400109143
SW 102326

BISON ENVIRONMENTAL NORTHWEST, INC.
200 South 333rd Street • Northmark Bldg • Suite 120 • Federal Way, WA 98003 • 206/838-7261 • 206/927-2610

August 15, 1994

Mr. Dale Shuman
Bonneville, Viert, Morton, & McGoldrick
820 "A" Street, Suite 600
Tacoma, Washington 98401

RE: Phase 2 Studies
Floor Drain and Heating Oil UST Closure
Walker Chevrolet - Paint Booth
633 Division Avenue
Tacoma, WA
Project# 94481

Reference: Bison Environmental Northwest, Inc., August 1994. "Phase 1 Environmental Site Assessment", same site.

Dear Mr. Shuman:

In response to your recent request, Bison Environmental Northwest, Inc., is pleased to provide this report on closure of the floor drains and heating oil tank at the Walker Chevrolet site. Two floor drains, a cleanout access, and evidence of a heating oil UST were noted in Walker Chevrolet's paint booth during the referenced Phase 1 Site Assessment. Sediments were observed inside both of the floor drains, which had reportedly received water from washing the paint booth floors. The UST was an unregulated heating oil tank which had provided fuel for the building's boiler. This boiler is no longer in use, and the building now uses suspended gas heaters.

FLOOR DRAIN AND UST CLOSURE

As discussed in our Phase 1 report, both drains contained metal lids, and consisted of 2-foot diameter cylinders extending beneath the concrete floor. The south drain was roughly 4 feet deep, and contained a 1-foot layer of dry, grayish sediment. The north drain was roughly 2 1/2 feet deep, with approximately 1 1/2 feet of wet, brown sediment and a 6-inch layer of water on top. Sediment in the south drain exhibited a solvent-like odor. The cleanout access, which was square, and roughly 1 1/2 feet deep, contained a small quantity of wet, brown sediment.

On August 2, 1994, the drains, cleanout access, and UST were pumped out and cleaned, and the contents and rinse water disposed of, by Waste Disposal of Tacoma, Washington. The invoice for the disposal of this material is appended to this report. The drains, cleanout access, and UST were filled with concrete slurry by Fife Sand & Gravel on August 3, 1994.

The north drain appears to have been connected to the cleanout access, and a pipe ran out of the north drain to the southwest, toward the street. It is likely that this drain had been connected to the storm sewer system.

The south drain was constructed of concrete cinder blocks, and contained a second lid at the bottom which opened to the heating oil UST. This drain had apparently been installed to provide access to the tank, either for cleaning or adding waste oil to be burned. With the interior lid closed, the drain may have functioned as a dry well, allowing liquids to pass between the cinder blocks into the surrounding soil.

The UST is oriented with it's axis east to west and is roughly 4 1/2 feet in diameter. The top of the tank is approximately 4 feet below grade. Based on the volume of concrete required to fill the tank, it appears to be roughly 1,000 gallons in capacity.

A site plan showing the location of the drains and UST has been appended to this report.

SOIL SAMPLING

Samples of sediments in the north and south drains were collected by Henry Perrin of Bison Environmental Northwest, Inc., on July 30, 1994. The samples were collected using clean hand tools.

On August 3, 1994, Mr. Perrin returned to the site and drilled four borings beneath the slab in the paint booth to collect soil samples. The borings were drilled using a gasoline-powered portable auger at the locations shown on the site plan. Soil samples were collected at selected depths by driving a steel pipe into the boring. To prevent cross-contamination, the pipe was cleaned between samples, and the auger was cleaned between boring locations, using laboratory-grade detergent and distilled water. Samples were collected in accordance with EPA and WDOE protocol, and transported under chain-of custody to Spectra Laboratories, of Tacoma, Washington, for analysis.

Cuttings were returned to the borings after sampling, and the borings were filled with concrete.

Boring logs are presented below. Depth measurements should be considered accurate to the nearest 0.5 foot.

Boring 1

Date: 08-03-94
Location: West of South Drain and UST
No groundwater encountered

Depth (feet)	Soils	Comments
0-1	8" concrete slab, +/- 6" gravel fill	
1-5.5	Light brown, fine-grained sand, moist	Solvent-like odors and black staining, 3-5.5 feet
Auger refusal at 6 feet		Hard object or dense gravel at 6 feet

Boring 2

Date: 08-03-94
Location: Northwest of South Drain and UST
No groundwater encountered

Depth (feet)	Soils	Comments
0-1	8" concrete slab, +/- 6" gravel fill	
1-5.5	Light brown, fine-grained sand, moist	No odors or staining noted
Auger refusal at 6 feet		Hard object or dense gravel at 6 feet

Boring 3

Date: 08-03-94
Location: South of North Drain
No groundwater encountered

Depth (feet)	Soils	Comments
0-1	8" concrete slab, +/- 6" gravel fill	
1-3	Light brown, fine-grained sand with pieces of brick, moist	No odors or staining noted
Boring terminated at 3 feet		

Boring 4

Date: 08-03-94
Location: North of South Drain
No groundwater encountered

Depth (feet)	Soils	Comments
0-1	8" concrete slab, +/- 6" gravel fill	
1-3	Light brown, fine-grained sand, moist	Faint solvent-like odor noted 1-3 feet
Boring terminated at 3 feet		

LABORATORY RESULTS

Samples D1 and D2, which were collected from sediments in the north and south drains, were initially analyzed using the WTPH-HCID method. This method is a qualitative test designed to determine the hydrocarbon range of petroleum products in a sample.

Laboratory analysis indicated that sample D1, from the north drain, contained all three hydrocarbon ranges (gasoline, diesel, and heavy oils). Sample D2, from the south drain, contained gasoline and heavy oil range hydrocarbons. Based on discussions with the project laboratory these samples appeared to be highly contaminated, and since the sediment had already been accepted for disposal, quantitative hydrocarbon analysis was not conducted on these samples.

Samples D1 and D2 were also analyzed for total metals and volatile organic compounds (VOCs). Sample D1 contained concentrations of lead, cadmium, chromium, benzene, xylenes, chlorobenzene, dichlorobenzene, and tetrachloroethene, which exceeded cleanup levels specified in the Model Toxics Control Act (MTCA). This sample also contained detectable concentrations of several other organic solvents and metals which were lower than MTCA cleanup levels. The reported lead, cadmium, and chromium concentrations in sample D2 also exceeded MTCA cleanup levels. Detectable concentrations of barium and trace levels of three organic solvents, all below MTCA cleanup levels, were also reported in this sample. Please refer to the attached laboratory reports for the results of laboratory analysis of samples D1 and D2.

The results of laboratory analysis of soil samples collected from the test borings are summarized in the table below. The laboratory reports for these analyses have also been appended.

