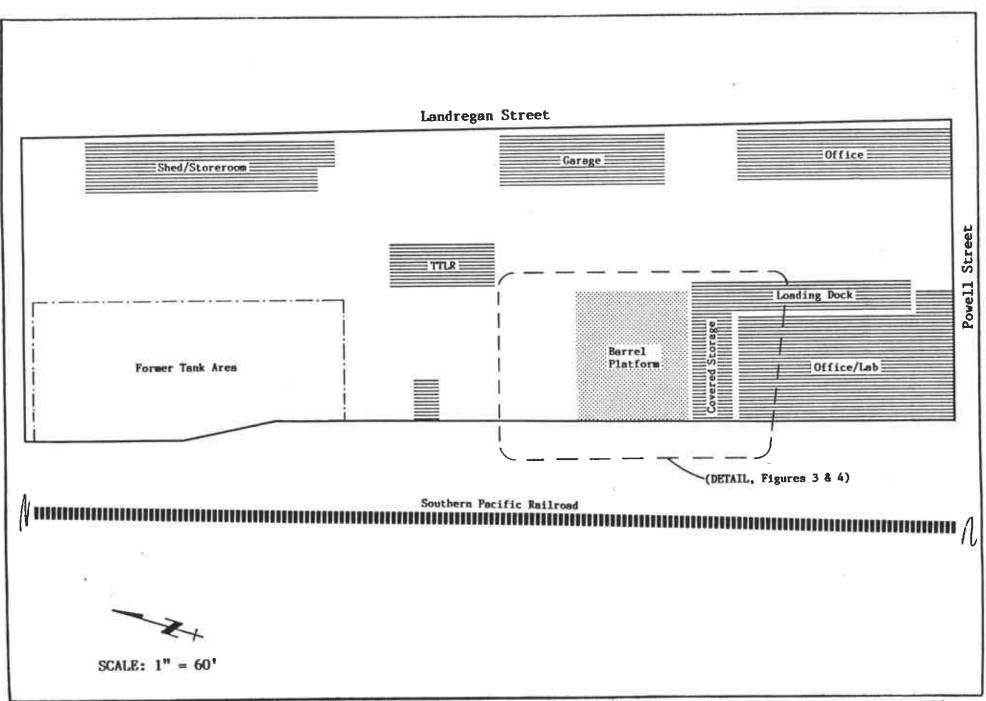


Figure 1. Site Location Map,
Former Chevron Asphalt Plant
1520 Powell Street, Emeryville, California.

C

()

C



6.3

4

(_)

Figure 2. Site Map,
Former Chevron Asphalt Plant
1520 Powell Street, Emeryville, California.

WGR

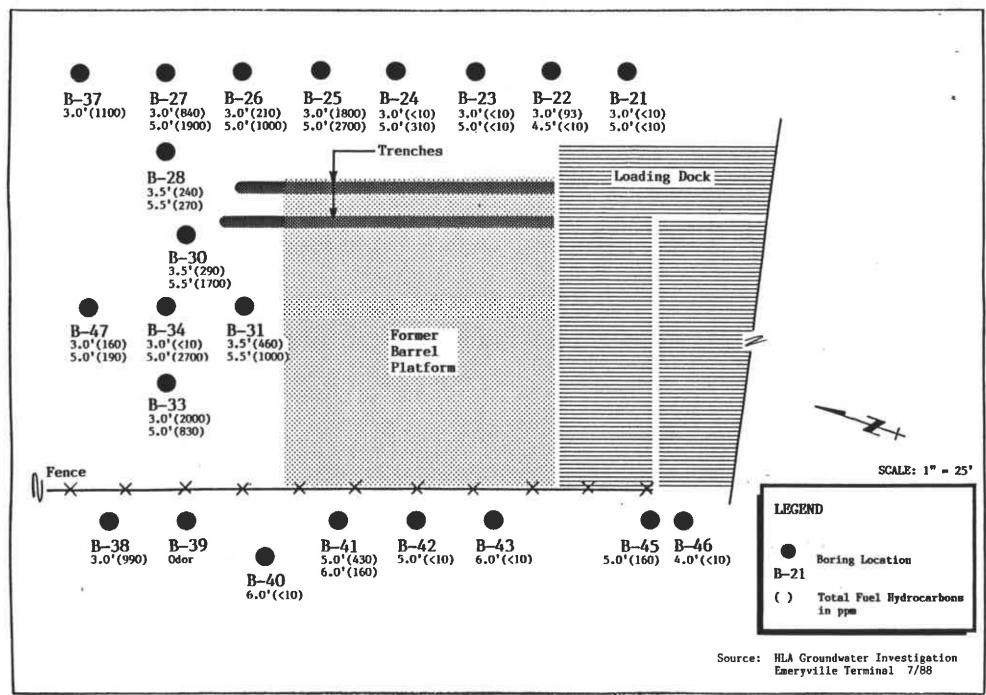


Figure 4. Boring Locations for B-21 through B-47;
Total Fuel Hydrocarbons at Depths in Feet.
Former Chevron Asphalt Plant
1520 Powell Street, Emeryville, California.



WESTERN GEOLOGIC RESOURCES, INC.

TABLE 1. Analytic Results For Composite Soil Samples 1520 Powell Street Emeryville, California

麗										
-	Bore Holes	Depth (ft.)			TFH <			Toluene		E-Benzene
うなが、一次	B-1 to B-5	3.0 5.0	07 Sep 07 Sep		1700 1700	D D	<0.3 0.5	<0.3 0.5	<0.3 <0.3	<0.3 0.9
1000	B-6 to B-10	3.0 5.0	07 Sep 07 Sep		490 640	D D	<0.3 0.5	<0.3 <0.3	<0.3 <0.3	<0.3 0.5
	B-11 to B-15	3.0 5.0	07 Sep 07 Sep		1900 1000	D D	0.3 0.6	<0.3 1.3	<0.3 <0.3	5.4 3.3
	B-16 to B-20	3.0 5.0	07 Sep 07 Sep		1700 2100			6.1 1.3		

Notes:

xylenes = Sum of xylene isomers

E-Benzene = Ethyl benzene TFH = Total fuel hydrocarbons

FC = Fuel characterization

D = Diesel

o = oil

G = Gas

--- = Not characterized METHOD(S) = EPA 8015/8020

TABLE 2 Analytic Results For Soil Samples 1520 Powell Street Emeryville, California

						-					
		Depth (ft.)		ate		TFH <	FC	Benzene	Toluene	Xylenes	E-Benzene
die steet		3		Sen	88			<0.3			<0.3
	B-21	5	30	Sep	88	<10		<0.3	<0.3	<0.3	<0.3
	B-22		30	Sep	88	93	D	<0.3 <0.3			
證明	B-22	4.5									
	B-23 B-23	3 5		Sep Sep				<0.3 <0.3	<0.3 <0.3	<0.3	
	B-24			-		<10		<0.3	<0.3		
Tales	B-24	5	30	Sep	88	310	D	<0.3	<0.3	2	
APRIL SERVICE	B-25	3	30	Sep	88	1800	D D	<0.3 <0.3	<0.3 <0.3	7 20	
F.Y.C.	B-25					2700		<0.3	<0.3	2	
	B-26 B-26					210 1000	D D	<0.3	<0.3	4.2	
	B-27					840	D	<0.3	<0.3	7.4	
	B-27	5	30	Sep	88	1900	D	<0.3	<0.3	16	
	B-28	3.5 5.5	30 30	Sep Sep	88 88	240 270	D D	<0.3 <0.3	<0.3 <0.3	2.5 1.3	
	T.	3.5					D	<0.3	<0.3		
1	B-30		30	Sep	88	1700	D	<0.3	<0.3	6.2	
C Marie	refer	3.5	30	Sep	88	460 1000	D+0 D+0	<0.3 <0.3			
200	B-31							0.7			<0.3
	B-33		30	Sep	88	2000 830	D+G D+G	<0.3	0.9	4.2	
	B-34			Sep				<0.3	<0.3	<0.3	
	B-34	1 5	30	Sep	88	2700	D+G	0.9	<0.3		
	B-31	7 3	30	Sep	88	1100	D	<0.3	<0.3	5.4	
	B-38	3	30	Sep	88	990	D+G	0.5	0.9	2.2	_
77	B-40			Sep Sep			0	<0.3 <0.3		<0.3 <0.3	
1				_		430	G	<0.3		4.	
	B-4:			Sep			Ğ	<0.3			3 <0.3

WESTERN GEOLOGIC RESOURCES, INC.

ATTACHMENT A

STANDARD OPERATING PROCEDURE FOR SOIL SAMPLING

WESTERN GEOLOGIC RESOURCES, INC. STANDARD OPERATING PROCEDURES RE: SOIL SAMPLING SOP-2

Soil samples for chemical analysis are collected in thin-walled brass tubes, 4-inches long by 2-inches outside diameter. Four of these tubes and a spacer tube are set in a 2-inch inside diameter 18-inch split-barrel sampler.

The split-barrel sampler is driven its entire length either hydraulically or using a 140 pound drop hammer. The sampler is extracted from the borehole and the brass tubes, containing the soil samples, are removed. Upon removal from the sampler, the selected brass tubes are immediately trimmed and capped with aluminum foil and plastic caps. They are then hermetically sealed with duct tape, labeled and refrigerated for delivery, under chain-of-custody, to the analytic laboratory. These procedures minimize the potential for cross-contamination and volatilization of volatile organic compounds (VOC) prior to chemical analysis.

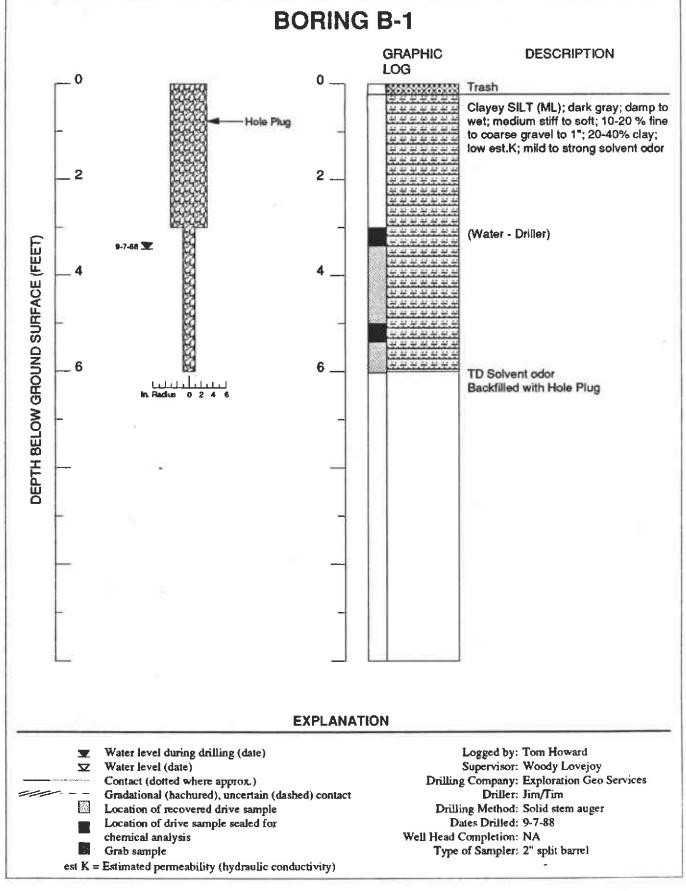
One soil sample collected at each sampling interval is analyzed in the field using either a photoionization detector (PID), a flame ionizing detector (FID), or an explosimeter. The purpose of this field analysis is to qualitatively determine the presence or absence of hydrocarbons and to establish which soil samples will be analyzed at the laboratory. The soil sample is sealed in a zip-lock plastic bag and placed in the sun to enhance volatilization of the hydrocarbons from the soil sample. The data is recorded on the drill logs at the depth corresponding to the sampling point.

Other soil samples are collected to document the stratigraphy and estimate relative permeability of the subsurface materials. All drilling and sampling equipment are steam-cleaned prior to use at each site and between boreholes to minimize the potential for cross-contamination.

WESTERN GEOLOGIC RESOURCES, INC.

