

November 30, 1998
Project BV97011B

Mr. Ronald W. Timm – VCP Site Manager
Washington State Department of Ecology - NWRO
Toxics Cleanup Section
3190 160th Avenue SE
Bellevue, Washington 98008-5452

RECEIVED
DEC 01 1998
DEPT OF ECOLOGY

CORPORATE OFFICE
911 Fifth Avenue, Suite 100
Kirkland, Washington 98033
(425) 827-7701
FAX (425) 827-5424

Subject: Summary of Preliminary Results – Environmental Site Investigation Activities
Former Chuck Olson Chevrolet Facility
17545 Aurora North
Shoreline, Washington

Dear Mr. Timm:

Please find attached the preliminary results of two phases of site investigation activities conducted at the Former Chuck Olson Chevrolet Facility. The initial investigation phase, including installation of 12 soil borings, was completed in May 1997, and was documented in a report by Associated Earth Sciences, Inc. (AESI) dated July 27, 1997. This report was forwarded to you on November 16, 1998. A second investigation phase, including installation of 13 soil borings within the service shop area, was completed in October 1998.

The attached preliminary results include:

1. Geologic Boring Logs - October 1998 borings (13 borings - 16 pages)
2. Analytical Laboratory Report - October 1998 soil data (23 pages)
3. Tabular Summary of Analytical Data (Tables 1,2,3 - 3 pages)
4. Site Plan With Boring Locations and Estimated Lateral Extent of Impacts to Soil

We look forward to discussing these results with you at your earliest convenience.

Sincerely,
ASSOCIATED EARTH SCIENCES, INC.
Bainbridge Island, Washington



William V. (Chip) Goodhue, RG
Senior Project Hydrogeologist

cc w/ attachments: Mr. Jeff Hancock - Chuck Olson Chevrolet
Mr. John Wiegenstein - Heller-Wiegenstein
Mr. Greg McCormick – EMR

Attachment 1 – Geologic Boring Logs



**ASSOCIATED
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SCIENCES, INC**

Geologic Log

Project Number
BV97011

Boring Number
EB-12

Sheet
1 of 1

Project Name: Chuck Olson Chevrolet
Drilling Location: 17545 Aurora Ave North, Seattle, WA
Driller/Equipment: Cascade Drilling
Sample/Method: Limited Access Hollow Stem Auger

Elevation (ft msl): 470
Start Date: October 28, 1998
Finish Date: October 28, 1998
Hole Diameter: 10"

Elev.	Depth (feet)	Sample No.	S T	Blows/ 6"	Analyses Conducted	Hard./ Weath.	Graphic Log	Classification and Physical Condition	Remarks
								Concrete Slab	
	1							WEATHERED VASHON LODGEMENT TILL	
	2							SILTY SAND (SM); medium dense, moist, brown; some gravel	
	3								
	4							VASHON LODGEMENT TILL	
	5			20				SILTY SAND WITH GRAVEL (SM); very dense, moist, gray	
	6			28					
	7			24					
	8			70	TPH-Dx				
	9								
	10							End of boring at 10 feet - refusal	
	11								
	12								
	13								
	14								
	15								
	16								
	17								
	18								
	19								

Sampler Type (ST):

☒ 2" OD split spoon sampler

Logged by: RFC

Approved by: WVG

Figure No. 1

Project Name Chuck Olson Chevrolet
Drilling Location 17545 Aurora Ave North, Seattle, WA
Driller/Equipment Cascade Drilling
Sample/Method Limited Access Hollow Stem Auger

Elevation (ft msl) 470
Start Date October 28, 1998
Finish Date October 28, 1998
Hole Diameter 10"

Elev.	Depth (feet)	Sample No.	S T	Blows/ 6"	Analyses Conducted	Hard./ Weath.	Graphic Log	Classification and Physical Condition	Remarks
								Concrete slab	
	1							WEATHERED VASHON LODGEMENT TILL	
	2							SILTY SAND (SM); medium dense, moist, brown; some gravel	
	3			60/4 in.					
	4							VASHON LODGEMENT TILL	
	5			50				SILTY SAND WITH GRAVEL (SM); very dense, moist, gray	
	6								
	7								
	8			60					
	9								
	10			50	TPH-Dx VOC-8260B				Heavy oil odor, no stain
	11								
	12			50					
	13								
	14								
	15			90	TPH-Dx				
	16								
	17								
	18							End of boring at 18 feet	
	19								

Sampler Type (ST):

☒ 2" OD split spoon sampler

Logged by: RFC

Approved by: WVG

Figure No. 2



**ASSOCIATED
EARTH
SCIENCES, INC**

Geologic Log

Project Number
BV97011

Boring Number
EB-14

Sheet
1 of 1

Project Name: Chuck Olson Chevrolet
Drilling Location: 17545 Aurora Ave North, Seattle, WA
Driller/Equipment: Cascade Drilling
Sample/Method: Limited Access Hollow Stem Auger

Elevation (ft msl): 470
Start Date: October 28, 1998
Finish Date: October 28, 1998
Hole Diameter: 10"

Elev.	Depth (feet)	Sample No.	S T	Blows/ 6"	Analyses Conducted	Hard/ Weath.	Graphic Log	Classification and Physical Condition	Remarks
								Concrete slab	
	1							WEATHERED VASHON LODGEMENT TILL	
	2							SILTY SAND (SM); medium dense, moist, brown; few gravel	
	3		X	50				VASHON LODGEMENT TILL	
	4							SILTY SAND WITH GRAVEL (SM); very dense, moist, gray	
	5		X	50					
	6								
	7								
	8		X	50					
	9								
	10		X	50					
	11								
	12								
	13								
	14								
	15		X	100	TPH-Dx				
	16								
	17								
	18								
	19								
	20		X	200					
	21							End of boring at 20.5 feet	

Sampler Type (ST):

☒ 2" OD split spoon sampler

Logged by: RFC

Approved by: WVG

Figure No. 3

**ASSOCIATED
EARTH
SCIENCES, INC****Geologic Log**Project Number
BV97011Boring Number
EB-15A/BSheet
1 of 2

Project Name Chuck Olson Chevrolet
Drilling Location 17545 Aurora Ave North, Seattle, WA
Driller/Equipment Cascade Drilling
Sample/Method Limited Access Hollow Stem Auger