TABLE A:
LABORATORY RESULTS - TEST BORINGS

Sample No./ Location	Analysis	Analyte	Results	Cleanup Level
B1-5.5′	WTPH-418.1	TPH	8,000 ppm	200 ppm
	Total Metals	Barium	43.8 ppm	5,600 ppm*
		Cadmium	50.2 ppm	2 ppm
		Chromium	110 ppm	100 ppm
		Lead	2140 ppm	250 ppm
		As, Cd, SE, & Ag	ND	-
	EPA 8240	Ethylbenzene	2,200 ppb	20,000 ppb
		Isopropylbenzene	1,600 ppb	NA
		p-Isopropyltoluene	480 ppb	NA
		Tetrachloroethene	210 ppb	500 ppb
		Naphthalene	1,100 ppb	320,000 ppb*
		n-Propylbenzne	1,500 ppb	NA
		Toluene	85,000 ppb	40,000 ppb
		1,2,4 Trimethylbenzene	11,000 ppb	NA
		1,3,5 Trimethylbenzene	5,000 ppb	NA
		Total Xylenes	143,000 ppb	20,000 ppb
		Other VOCs		
B2-5.5′	WTPH-418.1	TPH	79 ppm	200 ppm
B3-2′	WTPH-418.1	TPH	96 ppm	200 ppm
	EPA 8240	Toluene	13 ppb	40,000 ppb
		Total Xylenes	5 ppb	20,000 ppb
		Other VOCs	ND	-
B4-3′	WTPH-418.1	TPH	480 ppm	200 ppm
	EPA 8240	Toluene	7 ppb	40,000 ppb
		Total Xylenes	6 ppb	20,000 ppb
		Other VOCs	ND	-

NOTES:

1) ppm indicates parts per million.
2) ppb indicates parts per billion.
3) TPH indicates total petroleum hydrocarbons. The 418.1 analysis is designed for heavy oils, but also reports lighter hydrocarbon fractions.
4) ND denotes none detected. Refer to laboratory reports for detection limits.
5) Unless indicated by asterix, cleanup levels are "Method A" values as specified in the Model Toxics Control Act (MTCA), WAC 173-340. Asterix indicates MTCA Method B value.
6) NA indicates a published MTCA cleanup level for this compound is not currently available.

CONCLUSIONS

The results of this study suggest that soils beneath the floor of the paint room contain concentrations of petroleum products, chromium, cadmium, lead, toluene, and xylenes which exceed "Method A" cleanup levels specified in the Model Toxics Control Act. The source of this contamination is most likely leakage of petroleum and paint products which had been disposed of in the two floor drains. The heating oil UST present in this area may also have contributed to this contamination. The results of this study do suggest some limitation to the physical extent of contamination in this area.

The floor drains and UST have been cleaned and sealed, with the contents disposed of. Since the contamination is located under the building, we do not recommend remedial action in this area at the present time. However, if the building is demolished in the future, the contaminated soil should be removed and properly treated or disposed of.

LIMITATIONS

This report has been prepared for the exclusive use of the client and their representatives for specific application to this site. The work for this project was conducted in a manner consistent with generally accepted environmental science practices for consultants acting under similar conditions in the area, and in accordance with the terms of the client's request. No other warranty is expressed or implied.

If new information on the site is developed during future environmental studies, Bison Environmental, Inc., should be allowed to review this information, to reevaluate the conclusions of this report, and to provide amendments as required.

We appreciate the opportunity to provide environmental consulting services on this project. Should you have any questions or if there is additional information that you require, please do not hesitate to contact us.

Sincerely,

BISON ENVIRONMENTAL NORTHWEST, INC.