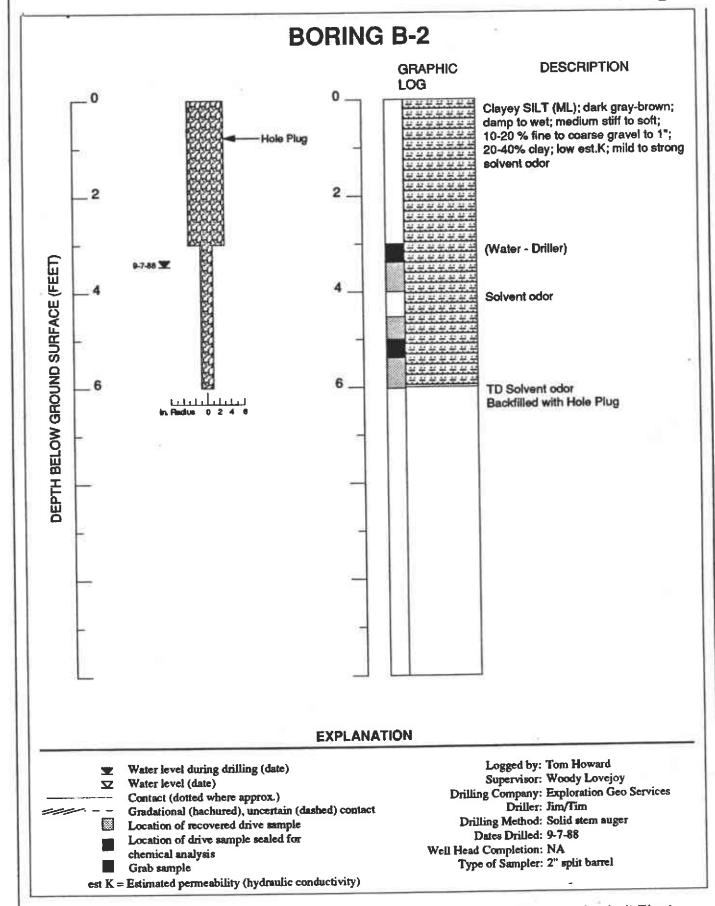
ATTACHMENT B

BORING LOGS



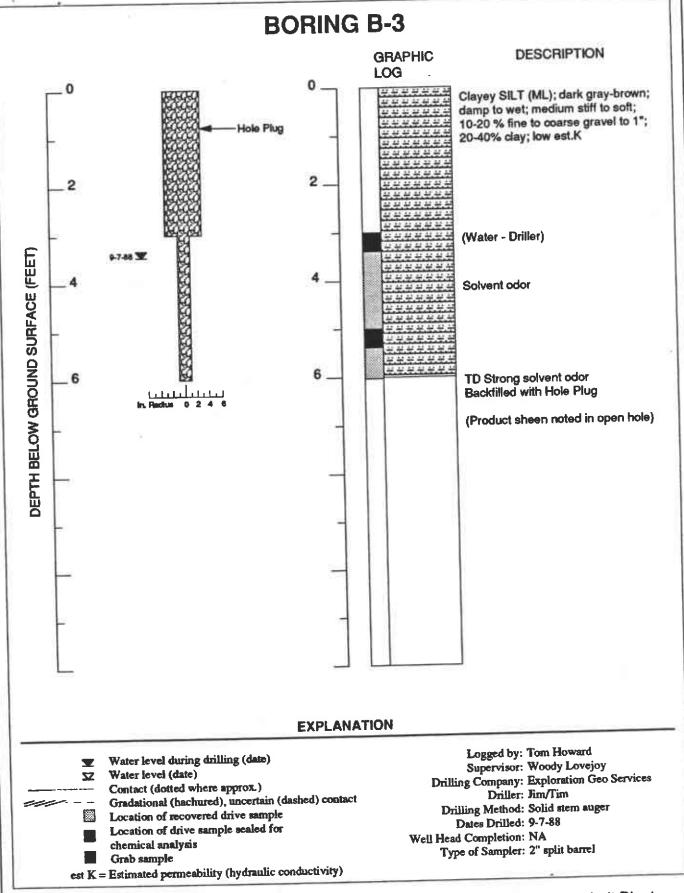
Boring Log B-1

WGR Project No.: 1-045.02

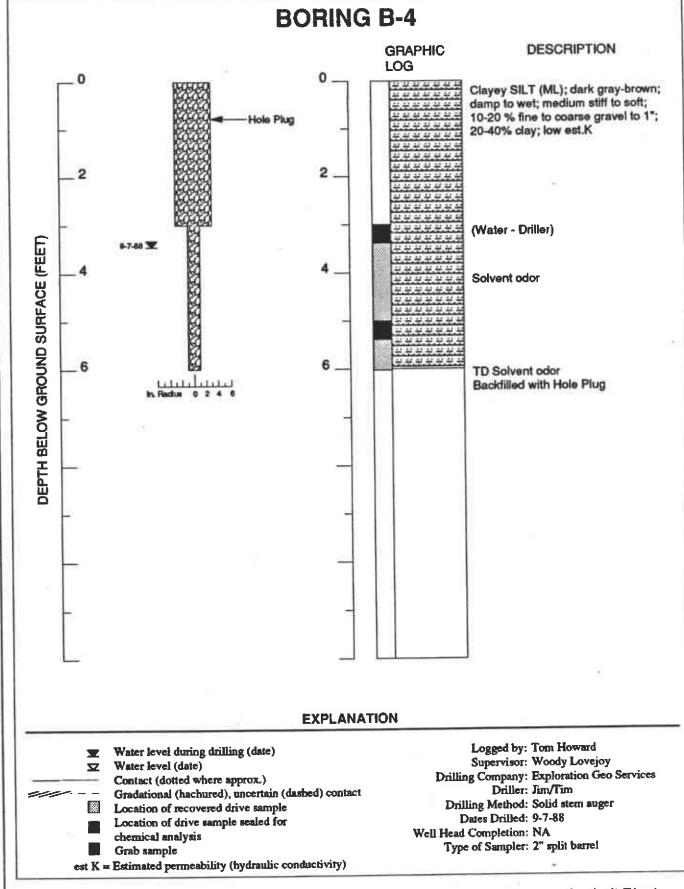


Boring Log B-2 WGR Project No.: 1-045.02

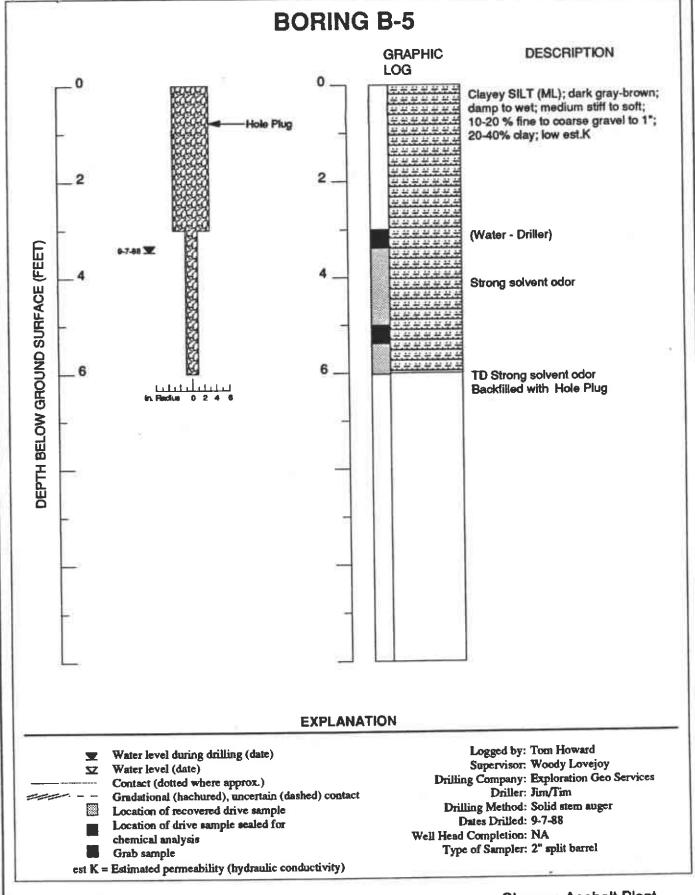
(



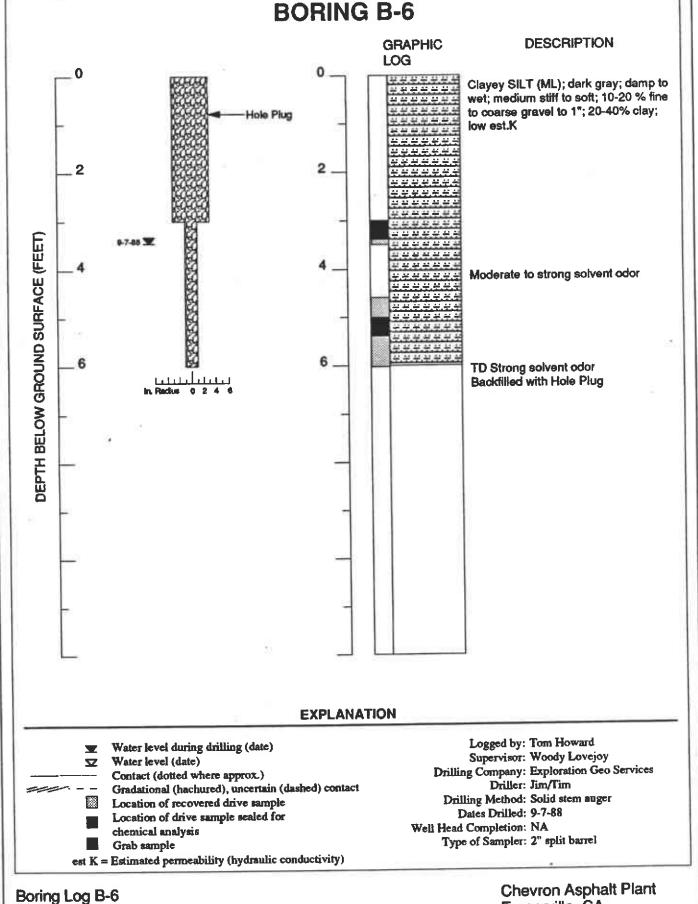
Boring Log B-3 WGR Project No.: 1-045.02



Boring Log B-4 WGR Project No.: 1-045.02

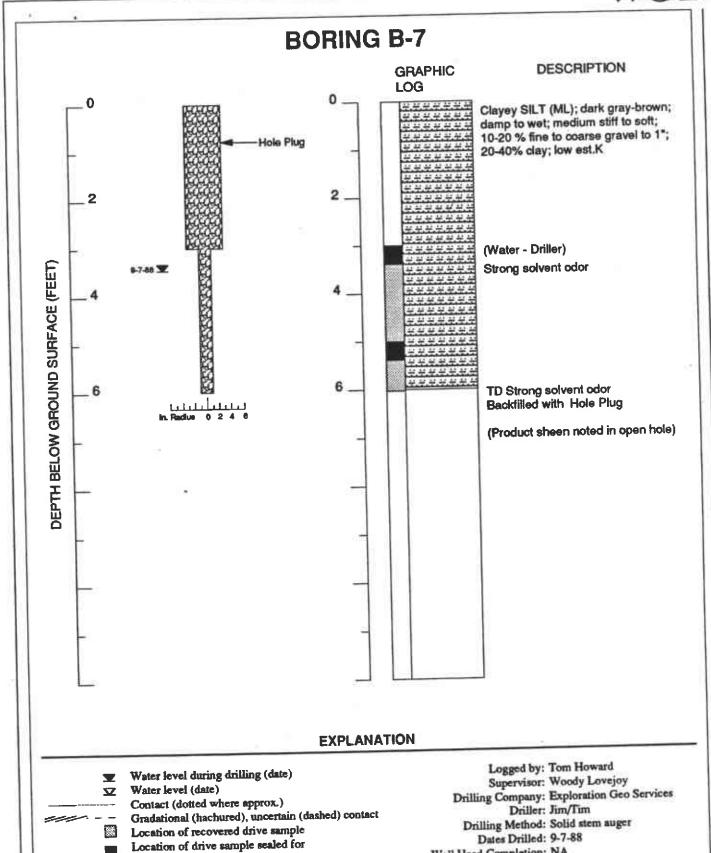


Boring Log B-5 WGR Project No.: 1-045.02



WGR Project No.: 1-045.02

0



Boring Log B-7 WGR Project No.: 1-045.02

chemical analysis

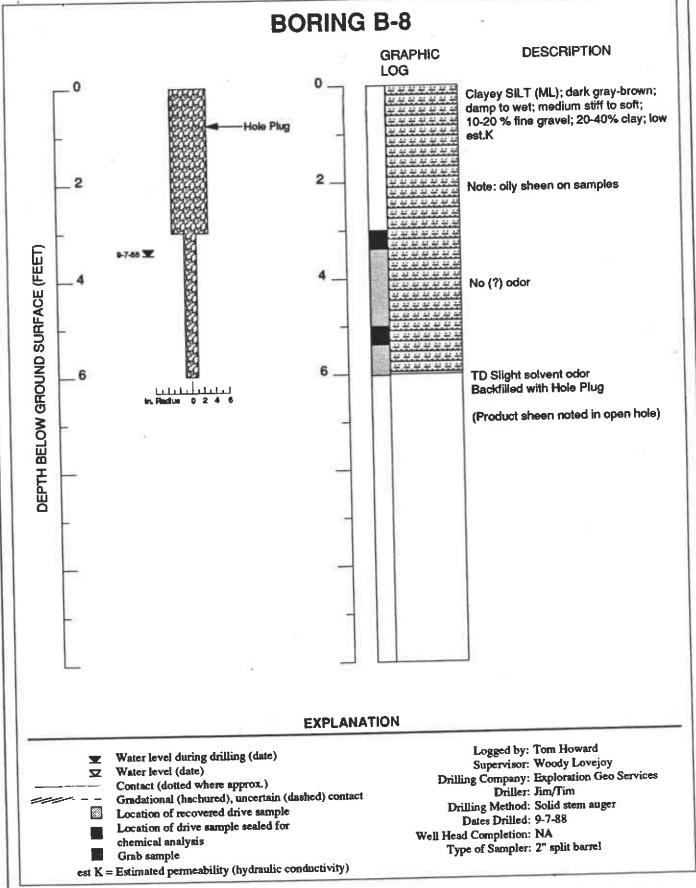
est K = Estimated permeability (hydraulic conductivity)