Elevation (ft msl) 470
Start Date October 28, 1998
Finish Date October 30, 1998
Hole Diameter 10"

Elev.	Depth (feet)	Sample No.	S T	Blows/ 6"	Analyses Conducted	Hard./ Weath.	Graphic Log	Classification and Physical Condition	Remarks
								Concrete Slab	
	1							FILL	
	2							SILTY SAND (SM); loose to medium dense, moist, gray; some gravel	
	3			2 1 2					Trace recovery
	4								
	5			5 4 3					No recovery - description from cuttings
	6								
	7							VASHON LODGEMENT TILL	
	8			40 75 55 70 30 50	TPH-Dx VOC-8260B EPH/VPH Metals			SILTY SAND WITH GRAVEL (SM); gray with tan-brown mottling	Stain, odor, and sheen
	9								
	10								
	11								
	12								
	13								
	14								
	15			40					Stain, odor and sheen - oil or possible solvent odor
	16								
	17								
	18								
	19								

Sampler Type (ST):

☒ 2" OD split spoon sampler

Logged by: RFC

Approved by: WVG

Figure No. 4



**ASSOCIATED
EARTH
SCIENCES, INC**

Geologic Log

Project Number
BV97011

Boring Number
EB-15A/B

Sheet
2 of 2

Project Name: Chuck Olson Chevrolet
Drilling Location: 17545 Aurora Ave North, Seattle, WA
Driller/Equipment: Cascade Drilling
Sample/Method: Limited Access Hollow Stem Auger

Elevation (ft msl): 470
Start Date: October 28, 1998
Finish Date: October 30, 1998
Hole Diameter: 10"

Elev.	Depth (feet)	Sample No.	S T	Blows/ 6"	Analyses Conducted	Hard./ Weath.	Graphic Log	Classification and Physical Condition	Remarks
			☒	70				VASHON LODGEMENT TILL	Trace odor
	21							SILTY SAND WITH GRAVEL (SM); gray with tan-brown mottling	
	22								
	23							End of boring at 23 feet for 15A - auger refusal	
	24								
	25		☒	100/3 in.	TPH-Dx			End of boring at 25 feet for 15B	No odor, stain, or sheen
	26								Note: boring 15B was advanced to a depth of 25 feet approximately 5 feet west of location 15A
	27								
	28								
	29								
	30								
	31								
	32								
	33								
	34								
	35								
	36								
	37								
	38								
	39								

Sampler Type (ST):

☒ 2" OD split spoon sampler

Logged by: RFC

Approved by: WVG

Figure No. 4

**ASSOCIATED
EARTH
SCIENCES, INC****Geologic Log**Project Number
BV97011Boring Number
EB-16Sheet
1 of 1

Project Name Chuck Olson Chevrolet
Drilling Location 17545 Aurora Ave North, Seattle, WA
Driller/Equipment Cascade Drilling
Sample/Method Limited Access Hollow Stem Auger

Elevation (ft msl) 470
Start Date October 28, 1998
Finish Date October 28, 1998
Hole Diameter 10"

Elev.	Depth (feet)	Sample No.	S T	Blows/ 6"	Analyses Conducted	Hard./ Weath.	Graphic Log	Classification and Physical Condition	Remarks
								Concrete slab	
	1							WEATHERED VASHON LODGEMENT TILL	
	2							SILTY SAND (SM); very dense, damp, tan-gray	
	3		X	50					
	4							VASHON LODGEMENT TILL	
	5		X	50				SILTY SAND WITH GRAVEL (SM); very dense, moist, gray	
	6								
	7								
	8		X	50					
	9								
	10		X	80					
	11								
	12								
	13								
	14								
	15		X	120					
	16								
	17								
	18								
	19								
	20		X	130	TPH-Dx				
	21							End of boring at 20.3 feet	

Sampler Type (ST):

☒ 2" OD split spoon sampler

Logged by: RFC

Approved by: WVG

Figure No. 5

Project Name Chuck Olson Chevrolet
Drilling Location 17545 Aurora Ave North, Seattle, WA
Driller/Equipment Cascade Drilling
Sample/Method Limited Access Hollow Stem Auger

Elevation (ft msl) 470
Start Date October 30, 1998
Finish Date October 30, 1998
Hole Diameter 10"

Elev.	Depth (feet)	Sample No.	S T	Blows/ 6"	Analyses Conducted	Hard./ Weath.	Graphic Log	Classification and Physical Condition	Remarks
								Concrete slab	
	1							WEATHERED VASHON LODGEMENT TILL	
	2							SAND WITH GRAVEL (SM); dense, damp, brown	
	3								
	4								
	5		X	50				VASHON LODGEMENT TILL	1 inch recovery in shoe
	6							SILTY SAND WITH GRAVEL (SM); very dense, moist, gray	
	7								
	8		X	100/4 in.					Moderate, sweetish odor
	9								
	10		X	80	TPH-Dx VOC-8260B				Same odor
	11								
	12								
	13								
	14								
	15		X	100					Same odor, weak - decreasing impact
	16								
	17								
	18								
	19								
	20		X	100/5 in.	TPH-Dx			End of boring at 20 feet	Very weak to no odor
	21								

Sampler Type (ST):

☒ 2" OD split spoon sampler

Logged by: **WVG**

Approved by: **WVG**

Figure No. **6**

Project Name Chuck Olson Chevrolet
Drilling Location 17545 Aurora Ave North, Seattle, WA
Driller/Equipment Cascade Drilling
Sample/Method Limited Access Hollow Stem Auger

Elevation (ft msl) 470
Start Date October 28, 1998
Finish Date October 28, 1998
Hole Diameter 10"

Elev.	Depth (feet)	Sample No.	S T	Blows/ 6"	Analyses Conducted	Hard./ Weath.	Graphic Log	Classification and Physical Condition	Remarks
								Concrete slab	
	1							WEATHERED VASHON LODGEMENT TILL	
	2							SILTY SAND; moist, brown-orange; some gravel, wood debris	
	3		X	60	TPH-Dx TPH-G			VASHON LODGEMENT TILL	Slight odor
	4							SILTY SAND WITH GRAVEL (SM); very dense, moist, gray	
	5		X	80					
	6								
	7								
	8		X	70					
	9								
	10		X	70					
	11								
	12								
	13								
	14								
	15		X	70	TPH-Dx TPH-G				
	16								
	17								
	18								
	19								
	20		X	130					
	21							End of boring at 20.5 feet	