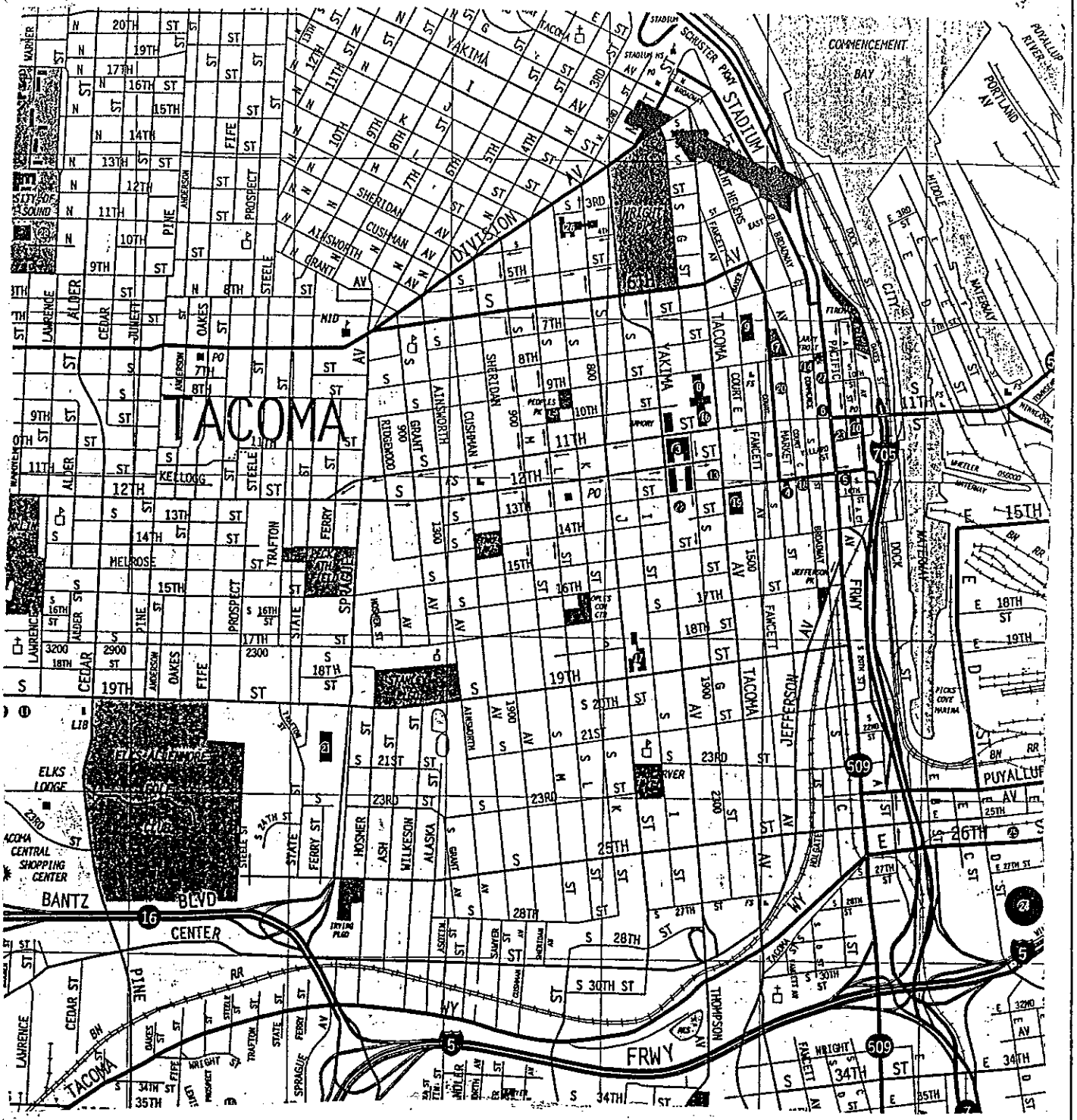
Bill Shuck

for Henry Perrin
Environmental Engineer
WDOE-registered UST Site Assessor

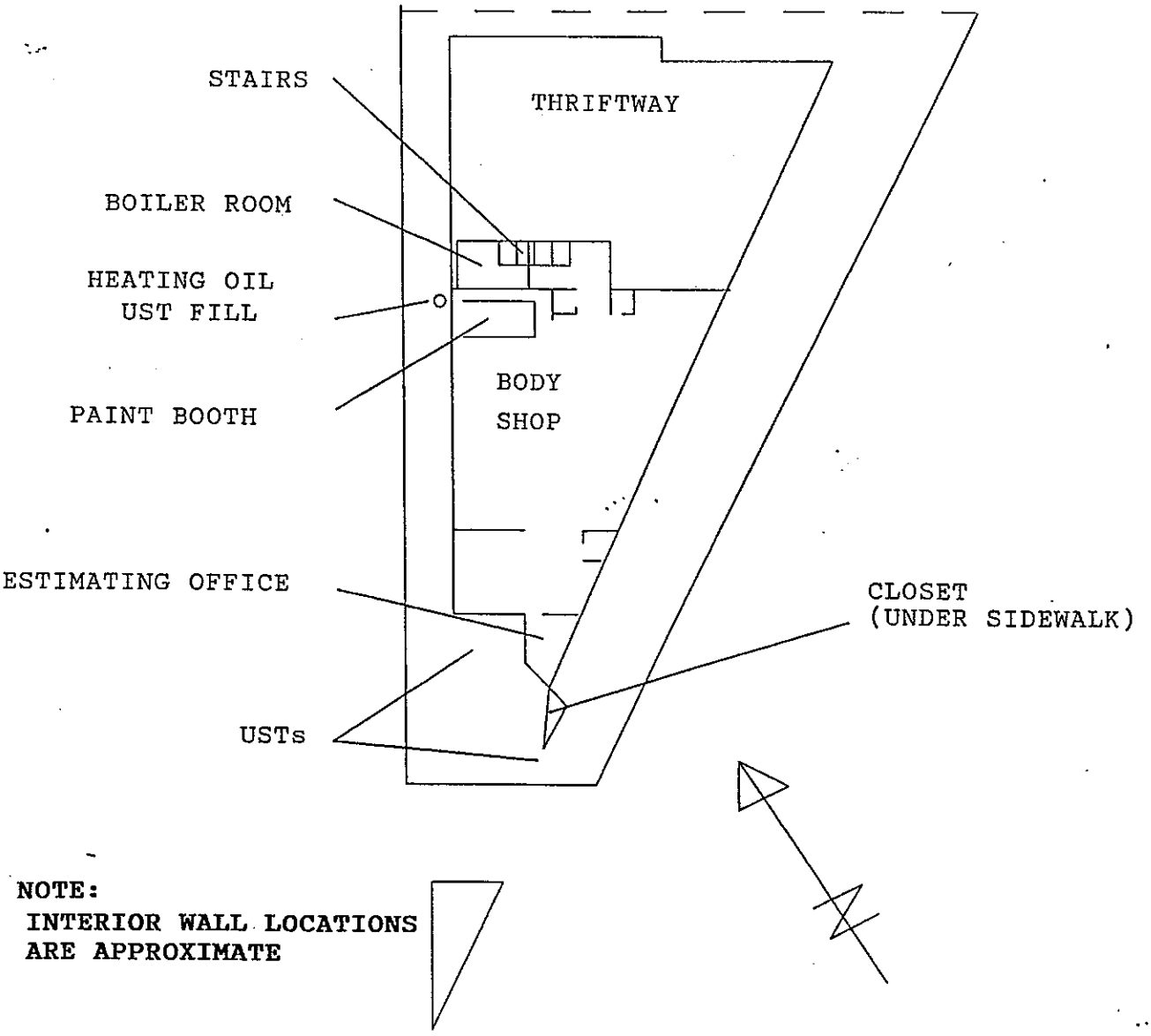
Bill Shuck

Bill Shuck
President

Attachments: Site Location Map
Site Plans (2)
Laboratory Reports (17)
Cleaning Documentation (1)



SITE LOCATION
BISON ENVIRONMENTAL NORTHWEST, INC.
PROJECT #94481 AUGUST 1994

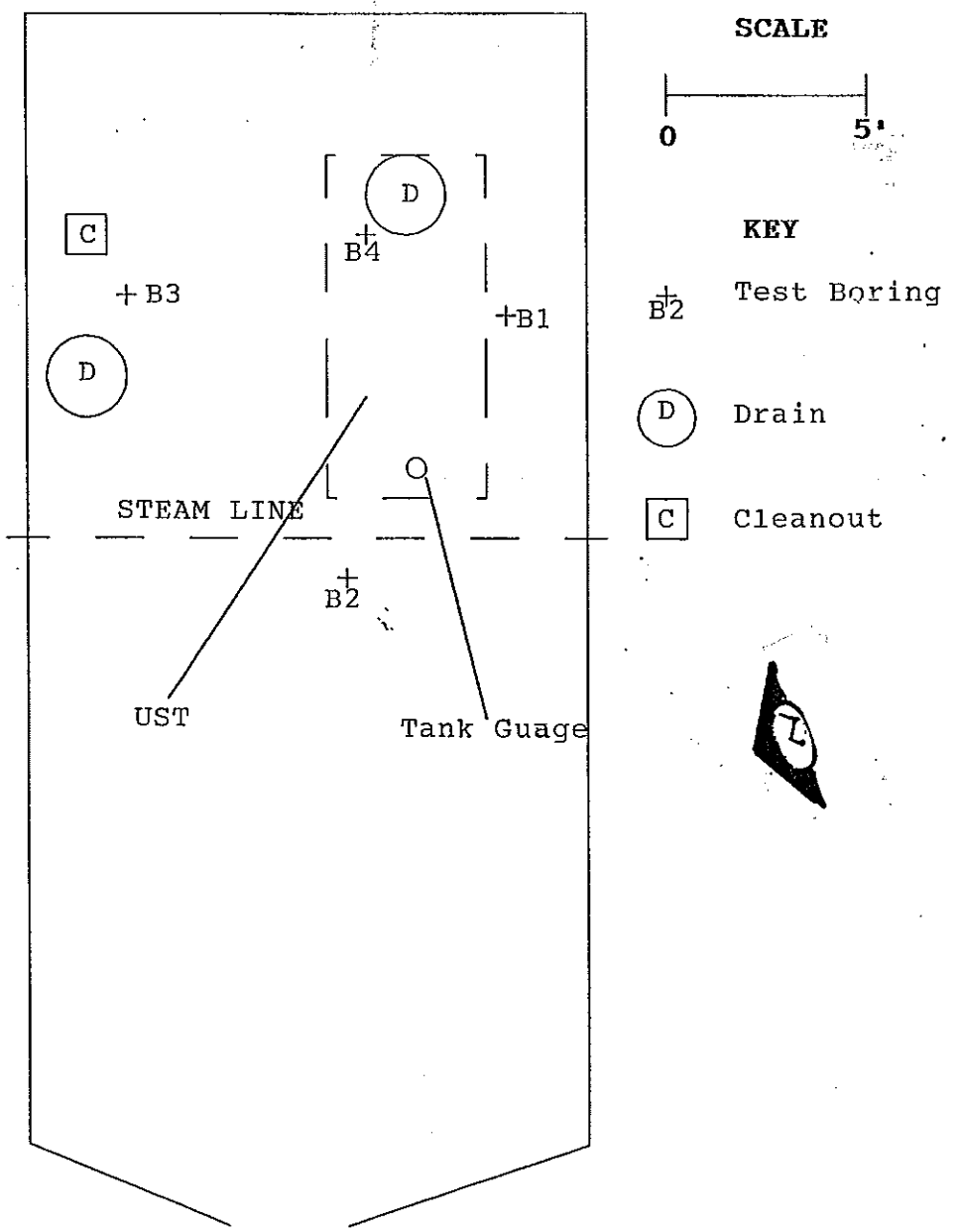


NOTE:
INTERIOR WALL LOCATIONS ARE APPROXIMATE

SCALE

0 50' 100'

SITE PLAN - LOWER FLOOR MAIN BUILDING
BISON ENVIRONMENTAL NORTHWEST, INC.
PROJECT# 94481 AUGUST 1994



SITE PLAN - PAINT BOOTH
BISON ENVIRONMENTAL NORTHWEST, INC.
PROJECT# 94481 AUGUST 1994

BISON ENVIRONMENTAL NORTHWEST, INC.

