CAMBRIA

July 25, 1997

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

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

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.

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.

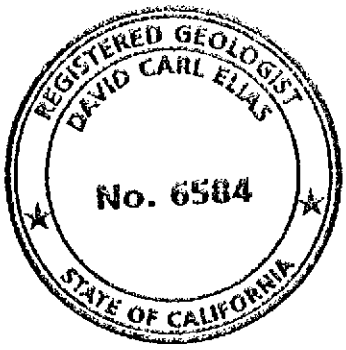
CAMBRIA

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

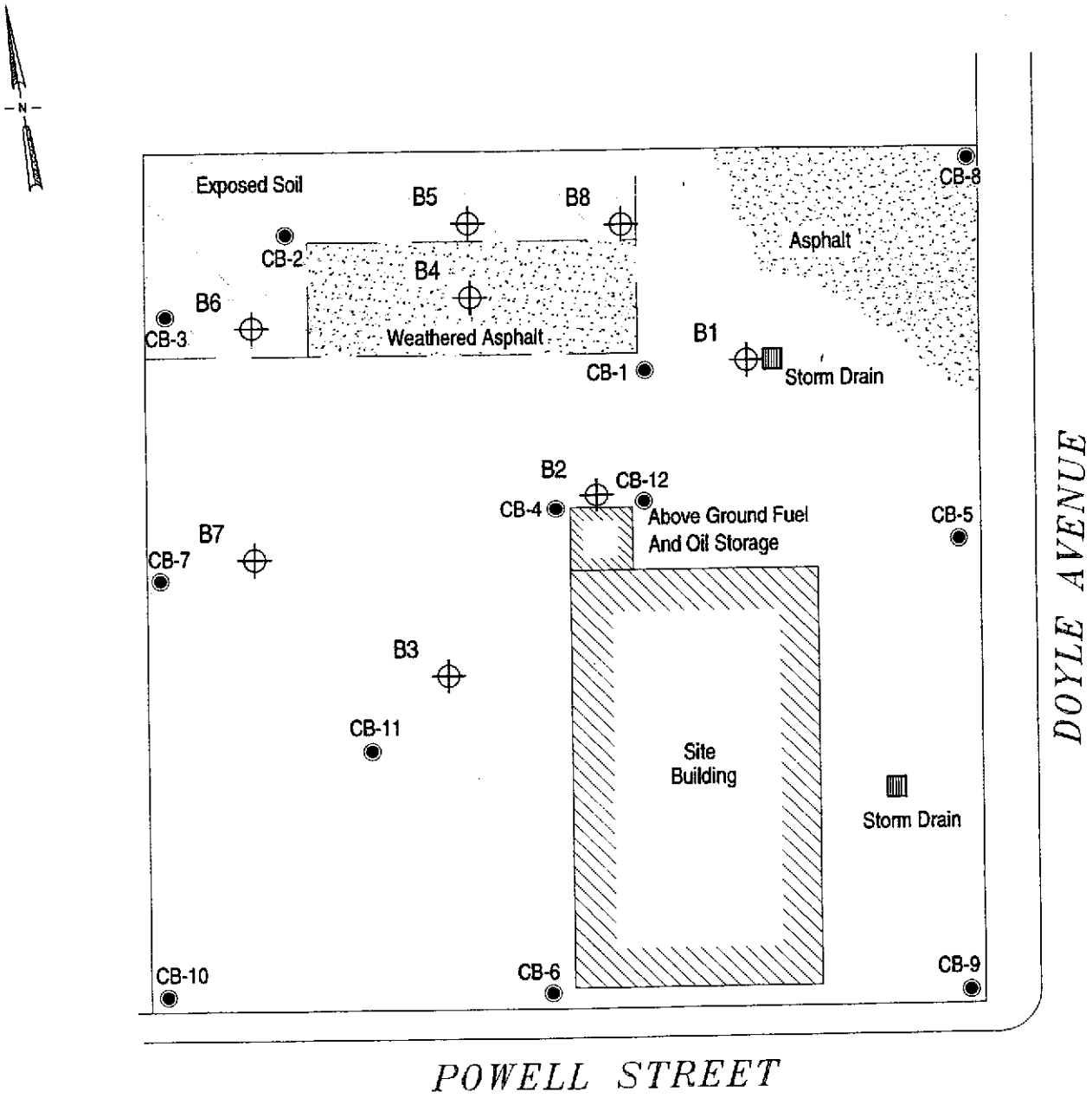
David Elias, RG
Project Geologist



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



EXPLANATION

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

0 20 40

Scale (ft)

CAMBRIA
Environmental Technology, Inc.

Construction Services Facility
1300 Powell Street
Emeryville, CA

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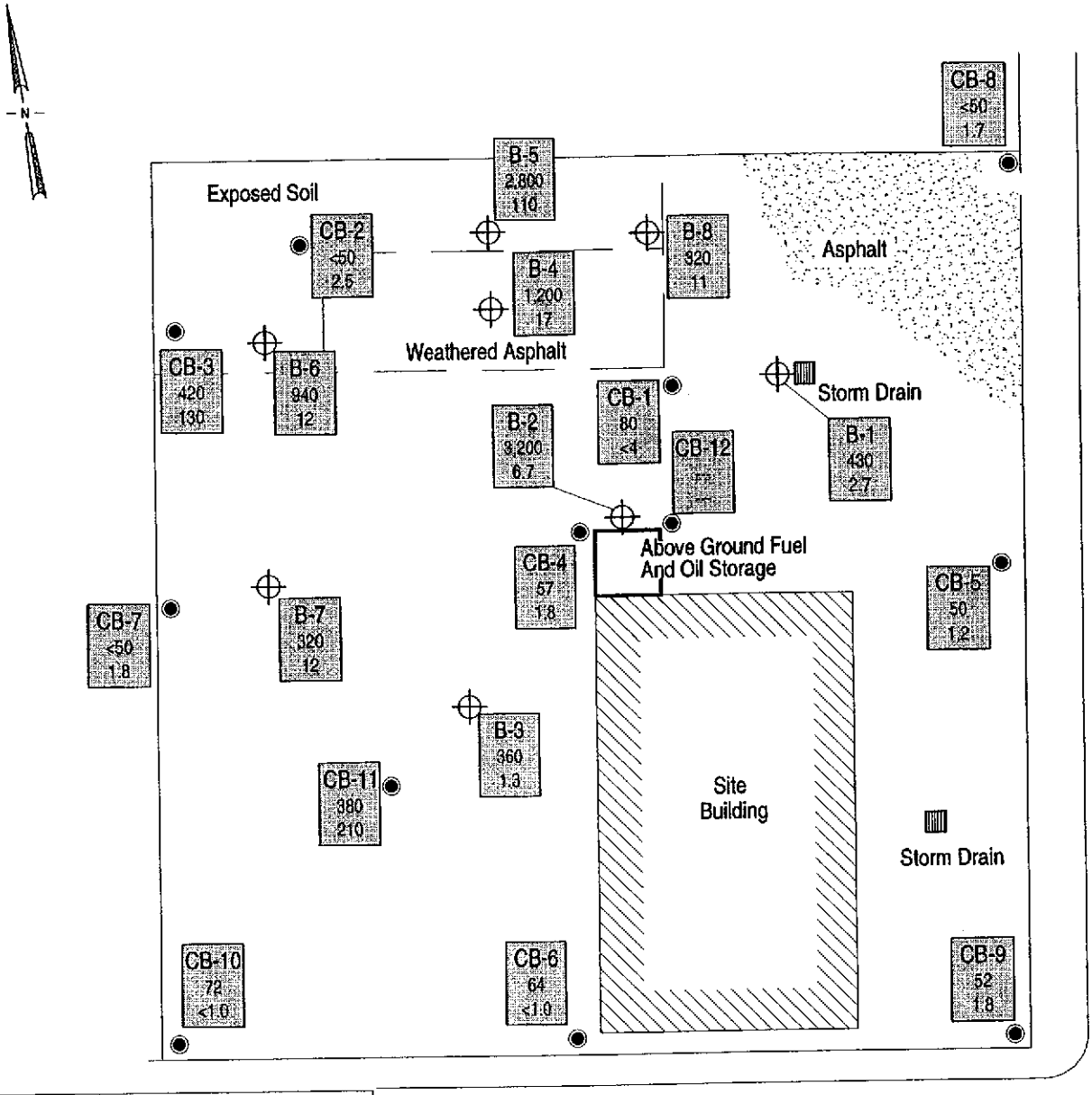
Soil Boring Locations

FIGURE
1



CAMBRIA
Environmental Technology, Inc.

Construction Services Facility
1300 Powell Street
Emeryville, CA

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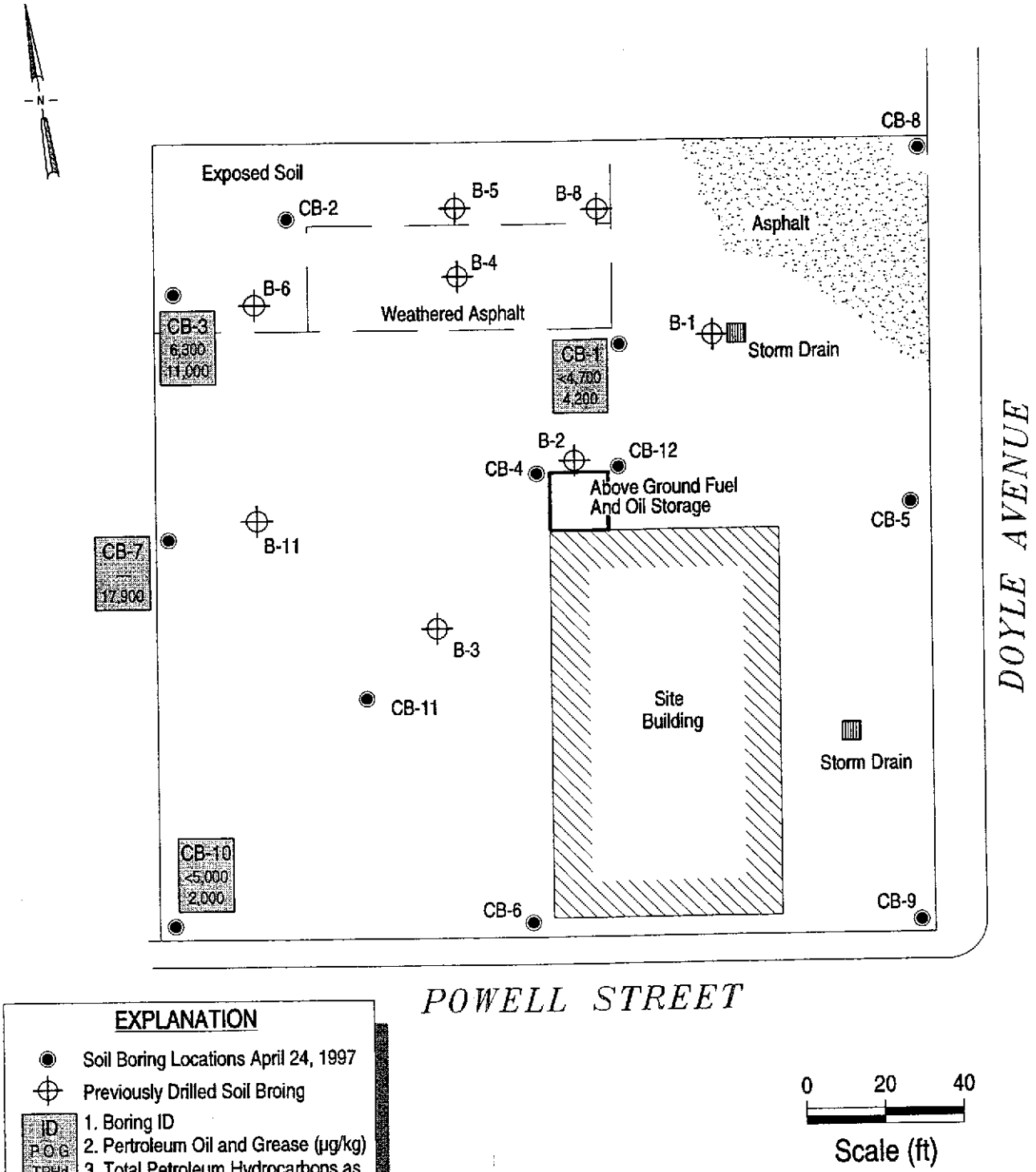
Maximum Petroleum Oil and Grease and TPHd Concentrations in Soil

FIGURE
2



CAMBRIA
Environmental Technology, Inc.

