



SUE 322

July 25, 1997

Ms. Susan Hugo
Alameda County Department
of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

ENVIRONMENTAL
PROTECTION
97 AUG 11 PM 4: 22

Re: **Subsurface Investigation**
Richard and Julia Becker
1300 Powell Street
Emeryville, CA
Cambria Project #950-423

Dear Ms. Hugo:

Cambria Environmental Technology, Inc. (Cambria) is pleased to present the analytic results for the environmental investigation completed on April 25, 1997 at the site referenced above (Figure 1). The Alameda County Department of Environmental Health requested that soil and ground water samples be collected in order to delineate the extent of soil and ground water contamination at this site. Presented below are a brief site history, descriptions of the investigation procedures, analytic results for soil and groundwater, and our conclusions and recommendations.

SITE HISTORY

Site Background: The site is located in a commercial area surrounded by present and former industrial facilities and a railroad line immediately to the west of the site boundary. The site is currently owned by Richard and Julia Becker. Construction Services, the tenant, operates an equipment rental yard at the site. The operations include using above-ground diesel, used oil and hydraulic oil tanks and a self-contained parts cleaning unit.

A Pennzoil bulk oil storage facility operated at the site in the 1920s - 1950s, as stated in an April 13, 1995 Investigation Report prepared by Lush Geosciences (Lush) of Sacramento, California. Sanborn Fire Insurance maps presented in the report showed the Pennzoil facility layout, a Cook Oil Company petroleum storage facility to the west, and Henry Kaiser Motors to the north. Both the Pennzoil and Cook Oil facilities operated numerous above-ground storage tanks. A historical map of the area is attached in Attachment D.

CAMBRIA
ENVIRONMENTAL
TECHNOLOGY, INC.
1144 65TH STREET,
SUITE B
OAKLAND,
CA 94608
PH: (510) 420-0700
FAX: (510) 420-9170

X 107

Ms. Susan Hugo
July 25, 1997

CAMBRIA

1995 Subsurface Investigation: In April, 1995 Lush drilled eight soil borings to 5 ft depth and collected and analyzed soil samples. Motor oil and petroleum oil and grease were detected in all of the samples analyzed. Maximum concentrations of 3,200 and 880 parts per million (ppm) petroleum oil and grease (POG) and total petroleum hydrocarbons as motor oil (TPHmo), respectively, were detected. The analytical results of the soil borings are presented in Attachment D.

INVESTIGATION PROCEDURES

Procedures for the subsurface investigation are summarized below. Boring logs are presented as Attachment B. Analytic results for soil and ground water sampling are presented in Tables 1 and 2, respectively, and the analytic reports are presented as Attachment C.

- Personnel Present:** Hydrogeologist Sam Rangarajan of Cambria collected and logged the soil samples.
- Permits:** Cambria obtained Alameda County Flood Control and Water Conservation District Zone 7 Boring Permit #97262, which is included as Attachment A.
- Drilling Dates:** April 24, 1997.
- Drilling Contractor:** Vironex of Hayward, California.
- Drilling Methods:** Geoprobe 5400/4220 subsurface sampling system using 2-inch diameter hollow rods.
- Asphalt Thickness:** 4 inches.
- Ground Water Depth:** Varied from one foot to approximately twelve feet.
- Number of Borings:** Twelve (Figure 1).
- Boring Depths:** Up to 12 ft below grade (Attachment B).

Boring Locations: Cambria drilled 12 soil borings on site at 1300 Powell Street (Figure 1). The locations were selected to assess whether any additional areas of the property contained hydrocarbons in soil, and to define the extent of the hydrocarbons detected during Lush's 1995 investigation.

Soil Sampling Method: The samples were collected by driving washed samplers lined with new brass or acetate tubes.

Soil Sample Locations: Soil samples were collected at 1, 3, 5, and 8 ft depth for most borings.

Sediment Lithology: The sediments encountered consist primarily of clayey silts, silty sands, and gravelly sands. Many samples appeared to consist of fill. Based on regional geology, this is likely to be underlain by bay mud. The boring logs are included as Attachment B.

Soil Analyses: Legend Analytical Services (Legend), a California-certified environmental laboratory, analyzed an initial soil sample (CB-4-5.0) from an area that showed field hydrocarbon indications for total petroleum hydrocarbons as gasoline (TPHg), diesel (TPHd), motor oil (TPHmo), creosote (TPHc), and kerosene (TPHk) by Modified EPA Method 8015; benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8020; petroleum (non-polar) oil and grease (POG) by SMWW Method 5520E/F; volatile organic compounds (VOCs) by EPA Method 8240, cadmium, chromium, nickel, lead, and zinc by EPA Method 6010, and polynuclear aromatic hydrocarbons (PNAs) by EPA Method 8270.

Because only TPHd and POG were detected in this initial sample, the subsequent samples were analyzed only for these analytes and TPHmo.

Global GeoChemistry Corporation (Global), also a California-certified environmental laboratory, analyzed one soil sample to characterize the hydrocarbons and to estimate the residence time of the hydrocarbons in the environment. Three samples were extracted with methylene chloride, and the extract of one sample (sample CB-12-3.0) was analyzed by gas chromatography-mass spectrometry (GC/MS) in full scan mode. The analytical results are summarized in Table 1. Global also analyzed a grab ground water sample (CB-7) by EPA Method 8015 and quantified the results as TPHd. Analytic reports for both sets of analyses are presented in Attachment C.

Ms. Susan Hugo
July 25, 1997

- Soil Disposal:** The Geoprobe drilling method does not generate cuttings, therefore no soil disposal was necessary.
- Temporary Wells:** Cambria installed temporary, 1" diameter PVC well casings in the borings since water did not enter many of the borings on April 24, 1997. Cambria returned to the site on the morning of April 25, 1997 and collected grab ground water samples from the wells that contained water. The PVC piping was then removed and the borings were grouted to the surface.
- Water Sampling Method:** Water samples were collected from CB-1, CB-3, CB-6, CB-7, and CB-10 using a peristaltic pump or a polyethylene bailer. No water entered the remaining borings.
- Water Analyses:** Legend analyzed the water samples from CB-1, CB-3, and CB-10 for TPHd, TPHmo, and POG. Global extracted the water sample from CB-7, and analyzed the extract by EPA Method 8015 for TPHd. The ground water sample results are summarized in Table 2, and the analytical reports are presented in Attachment C.

HYDROCARBON DISTRIBUTION IN SOIL

The broad range of analyses conducted on sample CB-4-5.0 indicated that the constituents of concern in the onsite soils are heavier, long-chain hydrocarbons, such as TPHd, TPHmo, and POG. The analytical results for soil showed that the extent of hydrocarbons in soil is defined to below 1,000 ppm POG along the southern, eastern, western, and most of the northern site boundary. Cambria was not able to place additional borings along the northern boundary due to access problems. The hydrocarbon concentrations in soil appear to decrease toward the property boundaries.

The Global analyses indicated that the hydrocarbons detected in the sample were moderately degraded and not from a recent release.

HYDROCARBON DISTRIBUTION IN GROUND WATER

The regional ground water direction pattern is toward the west. Therefore, the downgradient extent of hydrocarbons in ground water is not defined to concentrations below detection limits. However, grab ground water samples collected from open borings often show much higher hydrocarbon concentrations than samples collected from traditional monitoring wells after proper purging.

CONCLUSIONS AND RECOMMENDATIONS

Cambria recommends regulatory case closure for this site based on the following rationale:

- Hydrocarbon concentrations in soil are defined to within 1,000 ppm, a common regulatory guideline, to the east, west, south, and most of the northern property line;
- The constituents of concern consist of POG, TPHd, and TPHmo. These hydrocarbons present very little risk to human health and the environment due to their low mobility, low volatility, and low toxicity;
- The site is located in an industrial area;
- It is very unlikely that any remedial effort would be feasible to address the low hydrocarbon concentrations besides natural hydrocarbon biodegradation;
- The forensic analysis indicates that hydrocarbon biodegradation is occurring, indicating that hydrocarbon concentrations should diminish over time; and
- The affected ground water does not have a present or known future beneficial use.

CAMBRIA

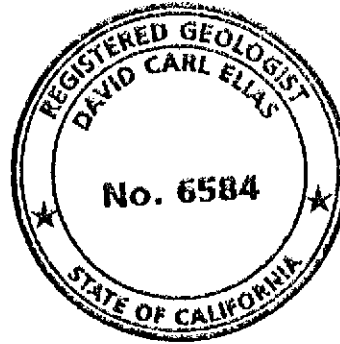
Ms. Susan Hugo
July 25, 1997

We appreciate this opportunity to provide environmental consulting services to Richard and Julia Becker.
Please call us with any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.



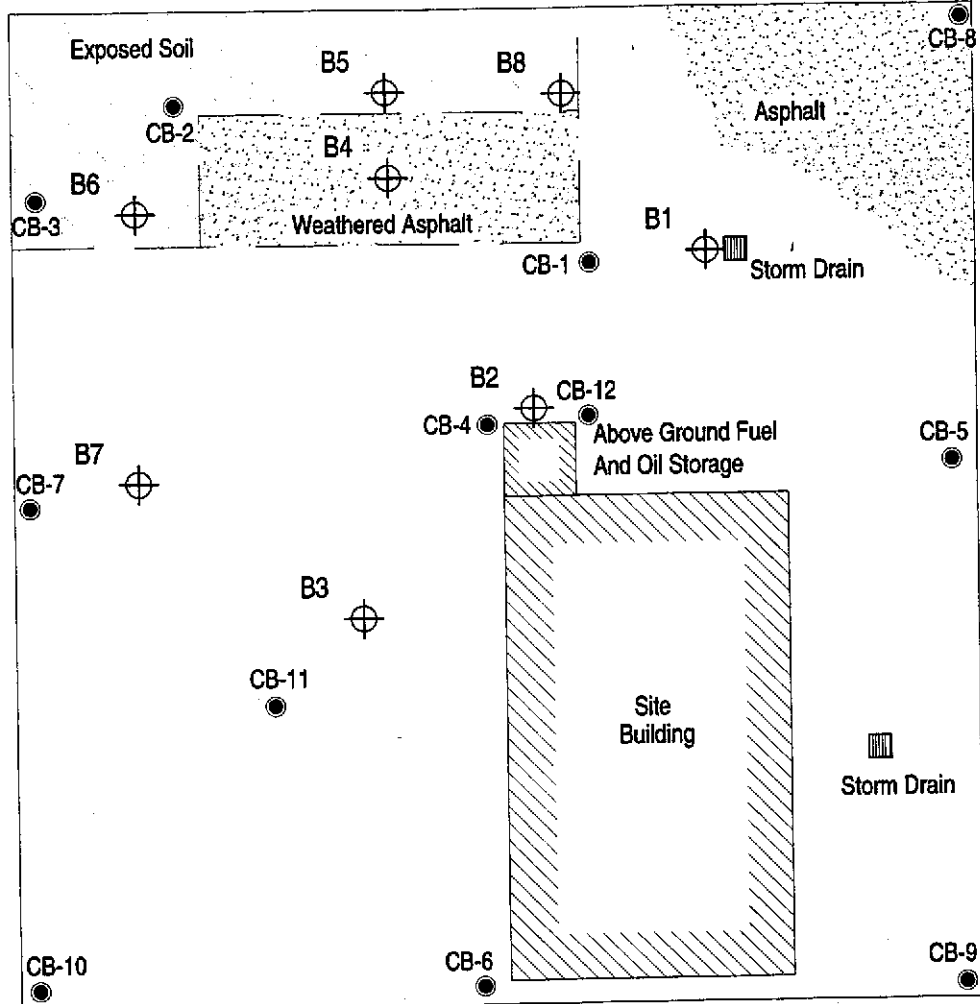
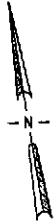
David Elias, RG
Project Geologist



Attachments: A - Permits
B - Boring Logs
C - Analytic Results
D - Lush GeoSciences Figure and Table
E - Standard Field Procedures

cc: Richard Becker, 1300 Powell Street, Emeryville, CA 94608
Julie Rose, Randick & O'Dea, 1800 Harrison Street, Suite 2350, Oakland, CA 94612

F:\PROJECT\CONSERV\REPORT.WPD

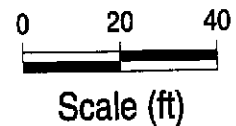


POWELL STREET

DOYLE AVENUE

EXPLANATION

- Soil Boring Locations April 24, 1997
- ⊕ Previously Drilled Soil Boring



CAMBRIA
Environmental Technology, Inc.

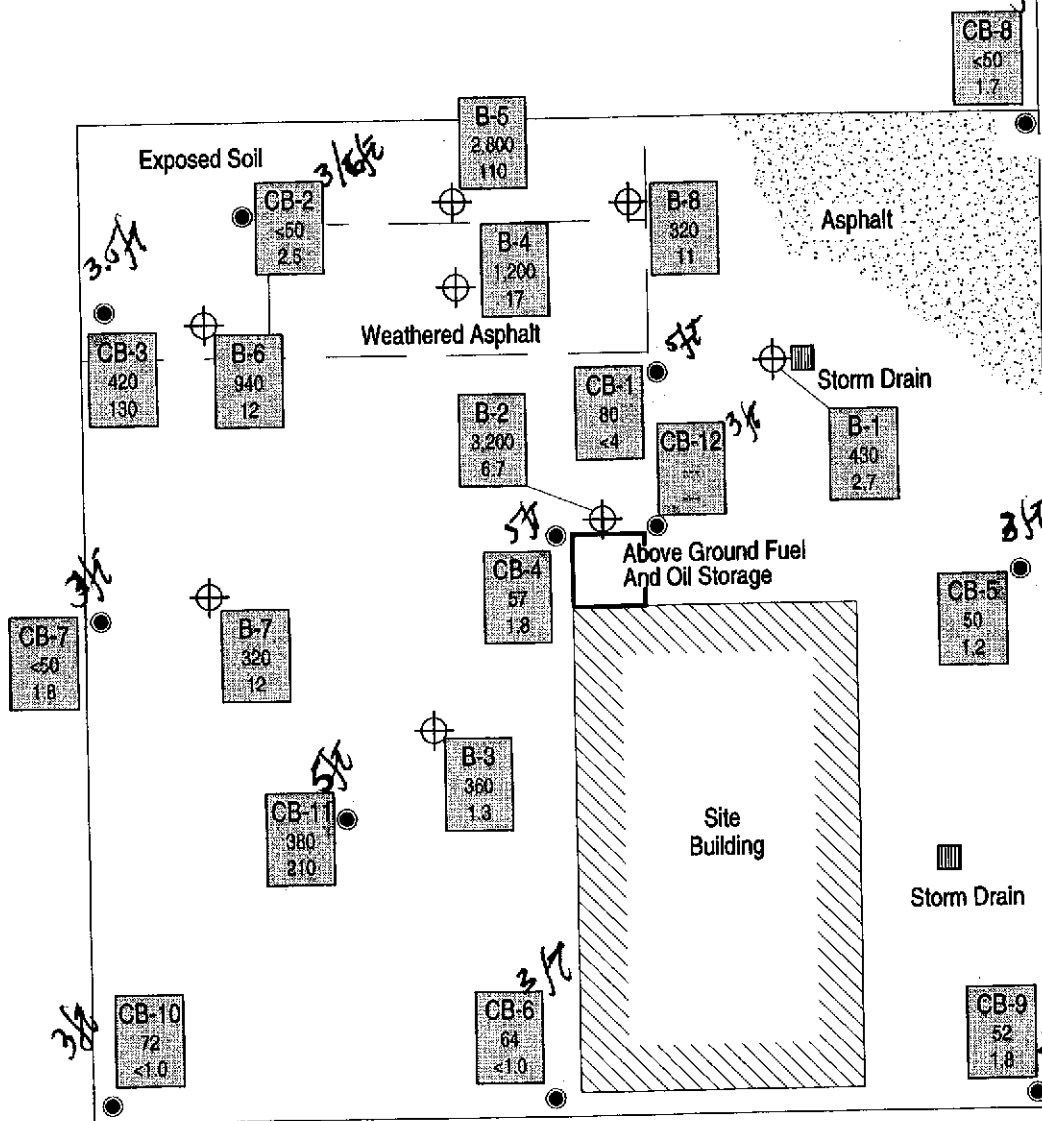
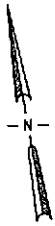
Construction Services Facility
1300 Powell Street
Emeryville, CA

F:\PROJECT\MISC\CNSTRSVS\BOR-LOC.DWG

Soil Boring Locations

FIGURE

1



EXPLANATION

- Soil Boring Locations April 24, 1997
- ⊕ Previously Drilled Soil Boring
- Analyzed for Forensic Analyses Only



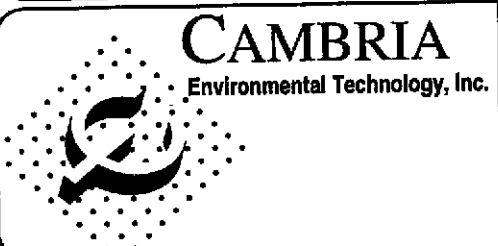
- 1. Boring ID
- 2. Petroleum Oil and Grease (mg/kg)
- 3. Total Petroleum Hydrocarbons as Diesel (mg/kg)

POWELL STREET



Scale (ft)

DOYLE AVENUE



CAMBRIA
Environmental Technology, Inc.

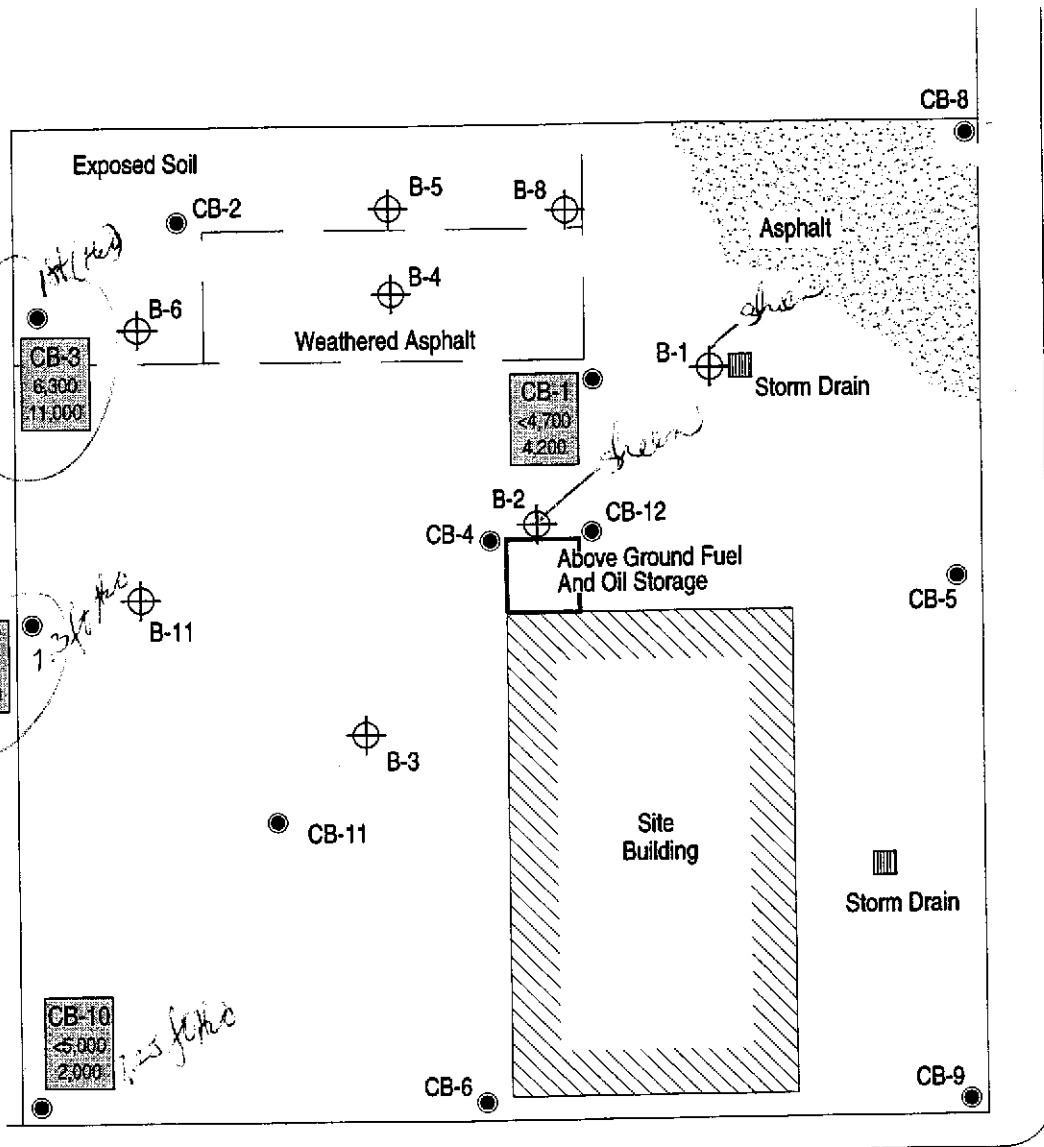
Construction Services Facility
1300 Powell Street
Emeryville, CA

F:\PROJECT\MISC\CNSTRVS\SOIL-CON.DWG

Maximum Petroleum Oil and Grease
and TPHd Concentrations in Soil

FIGURE

2



DOYLE AVENUE

POWELL STREET

EXPLANATION

- Soil Boring Locations April 24, 1997
- ⊕ Previously Drilled Soil Boring

ID	1. Boring ID
P.O.G.	2. Petroleum Oil and Grease (µg/kg)
TPHd	3. Total Petroleum Hydrocarbons as Diesel (µg/kg)



<p>CAMBRIA Environmental Technology, Inc.</p>	<p>Construction Services Facility 1300 Powell Street Emeryville, CA</p> <p>F:\PROJECT\MISC\CNSTRSVS\IGW-CON.DWG</p>	<p>Maximum Petroleum Oil and Grease and TPHd Concentrations in Ground Water</p>	<p>FIGURE 3</p>
--	---	---	----------------------------

CAMBRIA

Table 1. Soil Analytic Data - Construction Services, 1300 Powell Street, Emeryville, CA

Boring ID	Date Sampled	Sample Depth (ft)	TPHg	TPHd	TPHmo	TPHc	TPHk	NPOG	(Concentrations in mg/kg)						
									Metals	Benzene	Toluene	Ethylbenzene	Xylenes	VOCs	PNAs
<i>H20</i> CB-1	4/24/97	5.0	--	<4	71 ^a	--	--	80	--	--	--	--	--	--	--
CB-2	4/24/97	3.0	--	2.2 ^b	<10	--	--	<50	--	--	--	--	--	--	--
	4/24/97	6.0	--	2.5 ^b	<10	--	--	<50	--	--	--	--	--	--	--
<i>H20</i> CB-3	4/24/97	3.5	--	130	210	--	--	420	--	--	--	--	--	--	--
CB-4	4/24/97	5.0	<1.0	1.8 ^b	<10	<10	<1.0	57	c	<0.0025	<0.0025	<0.0025	<0.0025	d	<0.33
CB-5	4/24/97	3.0	--	1.2 ^e	<10	--	--	50	--	--	--	--	--	--	--
CB-6	4/24/97	3.0	--	<1.0	14	--	--	64	--	--	--	--	--	--	--
<i>H20</i> CB-7	4/24/97	3.0	--	1.8 ^b	<10	--	--	<50	--	--	--	--	--	--	--
CB-8	4/24/97	5.0	--	1.7 ^b	<10	--	--	<50	--	--	--	--	--	--	--
CB-9	4/24/97	5.0	--	1.8 ^b	<10	--	--	52	--	--	--	--	--	--	--
<i>H20</i> CB-10	4/24/97	3.0	--	<1.0	11 ^a	--	--	72	--	--	--	--	--	--	--
CB-11	4/24/97	5.0	--	210	450	--	--	380	--	--	--	--	--	--	--
CB-12	4/24/97	3.0	--	840 ^f	--	--	--	--	--	<0.25	<0.25	2.0	6.2	--	--

Table 1. Soil Analytic Data - Construction Services, 1300 Powell Street, Emeryville, CA

Boring ID	Date Sampled	Sample Depth (ft)	TPHg	TPHd	TPHmo	TPHc	TPHk	NPOG	Metals (Concentrations in mg/kg)	Benzene	Toluene	Ethylbenzene	Xylenes	VOCs	PNAs
-----------	--------------	-------------------	------	------	-------	------	------	------	-------------------------------------	---------	---------	--------------	---------	------	------

Abbreviations:

Benzene, toluene, ethylbenzene, and total xylenes by EPA Method 8020.
 TPHg = Total petroleum hydrocarbons as gasoline by Modified EPA Method 8015
 TPHd = Total petroleum hydrocarbons as diesel by Modified EPA Method 8015
 TPHmo = Total petroleum hydrocarbons as motor oil by Modified EPA Method 8015
 TPHc = Total petroleum hydrocarbons as creosote by Modified EPA Method 8015
 TPHk = Total petroleum hydrocarbons as kerosene by Modified EPA Method 8015
 POG = Petroleum (non-polar) oil and grease by SMWW Method 5520E/F
 Metals = Cadmium, chromium, lead, nickel, and zinc by EPA Method 6010
 VOCs = Volatile organic compounds by EPA Method 8240
 PNAs = Polynuclear aromatic hydrocarbons by EPA Method 8270
 mg/kg = Milligrams per kilogram, which is equivalent to parts per million
 --- = Not analyzed

Notes:

a = Peaks detected within the quantitation range do not match the standard used.
 b = Result has an atypical pattern for diesel analysis
 c = 35 mg/kg chromium, 26 mg/kg nickel, 31 mg/kg zinc, other metals below detection limits. Analytic Laboratory noted that the matrix spike for zinc exceeded established QC limits, post digestion spike was in control.
 d = 0.011 mg/kg acetone found in sample. 0.006 mg/kg acetone also found in Method Blank. All other VOCs below detection limits.
 e = Result appears to be a heavier hydrocarbon than diesel
 f = Result appears to be a heavier hydrocarbon than gasoline.
 g = Laboratory noted that method blank contained 68 mg/kg total oil and grease. The laboratory believes this to be due to point source contamination. Control spikes were within acceptable limits.