NORTHMARK BUILDING
200 SOUTH 333RD STREET, - SUITE 120
FEDERAL WAY, WASHINGTON 98003

OFFICE: 206/838-7261
FAX: 206/927-2610

CHAIN OF CUSTODY RECORD

Page 1 of 1

Project# 94481
Project Name Walker
Client
Results to Henry Perry

5408-00

Sample #	Location	Sample Description	Date	Time	Sample Type	Analysis Required
D1	N. Drain	Sediments	7/30	10:30	S	8240, RCRA Metals, TCLP 8270
D2	S. Drain	Sediments	7/30	10:40	S	8240, RCRA Metals, TCLP 8270

Sample Type: A=Air B=Bulk S-Soil W-Water Other-Describe

Special Instructions Bill to Bonneville, Vert, Mirken & McGoldrick 24-hour Rush

SIGNATURES: (Name, Company, Date and Time) Laboratory Name:

1. Relinquished by: BENW/ 8/1/94 8:30
   Received by: Marie Holt Spectrum 8-1-94 8:45
2. Relinquished by:
   Received by:

Delivered by: Hand _____ UPS _____ Airborne _____ Fed X _____ Other _____

SPECTRA Laboratories, Inc.

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

August 2, 1994

Bonneville, Viert, Morton & McGoldrick
P.O. Box 1533
Tacoma, WA 98401

Attn: Dale Schuman

Sample ID: D2
Project: Walker 94481
Sample Matrix: Sediment
Date Sampled: 7-30-94
Date Received: 8-1-94
Spectra Project: S408-003
Spectra #8710
RUSH

WTPH-HCID

Sample contains gasoline and heavier than diesel range hydrocarbons.

Total Metals, mg/Kg

Arsenic	(As)	<5
Barium	(Ba)	2,000
Cadmium	(Cd)	4.2
Chromium	(Cr)	927
Lead	(Pb)	918
Mercury	(Hg)	<3
Selenium	(Se)	<8
Silver	(Ag)	<0.7

Total Metals testing performed by EPA Method 6010

SPECTRA LABORATORIES, INC.

Steven G. Hibbs, Chemist

SPECTRA Laboratories, Inc.

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

August 2, 1994

Bonneville, Viert, Morton & McGoldrick
P.O. Box 1533
Tacoma, WA 98401

Attn: Dale Schuman

Sample ID: D1
Project: Walker 94481
Sample Matrix: Sediment
Date Sampled: 7-30-94
Spectra Project: S408-003

Date Received: 8-1-94
Date Analyzed: 8-1-94
Dilution: 100
< = less than
Spectra #8709 RUSH

VOLATILE ORGANIC COMPOUNDS — **EPA METHOD 8260**

Compound	CAS#	ug/Kg	Compound	CAS#	ug/Kg
Acetone	67-64-1	<5,000	trans-1,2-Dichloroethene	156-60-5	<500
Benzene	71-43-2	590	1,2-Dichloropropane	78-87-5	<500
Bromobenzene	108-86-1	<500	1,3-Dichloropropane	142-28-9	<500
Bromochloromethane	74-97-5	<500	2,2-Dichloropropane	594-20-7	<500
Bromodichloromethane	75-27-4	<500	1,1-Dichloropropene	563-58-6	<500
Bromoform	75-25-2	<500	Ethylbenzene	100-41-4	10,000
Bromomethane	74-83-9	<1,000	2-Hexanone (MBK)	591-78-6	<5,000
2-Butanone (MEK)	78-98-3	<5,000	Hexachlorobutadiene	87-68-3	<500
n-Butylbenzene	104-51-8	17,000	Isopropylbenzene	98-82-8	18,000
sec-Butylbenzene	135-98-8	14,000	p-Isopropyltoluene	99-87-6	15,000
tert-Butylbenzene	98-06-6	<500	Methylene chloride	75-09-2	<2,000
Carbon tetrachloride	56-23-5	<500	4-Methyl-2-pentanone (MIBK)	108-10-1	3,800J
Chlorobenzene	108-90-7	2,100	Naphthalene	91-20-3	930B
Chlorodibromomethane	124-48-1	<500	n-Propylbenzene	103-65-1	54,000
Chloroethane	75-00-3	<1,000	Styrene	100-42-5	<500
Chloroform	67-66-3	<500	1,1,1,2-Tetrachloroethane	630-20-6	<500
Chloromethane	74-87-3	<1,000	1,1,2,2-Tetrachloroethane	79-34-5	<500
2-Chlorotoluene	95-49-8	<500	Tetrachloroethene	127-18-4	2,100
4-Chlorotoluene	106-43-4	<500	Toluene	108-88-3	20,000
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	<5,000	1,2,3-Trichlorobenzene	87-61-6	<500
1,2-Dibromoethane (EDB)	106-93-4	<1,000	1,2,4-Trichlorobenzene	120-82-1	<500
Dibromomethane	74-95-3	<500	1,1,1-Trichloroethane	71-55-6	<500
1,2-Dichlorobenzene	95-50-1	103,000	1,1,2-Trichloroethane	79-00-5	<500
1,3-Dichlorobenzene	541-73-1	<500	Trichloroethene	79-01-6	<500
1,4-Dichlorobenzene	106-46-7	82,000	Trichlorofluoromethane	75-69-4	<500
Dichlorodifluoromethane	75-71-8	<1,000	1,2,3-Trichloropropane	96-18-4	<500
1,1-Dichloroethane	75-34-3	<500	1,2,4-Trimethylbenzene	95-63-6	175,000
1,2-Dichloroethane	107-06-2	<500	1,3,5-Trimethylbenzene	108-67-8	66,000
1,1-Dichloroethene	75-35-4	<500	Vinyl chloride	75-01-4	<1,000
cis-1,2-Dichloroethene	156-59-2	<500	Total xylenes	---	79,000

CAS# = Chemical Abstract Services Registry Number

VOA Surrogate Percent Recoveries

Dibromofluoromethane	98%
Toluene-d8	99%
4-Bromofluorobenzene	121% *

Sample contains a wide variety of compounds indicative of petroleum hydrocarbons

* Surrogates out of limits due to matrix effects

J = Estimated value, result is less than normal reporting limits.

R. J. Forrester

Richard J. Forrester, Manager, Organic Chem.

SPECTRA Laboratories, Inc.