Construction Services Facility
1300 Powell Street
Emeryville, CA

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Maximum Petroleum Oil and Grease and TPHd Concentrations in Ground Water

FIGURE
3

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	Benzene	Toluene	Ethylbenzene	Xylenes	VOCs	PNAs
			(Concentrations in mg/kg)												
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	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—
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	—	—	—	—	—	—	—
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	Benzene	Toluene	Ethylbenzene	Xylenes	VOCs	PNAs
			(Concentrations in mg/kg)												

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 vompounds 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 atyical 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	POG
		(concentrations in µg/L)		
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.

ATTACHMENT A

PERMITS

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

LOCATION OF PROJECT 1300 POWELL ST.
EMERYVILLE, CALIF.

CLIENT
Name RICHARD & JULIA BECKER
Address 800 POWELL ST Voice 510-652-6800
City EMERYVILLE CA Zip

APPLICANT
Name CAMBRIA ENVIRONMENTAL TECH. INC.
DAVID ELIAS Fax 510-420-9170
Address 1144 65TH ST SUITE B Voice 510-420-3307
City OAKLAND, CA Zip 94608

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	___	General	___
Water Supply	___	Contamination	X
Monitoring	___	Well Destruction	___

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other ___
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger ___
Cable ___ Other HYDRAULIC PUSH

DRILLER'S LICENSE NO. VIRONEX # 705927

WELL PROJECTS
Drill Hole Diameter ___ in. Maximum
Casing Diameter ___ in. Depth ___ ft.
Surface Seal Depth ___ ft. Number ___

GEOTECHNICAL PROJECTS
Number of Borings 8-12 Maximum
Hole Diameter 2 in. Depth 10-15 ft.

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

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

APPLICANT'S SIGNATURE David Elias Date 4/24/97

FOR OFFICE USE

PERMIT NUMBER 97262
LOCATION NUMBER

PERMIT CONDITIONS

Circled Permit Requirements Apply

A. 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.

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.

(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.

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

E. WELL DESTRUCTION. See attached.

Approved Wyman Hong Date 29 Apr 97
Wyman Hong

91992

BORING LOG

Client: **Becker**

Project No: **95-423** Phase Task **005**

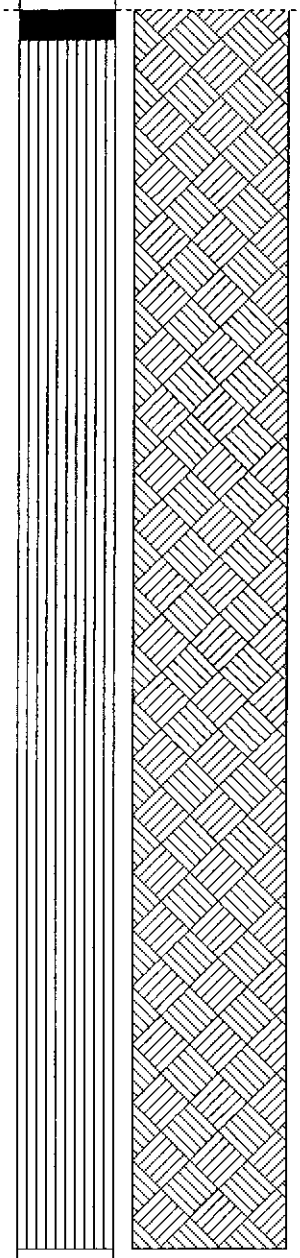
Boring ID **CB-1**

Location **1300 Powell St.**

Surface Elev. **NA ft,**

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

Depth (feet)	Blow Count	Sample	Interval	Lithologic Description
0	Ground Surface			**ASHALT**
				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.
10				



Additional Comments: Bottom of boring @ 12 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

Cambria Environmental Technology, Inc.

ATTACHMENT B

BORING LOGS

BORING LOG

Client: **Becker**

Project No: **95-423** Phase Task **005**

Boring ID **CB-2**

Location **1300 Powell St.**

Surface Elev. **NA ft,**

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

Depth (feet)	Blow Count	Sample	Interval	Lithologic Description
0	Ground Surface			**ASPHALT**
				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.
				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				

TPHg (ppm) | Graphic Log | Boring Completion Graphics

Depth (feet)	Additional Comments
0	
5	
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

Cambria Environmental Technology, Inc.

BORING LOG

Client: **Becker**

Project No: **95-423** Phase Task **005**

Boring ID **CB-3**

Location **1300 Powell St.**

Surface Elev. **NA ft,**

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**

Logged By **SR**

Water-Bearing Zones **NA**

Drilling Started **4/24/97**

Drilling Completed **4/24/97**

Grout Type **Potland Type I/II**

Notes: **See site map.**

BOR 95423 7/25/97

Cambria Environmental Technology, Inc.

BORING LOG

Client: **Becker**

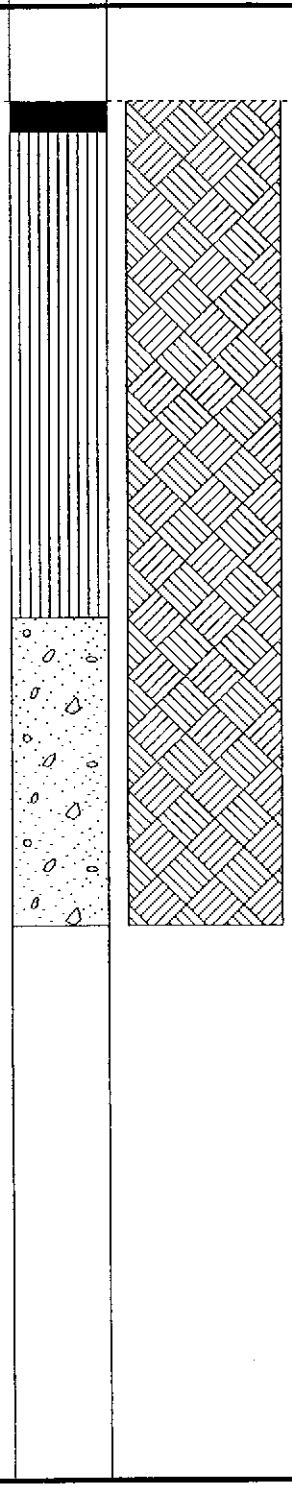
Project No: **95-423** Phase Task **005**

Boring ID **CB-4**

Location **1300 Powell St.**

Surface Elev. **NA ft.**

Depth (feet)	Blow Count	Sample	Interval	Lithologic Description
0	Ground Surface			**ASPHALT**
				Clayey, Sandy SILT; (ML); black; damp; 15% clay, 50% silt; 35% coarse sand; low plasticity; low to moderate estimated permeability.
5				**Clayey, Gravelly SAND**; (SP/SC); light brown; moist; 15% clay, 10% silt, 50% coarse sand, 25% gravel; low plasticity; low estimated permeability.
10				



Depth (feet)	Additional Comments
0	
5	
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

Cambria Environmental Technology, Inc.

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
0	Ground Surface			**ASPHALT**
				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.
10				

TPHg (ppm) | Graphic Log | Boring Completion Graphics | Depth (feet) | Additional Comments

0

5

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

Cambria Environmental Technology, Inc.

BORING LOG

Client: **Becker**

Project No: **95-423** Phase Task **005**

Boring ID **CB-6**

Location **1300 Powell St.**

Surface Elev. **NA ft,**

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

BORING LOG

Client: **Becker**

Project No: **95-423** Phase Task **005**

Boring ID **CB-7**

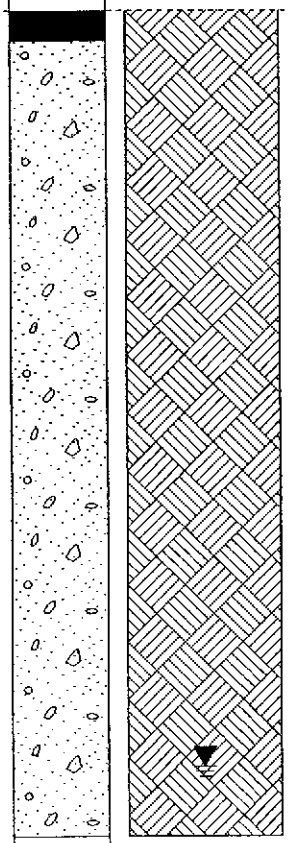
Location **1300 Powell St.**

Surface Elev. **NA ft,**

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

Depth (feet)	Blow Count	Sample	Interval	Lithologic Description
0	Ground Surface			**ASPHALT**
				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.
10				

TPHg (ppm) | Graphic Log | Boring Completion Graphics



Depth (feet)	Additional Comments
0	
5	Water level @ 7.33 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

Cambria Environmental Technology, Inc.

BORING LOG

Client: **Becker**

Project No: **95-423** Phase Task **005**

Boring ID **CB-8**

Location **1300 Powell St.**

Surface Elev. **NA ft,**

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

Depth (feet)	Blow Count	Sample	Interval	Lithologic Description
0	Ground Surface			**ASHALT**
				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.
10				

TPHg (ppm)	Graphic Log	Boring Completion Graphics	Depth (feet)	Additional Comments
			0	
			5	
			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

Cambria Environmental Technology, Inc.

BORING LOG

Client: **Becker**

Project No: **95-423** Phase Task **005**

Boring ID **CB-9**

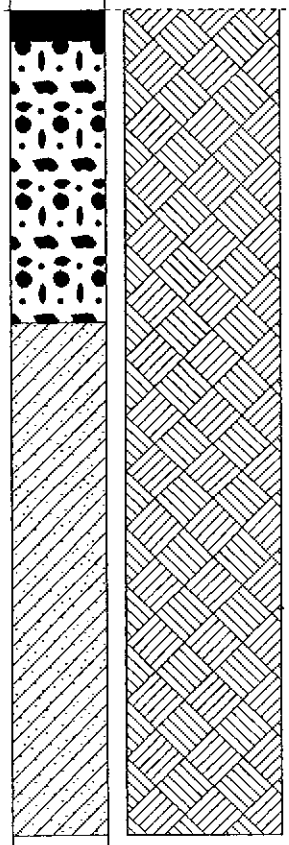
Location **1300 Powell St.**

Surface Elev. **NA ft,**

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

Depth (feet)	Blow Count	Sample	Interval	Lithologic Description
0	Ground Surface			**ASPHALT**
				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.
10				

TPHg (ppm) | Graphic Log | Boring Completion Graphics



Depth (feet)	Additional Comments
0	
5	
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

Cambria Environmental Technology, Inc.