Table 2. Ground Water Analytic Data - Construction Services, 1300 Powell Street, Emeryville, CA

Boring ID	Date Sampled	TPHd	TPHmo (concentrations in µg/L)	POG
CB-1	4/24/97	4,200 ^a	15,000	<4,700
CB-3	4/24/97	11,000 ^a	24,000 ^b	6,300
CB-7	4/24/97	17,900 ^c	--	--
CB-10	4/24/97	2,000 ^a	3,300 ^b	<5,000

Abbreviations and Notes:

TPHd = Total petroleum hydrocarbons as diesel by Modified EPA Method 8015

TPHmo = Total petroleum hydrocarbons as motor oil by Modified EPA Method 8015

TOG = Total oil and grease by SMWW Method 5520B

POG = Petroleum (non-polar) oil and grease by SMWW Method 5520B/F

mg/L = Milligrams per liter which is equivalent to parts per million

-- = Not analyzed

a = Result appears to be a heavier hydrocarbon than diesel

b = Peaks detected within the quantitation range do not match the standard used.

c = Analysis by Global Geochemistry Corporation

Analyses by Legend Analytical Services unless otherwise noted.

CAMBRIA

ATTACHMENT A

PERMITS

Apr-23-97 02:38P

P. 01



ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE

PLEASANTON, CALIFORNIA 94588

VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT 1300 POWELL ST.
EMERYVILLE, CALIF.

PERMIT NUMBER 97262
LOCATION NUMBER _____

CLIENT

Name RICHARD & JULIA BECKER
Address 1300 POWELL ST Voice 510-652-6800
City EMERYVILLE CA Zip _____

PERMIT CONDITIONS

Circled Permit Requirements Apply

APPLICANT

Name CAMBODIA ENVIRONMENTAL TECH. INC.
DAVID GUAN Fax 510-420-9170
Address 1146 5th St Voice 510-420-3307
City OAKLAND, CA Zip 94608

GENERAL

1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

TYPE OF PROJECT

Well Construction	_____	Geotechnical Investigation	_____
Cathodic Protection	_____	General	_____
Water Supply	_____	Contamination	_____
Monitoring	_____	Well Destruction	_____ <u>X</u>

B. WATER WELLS, INCLUDING PIEZOMETERS

1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

PROPOSED WATER SUPPLY WELL USE

Domestic	_____	Industrial	_____	Other	_____
Municipal	_____	Irrigation	_____		

- C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

DRILLING METHOD:

Mud Rotary _____ Air Rotary _____ Auger _____
Cable _____ Other HYDRAULIC PUSH

- D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

DRILLER'S LICENSE NO. VIRONEX # 705 927

- E. WELL DESTRUCTION. See attached.

WELL PROJECTS

Drill Hole Diameter	_____ in.	Maximum	
Casing Diameter	_____ in.	Depth	_____ ft.
Surface Seal Depth	_____ ft.	Number	_____

GEOTECHNICAL PROJECTS

Number of Borings	<u>8-12</u>	Maximum	
Hole Diameter	<u>2</u> in.	Depth	<u>10-15</u> ft.

ESTIMATED STARTING DATE 4/24/97
ESTIMATED COMPLETION DATE 4/24/97

Approved _____

Wyman Hong
Wyman Hong

Date 29 Apr 97

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE

David Guin Date 4/24/97

CAMBRIA

ATTACHMENT B

BORING LOGS

BORING LOG

Boring ID **CB-1**

Client: **Becker**

Location **1300 Powell St.**



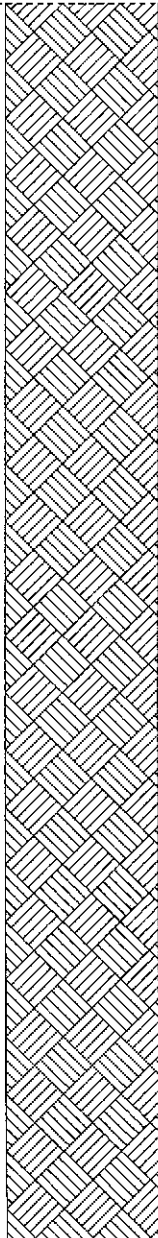
Project No: **95-423**

Phase

Task **005**

Surface Elev. **NA ft.**

Page **1** of **1**

Depth (feet)	Blow Count	Sample Interval	Lithologic Description	TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth (feet)	Additional Comments
0	Ground Surface		ASPHALT				0	
			Clayey SILT ; (ML); black to grey; damp; 15% clay, 75% silt, 10% coarse sand; no plasticity; moderate estimated permeability.					
5			light brown; 20% clay, 70% silt, 10% very fine sand; low plasticity; low to moderate estimated permeability.				5	
10							10	
								Bottom of boring @ 12 ft.

Driller **Vironex**

Drilling Started **4/24/97**

Notes: **See site map.**

Logged By **SR**

Drilling Completed **4/24/97**

Water-Bearing Zones **NA**

Grout Type **Portland Type I/II**

BOR 95423 7/22/97

BORING LOG

Boring ID **CB-2**

Client: **Becker**

Location **1300 Powell St.**



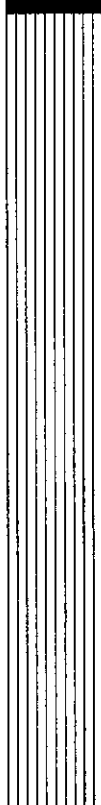
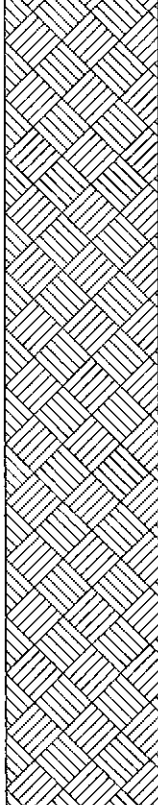

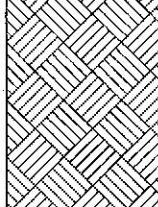


Project No: **95-423**

Phase

Task **005**

Surface Elev. **NA ft.**

Page **1** of **1**

Depth (feet)	Blow Count	Sample Interval	Lithologic Description	TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth (feet)	Additional Comments
0	Ground Surface		ASPHALT				0	
			Clayey SILT ; (ML); black; damp; 20% clay, 70% silt, 10% very fine sand; low plasticity; low to moderate estimated permeability.					
5			light brown to grey; damp to moist; 25% clay, 65% silt, 10% very fine sand; medium plasticity; low estimated permeability.				5	
			Sandy, Clayey GRAVEL (GC); light brown; damp to moist; 20% clay, 10% silt, 15% coarse sand, 55% gravel; no plasticity; moderate to high estimated permeability.					
10							10	Bottom of boring @ 10 ft.

Driller Vironex	Drilling Started 4/24/97	Notes: See site map.
Logged By SR	Drilling Completed 4/24/97	
Water-Bearing Zones NA	Grout Type Portland Type I/II	

BOR 95423 7/22/97

BORING LOG

Boring ID **CB-3**

Client: **Becker**

Location **1300 Powell St.**

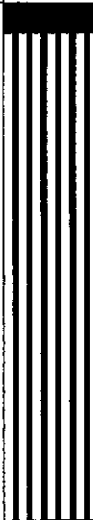
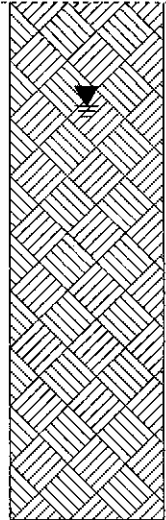
Project No: **95-423**

Phase

Task **005**

Surface Elev. **NA ft.**

Page **1** of **1**

Depth (feet)	Blow Count	Sample Interval	Lithologic Description	TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth (feet)	Additional Comments
0	Ground Surface		ASPHALT				0	
			Clayey SILT: (MH); dark brown; damp; 25% clay, 65% silt, 10% sand; medium to high plasticity; low estimated permeability.					Water level @ 1 ft.
5							5	Bottom of boring @ 5 ft.
10							10	

Driller VIRONEX	Drilling Started 4/24/97	Notes: See site map.
Logged By SR	Drilling Completed 4/24/97	
Water-Bearing Zones NA	Grout Type Potland Type I/II	

BOR 95423 7/25/97

BORING LOG

Boring ID **CB-4**

Client: **Becker**

Location **1300 Powell St.**


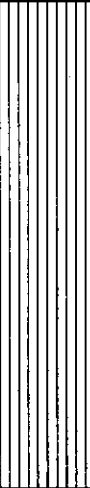
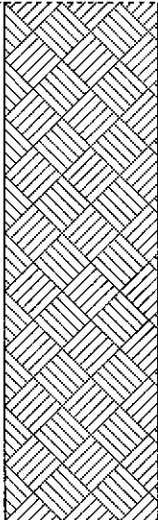
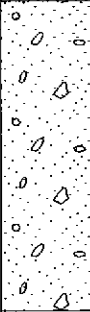
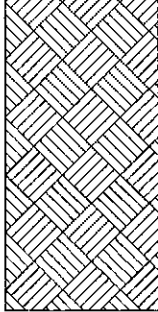
Project No: **95-423**

Phase

Task **005**

Surface Elev. **NA ft.**

Page **1** of **1**

Depth (feet)	Blow Count	Sample Interval	Lithologic Description	TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth (feet)	Additional Comments
0	Ground Surface		ASPHALT				0	
		X	Clayey, Sandy SILT ; (ML); black; damp; 15% clay, 50% silt; 35% coarse sand; low plasticity; low to moderate estimated permeability.					
5		X	Clayey, Gravelly SAND ; (SP/SC); light brown; moist; 15% clay, 10% silt, 50% coarse sand, 25% gravel; low plasticity; low estimated permeability.				5	
		X						
10							10	
								Bottom of boring @ 8 ft.

Driller **VIRONEX**
 Logged By **SR**
 Water-Bearing Zones **NA**

Drilling Started **4/24/97**
 Drilling Completed **4/24/97**
 Grout Type **Portland Type I/II**

Notes: **See site map.**

BOR 95423 7/22/97

BORING LOG

Client: **Becker**

Project No: **95-423**

Phase

Task **005**


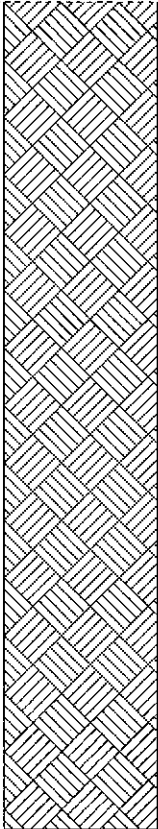
Boring ID

CB-5

Location **1300 Powell St.**

Surface Elev. **NA ft.**

Page **1** of **1**

Depth (feet)	Blow Count	Sample Interval	Lithologic Description	TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth (feet)	Additional Comments
0	Ground Surface		ASPHALT				0	
			Silty GRAVEL; (GM); black to brown; damp; 30% silt, 10% sand, 60% coarse gravel; no plasticity; moderate to high estimated permeability.					
5			Sandy GRAVEL; (GP); light brown to grey; damp; 5% silt, 35% coarse to medium sand; 60% coarse gravel; no plasticity; high estimated permeability.				5	
10							10	
								Bottom of boring @ 8 ft.

Driller **VIRONEX**

Logged By **SR**

Water-Bearing Zones **NA**

Drilling Started **4/24/97**

Drilling Completed **4/24/97**

Grout Type **Portland Type I/II**

Notes: **See site map.**

BORING LOG

Boring ID **CB-6**

Client: **Becker**

Location **1300 Powell St.**



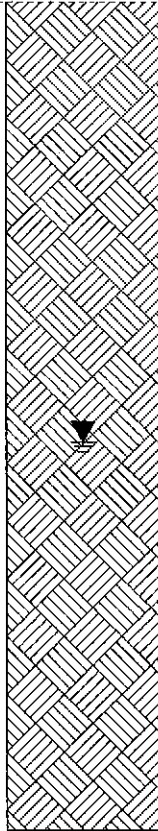

Project No: **95-423**

Phase

Task **005**

Surface Elev. **NA ft.**

Page **1** of **1**

Depth (feet)	Blow Count	Sample Interval	Lithologic Description	TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth (feet)	Additional Comments
0	Ground Surface		ASPHALT				0	
			Silty SAND; (SM); black to brown; damp; 5% clay, 25% silt, 60% coarse sand, 10% gravel; no plasticity; moderate estimated permeability.					
5			moist; 10% clay, 25% silt; 65% coarse sand; low plasticity; moderate estimated permeability.				5	Water level @ 4.25 ft.
10								Bottom of boring @ 8 ft.

Driller **VIRONEX**
 Logged By **SR**
 Water-Bearing Zones **NA**

Drilling Started **4/24/97**
 Drilling Completed **4/24/97**
 Grout Type **Portland Type I/II**

Notes: **See site map.**

BOR 95423 7/22/97

BORING LOG

Client: **Becker**

Project No: **95-423**

Phase

Task **005**

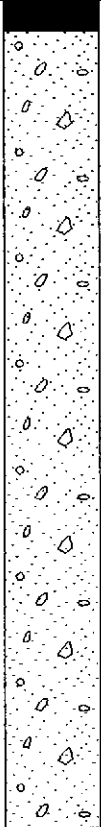
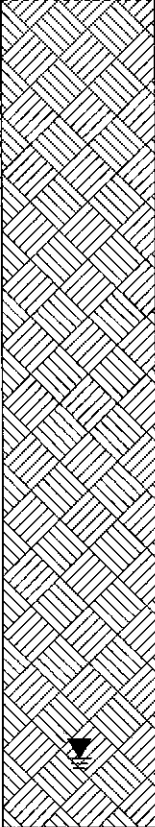
Boring ID

CB-7

Location **1300 Powell St.**

Surface Elev. **NA ft.**

Page **1** of **1**

Depth (feet)	Blow Count	Sample Interval	Lithologic Description	TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth (feet)	Additional Comments
0	Ground Surface		ASPHALT				0	
			Gravelly SAND; (SP); black to brown; damp; 12% clay, 10% silt, 40% sand, 38% gravel; no plasticity; high estimated permeability.					
5			brown; 15% clay, 10% silt, 40% sand, 35% gravel; low plasticity; moderate to high estimated permeability.				5	
10							10	

Water level @ 7.33 ft.

Bottom of boring @ 8 ft.

Driller **VIRONEX**

Drilling Started **4/24/97**

Notes: **See site map.**

Logged By **SR**

Drilling Completed **4/24/97**

Water-Bearing Zones **NA**

Grout Type **Portland Type I/II**

BOR 95423 7/22/97

BORING LOG

Boring ID **CB-8**

Client: **Becker**

Location **1300 Powell St.**


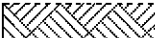
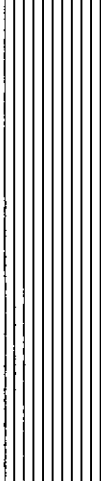
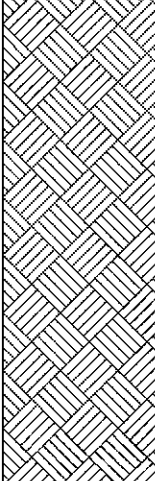

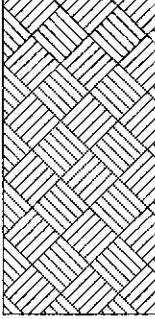
Project No: **95-423**

Phase

Task **005**

Surface Elev. **NA ft.**

Page **1** of **1**

Depth (feet)	Blow Count	Sample Interval	Lithologic Description	TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth (feet)	Additional Comments
0	Ground Surface						0	
			ASPHALT					
			Sandy SILT ; (ML); black; dry; 15% clay, 45% silt, 30% sand, 10% gravel; low plasticity; moderate estimated permeability.					
5			brown; 20% clay, 40% silt, 30% very fine sand, 10% small gravel; low to medium plasticity; low estimated permeability.				5	
10							10	
								Bottom of boring @ 8 ft.

Driller **VIRONEX**

Drilling Started **4/24/97**

Notes: **See site map.**

Logged By **SR**

Drilling Completed **4/24/97**

Water-Bearing Zones **NA**

Grout Type **Portland Type I/II**


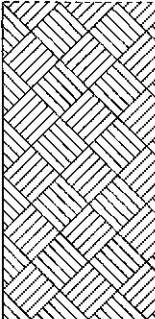
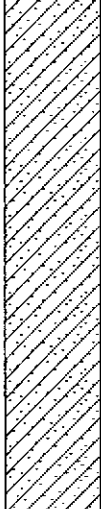
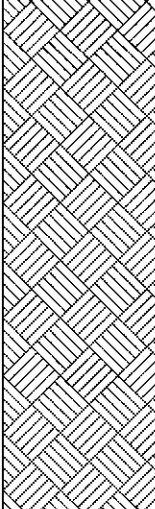


BOR 95423 7/22/97

BORING LOG

Client: **Becker**
 Project No: **95-423**

Phase _____ Task **005**

Boring ID **CB-9**
 Location **1300 Powell St.**
 Surface Elev. **NA ft.**
 Page **1** of **1**

Depth (feet)	Blow Count	Sample Interval	Lithologic Description	TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth (feet)	Additional Comments
0	Ground Surface		ASPHALT				0	
			Sandy GRAVEL ; (GP); black; dry; 10% silt, 30% sand, 60% coarse gravel; no plasticity; moderate to high estimated permeability.					
			Clayey SAND ; (SC); brown; dry; 15% clay, 10% silt, 65% fine sand, 10% gravel; low plasticity; low to moderate estimated permeability.					
5			20% clay, 10% silt, 60% sand, 10% 0.5" diameter gravel; low to medium plasticity; low to moderate estimated permeability.				5	
10							10	Bottom of boring @ 8 ft.

Driller VIRONEX	Drilling Started 4/24/97	Notes: See site map.
Logged By SR	Drilling Completed 4/24/97	
Water-Bearing Zones NA	Grout Type Portland Type I/II	

BOR 95423 7/22/97

BORING LOG

Boring ID

CB-10

Client: **Becker**

Location **1300 Powell St.**



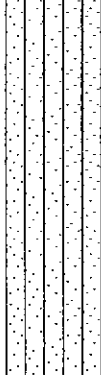
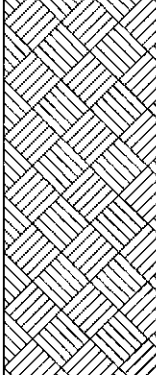
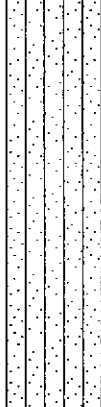
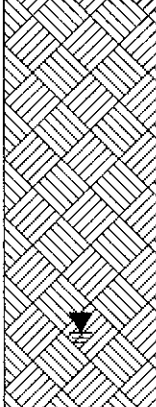

Project No: **95-423**

Phase

Task **005**

Surface Elev. **NA ft.**

Page **1** of **1**

Depth (feet)	Blow Count	Sample Interval	Lithologic Description	TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth (feet)	Additional Comments
0	Ground Surface		ASPHALT				0	
			Silty SAND: (SM); black, dry; 12% clay, 28% silt, 50% sand, 10% gravel; low plasticity; moderate estimated permeability.					
5			Silty, Gravelly SAND: (SM/SP); brown; dry; 20% silt, 60% coarse sand, 20% coarse gravel; no plasticity; moderate to high estimated permeability.				5	
								Water level @ 7.25 ft.
								Bottom of boring @ 8 ft.
10							10	

Driller **VIRONEX**
 Logged By **SR**
 Water-Bearing Zones **NA**

Drilling Started **4/24/97**
 Drilling Completed **4/24/97**
 Grout Type **Portland Type I/II**

Notes: **See site map.**

BORING LOG

Boring ID **CB-11**

Client: **Becker**

Location **1300 Powell St.**


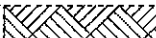
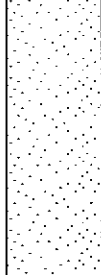
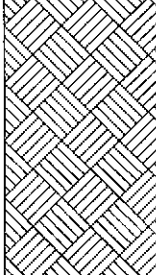
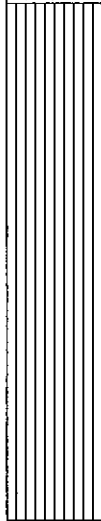
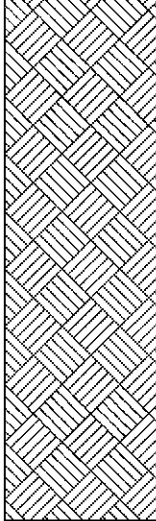
Project No: **95-423**

Phase

Task **005**

Surface Elev. **NA ft.**

Page **1** of **1**

Depth (feet)	Blow Count	Sample Interval	Lithologic Description	TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth (feet)	Additional Comments
0	Ground Surface		ASPHALT				0	
			Gravelly SAND; (SP); orange; dry; 10% clay, 15% silt, 45% sand, 30% gravel; no plasticity, high estimated permeability.					
			Clayey SILT; (ML); brown; dry; 20% clay, 70% silt, 10% sand; low plasticity; low to moderate estimated permeability.					
5			low to medium plasticity.				5	
10							10	Bottom of boring @ 8 ft

Driller **VIRONEX**

Drilling Started **4/24/97**

Notes: **See site map.**

Logged By **SR**

Drilling Completed **4/24/97**

Water-Bearing Zones **NA**

Grout Type **Portland Type I/II**

BOR 95423 7/22/97

BORING LOG

Boring ID **CB-12**

Client: **Becker**

Location **1300 Powell St.**



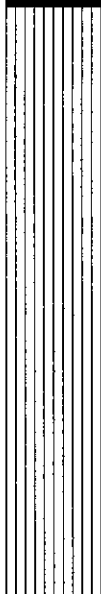
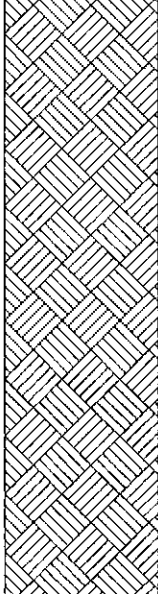
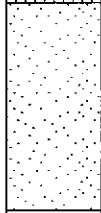
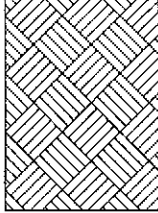
Project No: **95-423**

Phase

Task **005**

Surface Elev. **NA ft.**

Page **1** of **1**

Depth (feet)	Blow Count	Sample Interval	Lithologic Description	TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth (feet)	Additional Comments
0	Ground Surface						0	
			ASPHALT					
			Clayey SILT: (ML); black; damp; 15% clay, 75% silt, 10% medium to coarse sand; low plasticity; low to moderate estimated permeability.					
5							5	
			Gravelly SAND: (SP); black to brown; damp to moist; 15% clay, 10% silt, 40% coarse sand, 35% coarse gravel; low to medium plasticity; moderate to high estimated permeability.					
								Bottom of boring @ 8 ft.
10							10	

Driller **VIRONEX**

Drilling Started **4/24/97**

Notes: **See site map.**

Logged By **SR**

Drilling Completed **4/24/97**

Water-Bearing Zones **NA**

Grout Type **Portland Type I/II**

BOR 95423 7/22/97

CAMBRIA

ATTACHMENT C

ANALYTIC RESULTS

LEGEND

Analytical Services

3636 N. Laughlin Road, Suite 110 Santa Rosa, California 95403 707.526.7200 Fax 707.541.2333 E-Mail: info@legendlab.com

David Elias
Cambria Env. Technology
1144 65th Street
Suite C
Oakland, CA 94608

Date: 05/15/1997
LEGEND Client Acct. No: 98900
LEGEND Job No: 97.00840
Received: 04/26/1997

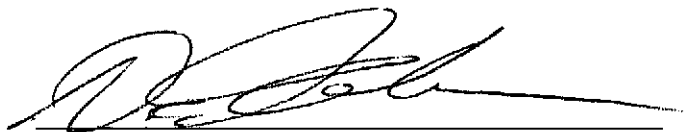
Client Reference Information

Becker/Project No. 950-0423-4

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety. Please refer to the enclosed "Key to Result Flags" for definition of terms. Should you have questions regarding procedures or results, please feel free to call me at (707) 541-2313.