Sampler Type (ST):

☒ 2" OD split spoon sampler

Logged by: RFC

Approved by: WVG

Figure No. 7



**ASSOCIATED
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Geologic Log

Project Number
BV97011

Boring Number
EB-19

Sheet
1 of 1

Project Name Chuck Olson Chevrolet
Drilling Location 17545 Aurora Ave North, Seattle, WA
Driller/Equipment Cascade Drilling
Sample/Method Limited Access Hollow Stem Auger

Elevation (ft msl) 470
Start Date October 30, 1998
Finish Date October 30, 1998
Hole Diameter 10"

Elev.	Depth (feet)	Sample No.	S T	Blows/ 6"	Analyses Conducted	Hard./ Weath.	Graphic Log	Classification and Physical Condition	Remarks
								Concrete slab	
	1							VASHON LODGEMENT TILL	
	2							SILTY SAND WITH GRAVEL (SM); very dense, moist, gray	
	3			100/4 in					
	4								
	5			50					
	6								
	7								
	8			50					No recovery
	9								
	10			100/5 in	TPH-Dx VOC-8260B TPH-G				Odd odor, no obvious stain, no sheen
	11								
	12								
	13								
	14								
	15			90					No odor
	16								
	17								
	18								
	19								
	20			90	TPH-Dx			End of boring at 20 feet	
	21								

Sampler Type (ST):

☒ 2" OD split spoon sampler

Logged by: **WVG**

Approved by: **WVG**

Figure No. **8**



**ASSOCIATED
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SCIENCES, INC**

Geologic Log

Project Number
BV97011

Boring Number
EB-20

Sheet
1 of 1

Project Name: Chuck Olson Chevrolet
Drilling Location: 17545 Aurora Ave North, Seattle, WA
Driller/Equipment: Cascade Drilling
Sample/Method: Limited Access Hollow Stem Auger

Elevation (ft msl): 470
Start Date: October 29, 1998
Finish Date: October 29, 1998
Hole Diameter: 10"

Elev.	Depth (feet)	Sample No.	S T	Blows/ 6"	Analyses Conducted	Hard./ Weath.	Graphic Log	Classification and Physical Condition	Remarks
								Concrete slab	
	1							VASHON LODGEMENT TILL	
	2							SILTY SAND WITH GRAVEL (SM); very dense, moist, gray	
	3								
	4								
	5		X	80					
	6								
	7								
	8								
	9								
	10		X	70	TPH-Dx				
	11								
	12								
	13		X	80					
	14								
	15								
	16								
	17								
	18								
	19								
	20		X	100				End of boring at 20 feet	
	21								

Sampler Type (ST):

☒ 2" OD split spoon sampler

Logged by: RFC

Approved by: WVG

Figure No. 9

Project Name Chuck Olson Chevrolet
Drilling Location 17545 Aurora Ave North, Seattle, WA
Driller/Equipment Cascade Drilling
Sample/Method Limited Access Hollow Stem Auger

Elevation (ft msl) 470
Start Date October 29, 1998
Finish Date October 29, 1998
Hole Diameter 10"

Elev.	Depth (feet)	Sample No.	S T	Blows/ 6"	Analyses Conducted	Hard./ Weath.	Graphic Log	Classification and Physical Condition	Remarks
								Concrete slab	
	1							VASHON LODGEMENT TILL	
	2							SILTY SAND WITH GRAVEL (SM); very dense, moist, gray	
	3								
	4								
	5		X	100					
	6								
	7								
	8		X	100					Odor, sheen
	9								
	10		X	100					Less odor, light sheen
	11								
	12								
	13		X	100/4 in	TPH-Dx				Odor, no stain or sheen
	14		X	100	VOC-8260B				
	15		X	50					Odor, no stain or sheen
	16								
	17								
	18								
	19								
	20		X	100					
	21							End of boring at 20.5 feet	

Sampler Type (ST):

☒ 2" OD split spoon sampler

Logged by: RFC

Approved by: WVG

Figure No. 10



**ASSOCIATED
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SCIENCES, INC**

Geologic Log

Project Number
BV97011

Boring Number
EB-22

Sheet
1 of 1

Project Name: Chuck Olson Chevrolet
Drilling Location: 17545 Aurora Ave North, Seattle, WA
Driller/Equipment: Cascade Drilling
Sample/Method: Limited Access Hollow Stem Auger

Elevation (ft msl): 470
Start Date: October 30, 1998
Finish Date: October 30, 1998
Hole Diameter: 10"

Elev.	Depth (feet)	Sample No.	S T	Blows/ 6"	Analyses Conducted	Hard./ Weath.	Graphic Log	Classification and Physical Condition	Remarks
								Concrete slab	
	1							FILL	
	2							SILTY SAND (SM); loose, moist, dark brown; some gravel	
	3							VASHON LODGEMENT TILL	
	4							SILTY SAND WITH GRAVEL (SM); very dense, moist, gray	
	5			70					
	6								
	7								
	8			80					
	9								
	10								
	11								
	12								
	13			50/5 in					
	14								
	15			130/3 in	TPH-Dx				
	16								
	17								
	18								
	19								
	20			150/5 in				End of boring at 20 feet	
	21								

Sampler Type (ST):

☒ 2" OD split spoon sampler

Logged by: RFC

Approved by: WVG

Figure No. 11

Project Name Chuck Olson Chevrolet
 Drilling Location 17545 Aurora Ave North, Seattle, WA
 Driller/Equipment Cascade Drilling
 Sample/Method Limited Access Hollow Stem Auger

Elevation (ft msl) 470
 Start Date October 29, 1998
 Finish Date October 29, 1998
 Hole Diameter 10"

Elev.	Depth (feet)	Sample No.	S T	Blows/ 6"	Analyses Conducted	Hard./ Weath.	Graphic Log	Classification and Physical Condition	Remarks
								Concrete slab	
	1							VASHON LODGEMENT TILL	
	2							SILTY SAND WITH GRAVEL (SM); very dense, moist, gray	
	3			50					
	4								
	5			50					
	6							End of boring EB-23 at 6 feet - auger refusal	
	7								
	8								
	9								
	10			60					
	11								
	12								
	13								
	14								
	15			50					
	16								
	17								
	18								
	19								