Grab sample

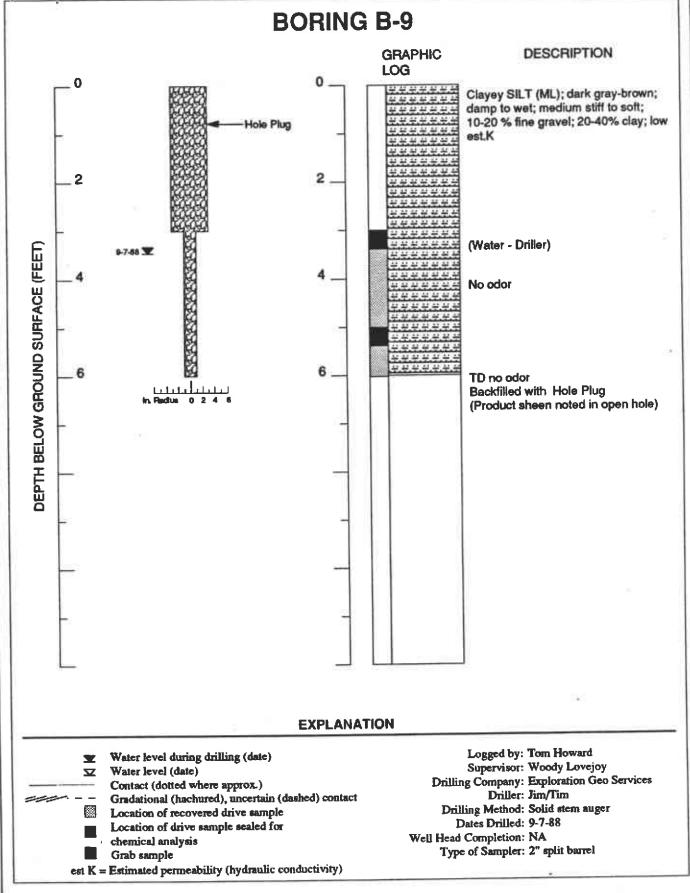
Chevron Asphalt Plant Emeryville, CA

Well Head Completion: NA

Type of Sampler: 2" split barrel

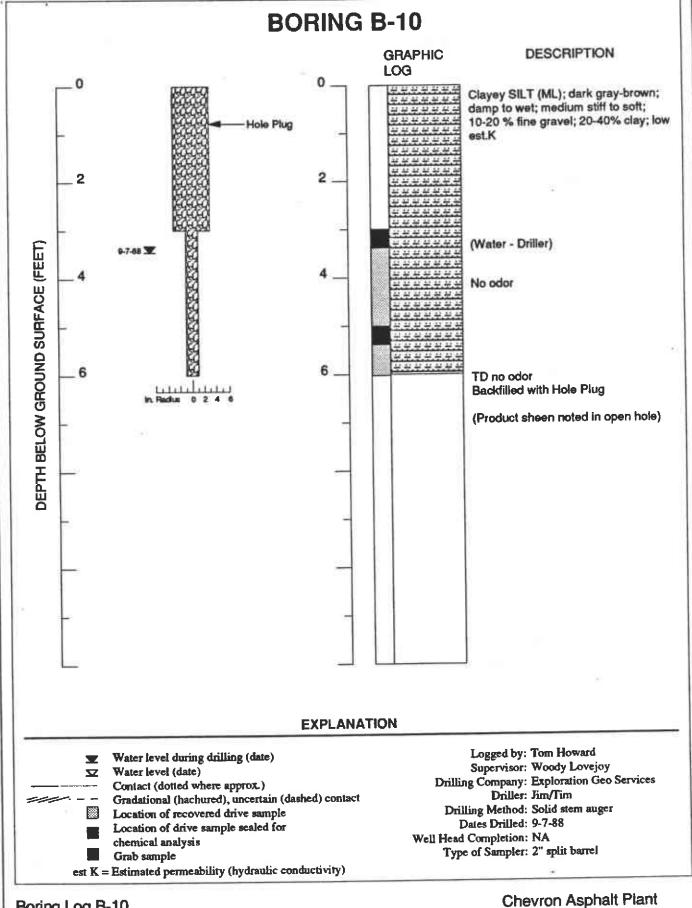


Boring Log B-8 WGR Project No.: 1-045.02

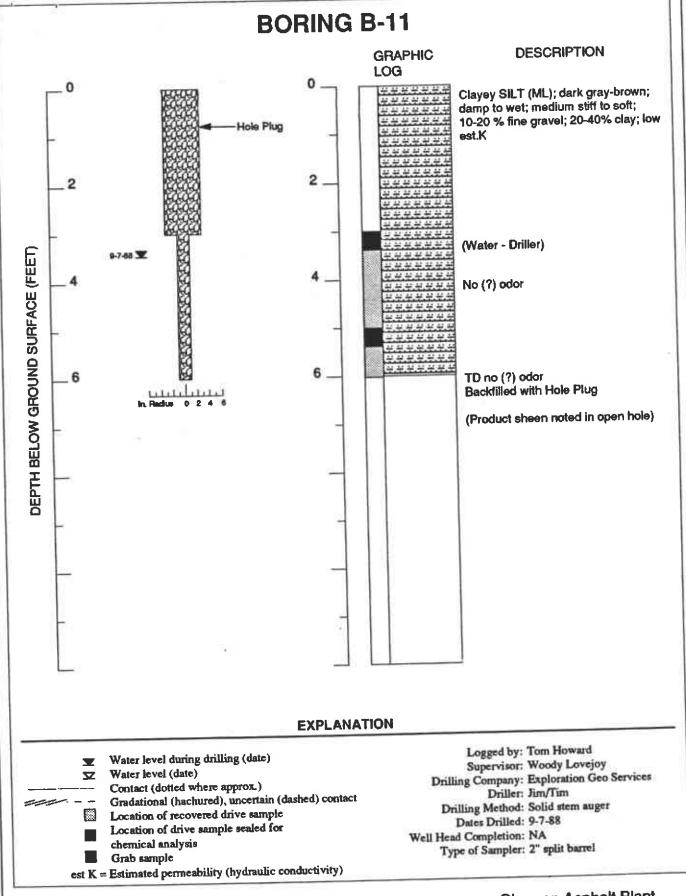


Boring Log B-9 WGR Project No.: 1-045.02

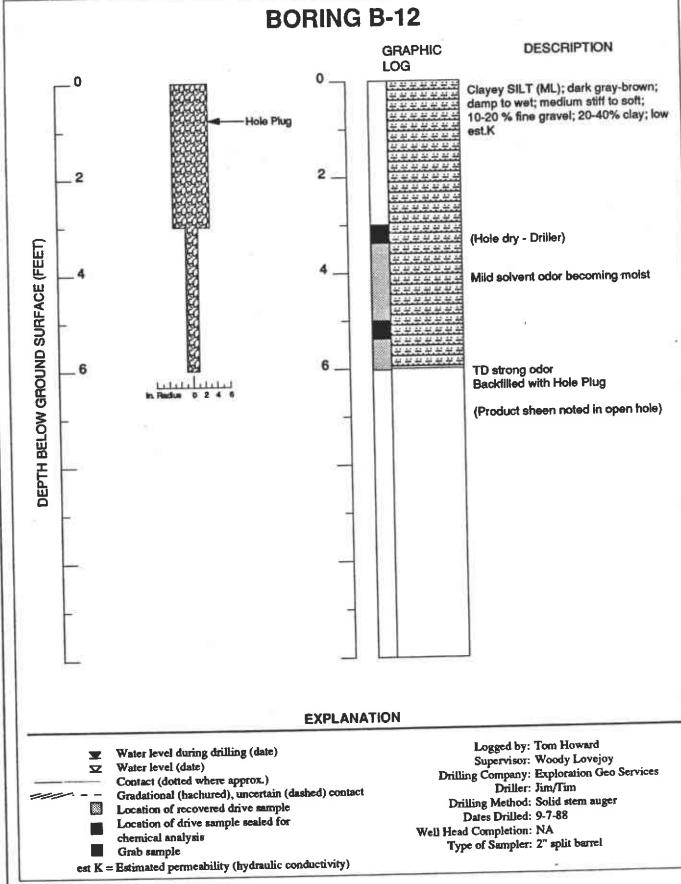
(1



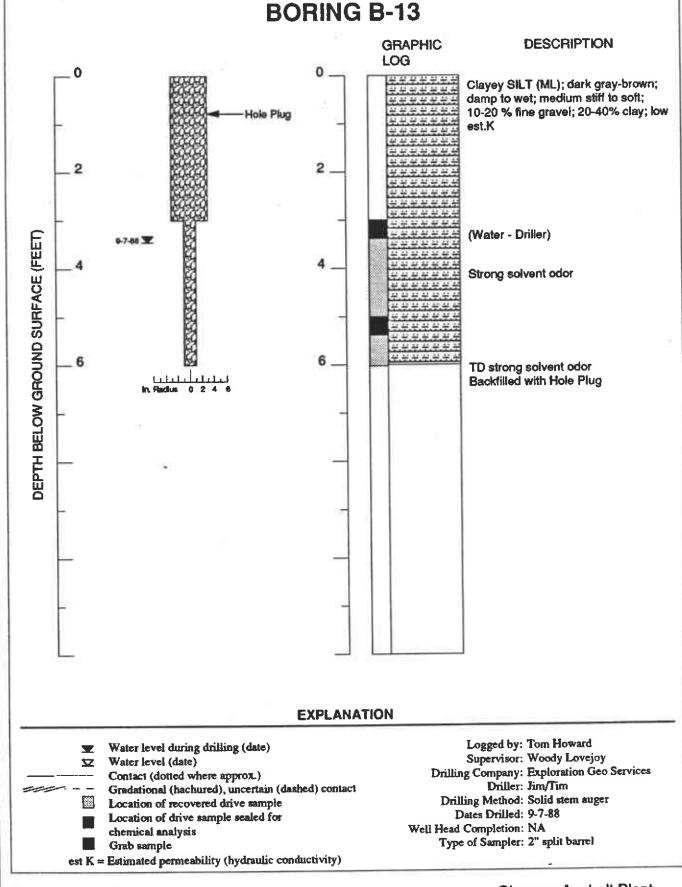
Boring Log B-10 WGR Project No.: 1-045.02



Boring Log B-11 WGR Project No.: 1-045.02



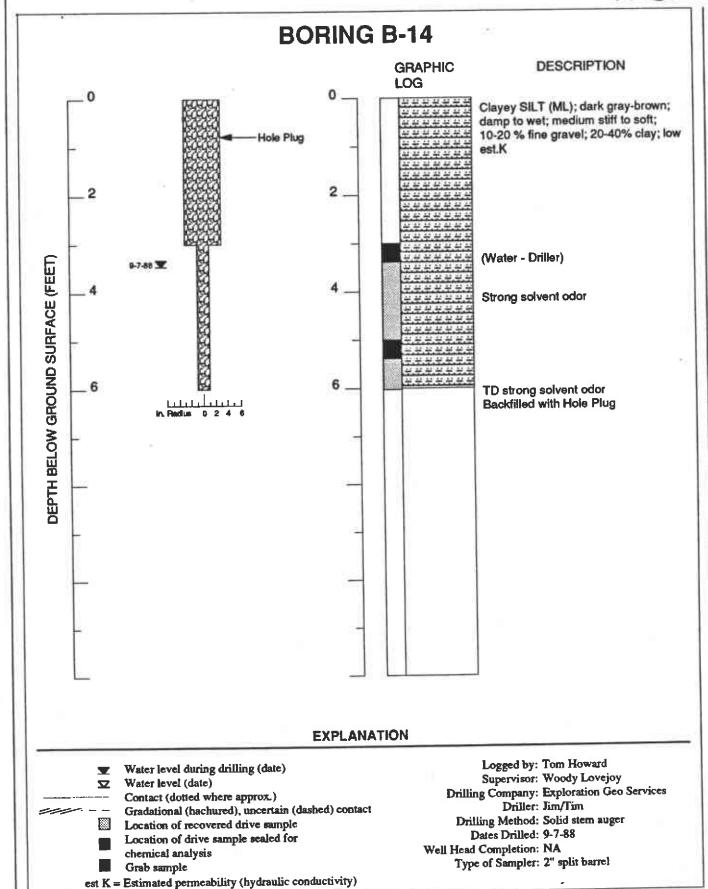
Boring Log B-12 WGR Project No.: 1-045.02



Boring Log B-13 WGR Project No.: 1-045.02

Ch.

0

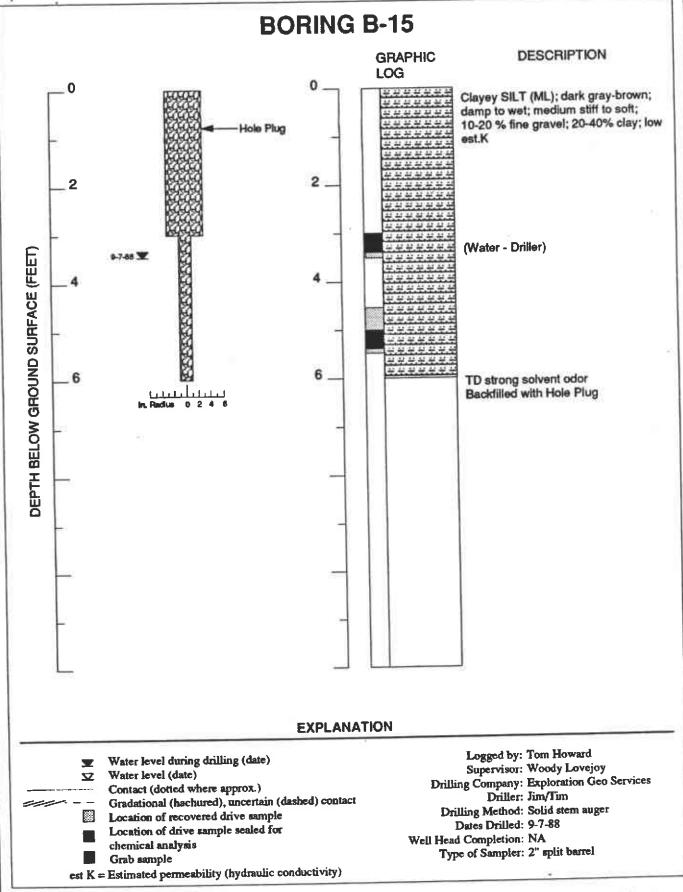


Boring Log B-14

0

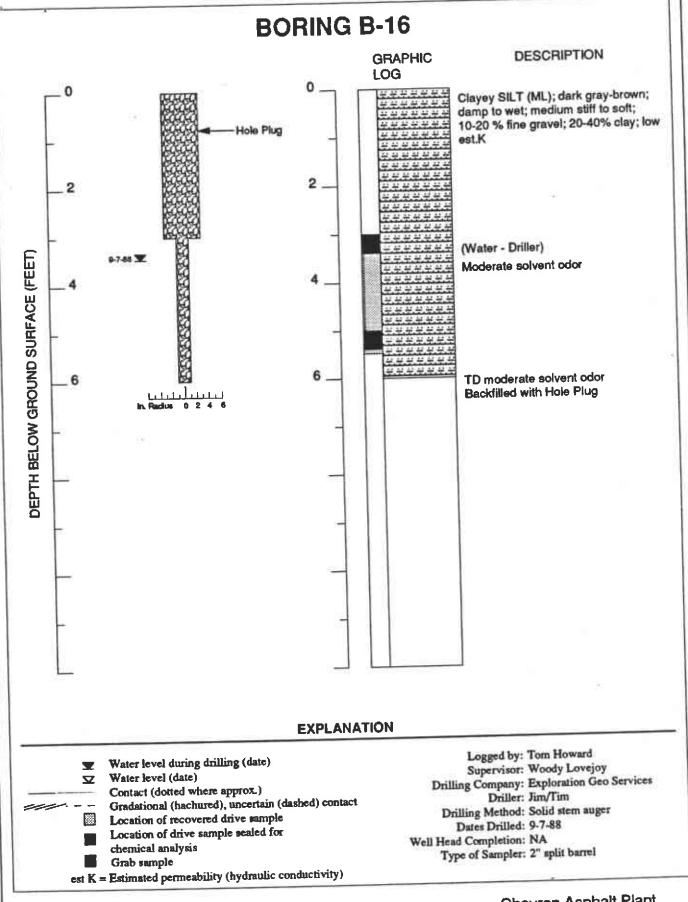
0

WGR Project No.: 1-045.02



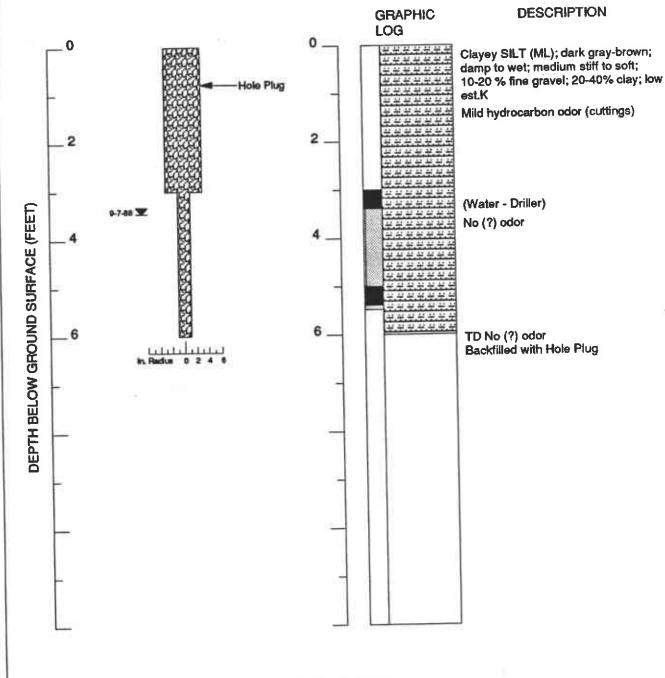
Boring Log B-15 WGR Project No.: 1-045.02

0



Boring Log B-16 WGR Project No.: 1-045.02





EXPLANATION

Water level during drilling (date) Water level (date) Contact (dotted where approx.) Gradational (hachured), uncertain (dashed) contact Location of recovered drive sample Location of drive sample sealed for chemical analysis Grab sample est K = Estimated permeability (hydraulic conductivity)

Logged by: Tom Howard Supervisor: Woody Lovejoy

Drilling Company: Exploration Geo Services

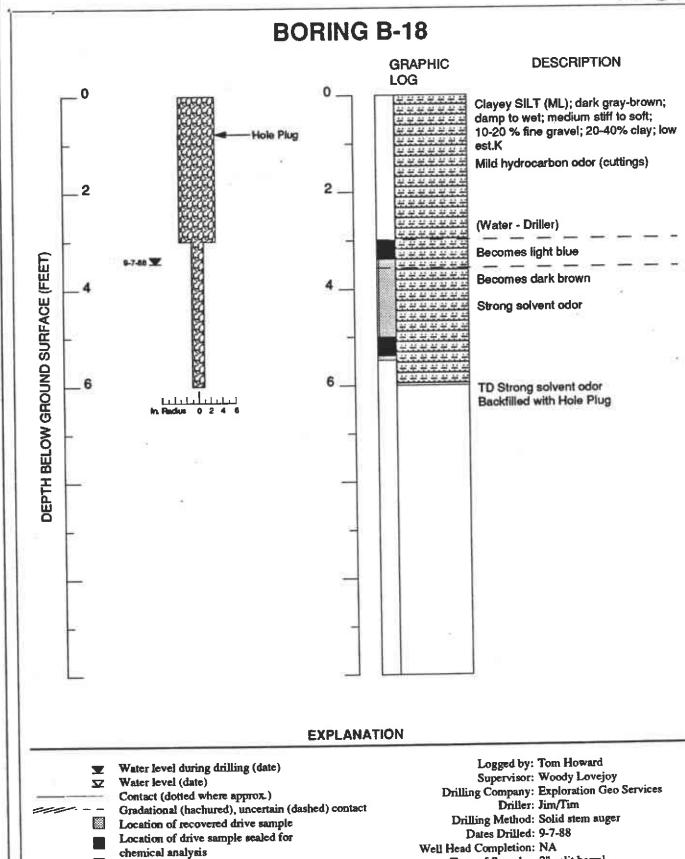
Driller: Jim/Tim

Drilling Method: Solid stem auger Dates Drilled: 9-7-88

Well Head Completion: NA

Type of Sampler: 2" split barrel

Boring Log B-17 WGR Project No.: 1-045.02



Boring Log B-18

C

C

0

WGR Project No.: 1-045.02

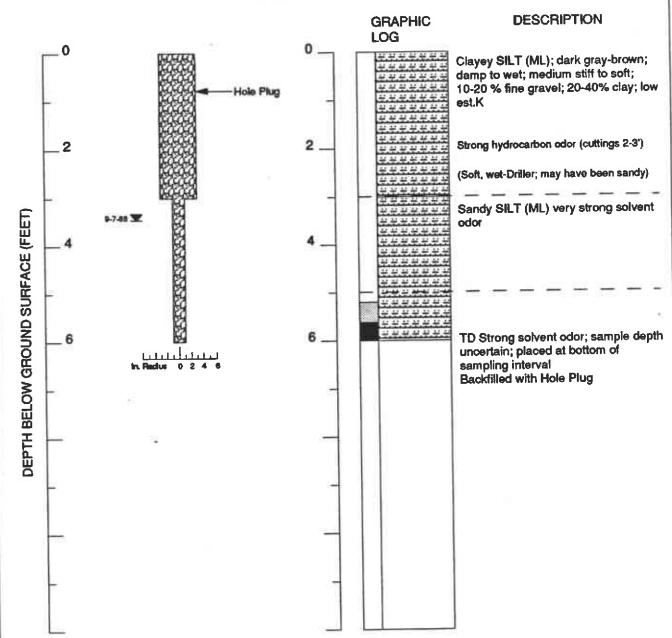
Grab sample

est K = Estimated permeability (hydraulic conductivity)

Chevron Asphalt Plant Emeryville, CA

Type of Sampler: 2" split barrel





EXPLANATION

- Water level during drilling (date)■ Water level (date)
- -- Contact (dotted where approx.)
 - Gradational (hachured), uncertain (dashed) contact
- Location of recovered drive sample
- Location of drive sample sealed for
- chemical analysis
- Grab sample
- est K = Estimated permeability (hydraulic conductivity)

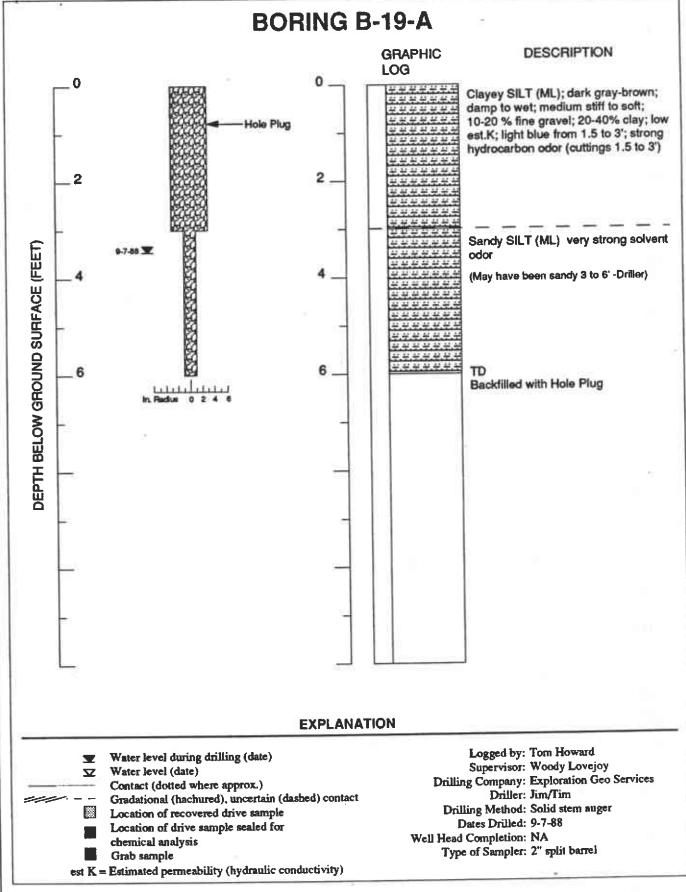
- Logged by: Tom Howard
- Supervisor: Woody Lovejoy
- Drilling Company: Exploration Geo Services
 - Driller: Jim/Tim
 - Drilling Method: Solid stem auger
 - Dates Drilled: 9-7-88
- Well Head Completion: NA
 - Type of Sampler: 2" split barrel