Sample 274962 shows a NAR flag adjacent to the total oil and grease result. The blank value for the total oil and grease came out positive. All other indicators are acceptable. This shows a point source contamination that didn't appear to affect the sample results. The recoverable petroleum hydrocarbon result for the blank was non-detect. The contamination was a polar, biological, source.

Submitted by:



Marty French
Project Manager

Enclosure(s)

LEGEND

Analytical Services

3636 N. Laughlin Road, Suite 110 Santa Rosa, California 95403 707.526.7200 Fax 707.541.2333 E-Mail: info@legendlab.com

David Elias
Cambria Env. Technology
1144 65th Street
Suite C
Oakland, CA 94608


Date: 05/15/1997
LEGEND Client Acct. No: 98900
LEGEND Job No: 97.00840
Received: 04/26/1997

Client Reference Information

Becker/Project No. 950-0423-4

Sample analysis in support of the project referenced above has been completed and results are presented on the following pages. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety. Please refer to the enclosed "Key to Result Flags" for definition of terms. Should you have questions regarding procedures or results, please feel free to call me at (707) 541-2313.

Submitted by:



Marty French
Project Manager

Enclosure(s)

Client Name: Cambria Env. Technology
Client Acct: 98900
LEGEND Job No: 97.00840

Date: 05/15/1997
SLAP Cert: 2193
Page: 3

Ref: Becker/Project No. 950-0423-4

SAMPLE DESCRIPTION: CB-3

Date Taken: 04/24/1997

Time Taken:

LEGEND Sample No: 274953

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch
Oil & Grease (Total)	7.9 ✓		5.0	mg/L	5520B		05/08/1997	450
Oil & Grease (Non-Polar)	6.3 ✓		5.0	mg/L	5520B/F		05/08/1997	425
M8015 (EXT., Liquid)						05/06/1997		
DILUTION FACTOR*	20						05/08/1997	1329
as Diesel	11 ✓	DH	1.0	mg/L	3510		05/08/1997	1329
as Motor Oil	24 ✓	HX	10	mg/L	3510		05/08/1997	1329
SURROGATE RESULTS	--						05/08/1997	1329
Ortho-terphenyl (SURR)	144			% Rec.	3510		05/08/1997	1329

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Cambria Env. Technology
Client Acct: 98900
LEGEND Job No: 97.00840

Date: 05/15/1997
ELAP Cert: 2193
Page: 5

Ref: Becker/Project No. 950-0423-4

SAMPLE DESCRIPTION: CB-1-5.0
Date Taken: 04/24/1997
Time Taken:
LEGEND Sample No: 274958

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch
Oil & Grease (Total)	260		50	mg/kg	5520E		05/08/1997	366
Oil & Grease (Non-Polar)	80		50	mg/kg	5520E/F		05/08/1997	364
M8015 (EXT., Solid)						05/07/1997		
DILUTION FACTOR*	4						05/14/1997	1270
as Diesel	ND		4	mg/kg	3550		05/14/1997	1270
as Motor Oil	71	HX	40	mg/kg	3550		05/14/1997	1270
SURROGATE RESULTS	--						05/14/1997	1270
Ortho-terphenyl (SURR)	74			% Rec.	3550		05/14/1997	1270

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Ref: Becker/Project No. 950-0423-4

SAMPLE DESCRIPTION: CB-4-5.0
 Date Taken: 04/24/1997
 Time Taken:
 LEGEND Sample No: 274962

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch
Oil & Grease (Total)	99 ✓	NAR	50	mg/kg	5520E		04/30/1997	365
Oil & Grease (Non-Polar)	57 ✓		50	mg/kg	5520E/F		04/30/1997	362
METHOD 6010 (SOLID)	--						04/30/1997	828
Cadmium (ICP)	ND ✓		2.0	mg/kg	EPA 6010	04/29/1997	04/30/1997	734
Chromium (ICP)	35 ✓		2.0	mg/kg	EPA 6010	04/29/1997	04/30/1997	745
Lead (ICP)	ND ✓		20	mg/kg	EPA 6010	04/29/1997	04/30/1997	608
Nickel (ICP)	26 ✓		5.0	mg/kg	EPA 6010	04/29/1997	04/30/1997	638
Zinc (ICP)	31 ✓	NI3	5.0	mg/kg	EPA 6010	04/29/1997	04/30/1997	683
TPH (Gas/BTEX,Solid)								
5030/M8015	--						04/29/1997	2133
DILUTION FACTOR*	1						04/29/1997	2133
as Gasoline	ND ✓		1.0	mg/kg	5030		04/29/1997	2133
8020 (GC,Solid)	--						04/29/1997	2133
Benzene	ND ✓		2.5	ug/kg	8020		04/29/1997	2133
Toluene	ND ✓		2.5	ug/kg	8020		04/29/1997	2133
Ethylbenzene	ND ✓		2.5	ug/kg	8020		04/29/1997	2133
Xylenes (Total)	ND ✓		2.5	ug/kg	8020		04/29/1997	2133
SURROGATE RESULTS								
Bromofluorobenzene (SURR)	82			% Rec.	5030		04/29/1997	2133
8015M - HEAVY SCAN								
DILUTION FACTOR*	1.0					05/01/1997	05/02/1997	31
as Creosote	ND ✓		10	mg/kg	M8015		05/02/1997	31
as Diesel	1.8 ✓	D-	1.0	mg/kg	M8015		05/02/1997	31
as Kerosene	ND ✓		1.0	mg/kg	M8015		05/02/1997	31
as Motor Oil	ND ✓		10	mg/kg	M8015		05/02/1997	31
SURROGATE RESULTS								
Ortho-terphenyl (SURR)	77			% Rec.	M8015		05/02/1997	31

Ref: Becker/Project No. 950-0423-4

SAMPLE DESCRIPTION: CB-4-5.0
 Date Taken: 04/24/1997
 Time Taken:
 LEGEND Sample No: 274962

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch No.
8240 (GCMS, Solid)								
DILUTION FACTOR*	1						05/01/1997	476
Benzene	ND		5.0	ug/kg	8240		05/01/1997	476
Acetone	11	B-O	10	ug/kg	8240		05/01/1997	476
Bromodichloromethane	ND		5.0	ug/kg	8240		05/01/1997	476
Bromoform	ND		5.0	ug/kg	8240		05/01/1997	476
Bromomethane	ND		5.0	ug/kg	8240		05/01/1997	476
2-Butanone	ND		10	ug/kg	8240		05/01/1997	476
Carbon disulfide	ND		5.0	ug/kg	8240		05/01/1997	476
Carbon tetrachloride	ND		5.0	ug/kg	8240		05/01/1997	476
Chlorobenzene	ND		5.0	ug/kg	8240		05/01/1997	476
Chloroethane	ND		5.0	ug/kg	8240		05/01/1997	476
2-Chloroethyl vinyl ether	ND		10	ug/kg	8240		05/01/1997	476
Chloroform	ND		5.0	ug/kg	8240		05/01/1997	476
Chloromethane	ND		5.0	ug/kg	8240		05/01/1997	476
Dibromochloromethane	ND		5.0	ug/kg	8240		05/01/1997	476
1,2-Dichlorobenzene	ND		5.0	ug/kg	8240		05/01/1997	476
1,3-Dichlorobenzene	ND		5.0	ug/kg	8240		05/01/1997	476
1,4-Dichlorobenzene	ND		5.0	ug/kg	8240		05/01/1997	476
1,1-Dichloroethane	ND		5.0	ug/kg	8240		05/01/1997	476
1,2-Dichloroethane	ND		5.0	ug/kg	8240		05/01/1997	476
1,1-Dichloroethene	ND		5.0	ug/kg	8240		05/01/1997	476
trans-1,2-Dichloroethene	ND		5.0	ug/kg	8240		05/01/1997	476
1,2-Dichloropropane	ND		5.0	ug/kg	8240		05/01/1997	476
cis-1,3-Dichloropropene	ND		5.0	ug/kg	8240		05/01/1997	476
trans-1,3-Dichloropropene	ND		5.0	ug/kg	8240		05/01/1997	476
Ethyl benzene	ND		5.0	ug/kg	8240		05/01/1997	476
Freon 113	ND		0.50	ug/kg	8240		05/01/1997	476
2-Hexanone	ND		10	ug/kg	8240		05/01/1997	476
Methylene chloride	ND		5.0	ug/kg	8240		05/01/1997	476
4-Methyl-2-pentanone	ND		10	ug/kg	8240		05/01/1997	476
Styrene	ND		5.0	ug/kg	8240		05/01/1997	476
1,1,2,2-Tetrachloroethane	ND		5.0	ug/kg	8240		05/01/1997	476
Tetrachloroethene	ND		5.0	ug/kg	8240		05/01/1997	476
Toluene	ND		5.0	ug/kg	8240		05/01/1997	476
1,1,1-Trichloroethane	ND		5.0	ug/kg	8240		05/01/1997	476
1,1,2-Trichloroethane	ND		5.0	ug/kg	8240		05/01/1997	476
Trichloroethene	ND		5.0	ug/kg	8240		05/01/1997	476
Trichlorofluoromethane	ND		5.0	ug/kg	8240		05/01/1997	476
Vinyl acetate	ND		10	ug/kg	8240		05/01/1997	476
Vinyl chloride	ND		5.0	ug/kg	8240		05/01/1997	476
Xylenes (total)	ND		5.0	ug/kg	8240		05/01/1997	476
SURROGATE RESULTS	--						05/01/1997	476
Toluene-d8 (SURR)	102			% Rec.	8240		05/01/1997	476
Bromofluorobenzene (SURR)	101			% Rec.	8240		05/01/1997	476
1,2-Dichloroethane-d4 (SURR)	85			% Rec.	8240		05/01/1997	476

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Cambria Env. Technology
Client Acct: 98900
LEGEND Job No: 97.00840

Date: 05/15/1997
ELAP Cert: 2193
Page: 8

Ref: Becker/Project No. 950-0423-4

SAMPLE DESCRIPTION: CB-4-5.0
Date Taken: 04/24/1997
Time Taken:
LEGEND Sample No: 274962

Parameter	Results	Flags	Reporting			Date	Date	Run
			Limit	Units	Method	Extracted	Analyzed	Batch
8270 (GCMS, Solid, PAH)						04/28/1997		
DILUTION FACTOR*	1						04/29/1997	798
POLYNUCLEAR AROMATIC	--						04/29/1997	798
HYDROCARBONS	--						04/29/1997	798
Acenaphthene	ND		330	ug/kg	8270		04/29/1997	798
Acenaphthylene	ND		330	ug/kg	8270		04/29/1997	798
Anthracene	ND		330	ug/kg	8270		04/29/1997	798
Benzo (a) anthracene	ND		330	ug/kg	8270		04/29/1997	798
Benzo (b&k) fluoranthene	ND		330	ug/kg	8270		04/29/1997	798
Benzo (a) pyrene	ND		330	ug/kg	8270		04/29/1997	798
Benzo (g, h, i) perylene	ND		330	ug/kg	8270		04/29/1997	798
Chrysene	ND		330	ug/kg	8270		04/29/1997	798
Dibenzo (a, h) anthracene	ND		330	ug/kg	8270		04/29/1997	798
Fluoranthene	ND		330	ug/kg	8270		04/29/1997	798
Fluorene	ND		330	ug/kg	8270		04/29/1997	798
Indeno (1, 2, 3-cd) pyrene	ND		330	ug/kg	8270		04/29/1997	798
Naphthalene	ND		330	ug/kg	8270		04/29/1997	798
Phenanthrene	ND		330	ug/kg	8270		04/29/1997	798
Pyrene	ND		330	ug/kg	8270		04/29/1997	798
SURROGATE RESULTS	--						04/29/1997	798
Nitrobenzene-d5 (SURR)	46			% Rec.	8270		04/29/1997	798
2-Fluorobiphenyl (SURR)	58			% Rec.	8270		04/29/1997	798
p-Terphenyl-d14 (SURR)	72			% Rec.	8270		04/29/1997	798

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Cambria Env. Technology
Client Acct: 98900
LEGEND Job No: 97.00840

Date: 05/15/1997
ELAP Cert: 2193
Page: 10

Ref: Becker/Project No. 950-0423-4

SAMPLE DESCRIPTION: CB-5-3.0
Date Taken: 04/24/1997
Time Taken:
LEGEND Sample No: 274969

Parameter	Results	Flags	Reporting			Method	Date	Date	Run
			Limit	Units	Extracted		Analyzed	Batch	
Oil & Grease (Total)	86 [✓]		50	mg/kg	5520E		05/08/1997	366	
Oil & Grease (Non-Polar)	50 [✓]		50	mg/kg	5520E/F		05/08/1997	364	
MB015 (EXT., Solid)						05/07/1997			
DILUTION FACTOR*	1						05/12/1997	1270	
as Diesel	1.2 [✓]	DH	1.0	mg/kg	3550		05/12/1997	1270	
as Motor Oil	ND [✓]		10	mg/kg	3550		05/12/1997	1270	
SURROGATE RESULTS	--						05/12/1997	1270	
Ortho-terphenyl (SURR)	112			% Rec.	3550		05/12/1997	1270	

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Cambria Env. Technology
Client Acct: 98900
LEGEND Job No: 97.00840

Date: 05/15/1997
ELAP Cert: 2193
Page: 11

Ref: Becker/Project No. 950-0423-4

SAMPLE DESCRIPTION: CB-2-6.0
Date Taken: 04/24/1997
Time Taken:
LEGEND Sample No: 274973

Parameter	Results	Flags	Reporting			Method	Date	Date	Run
			Limit	Units	Extracted		Analyzed	Batch	
Oil & Grease (Total)	63 ✓		50	mg/kg	5520E		05/08/1997	366	
Oil & Grease (Non-Polar)	ND ✓		50	mg/kg	5520E/F		05/08/1997	364	
M8015 (EXT., Solid)						05/14/1997			
DILUTION FACTOR*	1						05/15/1997	1271	
as Diesel	2.5 ✓	D-	1.0	mg/kg	3550		05/15/1997	1271	
as Motor Oil	ND ✓		10	mg/kg	3550		05/15/1997	1271	
SURROGATE RESULTS	--						05/15/1997	1271	
Ortho-terphenyl (SURR)	72			& Rec.	3550		05/15/1997	1271	

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Cambria Env. Technology
Client Acct: 98900
LEGEND Job No: 97.00840

Date: 05/15/1997
ELAP Cert: 2193
Page: 12

Ref: Becker/Project No. 950-0423-4

SAMPLE DESCRIPTION: CB-2-3.0
Date Taken: 04/24/1997
Time Taken:
LEGEND Sample No: 274974

Parameter	Results	Flags	Reporting			Method	Date	Date	Run
			Limit	Units	Extracted		Analyzed	Batch	
Oil & Grease (Total)	120 ✓		50	mg/kg	5520E		05/08/1997	366	
Oil & Grease (Non-Polar)	ND ✓		50	mg/kg	5520E/F		05/08/1997	364	
M8015 (EXT., Solid)						05/07/1997			
DILUTION FACTOR*	1						05/12/1997	1270	
as Diesel	2.2 ✓	D-	1.0	mg/kg	3550		05/12/1997	1270	
as Motor Oil	ND ✓		10	mg/kg	3550		05/12/1997	1270	
SURROGATE RESULTS	--						05/12/1997	1270	
Ortho-terphenyl (SURR)	81			% Rec.	3550		05/12/1997	1270	

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Cambria Env. Technology
Client Acct: 98900
LEGEND Job No: 97.00840

Date: 05/15/1997
ELAP Cert: 2193
Page: 13

Ref: Becker/Project No. 950-0423-4

SAMPLE DESCRIPTION: CB-3-3.5
Date Taken: 04/24/1997
Time Taken:
LEGEND Sample No: 274975

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch
Oil & Grease (Total)	690 ✓		50	mg/kg	5520E		05/08/1997	366
Oil & Grease (Non-Polar)	420 ✓		50	mg/kg	5520E/F		05/08/1997	364
M8015 (EXT., Solid)						05/07/1997		
DILUTION FACTOR*	10						05/15/1997	1270
as Diesel	130 ✓		10	mg/kg	3550		05/15/1997	1270
as Motor Oil	210 ✓		100	mg/kg	3550		05/15/1997	1270
SURROGATE RESULTS	--						05/15/1997	1270
Ortho-terphenyl (SURR)	84			% Rec.	3550		05/15/1997	1270

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Cambria Env. Technology
Client Acct: 98900
LEGEND Job No: 97.00840

Date: 05/15/1997
ELAP Cert: 2193
Page: 14

Ref: Becker/Project No. 950-0423-4

SAMPLE DESCRIPTION: CB-10-3.0
Date Taken: 04/24/1997
Time Taken:

LEGEND Sample No: 274977

Parameter	Results	Flags	Reporting			Date	Date	Run
			Limit	Units	Method	Extracted	Analyzed	Batch
Oil & Grease (Total)	92 ✓		50	mg/kg	5520E		05/08/1997	366
Oil & Grease (Non-Polar)	72 ✓		50	mg/kg	5520E/F		05/08/1997	364
M8015 (EXT., Solid)						05/07/1997		
DILUTION FACTOR*	1						05/14/1997	1270
as Diesel	ND ✓		1.0	mg/kg	3550		05/14/1997	1270
as Motor Oil	11 ✓	HX	10	mg/kg	3550		05/14/1997	1270
SURROGATE RESULTS	--						05/14/1997	1270
Ortho-terphenyl (SURR)	88			% Rec.	3550		05/14/1997	1270

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Cambria Env. Technology
Client Acct: 98900
LEGEND Job No: 97.00840

Date: 05/15/1997
ELAP Cert: 2193
Page: 15

Ref: Becker/Project No. 950-0423-4

SAMPLE DESCRIPTION: CB-9-5.0
Date Taken: 04/24/1997
Time Taken:
LEGEND Sample No: 274982

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch
Oil & Grease (Total)	100		50	mg/kg	5520E		05/08/1997	366
Oil & Grease (Non-Polar)	52		50	mg/kg	5520E/F		05/08/1997	364
M8015 (EXT., Solid)						05/07/1997		
DILUTION FACTOR*	1						05/14/1997	1270
as Diesel	1.8	D-	1.0	mg/kg	3550		05/14/1997	1270
as Motor Oil	ND		10	mg/kg	3550		05/14/1997	1270
SURROGATE RESULTS	--						05/14/1997	1270
Ortho-terphenyl (SURR)	70			% Rec.	3550		05/14/1997	1270

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Cambria Env. Technology
Client Acct: 98900
LEGEND Job No: 97.00840

Date: 05/15/1997
ELAP Cert: 2193
Page: 16

Ref: Becker/Project No. 950-0423-4

SAMPLE DESCRIPTION: CB-8-5.0
Date Taken: 04/24/1997
Time Taken:
LEGEND Sample No: 274986

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch
Oil & Grease (Total)	ND		50	mg/kg	5520E		05/08/1997	366
Oil & Grease (Non-Polar)	ND		50	mg/kg	5520E/F		05/08/1997	364
M8015 (EXT., Solid)						05/14/1997		
DILUTION FACTOR*	1						05/15/1997	1270
as Diesel	1.7	D-	1.0	mg/kg	3550		05/15/1997	1270
as Motor Oil	ND		10	mg/kg	3550		05/15/1997	1270
SURROGATE RESULTS	--						05/15/1997	1270
Ortho-terphenyl (SURR)	88			% Rec.	3550		05/15/1997	1270

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Cambria Env. Technology
Client Acct: 98900
LEGEND Job No: 97.00840

Date: 05/15/1997
ELAP Cert: 2193
Page: 17

Ref: Becker/Project No. 950-0423-4

SAMPLE DESCRIPTION: CB-11-5.0
Date Taken: 04/24/1997
Time Taken:
LEGEND Sample No: 274990

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch
Oil & Grease (Total)	380		50	mg/kg	5520E		05/08/1997	366
Oil & Grease (Non-Polar)	380		50	mg/kg	5520E/F		05/08/1997	364
M8015 (EXT., Solid)						05/07/1997		
DILUTION FACTOR*	10						05/13/1997	1270
as Diesel	210		10	mg/kg	3550		05/13/1997	1270
as Motor Oil	450		100	mg/kg	3550		05/13/1997	1270
SURROGATE RESULTS	--						05/13/1997	1270
Ortho-terphenyl (SURR)	117			% Rec.	3550		05/13/1997	1270

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Cambria Env. Technology
Client Acct: 98900
LEGEND Job No: 97.00840

Date: 05/15/1997
ELAP Cert: 2193
Page: 18

Ref: Becker/Project No. 950-0423-4

SAMPLE DESCRIPTION: CB-12-3.0
Date Taken: 04/24/1997
Time Taken:
LEGEND Sample No: 274992

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch
No.								
TPH (Gas/BTKE,Solid)								
5030/M8015	--						05/03/1997	2134
DILUTION FACTOR*	100						05/03/1997	2134
as Gasoline	840✓	GH	100	mg/kg	5030		05/03/1997	2134
8020 (GC,Solid)	--						05/03/1997	2134
Benzene	ND✓		250	ug/kg	8020		05/03/1997	2134
Toluene	ND		250	ug/kg	8020		05/03/1997	2134
Ethylbenzene	2,000✓		250	ug/kg	8020		05/03/1997	2134
Xylenes (Total)	6,200✓		250	ug/kg	8020		05/03/1997	2134
SURROGATE RESULTS	--						05/03/1997	2134
Bromofluorobenzene (SURR)	112			% Rec.	5030		05/03/1997	2134

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Cambria Env. Technology
Client Acct: 98900
LEGEND Job No: 97.00840