Sampler Type (ST):

☒ 2" OD split spoon sampler

Logged by: RFC

Approved by: WVG

Figure No. 12



**ASSOCIATED
EARTH
SCIENCES, INC**

Geologic Log

Project Number
BV97011

Boring Number
EB-23/23B

Sheet
2 of 2

Project Name: Chuck Olson Chevrolet
Drilling Location: 17545 Aurora Ave North, Seattle, WA
Driller/Equipment: Cascade Drilling
Sample/Method: Limited Access Hollow Stem Auger

Elevation (ft msl): 470
Start Date: October 29, 1998
Finish Date: October 29, 1998
Hole Diameter: 10"

Elev.	Depth (feet)	Sample No.	S T	Blows/ 6"	Analyses Conducted	Hard./ Weath.	Graphic Log	Classification and Physical Condition	Remarks
	21							VASHON LODGEMENT TILL	
	22							SILTY SAND WITH GRAVEL (SM); very dense, moist, gray	
	23								
	24								
	25								
	26								
	27								
	28			100					
	29							End of boring EB-23B at 28 feet	
	30								
	31								
	32								
	33								
	34								
	35								
	36								
	37								
	38								
	39								

Sampler Type (ST):

☒ 2" OD split spoon sampler

Logged by: RFC

Approved by: WVG

Figure No. 12



**ASSOCIATED
EARTH
SCIENCES, INC**

Geologic Log

Project Number
BV97011

Boring Number
EB-24

Sheet
1 of 2

Project Name Chuck Olson Chevrolet
Drilling Location 17545 Aurora Ave North, Seattle, WA
Driller/Equipment Cascade Drilling
Sample/Method Limited Access Hollow Stem Auger

Elevation (ft msl) 470
Start Date October 30, 1998
Finish Date October 30, 1998
Hole Diameter 10"

Elev.	Depth (feet)	Sample No.	S T	Blows/ 6"	Analyses Conducted	Hard./ Weath.	Graphic Log	Classification and Physical Condition	Remarks
								Concrete slab	
								VASHON LODGEMENT TILL	
								SILTY SAND WITH GRAVEL (SM); very dense, moist, gray .	
	1								
	2								
	3								
	4								
	5			55					Strong solvent and oil odor
				100					
	6			50					
				80					
	7								
	8			40	TPH-Dx				Very strong solvent and oil
				50	EPH-VPH				odor, medium sheen
				50	Metals				
					PCBs				
	9								
	10			100					No recovery
	11								
	12								
	13								
	14			80					Medium to strong oil/solvent odor
	15								
	16								
	17								
	18								
	19								

Sampler Type (ST):

☒ 2" OD split spoon sampler

Logged by: **WVG**

Approved by: **WVG**

Figure No. **13**



**ASSOCIATED
EARTH
SCIENCES, INC**

Geologic Log

Project Number
BV97011

Boring Number
EB-24

Sheet
2 of 2

Project Name Chuck Olson Chevrolet
Drilling Location 17545 Aurora Ave North, Seattle, WA
Driller/Equipment Cascade Drilling
Sample/Method Limited Access Hollow Stem Auger

Elevation (ft msl) 470
Start Date October 30, 1998
Finish Date October 30, 1998
Hole Diameter 10"

Elev.	Depth (feet)	Sample No.	S T	Blows/ 6"	Analyses Conducted	Hard./ Weath.	Graphic Log	Classification and Physical Condition	Remarks
			☒	100				VASHON LODGEMENT TILL	Medium to strong odor of hydrocarbons
	21							SILTY SAND WITH GRAVEL (SM); very dense, moist, gray	
	22								
	23								
	24							"Rocky" drilling	
	25		☒	100					Weaker odor, no visible stain
	26								
	27								
	28							Smoother drilling 25 -30 feet	
	29								
	30		☒	150				Very dense, difficult drilling 30-32 - a lot of gravel in cuttings	No odor or staining
	31								
	32		☒	150	TPH-Dx VOC-8260B				No odor
	33							End of boring at 32.4 feet - auger refusal	
	34								
	35								
	36								
	37								
	38								
	39								

Sampler Type (ST):

☒ 2" OD split spoon sampler

Logged by: **WVG**

Approved by: **WVG**

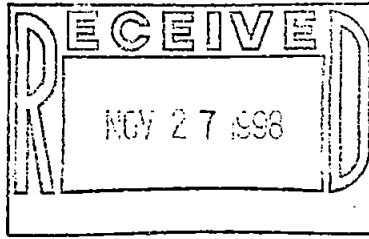
Figure No. **13**

Attachment 2 – Analytical Laboratory Report

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Jensen, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.



3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

November 24, 1998

Chip Goodhue, Project Manager
Associated Earth Sciences, Inc.
179 Madrone Lane North
Bainbridge Island, WA 98110

Dear Mr. Goodhue:

Included are the results from the testing of material submitted on October 30, 1998 from your BV 97011B project. Samples EB-15-7.5'-9.5' and EB-24-7.5'-9.0' were sent to Sound Analytical for VPH/EPH analysis. Results will follow.

Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Charlene Jensen
Chemist

Enclosures
AES1124R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/24/98

Date Received: 10/30/98

Project: BV 97011B

Date Extracted: 11/09/98

Date Analyzed: 11/11/98

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
BY GC/FID (NWTPH-Gx)**

Results Reported on a Dry Weight Basis

Results Reported as $\mu\text{g/g}$ (ppm)

<u>Sample ID</u> Laboratory ID	<u>Gasoline</u>	<u>Surrogate</u> (% Recovery)
EB-18-15' 810182-06	<1	101
EB-19-10' 810182-07	2	96
EB-18-2.5' 810182-14	<1	97
Method Blank	<1	103

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/24/98

Date Received: 10/30/98

Project: BV 97011B

Date Extracted: 11/05/98

Date Analyzed: 11/06/98

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS
BY GC/FID (NWTPH-Dx)**

Results Reported on a Dry Weight Basis

Results Reported as µg/g (ppm)