BORING LOG

Client: **Becker**

Project No: **95-423** Phase Task **005**

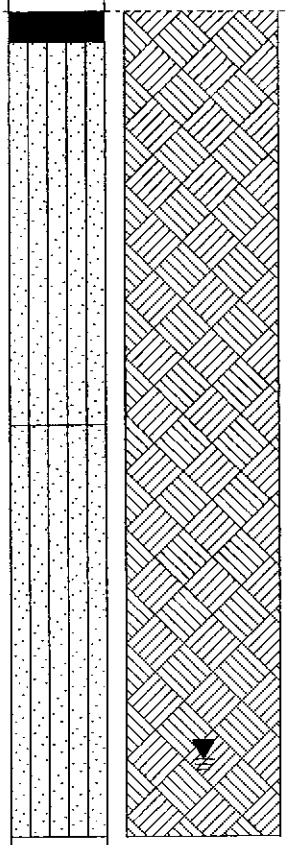
Boring ID **CB-10**

Location **1300 Powell St.**

Surface Elev. **NA ft,**

Depth (feet)	Blow Count	Sample	Interval	Lithologic Description
0	Ground Surface			**ASPHALT**
				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.
10				

TPHg (ppm) | Graphic Log | Boring Completion Graphics | Depth (feet) | Additional Comments



Water level @ 7.25 ft.

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

Cambria Environmental Technology, Inc.

BORING LOG

Client: **Becker**

Project No: **95-423** Phase Task **005**

Boring ID **CB-11**

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); orange; dry; 10% clay, 15% silt, 45% sand, 30% gravel; no plasticity, high estimated permeability.					
		X		**Clayey SILT**; (ML); brown; dry; 20% clay, 70% silt, 10% sand; low plasticity; low to moderate estimated permeability.					
5		X		low to medium plasticity.				5	
		X							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.**

BOR 95423 7/22/97

Cambria Environmental Technology, Inc.

BORING LOG

Client: **Becker**

Project No: **95-423** Phase Task **005**

Boring ID **CB-12**

Location **1300 Powell St.**

Surface Elev. **NA ft,**

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

Depth (feet)	Blow Count	Sample	Interval	Lithologic Description
0	Ground Surface			**ASPHALT**
				Clayey SILT; (ML); black; damp; 15% clay, 75% silt, 10% medium to coarse sand; low plasticity; low to moderate estimated permeability.
				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.
5				
10				

TPHg (ppm) | Graphic Log | Boring Completion Graphics

Depth (feet): 0, 5, 10

Additional Comments: 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

Cambria Environmental Technology, Inc.

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 Date: 05/15/1997
Client Acct: 98900 ELAP Cert: 2193
LEGEND Job No: 97.00840 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 Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
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

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 Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
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

Client Name: Cambria Env. Technology Date: 05/15/1997
Client Acct: 98900 ELAP Cert: 2193
LEGEND Job No: 97.00840 Page: 6

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 Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
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/BTXE,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	--						04/29/1997	2133
Bromofluorobenzene (SURR)	82			% Rec.	5030		04/29/1997	2133
8015M - HEAVY SCAN						05/01/1997		
DILUTION FACTOR*	1.0						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	--						05/02/1997	31
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 Limit	Units	Method	Date Extracted	Date Analyzed	Run 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-0	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

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 Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
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

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

Date: 05/15/1997
ELAP Cert: 2193

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 Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
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
M8015 (EXT., Solid)								
DILUTION FACTOR*	1					05/07/1997		
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
							05/12/1997	1270

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

Date: 05/15/1997
ELAP Cert: 2193

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 Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
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)								
DILUTION FACTOR*	1					05/14/1997		
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

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

Date: 05/15/1997
ELAP Cert: 2193

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 Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
Oil & Grease (Total)	120 ✓		50	mg/kg	5520B		05/08/1997	366
Oil & Grease (Non-Polar)	ND ✓		50	mg/kg	5520E/F		05/08/1997	364
M8015 (EXT., Solid)								
DILUTION FACTOR*	1					05/07/1997		
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

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 Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
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

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 Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
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

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 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)	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

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 Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
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

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 Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
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
MB015 (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

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 Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,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

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 Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
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

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 Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
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

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Client Acct: 98900 ELAP Cert: 2193
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SAMPLE DESCRIPTION: CB-10
Date Taken: 04/25/1997
Time Taken:
LEGEND Sample No: 274956

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
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

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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

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CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV Standard % Recovery	CCV Standard Amount Found	CCV Standard Amount Expected	Flags	Units	Date Analyzed	Analyst Initials	Run Batch Number
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)								

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CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV Standard % Recovery	CCV Standard Amount Found	CCV Standard Amount Expected	Flags	Units	Date Analyzed	Analyst Initials	Run Batch Number
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)	104.0	104	100		% Rec.	05/13/1997	vah	1270
M8015 (EXT., Solid)								
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)	107.0	107	100		% Rec.	05/14/1997	vah	1270
M8015 (EXT., Solid)								
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)	119.0	119	100		% Rec.	05/15/1997	vah	1270
M8015 (EXT., Solid)								
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

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CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV Standard % Recovery	CCV Standard Amount Found	CCV Standard Amount Expected	Flags	Units	Date Analyzed	Analyst Initials	Run Batch 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

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CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV Standard % Recovery	CCV Standard Amount Found	CCV Standard Amount Expected	Flags	Units	Date Analyzed	Analyst Initials	Run Batch 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

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CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV Standard % Recovery	CCV Standard Amount Found	CCV Standard Amount Expected	Flags	Units	Date Analyzed	Analyst Initials	Run Batch 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

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METHOD BLANK REPORT

Parameter	Method Blank Amount Found	Reporting Limit	Flags	Units	Date Analyzed	Analyst Initials	Run Batch 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
8015M - 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

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METHOD BLANK REPORT

Parameter	Method Blank Amount Found	Reporting Limit	Flags	Units	Date Analyzed	Analyst Initials	Run Batch Number
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

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METHOD BLANK REPORT

Parameter	Method Blank Amount Found	Reporting Limit	Flags	Units	Date Analyzed	Analyst Initials	Run Batch Number
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

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

MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix Spike % Rec.	Matrix Spike Dup % Rec.	RPD	Spike Amount	Sample Conc.	Matrix Spike Conc.	Matrix Spike Dup. Conc.	Flags	Units	Date Analyzed	Run Batch	Sample Spiked
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

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

MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix Spike % Rec.	Matrix Spike Dup % Rec.	RPD	Spike Amount	Sample Conc.	Matrix Spike Conc.	Matrix Spike Dup. Conc.	Flags	Units	Date Analyzed	Run Batch	Sample Spiked
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

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

MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix Spike % Rec.	Matrix Spike Dup % Rec.	RPD	Spike Amount	Sample Conc.	Matrix Spike Conc.	Matrix Spike Dup. Conc.	Flags	Units	Date Analyzed	Run Batch	Sample Spiked
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

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

MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix Spike % Rec.	Matrix Spike Dup % Rec.	RPD	Spike Amount	Sample Conc.	Matrix Spike Conc.	Matrix Spike Dup. Conc.	Flags	Units	Date Analyzed	Run Batch	Sample Spiked
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 (SURR)	61.0	58.0	5.0	100	58	61	58		% Rec.	04/29/1997	798	274962
p-Terphenyl-d14 (SURR)	77.0	74.0	4.0	100	72	77	74		% Rec.	04/29/1997	798	274962

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

LABORATORY CONTROL SAMPLE REPORT

Parameter	LCS % Rec.	DUP LCS % Rec.	RPD	LCS Amount Found	DUP LCS Amount Found	LCS Amount Exp.	Flags	Units	Date Analyzed	Analyst Initials	Run Batch
Oil & Grease (Total)	83.2			83.8		100.7		mg/L	05/08/1997	temp	450
Oil & Grease (Non-Polar)	83.1			83.7		100.7		mg/L	05/08/1997	temp	425
Oil & Grease (Total)	101.1			3420		3384		mg/kg	04/30/1997	aal	365
Oil & Grease (Total)	102.4			3,022		2,952		mg/kg	05/08/1997	temp	366
Oil & Grease (Non-Polar)	100.7			3408		3384		mg/kg	04/30/1997	aal	362
Oil & Grease (Non-Polar)	93.3			2,630		2,818		mg/kg	05/08/1997	temp	363
Oil & Grease (Non-Polar)	94.7			2,796		2,952		mg/kg	05/08/1997	temp	364
Cadmium (ICP)	94.7			94.67		100		mg/kg	04/30/1997	jeo	734
Chromium (ICP)	101.7			101.7		100		mg/kg	04/30/1997	jeo	745
Lead (ICP)	98.2			98.18		100		mg/kg	04/30/1997	jeo	608
Nickel (ICP)	96.8			96.80		100		mg/kg	04/30/1997	jeo	638
Zinc (ICP)	95.6			95.55		100		mg/kg	04/30/1997	jeo	683
M8015 (EXT., Liquid) as Diesel	106.0			1.06		1.00		mg/L	05/07/1997	vah	1329
Ortho-terphenyl (SURR)	134.0			134		100		% 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 (SURR)	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 (SURR)	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 (SURR)	121.0			121		100		% Rec.	05/15/1997	vah	1271

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

LABORATORY CONTROL SAMPLE REPORT

Parameter	LCS % Rec.	DUP LCS % Rec.	RPD	LCS Amount Found	DUP LCS Amount Found	LCS Amount Exp.	Flags	Units	Date Analyzed	Analyst Initials	Run Batch
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

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

DUPLICATE REPORT

Parameter	RPD	Original Sample Result	Duplicate Sample Result	Flags	Units	Date Analyzed	Analyst	Duplicate Sample No.
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

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.