Date: 05/15/1997
ELAP Cert: 2193
Page: 19

Ref: Becker/Project No. 950-0423-4

SAMPLE DESCRIPTION: CB-6-3.0
Date Taken: 04/24/1997
Time Taken:
LEGEND Sample No: 274995

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch
Oil & Grease (Total)	93		50	mg/kg	5520E		05/08/1997	366
Oil & Grease (Non-Polar)	64		50	mg/kg	5520E/F		05/08/1997	363
M8015 (EXT., Solid)						05/07/1997		
DILUTION FACTOR*	1						05/14/1997	1270
as Diesel	ND		1.0	mg/kg	3550		05/14/1997	1270
as Motor Oil	14		10	mg/kg	3550		05/14/1997	1270
SURROGATE RESULTS	--						05/14/1997	1270
Ortho-terphenyl (SURR)	88			% Rec.	3550		05/14/1997	1270

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Cambria Env. Technology
Client Acct: 98900
LEGEND Job No: 97.00840

Date: 05/15/1997
ELAP Cert: 2193
Page: 2

Ref: Becker/Project No. 950-0423-4

SAMPLE DESCRIPTION: CB-1

Date Taken: 04/25/1997

Time Taken:

LEGEND Sample No: 274952

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch
Oil & Grease (Total)	ND		47	mg/L	5520B		05/08/1997	450
Oil & Grease (Non-Polar)	ND		47	mg/L	5520B/F		05/08/1997	425
M8015 (EXT., Liquid)						05/06/1997		
DILUTION FACTOR*	12						05/08/1997	1329
as Diesel	4.2	DH	0.60	mg/L	3510		05/08/1997	1329
as Motor Oil	15		6.0	mg/L	3510		05/08/1997	1329
SURROGATE RESULTS	--						05/08/1997	1329
Ortho-terphenyl (SURR)	110			% Rec.	3510		05/08/1997	1329

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Cambria Env. Technology
Client Acct: 98900
LEGEND Job No: 97.00840

Date: 05/15/1997
ELAP Cert: 2193
Page: 4

Ref: Becker/Project No. 950-0423-4

SAMPLE DESCRIPTION: CB-10

Date Taken: 04/25/1997

Time Taken:

LEGEND Sample No: 274956

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch
Oil & Grease (Total)	ND		5.0	mg/L	5520B		05/08/1997	450
Oil & Grease (Non-Polar)	ND		5.0	mg/L	5520B/F		05/08/1997	425
M8015 (EXT., Liquid)						05/06/1997		
DILUTION FACTOR*	4						05/08/1997	1329
as Diesel	2.0	DH	0.2	mg/L	3510		05/08/1997	1329
as Motor Oil	3.3	HX	2	mg/L	3510		05/08/1997	1329
SURROGATE RESULTS	--						05/08/1997	1329
Ortho-terphenyl (SURR)	115			% Rec.	3510		05/08/1997	1329

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Cambria Env. Technology
Client Acct: 98900
LEGEND Job No: 97.00840

Date: 05/15/1997
ELAP Cert: 2193
Page: 9

Ref: Becker/Project No. 950-0423-4

SAMPLE DESCRIPTION: CB-7-3.0
Date Taken: 04/24/1997
Time Taken:
LEGEND Sample No: 274965

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
Oil & Grease (Total)	100		50	mg/kg	5520E		05/08/1997	366
Oil & Grease (Non-Polar)	ND		50	mg/kg	5520E/F		05/08/1997	364
M8015 (EXT., Solid)						05/07/1997		
DILUTION FACTOR*	1						05/13/1997	1270
as Diesel	1.8	D-	1.0	mg/kg	3550		05/13/1997	1270
as Motor Oil	ND		10	mg/kg	3550		05/13/1997	1270
SURROGATE RESULTS	--						05/13/1997	1270
Ortho-terphenyl (SURR)	66			% Rec.	3550		05/13/1997	1270

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Ref: Becker/Project No. 950-0423-4

CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV	CCV	CCV	Flags	Units	Date Analyzed	Analyst Initials	Run Batch
	Standard % Recovery	Standard Amount Found	Standard Amount Expected					
Cadmium (ICP)	98.8	0.9876	1.00		mg/kg	04/30/1997	jeo	734
Chromium (ICP)	104.3	1.043	1.00		mg/kg	04/30/1997	jeo	745
Lead (ICP)	101.6	1.016	1.00		mg/kg	04/30/1997	jeo	608
Nickel (ICP)	101.5	1.015	1.00		mg/kg	04/30/1997	jeo	638
Zinc (ICP)	101.3	1.013	1.00		mg/kg	04/30/1997	jeo	683
M8015 (EXT., Liquid)								
as Diesel	102.3	1023	1000		mg/L	05/08/1997	vah	1329
as Motor Oil	105.0	1050	1000		mg/L	05/08/1997	vah	1329
Ortho-terphenyl (SURR)	105.0	105	100		% Rec.	05/08/1997	vah	1329
M8015 (EXT., Liquid)								
as Diesel	103.9	1039	1000		mg/L	05/08/1997	vah	1329
as Motor Oil	108.2	1082	1000		mg/L	05/08/1997	vah	1329
Ortho-terphenyl (SURR)	108.0	108	100		% Rec.	05/08/1997	vah	1329
M8015 (EXT., Liquid)								
as Diesel	110.7	1107	1000		mg/L	05/12/1997	vah	1329
as Motor Oil	111.1	1111	1000		mg/L	05/12/1997	vah	1329
Ortho-terphenyl (SURR)	112.0	112	100		% Rec.	05/12/1997	vah	1329
M8015 (EXT., Liquid)								
as Diesel	101.6	1016	1000		mg/L	05/13/1997	vah	1329
as Motor Oil	----	----	1000		mg/L	05/13/1997	vah	1329
Ortho-terphenyl (SURR)	104.0	104	100		% Rec.	05/13/1997	vah	1329
TPH (Gas/BTXE,Solid)								
as Gasoline	96.7	2.417	2.50		mg/kg	04/28/1997	aal	2133
Benzene	94.5	94.50	100.0		ug/kg	04/28/1997	aal	2133
Toluene	90.6	90.60	100.0		ug/kg	04/28/1997	aal	2133
Ethylbenzene	90.7	90.70	100.0		ug/kg	04/28/1997	aal	2133
Xylenes (Total)	89.7	269.2	300.0		ug/kg	04/28/1997	aal	2133
Bromofluorobenzene (SURR)	94.0	94	100		% Rec.	04/28/1997	aal	2133
TPH (Gas/BTXE,Solid)								
as Gasoline	97.5	2.437	2.50		mg/kg	05/03/1997	cjy	2134
Benzene	96.1	96.1	100.0		ug/kg	05/03/1997	cjy	2134
Toluene	89.8	89.8	100.0		ug/kg	05/03/1997	cjy	2134
Ethylbenzene	89.8	89.8	100.0		ug/kg	05/03/1997	cjy	2134
Xylenes (Total)	89.0	267	300.0		ug/kg	05/03/1997	cjy	2134
Bromofluorobenzene (SURR)	100.0	100	100		% Rec.	05/03/1997	cjy	2134
8015M - HEAVY SCAN								
as Diesel	94.2	942	1000		mg/kg	05/02/1997	vah	31
Ortho-terphenyl (SURR)	97.0	97	100		% Rec.	05/02/1997	vah	31
M8015 (EXT., Solid)								
as Diesel	102.1	1021	1000		mg/kg	05/12/1997	vah	1270
as Motor Oil	102.5	1025	1000		mg/kg	05/12/1997	vah	1270
Ortho-terphenyl (SURR)	107.0	107	100		% Rec.	05/12/1997	vah	1270
M8015 (EXT., Solid)								

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Ref: Becker/Project No. 950-0423-4

CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV	CCV	CCV	Flags	Units	Date Analyzed	Analyst Initials	Run Batch Number
	Standard % Recovery	Standard Amount Found	Standard Amount Expected					
as Diesel	101.6	1016	1000		mg/kg	05/13/1997	vah	1270
as Motor Oil		----	1000		mg/kg	05/13/1997	vah	1270
Ortho-terphenyl (SURR) M8015 (EXT., Solid)	104.0	104	100		% Rec.	05/13/1997	vah	1270
as Diesel	99.4	994	1000		mg/kg	05/14/1997	vah	1270
as Motor Oil	97.7	977	1000		mg/kg	05/14/1997	vah	1270
Ortho-terphenyl (SURR) M8015 (EXT., Solid)	107.0	107	100		% Rec.	05/14/1997	vah	1270
as Diesel	109.7	1097	1000		mg/kg	05/15/1997	vah	1270
as Motor Oil	102.2	1022	1000		mg/kg	05/15/1997	vah	1270
Ortho-terphenyl (SURR) M8015 (EXT., Solid)	119.0	119	100		% Rec.	05/15/1997	vah	1270
as Diesel	109.7	1097	1000		mg/kg	05/15/1997	vah	1271
as Motor Oil	106.0	1060	1000		mg/kg	05/15/1997	vah	1271
Ortho-terphenyl (SURR)	119.0	119	100		% Rec.	05/15/1997	vah	1271

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Ref: Becker/Project No. 950-0423-4

CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV	CCV	CCV	Flags	Units	Date Analyzed	Analyst Initials	Run
	Standard	Standard	Standard					Batch
	% Recovery	Amount Found	Amount Expected					Number
8240 (GCMS, Solid)								
Chloroform	92.4	46.2	50.0		ug/kg	05/01/1997	jde	476
1,1-Dichloroethene	96.0	48.0	50.0		ug/kg	05/01/1997	jde	476
1,2-Dichloropropane	98.4	49.2	50.0		ug/kg	05/01/1997	jde	476
Ethyl benzene	100.6	50.3	50.0		ug/kg	05/01/1997	jde	476
Toluene	96.0	48.0	50.0		ug/kg	05/01/1997	jde	476
Vinyl chloride	91.0	45.5	50.0		ug/kg	05/01/1997	jde	476
Toluene-d8 (SURR)	110.0	110	100		‡ Rec.	05/01/1997	jde	476
Bromofluorobenzene (SURR)	112.0	112	100		‡ Rec.	05/01/1997	jde	476
1,2-Dichloroethane-d4 (SURR)	95.0	95	100		‡ Rec.	05/01/1997	jde	476

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Ref: Becker/Project No. 950-0423-4

CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV	CCV	CCV	Flags	Units	Date Analyzed	Analyst Initials	Run
	Standard	Standard	Standard					Batch
	% Recovery	Amount Found	Amount Expected					Number
8270 (GCMS, Solid, PAH)								
Acenaphthene	99.7	99.7	100		ug/kg	04/29/1997	gec	798
Benzo(a)pyrene	95.0	95.0	100		ug/kg	04/29/1997	gec	798
HYDROCARBONS	110.0	110	100		ug/kg	04/29/1997	gec	798
SURROGATE RESULTS	100.0	100	100		% Rec.	04/29/1997	gec	798
Nitrobenzene-d5 (SURR)	97.4	97.4	100		% Rec.	04/29/1997	gec	798
2-Fluorobiphenyl (SURR)	92.7	92.7	100		% Rec.	04/29/1997	gec	798
p-Terphenyl-d14 (SURR)	102.0	102	100		% Rec.	04/29/1997	gec	798

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Cambria Env. Technology
Client Acct: 98900
LEGEND Job No: 97.00840

Date: 05/15/1997
ELAP Cert: 2193
Page: 24

Ref: Becker/Project No. 950-0423-4

CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV	CCV	CCV	Flags	Units	Date Analyzed	Analyst Initials	Run
	Standard	Standard	Standard					Batch
	% Recovery	Amount Found	Amount Expected					Number
8270 (GCMS, Solid, PAH)								
Acenaphthene	101.0	101	100		ug/kg	04/30/1997	gec	798
Benzo(a)pyrene	94.4	94.4	100		ug/kg	04/30/1997	gec	798
HYDROCARBONS	113.0	113	100		ug/kg	04/30/1997	gec	798
SURROGATE RESULTS	104.0	104	100		% Rec.	04/30/1997	gec	798
Nitrobenzene-d5 (SURR)	99.9	99.9	100		% Rec.	04/30/1997	gec	798
2-Fluorobiphenyl (SURR)	91.8	91.8	100		% Rec.	04/30/1997	gec	798
p-Terphenyl-d14 (SURR)	107.0	107	100		% Rec.	04/30/1997	gec	798

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Ref: Becker/Project No. 950-0423-4

METHOD BLANK REPORT

Parameter	Method	Reporting	Flags	Units	Date	Analyst	Run
	Blank						
	Found						Number
Oil & Grease (Total)	ND	5.0		mg/L	05/08/1997	temp	450
Oil & Grease (Non-Polar)	ND	5.0		mg/L	05/08/1997	temp	425
Oil & Grease (Total)	68	50		mg/kg	04/30/1997	aal	365
Oil & Grease (Total)	ND	50		mg/kg	05/08/1997	temp	366
Oil & Grease (Non-Polar)	ND	50		mg/kg	04/30/1997	aal	362
Oil & Grease (Non-Polar)	ND	50		mg/kg	05/08/1997	temp	363
Oil & Grease (Non-Polar)	ND	50		mg/kg	05/08/1997	temp	364
Cadmium (ICP)	ND	2.0		mg/kg	04/30/1997	jeo	734
Chromium (ICP)	ND	2.0		mg/kg	04/30/1997	jeo	745
Lead (ICP)	ND	20		mg/kg	04/30/1997	jeo	608
Nickel (ICP)	ND	5.0		mg/kg	04/30/1997	jeo	638
Zinc (ICP)	ND	5.0		mg/kg	04/30/1997	jeo	683
M8015 (EXT., Liquid)							
as Diesel	ND	0.050		mg/L	05/08/1997	vah	1329
as Motor Oil	ND	0.50		mg/L	05/08/1997	vah	1329
Ortho-terphenyl (SURR)	124			% Rec.	05/08/1997	vah	1329
TPH (Gas/BTXE,Solid)							
as Gasoline	ND	1.0		mg/kg	04/28/1997	aal	2133
Benzene	ND	2.5		ug/kg	04/28/1997	aal	2133
Toluene	ND	2.5		ug/kg	04/28/1997	aal	2133
Ethylbenzene	ND	2.5		ug/kg	04/28/1997	aal	2133
Xylenes (Total)	ND	2.5		ug/kg	04/28/1997	aal	2133
Bromofluorobenzene (SURR)	93			% Rec.	04/28/1997	aal	2133
TPH (Gas/BTXE,Solid)							
as Gasoline	ND	1.0		mg/kg	05/03/1997	cjy	2134
Benzene	ND	2.5		ug/kg	05/03/1997	cjy	2134
Toluene	ND	2.5		ug/kg	05/03/1997	cjy	2134
Ethylbenzene	ND	2.5		ug/kg	05/03/1997	cjy	2134
Xylenes (Total)	ND	2.5		ug/kg	05/03/1997	cjy	2134
Bromofluorobenzene (SURR)	103			% Rec.	05/03/1997	cjy	2134
B015M - HEAVY SCAN							
as Creosote	ND	10		mg/kg	05/02/1997	vah	31
as Diesel	ND	1.0		mg/kg	05/02/1997	vah	31
as Kerosene	ND	1.0		mg/kg	05/02/1997	vah	31
as Motor Oil	ND	10		mg/kg	05/02/1997	vah	31
Ortho-terphenyl (SURR)	105			% Rec.	05/02/1997	vah	31
M8015 (EXT., Solid)							
as Diesel	ND	1.0		mg/kg	05/12/1997	vah	1270
as Motor Oil	ND	10		mg/kg	05/12/1997	vah	1270
Ortho-terphenyl (SURR)	125			% Rec.	05/12/1997	vah	1270
M8015 (EXT., Solid)							
as Diesel	ND	1.0		mg/kg	05/15/1997	vah	1271
as Motor Oil	ND	10		mg/kg	05/15/1997	vah	1271
Ortho-terphenyl (SURR)	118			% Rec.	05/15/1997	vah	1271

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Ref: Becker/Project No. 950-0423-4

METHOD BLANK REPORT

Parameter	Method	Reporting	Flags	Units	Date	Analyst	Run
	Blank						
	Amount	Limit			Analyzed	Initials	Number
	Found						
8240 (GCMS, Solid)							
Benzene	ND	5.0		ug/kg	05/01/1997	jde	476
Acetone	6.0	10	B-I	ug/kg	05/01/1997	jde	476
Bromodichloromethane	ND	5.0		ug/kg	05/01/1997	jde	476
Bromoform	ND	5.0		ug/kg	05/01/1997	jde	476
Bromomethane	ND	5.0		ug/kg	05/01/1997	jde	476
2-Butanone	ND	10		ug/kg	05/01/1997	jde	476
Carbon disulfide	ND	5.0		ug/kg	05/01/1997	jde	476
Carbon tetrachloride	ND	5.0		ug/kg	05/01/1997	jde	476
Chlorobenzene	ND	5.0		ug/kg	05/01/1997	jde	476
Chloroethane	ND	5.0		ug/kg	05/01/1997	jde	476
2-Chloroethyl vinyl ether	ND	10		ug/kg	05/01/1997	jde	476
Chloroform	ND	5.0		ug/kg	05/01/1997	jde	476
Chloromethane	ND	5.0		ug/kg	05/01/1997	jde	476
Dibromochloromethane	ND	5.0		ug/kg	05/01/1997	jde	476
1,2-Dichlorobenzene	ND	5.0		ug/kg	05/01/1997	jde	476
1,3-Dichlorobenzene	ND	5.0		ug/kg	05/01/1997	jde	476
1,4-Dichlorobenzene	ND	5.0		ug/kg	05/01/1997	jde	476
1,1-Dichloroethane	ND	5.0		ug/kg	05/01/1997	jde	476
1,2-Dichloroethane	ND	5.0		ug/kg	05/01/1997	jde	476
1,1-Dichloroethene	ND	5.0		ug/kg	05/01/1997	jde	476
trans-1,2-Dichloroethene	ND	5.0		ug/kg	05/01/1997	jde	476
1,2-Dichloropropane	ND	5.0		ug/kg	05/01/1997	jde	476
cis-1,3-Dichloropropene	ND	5.0		ug/kg	05/01/1997	jde	476
trans-1,3-Dichloropropene	ND	5.0		ug/kg	05/01/1997	jde	476
Ethyl benzene	ND	5.0		ug/kg	05/01/1997	jde	476
Freon 113	ND	0.50		ug/kg	05/01/1997	jde	476
2-Hexanone	ND	10		ug/kg	05/01/1997	jde	476
Methylene chloride	ND	5.0		ug/kg	05/01/1997	jde	476
4-Methyl-2-pentanone	ND	10		ug/kg	05/01/1997	jde	476
Styrene	ND	5.0		ug/kg	05/01/1997	jde	476
1,1,2,2-Tetrachloroethane	ND	5.0		ug/kg	05/01/1997	jde	476
Tetrachloroethene	ND	5.0		ug/kg	05/01/1997	jde	476
Toluene	ND	5.0		ug/kg	05/01/1997	jde	476
1,1,1-Trichloroethane	ND	5.0		ug/kg	05/01/1997	jde	476
1,1,2-Trichloroethane	ND	5.0		ug/kg	05/01/1997	jde	476
Trichloroethene	ND	5.0		ug/kg	05/01/1997	jde	476
Trichlorofluoromethane	ND	5.0		ug/kg	05/01/1997	jde	476
Vinyl acetate	ND	10		ug/kg	05/01/1997	jde	476
Vinyl chloride	ND	5.0		ug/kg	05/01/1997	jde	476
Xylenes (total)	ND	5.0		ug/kg	05/01/1997	jde	476
Toluene-d8 (SURR)	99			% Rec.	05/01/1997	jde	476
Bromofluorobenzene (SURR)	99			% Rec.	05/01/1997	jde	476
1,2-Dichloroethane-d4 (SURR)	98			% Rec.	05/01/1997	jde	476

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Ref: Becker/Project No. 950-0423-4

METHOD BLANK REPORT

Parameter	Method	Reporting	Flags	Units	Date	Analyst	Run
	Blank						
	Amount	Limit			Analyzed	Initials	Number
	Found						
8270 (GCMS, Solid, PAH)							
Acenaphthene	ND	330		ug/kg	04/29/1997	gec	798
Acenaphthylene	ND	330		ug/kg	04/29/1997	gec	798
Anthracene	ND	330		ug/kg	04/29/1997	gec	798
Benzo (a) anthracene	ND	330		ug/kg	04/29/1997	gec	798
Benzo (b&k) fluoranthene	ND	330		ug/kg	04/29/1997	gec	798
Benzo (a) pyrene	ND	330		ug/kg	04/29/1997	gec	798
Benzo (g, h, i) perylene	ND	330		ug/kg	04/29/1997	gec	798
Chrysene	ND	330		ug/kg	04/29/1997	gec	798
Dibenzo (a, h) anthracene	ND	330		ug/kg	04/29/1997	gec	798
Fluoranthene	ND	330		ug/kg	04/29/1997	gec	798
Fluorene	ND	330		ug/kg	04/29/1997	gec	798
Indeno (1, 2, 3-cd) pyrene	ND	330		ug/kg	04/29/1997	gec	798
Naphthalene	ND	1600		ug/kg	04/29/1997	gec	798
Phenanthrene	ND	330		ug/kg	04/29/1997	gec	798
Pyrene	ND	330		ug/kg	04/29/1997	gec	798
HYDROCARBONS	ND	330		ug/kg	04/29/1997	gec	798
SURROGATE RESULTS	65			% Rec.	04/29/1997	gec	798
Nitrobenzene-d5 (SURR)	83			% Rec.	04/29/1997	gec	798
2-Fluorobiphenyl (SURR)	79			% Rec.	04/29/1997	gec	798
p-Terphenyl-d14 (SURR)	66			% Rec.	04/29/1997	gec	798

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Ref: Becker/Project No. 950-0423-4

MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix				Sample Conc.	Matrix				Date Analyzed	Run Batch	Sample Spiked
	Matrix Spike % Rec.	Spike Dup % Rec.	RPD	Spike Amount		Matrix Spike Conc.	Spike Dup Conc.	Flags	Units			
Oil & Grease (Total)	79.3	93.6	16.5	137.7	ND	109.2	84.6		mg/L	05/08/1997	450	275090
Oil & Grease (Non-Polar)	58.4	80.2	31.5	137.7	ND	80.4	72.5	*M	mg/L	05/08/1997	425	275090
Oil & Grease (Total)	109.8	100.4	8.9	2809	99	3184	3553	NAR	mg/kg	04/30/1997	365	274962
Oil & Grease (Total)	100.9	103.6	2.6	2,227	260	2,508	3,350		mg/kg	05/08/1997	366	274958
Oil & Grease (Total)	105.8	114.3	7.7	3,254	93	3,535	3,428		mg/kg	05/08/1997	366	274995
Oil & Grease (Non-Polar)	109.1	99.0	9.6	2809	57	3123	3461		mg/kg	04/30/1997	362	274962
Oil & Grease (Non-Polar)	93.5	83.7	11.1	3,254	64	3,106	2,506		mg/kg	05/08/1997	363	274995
Oil & Grease (Non-Polar)	97.2	91.8	5.7	2,227	80	2,244	2,820		mg/kg	05/08/1997	364	274958
METHOD 6010 (SOLID)					--					04/30/1997	828	274962
Cadmium (ICP)	93.9	92.4	1.6	81.97	ND	77.01	61.58		mg/kg	04/30/1997	734	274962
Chromium (ICP)	91.7	92.3	0.7	81.97	35	110.2	96.55		mg/kg	04/30/1997	745	274962
Lead (ICP)	102.0	97.9	4.0	81.97	ND	83.59	65.30		mg/kg	04/30/1997	608	274962
Nickel (ICP)	80.0	81.2	1.5	81.97	26	91.57	80.14		mg/kg	04/30/1997	638	274962
Zinc (ICP)	76.2	79.2	3.9	81.97	31	93.48	83.80	NI3	mg/kg	04/30/1997	683	274962
M8015 (EXT., Liquid)												275079
as Diesel	95.2	102.7	7.5	1.89	2.3	4.1	4.20	D-	mg/L	05/08/1997	1329	275079
Ortho-terphenyl (SURR)	127.0	133.0	4.6	100	154	127	133	MI	% Rec.	05/08/1997	1329	275079
TPH (Gas/BTXE,Solid)												274962
as Gasoline	88.6	89.8	1.3	2.50	ND	2.216	2.244		mg/kg	04/29/1997	2133	274962
Benzene	90.6	91.2	0.7	30.75	ND	27.85	28.05		ug/kg	04/29/1997	2133	274962
Toluene	89.5	89.5	0.0	166.2	ND	148.7	148.8		ug/kg	04/29/1997	2133	274962
Bromofluorobenzene (SURR)	84.0	84.0	0.0	100	82	84	84		% Rec.	04/29/1997	2133	274962
TPH (Gas/BTXE,Solid)												275166
as Gasoline	89.6	84.1	6.3	2.50	ND	2.239	2.102		mg/kg	05/03/1997	2134	275166
Benzene	90.2	95.8	6.0	20.45	ND	18.45	19.60		ug/kg	05/03/1997	2134	275166
Toluene	94.8	89.8	5.4	168.0	ND	159.2	150.9		ug/kg	05/03/1997	2134	275166
Bromofluorobenzene (SURR)	94.0	90.0	4.3	100	88	94	90		% Rec.	05/03/1997	2134	275166
M8015 (EXT., Solid)												274986
as Diesel	80.2	85.0	5.8	16.7	1.7	15.1	15.9	D-	mg/kg	05/15/1997	1270	274986
Ortho-terphenyl (SURR)	96.0	87.0	9.8	100	88	96	87		% Rec.	05/15/1997	1270	274986
M8015 (EXT., Solid)												275326
as Diesel	101.8	96.4	5.3	16.7	ND	17.0	16.1		mg/kg	05/15/1997	1271	275326
Ortho-terphenyl (SURR)	92.0	110.0	17.7	100	72	92	110		% Rec.	05/15/1997	1271	275326
M8015 (EXT., Solid)												274986
as Diesel	80.2	85.0	5.8	16.7	1.7	15.1	15.9	D-	mg/kg	05/15/1997	1270	274986
Ortho-terphenyl (SURR)	96.0	87.0	9.8	100	88	96	87		% Rec.	05/15/1997	1270	274986
M8015 (EXT., Solid)												275326
as Diesel	101.8	96.4	5.3	16.7	ND	17.0	16.1		mg/kg	05/15/1997	1271	275326
Ortho-terphenyl (SURR)	92.0	110.0	17.7	100	72	92	110		% Rec.	05/15/1997	1271	275326

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Ref: Becker/Project No. 950-0423-4

MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix Spike			Matrix Spike			Flags	Units	Date Analyzed	Run Batch	Sample Spiked	
	Spike % Rec.	Dup % Rec.	RPD	Spike Amount	Sample Conc.	Spike Conc.						Dup. Conc.
8240 (GCMS, Solid)												274962
Benzene	98.6	100.6	1.9	50.0	ND	49.3	50.3	ug/kg	05/01/1997	476		274962
Chlorobenzene	97.4	105.0	7.4	50.0	ND	48.7	52.5	ug/kg	05/01/1997	476		274962
1,1-Dichloroethene	107.2	111.8	4.2	50.0	ND	53.6	55.9	ug/kg	05/01/1997	476		274962
Toluene	93.4	99.2	6.0	50.0	ND	46.7	49.6	ug/kg	05/01/1997	476		274962
Trichloroethene	100.8	103.8	2.9	50.0	ND	50.4	51.9	ug/kg	05/01/1997	476		274962
Toluene-d8 (SURR)	95.0	98.0	3.1	100	102	95	98	% Rec.	05/01/1997	476		274962
Bromofluorobenzene (SURR)	94.0	100.0	6.1	100	101	94	100	% Rec.	05/01/1997	476		274962
1,2-Dichloroethane-d4 (SURR)	94.0	94.0	0.0	100	85	94	94	% Rec.	05/01/1997	476		274962

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Ref: Becker/Project No. 950-0423-4

MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix Spike				Sample Conc.	Matrix Spike			Date Analyzed	Run Batch	Sample Spiked
	Matrix Spike % Rec.	Spike Dup % Rec.	RPD	Spike Amount		Matrix Spike Conc.	Spike Dup. Conc.	Flags			
8270 (GCMS, Solid, PAH)											274962
Acenaphthene	70.0	67.3	3.9	3,330	ND	2,330	2,240	ug/kg	04/29/1997	798	274962
Phenanthrene	82.0	76.3	7.2	3,330	ND	2,730	2,540	ug/kg	04/29/1997	798	274962
Pyrene	59.8	55.6	7.3	3,330	ND	1,990	1,850	ug/kg	04/29/1997	798	274962
HYDROCARBONS	67.2	65.5	2.6	6,670	ND	4,480	4,370	ug/kg	04/29/1997	798	274962
SURROGATE RESULTS	58.0	54.0	7.1	100	46	58	54	% Rec.	04/29/1997	798	274962
Nitrobenzene-d5 (SURR)	61.0	58.0	5.0	100	58	61	58	% Rec.	04/29/1997	798	274962
2-Fluorobiphenyl (SURR)	77.0	74.0	4.0	100	72	77	74	% Rec.	04/29/1997	798	274962
p-Terphenyl-d14 (SURR)	60.0	59.0	1.7	100	53	60	59	% Rec.	04/29/1997	798	274962

Client Name: Cambria Env. Technology
Client Acct: 98900
LEGEND Job No: 97.00840

Date: 05/15/1997
ELAP Cert: 2193
Page: 31

Ref: Becker/Project No. 950-0423-4

MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix Spike			Matrix Spike			Flags	Units	Date Analyzed	Run Batch	Sample Spiked
	Matrix Spike % Rec.	Matrix Spike Dup % Rec.	RPD	Spike Amount	Sample Conc.	Matrix Spike Dup. Conc.					
8270 (GCMS, Solid, PAH)											274962
Acenaphthene	70.0	67.3	3.9	3,330	ND	2,330	2,240	ug/kg	04/29/1997	798	274962
SURROGATE RESULTS	58.0	54.0	7.1	100	46	58	54	% Rec.	04/29/1997	798	274962
2-Fluorobiphenyl (SURRE)	61.0	58.0	5.0	100	58	61	58	% Rec.	04/29/1997	798	274962
p-Terphenyl-d14 (SURRE)	77.0	74.0	4.0	100	72	77	74	% Rec.	04/29/1997	798	274962

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Ref: Becker/Project No. 950-0423-4

LABORATORY CONTROL SAMPLE REPORT

Parameter	LCS		RPD	LCS		Flags	Units	Date Analyzed	Analyst Initials	Run Batch
	% Rec.	% Rec.		Amount Found	Amount Found					
Oil & Grease (Total)	83.2			83.8			mg/L	05/08/1997	temp	450
Oil & Grease (Non-Polar)	83.1			83.7			mg/L	05/08/1997	temp	425
Oil & Grease (Total)	101.1			3420			mg/kg	04/30/1997	aal	365
Oil & Grease (Total)	102.4			3,022			mg/kg	05/08/1997	temp	366
Oil & Grease (Non-Polar)	100.7			3408			mg/kg	04/30/1997	aal	362
Oil & Grease (Non-Polar)	93.3			2,630			mg/kg	05/08/1997	temp	363
Oil & Grease (Non-Polar)	94.7			2,796			mg/kg	05/08/1997	temp	364
Cadmium (ICP)	94.7			94.67			mg/kg	04/30/1997	jeo	734
Chromium (ICP)	101.7			101.7			mg/kg	04/30/1997	jeo	745
Lead (ICP)	98.2			98.18			mg/kg	04/30/1997	jeo	608
Nickel (ICP)	96.8			96.80			mg/kg	04/30/1997	jeo	638
Zinc (ICP)	95.6			95.55			mg/kg	04/30/1997	jeo	683
M8015 (EXT., Liquid)										
as Diesel	106.0			1.06			mg/L	05/07/1997	vah	1329
Ortho-terphenyl (SURRE)	134.0			134			% Rec.	05/07/1997	vah	1329
8015M - HEAVY SCAN										
as Diesel	91.0	90.4	0.7	15.2	15.1	16.7	mg/kg	05/02/1997	vah	31
Ortho-terphenyl (SURRE)	105.0	105.0	0.0	105	105	100	% Rec.	05/02/1997	vah	31
M8015 (EXT., Solid)										
as Diesel	92.8			15.5		16.7	mg/kg	05/12/1997	vah	1270
Ortho-terphenyl (SURRE)	119.0			119		100	% Rec.	05/12/1997	vah	1270
M8015 (EXT., Solid)										
as Diesel	95.2			15.9		16.7	mg/kg	05/15/1997	vah	1271
Ortho-terphenyl (SURRE)	121.0			121		100	% Rec.	05/15/1997	vah	1271

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Client Name: Cambria Env. Technology
 Client Acct: 98900
 LEGEND Job No: 97.00840

Date: 05/15/1997
 ELAP Cert: 2193
 Page: 33

Ref: Becker/Project No. 950-0423-4

LABORATORY CONTROL SAMPLE REPORT

Parameter	LCS % Rec.	DUP LCS % Rec.	RPD	LCS Amount Found	DUP		Flags	Units	Date Analyzed	Analyst Initials	Run Batch
					LCS Amount Found	LCS Amount Exp.					
8270 (GCMS, Solid, PAH)											
Acenaphthene	91.3			3,040		3,330		ug/kg	04/29/1997	gec	798
Phenanthrene	93.7			3,120		3,330		ug/kg	04/29/1997	gec	798
Pyrene	79.6			2,650		3,330		ug/kg	04/29/1997	gec	798
HYDROCARBONS	82.8			5,520		6,670		ug/kg	04/29/1997	gec	798
SURROGATE RESULTS	74.0			74		100		% Rec.	04/29/1997	gec	798
Nitrobenzene-d5 (SURR)	74.0			74		100		% Rec.	04/29/1997	gec	798
2-Fluorobiphenyl (SURR)	88.0			88		100		% Rec.	04/29/1997	gec	798
p-Terphenyl-d14 (SURR)	78.0			78		100		% Rec.	04/29/1997	gec	798

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

Ref: Becker/Project No. 950-0423-4

DUPLICATE REPORT

Parameter	RPD	Original	Duplicate	Flags	Units	Date		Duplicate
		Sample	Sample			Analyzed	Analyst	Sample No.
		Result	Result					
METHOD 6010 (SOLID)		--	--			04/30/1997	jeo	274896
Cadmium (ICP)		ND	ND		mg/kg	04/30/1997	jeo	274896
Chromium (ICP)	0.0	170	170		mg/kg	04/30/1997	jeo	274896
Lead (ICP)		ND	ND		mg/kg	04/30/1997	jeo	274896
Nickel (ICP)	0.0	110	110		mg/kg	04/30/1997	jeo	274896
Zinc (ICP)	0.0	68	68		mg/kg	04/30/1997	jeo	274896

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.

KEY TO RESULT FLAGS

- * : RPD between sample duplicates exceeds 30%.
- *M : RPD between sample duplicates or MS/MSD exceeds 20%.
- + : Correlation coefficient for the Method of Standard Additions is less than 0.995.
- < : Sample result is less than reported value.
- B-I : Value is between Method Detection Limit and Reporting Limit.
- B-0 : Analyte found in blank and sample.
- C : The result confirmed by secondary column or GC/MS analysis.
- CNA : Cr+6 not analyzed; Total Chromium concentration below Cr+6 regulatory level.
- COMP : Sample composited by equal volume prior to analysis.
- CV : 2-Chloroethylvinyl ether cannot be determined in a preserved sample.
- CWT : Due to the sample matrix, constant weight could not be achieved.
- D- : The result has an atypical pattern for Diesel analysis.
- D1 : The result for Diesel is an unknown hydrocarbon which consists of a single peak.
- DB : ND for hydrocarbons, non-discrete baseline rise detected.
- DH : The result appears to be a heavier hydrocarbon than Diesel.
- DL : The result appears to be a lighter hydrocarbon than Diesel.
- DR : Elevated Reporting Limit due to Matrix.
- DS : Surrogate diluted out of range.
- DX : The result for Diesel is an unknown hydrocarbon which consists of several peaks.
- FA : Compound quantitated at a 2X dilution factor.
- FB : Compound quantitated at a 5X dilution factor.
- FC : Compound quantitated at a 10X dilution factor.
- FD : Compound quantitated at a 20X dilution factor.
- FE : Compound quantitated at a 50X dilution factor.
- FF : Compound quantitated at a 100X dilution factor.
- FG : Compound quantitated at a 200X dilution factor.
- FH : Compound quantitated at a 500X dilution factor.
- FI : Compound quantitated at a 1000X dilution factor.
- FJ : Compound quantitated at a greater than 1000x dilution factor.
- FK : Compound quantitated at a 25X dilution factor.
- FL : Compound quantitated at a 250X dilution factor.
- G- : The result has an atypical pattern for Gasoline.
- G1 : The result for Gasoline is an unknown single peak.
- GH : The result appears to be a heavier hydrocarbon than Gasoline.
- GL : The result appears to be a lighter hydrocarbon than Gasoline.
- GX : The result for Gasoline is an unknown hydrocarbon which consists of several peaks.
- HT : Analysis performed outside of the method specified holding time.
- HTC : Confirmation analyzed outside of the method specified holding time.
- HTP : Prep procedure performed outside of the method specified holding time.
- HTR : Received after holding time expired, analyzed ASAP after receipt.
- HX : Peaks detected within the quantitation range do not match standard used.
- J : Value is estimated.
- MI : Matrix Interference Suspected.
- MSA : Value determined by Method of Standard Additions.
- MSA* : Value obtained by Method of Standard Additions; Correlation coefficient is <0.995.
- NI1 : Sample spikes outside of QC limits; matrix interference suspected.
- NI2 : Sample concentration is greater than 4X the spiked value; the spiked value is considered insignificant.
- NI3 : Matrix Spike values exceed established QC limits, post digestion spike is in control.
- NI4 : MS/MSD outside of control limits, serial dilution within control.
- P : There is >40% difference between primary and confirmation analysis.
- P7 : pH of sample > 2; sample analyzed past 7 days.
- RSC : Refer to subcontract laboratory report for QC data.
- S2 : Matrix interference confirmed by repeat analysis.
- SCN : Thiocyanate not analyzed separately; total value is below the Reporting Limit for Free Cyanide.
- SIM : Analysis performed by Selective Ion Monitoring.
- TND : Conc. of the total analyte ND; therefore this analyte is ND also.
- UMDL : Undetected at the Method Detection Limit.
- UTD : Unable to perform requested analysis.



NATIONAL ENVIRONMENTAL TESTING, INC.

CHAIN OF CUSTODY RECORD

COMPANY CAMBRIA ENV. TECH.
 ADDRESS 1144 65th ST, OAKLAND, CA
 PHONE 510-420-3307 FAX 510-420-9170
 PROJECT NAME/LOCATION BECKER
 PROJECT NUMBER SA-950-0423-4
 PROJECT MANAGER DAVID ELIAS

REPORT TO: DAVID ELIAS
 INVOICE TO: DAVID ELIAS
 P.O. NO. _____
 NET QUOTE NO. _____

SAMPLED BY Sam Ranganujan
 (PRINT NAME)
DAVID ELIAS
 (PRINT NAME)

David Elias
 SIGNATURE
David Elias
 SIGNATURE

ANALYSES

To assist us in selecting the proper method

Is this work being conducted for regulatory compliance monitoring? Yes ___ No ___

Is this work being conducted for regulatory enforcement action? Yes ___ No ___

Which regulations apply: RCRA ___ NPDES Wastewater ___
 UST ___ Drinking Water ___
 Other ___ None ___

COMMENTS

DATE	TIME	SAMPLE ID/DESCRIPTION	MATRIX	GRAB	COMPOSITE	# and Type of Containers					
						HCl 100A	NaOH	HNO ₃	H ₂ SO ₄	OTHER	
4/24-4/25		CB-1	W	X	3	3					2
4/24/97		CB-3				6		1	1	3	
4/24/97		CB-6				3	3	1	1	1	
4/24/97-4/25		CB-7				3	3		5		
4/24-4/25/97		CB-10	↓	↓		3	3			2	

CUSTODY SEALED

Date 4/25/97 Time 1800 Initials DE

SEAL INTACT?

Yes No ___ Initials QB

CONDITION OF SAMPLE: BOTTLES INTACT? YES/NO
 FIELD FILTERED? YES/NO

COC SEALS PRESENT AND INTACT? YES/NO
 VOLATILES FREE OF HEADSPACE? YES/NO

TEMPERATURE UPON RECEIPT: 0.1°C, 0.0°C, 0.3°C
 Bottles supplied by NET? YES/NO

SAMPLE REMAINDER DISPOSAL: RETURN SAMPLE REMAINDER TO CLIENT VIA _____
 I REQUEST NET TO DISPOSE OF ALL SAMPLE REMAINDERS _____ DATE _____

RELINQUISHED BY: Sam Ranganujan

DATE: 4/25/97
 TIME: 2:45 AM

RECEIVED BY: Harvey Rapp

RELINQUISHED BY: Harvey Rapp

DATE: 4/25/97
 TIME: 1800

RECEIVED FOR NET BY: Phil Jussen

METHOD OF SHIPMENT: VIA CDS

REMARKS: _____
4/26/97 0615





NATIONAL ENVIRONMENTAL TESTING, INC.

CHAIN OF CUSTODY RECORD

COMPANY Cambrina Environmental Tech. Inc
 ADDRESS 1144 65th St, Ste C, Oakland, CA 94608
 PHONE (510) 420-3300 FAX (510) 420-9170
 PROJECT NAME/LOCATION Becker Property, 1300 Powell, Emeryville
 PROJECT NUMBER 95-42314
 PROJECT MANAGER David Elias

REPORT TO: David Elias
 INVOICE TO: Cambrina
 P.O. NO. _____
 NET QUOTE NO. _____

SAMPLED BY
Sam Ranganajan
 (PRINT NAME)
 (PRINT NAME)

SIGNATURE S. Ranganajan
 SIGNATURE _____

ANALYSES

To assist us in selecting the proper method

Is this work being conducted for regulatory compliance monitoring? Yes ___ No ___

Is this work being conducted for regulatory enforcement action? Yes ___ No ___

Which regulations apply: RCRA ___ NPDES Wastewater ___
 UST ___ Drinking Water ___
 Other ___ None ___

DATE	TIME	SAMPLE ID/DESCRIPTION	MATRIX	GRAB	COMP	HCl	NaOH	HNO ₃	H ₂ SO ₄	OTHER	# and Type of Containers (i)
4/24/97		CB-5-110	S								TUBE
↓		CB-5-300	"								↓
↓		CB-5-500	"								↓
↓		CB-5-810	"								↓
4/24/97		CB-2-910	"								TUBE
↓		CB-2-610	"								↓
↓		CB-2-310	"								↓
4/24/97		CB-3-315	"								TUBE

COMMENTS

CUSTODY SEALED
 Date 4/25/97 Time 1:00 Initials SR
 SEAL INTACT?
 Yes ✓ No ___ Initials SR

CONDITION OF SAMPLE: BOTTLES INTACT? YES/NO
 FIELD FILTERED? YES/NO

COC SEALS PRESENT AND INTACT? YES/NO
 VOLATILES FREE OF HEADSPACE? YES/NO

TEMPERATURE UPON RECEIPT: 0.12, 0.00, 0.3
 Bottles supplied by NET? YES/NO

SAMPLE REMAINDER DISPOSAL: RETURN SAMPLE REMAINDER TO CLIENT VIA _____
 I REQUEST NET TO DISPOSE OF ALL SAMPLE REMAINDERS S. Ranganajan DATE 4/25/97

RELINQUISHED BY: <u>S. Ranganajan</u>	DATE <u>4/25/97</u>	TIME <u>2:45 PM</u>	RECEIVED BY: <u>Harriet Rapp</u>	RELINQUISHED BY: <u>Harriet Rapp</u>	DATE <u>4/26/97</u>	TIME <u>1:00</u>	RECEIVED FOR NET BY: <u>Phil Wasser</u>
METHOD OF SHIPMENT <u>VIA UPS</u>			REMARKS:			<u>4/26/97 0615</u>	





NATIONAL ENVIRONMENTAL TESTING, INC.

CHAIN OF CUSTODY RECORD

COMPANY Cambria Environmental Tech, Inc.
 ADDRESS 1144 65th St, Ste C, Oakland, CA 94608
 PHONE (510) 420-3300 FAX (510) 420-9170
 PROJECT NAME/LOCATION Becker Property, 1300 Powell, Emeryville
 PROJECT NUMBER 95-423.4
 PROJECT MANAGER David Elias

4331

REPORT TO: David Elias
 INVOICE TO: Cambria
 P.O. NO. _____
 NET QUOTE NO. _____

SAMPLED BY
Sam Ranganajan
 (PRINT NAME)
 (PRINT NAME)

SIGNATURE
S. Ranganajan
 SIGNATURE

ANALYSES

To assist us in selecting the proper method

Is this work being conducted for regulatory compliance monitoring? Yes ___ No ___

Is this work being conducted for regulatory enforcement action? Yes ___ No ___

Which regulations apply: RCRA ___ NPDES Wastewater ___
 UST ___ Drinking Water ___
 Other ___ None ___

COMMENTS

DATE	TIME	SAMPLE ID/DESCRIPTION	MATRIX	GRAB	COMB	# and Type of Containers (i)					
						HCl	NaOH	HNO ₃	H ₂ SO ₄	OTHER	
4/21/97		CB-2-1.0 CB-1-2.0	S							TUBE	
		CB-1-5.0	"							"	
		CB-1-9.0	"							"	
4/21/97		CB-4-1.0	S							TUBE	
		CB-4-3.0	"							"	
		CB-4-5.0	"							"	
		CB-4-8.0	"							"	
4/24/97		CB-7-1.0	S							TUBE	
		CB-7-3.0	"							"	
		CB-7-5.0	"							"	
		CB-7-8.0	"							"	

CUSTODY SEALED
 Date 4/25/97 Time 1800 Initials SB
 SEAL INTACT?
 Yes ✓ No ___ Initials CB

CONDITION OF SAMPLE: BOTTLES INTACT? YES/NO NO FIELD FILTERED? YES/NO NO
 COC SEALS PRESENT AND INTACT? YES/NO NO VOLATILES FREE OF HEADSPACE? YES/NO NO
 TEMPERATURE UPON RECEIPT: 0.1°C, 0.0°C, 0.2°C
 Bottles supplied by NET? YES/NO NO

SAMPLE REMAINDER DISPOSAL: RETURN SAMPLE REMAINDER TO CLIENT VIA _____
 ✓ REQUEST NET TO DISPOSE OF ALL SAMPLE REMAINDERS → Ranganajan DATE 4/25/97

RELINQUISHED BY: <u>→ Ranganajan</u>	DATE <u>4/25/97</u>	TIME <u>2:45 PM</u>	RECEIVED BY: <u>Shoree Rapp</u>	RELINQUISHED BY: <u>Shoree Rapp</u>	DATE <u>4/25/97</u>	TIME <u>1800</u>	RECEIVED FOR NET BY: <u>Phil Jasso</u>
METHOD OF SHIPMENT <u>VIA CDS</u>			REMARKS: <u>4/26/97 06L5</u>				



NATIONAL ENVIRONMENTAL TESTING, INC.