Boring Log B-19

C

C

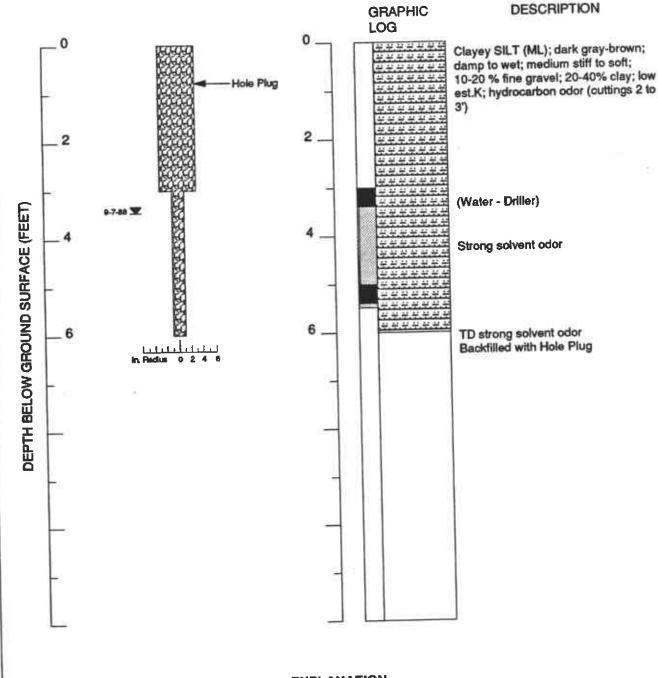
WGR Project No.: 1-045.02



Boring Log B-19-A WGR Project No.: 1-045.02

0





EXPLANATION

■ Water level during drilling (date)

■ Water level (date)

■ Contact (dotted where approx.)

■ Gradational (hachured), uncertain (dashed) contact

■ Location of recovered drive sample

■ Location of drive sample sealed for chemical analysis

■ Grab sample

est K = Estimated permeability (hydraulic conductivity)

Logged by: Tom Howard Supervisor: Woody Lovejoy

Drilling Company: Exploration Geo Services

Driller: Jim/Tim

Drilling Method: Solid stem auger

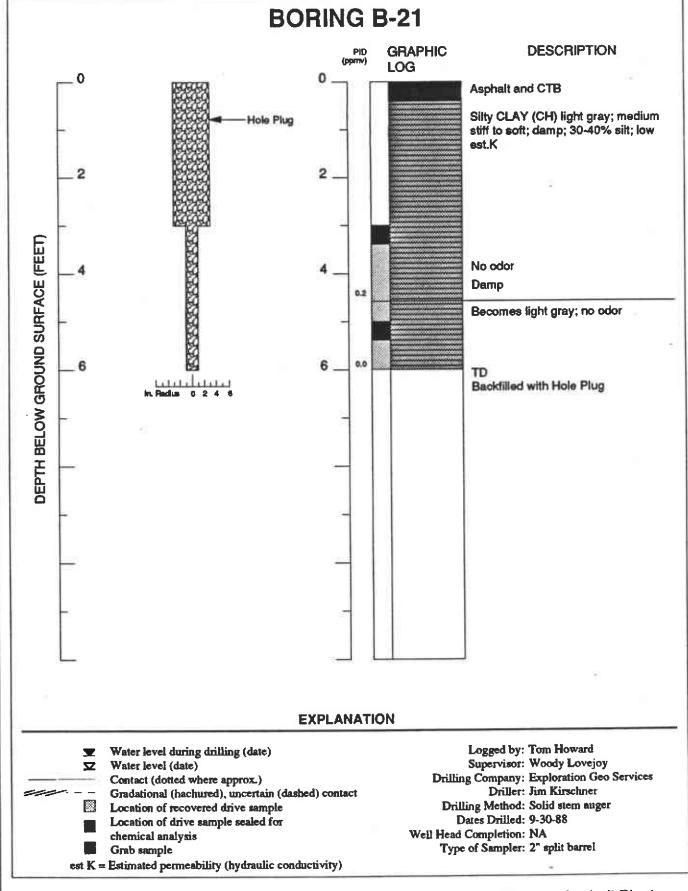
Dates Drilled: 9-7-88
Well Head Completion: NA

Type of Sampler: 2" split barrel

Boring Log B-20

(1)

WGR Project No.: 1-045.02

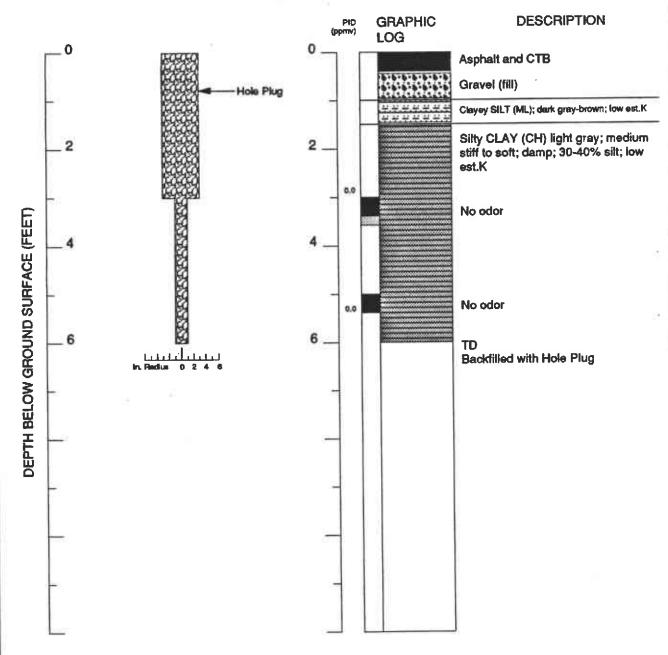


Boring Log B-21

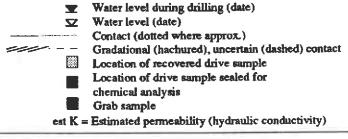
WGR Project No.: 1-045.02

-WGR





EXPLANATION



Logged by: Tom Howard Supervisor: Woody Lovejoy Drilling Company: Exploration Geo Services

Driller: Jim Kirschner
Drilling Method: Solid stem auger

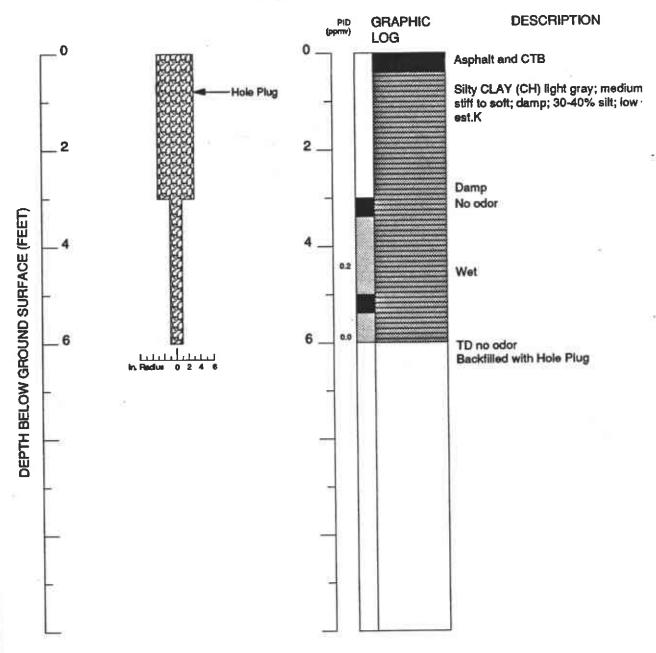
Dates Drilled: 9-30-88
Well Head Completion: NA

Type of Sampler: 2" split barrel

Boring Log B-22 WGR Project No.: 1-045.02

e





EXPLANATION

Water level during drilling (date)

Water level (date)

Contact (dotted where approx.)

Gradational (hachured), uncertain (dashed) contact

Location of recovered drive sample

Location of drive sample sealed for chemical analysis

Grab sample

est K = Estimated permeability (hydraulic conductivity)

Driller: Jim Kirschner
Drilling Method: Solid stem auger
Dates Drilled: 9-30-88
Well Head Completion: NA
Type of Sampler: 2" split barrel

Logged by: Tom Howard

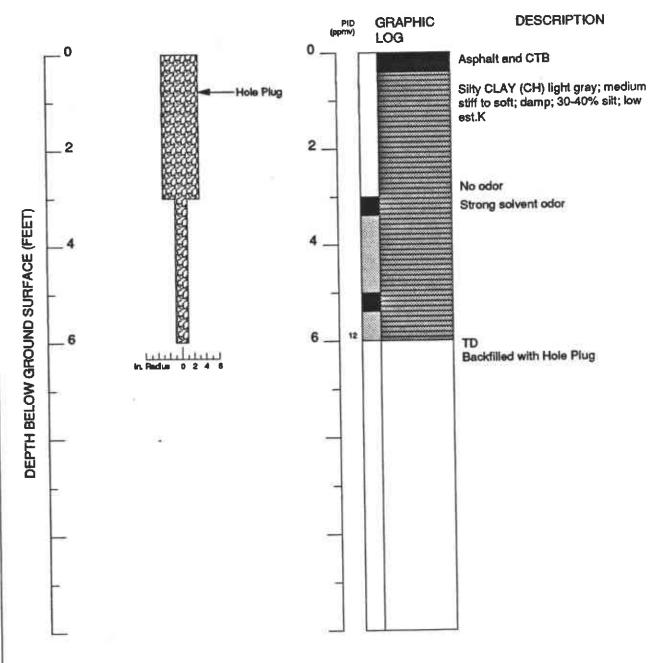
Supervisor: Woody Lovejoy

Drilling Company: Exploration Geo Services

Boring Log B-23 WGR Project No.: 1-045.02

نديك





EXPLANATION

- Water level during drilling (date)

 Water level (date)

 Contact (dotted where approx.)

 Gradational (hachured), uncertain (dashed) contact

 Location of recovered drive sample

 Location of drive sample sealed for chemical analysis

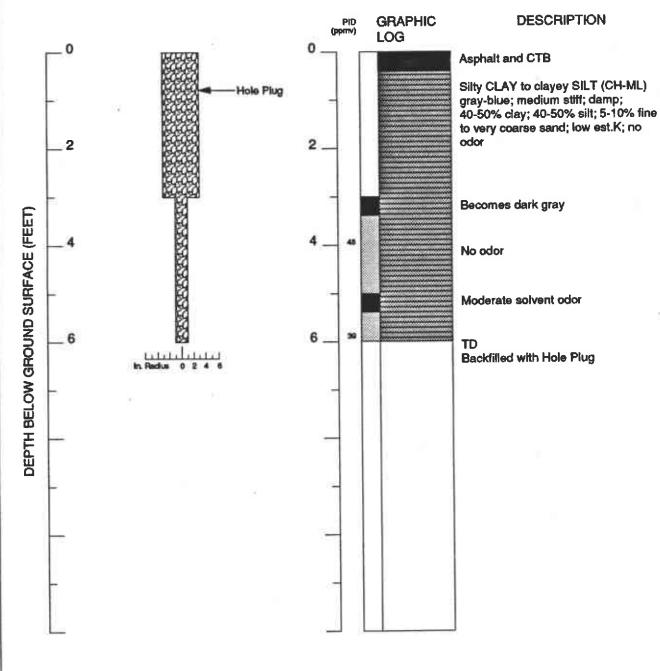
 Grab sample

 est K = Estimated permeability (hydraulic conductivity)
- Logged by: Tom Howard
 Supervisor: Woody Lovejoy
 Drilling Company: Exploration Geo Services
- Driller: Jim Kirschner
 Drilling Method: Solid stem auger
 Dates Drilled: 9-30-88
- Dates Drilled: 9-30-88
 Well Head Completion: NA
 - Type of Sampler: 2" split barrel

Boring Log B-24

WGR Project No.: 1-045.02





EXPLANATION

- Water level during drilling (date)

 □ Water level (date)

 □ Contact (dotted where approx.)

 □ Gradational (hachured), uncertain (dashed) contact

 □ Location of recovered drive sample

 □ Location of drive sample sealed for chemical analysis

 □ Grab sample

 est K = Estimated permeability (hydraulic conductivity)
- Logged by: Tom Howard
 Supervisor: Woody Lovejoy
 Drilling Company: Exploration Geo Services
- Driller: Jim Kirschner
 Drilling Method: Solid stem auger
 Dates Drilled: 9-30-88
- Well Head Completion: NA

Type of Sampler: 2" split barrel

Boring Log B-25 WGR Project No.: 1-045.02

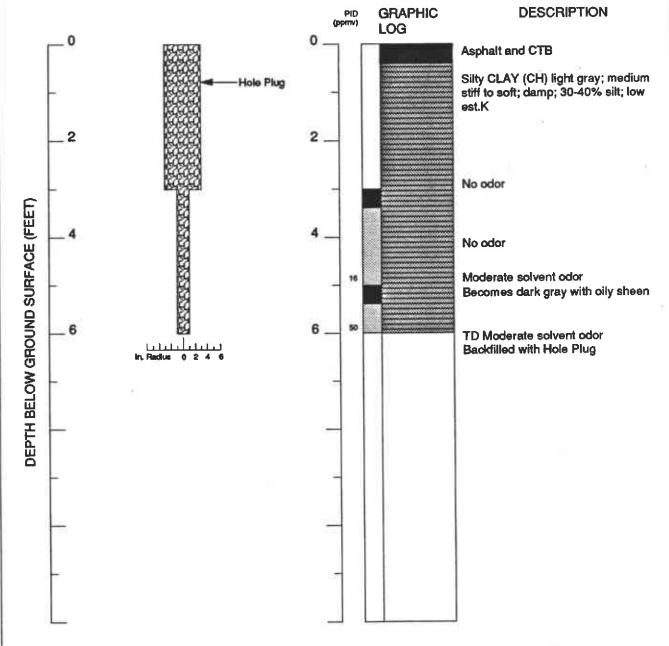
C

CI

0

-WGR





EXPLANATION

Water level during drilling (date)
 Water level (date)
 Contact (dotted where approx.)
 Gradational (hachured), uncertain (expression)

Gradational (hachured), uncertain (dashed) contact

Location of recovered drive sample
Location of drive sample sealed for
chemical analysis

Grab sample

est K = Estimated permeability (hydraulic conductivity)

Logged by: Tom Howard

Supervisor: Woody Lovejoy

Drilling Company: Exploration Geo Services

Driller: Jim Kirschner Drilling Method: Solid stem auger

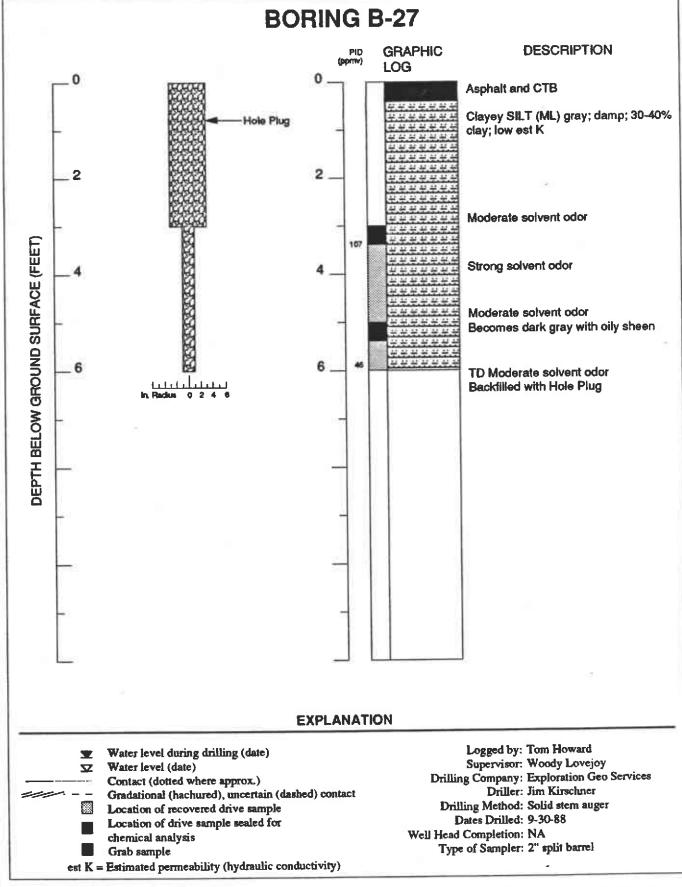
Dates Drilled: 9-30-88
Well Head Completion: NA