<u>Sample ID</u> Laboratory ID	<u>C₈-C₁₂ Range</u>	<u>C₁₂-C₃₆ Range</u>	<u>Surrogate</u> (% Recovery)
EB-12-7.5 810182-01	<10	1,800	111
EB-13-15' 810182-02	<10	<50	99
EB-14-15' 810182-03	<10	1,800	101
EB-15-7.5'-9.5' 810182-04	90	17,000	98 d
EB-16-20' 810182-05	<10	<50	104
EB-18-15' 810182-06	<10	<50	102
EB-19-10' 810182-07	30	2,800	114
EB-19-20' 810182-08	<10	<50	98
EB-20-10' 810182-09	<10	<50	116
EB-13-10' 810182-10	<10	<50	110

d - The sample was diluted due to the presence of high levels of material. Surrogate recoveries may not be meaningful.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/24/98

Date Received: 10/30/98

Project: BV 97011B

Date Extracted: 11/05/98

Date Analyzed: 11/06/98

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS
BY GC/FID (NWTPH-Dx)

Results Reported on a Dry Weight Basis

Results Reported as $\mu\text{g/g}$ (ppm)

<u>Sample ID</u> Laboratory ID	<u>C₈-C₁₂ Range</u>	<u>C₁₂-C₃₆ Range</u>	<u>Surrogate</u> (% Recovery)
EB-24-7.5-9.0 810182-11	290	29,000	91 d
EB-21-13' 810182-12	<10	<50	97
EB-22-15' 810182-13	<10	<50	101
EB-18-2.5' 810182-14	<10	<50	113
EB-24-32' 810182-15	<10	60	109
EB-15b-25' 810182-16	<10	<50	100
EB-17-10' 810182-17	610	12,000	107 d
EB-17-20 810182-18	<10	60	102
Method Blank	<10	<50	98

d - The sample was diluted due to the presence of high levels of material. Surrogate recoveries may not be meaningful.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/24/98
Date Received: 10/30/98
Project: BV 97011B
Date Extracted: 11/03/98
Date Analyzed: 11/03/98

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES
FOR TOTAL METALS BY
INDUCTIVELY COUPLED PLASMA (ICP)
(METHOD 6010)

Results Reported as $\mu\text{g/g}$ (ppm)

<u>Sample ID</u>	<u>EB-15-7.5'-9.5'</u>	<u>EB-24-7.5-9.0</u>	<u>Method Blank</u>
Analyte:			
Cadmium	<1	<1	<1
Chromium	4	4	<1
Lead	<2	57	<2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/24/98

Date Received: 10/30/98

Project: BV 97011B

Date Extracted: 11/02/98

Date Analyzed: 11/05/98

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLE
FOR PCB AS AROCHLORS BY METHOD 8081 (GC/ECD)**

Results Reported as $\mu\text{g/g}$ (ppm)

<u>Sample ID</u> Laboratory ID	<u>PCB</u>	<u>Surrogate</u> (% Recovery)
EB-24-7.5-9.0 810182-11	<0.2	111
Method Blank	<0.2	92

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: EB-15-7.5'-9.5'	Client: Associated Earth Sciences
Date Received: 10/30/98	Project: BV97011B
Date Extracted: 11/11/98	Lab ID: 810182-04
Date Analyzed: 11/23/98	Data File: 112308.D
Matrix: Soil	Instrument: GCMS1
Units: ug/g (ppm)	Operator: YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Dibromofluoromethane	259 j	54	121
1,2-Dichloroethane-d4	106	61	120
Toluene-d8	363 j	58	121
4-Bromofluorobenzene	76	56	124

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Dichlorodifluoromethane	<0.04 j	Tetrachloroethene	0.53
Chloromethane	<0.04 j	Dibromochloromethane	<0.04
Vinyl chloride	<0.04 j	1,2-Dibromoethane (EDB)	<0.04
Bromomethane	<0.04 j	Chlorobenzene	<0.04
Chloroethane	<0.04 j	Ethylbenzene	0.10
Trichlorofluoromethane	<0.04 j	1,1,1,2-Tetrachloroethane	<0.04
Acetone	<0.4 j	m,p-Xylene	0.45
1,1-Dichloroethene	<0.04 j	o-Xylene	0.27
Methylene chloride	<0.2 j	Styrene	<0.04
trans-1,2-Dichloroethene	<0.04 j	Isopropylbenzene	<0.04
1,1-Dichloroethane	<0.04 j	Bromoform	<0.04
2,2-Dichloropropane	<0.04 j	n-Propylbenzene	0.13
cis-1,2-Dichloroethene	<0.04 j	Bromobenzene	<0.04
Chloroform	<0.04 j	1,3,5-Trimethylbenzene	0.71
2-Butanone (MEK)	<0.4 j	1,1,2,2-Tetrachloroethane	<0.04
1,2-Dichloroethane (EDC)	<0.04 j	1,2,3-Trichloropropane	<0.04
1,1,1-Trichloroethane	<0.04 j	2-Chlorotoluene	<0.04
1,1-Dichloropropene	<0.04 j	4-Chlorotoluene	<0.04
Carbon Tetrachloride	<0.04 j	tert-Butylbenzene	<0.04
Benzene	<0.04 j	1,2,4-Trimethylbenzene	1.4
Trichloroethene	<0.04 j	sec-Butylbenzene	0.11
1,2-Dichloropropane	<0.04 j	p-Isopropyltoluene	0.23
Bromodichloromethane	<0.04 j	1,3-Dichlorobenzene	<0.04
Dibromomethane	<0.04 j	1,4-Dichlorobenzene	<0.04
4-Methyl-2-pentanone	<0.4 j	1,2-Dichlorobenzene	<0.04
cis-1,3-Dichloropropene	<0.04 j	1,2-Dibromo-3-chloropropane	<0.04
Toluene	0.17	1,2,4-Trichlorobenzene	<0.04
trans-1,3-Dichloropropene	<0.04	Hexachlorobutadiene	<0.04
1,1,2-Trichloroethane	<0.04	Naphthalene	0.36
2-Hexanone	<0.4	1,2,3-Trichlorobenzene	<0.04
1,3-Dichloropropane	<0.04		

j - The internal standard associated with the compound fell outside of acceptance limits. The value reported is an estimate.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: EB-19-10'
Date Received: 10/30/98
Date Extracted: 11/11/98
Date Analyzed: 11/21/98
Matrix: Soil
Units: ug/g (ppm)

Client: Associated Earth Sciences, Inc.
Project: BV97011B
Lab ID: 810182-07
Data File: 112028.D
Instrument: GCMS1
Operator: YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Dibromofluoromethane	69	54	121
1,2-Dichloroethane-d4	73	61	120
Toluene-d8	78	58	121
4-Bromofluorobenzene	77	56	124