CHAIN OF CUSTODY RECORD

COMPANY Cambria Environmental Tech. Inc
 ADDRESS 1144 65th St, Ste C, Oakland, CA 94608
 PHONE (510) 420-3300 FAX (510) 420-9170
 PROJECT NAME/LOCATION Becker Property, 1300 Powell, Emeryville
 PROJECT NUMBER 95-42314
 PROJECT MANAGER David Elias

REPORT TO: David Elias
 INVOICE TO: Cambria
 P.O. NO. _____
 NET QUOTE NO. _____

SAMPLED BY Sam Rangarajan
 (PRINT NAME)
 (PRINT NAME)

S. Rangarajan
 SIGNATURE
 SIGNATURE

ANALYSES

To assist us in selecting the proper method
 Is this work being conducted for regulatory compliance monitoring? Yes ___ No ___
 Is this work being conducted for regulatory enforcement action? Yes ___ No ___
 Which regulations apply: RCRA ___ NPDES Wastewater ___
 UST ___ Drinking Water ___
 Other ___ None ___

DATE	TIME	SAMPLE ID/DESCRIPTION	MATRIX	GRAB	COMP	# and Type of Containers (1)					
						HCl	NaOH	HNO ₃	H ₂ SO ₄	OTHER	
<u>4/24/97</u>		<u>CB-10-110</u>	<u>S</u>							<u>TUBE</u>	
		<u>CB-10-310</u>	<u>"</u>								
		<u>CB-10-510</u>	<u>"</u>								
		<u>CB-10-810</u>	<u>"</u>								
		<u>CB-9-110</u>	<u>"</u>								
		<u>CB-9-310</u>	<u>"</u>								
		<u>CB-9-510</u>	<u>"</u>								
		<u>CB-9-810</u>	<u>"</u>								
		<u>CB-8-110</u>	<u>"</u>								
		<u>CB-8-310</u>	<u>"</u>								
		<u>CB-8-510</u>	<u>"</u>								
<u>✓</u>		<u>CB-8-810</u>	<u>"</u>							<u>✓</u>	

COMMENTS

CUSTODY SEALED
 Date 4-25-97 Time 1800 Initials SE
 SEAL INTACT?
 Yes ✓ No ___ Initials QB

CONDITION OF SAMPLE: BOTTLES INTACT? (YES/NO) YES FIELD FILTERED? (YES/NO) NO
 COC SEALS PRESENT AND INTACT? (YES/NO) NO VOLATILES FREE OF HEADSPACE? (YES/NO) NO
 TEMPERATURE UPON RECEIPT: 0.1°C, 0.0°C, 0.0°C
 Bottles supplied by NET? (YES/NO) NO

SAMPLE REMAINDER DISPOSAL: RETURN SAMPLE REMAINDER TO CLIENT VIA _____
 I REQUEST NET TO DISPOSE OF ALL SAMPLE REMAINDERS → Rangarajan DATE 4/25/97

RELINQUISHED BY: <u>S. Rangarajan</u>	DATE: <u>4/25/97</u>	TIME: <u>2:45 PM</u>	RECEIVED BY: <u>Sharon Rapp</u>	RELINQUISHED BY: <u>Sharon Rapp</u>	DATE: <u>4-25-97</u>	TIME: <u>1800</u>	RECEIVED FOR NET BY: <u>Phil Mosser</u>
---------------------------------------	----------------------	----------------------	---------------------------------	-------------------------------------	----------------------	-------------------	---

METHOD OF SHIPMENT: VIA CBS
 REMARKS: _____
4/26/97 0615



NATIONAL ENVIRONMENTAL TESTING, INC.

CHAIN OF CUSTODY RECORD

COMPANY Cambria Environmental Tech, Inc.
 ADDRESS 1144 65th St, Ste C, Oakland, CA 94608
 PHONE (510) 420-3300 FAX (510) 420-9170
 PROJECT NAME/LOCATION Becken Property, 1300 Powell, Emeryville
 PROJECT NUMBER 95-42314
 PROJECT MANAGER David Elias

REPORT TO: David Elias
 INVOICE TO: Cambria
 P.O. NO. _____
 NET QUOTE NO. _____

SAMPLED BY Sam Ranganajan
 (PRINT NAME)
 (PRINT NAME)

SIGNATURE S. Ranganajan
 SIGNATURE

ANALYSES

To assist us in selecting the proper method

Is this work being conducted for regulatory compliance monitoring? Yes ___ No ___

Is this work being conducted for regulatory enforcement action? Yes ___ No ___

Which regulations apply: RCRA ___ NPDES Wastewater ___
 UST ___ Drinking Water ___
 Other ___ None ___

DATE	TIME	SAMPLE ID/DESCRIPTION	MATRIX	GRAB	COMP	# and Type of Containers (1)					
						HCl	NaOH	HNO ₃	H ₂ SO ₄	OTHER	
4/24/97		CB-11-10	S								TUBE
		CB-11-310									
		CB-11-510									
		CB-11-810									
4/24/97		CB-12-310	S								TUBE
4/24/97		CB-12-310	S								TUBE
		CB-12-810									
4/24/97		CB-6-110	S								TUBE
		CB-6-310									
		CB-6-510									
		CB-6-810									

COMMENTS
not taken per Sam to JL 042897

CUSTODY SEALED
 Date 4/25/97 Time 1:00 Initials JL
 SEAL INTACT?
 Yes No Initials CB

CONDITION OF SAMPLE: BOTTLES INTACT? YES/NO
 FIELD FILTERED? YES/NO

COC SEALS PRESENT AND INTACT? YES/NO
 VOLATILES FREE OF HEADSPACE? YES/NO

TEMPERATURE UPON RECEIPT: 0.1°C, 0.0°C, 0.0°C
 Bottles supplied by NET? YES/NO

SAMPLE REMAINDER DISPOSAL: RETURN SAMPLE REMAINDER TO CLIENT VIA _____
 I REQUEST NET TO DISPOSE OF ALL SAMPLE REMAINDERS S. Ranganajan DATE 4/25/97

RELINQUISHED BY: <u>S. Ranganajan</u>	DATE: <u>4/25/97</u>	TIME: <u>2:45 PM</u>	RECEIVED BY: <u>Sharon Rapp</u>	RELINQUISHED BY: <u>Sharon Rapp</u>	DATE: <u>4/25/97</u>	TIME: <u>1:00</u>	RECEIVED FOR NET BY: <u>Phil Wassen</u>
METHOD OF SHIPMENT: <u>VIA CDS</u>			REMARKS: _____				

4/26/97 0613





GLOBAL
GEOCHEMISTRY
CORPORATION

E-mail: globalg1@idt.net
FAX: (818) 992-8940

6919 ETON AVENUE • CANOGA PARK • CALIFORNIA 91303-2194

(818) 992-4103

May 27, 1997

David Elias
Cambria Environmental Technology, Inc.
1144 65th Street, Suite B
Oakland, CA 94608

Re: 1300 Powell Street

Dear Mr. Elias:

Two soil and one water samples were submitted to Global Geochemistry Corporation (GGC) for hydrocarbon fingerprinting. The main objectives of the investigation were to characterize the hydrocarbon contamination and to estimate its residence time in the environment. According to your request on May 5, 1997, all three samples were extracted with methylene chloride (see Table 1 for extractables concentration) and the extract of sample CB-12-3.0 was then analyzed by gas chromatography-mass spectrometry (GC/MS) in a full scan mode. Extracts of the other two samples are being retained pending your instructions.

The reconstructed ion chromatogram (RIC) of sample CB-12-3.0 (Figure 1) depicts a peak distribution which spans a range from a middle distillate fuel (group of peaks with retention time between 16 and 50 min) to a high-boiling petroleum product (unresolved "hump" between 66 and 84 min). This RIC suggests that hydrocarbon contamination in sample CB-12-3.0 represents a mixture of different petroleum products. To identify components of this mixture, further examination of the acquired GC/MS data was performed, based on distributions of the product-specific groups of hydrocarbons:

- a. Alkanes; m/z 85 mass chromatogram (Figure 2)
- b. Isoprenoids; m/z 113 mass chromatogram (Figure 3)
- c. Alkylcyclohexanes; m/z 83 mass chromatogram (Figure 4)
- d. C₄-Alkylbenzenes; m/z 134 mass chromatogram (Figure 5, see Table 2 for key)
- e. Polynuclear aromatic hydrocarbons (Figure 6, see Table 3 for key).
- f. Steranes; m/z 217 mass chromatogram (Figure 7, see Table 4 for key)
- g. Terpanes; m/z 191 mass chromatogram (Figure 8, see Table 5 for key)
- h. Monoaromatic steranes; m/z 253 mass chromatogram (Figure 9, see Table 6 for key).

The alkane mass chromatogram presented in Figure 2 is dominated by isoalkanes from $i-C_9$ to $i-C_{20}$ (see also Figure 3). It also exhibits subordinate amounts of n-alkanes in the $C_8 - C_{18}$ range. The distribution patterns of these two homologous series are typical for a moderately degraded diesel-type fuel. The alkylcyclohexane mass chromatogram (Figure 4) shows a distribution pattern maximizing around pentylcyclohexane (CH-5), which closely matches that for the reference diesel fuel No.1. This conclusion is also consistent with distribution patterns of C_4 -alkylbenzenes (Figure 5) and polynuclear aromatic hydrocarbons presented as bar diagram in Figure 6.

Timing a diesel fuel release is site-dependent and requires consideration of a wide set of environmental parameters such as soil characteristics, site hydrology, oxygen and nutrient availability. Among the hydrocarbon components of diesel fuel, n-alkanes are the most susceptible to biodegradation, that leads to their content reduction relative to the content of more recalcitrant branched-chain hydrocarbons (isoprenoids). Published results on biological degradation of diesel fuel in the protected subsurface environment suggest that it typically take about 15 - 20 years to remove most of the n-alkanes from a petroleum product.

The presence and distribution of a subordinate content of high boiling steranes (Figure 7), terpanes (Figure 8) and monoaromatic steranes (Figure 9) indicate that the heavy petroleum product in sample CB-12-3.0 represents hydraulic fluid. A relatively high abundance of diasteranes (peaks 1 - 8D in Figure 7, see Table 4 for key) is indicative of a moderate biodegradation of the hydraulic fluid, which suggests that it could have been in the subsurface environment for more then 10 years.

In summary, the results of GC/MS analysis seem to indicate that hydrocarbon contamination in soil sample CB-12-3.0 consists of a mixture of environmentally altered diesel fuel No.1 and hydraulic fluid. The degree of hydrocarbon biodegradation allows us to estimate subsurface residence time of a diesel fuel as 15 - 20 years and that of a hydraulic fluid as longer then 10 years.

Please do not hesitate to contact us if you have any questions or comments regarding this report.

Sincerely,



Isaac R. Kaplan
President

A3914-report.wpd

TABLES

Table 1

Concentration of extracts for samples submitted
by Cambria Environmental Technology, Inc.

Sample ID	GGC ID	Sample Weight for Extraction (g)	Water Volume for Extraction (ml)	Extract Weight (mg)	Sample Concentration (mg/g or $\mu\text{g/ml}$)
CB-12-1.0	3914-1	30.6		564	18.4
CB-7	3914-2		950	23.4	24.9
CB-12-3.0	3914-3	30.1		117	3.89
CB-12-3.0	3914-3D	30.6		116	3.79

D: Duplicate

Table 2

Key for C₄-Alkylbenzenes (m/z 134 mass chromatograms)

#	Compound
16	Sec-Butylbenzene
17	1-Methyl-3-Isopropylbenzene
18	1-Methyl-4-Isopropylbenzene
19	1-Methyl-2-Isopropylbenzene
20	1,3-Diethylbenzene
21	1-Methyl-3-Propylbenzene
22	Butylbenzene
23	1,3-Dimethyl-5-Ethylbenzene
24	1,2-Diethylbenzene
25	1-Methyl-2-Propylbenzene
26	1,4-Dimethyl-2-Ethylbenzene
27	1,3-Dimethyl-4-Ethylbenzene
28	1,2-Dimethyl-4-Ethylbenzene
29	1,3-Dimethyl-2-Ethylbenzene
30	1,2-Dimethyl-3-Ethylbenzene
31a	1,2,4,5-Tetramethylbenzene
31	1,2,3,5-Tetramethylbenzene
32	1,2,3,4-Tetramethylbenzene

Table 3

Key for Aromatic Compounds Identification in bar diagram

AB:	C ₃ -C ₈ Alkylbenzenes
NAPH:	C ₀ -C ₄ Naphthalenes
FL:	C ₀ -C ₄ Fluorenes
BP:	C ₀ -C ₂ BP Biphenyl/Dibenzofuran
PHEN:	C ₀ -C ₄ Phenanthrenes
PY:	C ₀ -C ₄ Pyrenes/Fluoranthenes
CHR:	C ₀ -C ₄ Chrysenes
BT:	C ₁ -C ₅ Benzothiophenes
DBT:	C ₀ -C ₄ Dibenzothiophenes
NBT:	C ₀ -C ₄ Naphthobenzothiophenes
MAS:	Monoaromatic Steranes
TAS:	Triaromatic Steranes

Table 4

Key for steranes identification (m/z 217 mass chromatogram)

Code	Identity	Carbon #
1	13 β ,17 α -diacholestane (20S)	27
2	13 β ,17 α -diacholestane (20R)	27
3	13 α ,17 β -diacholestane (20S)	27
4	13 α ,17 β -diacholestane (20R)	27
5	24-methyl-13 β ,17 α -diacholestane (20S)	28
6	24-methyl-13 β ,17 α -diacholestane (20R)	28
7D	24-methyl-13 α ,17 β -diacholestane (20S)	28
7	14 α ,17 α -cholestane (20S)	27
8+8D	14 β ,17 β -cholestane (20R) + 24-ethyl-13 β ,17 α -diacholestane (20S)	27+29
9	14 β ,17 β -cholestane (20S)	27
9D	24-methyl-13 α ,17 β -diacholestane (20R)	28
10	14 α ,17 α -cholestane (20R)	27
11	24-ethyl-13 β ,17 α -diacholestane (20R)	29
12	24-ethyl-13 α ,17 β -diacholestane (20S)	29
13	24-methyl-14 α ,17 α -cholestane (20S)	28
14+14D	24-methyl-14 β ,17 β -cholestane (20R) + 24-ethyl-13 α ,17 β -diacholestane (20R)	28+29
15	24-methyl-14 β ,17 β -cholestane (20S)	28
16	24-methyl-14 α ,17 α -cholestane (20R)	28
17	24-ethyl-14 α -cholestane (20S)	29
18	24-ethyl-14 β ,17 β -cholestane (20R)	29
19	24-ethyl-14 β ,17 β -cholestane (20S)	29
20	24-ethyl-14 α ,17 α -cholestane (20R)	29
21A	24-n-Propylcholestanes	30
21B	4-Methyl-24-ethylcholestane	30

Table 5

Key for Tricyclic, Tetracyclic, and Pentacyclic Terpanes
Identification (m/z 191 mass chromatograms)

Code	Identity	Carbon #
0	C ₂₀ -Tricyclic Terpene	20
1	C ₂₁ -Tricyclic Terpene	21
2	C ₂₂ -Tricyclic Terpene	22
3	C ₂₃ -Tricyclic Terpene	23
4	C ₂₄ -Tricyclic Terpene	24
5	C ₂₅ -Tricyclic Terpene	25
Z4	C ₂₄ -Tetracyclic Terpene	24
6a	C ₂₆ -Tricyclic Terpene	26
6b	C ₂₆ -Tricyclic Terpene	26
7	C ₂₇ -Tricyclic Terpene	27
A	C ₂₈ -Tricyclic Terpene #1	28
B	C ₂₈ -Tricyclic Terpene #2	28
C	C ₂₉ -Tricyclic Terpene #1	29
D	C ₂₉ -Tricyclic Terpene #2	29
E	18 α -22,29,30-Trisnorneohopane (Ts)	27
F	17 α -22,29,30-Trisnorhopane (Tm)	27
G	17 β -22,29,30-Trisnorhopane	27
H	17 α -23,28-Bisnorlupane	28
10a	C ₃₀ -Tricyclic Terpene #1	30
10b	C ₃₀ -Tricyclic Terpene #2	30
I	17 α -28,30-Bisnorhopane	28
11a	C ₃₁ -Tricyclic Terpene #1	31
J	17 α -25-Norhopane	29
11b	C ₃₁ -Tricyclic Terpene #2	31
K	17 α ,21 β -30-Norhopane	29
C ₂₉ Ts	18 α -30-Norneohopane	29
C ₃₀ *	17 α -Diahopane	30
L	17 β -21 α -30-Normoretane	29
Ma	18 α -Oleanane	30
Mb	18 β -Oleanane	30
N	17 α ,21 β -Hopane	30
O	17 β ,21 α -Moretane	30
13a	C ₃₃ -Tricyclic Terpene #1	33
13b	C ₃₃ -Tricyclic Terpene #2	33
P	22S-17 α ,21 β -30-Homohopane	31
Q	22R-17 α ,21 β -30-Homohopane	31
R	Gammacerane	30
14a	C ₃₄ -Tricyclic Terpene #1	34
S	17 β ,21 α -Homomoretane	31
14b	C ₃₄ -Tricyclic Terpene #2	34
T	22S-17 α ,21 β -30-Bishomohopane	32
U	22R-17 α ,21 β -30-Bishomohopane	32
15a	C ₃₅ -Tricyclic Terpene #1	35
15b	C ₃₅ -Tricyclic Terpene #2	35
V	17 β ,21 α -C ₃₂ -Bishomomoretane	32
WS	22S-17 α ,21 β -30,31,32-Trishomohopane	33
WR	22R-17 α ,21 β -30,31,32-Trishomohopane	33
16a	C ₃₆ -Tricyclic Terpene #1	36
16b	C ₃₆ -Tricyclic Terpene #2	36
XS	22S-17 α ,21 β -30,31,32,33-Tetrahomohopane	34
XR	22R-17 α ,21 β -30,31,32,33-Tetrahomohopane	34
YS	22S-17 α ,21 β -30,31,32,33,34-Pentahomohopane	35
YR	22R-17 α ,21 β -30,31,32,33,34-Pentahomohopane	35

Table 6

Key for Monoaromatic Steranes Identification
(m/z 253 mass chromatogram)

Code	Identity	Elemental Composition
a	20S, 5 β C ₂₇ -Monoaromatic sterane	C ₂₇ H ₄₂
b	20S, dia C ₂₇ -Monoaromatic sterane	C ₂₇ H ₄₂
c	20R, 5 β C ₂₇ -Monoaromatic sterane + 20R C ₂₇ dia MAS	C ₂₇ H ₄₂
d	20S, 5 α C ₂₇ -Monoaromatic sterane	C ₂₇ H ₄₂
e	20S, 5 β C ₂₈ -Monoaromatic sterane + 20S C ₂₈ dia MAS	C ₂₈ H ₄₄
f	20R, 5 α C ₂₇ -Monoaromatic sterane	C ₂₇ H ₄₂
g	20S, 5 α C ₂₈ -Monoaromatic sterane	C ₂₈ H ₄₄
h	20R, 5 β C ₂₈ -Monoaromatic sterane + 20R C ₂₈ dia MAS	C ₂₈ H ₄₄
i	20S, 5 β C ₂₉ -Monoaromatic sterane + 20S C ₂₉ dia MAS	C ₂₉ H ₄₆
j	20S, 5 α C ₂₉ -Monoaromatic sterane	C ₂₉ H ₄₆
k	20R, 5 α C ₂₈ -Monoaromatic sterane	C ₂₈ H ₄₄
l	20R, 5 β C ₂₉ -Monoaromatic sterane + 20R C ₂₉ dia MAS	C ₂₉ H ₄₆
m	20R, 5 α C ₂₉ -Monoaromatic sterane	C ₂₉ H ₄₆

FIGURES

Figure 1

RIC DATA: G7742 #1 SCANS 250 TO 2800
05/12/97 12:57:00 CALI: G7742 #1
SAMPLE: CB-12-3.0 (A3914-3) SOIL EXT 0.6UL OF 3500UL +0.5UL STD
CONDS.: 5 MIN @ 40C 4C/MIN TO 310C (30 MIN) DB-1 60M COLUMN
RANGE: G 1,2850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

951296.

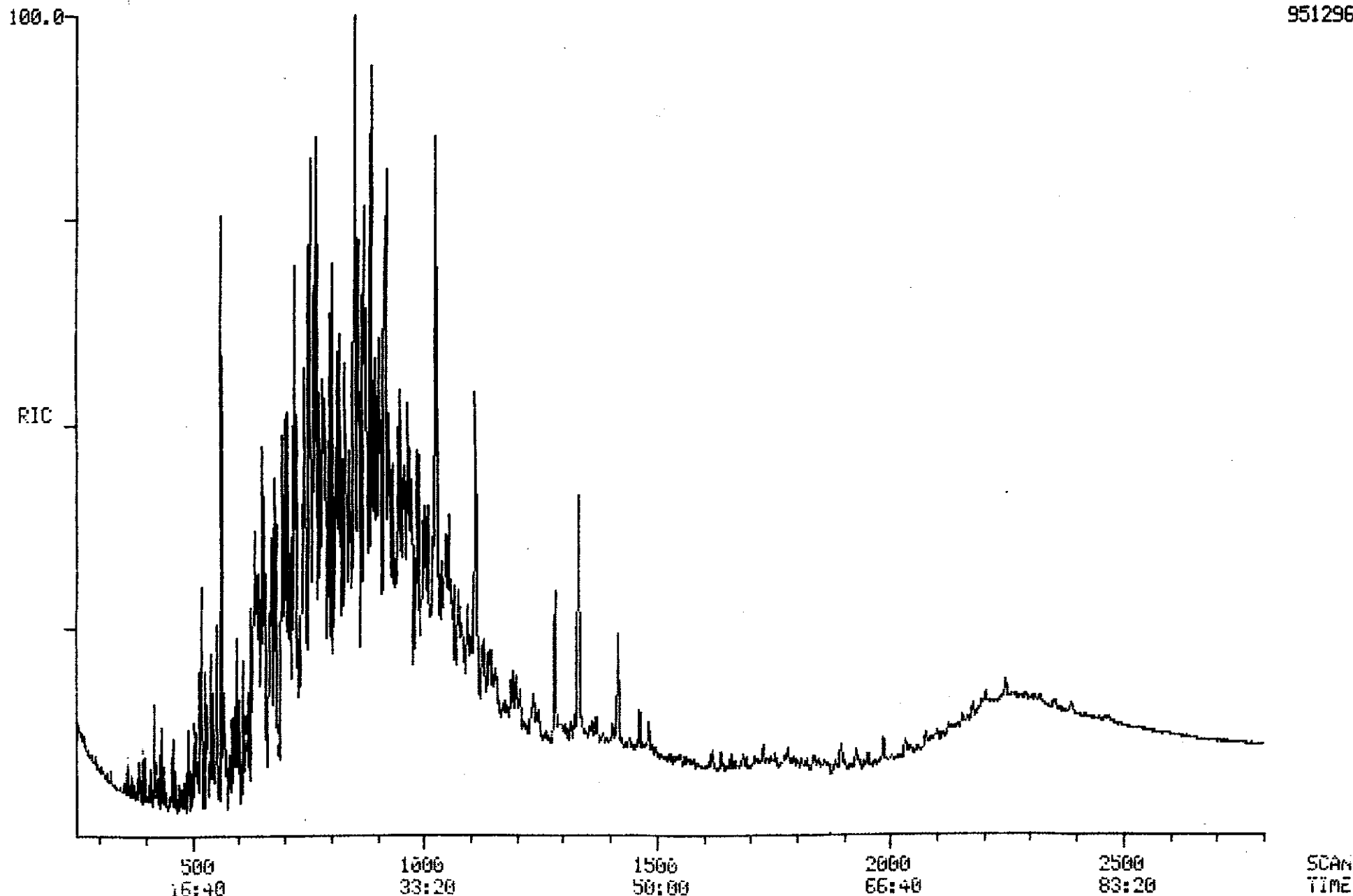


Figure 2

MASS CHROMATOGRAM DATA: G7742 #1 SCANS 200 TO 1800
05/12/97 12:57:00 CALI: G7742 #1
SAMPLE: CB-12-3.0 (A3914-3) SOIL EXT 0.6UL OF 3500UL +0.5UL STD
CONDS.: 5 MIN @ 40C 4C/MIN TO 310C (30 MIN) DB-1 60M COLUMN
RANGE: G 1.2850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