Type of Sampler: 2" split barrel

Boring Log B-26

C

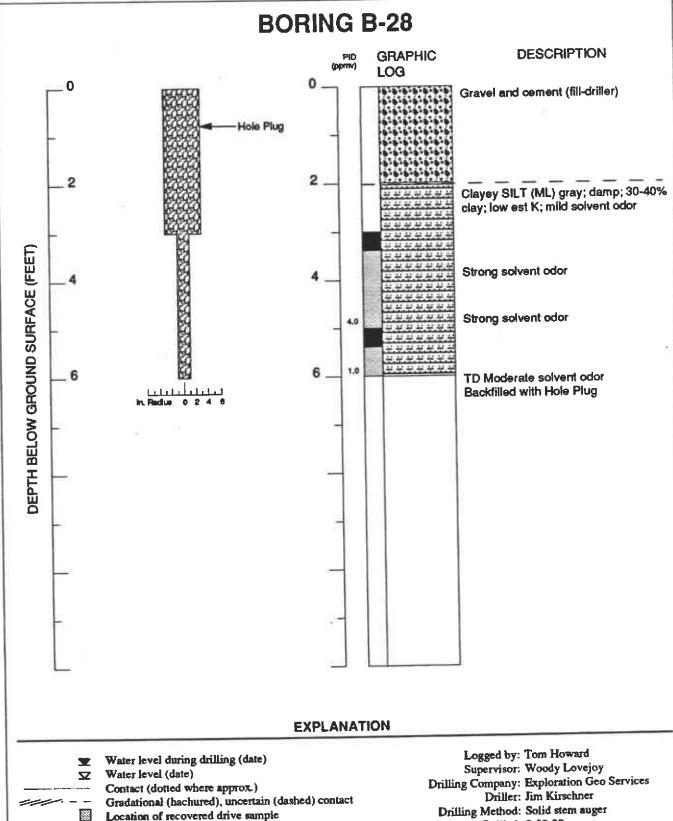
WGR Project No.: 1-045.02



Boring Log B-27

 \mathbf{O}

WGR Project No.: 1-045.02



Boring Log B-28

WGR Project No.: 1-045.02

Location of drive sample sealed for

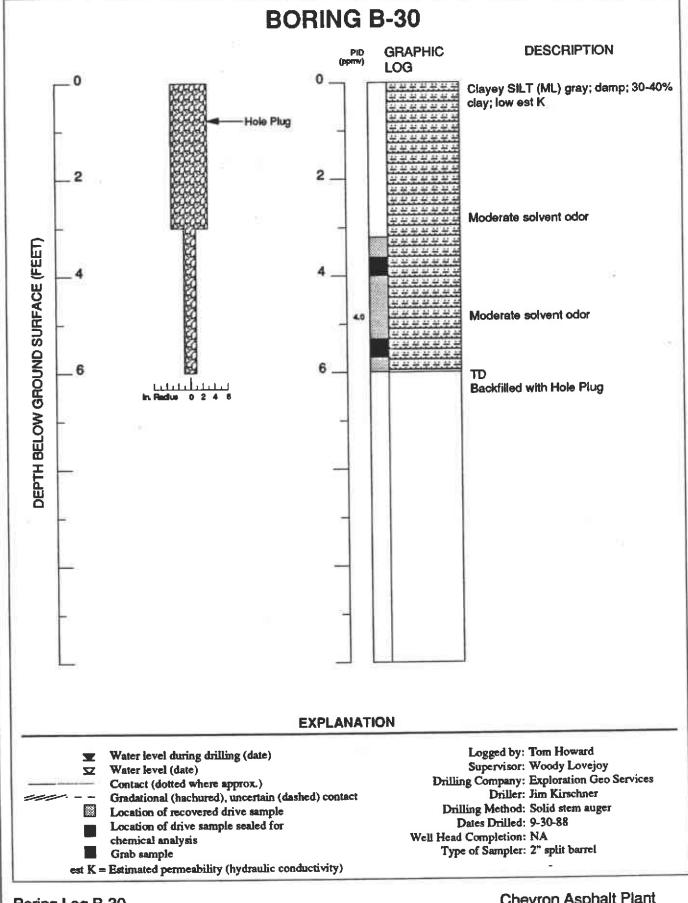
est K = Estimated permeability (hydraulic conductivity)

chemical analysis

Grab sample

Dates Drilled: 9-30-88 Well Head Completion: NA

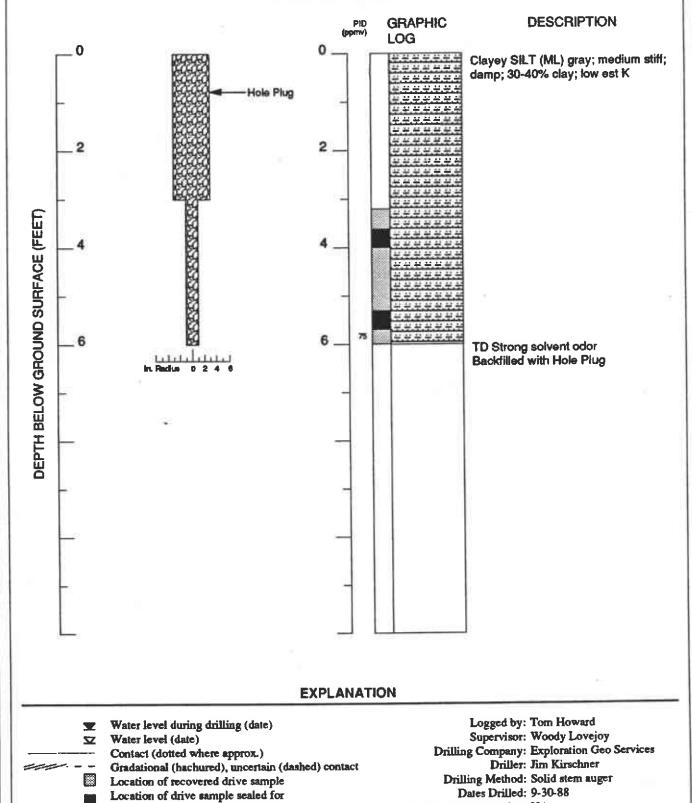
Type of Sampler: 2" split barrel



Boring Log B-30

WGR Project No.: 1-045.02





Boring Log B-31

WGR Project No.: 1-045.02

chemical analysis

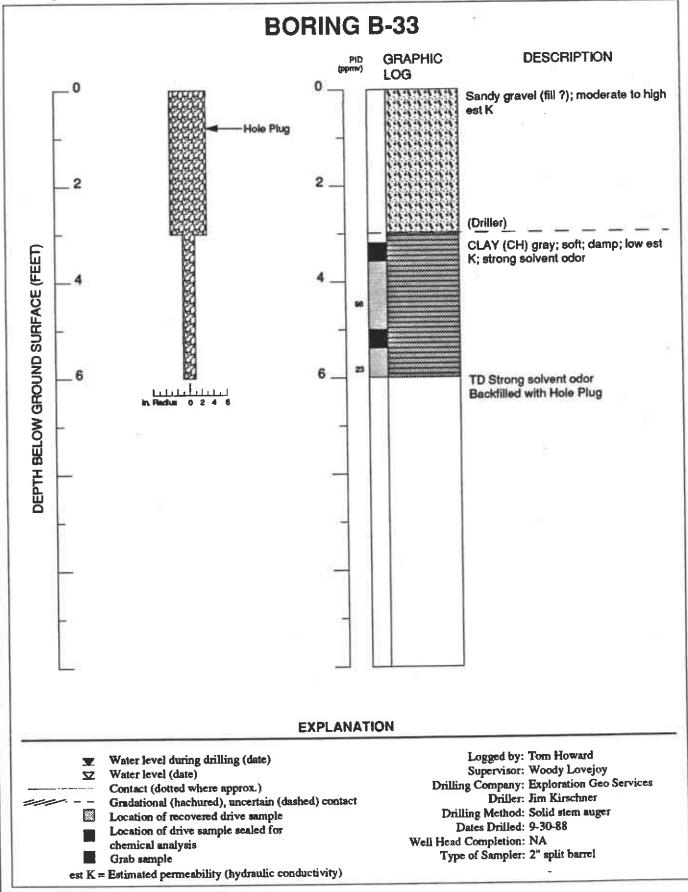
est K = Estimated permeability (hydraulic conductivity)

Grab sample

Chevron Asphalt Plant Emeryville, CA

Well Head Completion: NA

Type of Sampler: 2" split barrel



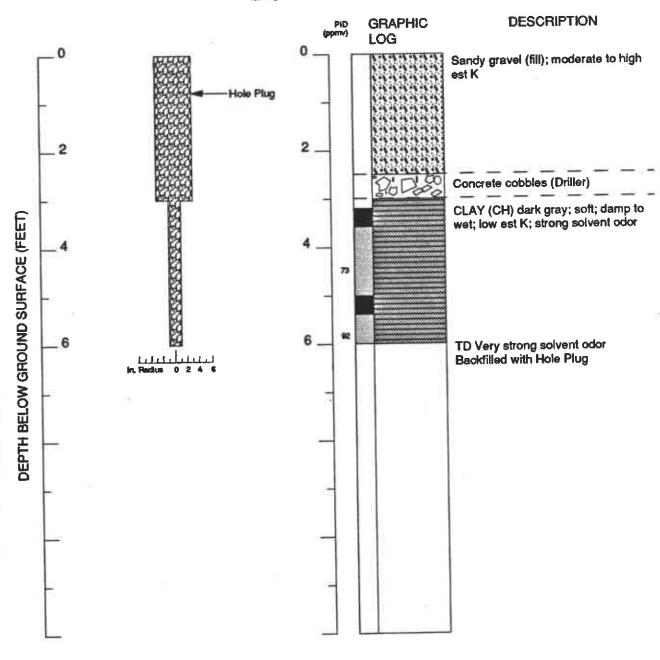
Boring Log B-33

C

C

WGR Project No.: 1-045.02





EXPLANATION

Water level during drilling (date)

Water level (date)

Contact (dotted where approx.)

Gradational (hachured), uncertain (dashed) contact

Location of recovered drive sample

Location of drive sample sealed for chemical analysis

Grab sample

est K = Estimated permeability (hydraulic conductivity)

Logged by: Tom Howard
Supervisor: Woody Lovejoy
Drilling Company: Exploration Geo Services

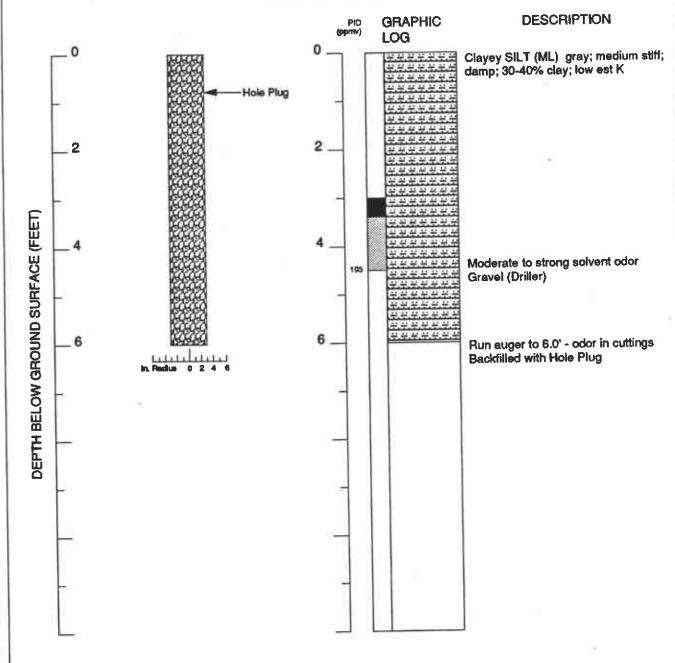
Driller: Jim Kirschner
Drilling Method: Solid stem auger
Dates Drilled: 9-30-88
Well Head Completion: NA

Type of Sampler: 2" split barrel

Boring Log B-34 WGR Project No.: 1-045.02

-WGR





EXPLANATION

Water level during drilling (date)

Water level (date)

Contact (dotted where approx.)

Gradational (hachured), uncertain (dashed) contact

Location of recovered drive sample

Location of drive sample sealed for

chemical analysis

Grab sample

est K = Estimated permeability (hydraulic conductivity)

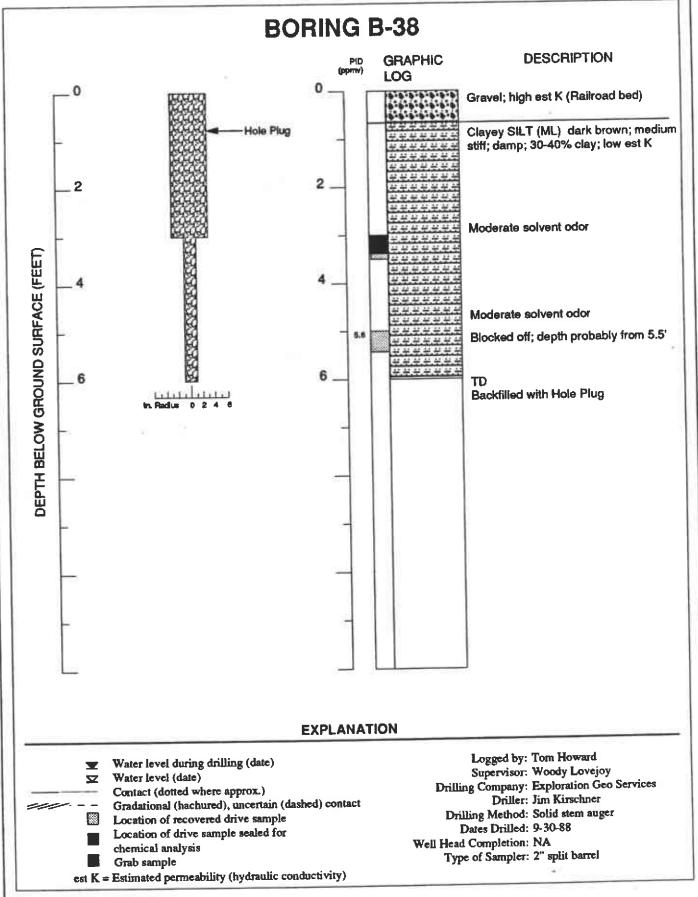
Logged by: Tom Howard
Supervisor: Woody Lovejoy
Drilling Company: Exploration Geo Services
Driller: Jim Kirschner
Drilling Method: Solid stem auger

Dates Drilled: 9-30-88
Well Head Completion: NA

Type of Sampler: 2" split barrel

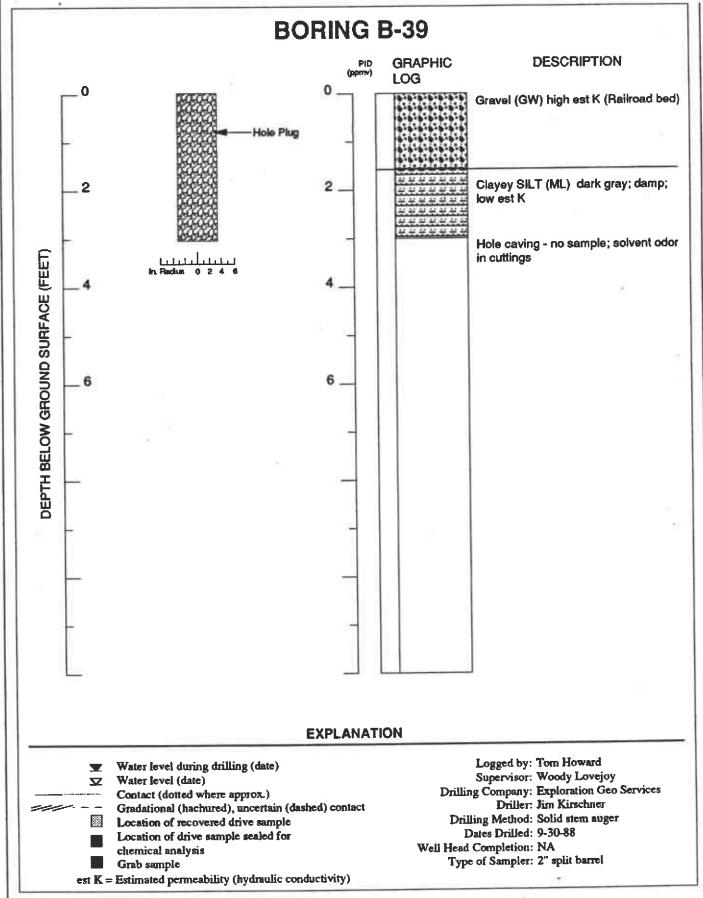
Boring Log B-37 WGR Project No.: 1-045.02