NET 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 950-0423-4
PROJECT MANAGER DAVID ELIAS

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

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

S. Ranganayakulu
SIGNATURE
David Elias
SIGNATURE

DATE	TIME	SAMPLE ID/DESCRIPTION	MATRIX	GRAB	# and Type of Containers: CONT. SIZE	HCl	NaOH	HNO_3	H_2SO_4	OTHER
4/24-4/25		CB-1	W	X	3	3		1		1/2
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	1
4/24-4/25/97		CB-10			3	3				2

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

CUSTODY SEALED
Date 4/25/97 Time 1800 Initials [illegible]
SEAL INTACT?
Yes ✓ No ____ Initials QJ

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:	DATE	TIME	RECEIVED BY:	RELINQUISHED BY:	DATE	TIME	RECEIVED FOR NET BY:
S. Ranganayakulu	4/25/97	2:45PM	Lorrie Rapp	Lorrie Rapp	4/25/97	1800	4/26/97 0615

METHOD OF SHIPMENT: VIA CAS

REMARKS:

4991

NET 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 95-423.14
PROJECT MANAGER David Elias

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

SAMPLED BY
Sam Rangarajan (PRINT NAME) — S. Rangarajan (SIGNATURE)
(PRINT NAME) — (SIGNATURE)

DATE	TIME	SAMPLE ID/DESCRIPTION	MATRIX	GRAB	COMP	# and Type of Containers (1): HCl	NaOH	HNO_3	H_2SO_4	OTHER
4/24/97		CB-5-1.0	S							TUBE
↓		CB-5-3.0	"							↓
↓		CB-5-5.0	"							↓
↓		CB-5-8.0	"							↓
4/24/97		CB-2-9.0	"							TUBE
↓		CB-2-6.0	"							↓
↓		CB-2-3.0	"							↓
4/24/97		CB-3-3.5	"							TUBE

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

CUSTODY SEALED
Date 4/25/97 Time 1800 Initials SR
SEAL INTACT?
Yes Y No ____ Initials B

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°, 0.0°, 0.1°
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. Rangarajan DATE 4/25/97

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	RELINQUISHED BY:	DATE	TIME	RECEIVED FOR NET BY:
S. Rangarajan	4/25/97	2:45 PM	Florence Rapp	Florence Rapp	4-28-97	1800	4/26/97 0615

METHOD OF SHIPMENT: VIA CDS
REMARKS:

WHITE - RET'D. NET PROJECT MANAGER YELLOW - RET'D. CUSTOMER COPY PINK

4337

NET 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

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

SAMPLED BY
Sam Rangarajan (PRINT NAME) — D. Rangarajan (SIGNATURE)
(PRINT NAME) — (SIGNATURE)

DATE	TIME	SAMPLE ID/DESCRIPTION	MATRIX	GRAB	COMP	# and Type of Containers (1) HCl	NaOH	HNO_3	H_2SO_4	OTHER
4/24/97		~~CB-2-0~~ CB-1-2.0	S							TUBE
↓		CB-1-5.0	"							"
↓		CB-1-9.0	"							"
4/24/97		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	"							↓

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

CUSTODY SEALED
Date 4/25/97 Time 1800 Initials [illegible]
SEAL INTACT?
Yes ✓ No ____ Initials [illegible]

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, 0.2
Bottles supplied by NET? YES / NO

SAMPLE REMAINDER DISPOSAL: RETURN SAMPLE REMAINDER TO CLIENT VIA ____
✓ REQUEST NET TO DISPOSE OF ALL SAMPLE REMAINDERS — D. Rangarajan DATE 4/25/97

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	RELINQUISHED BY:	DATE	TIME	RECEIVED FOR NET BY:
D. Rangarajan	4/25/97	2:45PM	Renee Rapp	Renee Rapp	4-25-97	1800	[illegible] 4/26/97 0615

METHOD OF SHIPMENT: VIA CDS
REMARKS:

NET 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 Beeker Property, 1300 Powell, Emeryville
PROJECT NUMBER 95-4231.4
PROJECT MANAGER David Elias

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

SAMPLED BY Sam Rangarajan (PRINT NAME) S. Rangarajan SIGNATURE
(PRINT NAME) 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_2SO_4	OTHER	COMMENTS
4/24/97		CB-10-1.0	S							TUBE	
		CB-10 -3.0	"								
		CB-10 -5.0	"								
		CB-10 -8.0	"								
		CB-9-1.0	"								
		CB-9 -3.0	"								
		CB-9 -5.0	"								
		CB-9 -8.0	"								
		CB-8-1.0	"								
		CB-8 -3.0	"								
		CB-8 -5.0	"								
		CB-8 -8.0	"								

CUSTODY SEALED
Date 4-25-97 Time 1000 Initials
SEAL INTACT?
Yes ___ No ___ Initials

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.
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. Rangarajan DATE 4/25/97

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	RELINQUISHED BY:	DATE	TIME	RECEIVED FOR NET BY:
S. Rangarajan	4/25/97	2:45PM	Noreen Rapp	Noreen Rapp	4-25-97	1000	4/26/97 0615

METHOD OF SHIPMENT: VIA CDS
REMARKS:

PT.1 - ORIGINAL - WHITE PT.2 - NET PROJECT MANAGER - YELLOW PT.3 - CUSTOMER COPY - PINK

NET 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 95-423.14
PROJECT MANAGER David Elias

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

SAMPLED BY Sam Rangarajan (PRINT NAME) — D. Rangarajan (SIGNATURE)
(PRINT NAME) — (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_2SO_4	OTHER
4/24/97		~~CB-11-10~~	S							TUBE
↓		CB-11-3.0	↓							↓
		CB-11-5.0								
↓		CB-11-8.0	↓							↓
~~4/24/97~~		~~CB-12-10~~	~~S~~							~~TUBE~~
4/24/97		CB-12-3.0	S							TUBE
↓		CB-12-8.0	↓							↓
4/24/97		CB-~~6~~-1.0	S							TUBE
↓		CB-~~6~~-3.0	↓							↓
		CB-~~6~~-5.0								
↓		CB-~~6~~-8.0	↓							↓

COMMENTS
not taken per Sam to JR 042897

CUSTODY SEALED
Date 4/25/97 Time 1300 Initials [illegible]
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.
Bottles supplied by NET? (YES) / NO

SAMPLE REMAINDER DISPOSAL: RETURN SAMPLE REMAINDER TO CLIENT VIA ____
I REQUEST NET TO DISPOSE OF ALL SAMPLE REMAINDERS — D. Rangarajan — DATE 4/25/97

RELINQUISHED BY:	DATE	TIME	RECEIVED BY:	RELINQUISHED BY:	DATE	TIME	RECEIVED FOR NET BY:
D. Rangarajan	4/25/97	2:45 PM	Florence Rapp	Florence Rapp	4/25/97	1800	[illegible] 4/26/97 0613

METHOD OF SHIPMENT: VIA CDS
REMARKS:

GLOBAL
*GEO*CHEMISTRY
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. C_4-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 Kaplan

Isaac R. Kaplan
President

A3914-report.wpd

GLOBAL GEOCHEMISTRY CORP. 6919 ETON AVENUE • CANOGA PARK, CA 91303-2194 • (818) 992-4103

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 µg/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 C_4-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-Diemethyl-5-Ethylbenzene
24	1,2-Diethylbenzene
25	1-Methy-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_6 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	13ß,17α-diacholestane (20S)	27
2	13ß,17α-diacholestane (20R)	27
3	13α,17ß-diacholestane (20S)	27
4	13α,17ß-diacholestane (20R)	27
5	24-methyl-13ß,17α-diacholestane (20S)	28
6	24-methyl-13ß,17α-diacholestane (20R)	28
7D	24-methyl-13α,17ß-diacholestane (20S)	28
7	14α,17α-cholestane (20S)	27
8+8D	14ß,17ß-cholestane (20R) + 24-ethyl-13ß,17α-diacholestane (20S)	27+29
9	14ß,17ß-cholestane (20S)	27
9D	24-methyl-13α,17ß-diacholestane (20R)	28
10	14α,17α-cholestane (20R)	27
11	24-ethyl-13ß,17α-diacholestane (20R)	29
12	24-ethyl-13α,17ß-diacholestane (20S)	29
13	24-methyl-14α,17α-cholestane (20S)	28
14+14D	24-methyl-14ß,17ß-cholestane (20R) + 24-ethyl-13α,17ß-diacholestane (20R)	28+29
15	24-methyl-14ß,17ß-cholestane (20S)	28
16	24-methyl-14α,17α-cholestane (20R)	28
17	24-ethyl-14α-cholestane (20S)	29
18	24-ethyl-14ß,17ß-cholestane (20R)	29
19	24-ethyl-14ß,17ß-cholestane (20S)	29
20	24-ethyl-14α,17α-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 Terpane	20
1	C_{21}-Tricyclic Terpane	21
2	C_{22}-Tricyclic Terpane	22
3	C_{23}-Tricyclic Terpane	23
4	C_{24}-Tricyclic Terpane	24
5	C_{25}-Tricyclic Terpane	25
Z4	C_{24}-Tetracyclic Terpane	24
6a	C_{26}-Tricyclic Terpane	26
6b	C_{26}-Tricyclic Terpane	26
7	C_{27}-Tricyclic Terpane	27
A	C_{28}-Tricyclic Terpane #1	28
B	C_{28}-Tricyclic Terpane #2	28
C	C_{29}-Tricyclic Terpane #1	29
D	C_{29}-Tricyclic Terpane #2	29
E	18α-22,29,30-Trisnorneohopane (Ts)	27
F	17α-22,29,30-Trisnorhopane (Tm)	27
G	17ß-22,29-30-Trisnorhopane	27
H	17α-23,28-Bisnorlupane	28
10a	C_{30}-Tricyclic Terpane #1	30
10b	C_{30}-Tricyclic Terpane #2	30
I	17α-28,30-Bisnorhopane	28
11a	C_{31}-Tricyclic Terpane #1	31
J	17α-25-Norhopane	29
11b	C_{31}-Tricyclic Terpane #2	31
K	17α,21ß-30-Norhopane	29
C_{29}Ts	18α-30-Norneohopane	29
C_{30}*	17α-Diahopane	30
L	17ß-21α-30-Normoretane	29
Ma	18α-Oleanane	30
Mb	18ß-Oleanane	30
N	17α,21ß-Hopane	30
O	17ß,21α-Moretane	30
13a	C_{33}-Tricyclic Terpane #1	33
13b	C_{33}-Tricyclic Terpane #2	33
P	22S-17α,21ß-30-Homohopane	31
Q	22R-17α,21ß-30-Homohopane	31
R	Gammacerane	30
14a	C_{34}-Tricyclic Terpane #1	34
S	17ß,21α-Homomoretane	31
14b	C_{34}-Tricyclic Terpane #2	34
T	22S-17α,21ß-30-Bishomohopane	32
U	22R-17α,21ß-30-Bishomohopane	32
15a	C_{35}-Tricyclic Terpane #1	35
15b	C_{35}-Tricyclic Terpane #2	35
V	17ß,21α-C_{32}-Bishomomoretane	32
WS	22S-17α,21ß-30,31,32-Trishomohopane	33
WR	22R-17α,21ß-30,31,32-Trishomohopane	33
16a	C_{36}-Tricyclic Terpane #1	36
16b	C_{36}-Tricyclic Terpane #2	36
XS	22S-17α,21ß-30,31,32,33-Tetrahomohopane	34
XR	22R-17α,21ß-30,31,32,33-Tetrahomohopane	34
YS	22S-17α,21ß-30,31,32,33,34-Pentahomohopane	35
YR	22R-17α,21ß-30,31,32,33,34-Pentahomohopane	35