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Dichlorodifluoromethane	<0.04	Tetrachloroethene	0.04
Chloromethane	<0.04	Dibromochloromethane	<0.04
Vinyl chloride	<0.04	1,2-Dibromoethane (EDB)	<0.04
Bromomethane	<0.04	Chlorobenzene	<0.04
Chloroethane	<0.04	Ethylbenzene	<0.04
Trichlorofluoromethane	<0.04	1,1,1,2-Tetrachloroethane	<0.04
Acetone	<0.4	m,p-Xylene	<0.04
1,1-Dichloroethene	<0.04	o-Xylene	<0.04
Methylene chloride	<0.2	Styrene	<0.04
trans-1,2-Dichloroethene	<0.04	Isopropylbenzene	<0.04
1,1-Dichloroethane	<0.04	Bromoform	<0.04
2,2-Dichloropropane	<0.04	n-Propylbenzene	<0.04
cis-1,2-Dichloroethene	<0.04	Bromobenzene	<0.04
Chloroform	<0.04	1,3,5-Trimethylbenzene	<0.04
2-Butanone (MEK)	<0.4	1,1,2,2-Tetrachloroethane	<0.04
1,2-Dichloroethane (EDC)	<0.04	1,2,3-Trichloropropane	<0.04
1,1,1-Trichloroethane	<0.04	2-Chlorotoluene	<0.04
1,1-Dichloropropene	<0.04	4-Chlorotoluene	<0.04
Carbon Tetrachloride	<0.04	tert-Butylbenzene	<0.04
Benzene	<0.04	1,2,4-Trimethylbenzene	<0.04
Trichloroethene	<0.04	sec-Butylbenzene	<0.04
1,2-Dichloropropane	<0.04	p-Isopropyltoluene	<0.04
Bromodichloromethane	<0.04	1,3-Dichlorobenzene	<0.04
Dibromomethane	<0.04	1,4-Dichlorobenzene	<0.04
4-Methyl-2-pentanone	<0.4	1,2-Dichlorobenzene	<0.04
cis-1,3-Dichloropropene	<0.04	1,2-Dibromo-3-chloropropane	<0.04
Toluene	<0.04	1,2,4-Trichlorobenzene	<0.04
trans-1,3-Dichloropropene	<0.04	Hexachlorobutadiene	<0.04
1,1,2-Trichloroethane	<0.04	Naphthalene	<0.04
2-Hexanone	<0.4	1,2,3-Trichlorobenzene	<0.04
1,3-Dichloropropane	<0.04		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: EB-13-10'
 Date Received: 10/30/98
 Date Extracted: 11/11/98
 Date Analyzed: 11/23/98
 Matrix: Soil
 Units: ug/g (ppm)

Client: Associated Earth Sciences, Inc.
 Project: BV97011B
 Lab ID: 810182-10
 Data File: 112309.D
 Instrument: GCMS1
 Operator: YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Dibromofluoromethane	74	54	121
1,2-Dichloroethane-d4	70	61	120
Toluene-d8	77	58	121
4-Bromofluorobenzene	76	56	124

Compounds:

Compounds:	Concentration ug/g (ppm)
Dichlorodifluoromethane	<0.04
Chloromethane	<0.04
Vinyl chloride	<0.04
Bromomethane	<0.04
Chloroethane	<0.04
Trichlorofluoromethane	<0.04
Acetone	<0.4
1,1-Dichloroethene	<0.04
Methylene chloride	<0.2
trans-1,2-Dichloroethene	<0.04
1,1-Dichloroethane	<0.04
2,2-Dichloropropane	<0.04
cis-1,2-Dichloroethene	<0.04
Chloroform	<0.04
2-Butanone (MEK)	<0.4
1,2-Dichloroethane (EDC)	<0.04
1,1,1-Trichloroethane	<0.04
1,1-Dichloropropene	<0.04
Carbon Tetrachloride	<0.04
Benzene	<0.04
Trichloroethene	<0.04
1,2-Dichloropropane	<0.04
Bromodichloromethane	<0.04
Dibromomethane	<0.04
4-Methyl-2-pentanone	<0.4
cis-1,3-Dichloropropene	<0.04
Toluene	<0.04
trans-1,3-Dichloropropene	<0.04
1,1,2-Trichloroethane	<0.04
2-Hexanone	<0.4
1,3-Dichloropropane	<0.04

Compounds:

Compounds:	Concentration ug/g (ppm)
Tetrachloroethene	<0.04
Dibromochloromethane	<0.04
1,2-Dibromoethane (EDB)	<0.04
Chlorobenzene	<0.04
Ethylbenzene	<0.04
1,1,1,2-Tetrachloroethane	<0.04
m,p-Xylene	<0.04
o-Xylene	<0.04
Styrene	<0.04
Isopropylbenzene	<0.04
Bromoform	<0.04
n-Propylbenzene	<0.04
Bromobenzene	<0.04
1,3,5-Trimethylbenzene	<0.04
1,1,2,2-Tetrachloroethane	<0.04
1,2,3-Trichloropropane	<0.04
2-Chlorotoluene	<0.04
4-Chlorotoluene	<0.04
tert-Butylbenzene	<0.04
1,2,4-Trimethylbenzene	<0.04
sec-Butylbenzene	<0.04
p-Isopropyltoluene	<0.04
1,3-Dichlorobenzene	<0.04
1,4-Dichlorobenzene	<0.04
1,2-Dichlorobenzene	<0.04
1,2-Dibromo-3-chloropropane	<0.04
1,2,4-Trichlorobenzene	<0.04
Hexachlorobutadiene	<0.04
Naphthalene	<0.04
1,2,3-Trichlorobenzene	<0.04

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: EB-21-13'
 Date Received: 10/30/98
 Date Extracted: 11/11/98
 Date Analyzed: 11/21/98
 Matrix: Soil
 Units: ug/g (ppm)

Client: Associated Earth Sciences, Inc.
 Project: BV97011B
 Lab ID: 810182-12
 Data File: 112030.D
 Instrument: GCMS1
 Operator: YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Dibromofluoromethane	77	54	121
1,2-Dichloroethane-d4	76	61	120
Toluene-d8	71	58	121
4-Bromofluorobenzene	78	56	124