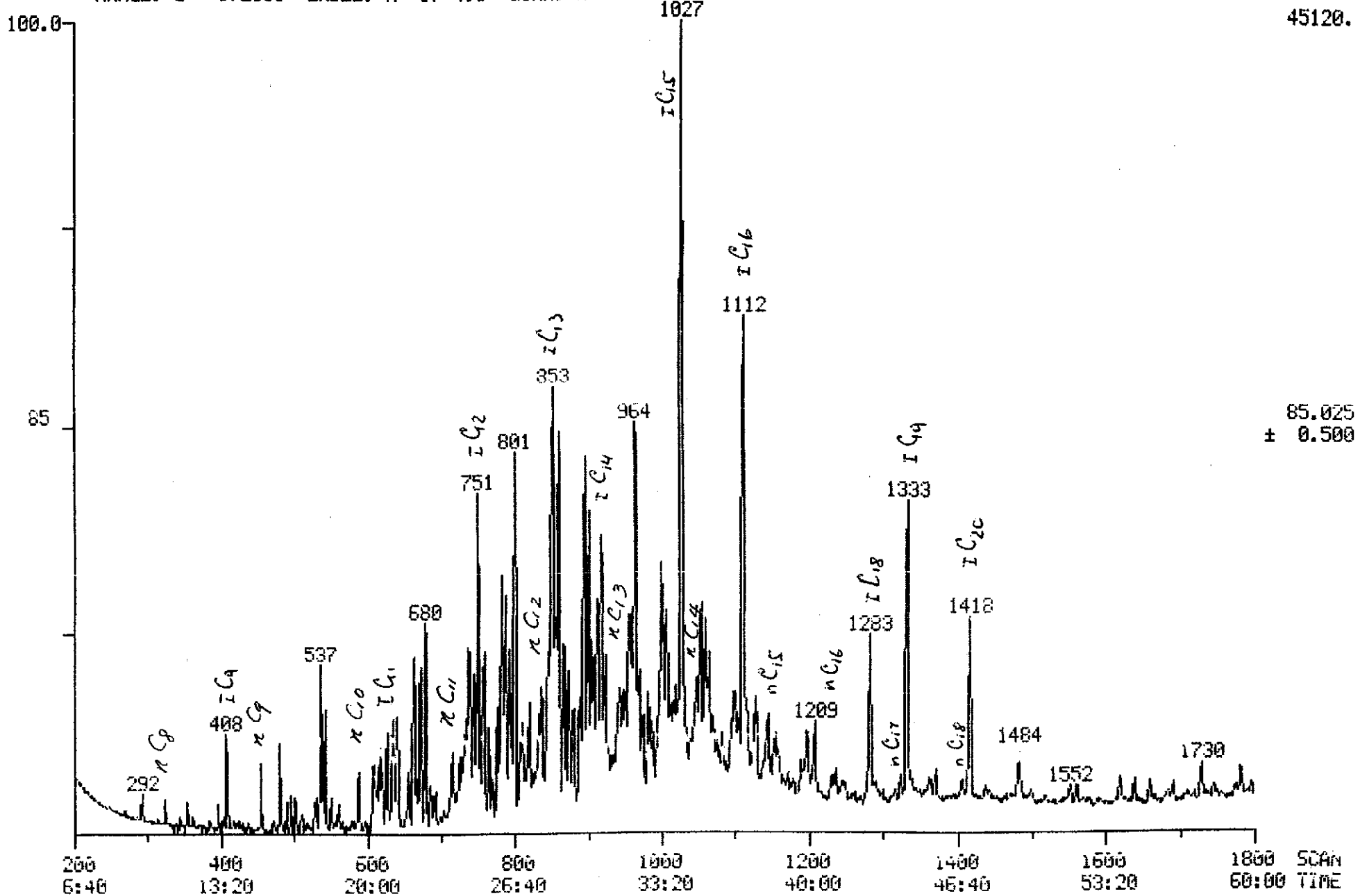


Figure 3

MASS CHROMATOGRAM

DATA: G7742 #1

SCANS 200 TO 1800

05/12/97 12:57:00

CALI: G7742 #1

SAMPLE: CB-12-3.0 (A3914-3) SOIL EXT 0.6UL OF 3500UL +0.5UL STD

CONDS.: 5 MIN @ 40C 4C/MIN TO 310C (30 MIN) DB-1 60M COLUMN

RANGE: G 1,2850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

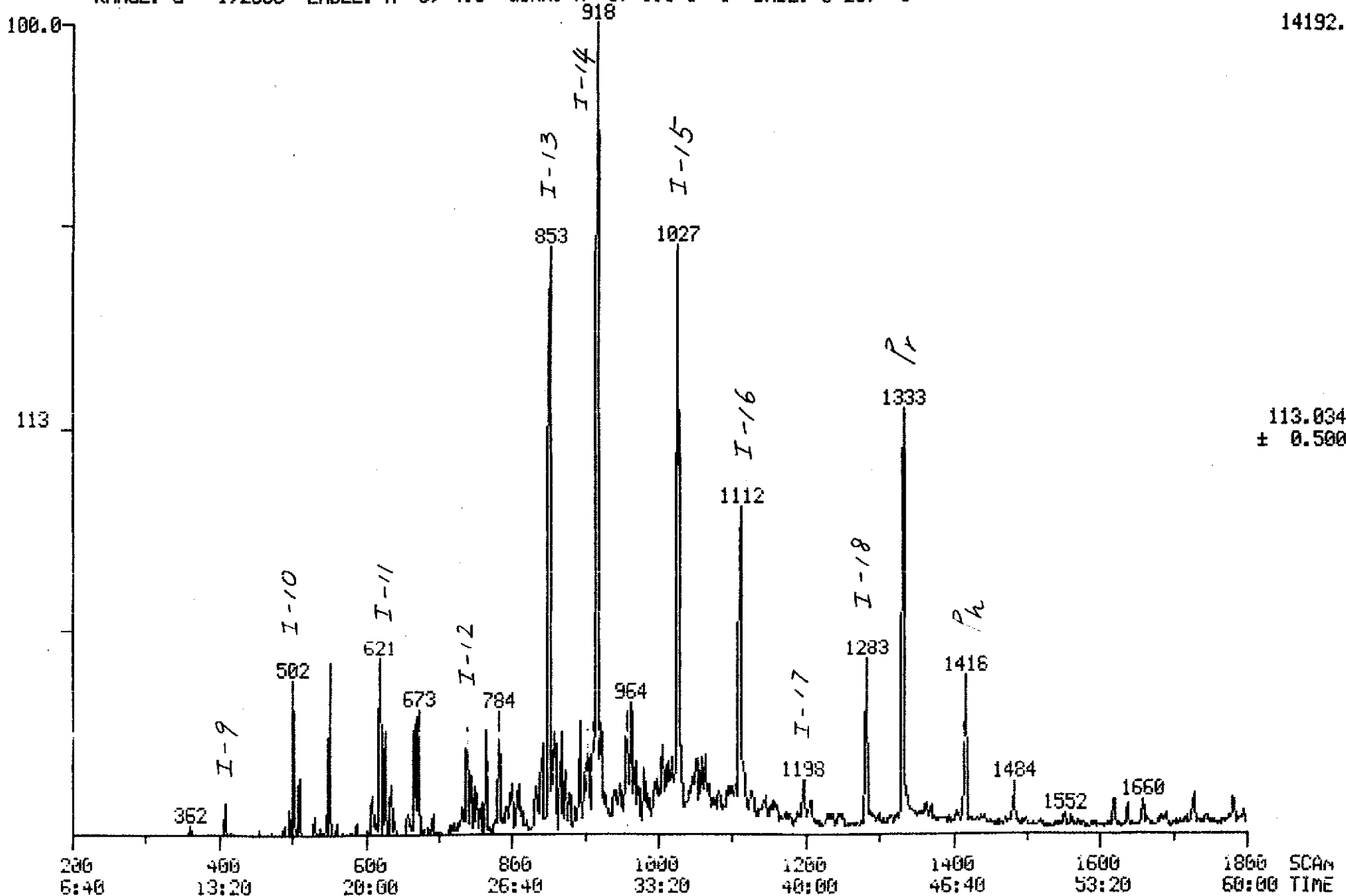


Figure 4

MASS CHROMATOGRAM DATA: G7742 #1 SCANS 200 TO 1500
05/12/97 12:57:00 CALI: G7742 #1
SAMPLE: CB-12-3.0 (A3914-3) SOIL EXT 0.6UL OF 3500UL +0.5UL STD
CONDS.: 5 MIN @ 40C 4C/MIN TO 310C (30 MIN) DB-1 60M COLUMN
RANGE: G 1.2850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

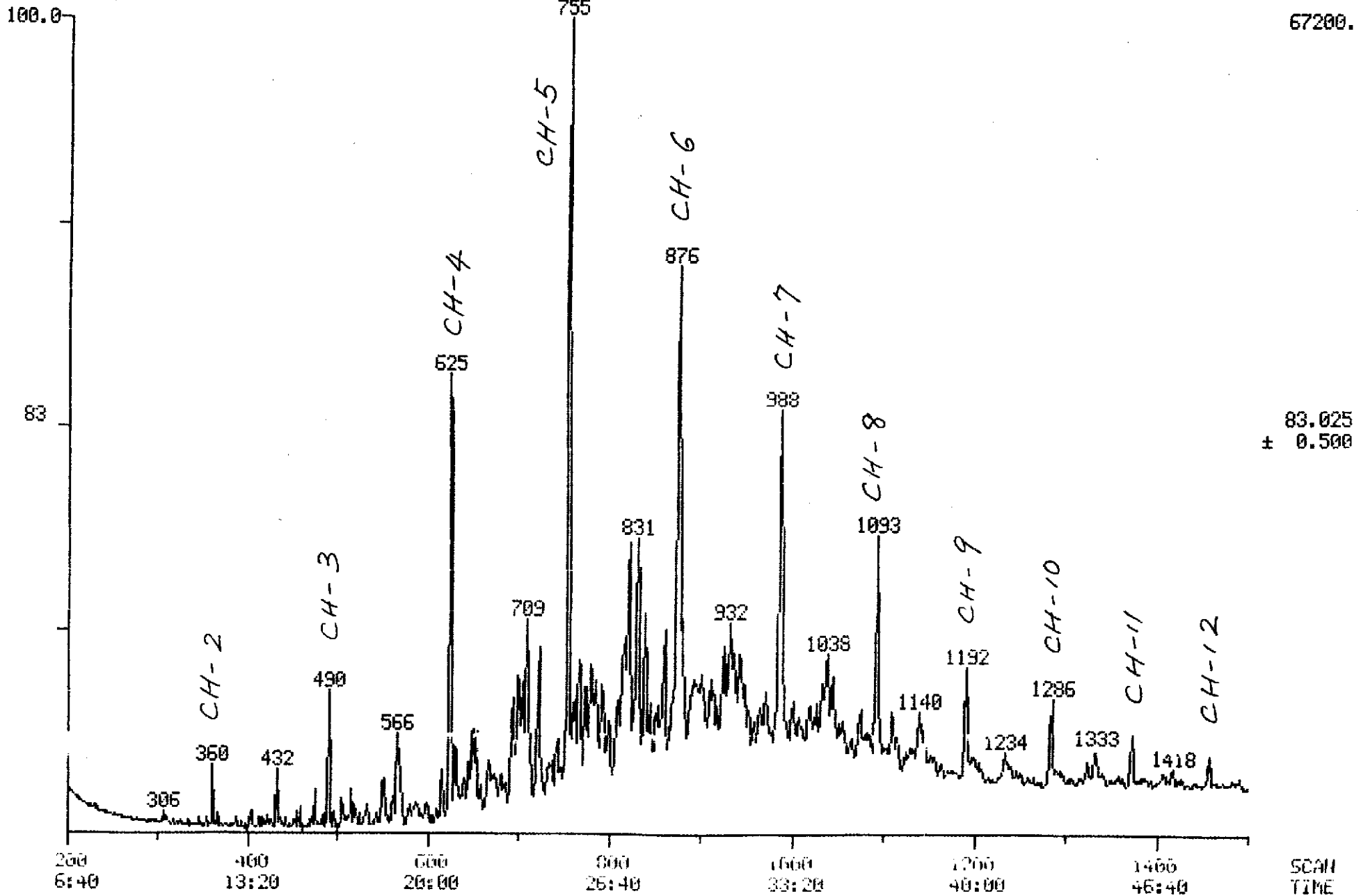


Figure 5

MASS CHROMATOGRAM DATA: G7742 #1 SCANS 550 TO 800
05/12/97 12:57:00 CALI: G7742 #1
SAMPLE: CB-12-3.0 (A3914-3) SOIL EXT 0.6UL OF 3500UL +0.5UL STD
CONDS.: 5 MIN @ 40C 4C/MIN TO 310C (30 MIN) DB-1 60M COLUMN
RANGE: G 1,2850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

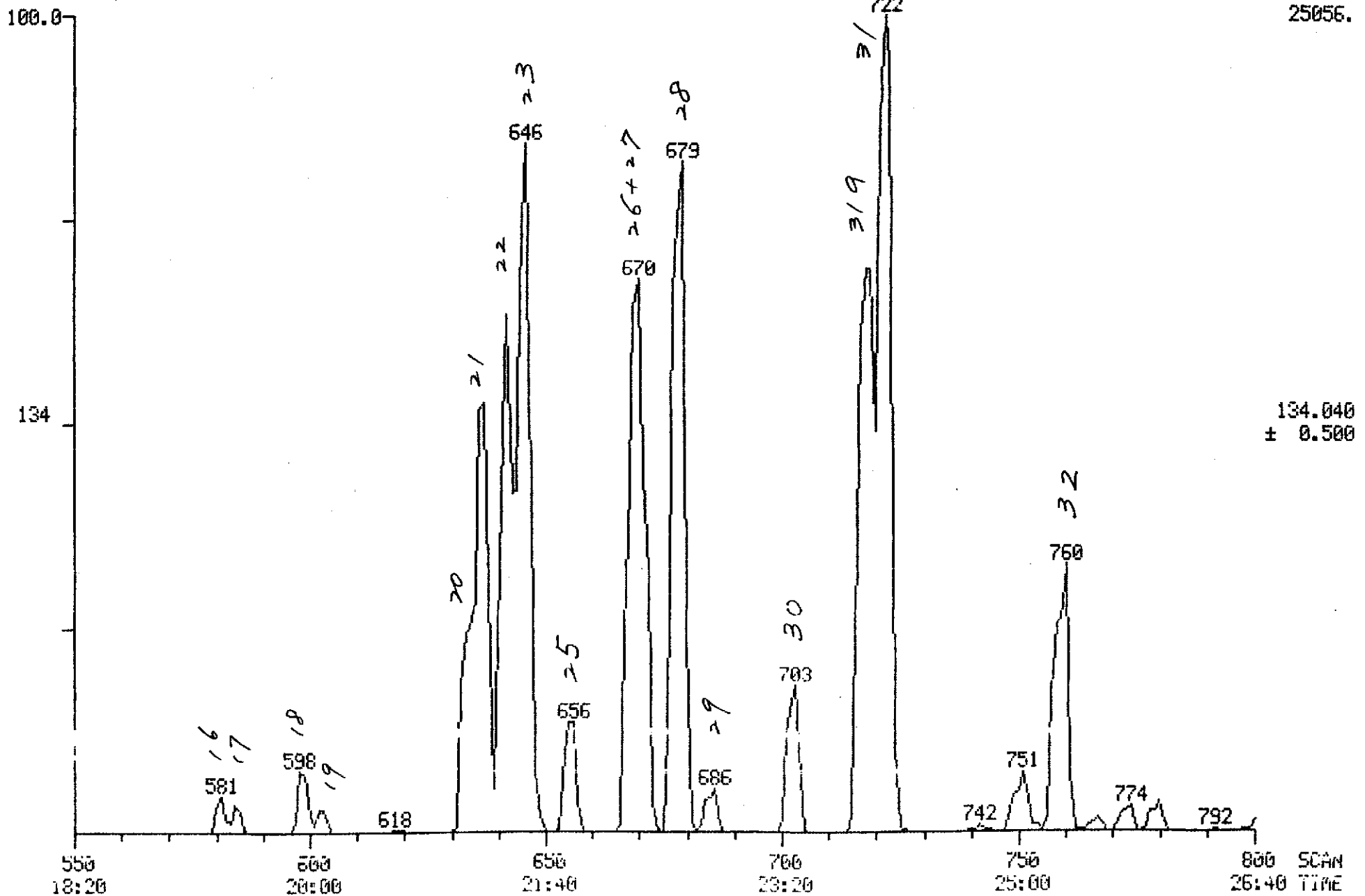


Figure 6

Aromatic Hydrocarbon Distribution

CB-12-3.0

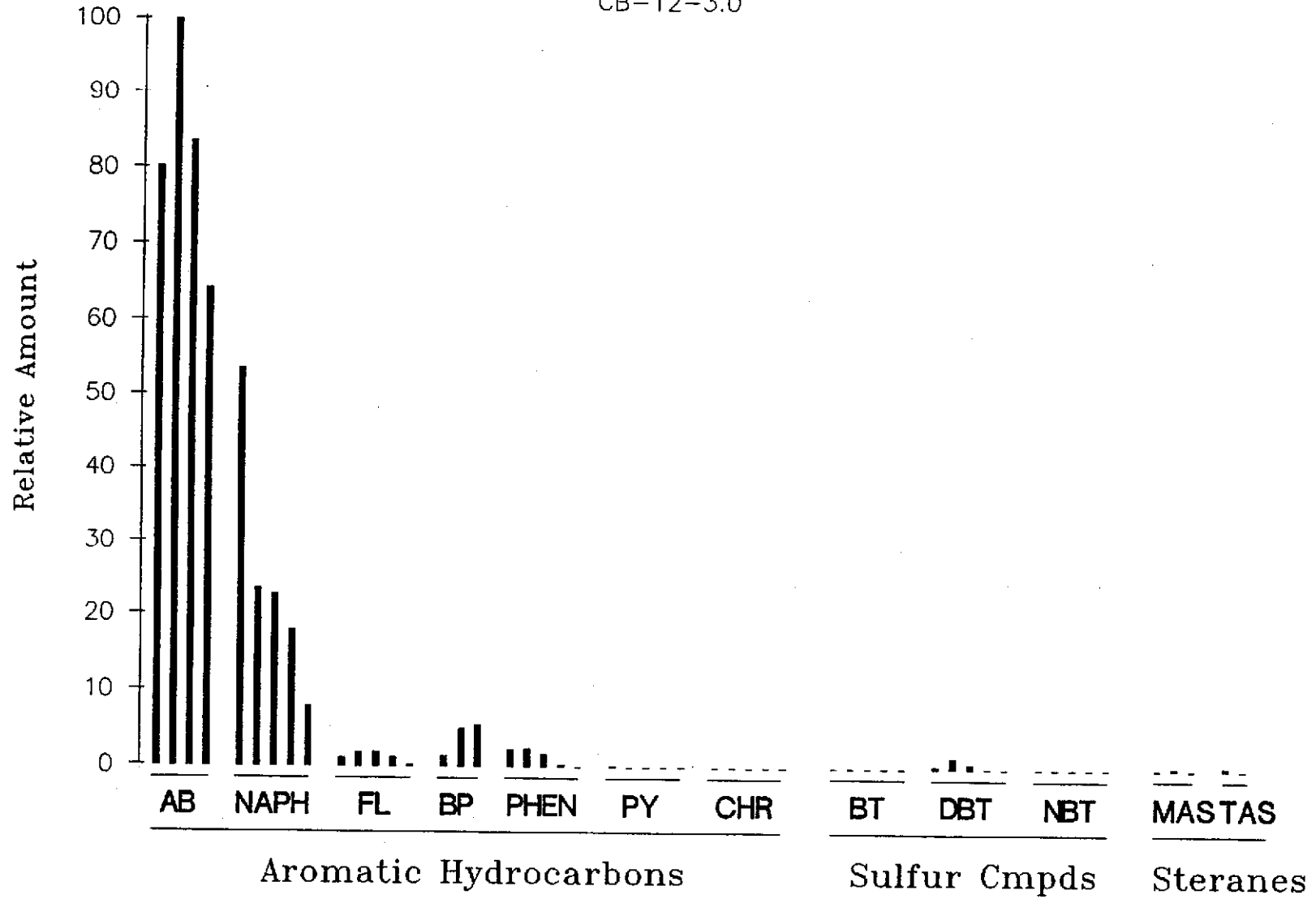


Figure 7

MASS CHROMATOGRAM
05/12/97 12:57:00

DATA: G7742 #1
CALI: G7742 #1

SCANS 1925 TO 2275

SAMPLE: CB-12-3.0 (A3914-3) SOIL EXT 0.6UL OF 3500UL +0.5UL STD

CONDS.: 5 MIN @ 40C 4C/MIN TO 310C (30 MIN) DB-1 60M COLUMN

RANGE: G 1.2850 LABEL: N 0.4.0 QUAN: A 0.1.0 J 0 BASE: U 20. 3

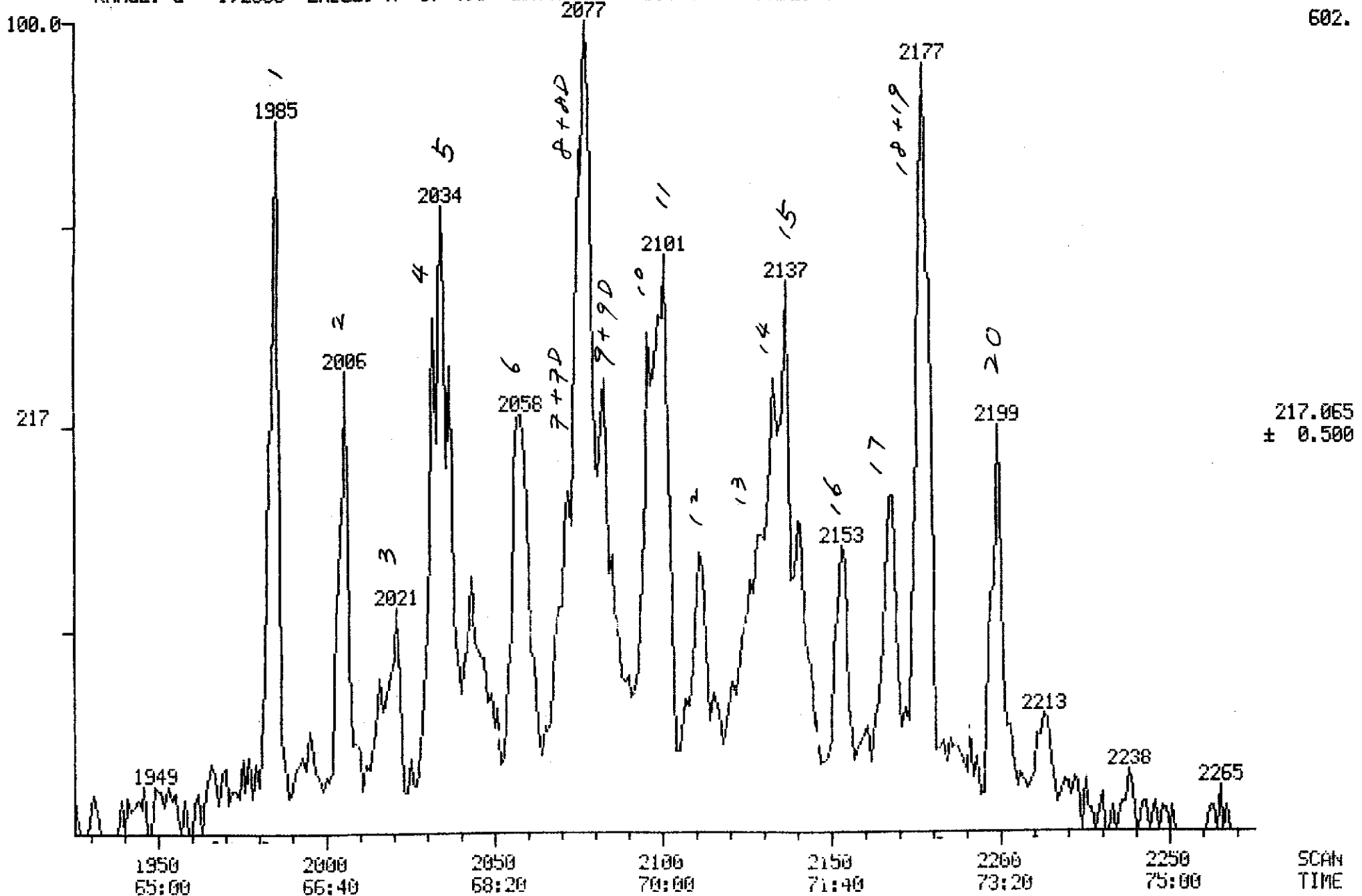


Figure 8

MASS CHROMATOGRAM DATA: G7742 #1 SCANS 1600 TO 2700
05/12/97 12:57:00 CALI: G7742 #1
SAMPLE: CB-12-3.0 (A3914-3) SOIL EXT 0.6UL OF 3500UL +0.5UL STD
CONDS.: 5 MIN @ 40C 4C/MIN TO 310C (30 MIN) DB-1 EOM COLUMN
RANGE: G 1.2850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3