-WGR



Boring Log B-38

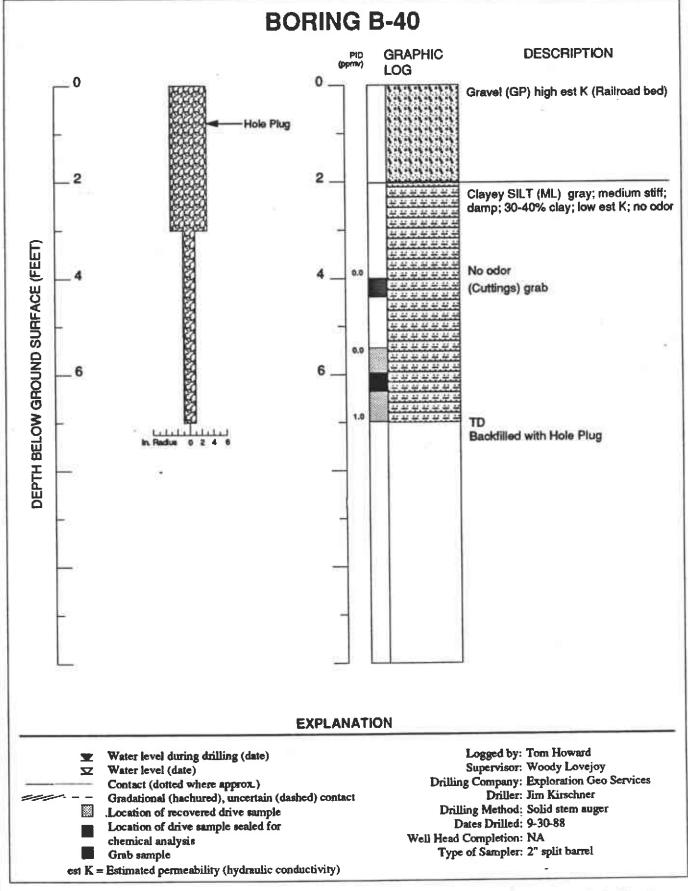
WGR Project No.: 1-045.02



Boring Log B-39

0

WGR Project No.: 1-045.02



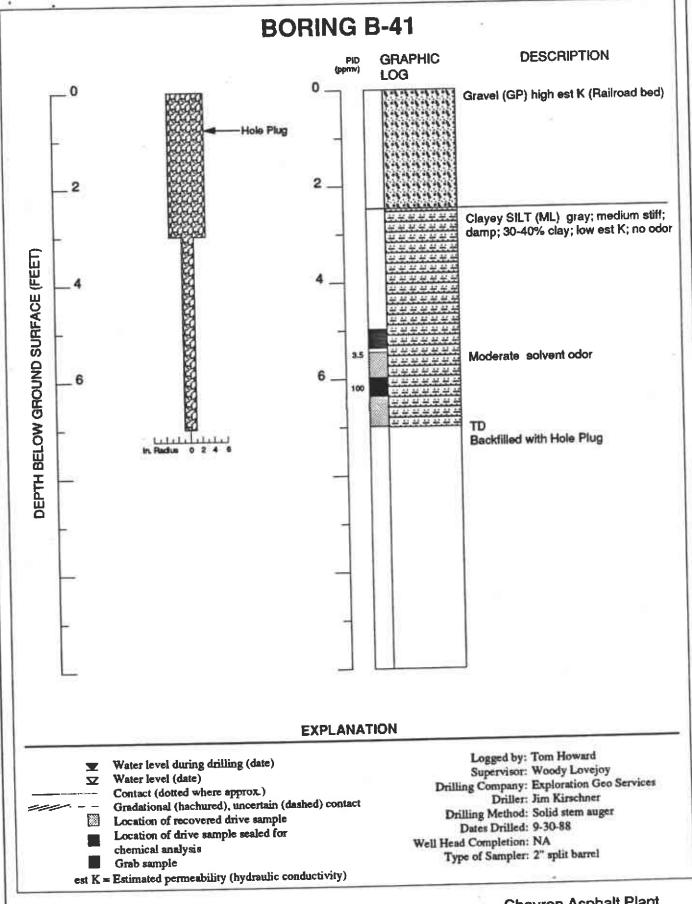
Boring Log B-40

C

0

WGR Project No.: 1-045.02

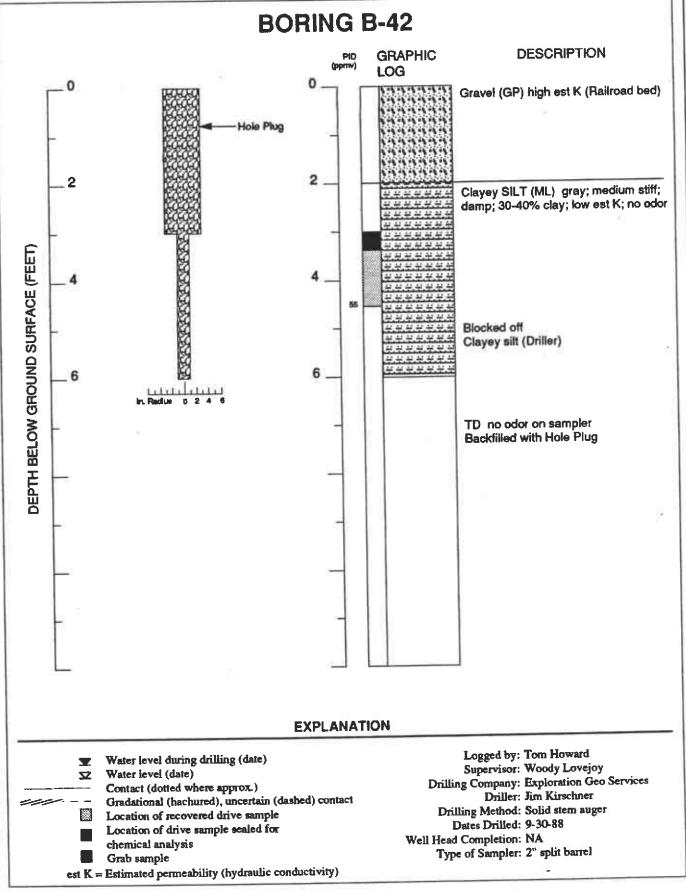
-WGR



Boring Log B-41

0

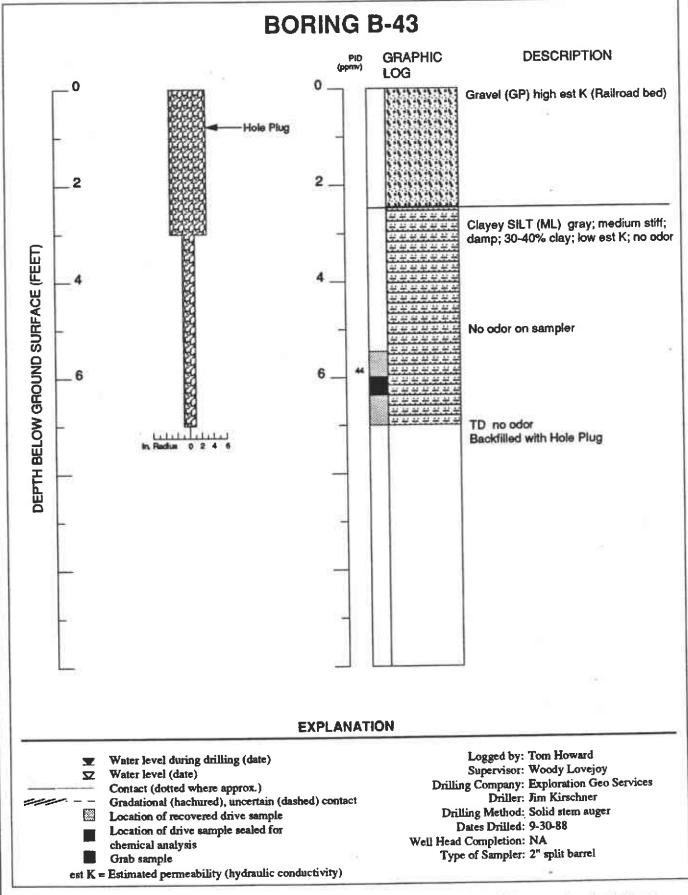
WGR Project No.: 1-045.02



Boring Log B-42

0

WGR Project No.: 1-045.02



Boring Log B-43

()

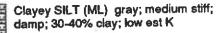
WGR Project No.: 1-045.02

-WGR



Hole Plug





No odor on sampler

TD No (?) odor Backfilled with Hole Plug

EXPLANATION

■ Water level during drilling (date)

In Redus 0 2 4

- Z Water level (date)
 - Contact (dotted where approx.)
- Gradational (hachured), uncertain (dashed) contact
- Location of recovered drive sample
- Location of drive sample scaled for
- chemical analysis
- Grab sample
- est K = Estimated permeability (hydraulic conductivity)

Logged by: Tom Howard

Supervisor: Woody Lovejoy

Drilling Company: Exploration Geo Services

Driller: Jim Kirschner Drilling Method: Solid stem auger

Dates Drilled: 9-30-88
Well Head Completion: NA

Type of Sampler: 2" split barrel

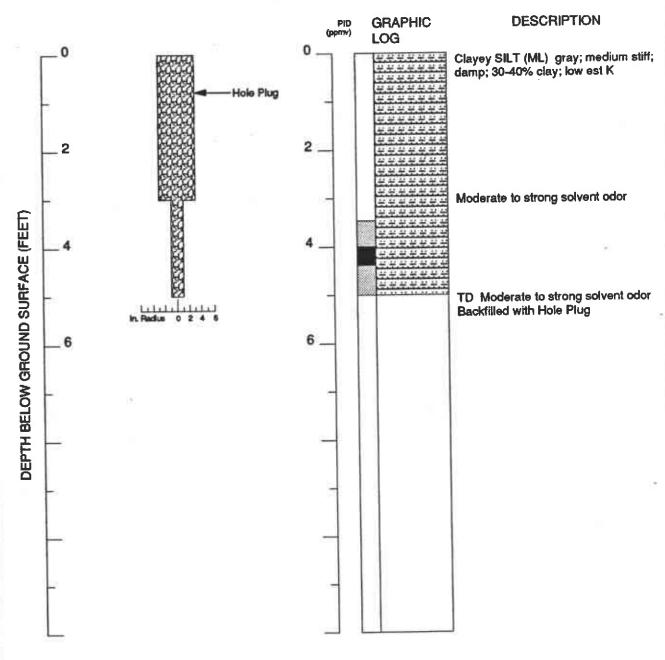
Boring Log B-45

2

DEPTH BELOW GROUND SURFACE (FEET)

WGR Project No.: 1-045.02





EXPLANATION

■ Water level during drilling (date)

Water level (date)

Contact (dotted where approx.)

Gradational (hachured), uncertain (dashed) contact

Location of recovered drive sample

Location of drive sample sealed for chemical analysis

Grab sample

est K = Estimated permeability (hydraulic conductivity)

Logged by: Tom Howard
Supervisor: Woody Lovejoy
Drilling Company: Exploration Geo Services

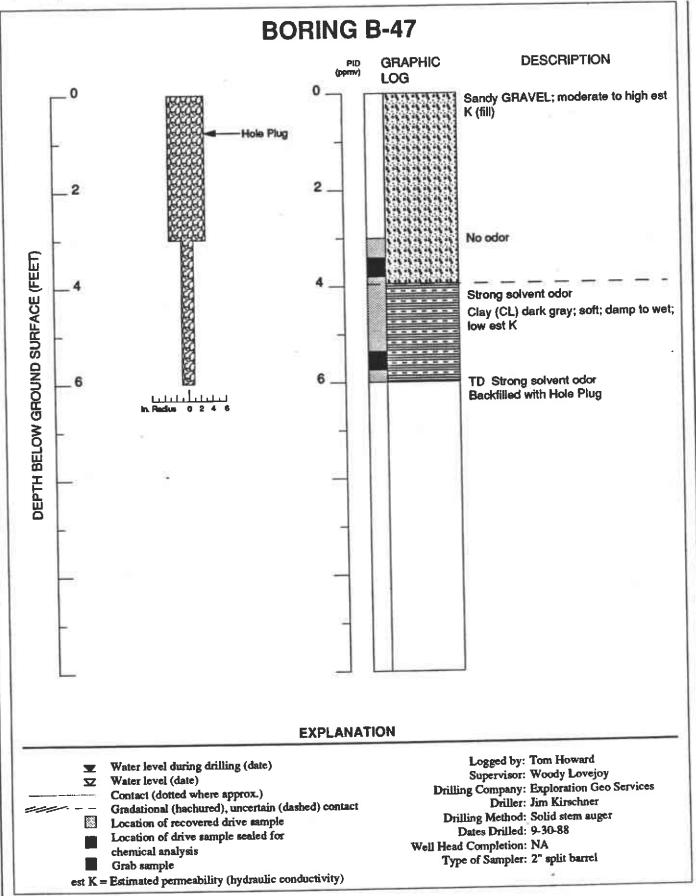
Driller: Jim Kirschner
Drilling Method: Solid stem auger
Dates Drilled: 9-30-88

Well Head Completion: NA

Type of Sampler: 2" split barrel

Boring Log B-46

WGR Project No.: 1-045.02



Boring Log B-47

e,

WGR Project No.: 1-045.02

ATTACHMENT C
Chain-of-Custody Forms

Ø

CHAIN OF CUSTODY RECORD CHAIN OF CUSTODY RECORD Project or POR NESTERN GEOLOGIC RESOURCES 1. 045 02	1777	1.0		-/	/	-	, ,	Unalyses	s requir	ed /	11	/	400
Address SUITE TRAVICISCO BLUD SUITE B AN 1177	75	37		/	/	15	/	/	/	//	18/	14/	1 2 3
City, State, Zip SA-1 7 C SA-1 7 C SA-1 7 C STATE STAT		4	1	Ŋ,	3/	4/	/	/	/	1	8		
Sample Dale Time See key below Sampled	Number of containers	/	37	15/	1/1	+/	/	/	1/2		Re	omarks	
30 5-1-30	1.	Life	24-		ar S	1	e \$	12.5	7.1	1		1	10.50
The second states of the Ball 3.0	. 1	4.1	77 E	1.1	ž,	Tes.	4.0	>	35	13	_		CALT
30 7 3 3 V	1	77	907	× ,	- 1-	-	ii.	/		17 to	y Cor	APO	SITE
第20 7 20 1 1 8.4.5.0	37.20	+ 1	K X X		*	15	/		3.7	0/	11170	: C-	-100
3.5-3.0	. 1				116	1.0	1	020	Pad	100	Vista :	?	14/1/14
2012年 · 1200年		12.	(2)		5	43	270	.50		132		1 3	2317
B-6-30	t-	3.1	1	74.11	1.17	-	14.	491	10.15	1	44 75K	Y. J.	F-307.4
B7.30	1 7	r_,	33.	100	V.	3 -	1	1			COLAR	051	te
	1	1,12	9.1	Act.	12.	(i-):	27	1	2		MINTO		2
·	1	1		1.3	200	100	/	10	1.0	1/	100	37 17	注意性(
8-10 · 30	1	1, 8	172	11	Mil.	1		123	3.8		17	7	11.6
TO DEVICE SEED TO DESCRIPTION OF THE PERSON		12	.75		1.st	1	1	100		1	1	_	
Print Name		N)		10.0	Comp	1	3.	***		1	Date I/n	100	Time
Relinquished by James M. Howar Thomas 11 1/11 AR)	14/8	572							7.6	41	11/7/18	360	1106
Received by	-			¥					11	ALET CO.	2.7253284 80.588	231	5-2415 · ·
the state of the s	0.1	- 6	iĝis J			65	-fig		1	2000	(A) (A)		1130
Received by		- 4		\$F 1	Caracter State			1	3.1	312	411	11111	
Received by Laboratory ####################################	RC	-		y				⇒v.(a)			0/- /	1	15:00

1255 Powell Street, Emeryville, CA 94608 (415) 428-2300

1200 Pacifico Avenue, Anaheim, CA+92805 . .

373 South Fair Oaks Avenue, Pasadene, CA 91105 (818) 795-7553

Samples are discarded 30 days after results are reported unless other arrangements are made

*KEY: AQ-Aqueous NA-Nonaqueous SL-Sludge GW-Groundwater SO-Soil OT-Other PE-Petroleum

Hazardous samples will be returned to client or disposed of at client expense.