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

August 2, 1994

Bonneville, Viert, Morton & McGoldrick
P.O. Box 1533
Tacoma, WA 98401

Attn: Dale Schuman

Sample ID: D2
Project: Walker 94481
Sample Matrix: Sediment
Date Sampled: 7-30-94
Spectra Project: S408-003

Date Received: 8-1-94
Date Analyzed: 8-2-94
Dilution: 5
< = less than
Spectra #8710 RUSH

VOLATILE ORGANIC COMPOUNDS **EPA METHOD 8260**

Compound	CAS#	ug/Kg	Compound	CAS#	ug/Kg
Acetone	67-64-1	<250	trans-1,2-Dichloroethene	156-60-5	<25
Benzene	71-43-2	<25	1,2-Dichloropropane	78-87-5	<25
Bromobenzene	108-86-1	<25	1,3-Dichloropropane	142-28-9	<25
Bromochloromethane	74-97-5	<25	2,2-Dichloropropane	594-20-7	<25
Bromodichloromethane	75-27-4	<25	1,1-Dichloropropene	563-58-6	<25
Bromoform	75-25-2	<25	Ethylbenzene	100-41-4	<25
Bromomethane	74-83-9	<50	2-Hexanone (MBK)	591-78-6	<250
2-Butanone (MEK)	78-98-3	<250	Hexachlorobutadiene	87-68-3	<25
n-Butylbenzene	104-51-8	<25	Isopropylbenzene	98-82-8	<25
sec-Butylbenzene	135-98-8	<25	p-Isopropyltoluene	99-87-6	<25
tert-Butylbenzene	98-06-6	<25	Methylene chloride	75-09-2	475
Carbon tetrachloride	56-23-5	<25	4-Methyl-2-pentanone (MIBK)	108-10-1	<250
Chlorobenzene	108-90-7	<25	Naphthalene	91-20-3	53B
Chlorodibromomethane	124-48-1	<25	n-Propylbenzene	103-65-1	<25
Chloroethane	75-00-3	<50	Styrene	100-42-5	<25
Chloroform	67-66-3	<25	1,1,1,2-Tetrachloroethane	630-20-6	<25
Chloromethane	74-87-3	<50	1,1,2,2-Tetrachloroethane	79-34-5	<25
2-Chlorotoluene	95-49-8	<25	Tetrachloroethene	127-18-4	<25
4-Chlorotoluene	106-43-4	<25	Toluene	108-88-3	<25
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	<250	1,2,3-Trichlorobenzene	87-61-6	<25
1,2-Dibromoethane (EDB)	106-93-4	<50	1,2,4-Trichlorobenzene	120-82-1	<25
Dibromomethane	74-95-3	<25	1,1,1-Trichloroethane	71-55-6	<25
1,2-Dichlorobenzene	95-50-1	<25	1,1,2-Trichloroethane	79-00-5	<25
1,3-Dichlorobenzene	541-73-1	<25	Trichloroethene	79-01-6	<25
1,4-Dichlorobenzene	106-46-7	<25	Trichlorofluoromethane	75-69-4	<25
Dichlorodifluoromethane	75-71-8	<50	1,2,3-Trichloropropane	96-18-4	<25
1,1-Dichloroethane	75-34-3	<25	1,2,4-Trimethylbenzene	95-63-6	72
1,2-Dichloroethane	107-06-2	<25	1,3,5-Trimethylbenzene	108-67-8	64
1,1-Dichloroethene	75-35-4	<25	Vinyl chloride	75-01-4	<50
cis-1,2-Dichloroethene	156-59-2	<25	Total xylenes	---	190

CAS# = Chemical Abstract Services Registry Number

VOA Surrogate Percent Recoveries

Dibromofluoromethane	105%
Toluene-d8	115%
4-Bromofluorobenzene	123% *

Sample contains a wide variety of compounds indicative of petroleum hydrocarbons

* Surrogates out of limits due to matrix effects

B = Also found in blank. The sample result should be reduced by the amount found in the blank.

Richard J. Forrester, Manager, Organic Chem.

SPECTRA Laboratories, Inc.

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

August 2, 1994

Bonneville, Viert, Morton, & McGoldrick
P.O. Box 1533
Tacoma, WA 98401

Attn: Dale Schuman

METHOD BLANK
Sample Matrix: Soil
Spectra Project: S408-003
Applies to Spectra #8709

Date Analyzed: 8-1-94
Dilution: 1
< = less than

VOLATILE ORGANIC COMPOUNDS — **EPA METHOD 8260**

Compound	CAS#	ug/Kg	Compound	CAS#	ug/Kg
Acetone	67-64-1	<50	trans-1,2-Dichloroethene	156-60-5	<5
Benzene	71-43-2	<5	1,2-Dichloropropane	78-87-5	<5
Bromobenzene	108-86-1	<5	1,3-Dichloropropane	142-28-9	<5
Bromochloromethane	74-97-5	<5	2,2-Dichloropropane	594-20-7	<5
Bromodichloromethane	75-27-4	<5	1,1-Dichloropropene	563-58-6	<5
Bromoform	75-25-2	<5	Ethylbenzene	100-41-4	<5
Bromomethane	74-83-9	<10	2-Hexanone (MBK)	591-78-6	<50
2-Butanone (MEK)	78-98-3	<50	Hexachlorobutadiene	87-68-3	<5
n-Butylbenzene	104-51-8	<5	Isopropylbenzene	98-82-8	<5
sec-Butylbenzene	135-98-8	<5	p-Isopropyltoluene	99-87-6	<5
tert-Butylbenzene	98-06-6	<5	Methylene chloride	75-09-2	<20
Carbon tetrachloride	56-23-5	<5	4-Methyl-2-pentanone (MIBK)	108-10-1	<50
Chlorobenzene	108-90-7	<5	Naphthalene	91-20-3	<5
Chlorodibromomethane	124-48-1	<5	n-Propylbenzene	103-65-1	<5
Chloroethane	75-00-3	<10	Styrene	100-42-5	<5
Chloroform	67-66-3	<5	1,1,1,2-Tetrachloroethane	630-20-6	<5
Chloromethane	74-87-3	<10	1,1,2,2-Tetrachloroethane	79-34-5	<5
2-Chlorotoluene	95-49-8	<5	Tetrachloroethene	127-18-4	<5
4-Chlorotoluene	106-43-4	<5	Toluene	108-88-3	<5
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	<50	1,2,3-Trichlorobenzene	87-61-6	<5
1,2-Dibromoethane (EDB)	106-93-4	<10	1,2,4-Trichlorobenzene	120-82-1	<5
Dibromomethane	74-95-3	<5	1,1,1-Trichloroethane	71-55-6	<5
1,2-Dichlorobenzene	95-50-1	<5	1,1,2-Trichloroethane	79-00-5	<5
1,3-Dichlorobenzene	541-73-1	<5	Trichloroethene	79-01-6	<5
1,4-Dichlorobenzene	106-46-7	<5	Trichlorofluoromethane	75-69-4	<5
Dichlorodifluoromethane	75-71-8	<10	1,2,3-Trichloropropane	96-18-4	<5
1,1-Dichloroethane	75-34-3	<5	1,2,4-Trimethylbenzene	95-63-6	<5
1,2-Dichloroethane	107-06-2	<5	1,3,5-Trimethylbenzene	108-67-8	<5
1,1-Dichloroethene	75-35-4	<5	Vinyl chloride	75-01-4	<10
cis-1,2-Dichloroethene	156-59-2	<5	Total xylenes	---	<5

CAS# = Chemical Abstract Services Registry Number

VOA Surrogate Percent Recoveries

Dibromofluoromethane	100%
Toluene-d8	96%
4-Bromofluorobenzene	97%

Richard J. Forrester
Manager, Organic Chemistry

SPECTRA Laboratories, Inc.