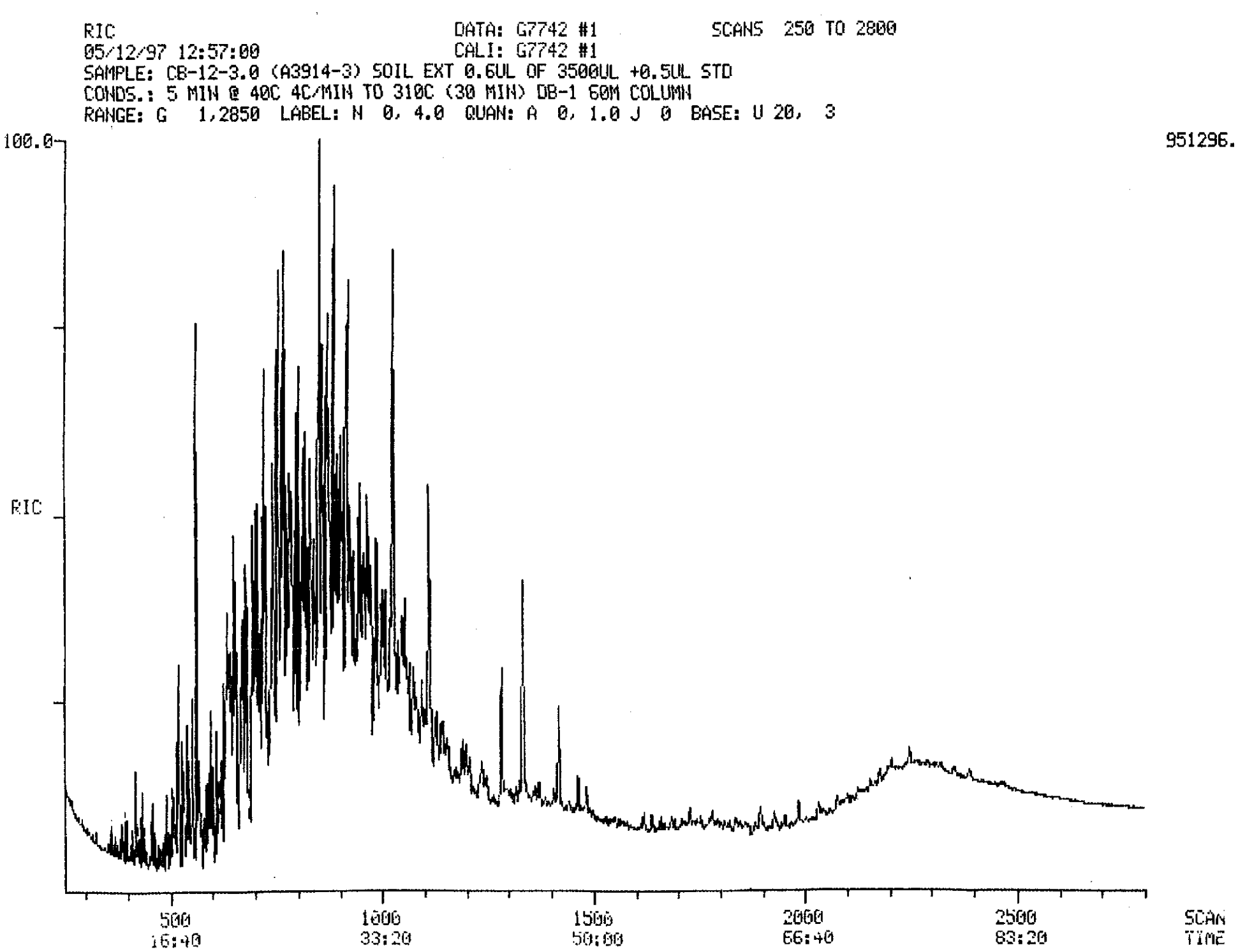
Table 6

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

Code	Identity	Elemental Composition
a	20S, 5ß C_{27}-Monoaromatic sterane	$C_{27}H_{42}$
b	20S, dia C_{27}-Monoaromatic sterane	$C_{27}H_{42}$
c	20R, 5ß C_{27}-Monoaromatic sterane + 20R C_{27} dia MAS	$C_{27}H_{42}$
d	20S, 5α C_{27}-Monoaromatic sterane	$C_{27}H_{42}$
e	20S, 5ß C_{28}-Monoaromatic sterane + 20S C_{28} dia MAS	$C_{28}H_{44}$
f	20R, 5α C_{27}-Monoaromatic sterane	$C_{27}H_{42}$
g	20S, 5α C_{28}-Monoaromatic sterane	$C_{28}H4_4$
h	20R, 5ß C_{28}-Monoaromatic sterane + 20R C_{28} dia MAS	$C_{28}H_{44}$
i	20S, 5ß C_{29}-Monoaromatic sterane + 20S C_{29} dia MAS	$C_{29}H_{46}$
j	20S, 5α C_{29}-Monoaromatic sterane	$C_{29}H_{46}$
k	20R, 5α C_{28}-Monoaromatic sterane	$C_{28}H_{44}$
l	20R, 5ß C_{29}-Monoaromatic sterane + 20R C_{29} dia MAS	$C_{29}H_{46}$
m	20R, 5α C_{29}-Monoaromatic sterane	$C_{29}H_{46}$

FIGURES

Figure 1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DATA: G7742 #1
CALI: G7742 #1
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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
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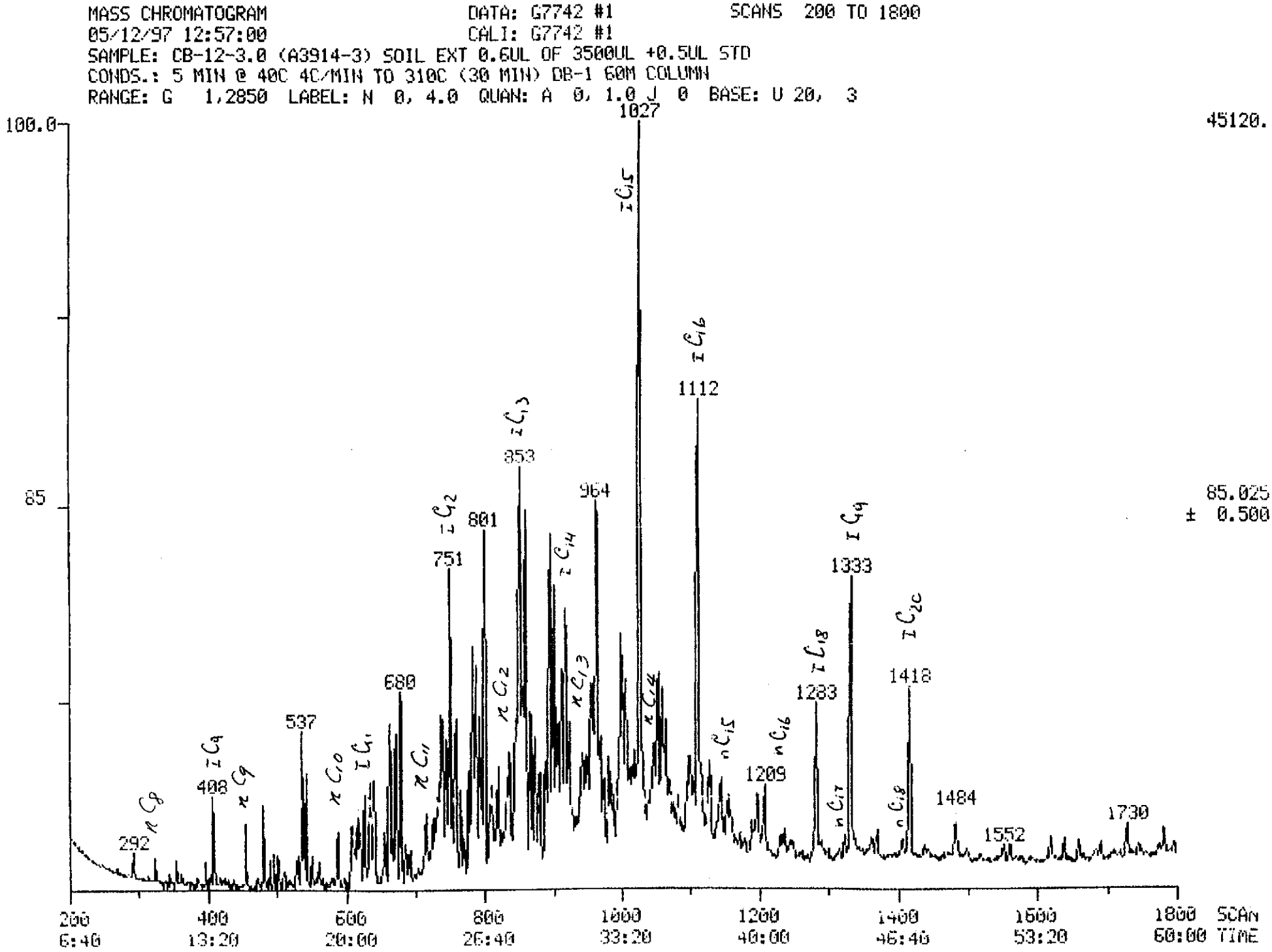
SCAN
TIME

Figure 2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CALI: G7742 #1
SCANS 200 TO 1800
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
100.0
85
45120.
85.025
± 0.500
1027
iC25
1112
iC16
853
iC13
964
801
iC12
751
iC2
680
537
408
iC9
292
nC8
nC9
nC10
iC11
nC11
nC12
nC13
nC14
nC15
nC16
1209
1283
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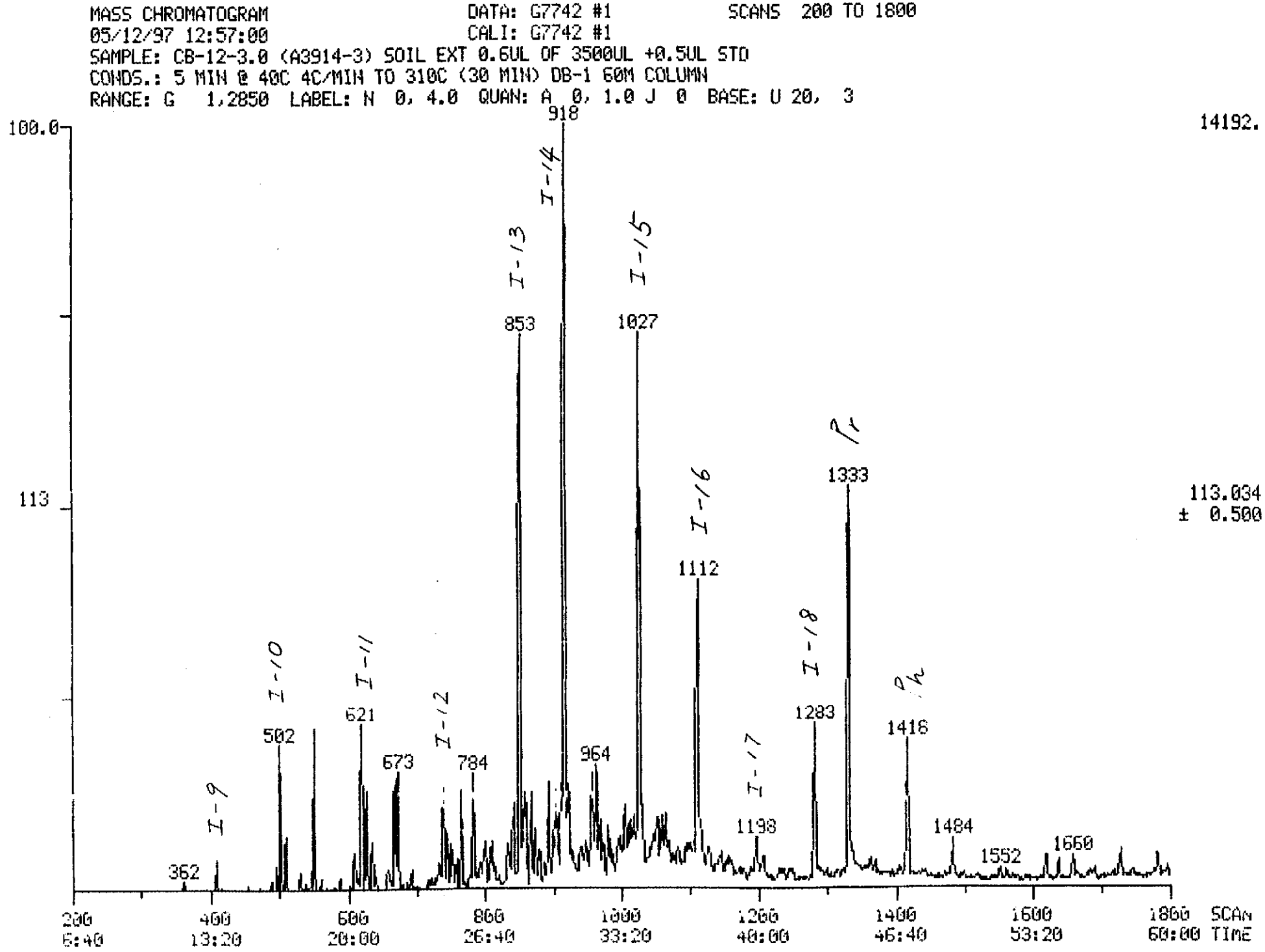
Figure 3