		AND RESIDENCE AND RESIDENCE	THE RESERVE AND ADDRESS OF
CHAIN	OF	CUSTODY	RECORD

BC Loo Number XX09/47

Client name	Project or PON / ON 1.02	12 ¹⁰ 77 ×	8	1	///	/-/	Analyses requ	uired					
minus 7.1 la 4 to 17 AVICIS	10 FIND SIFE AN ATT 75			/0/	13	NY ,	//	//3/					
City State Zip A 4907"		Ely	1	10/	18/	/	//						
Sample Protein Time See key	Sempled by 1000 ATCM	Number of containers	15	13/	1/11	//	///						
number sampled sampled below	Sample description	COMBINIA	17	17 1	14	1	//	Rémarks					
4 9 1/88 Su	B111 3.0 1 1	11.00	Section 15	- 1	30 m		11 19						
The second of the second	まずているひずっ	1, 1	35. 13		L S			Noi IPOSITE INTO:					
	7-13-3-U	1		10 1	W. 4.	08%	11	1 1 C.5					
	B-14-30		12 7	11:11:	of di	/	13	一大线性性的现在分 数					
· · · · · · · · · · · · · · · · · · ·	B-K=30	. 10	20	J. 7	11/	1	4分類	1/3% > 30.59					
48 × 10 × 10 × 10		E 1,2	11		4.4 等	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	ele.	Company Company					
The same and same	B.16=30	1		- 812	× 4 1		\$18.00	X					
Concept 100 (Ed.) Cartistan and Sharkstone Cont. Cartist	B.1703.0	1	154		- 1		> 4	f COMPOSITE INTU:					
经 基础出现。	B-18-30	1		25	* E	\angle	8	/ C-1					
A	B-70-30	1	100	4 9	89.	. 4	30 5						
では、「一般」		1174	1	17	VI - 1	. 3		2/2					
12 3/4 5/		L Ša	0000	9 - 3	S. 4.		38 12	04					
Signature - The Signature - Th	Print Name	-		V7-10	Company	-70 4	Section 1						
Relinquished by Was Mr. Hou	Thomas, M HOMARY	11/2	STE	711	EULO	41		9/7/18" 11:35					
Received by	Received by						在一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个						
Relinquished by	the second of th						and explose with						
Received by		1 144 1	4.	LIVE,	9.00		44年以外区共1996年						
Relinquished by	Relinquished by					150	10. 1	147. july 300 1					
Received by Laboratory	Received by Laboratory ###							9/1/50 15100					

Application of the second of t

BROWN AND CALDWELL LABORATORIES

1255 Powell Street, Emeryville, CA 94508 (415) 426-2300

373 South Felr Oaks Avenue, Pasadena, CA 91105 (818) 795-7553

1200 Pacifico Avenue, Anahelm, CA 92805

Note:

Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

*KEY: AQ-Aqueous NA-Nonsqueous SL-Sludge GW-Groundwater SO-Soil OT-Other PE-Petroleum

	A gr			1/2		ODY RECORD	Qa, pared 4			2						BC Log	Number	_	_	
Client na	1115 6	7	CTI	Con	dul Rr	SUIDIT S	Project or PO#				1	7	7	7	nalyses	eniuper	1	7	7	
Address	7110)	TIV	AULISC	0 1.147	5 MT 5	Physical day 7	155		,	/	/ ,	/ ,	/ ,	/,	/ ,	/ /	30/		5.5
City, Stat	e, Zip	7,	THE	11	94901	Report attention	11183/100	7.9			/	/	/	/	/	/	1	/	88.	
Lab Sample number	Date		Time sampled	Type* See key below	Sampled by	Sample descri	7.5	Number of containers	/	/	/	/	/			1			- Remarks	r'ings Fly
250	dils	8	77.14	50	B.1- <			/								3.7		46	LD)
Addition	install		5.40		13.7.5	.0		1					-			1.5	1			
and the	1.44	ď,	- 1000 1000		B2.5			1			13				**************************************	Ç4		1,84		
of topical	ix, 60	7		137	B.1.		1.	1:				Sain Ou	i ::	(4)	1 , 2	2-7	1,000	2 -		with the
MARINE MARINE	स्थापन । स्थापन । स्थापन ।	ak -	十分の対象を	++ 1 - 0 - 1 1 - 1	3.5.			- 1			-			"	3,1	-1	1. 1	24. S	Contraction of the Contraction o	性質問題
MAC N	19406	ī,	de sti			(,0	110 5	. ,			2.0	. "	1.	457		+ - 3	19.0	37 7	是是可以	
Market Market Militari	70 mm	15.	iter and	205	1. P. 7		2 × =	1			N.			7.8	87	1 2	1.00	41	Mag 50	Estro :
	· · · · · · · · · · · · · · · · · · ·	24	in the part	52. 43	B. K.			T.		. 5				154	* 32	101.1 101.1	-200	37		
Part Server		κ.		100	13.9.	Tetre		, 1			: 1			i i	-15	100	33.	7+14	Short	0,7400
Secretary	# in		Day of Land	Figure Mark	1B.10-	9.0	T/g	1		3	100	1	14,15	350	150		5 S 191		ija des	ti goda ji
100 B. F.	77 - 01/15		100	100	13-11.	7	N 4	_ /		6.			1	ă.	11	100	200	7	7	, , ,
	1	1.	1.5	1.7	13.17			1					11	72.0				· \/	/	1/ 6
		0	Signatur	·	7		Print Name					Comp		Ш			1.1	_	ate	Time
_			e, Ila	17	X	TILVERS	M. LIWARN	1/1	- 57	(7)	16-	rol	0/11	C.1	4 8	Sire	1.4	7/7	110	18:00
Receive	ed by	i an	11832			- 51	3.6 =				120	_	11			1	1/2		O. J.	100 10 - 1
				ACTION 12 CO	Court makes			- 1									250 mil	1.2		

BROWN AND CALDWELL LABORATORIES

Received by

Received by Laboratory

Relinquished by

☐ 1255 Powell Street, Emeryville, CA 94608 (415) 428-2300

373 South Felr Oaks Avenue, Pasadena, CA 91105 (818) 795-7553

Note

Samples are discarded 30 days after results are reported unless other arrangements are made.

Hazardous samples will be returned to client or disposed of at client expense.

*KEY: AQ-Aqueous NA-Nonaqueous SL-Sludge GW-Groundwater SO-Soll OT-Other PE-Petroleur

ă.,,,;			- 1. C	AIN OF CUSTODY RECO			- 1			Analyses	s required		_
Address	11/67	CEN	MEDI	OGIL 10 GILTE T.	Project or POII OAK Z Phone II AT 7				//	77	//	72/	14
City, Stat	a, Zip	THEL	70	1901 Report attention	11 ATT / 1000	750	/	//,	//	//			* 1
Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by	ATT >	Number of containers	//	//,	/./	//		Remarks	
25.00	7/7/38		50	Fg. 13.5.0		1						HOLD	- 59
y 1.	4.7		-1	B.11 (.0		1					1	in the	vig tr
1.44		274		B-K-5.0	189	1						. A 13 to 1	4-4-
Ť	8.			B-16.50		1					-		Shar .t
οκο. 140	And the last			B.17- S.O								8 1 8	ep grandra
75 16	GC 1		22	R-11- E.U		1						4 4 5 00 V	
1 12				B-17- 6.0		1							*10 T - 2
	V		A,	B. 70-5.0		1.	\perp	\perp					
de s	· · · · · · · · · · · · · · · · · · ·	* * *.	11 12	2 2 8					-		-	7	
200			1.0	0 90				\dashv	_		-		
1.5	7.						\vdash	\perp		-	-	7.17	
	100			Y. I		<u> </u>						- 01 2	
10.9		Signatu			Print Name				ompany			Date	Time
Relinqu	ished by	and	2 Lbo	whi Tilderi	MM MINDES	5//	FST	ET 1	1.101	dric		4/7/4	18:00
Receive	d by			0								-	
Relinqu	ished by												
Receiv	ed by Haran	1	1.3. T							36			
Relinqu	ished by	01	1/6	229		1			20			1,,	
Receiv	ed by Laborato	ry / 1/19	Mar	- : EZ		le	6					4/7/20	18:30
THE CALDWELL LABORATORIES					Note:	discarded 3	O dava alter n	esults are rec	orted unless	other arranger	ments are made.		

Hazardous samples will be returned to client or disposed of at client expense.

*KEY: AQ-Aqueous NA-Nonaqueous SL-Sludge GW-Groundwater SO-Soil OT-Other PE-Petroleum

1255 Powell Street, Emeryville, CA 94608 (415) 428-2300

1200 Pacifico Avenue, Anaheim, CA 92805

373 South Fair Oaks Avenue, Pasadena, CA 91105 (818) 795-7553

dress Phone 7 - 04	3.00	v.		/	/	N	/	/			1857	/:-	
y State, Zip ! Report attention // / / / / / / / / / / / / / / / / /	20	4.1	X	Sy,	35							na Pigas	
lab mple Date Time See key	Number	1	(P)	(3)	//							ness a	un en anne
moer sampled sampled below Sample description	containers	/	<u>y</u>	/	154	100	Section 1	99C3	2000 2000 2000 2000 2000 2000 2000 200	1 TO 100	THE CANADONA	Remarks	10 mg
1 900/8 50 B-21-3.0	* 254 V	19 (E-1	108	19199	NAME.	200	2000年	COLUMN TO SERVICE	25714		147	ペノクと	
2 3 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	o Partie	1.27	135	SAN THE	ZBTort	THE SECOND	West of the last o	Service.	THE REAL PROPERTY.	54	TUR	12	
3-17-72-3:0	1 11112	(3.4)	15.3	44	W	3-6	A PERSON	1	を対象	2d	211	MEAN W	and the second
1 B-72-45	4.137	350	1.00	- 100 M	ANCOR.	23	1	444		1		7.E	
5		100	rgary.	1000	The !	THE STATE OF	1000	NEW Y	AND UNITED	建 频	ALCO N		
6 3 - 8-27-50	E LOVER	變	位的	300	1	April 1	1	200	1999	19-41			
7 8 8-74-50	3. 中华教	137	- 100	100 a	100	PER STATE	No.	7.7.1	門際	MORNING.		دری. دری.	(a) (a)
5 73-74-5.0		100	1	186	17.75	19999	Dev.	E P	1000	40 to	ATTENDED		STAR FAMILIE
9 7 75-3.0	€ 1. pe 18 a	45 8	-	湯	arting)	(A) (A)	2006 2006	CONT.	14.30	TO S	All the same	Mar of	4
D 8-75-5.0	7/-		(10)	(PCU)	C.A.	54 54	1000	NAME OF THE PERSON	数器	Marie Marie	Maria are	Maria Control	LIND PA
71. 8-76-30	t tor's	11.5	18.4	1.20	356	13.40	A CONTRACT	R.M.	部	色神	A LANGE	A. C.	
2 70- 5.0			1985	140	1	Sink	物	李	1500	歌歌	S Day	THE PERSON	
Signature Print Name		/1/	, r	7	Comp	any ~	10 mg	Table 1	15	AND THE	oils	210	279
elinquished by James Hours Jona Horal ARI	, ,	$\Delta \Gamma$	7/	. 1 212	(1) · · ·	4476	AL HAZ	***	45 W	772 #	機能	が開発す	No. of the last
eceived by	ra Fast		1.25	and.	V X	*****	医抗症	1000		NO THE RES	DE ST		1000
telinquished by	- Table	6 - T2 - 1	is pra	80 V 82	24	e projection de	S. March	1	A SECTION AND ADDRESS OF THE PERSON ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON ADDRES	Car	348	THE STATE OF	- The second
Boonved by		- 20		14	STATE OF THE	CAN THE	对	ALCOHOL:	North Park	国際で	ALC: NAME OF THE PERSON OF THE	大学	STATE OF
		CE	40		- THE	- 1	1	***	か時期		9ho	10P	15
Received by Laboratory WW/// = = = = = = = = = = = = = = = = =	Note:	X Z	(3)	80	4	Sec. 7	L. Ayrı	ere The	4.	angeme nae.	的外外的	2,000	

ą.,	aja II.		CHA	AIN OF CUSTODY RECORD	PUSH	·	£ -		٥,				BC Log	9 Number 8809 686
Client na Address City, Stat	M	4R	- (e.a. - 2	Report attention	Project or PON 04	5.02		(3)	.7	N/	/	nalyses	require	
Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by // Sample desc	""	Number of containers	45	73	1	/	/	/	1	Remarks
1	9/30		50	8-27-30					54	1,2	rå.	MI	3:	MAY BE
al	100	1000	14.4	15.77.50					50	1	3.35		i X	SATURA FED
3	J. 18	1897.j.	11/2	13-78-3,5				4.0	100	* 1881	14	all v	PEN.	and the latest and the
y	136 2. 5	Y	30	B-78.515	N 00 1/	300			4	1 12	14.	1/2	145	and the second
s	34.1 .7 S	100	20 g	8-30-55	10 10			3	020	-31	Au;	24 25	100	10. 11. 12. 14. 14. 14. 14. 14. 14. 14. 14. 14. 14
4	\$1.50	100	5 3 27	B-30-5.5		100 5		30	- 4	100	76.9	*		
7	13 4	ess ésse	500	13-31-3.5				* 4	F-9		2	1124	$\mathcal{A}_{\mathcal{A}}^{p} \mathcal{A}_{1}$	and the second second
	78 mg	0 3	1	8-31-5.5	5'				1.1			27	. 37	and the same same
1		1.37		13-33-3.0				1	-	(10)	-		120	2. 自由于特定 和
16	1.	# 11 ×	1	8-95-5.0	18 A. H. V. O.				100		261	17	534	A SAME OF THE SAME
1	100	N 1898	1,1%	B-34-3.0					1,50	9	77		1,32	The second second
1	14	70 00	V	B-34, 5.0	== sa II #/ 1				1160	ie.	SHE	Tid.	135	and the second second
F	1 V	Signatur	re		Print Name			. p. 1	Comp	any		49 N	-2014	Date with Time (C)
Relinqu	ished by	een	EN L	gain Torn	HOWATED		1	11/1	2		45	3500	7 (1936)	9/30/8 6:25
Receive	ed by	7"	me Sign		*>= "= "	le III		Hon T	- 161	11 6	1 2.		- 1	
Relinqu	ulshed by			The second				Ŷ	3		_	0.00	3,36	THE PARTY OF THE PARTY OF THE PERSON OF THE
Receive	ed by	1/	111	1/2 200				- 1	N. S. J.	o Vila	3,050	_	_	The second secon
Relings	ulshed by	111	11/11		5 ⁷⁷ III t IIDs		10		G.C.	U W		1		The state of the s

BROWN AND CALDWELL LABORATORIES

Received by Laboratory

155 Powell Street, Emeryville, CA 94608 (416) 428-2300

South Fair Oaks Avenue, Pasadena, CA 91105 (818) 795-7553

₹. E.

Pacifico Avenue, Anahelm, CA 92805

Note

Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.