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

August 2, 1994

Bonneville, Viert, Morton, & McGoldrick
P.O. Box 1533
Tacoma, WA 98401

Attn: Dale Schuman

METHOD BLANK
Sample Matrix: Soil
Spectra Project: S408-003
Applies to Spectra #8710

Date Analyzed: 8-2-94
Dilution: 1
< = less than

VOLATILE ORGANIC COMPOUNDS — **EPA METHOD 8260**

Compound	CAS#	ug/Kg	Compound	CAS#	ug/Kg
Acetone	67-64-1	<50	trans-1,2-Dichloroethene	156-60-5	<5
Benzene	71-43-2	<5	1,2-Dichloropropane	78-87-5	<5
Bromobenzene	108-86-1	<5	1,3-Dichloropropane	142-28-9	<5
Bromochloromethane	74-97-5	<5	2,2-Dichloropropane	594-20-7	<5
Bromodichloromethane	75-27-4	<5	1,1-Dichloropropene	563-58-6	<5
Bromoform	75-25-2	<5	Ethylbenzene	100-41-4	<5
Bromomethane	74-83-9	<10	2-Hexanone (MBK)	591-78-6	<50
2-Butanone (MEK)	78-98-3	<50	Hexachlorobutadiene	87-68-3	<5
n-Butylbenzene	104-51-8	<5	Isopropylbenzene	98-82-8	<5
sec-Butylbenzene	135-98-8	<5	p-Isopropyltoluene	99-87-6	<5
tert-Butylbenzene	98-06-6	<5	Methylene chloride	75-09-2	<20
Carbon tetrachloride	56-23-5	<5	4-Methyl-2-pentanone (MIBK)	108-10-1	<50
Chlorobenzene	108-90-7	<5	Naphthalene	91-20-3	10
Chlorodibromomethane	124-48-1	<5	n-Propylbenzene	103-65-1	<5
Chloroethane	75-00-3	<10	Styrene	100-42-5	<5
Chloroform	67-66-3	<5	1,1,1,2-Tetrachloroethane	630-20-6	<5
Chloromethane	74-87-3	<10	1,1,2,2-Tetrachloroethane	79-34-5	<5
2-Chlorotoluene	95-49-8	<5	Tetrachloroethene	127-18-4	<5
4-Chlorotoluene	106-43-4	<5	Toluene	108-88-3	<5
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	<50	1,2,3-Trichlorobenzene	87-61-6	<5
1,2-Dibromoethane (EDB)	106-93-4	<10	1,2,4-Trichlorobenzene	120-82-1	<5
Dibromomethane	74-95-3	<5	1,1,1-Trichloroethane	71-55-6	<5
1,2-Dichlorobenzene	95-50-1	<5	1,1,2-Trichloroethane	79-00-5	<5
1,3-Dichlorobenzene	541-73-1	<5	Trichloroethene	79-01-6	<5
1,4-Dichlorobenzene	106-46-7	<5	Trichlorofluoromethane	75-69-4	<5
Dichlorodifluoromethane	75-71-8	<10	1,2,3-Trichloropropane	96-18-4	<5
1,1-Dichloroethane	75-34-3	<5	1,2,4-Trimethylbenzene	95-63-6	<5
1,2-Dichloroethane	107-06-2	<5	1,3,5-Trimethylbenzene	108-67-8	<5
1,1-Dichloroethene	75-35-4	<5	Vinyl chloride	75-01-4	<10
cis-1,2-Dichloroethene	156-59-2	<5	Total xylenes	---	<5

CAS# = Chemical Abstract Services Registry Number

VOA Surrogate Percent Recoveries

Dibromofluoromethane	104%
Toluene-d8	104%
4-Bromofluorobenzene	99%

Richard J. Forrester
Manager, Organic Chemistry

SPECTRA Laboratories, Inc.

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

August 2, 1994

Bonneville, Viert, Morton, & McGoldrick
P.O. Box 1533
Tacoma, WA 98401

Attn: Dale Schuman

Sample Matrix: Soil
EPA Method: 8260
Sample Spiked: Method Blank
Date Analyzed: 7-25-94
Units: ug/Kg
Spectra Project: S408-003
Applies to Spectra #'s
8709 and 8710

GCMS VOLATILE ORGANIC ANALYSIS
QUALITY CONTROL RESULTS

Compound	Sample Result	Spike Amount Added	Spike Amount Found	% Recovery	Dup. Spike Amount Found	% Recovery	RPD
1,1-Dichloroethene	<5	50.0	41.7	83	38.3	77	8
Trichloroethene	<5	50.0	43.3	87	39.1	78	10
Benzene	<5	50.0	50.5	101	45.6	91	10
Toluene	4.6	50.0	52.4	96	46.3	83	14
Chlorobenzene	<5	50.0	46.6	93	40.5	81	14

SPECTRA LABORATORIES, INC.

Richard J. Forrester
Manager, Organic Chemistry

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August 2, 1994

Bonneville, Viert, Morton & McGoldrick
P.O. Box 1533
Tacoma, WA 98401

Attn: Dale Schuman

METHOD BLANK
Date Analyzed: 8-2-94
Spectra Project: S408-003
Applies to Spectra #'s
8709 and 8710

Total Metals, mg/Kg

Arsenic	(As)	<5
Barium	(Ba)	<0.2
Cadmium	(Cd)	<0.3
Chromium	(Cr)	<0.7
Lead	(Pb)	<4
Mercury	(Hg)	<3
Selenium	(Se)	<8
Silver	(Ag)	<0.7

Total Metals testing performed by EPA Method 6010

SPECTRA LABORATORIES, INC.

Steven G. Hibbs, Chemist

BISON Environmental Northwest, Inc.
Northmark Building
200 South 333rd Street, - Suite 120
Federal Way, Washington 98003
Office: 206/838-7261
Fax: 206/927-2610

CHAIN OF CUSTODY RECORD

Page 1 of 1

Project# [illegible]
Project Name [illegible]
Client "
Results to [illegible]

Sample #	Location	Sample Description	Date	Time	Sample Type	Analysis Required
B1-5.5'		3408-037-8992	5/3	3:30	S	418.1, 8240
B2-4'		8993	↓	4:05	↓	Hold
B2-5.5'		8994	↓	4:3[illegible]	↓	418.1
B3-2'		8995	↓	5:00	↓	418.1, 8240
B3-3'		8996	↓	5:15	↓	Hold
B4-2'		8997	↓	5:55	↓	Hold
B4-3'		8998	↓	6:15	↓	418.1, 8240

Sample Type: A=Air B=Bulk S-Soil W-Water Other-Describe

Special Instructions Bill to Bornoville, Vost, Mortar, At Mc Goldrick 24-hr Rush

SIGNATURES: (Name, Company, Date and Time) Laboratory Name: Specky

1. Relinquished by: BENW/ [signature] 3/4/94 11:20 2. Relinquished by: ______

Received by: [signature] 3-4-94 11:20 Received by: ______

Delivered by: Hand ______ UPS ______ Airborne ______ Fed X ______ Other ______

SPECTRA Laboratories, Inc.