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Dichlorodifluoromethane	<0.04	Tetrachloroethene	<0.04
Chloromethane	<0.04	Dibromochloromethane	<0.04
Vinyl chloride	<0.04	1,2-Dibromoethane (EDB)	<0.04
Bromomethane	<0.04	Chlorobenzene	<0.04
Chloroethane	<0.04	Ethylbenzene	<0.04
Trichlorofluoromethane	<0.04	1,1,1,2-Tetrachloroethane	<0.04
Acetone	<0.4	m,p-Xylene	<0.04
1,1-Dichloroethene	<0.04	o-Xylene	<0.04
Methylene chloride	<0.2	Styrene	<0.04
trans-1,2-Dichloroethene	<0.04	Isopropylbenzene	<0.04
1,1-Dichloroethane	<0.04	Bromoform	<0.04
2,2-Dichloropropane	<0.04	n-Propylbenzene	<0.04
cis-1,2-Dichloroethene	<0.04	Bromobenzene	<0.04
Chloroform	<0.04	1,3,5-Trimethylbenzene	<0.04
2-Butanone (MEK)	<0.4	1,1,2,2-Tetrachloroethane	<0.04
1,2-Dichloroethane (EDC)	<0.04	1,2,3-Trichloropropane	<0.04
1,1,1-Trichloroethane	<0.04	2-Chlorotoluene	<0.04
1,1-Dichloropropene	<0.04	4-Chlorotoluene	<0.04
Carbon Tetrachloride	<0.04	tert-Butylbenzene	<0.04
Benzene	<0.04	1,2,4-Trimethylbenzene	<0.04
Trichloroethene	<0.04	sec-Butylbenzene	<0.04
1,2-Dichloropropane	<0.04	p-Isopropyltoluene	<0.04
Bromodichloromethane	<0.04	1,3-Dichlorobenzene	<0.04
Dibromomethane	<0.04	1,4-Dichlorobenzene	<0.04
4-Methyl-2-pentanone	<0.4	1,2-Dichlorobenzene	<0.04
cis-1,3-Dichloropropene	<0.04	1,2-Dibromo-3-chloropropane	<0.04
Toluene	<0.04	1,2,4-Trichlorobenzene	<0.04
trans-1,3-Dichloropropene	<0.04	Hexachlorobutadiene	<0.04
1,1,2-Trichloroethane	<0.04	Naphthalene	<0.04
2-Hexanone	<0.4	1,2,3-Trichlorobenzene	<0.04
1,3-Dichloropropane	<0.04		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: EB-24-32'
 Date Received: 10/30/98
 Date Extracted: 11/11/98
 Date Analyzed: 11/21/98
 Matrix: Soil
 Units: ug/g (ppm)

Client: Associated Earth Sciences, Inc.
 Project: BV97011B
 Lab ID: 810182-15
 Data File: 112031.D
 Instrument: GCMS1
 Operator: YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Dibromofluoromethane	75	54	121
1,2-Dichloroethane-d4	74	61	120
Toluene-d8	70	58	121
4-Bromofluorobenzene	74	56	124

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Dichlorodifluoromethane	<0.04	Tetrachloroethene	<0.04
Chloromethane	<0.04	Dibromochloromethane	<0.04
Vinyl chloride	<0.04	1,2-Dibromoethane (EDB)	<0.04
Bromomethane	<0.04	Chlorobenzene	<0.04
Chloroethane	<0.04	Ethylbenzene	<0.04
Trichlorofluoromethane	<0.04	1,1,1,2-Tetrachloroethane	<0.04
Acetone	<0.4	m,p-Xylene	<0.04
1,1-Dichloroethene	<0.04	o-Xylene	<0.04
Methylene chloride	<0.2	Styrene	<0.04
trans-1,2-Dichloroethene	<0.04	Isopropylbenzene	<0.04
1,1-Dichloroethane	<0.04	Bromoform	<0.04
2,2-Dichloropropane	<0.04	n-Propylbenzene	<0.04
cis-1,2-Dichloroethene	<0.04	Bromobenzene	<0.04
Chloroform	<0.04	1,3,5-Trimethylbenzene	<0.04
2-Butanone (MEK)	<0.4	1,1,2,2-Tetrachloroethane	<0.04
1,2-Dichloroethane (EDC)	<0.04	1,2,3-Trichloropropane	<0.04
1,1,1-Trichloroethane	<0.04	2-Chlorotoluene	<0.04
1,1-Dichloropropene	<0.04	4-Chlorotoluene	<0.04
Carbon Tetrachloride	<0.04	tert-Butylbenzene	<0.04
Benzene	<0.04	1,2,4-Trimethylbenzene	<0.04
Trichloroethene	<0.04	sec-Butylbenzene	<0.04
1,2-Dichloropropane	<0.04	p-Isopropyltoluene	<0.04
Bromodichloromethane	<0.04	1,3-Dichlorobenzene	<0.04
Dibromomethane	<0.04	1,4-Dichlorobenzene	<0.04
4-Methyl-2-pentanone	<0.4	1,2-Dichlorobenzene	<0.04
cis-1,3-Dichloropropene	<0.04	1,2-Dibromo-3-chloropropane	<0.04
Toluene	<0.04	1,2,4-Trichlorobenzene	<0.04
trans-1,3-Dichloropropene	<0.04	Hexachlorobutadiene	<0.04
1,1,2-Trichloroethane	<0.04	Naphthalene	<0.04
2-Hexanone	<0.4	1,2,3-Trichlorobenzene	<0.04
1,3-Dichloropropane	<0.04		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: EB-17-10'
 Date Received: 10/30/98
 Date Extracted: 11/11/98
 Date Analyzed: 11/23/98
 Matrix: Soil
 Units: ug/g (ppm)

Client: Associated Earth Sciences, Inc.
 Project: BV97011B
 Lab ID: 810182-17
 Data File: 112310.D
 Instrument: GCMS1
 Operator: YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Dibromofluoromethane	74	54	121
1,2-Dichloroethane-d4	72	61	120
Toluene-d8	79	58	121
4-Bromofluorobenzene	82	56	124