*KEY: AQ-Aqueous NA-Nonsqueous SL-Sludge GW-Groundwater SO-Soil OT-Other PE-Petroleum

e	9.7		CH	AIN OF CUSTO	DY RECORD	17139	14			-11-	100	1200	40				880460	27 10 May 10 May 12
Client na	TEST.	ETEN	HEOL	dic	Proje	ct or PO/ - 04 (* 7	1	'	1	A	alyses	require	d .	1-/	Silver Control
				10150	SUITE B Phon	*457-7	795	(g. 10)		200	133	1	//	/		//	/ 8/	の場合の最近の
				A 94901	Report attention	toine AZ	>					/	/	/	/	1	Francisco de la companya de la compa	A THE COLUMN TWO IS NOT THE COLUMN TWO IS NO
Lab	Date	Time	Type* See key	Sampled by	u Homen	12.15	Number	6	27	X	/	/	//	//	//		Spirit Contra	1000元的特
Sample number	sampled	sampled	below	Lev B	Sample description		containers		<u>Z</u>	Z	/	1	10	/	1	/		The company
13	9/30	1	40	13.37.	3.0	8 6		1		2.5	137	1 4	F. 4.	35.44	344	MI	H BE	and the second
11	products	. 1	1	13.38-	3.0	127	o =		- (%)	. *		iki.			314	9	ATISTER	TED.
181		4.1	- 1	B-40	4.0					1.	J.		(9±)	., 1	/	7	Neil	A manufactures
14	11 2	da	-	13-40	6.0							F 15		45	(4)	±/C	074	/cabeners
117	ol,		1	13-41	5.0						- 1					<	1000	19 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1.				13-41	6.0	2 '				T.		-3.7	Ĥ	123		J.C.	1 - 1 - 2 - 7/12 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	
/		Fig. 9.	100	13-47	5.0			_			111		-200 - 342	187	3.11	1000	nie i Olefferiebe (1) Deut abster der seht f	
20		V 31.14	4	B-43				-	3	-		100	7.1	7.77	45.00	100	STATE OF THE STATE	Jesus Line
21	1 222	01 7 7			. <.0			_			-		100	7/8-1	12.00	N Jole	and the second	and the second
24	A	1 2	7-0-1		-4.0						1	_	100	124	(VL)	. Mr. s	THE REPORT OF THE PARTY OF THE	2007 1000 000 5 TO 100 NO SECULO 100 5 TO 100
28		S. 1516.	1	13-4	7-3/	- < 1	T.	_	_	_			4 5	50.	100			real symples
21	V	3 ., 1991	V	13-4	7-5.	-					13	int i		170	13	1973		WV Programmer (1921)
_		Signatur	ю		Print N						Compe	iny		4.1	* *****	107,224 1736,53	Date los	Time
Relinqu	lehed by	Ken	not	bun	Tom 140	(ISIMIA)	1	1	GI	_				100	1	Reserve	9/30/88	620
Receive	ed by			Mary 1	The section of the se					1 1/2		24.0	100	5 DV	-	7,008	A. C. Park Str. St.	1 17 17 11 14 15
Relinqu	lished by	at ve	1		6.5	5					2.5	-			G.	-	\$3.74.14.75 St	ask with
Receiv	ed by	11/1	111	1		(0)				niệi)	i Neti		72	17.0		* 25	344	Special and
Relinq	ulshed by	///	1/1/1/1	Str. in						1			- 5			1077	-//	建筑等的
Dacah	red by Laborate	ory Mint	Ilm		£		BO	2		ш	, 77		27	tes.	4.4.1	1.95	9/30/88	18:20

1255 Powell Street, Emeryville, CA 94608 (415) 428-2300

373 South Fair Oaks Avenue, Pasadena, CA 91105 (818) 795-7553

1200 Pacifico Avenue, Anahelm, CA 92805

*KEY: AQ-Aqueous NA-Nonaqueous SL-Sludge GW-Groundwater SO-Soil OT-Other PE-Petroleum

ATTACHMENT D Laboratory Reports

(

1255 POWELL STREET EMERYVILLE, CA 94608 * (415) 428-2300

LOG NO: E88-09-236

Received: 07 SEP 88

Reported: 14 SEP 88

Mr. Woody Lovejoy Western Geological Resources, Inc. 2169 East Francisco, Suite B San Rafael, California 94901

CC: T. Howard

Project: 1-045.02

REPORT OF ANALYTICAL RESULTS

Page 1

LOG NO	SAMPLE DESCRIPTION,	SOIL SAM	PLES		D#	ATE SAMPLED
09-236-1 09-236-2 09-236-3 09-236-4	B1-B5 Composite B6-B10 Composite B11-B15 Composite B16-B20 Composite	FROM	5.01			07 SEP 88 07 SEP 88 07 SEP 88 07 SEP 88
PARAMETER			09-236-1	09-236-2	09-236-3	09-236-4
BTX by PID Benzene, m Ethylbenze Toluene, m Total Xyle	g/kg ne, mg/kg		0.5 0.5 <0.3 0.9	0.5 <0.3 <0.3 0.5	0.6 1.3 <0.3 3.3	
Total Fuel Date Analy Fuel Chara	Hydrocarbons		09.12.88 DIESEL 1700	09.12.88 DIESEL 640	09.12.88 DIESEL 1000	GAS+DIESEL

Sim D. Lessley, Ph.D., Laboratory Director

 \bigcirc

£ ..

D) ECEIVE	M
SEP 20 1988	ש
Approved	
Copy To	

1255 POWELL STREET EMERYVILLE, CA 94608 * (415) 428-2300

LOG NO: E88-09-147

Received: 07 SEP 88 Reported: 09 SEP 88

Mr. Woody Lovejoy Western Geological Resources, Inc. 2169 East Francisco, Suite B San Rafael, California 94901 CC: Tom Howard

Project: 1-045.02

	REPORT OF A	NALYTICAL RESUI	TS		Page 1
LOG NO	SAMPLE DESCRIPTION, SOIL SA	MPLES			TE SAMPLED
09-147-1 09-147-2 09-147-3 09-147-4	B-1,2,3,4,5-3.0 B-6,7,8,9,10-3.0				07 SEP 88 07 SEP 88 07 SEP 88 07 SEP 88
PARAMETER			09-147-2	09-147-3	09-147-4
BTX by PID Benzene, m Ethylbenze Toluene, m Total Xyle	(EFA-8020) g/kg ne, mg/kg	<0.3 <0.3 <0.3 <0.3	<0.3 <0.3 <0.3 <0.3	0.3 <0.3 <0.3 5.4	
Total Fuel Date Analy Fuel Chara	Hydrocarbons	09.07.88 DIESEL 1700	09.07.88 DIESEL 490	09.07.88 DIESEL 1900	GAS+DIESEL

Sim D. Lessley, Ph.D., Waboratory Director

Ç

€'

 \bigcirc

BROWN AND CALDWELL LABORATORIES

ANALYTICAL REPORT

1255 POWELL STREET EMERYVILLE, CA 94606 • (415) 428-2300

LOG NO: E88-09-686

Received: 30 SEP 88 Reported: 05 OCT 88

Mr. Tom Howard
Western Geologic Resources, Inc.
2169 East Francisco, Suite B
San Rafael, California 94901
CC: Mr. Tom Howard

Project: 1-045.02

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION,	SOIL SAMPLI	3S			TE SAMPLED
						30 SEP 88
09-686-1	B-21-3.0					30 SEP 88
09-686-2	B-21-5.0		-			30 SEP 88
09-686-3	B-22-3.0					30 SEP 88
09-686-4	B-22-4.5					30 SEP 88
09-686-5	B-23-3.0					
PARAMETER		09-686-1	09-686-2	09-686-3	09-686-4	09-686-5
DOW L. DID	/PDA 9020\					
BTX by PID		<0.3	<0.3	<0.3	<0.3	<0.3
Benzene, m		<0.3	<0.3	<0.3	<0.3	<0.3
Ethylbenze		<0.3	<0.3	<0.3	<0.3	<0.3
Toluene, m	ne Isomers, mg/kg	<0.3	<0.3	<0.3	<0.3	<0.3
	Hydrocarbons					
Date Analy		10.02.88	10.02.88	10.02.88	10.02.88	10.02.88
				DIESEL		
Total Fuel	cterization, . Hydrocarbons, mg/kg	<10	<10	93	<10	<10

C

 \mathbf{C}

BROWN AND CALDWELL LABORATORIES

ANALYTICAL REPORT

1255 POWELL STREET EMERYVILLE, CA 94608 * (415) 428-2300

LOG NO: E88-09-686

Received: 30 SEP 88 Reported: 05 OCT 88

Mr. Tom Howard Western Geologic Resources, Inc. 2169 East Francisco, Suite B San Rafael, California 94901 CC: Mr. Tom Howard

Project: 1-045.02

REPORT OF ANALYTICAL RESULTS						Page 2
LOG NO	SAMPLE DESCRIPTION,	DA'	TE SAMPLED			
09-686-6 09-686-7 09-686-8 09-686-9 09-686-10	B-24-3.0 B-24-5.0 B-25-3.0			-		30 SEP 88 30 SEP 88 30 SEP 88 30 SEP 88 30 SEP 88
PARAMETER		09-686-6	09-686-7	09-686-8	09-686-9	09-686-10
BTX by PID Benzene, m Ethylbenze Toluene, m Total Xvle	ng/kg ene, mg/kg	<0.3 <0.3 <0.3 <0.3	<0.3 <0.3 <0.3 <0.3		<0.3 <0.3 <0.3 7.0	
Total Fuel Date Analy Fuel Chara	Hydrocarbons	10.02.88	10.02.88	10.02.88 DIESEL 310	10.02.88 DIESEL 1800	10.02.88 DIESEL 2700

1255 POWELL STREET EMERYVILLE, CA 94606 . (415) 428-2300

LOG NO: E88-09-686

Received: 30 SEP 88 Reported: 05 OCT 88

Mr. Tom Howard
Western Geologic Resources, Inc.
2169 East Francisco, Suite B
San Rafael, California 94901
CC: Mr. Tom Howard

Project: 1-045.02

REPORT OF ANALYTICAL RESULTS

LOG NO SAMPLE DESCRIPTION,	SOIL SAMPL	ES		DA	TE SAMPLED
09-686-11 B-26-3.0 09-686-12 B-26-5.0 09-686-13 B-27-3.0 09-686-14 B-27-5.0 09-686-15 B-28-3.5					30 SEP 88 30 SEP 88 30 SEP 88 30 SEP 88
PARAMETER	09-686-11	09-686-12	09-686-13	09-686-14	09-686-15
BTX by PID (EPA-8020) Benzene, mg/kg Ethylbenzene, mg/kg Toluene, mg/kg Total Xylene Isomers, mg/kg Total Fuel Hydrocarbons Date Analyzed Fuel Characterization, Total Fuel Hydrocarbons, mg/kg	<0.3 <0.3 <0.3 2.0 10.02.88 DIESEL 210	<0.3 <0.3 <0.3 4.2 10.02.88 DIESEL 1000	<0.3 <0.3 <0.3 7.4 10.02.88 DIESEL 840	<0.3 <0.3 <0.3 16 10.02.88 DIESEL 1900	<0.3 <0.3 <0.3 2.5 10.02.88 DIESEL 240

1255 POWELL STREET EMERYVILLE, CA 94608 . (415) 428-2300

LOG NO: E88-09-686

Received: 30 SEP 88 Reported: 05 OCT 88

Mr. Tom Howard
Western Geologic Resources, Inc.
2169 East Francisco, Suite B
San Rafael, California 94901

CC: Mr. Tom Howard

Project: 1-045.02

REPORT OF ANALYTICAL RESULTS

LOG NO SAMPLE DESCRIPTION,	SOIL SAMPL	ES		DA	TE SAMPLED
09-686-16 B-28-5.5 09-686-17 B-30-3.5 09-686-18 B-30-5.5 09-686-19 B-31-3.5 09-686-20 B-31-5.5					30 SEP 88 30 SEP 88 30 SEP 88 30 SEP 88 30 SEP 88
PARAMETER	09-686-16	09-686-17	09-686-18	09-686-19	09-686-20
BTX by PID (EPA-8020) Benzene, mg/kg Ethylbenzene, mg/kg Toluene, mg/kg Total Xylene Isomers, mg/kg Total Fuel Hydrocarbons Date Analyzed Fuel Characterization, . Total Fuel Hydrocarbons, mg/kg	<0.3 <0.3 <0.3 1.3 10.03.88 DIESEL 270	<0.3 <0.3 <0.3 1.4 10.02.88 DIESEL 290	6.2	<0.3 <0.3 10.02.88 DIESEL+OIL	2.6 10.03.88 DIESEL+OIL

1255 POWELL STREET EMERYVILLE, CA 94606 • (415) 428-2300

LOG NO: E88-09-686

Received: 30 SEP 88 Reported: 05 OCT 88

Mr. Tom Howard Western Geologic Resources, Inc. 2169 East Francisco, Suite B San Rafael, California 94901 CC: Mr. Tom Howard

0

Project: 1-045.02

REPORT OF ANALYTICAL RESULTS

LOG NO SAMPLE DESCRIPTION,	SOIL SAMPI	LES		DA	TE SAMPLED
09-686-21 B-33-3.0 09-686-22 B-33-5.0 09-686-23 B-34-3.0 09-686-24 B-34-5.0 09-686-25 B-37-3.0	**************************************				30 SEP 88 30 SEP 88 30 SEP 88 30 SEP 88 30 SEP 88
PARAMETER	09-686-21	09-686-22	09-686-23	09-686-24	09-686-25
BTX by PID (EPA-8020) Benzene, mg/kg Ethylbenzene, mg/kg Toluene, mg/kg Total Xylene Isomers, mg/kg Total Fuel Hydrocarbons Date Analyzed Fuel Characterization, . Total Fuel Hydrocarbons, mg/kg	<0.3 9.6 10.03.88 DIESEL+GAS	<0.3 0.9 4.2 10.03.88 DIESEL+GAS	<0.3 <0.3 10.03.88	<0.3 12 10.03.88 DIESEL+GAS	_

1255 POWELL STREET EMERYVILLE, CA 94808 . (415) 428-2300

LOG NO: E88-09-686

Received: 30 SEP 88 Reported: 05 OCT 88

Mr. Tom Howard Western Geologic Resources, Inc. 2169 East Francisco, Suite B San Rafael, California 94901

CC: Mr. Tom Howard

Project: 1-045.02

Page 6

REPORT OF ANALYTICAL RESULTS DATE SAMPLED SAMPLE DESCRIPTION, SOIL SAMPLES LOG NO 30 SEP 88 09-686-26 B-38-3.0 30 SEP 88 09-686-27 B-40-4.0 09-686-28 B-40-6.0 30 SEP 88 30 SEP 88 09-686-29 B-41-5.0 30 SEP 88 09-686-30 B-41-6.0 09-686-26 09-686-27 09-686-28 09-686-29 09-686-30 BTX by PID (EPA-8020) <0.3 <0.3 <0.3 <0.3 0.5 Benzene, mg/kg <0.3 <0.3 <0.3 <0.3 <0.3 Ethylbenzene, mg/kg <0.3 <0.3 <0.3 0.9 <0.3 Toluene, mg/kg <0.3 4.7 <0.3 <0.3 2.2 Total Xylene Isomers, mg/kg Total Fuel Hydrocarbons 10.03.88 10.04.88 10.04.88 10.04.88 10.03.88 Date Analyzed GAS Fuel Characterization, . DIESEL+GAS GAS OIL 160 430 <10 Total Fuel Hydrocarbons, mg/kg 990 180

BROWN AND CALDWELL LABORATORIES

ANALYTICAL REPORT

1255 POWELL STREET EMERYVILLE, CA 94608 * (415) 428-2300

LOG NO: E88-09-686

Received: 30 SEP 88 Reported: 05 OCT 88

Mr. Tom Howard
Western Geologic Resources, Inc.
2169 East Francisco, Suite B
San Rafael, California 94901
CC: Mr. Tom Howard

Project: 1-045.02

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION,	SOIL SAMPI	LES		DA	TE SAMPLED
09-686-31 09-686-32 09-686-33 09-686-34 09-686-35	B-42-5.0 B-43-6.0 B-45-5.0 B-46-4.0 B-47-3.5					30 SEP 88 30 SEP 88 30 SEP 88 30 SEP 88 30 SEP 88
PARAMETER		09-686-31	09-686-32	09-686-33	09-686-34	09-686-35
BTX by PID Benzene, m Ethylbenze Toluene, m Total Xyle	g/kg ne, mg/kg	<0.3 <0.3 <0.3 <0.3		<0.3 <0.3 <0.3 <0.3	<0.3 <0.3 <0.3 <0.3	<0.3 <0.3 <0.3 1.3
Total Fuel Date Analy Fuel Chara	Hydrocarbons	10.04.88 <10	10.04.88 <10	10.04.88 DIESEL 160	10.04.88	10.04.88 DIESEL 160

1255 POWELL STREET EMERYVILLE, CA 94608 * (415) 428-2300

LOG NO: E88-09-686

Received: 30 SEP 88 Reported: 05 OCT 88

Mr. Tom Howard Western Geologic Resources, Inc. 2169 East Francisco, Suite B San Rafael, California 94901

CC: Mr. Tom Howard

Project: 1-045.02

	REPORT (OF ANALYTICAL RESULTS	· rage o
LOG NO	SAMPLE DESCRIPTION, SOII	SAMPLES	DATE SAMPLED
09-686-36	B-47-5.5		30 SEP 88
PARAMETER	***************************************	09-686-36	
Total Fuel Date Analy Fuel Chara	(EPA-8020) g/kg ne, mg/kg g/kg ne Isomers, mg/kg Hydrocarbons	<0.3 <0.3 <0.3 2.0 10.04.88 DIESEL 190	

Sim D. Lessley, Ph.D., Laboratory Director