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

August 8, 1994

Bonneville, Viert, Morton & McGoldrick
P.O. Box 1533
Tacoma, WA 98401

Attn: Dale Schuman

Sample ID: B-1-5.5'
Project: Walker
Sample Matrix: Soil
Date Sampled: 8-3-94
Date Received: 8-4-94
Spectra Project: S408-037
Spectra #8992
RUSH

Total Metals, mg/Kg

Arsenic	(As)	<5
Barium	(Ba)	43.8
Cadmium	(Cd)	<0.3
Chromium	(Cr)	18.6
Lead	(Pb)	25
Mercury	(Hg)	<3
Selenium	(Se)	<8
Silver	(Ag)	<0.7

Total Metals testing performed by EPA Method 6010

SPECTRA LABORATORIES, INC.

Steven G. Hibbs, Chemist

SPECTRA Laboratories, Inc.

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

August 8, 1994

Bonneville, Viert, Morton, & McGoldrick
P.O. Box 1533
Tacoma, WA 98401

Attn: Dale Schuman

Project: Walker
Sample Matrix: Soil
Date Sampled: 8-3-94
Date Received: 8-4-94
Spectra Project: S408-037
RUSH

Spectra #	ID	Total Petroleum Hydrocarbons, mg/Kg
8992	B-1-5.5'	8,000
8994	B-2-5.5'	79
8995	B3-2'	96
8998	B4-3'	480

Total Petroleum Hydrocarbons testing performed by WTPH-418.1 Modified

SPECTRA LABORATORIES, INC.

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August 8, 1994

Bonneville, Viert, Morton, & McGoldrick
P.O. Box 1533
Tacoma, WA 98401

Attn: Dale Schuman

Sample ID: B-1-5.5'
Project: Walker
Sample Matrix: Soil
Date Sampled: 8-3-94
Spectra Project: S408-037

Date Received: 8-4-94
Date Analyzed: 8-4-94
Dilution: 45
< = less than
Spectra #8992 RUSH

VOLATILE ORGANIC COMPOUNDS — **EPA METHOD 8260**

Compound	CAS#	ug/Kg	Compound	CAS#	ug/Kg
Acetone	67-64-1	<2,300	trans-1,2-Dichloroethene	156-60-5	<230
Benzene	71-43-2	<230	1,2-Dichloropropane	78-87-5	<230
Bromobenzene	108-86-1	<230	1,3-Dichloropropane	142-28-9	<230
Bromochloromethane	74-97-5	<230	2,2-Dichloropropane	594-20-7	<230
Bromodichloromethane	75-27-4	<230	1,1-Dichloropropene	563-58-6	<230
Bromoform	75-25-2	<230	Ethylbenzene	100-41-4	2,200
Bromomethane	74-83-9	<460	2-Hexanone (MBK)	591-78-6	<2,300
2-Butanone (MEK)	78-98-3	<2,300	Hexachlorobutadiene	87-68-3	<230
n-Butylbenzene	104-51-8	<230	Isopropylbenzene	98-82-8	1,600
sec-Butylbenzene	135-98-8	450	p-Isopropyltoluene	99-87-6	480
tert-Butylbenzene	98-06-6	<230	Methylene chloride	75-09-2	<920
Carbon tetrachloride	56-23-5	<230	4-Methyl-2-pentanone (MIBK)	108-10-1	<2,300
Chlorobenzene	108-90-7	<230	Naphthalene	91-20-3	1,100
Chlorodibromomethane	124-48-1	<230	n-Propylbenzene	103-65-1	1,500
Chloroethane	75-00-3	<460	Styrene	100-42-5	<230
Chloroform	67-66-3	<230	1,1,1,2-Tetrachloroethane	630-20-6	<230
Chloromethane	74-87-3	<460	1,1,2,2-Tetrachloroethane	79-34-5	<230
2-Chlorotoluene	95-49-8	<230	Tetrachloroethene	127-18-4	210J
4-Chlorotoluene	106-43-4	<230	Toluene	108-88-3	85,000
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	<2,300	1,2,3-Trichlorobenzene	87-61-6	<230
1,2-Dibromoethane (EDB)	106-93-4	<460	1,2,4-Trichlorobenzene	120-82-1	<230
Dibromomethane	74-95-3	<230	1,1,1-Trichloroethane	71-55-6	<230
1,2-Dichlorobenzene	95-50-1	<230	1,1,2-Trichloroethane	79-00-5	<230
1,3-Dichlorobenzene	541-73-1	<230	Trichloroethene	79-01-6	<230
1,4-Dichlorobenzene	106-46-7	<230	Trichlorofluoromethane	75-69-4	<230
Dichlorodifluoromethane	75-71-8	<460	1,2,3-Trichloropropane	96-18-4	<230
1,1-Dichloroethane	75-34-3	<230	1,2,4-Trimethylbenzene	95-63-6	11,000
1,2-Dichloroethane	107-06-2	<230	1,3,5-Trimethylbenzene	108-67-8	5,000
1,1-Dichloroethene	75-35-4	<230	Vinyl chloride	75-01-4	<460
cis-1,2-Dichloroethene	156-59-2	<230	Total xylenes	---	143,000

CAS# = Chemical Abstract Services Registry Number

VOA Surrogate Percent Recoveries

Dibromofluoromethane	92%
Toluene-d8	107%
4-Bromofluorobenzene	107%

Sample contains a wide variety of compounds indicative of petroleum and aromatic hydrocarbons.
J = Estimated value, result is less than normal reporting limits.

Richard J. Forrester
Manager, Organic Chemistry

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2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

August 8, 1994

Bonneville, Viert, Morton, & McGoldrick
P.O. Box 1533
Tacoma, WA 98401

Attn: Dale Schuman

Sample ID: B3-2'
Project: Walker
Sample Matrix: Soil
Date Sampled: 8-3-94
Spectra Project: S408-037

Date Received: 8-4-94
Date Analyzed: 8-4-94
Dilution: 1
< = less than
Spectra #8995 RUSH