MASS CHROMATOGRAM
05/12/97 12:57:00
DATA: G7742 #1
CALI: G7742 #1
SCANS 200 TO 1800
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
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14192.
113
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± 0.500
I-9
I-10
I-11
I-12
I-13
I-14
I-15
I-16
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P1
P2
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502
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1552
1660
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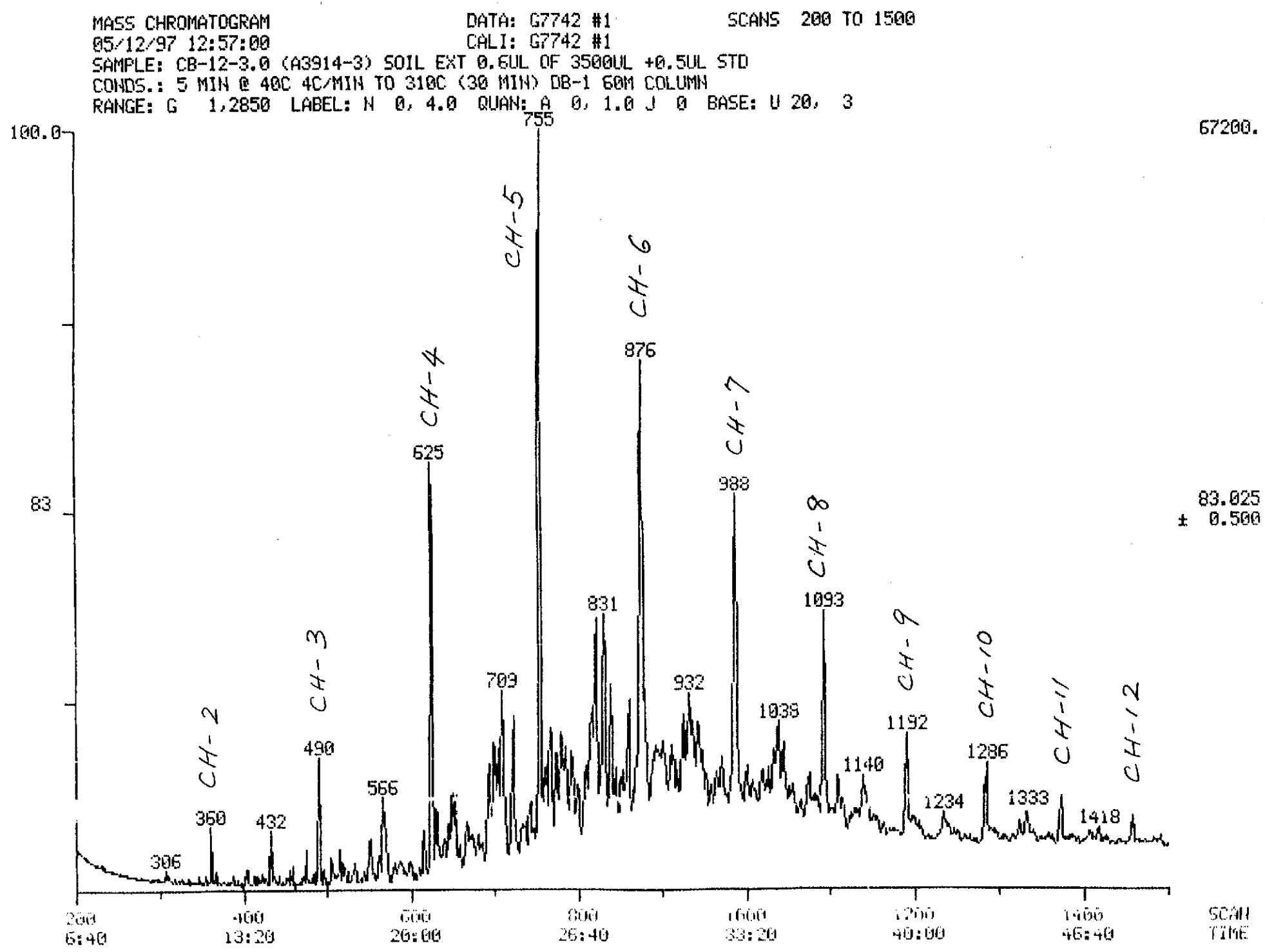
1800 60:00
SCAN
TIME

Figure 4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05/12/97 12:57:00
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CALI: G7742 #1
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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
100.0
83
67200.
83.025
± 0.500
CH-2
CH-3
CH-4
CH-5
CH-6
CH-7
CH-8
CH-9
CH-10
CH-11
CH-12
306
350
432
490
566
625
709
755
831
876
932
988
1038
1093
1140
1192
1234
1286
1333
1418
200
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800
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1000
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40:00
1400
46:40
SCAN
TIME

Figure 5

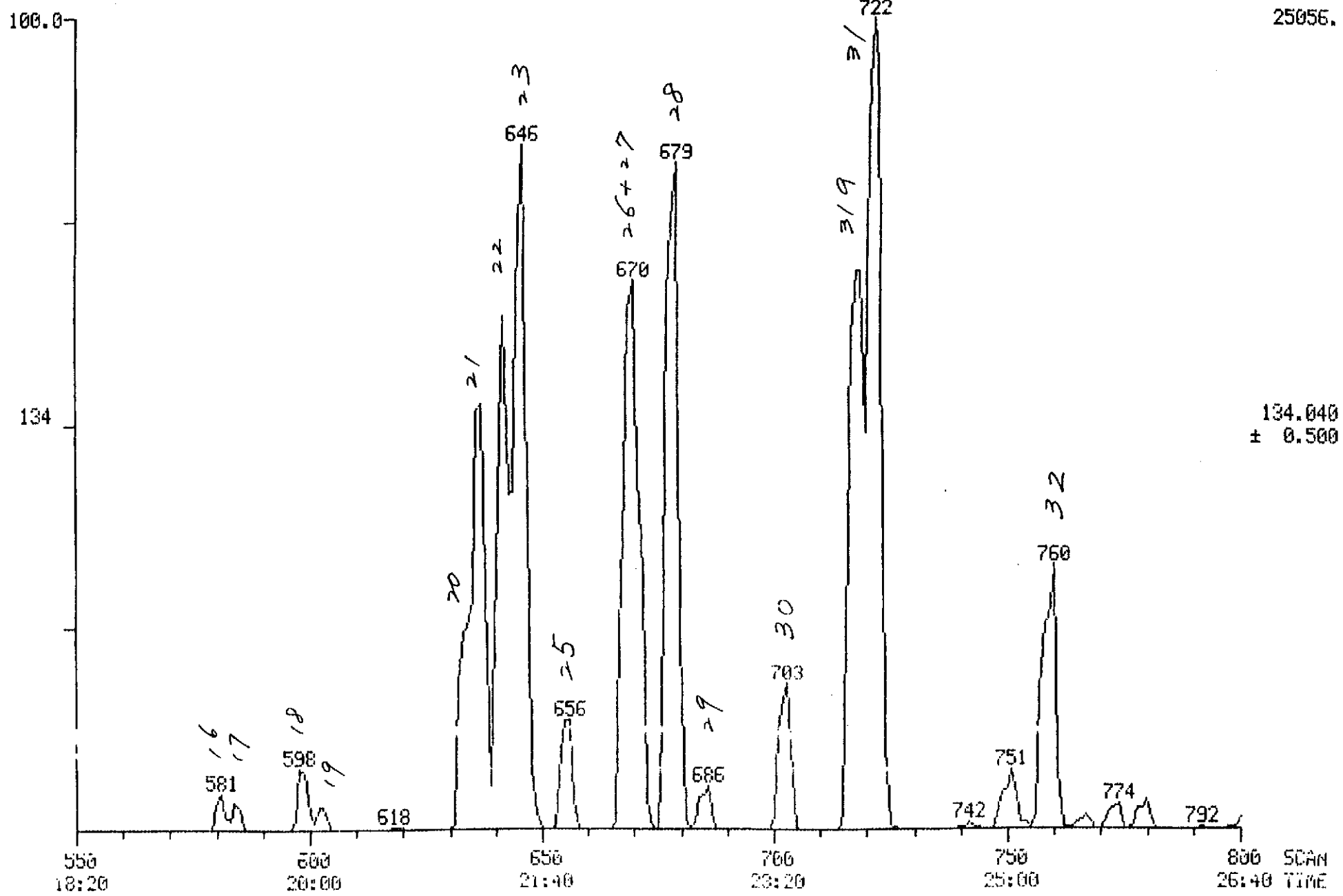

MASS CHROMATOGRAM
05/12/97 12:57:00
DATA: G7742 #1
CALI: G7742 #1
SCANS 550 TO 800
SAMPLE: CB-12-3.0 (A3914-3) SOIL EXT 0.6UL OF 3500UL +0.5UL STD
CONDS.: 5 MIN @ 40C 4C/MIN TO 310C (30 MIN) DB-1 60M COLUMN
RANGE: G 1,2850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3
100.0
25056.
134
134.040
± 0.500
581
598
618
646
656
670
679
686
703
722
742
751
760
774
792
16
17
18
19
20
21
22
23
25
26+27
28
29
30
31
32
550
18:20
600
20:00
650
21:40
700
23:20
750
25:00
800
26:40
SCAN
TIME