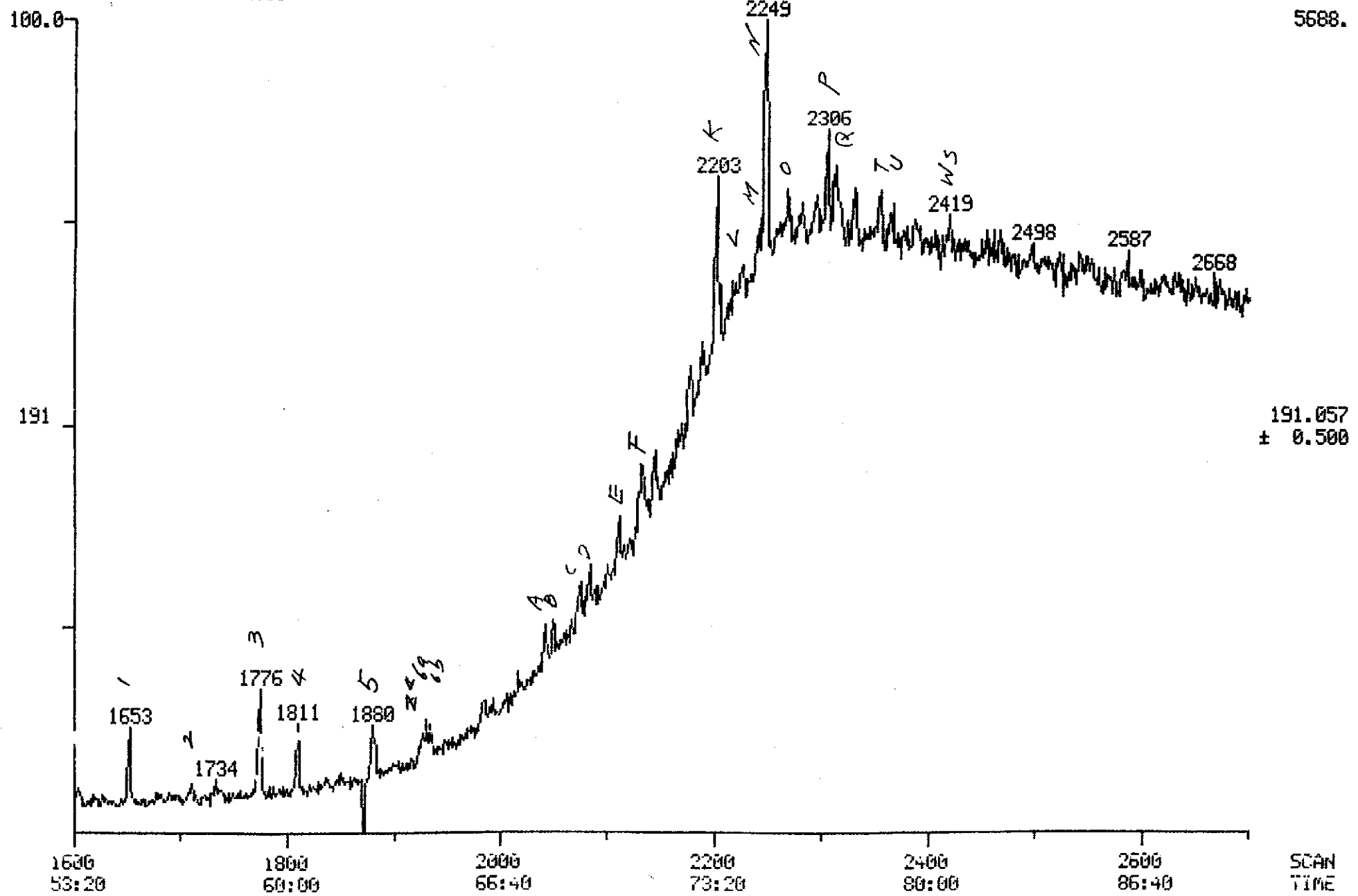


Figure 9

MASS CHROMATOGRAM

DATA: G7742 #1

SCANS 1900 TO 2200

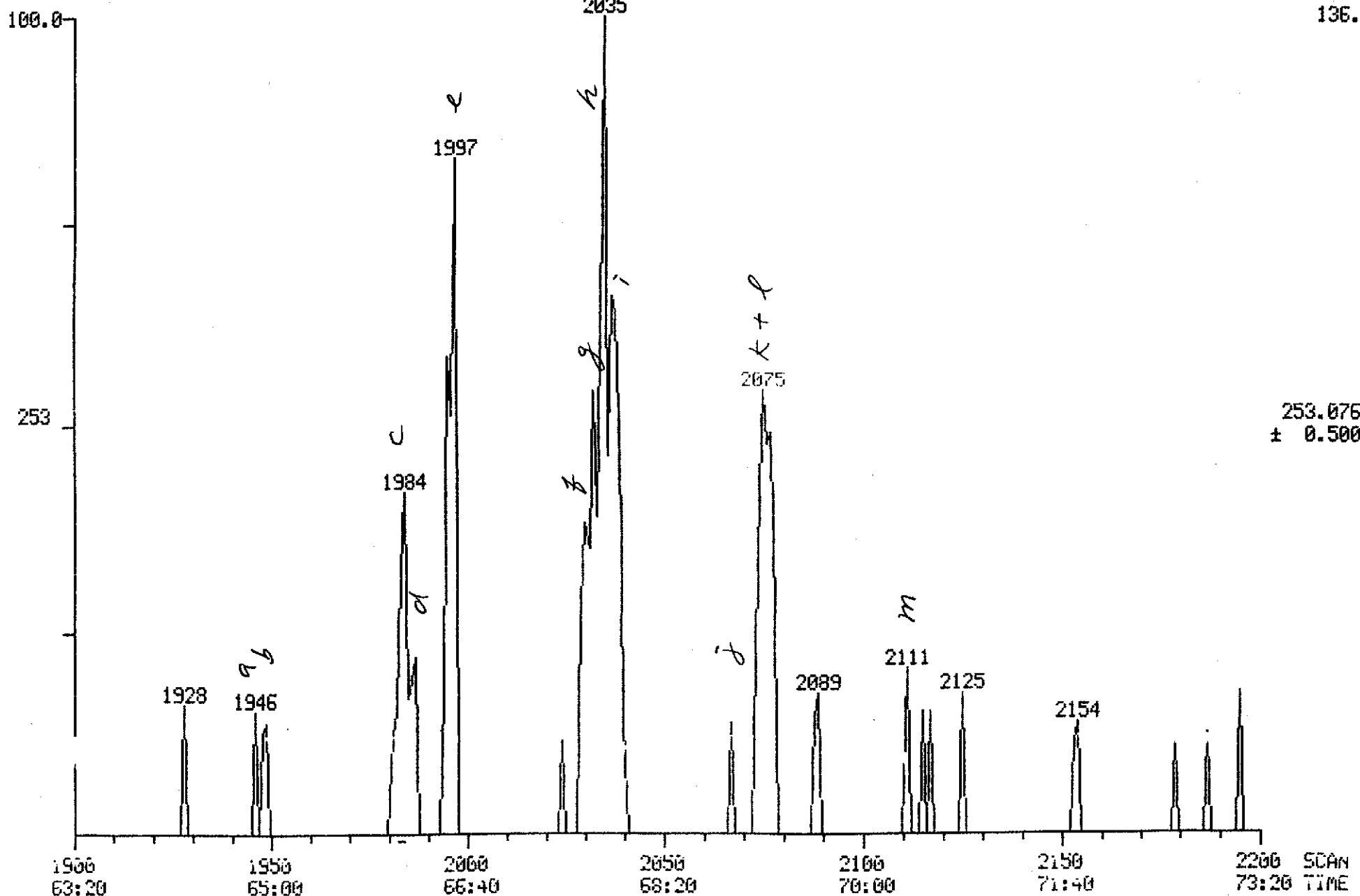
05/12/97 12:57:00

CALI: G7742 #1

SAMPLE: CB-12-3.0 (A3914-3) SOIL EXT 0.6UL OF 3500UL +0.5UL STD

CONDS.: 5 MIN @ 40C 4C/MIN TO 310C (30 MIN) DB-1 60M COLUMN

RANGE: G 1,2850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3





APPENDIX

CHAIN OF CUSTODY

CAMBRIA ENVIRONMENTAL TECHNOLOGY, INC.

1144 65th Street, Suite C, Oakland, CA 94608
 (510) 420-0700 Fax: (510) 420-9170

CHAIN OF CUSTODY

Page 1 of 1

~~31719-1~~

Cambria Manager: <u>DAVID ELIAS</u>					ANALYSES										LAB: <u>GLOBAL</u> <u>LAB CHEMISTRY</u>					
Cambria Sampler: <u>SAMPATH RANGARAJAN</u>					FULL SCALE MASS SPEC. HOLD PENDING INITIAL RESULTS															
Client: <u>BECKER</u>																				
Site Address: <u>1300 POWELL ST.</u>																				
Project Number: <u>95-423-4</u>																				
SAMPLE ID	DATE	TIME	MATRIX	# OF SAMPLES																
<u>CB-12-1.0</u>	<u>4/24/97</u>		<u>SOIL</u>	<u>1</u>	NO	<u>X</u>														
<u>CB-7</u>	<u>4/25/97</u>		<u>H₂O</u>	<u>1 LITER</u>		<u>X</u>														
Relinquished by: <u>David Elias</u>					Relinquished by: <u>Fed X</u>					Relinquished by: _____					Relinquished by: _____					
Received by: <u>FEDEX</u>					Received by: <u>RWBrewer</u>					Received by: _____					Received by: _____					
Time/Date: <u>4/28/97</u>					Time/Date: <u>4-29-97</u>					Time/Date: _____					Time/Date: _____					

STORED ACCURATELY

WOULD NOT SIGN

LEGEND

SUBCONTRACT CHAIN OF CUSTODY RECORD

Analytical Services, Inc.
 3636 N. Laughlin Road
 Suite 110
 Santa Rosa CA 95403

Company: LEGEND Analytical Services, Inc.
 Address: 3636 N. Laughlin Rd. Suite 110 Santa Rosa CA 95403
 Phone: (707) 541-2313 FAX: (707) 541-2333

SUB LAB: GLOBAL GEOCHEMISTRY
 CONTACT:
 PHONE: 818-992-4103

(707) 541-2313

Report To: Client Services Invoice To: Accounts Payable

LEGEND PO#: 98900197.00840

Additional Info:

REQUESTED TAT:

STANDARD

RUSH due _____

CODE: _____

TEMPERATURE UPON RECEIPT: _____

Date	Time	SAMPLE DESCRIPTION	# and Type of Containers							ANALYSES											
			M a t r i x	G r a b	C o m p	H C l	N a O H	H N O ₃	H ₂ S O ₄	O t h e r	B O D	M B A S	E T O A S S A Y	S U L F I D E	R E A G E N T	F O R M A L D E H Y D R A T E					
4/29/97		CB-12-3.0	S																		

SENT AT REQUEST OF:
 CAMBRIA ENV. TECHNOLOGY
 1144 65th ST. SUITE C
 OAKLAND, CA. 94608

CONTACT: DAVID ELIAS
 (510) 420-3300

PLEASE RETURN THIS DOCUMENT WITH WRITTEN RESULTS

Results must include method reference, date analyzed and appropriate QC documents.

RELINQUISHED BY: <i>Shil Wasser</i>	DATE: 5/5/97	TIME: 1600	RECEIVED BY:	RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:
METHOD of SHIPMENT:			REMARKS:				

July 11, 1997

TPH (diesel) in samples submitted by Cambria Environmental Technology, Inc.

Sample Matrix: Water
Analysis Date: 7/10/97

Method: EPA 8015M (diesel)

Sample ID	GGCID	TPH (diesel)*
		ppm
Method Blank:		<1.0
CB-7	3914-2	17.9

* No hydrocarbons beyond the diesel range were detected

3914 TPH-table.wpd

Ru-Po Lee
Supervisor

Surrogate Recovery

Sample ID	GGC ID	o-Terphenyl (8015M diesel)
		Recovery %
Method Blank		78
CB-7	3914-2	86

MS = Matrix Spike

MSD = Matrix Spike Duplicate

Instrument calibration control for TPH analysis

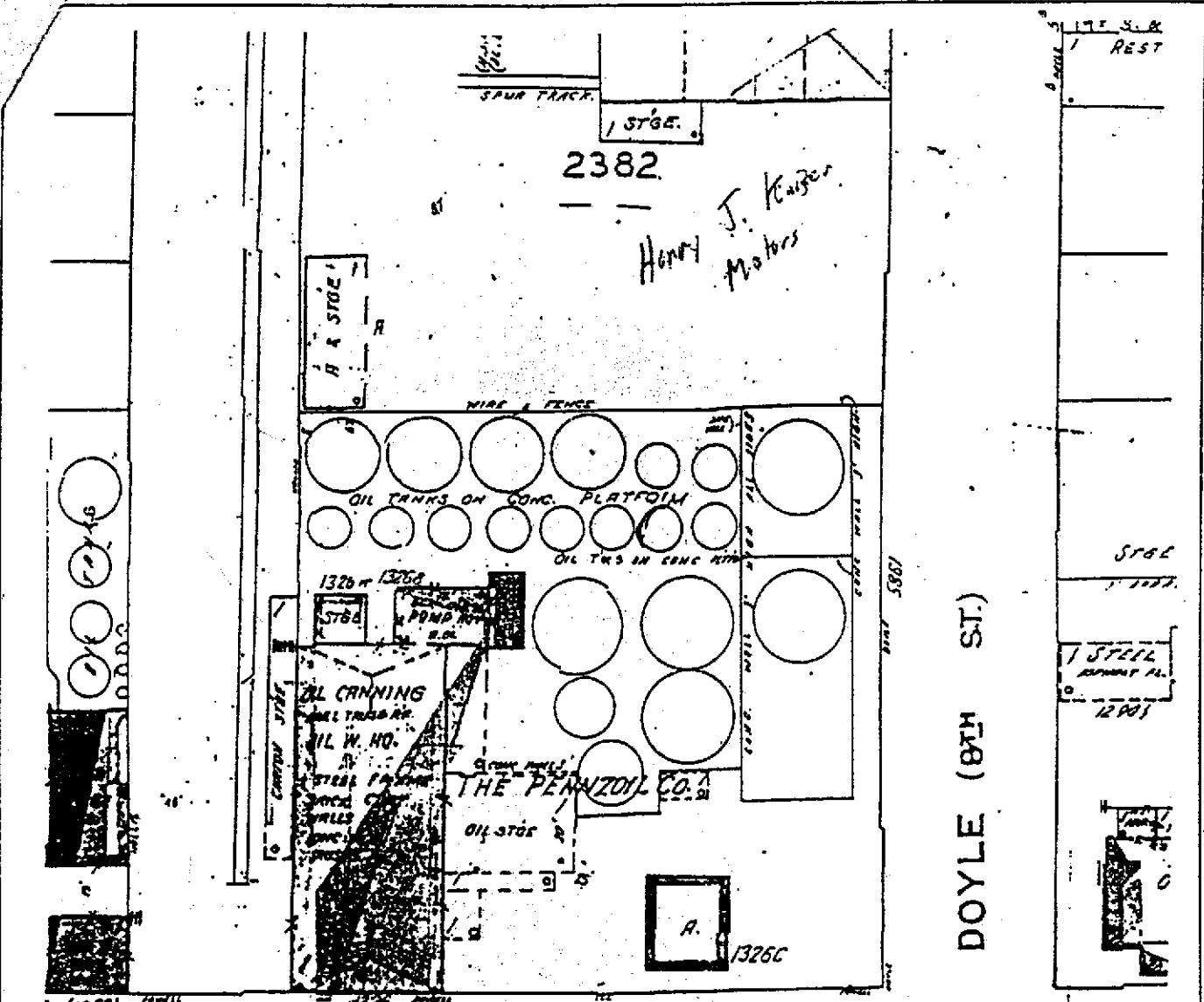
Analytes	RF	RF _D	% Difference	Acceptance Limit (%)
TPH (diesel)	960.4	1020	6.2	±10

RF = Linear response factor from 3 point calibration.

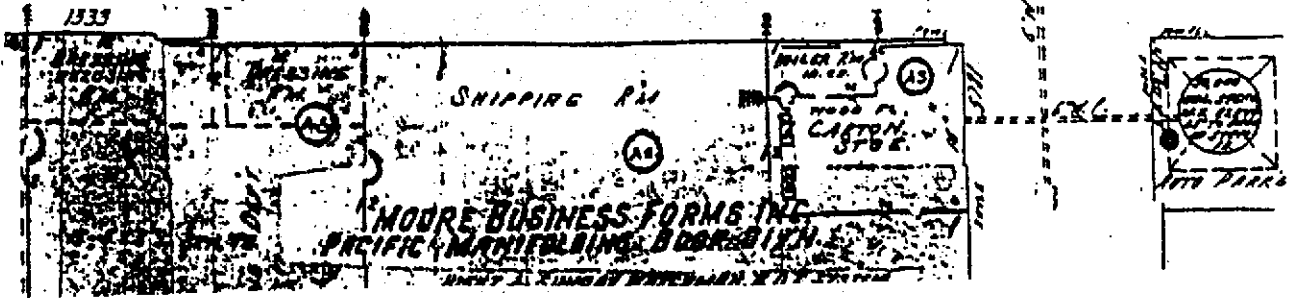
RF_D = Daily response factor from calibration check standards.

ATTACHMENT D

LUSH GEOSCIENCES FIGURE AND TABLE



POWELL



1951 SANBORN MAP
 CONSTRUCTION SERVICES FACILITY
 1300 POWELL STREET
 EMERYVILLE, CALIFORNIA

TABLE 2

**RESULTS OF LABORATORY ANALYSES
SOIL SAMPLES FROM SOIL BORINGS
CONSTRUCTION SERVICES FACILITY
EMERYVILLE, CALIFORNIA**

Sample Number	Sample Depth (ft)	TPHd	TPHk	TPHmo	TOG
Boring B1					
S-1-B1	1	<1.0	<1.0	24	360
S-5-B1	5	2.7	<1.0	320	430
Boring B2					
S-1-B2	1	<1.0	<1.0	<1.0	250
S-5-B2	5	6.7	<1.0	210	3,200
Boring B3					
S-1-B3	1	1.3	<1.0	130	360
S-5-B3	5	<1.0	<1.0	<1.0	190
Boring B4					
S-1-B4	1	17	<1.0	880	1,200
S-5-B4	5	<1.0	<1.0	<1.0	440
Boring B5					
S-1-B5	1	110	<1.0	<1.0	2,800
S-5-B5	5	17	<1.0	<1.0	600
Boring B6					
S-1-B6	1	<1.0	<1.0	15	220
S-5-B6	5	12	<1.0	230	940
Boring B7					
S-1-B7	1	<1.0	<1.0	<1.0	200
S-5-B7	5	12	<1.0	<1.0	320
Boring B8					
S-1-B8	1	11	<1.0	<1.0	320

TPHd = Total petroleum hydrocarbons as diesel
 TPHk = Total petroleum hydrocarbons as kerosene
 TPHmo = Total petroleum hydrocarbons as motor oil
 TOG = Total oil and grease
 Results given in parts per million (ppm)
 < = less than laboratory minimum detection limits

CAMBRIA

ATTACHMENT E

STANDARD FIELD PROCEDURES

STANDARD FIELD PROCEDURES FOR SOIL BORINGS

This document describes Cambria Environmental Technology's standard field methods for drilling and sampling soil borings. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor odor or staining, estimate ground water depth and quality and to submit samples for chemical analysis.

Soil Classification/Logging

All soil samples are classified according to the Unified Soil Classification System by a trained geologist or engineer working under the supervision of a California Registered Geologist (RG) or a Certified Engineering Geologist (CEG). The following soil properties are noted for each soil sample:

- Principal and secondary grain size category (i.e. sand, silt, clay or gravel)
- Approximate percentage of each grain size category,
- Color,
- Approximate water or product saturation percentage,
- Observed odor and/or discoloration,
- Other significant observations (i.e. cementation, presence of marker horizons, mineralogy), and
- Estimated permeability.

Soil Boring and Sampling

Soil borings are typically drilled using hollow-stem augers or hydraulic push technologies. At least one and one half ft of the soil column is collected for every five ft of drilled depth. Additional soil samples are collected near the water table and at lithologic changes. Samples are collected using lined split-barrel or equivalent samplers driven into undisturbed sediments beyond the bottom of the borehole. The vertical location of each soil sample is determined by measuring the distance from the middle of the soil sample tube to the end of the drive rod used to advance the split barrel sampler. All sample depths use the ground surface immediately adjacent to the boring as a datum. The horizontal location of each boring is measured in the field from an onsite permanent reference using a measuring wheel or tape measure.

Drilling and sampling equipment is steam-cleaned prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Storage, Handling and Transport

Sampling tubes chosen for analysis are trimmed of excess soil and capped with Teflon tape and plastic end caps. Soil samples are labeled and stored at or below 4°C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

Field Screening

One of the remaining tubes is partially emptied leaving about one-third of the soil in the tube. The tube is capped with plastic end caps and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable photoionization detector (PID) measures volatile hydrocarbon vapor concentrations in the tube headspace, extracting the vapor through a slit in the cap. PID measurements are used along with the field observations, odors, stratigraphy and ground water depth to select soil samples for analysis.

Water Sampling

Water samples, if they are collected from the boring, are either collected using a driven Hydropunch type sampler or are collected from the open borehole using bailers. The ground water samples are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory.

Duplicates and Blanks

Blind duplicate water samples are collected usually collected only for monitoring well sampling programs, at a rate of one blind sample for every 10 wells sampled. Laboratory-supplied trip blanks accompany samples collected for all sampling programs to check for cross-contamination caused by sample handling and transport. These trip blanks are analyzed if the internal laboratory QA/QC blanks contain the suspected field contaminants. An equipment blank may also be analyzed if non-dedicated sampling equipment is used.

Grouting

If the borings are not completed as wells, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

Waste Handling and Disposal

Soil cuttings from drilling activities are usually stockpiled onsite on top of and covered by plastic sheeting. At least three individual soil samples are collected from the stockpiles for later compositing at the analytic laboratory. The composite sample is analyzed for the same constituents analyzed in the borehole samples. Soil cuttings are transported by licenced waste haulers and disposed in secure, licenced facilities based on the composite analytic results.

Ground water removed during sampling and/or rinseate generated during decontamination procedures are stored onsite in sealed 55 gallon drums. Each drum is labeled with the drum number, date of generation, suspected contents, generator identification and consultant contact. Disposal of the water is based on the analytic results for the well samples. The water is either pumped out using a vacuum truck for transport to a licenced waste treatment/disposal facility or the individual drums are picked up and transported to the waste facility where the drum contents are removed and appropriately disposed.