VOLATILE ORGANIC COMPOUNDS — **EPA METHOD 8260**

Compound	CAS#	ug/Kg	Compound	CAS#	ug/Kg
Acetone	67-64-1	<50	trans-1,2-Dichloroethene	156-60-5	<5
Benzene	71-43-2	<5	1,2-Dichloropropane	78-87-5	<5
Bromobenzene	108-86-1	<5	1,3-Dichloropropane	142-28-9	<5
Bromochloromethane	74-97-5	<5	2,2-Dichloropropane	594-20-7	<5
Bromodichloromethane	75-27-4	<5	1,1-Dichloropropene	563-58-6	<5
Bromoform	75-25-2	<5	Ethylbenzene	100-41-4	<5
Bromomethane	74-83-9	<10	2-Hexanone (MBK)	591-78-6	<50
2-Butanone (MEK)	78-98-3	<50	Hexachlorobutadiene	87-68-3	<5
n-Butylbenzene	104-51-8	<5	Isopropylbenzene	98-82-8	<5
sec-Butylbenzene	135-98-8	<5	p-Isopropyltoluene	99-87-6	<5
tert-Butylbenzene	98-06-6	<5	Methylene chloride	75-09-2	<20
Carbon tetrachloride	56-23-5	<5	4-Methyl-2-pentanone (MIBK)	108-10-1	<50
Chlorobenzene	108-90-7	<5	Naphthalene	91-20-3	<5
Chlorodibromomethane	124-48-1	<5	n-Propylbenzene	103-65-1	<5
Chloroethane	75-00-3	<10	Styrene	100-42-5	<5
Chloroform	67-66-3	<5	1,1,1,2-Tetrachloroethane	630-20-6	<5
Chloromethane	74-87-3	<10	1,1,2,2-Tetrachloroethane	79-34-5	<5
2-Chlorotoluene	95-49-8	<5	Tetrachloroethene	127-18-4	<5
4-Chlorotoluene	106-43-4	<5	Toluene	108-88-3	13
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	<50	1,2,3-Trichlorobenzene	87-61-6	<5
1,2-Dibromoethane (EDB)	106-93-4	<10	1,2,4-Trichlorobenzene	120-82-1	<5
Dibromomethane	74-95-3	<5	1,1,1-Trichloroethane	71-55-6	<5
1,2-Dichlorobenzene	95-50-1	<5	1,1,2-Trichloroethane	79-00-5	<5
1,3-Dichlorobenzene	541-73-1	<5	Trichloroethene	79-01-6	<5
1,4-Dichlorobenzene	106-46-7	<5	Trichlorofluoromethane	75-69-4	<5
Dichlorodifluoromethane	75-71-8	<10	1,2,3-Trichloropropane	96-18-4	<5
1,1-Dichloroethane	75-34-3	<5	1,2,4-Trimethylbenzene	95-63-6	<5
1,2-Dichloroethane	107-06-2	<5	1,3,5-Trimethylbenzene	108-67-8	<5
1,1-Dichloroethene	75-35-4	<5	Vinyl chloride	75-01-4	<10
cis-1,2-Dichloroethene	156-59-2	<5	Total xylenes	---	5J

CAS# = Chemical Abstract Services Registry Number

VOA Surrogate Percent Recoveries

Dibromofluoromethane	99%
Toluene-d8	102%
4-Bromofluorobenzene	101%

Sample contains a wide variety of compounds indicative of petroleum and aromatic hydrocarbons.
J = Estimated value, result is less than normal reporting limits.

Richard J. Forrester
Manager, Organic Chemistry

SPECTRA Laboratories, Inc.

2221 Ross Way • Tacoma, WA 98421 • (206) 272-4850

August 8, 1994

Bonneville, Vicrt, Morton, & McGoldrick
P.O. Box 1533
Tacoma, WA 98401

Attn: Dale Schuman

Sample ID: B4-3'
Project: Walker
Sample Matrix: Soil
Date Sampled: 8-3-94
Spectra Project: S408-037

Date Received: 8-4-94
Date Analyzed: 8-4-94
Dilution: 1
< = less than
Spectra #8998 RUSH

VOLATILE ORGANIC COMPOUNDS — **EPA METHOD 8260**

Compound	CAS#	ug/Kg	Compound	CAS#	ug/Kg
Acetone	67-64-1	<50	trans-1,2-Dichloroethene	156-60-5	<5
Benzene	71-43-2	<5	1,2-Dichloropropane	78-87-5	<5
Bromobenzene	108-86-1	<5	1,3-Dichloropropane	142-28-9	<5
Bromochloromethane	74-97-5	<5	2,2-Dichloropropane	594-20-7	<5
Bromodichloromethane	75-27-4	<5	1,1-Dichloropropene	563-58-6	<5
Bromoform	75-25-2	<5	Ethylbenzene	100-41-4	<5
Bromomethane	74-83-9	<10	2-Hexanone (MBK)	591-78-6	<50
2-Butanone (MEK)	78-98-3	<50	Hexachlorobutadiene	87-68-3	<5
n-Butylbenzene	104-51-8	<5	Isopropylbenzene	98-82-8	<5
sec-Butylbenzene	135-98-8	<5	p-Isopropyltoluene	99-87-6	<5
tert-Butylbenzene	98-06-6	<5	Methylene chloride	75-09-2	<20
Carbon tetrachloride	56-23-5	<5	4-Methyl-2-pentanone (MIBK)	108-10-1	<50
Chlorobenzene	108-90-7	<5	Naphthalene	91-20-3	<5
Chlorodibromomethane	124-48-1	<5	n-Propylbenzene	103-65-1	<5
Chloroethane	75-00-3	<10	Styrene	100-42-5	<5
Chloroform	67-66-3	<5	1,1,1,2-Tetrachloroethane	630-20-6	<5
Chloromethane	74-87-3	<10	1,1,2,2-Tetrachloroethane	79-34-5	<5
2-Chlorotoluene	95-49-8	<5	Tetrachloroethene	127-18-4	<5
4-Chlorotoluene	106-43-4	<5	Toluene	108-88-3	7
1,2-Dibromo-3-Chloropropane (DBCP)	96-12-8	<50	1,2,3-Trichlorobenzene	87-61-6	<5
1,2-Dibromoethane (EDB)	106-93-4	<10	1,2,4-Trichlorobenzene	120-82-1	<5
Dibromomethane	74-95-3	<5	1,1,1-Trichloroethane	71-55-6	<5
1,2-Dichlorobenzene	95-50-1	<5	1,1,2-Trichloroethane	79-00-5	<5
1,3-Dichlorobenzene	541-73-1	<5	Trichloroethene	79-01-6	<5
1,4-Dichlorobenzene	106-46-7	<5	Trichlorofluoromethane	75-69-4	<5
Dichlorodifluoromethane	75-71-8	<10	1,2,3-Trichloropropane	96-18-4	<5
1,1-Dichloroethane	75-34-3	<5	1,2,4-Trimethylbenzene	95-63-6	<5
1,2-Dichloroethane	107-06-2	<5	1,3,5-Trimethylbenzene	108-67-8	<5
1,1-Dichloroethene	75-35-4	<5	Vinyl chloride	75-01-4	<10
cis-1,2-Dichloroethene	156-59-2	<5	Total xylenes	---	6

CAS# = Chemical Abstract Services Registry Number
VOA Surrogate Percent Recoveries

Dibromofluoromethane	105%
Toluene-d8	96%
4-Bromofluorobenzene	132%*

Sample contains a wide variety of compounds indicative of petroleum and aromatic hydrocarbons.
* Surrogates out of limits due to matrix effects.

Richard J. Forrester
Manager, Organic Chemistry

P.O. Box 44002
TACOMA, WASHINGTON 98444
800-582-2343

CUSTOMER'S ORDER NO. | PHONE | DATE 8-2-94

NAME Fife Sand & Gravel

ADDRESS WALKER Paint Booth Sump & Tank

QTY.	DESCRIPTION	PRICE	AMOUNT
	WASTE ANTIFREEZE WT02		
132 gal	WASTE SLUDGE UNREGULATED	4.50	594.00
	WASTE WATER UNREGULATED		
	WASTE LUBE OIL UNREGULATED		
300 gal	Blending Fuel	.50	150.00
2 hr	TK tm	65.00	130.00
	Ron		
	Net 30 days. A finance charge of 1½% per month will be charged for all unpaid balances.	TAX	
RECEIVED BY		TOTAL	874.00

75748

All claims and returned goods MUST be accompanied by this bill.

Thank You