Figure 6

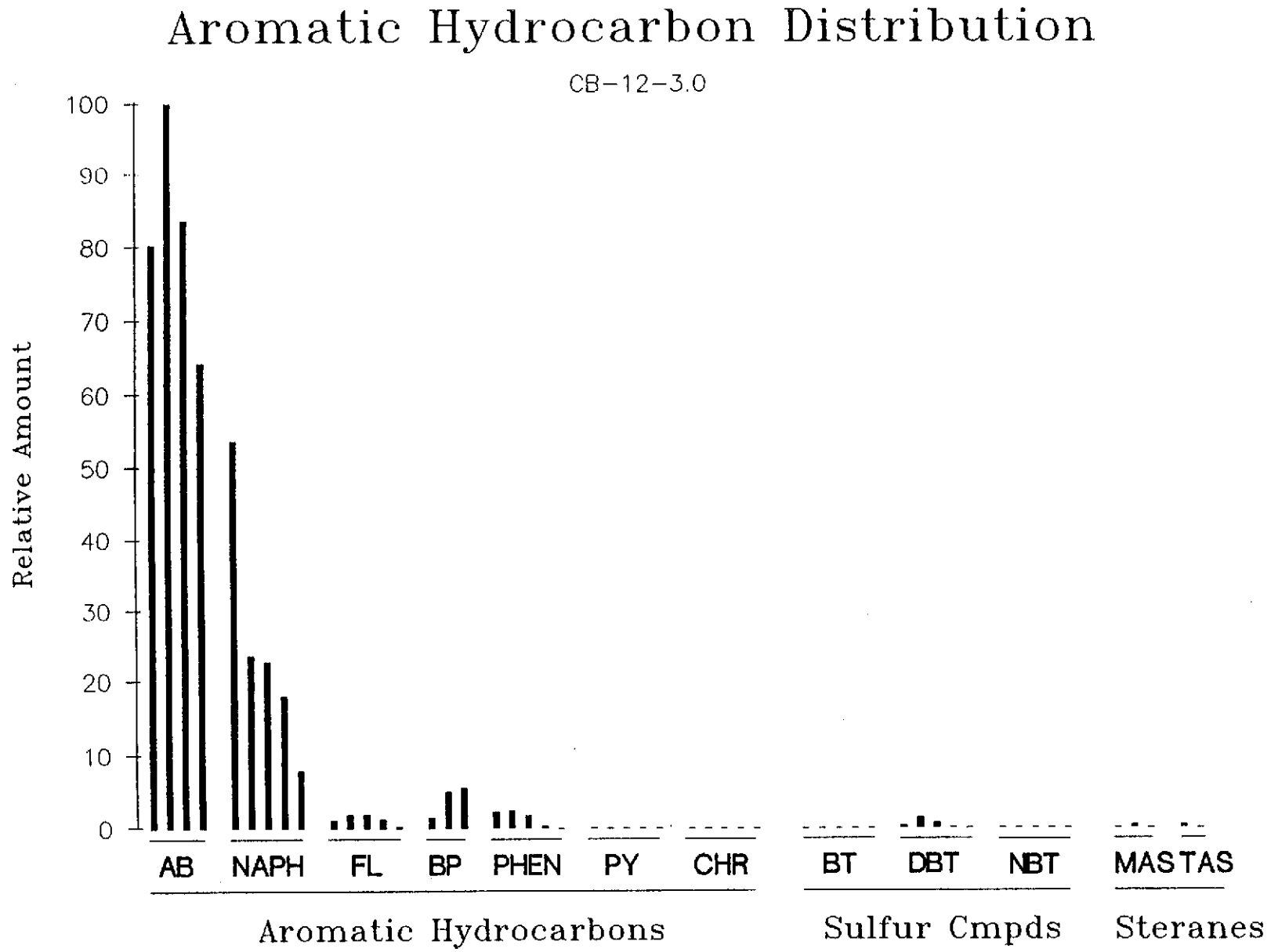

Aromatic Hydrocarbon Distribution
CB-12-3.0
Relative Amount
100
90
80
70
60
50
40
30
20
10
0
AB
NAPH
FL
BP
PHEN
PY
CHR
BT
DBT
NBT
MAS
TAS
Aromatic Hydrocarbons
Sulfur Cmpds
Steranes

Figure 7

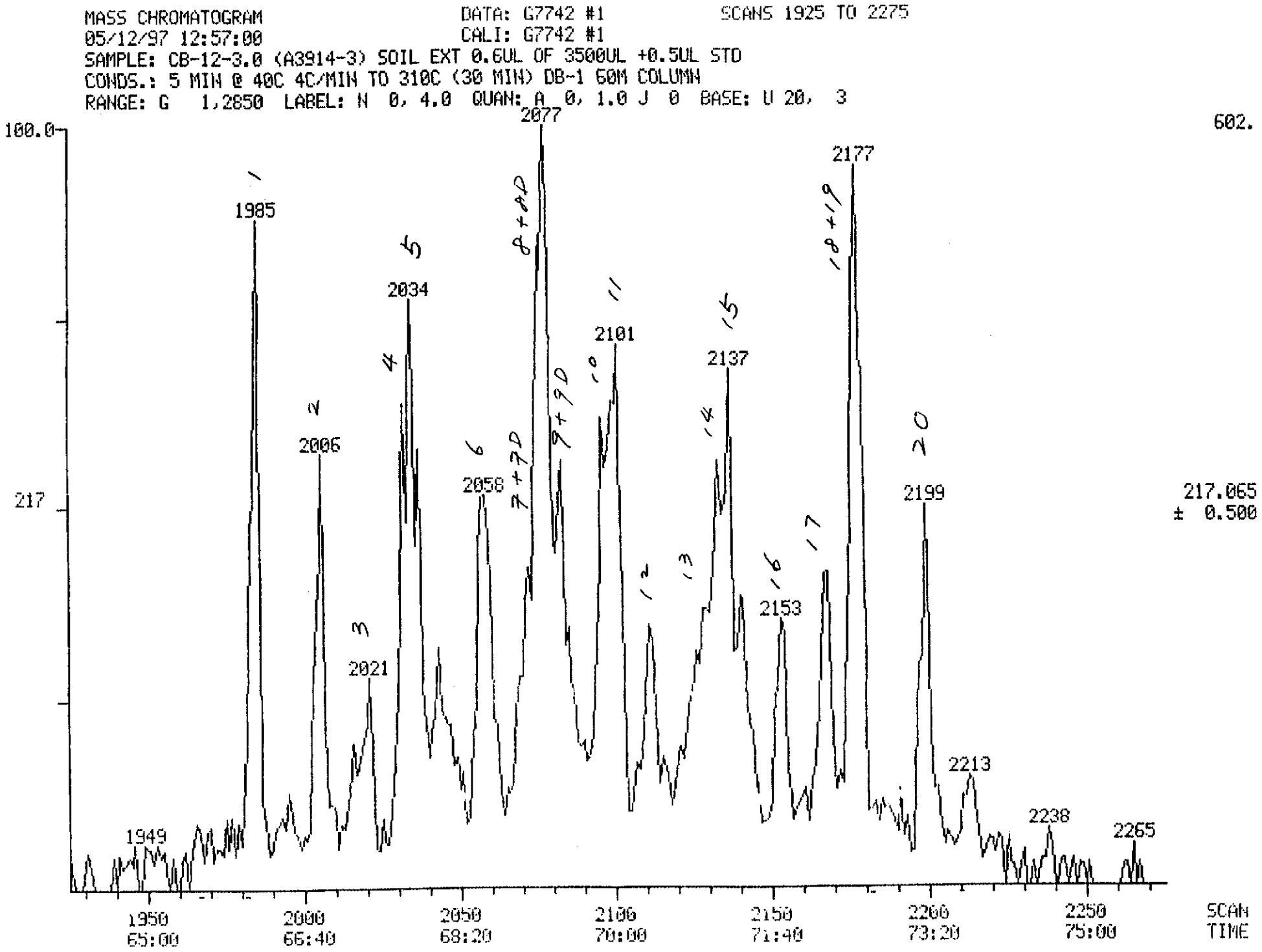

MASS CHROMATOGRAM
05/12/97 12:57:00
DATA: G7742 #1
CALI: G7742 #1
SCANS 1925 TO 2275
SAMPLE: CB-12-3.0 (A3914-3) SOIL EXT 0.6UL OF 3500UL +0.5UL STD
CONDS.: 5 MIN @ 40C 4C/MIN TO 310C (30 MIN) DB-1 60M COLUMN
RANGE: G 1,2850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3
100.0
602.
217
217.065
± 0.500
1985
2006
2021
2034
2058
2077
2101
2137
2153
2177
2199
2213
2238
2265
1949
1950
65:00
2000
66:40
2050
68:20
2100
70:00
2150
71:40
2200
73:20
2250
75:00
SCAN
TIME

Figure 8

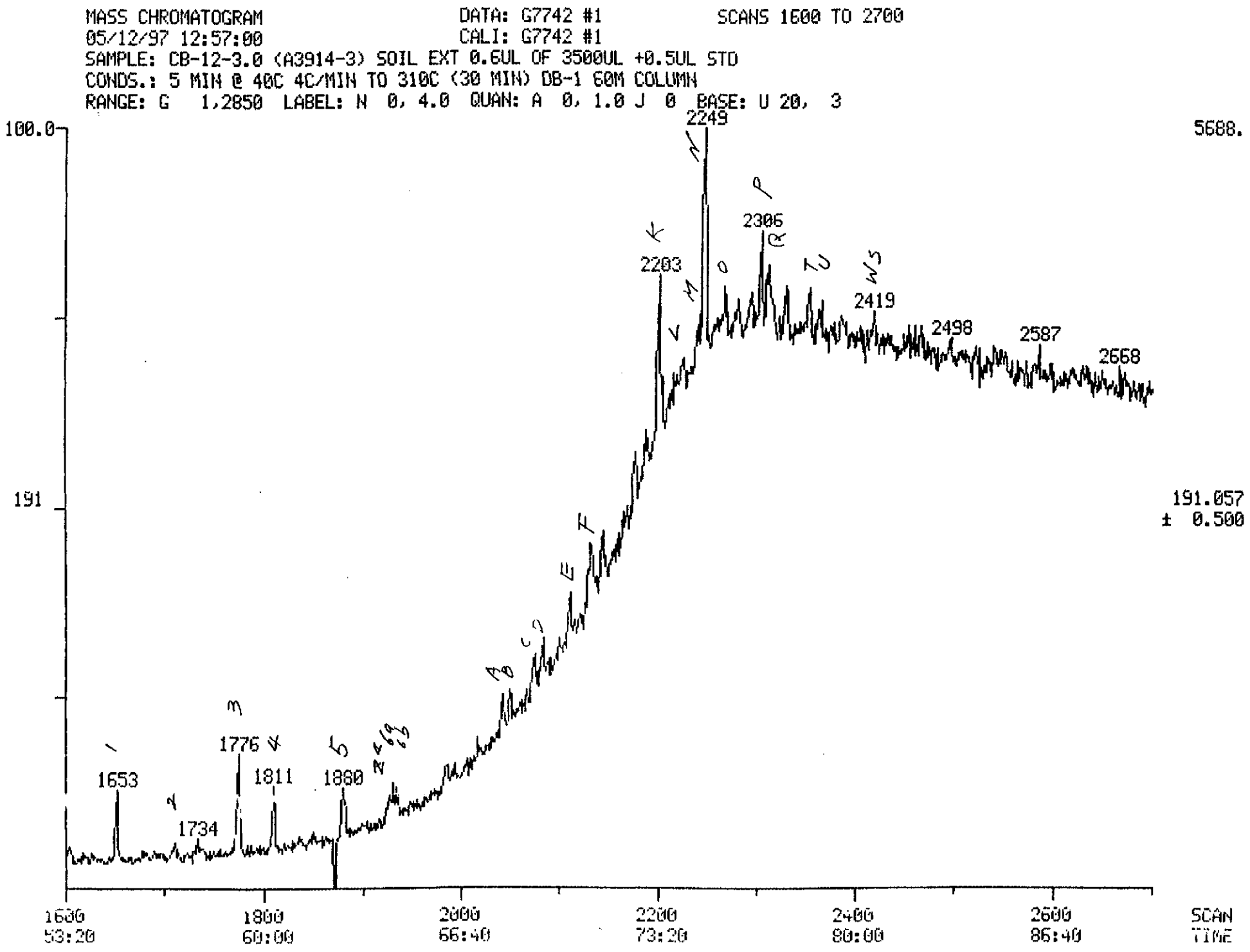
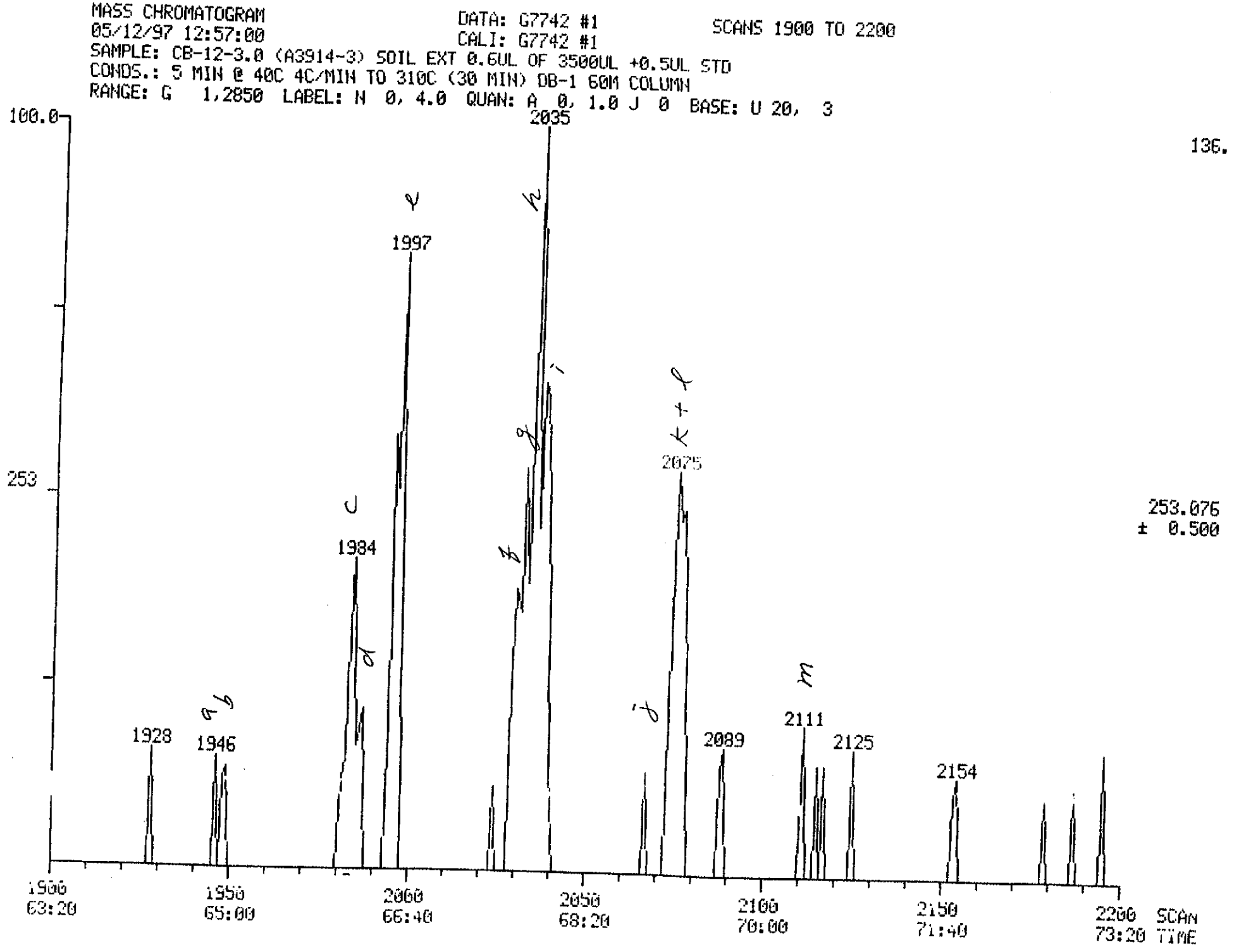

MASS CHROMATOGRAM
05/12/97 12:57:00
DATA: G7742 #1
CALI: G7742 #1
SCANS 1600 TO 2700
SAMPLE: CB-12-3.0 (A3914-3) SOIL EXT 0.6UL OF 3500UL +0.5UL STD
CONDS.: 5 MIN @ 40C 4C/MIN TO 310C (30 MIN) DB-1 60M COLUMN
RANGE: G 1.2850 LABEL: N 0, 4.0 QUAN: A 0, 1.0 J 0 BASE: U 20, 3
100.0
191
5688.
191.057
± 0.500
1653
1734
1776
1811
1880
2203
2249
2306
2419
2498
2587
2668
1600
53:20
1800
60:00
2000
66:40
2200
73:20
2400
80:00
2600
86:40
SCAN
TIME

Figure 9


MASS CHROMATOGRAM
05/12/97 12:57:00
DATA: G7742 #1
CALI: G7742 #1
SCANS 1900 TO 2200
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
100.0
253
136.
253.076
± 0.500
1928
1946
1984
1997
2035
2075
2089
2111
2125
2154
1900
63:20
1950
65:00
2000
66:40
2050
68:20
2100
70:00
2150
71:40
2200
73:20
SCAN
TIME

APPENDIX

CHAIN OF CUSTODY

H 5717

~~3131-1~~

CAMBRIA ENVIRONMENTAL TECHNOLOGY, INC.

CHAIN OF CUSTODY

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

Cambria Manager: DAVID ELIAS
Cambria Sampler: SAMPATH RANGARAJAN
Client: BECKER
Site Address: 1300 POWELL ST.
Project Number: 95-423-4

LAB: GLOBAL GEOCHEMISTRY

SAMPLE ID	DATE	TIME	MATRIX	# OF SAMPLES	ANALYSES: FULL SCALE MASS SPEC.	ANALYSES: HOLD PENDING INITIAL RESULTS								
CB-12-1.0	4/24/97		SOIL	1	~~X~~	X								ONCE INITIAL RESULTS ARE COMPLETE, WILL REQUEST ANALYSES
CB-7	4/25/97		H_2O	1 LITER		X								

STORED MECHANICS LAB

Relinquished by:	Relinquished by:	Relinquished by:	Relinquished by:
DAVID ELIAS	FED X		
Received by: FEDEX	Received by: R W Brewer / FAX Brewer	Received by:	Received by:
Time/Date: 4/28/97	Time/Date: 4-29-97	Time/Date:	Time/Date:

FED X WOULD NOT SIGN.

A 3714

LEGEND

SUBCONTRACT CHAIN OF CUSTODY RECORD

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

(707) 541-2313

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

Report To: Client Services Invoice To: Accounts Payable

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

LEGEND PO#: 98900197.00840
Additional Info:

REQUESTED TAT:
STANDARD ☐
RUSH ☐ due_____

CODE:_____
TEMPERATURE UPON RECEIPT:_____

Date	Time	SAMPLE DESCRIPTION	# and Type of Containers: Matrix	Grab	Comp	HCl	NaOH	HNO3	H2SO4	Other	ANALYSES: BOD	MBAS	BIOASSAY	SULFITE	REACCN	REACT SULFIDE	FORMALDEHYDE	
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:	DATE:	TIME:	RECEIVED BY:	RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:
Phil Trussell	5/5/97	1600					

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

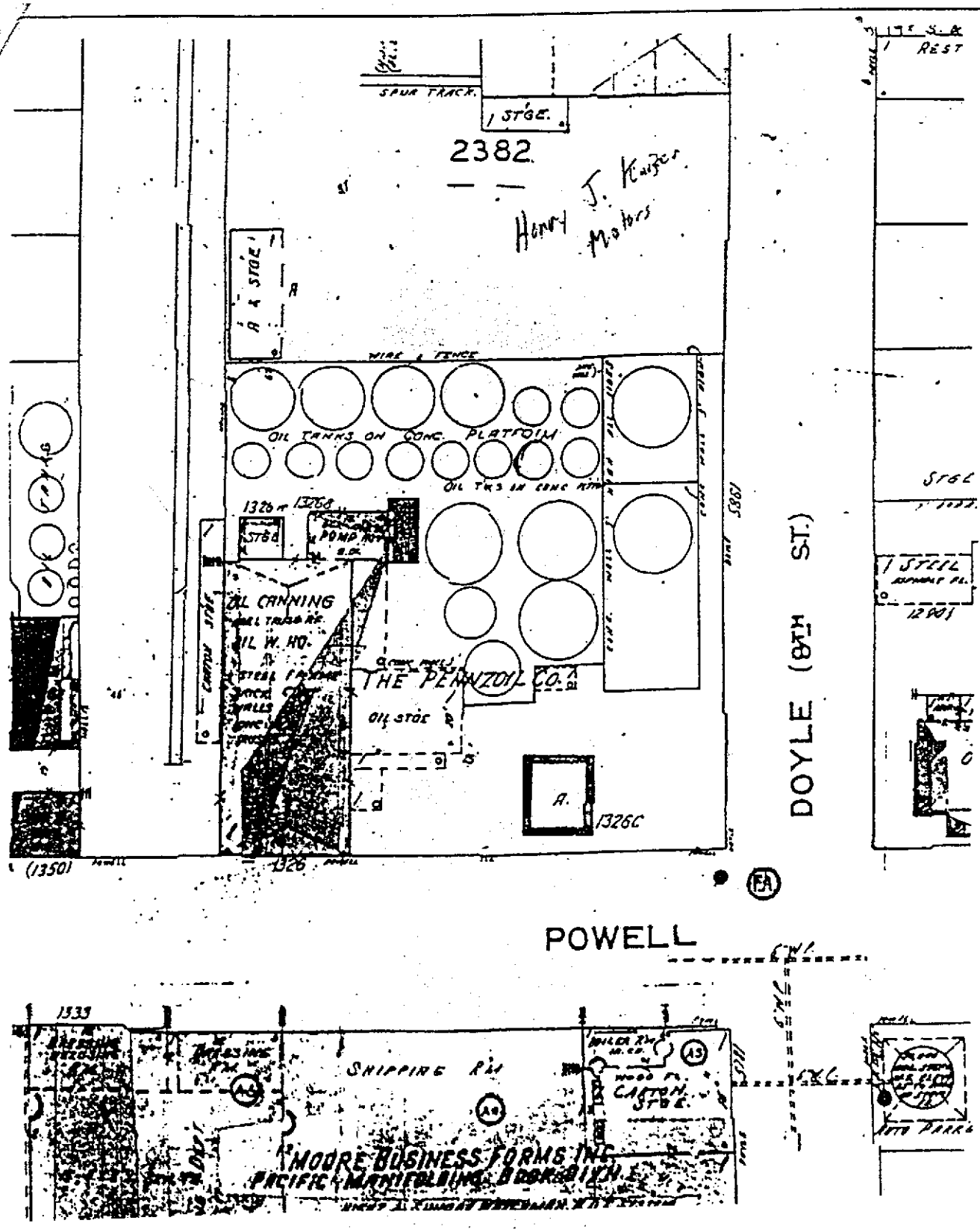
Instrument calibration control for TPH analysis

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



1951 SANBORN MAP
CONSTRUCTION SERVICES FACILITY
1300 POWELL STREET

EMERYVILLE, CALIFORNIA

LUSH GEOSCIENCES
FIGURE 3

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

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 permeablily.

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.