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Dichlorodifluoromethane	<0.04	Tetrachloroethene	0.06
Chloromethane	<0.04	Dibromochloromethane	<0.04
Vinyl chloride	<0.04	1,2-Dibromoethane (EDB)	<0.04
Bromomethane	<0.04	Chlorobenzene	<0.04
Chloroethane	<0.04	Ethylbenzene	<0.04
Trichlorofluoromethane	<0.04	1,1,1,2-Tetrachloroethane	<0.04
Acetone	<0.4	m,p-Xylene	0.26
1,1-Dichloroethene	<0.04	o-Xylene	0.21
Methylene chloride	<0.2	Styrene	<0.04
trans-1,2-Dichloroethene	<0.04	Isopropylbenzene	0.08
1,1-Dichloroethane	<0.04	Bromoform	<0.04
2,2-Dichloropropane	<0.04	n-Propylbenzene	0.35
cis-1,2-Dichloroethene	<0.04	Bromobenzene	<0.04
Chloroform	<0.04	1,3,5-Trimethylbenzene	1.5
2-Butanone (MEK)	<0.4	1,1,2,2-Tetrachloroethane	<0.04
1,2-Dichloroethane (EDC)	<0.04	1,2,3-Trichloropropane	<0.04
1,1,1-Trichloroethane	<0.04	2-Chlorotoluene	<0.04
1,1-Dichloropropene	<0.04	4-Chlorotoluene	<0.04
Carbon Tetrachloride	<0.04	tert-Butylbenzene	<0.04
Benzene	<0.04	1,2,4-Trimethylbenzene	3.4
Trichloroethene	<0.04	sec-Butylbenzene	0.45
1,2-Dichloropropane	<0.04	p-Isopropyltoluene	0.51
Bromodichloromethane	<0.04	1,3-Dichlorobenzene	<0.04
Dibromomethane	<0.04	1,4-Dichlorobenzene	<0.04
4-Methyl-2-pentanone	<0.4	1,2-Dichlorobenzene	<0.04
cis-1,3-Dichloropropene	<0.04	1,2-Dibromo-3-chloropropane	<0.04
Toluene	<0.04	1,2,4-Trichlorobenzene	<0.04
trans-1,3-Dichloropropene	<0.04	Hexachlorobutadiene	<0.04
1,1,2-Trichloroethane	<0.04	Naphthalene	0.17
2-Hexanone	<0.4	1,2,3-Trichlorobenzene	<0.04
1,3-Dichloropropane	<0.04		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: Method Blank	Client: Associated Earth Sciences
Date Received: 10/30/98	Project: BV97011B
Date Extracted: 11/11/98	Lab ID: 08-681 mb
Date Analyzed: 11/21/98	Data File: 112027.D
Matrix: Soil	Instrument: GCMS1
Units: ug/g (ppm)	Operator: YA

Surrogates:	% Recovery	Lower Limit	Upper Limit
Dibromofluoromethane	84	54	121
1,2-Dichloroethane-d4	86	61	120
Toluene-d8	80	58	121
4-Bromofluorobenzene	85	56	124

Compounds:	Concentration ug/g (ppm)	Compounds:	Concentration ug/g (ppm)
Dichlorodifluoromethane	<0.04	Tetrachloroethene	<0.04
Chloromethane	<0.04	Dibromochloromethane	<0.04
Vinyl chloride	<0.04	1,2-Dibromoethane (EDB)	<0.04
Bromomethane	<0.04	Chlorobenzene	<0.04
Chloroethane	<0.04	Ethylbenzene	<0.04
Trichlorofluoromethane	<0.04	1,1,1,2-Tetrachloroethane	<0.04
Acetone	<0.4	m,p-Xylene	<0.04
1,1-Dichloroethene	<0.04	o-Xylene	<0.04
Methylene chloride	<0.2	Styrene	<0.04
trans-1,2-Dichloroethene	<0.04	Isopropylbenzene	<0.04
1,1-Dichloroethane	<0.04	Bromoform	<0.04
2,2-Dichloropropane	<0.04	n-Propylbenzene	<0.04
cis-1,2-Dichloroethene	<0.04	Bromobenzene	<0.04
Chloroform	<0.04	1,3,5-Trimethylbenzene	<0.04
2-Butanone (MEK)	<0.4	1,1,2,2-Tetrachloroethane	<0.04
1,2-Dichloroethane (EDC)	<0.04	1,2,3-Trichloropropane	<0.04
1,1,1-Trichloroethane	<0.04	2-Chlorotoluene	<0.04
1,1-Dichloropropene	<0.04	4-Chlorotoluene	<0.04
Carbon Tetrachloride	<0.04	tert-Butylbenzene	<0.04
Benzene	<0.04	1,2,4-Trimethylbenzene	<0.04
Trichloroethene	<0.04	sec-Butylbenzene	<0.04
1,2-Dichloropropane	<0.04	p-Isopropyltoluene	<0.04
Bromodichloromethane	<0.04	1,3-Dichlorobenzene	<0.04
Dibromomethane	<0.04	1,4-Dichlorobenzene	<0.04
4-Methyl-2-pentanone	<0.4	1,2-Dichlorobenzene	<0.04
cis-1,3-Dichloropropene	<0.04	1,2-Dibromo-3-chloropropane	<0.04
Toluene	<0.04	1,2,4-Trichlorobenzene	<0.04
trans-1,3-Dichloropropene	<0.04	Hexachlorobutadiene	<0.04
1,1,2-Trichloroethane	<0.04	Naphthalene	<0.04
2-Hexanone	<0.4	1,2,3-Trichlorobenzene	<0.04
1,3-Dichloropropane	<0.04		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/24/98

Date Received: 10/30/98

Project: BV 97011B

QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF SOIL SAMPLES FOR GASOLINE
USING NWTPH-Gx

Laboratory Code: 810182-14 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Gasoline	µg/g (ppm)	<1	<1	nm	0-20

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	Relative Percent Difference
Gasoline	µg/g (ppm)	10	83	82	68-112	1

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/24/98

Date Received: 10/30/98

Project: BV 97011B

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL EXTRACTABLE
PETROLEUM HYDROCARBONS BY GC/FID (NWTPH-Dx)**

Laboratory Code: 810182-03 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Diesel Extended	µg/g (ppm)	<50	<50	nm	0-20

Laboratory Code: 810182-10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	Relative Percent Difference
Diesel Extended	µg/g (ppm)	500	<50	121	128	41-170	6

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	Acceptance Criteria
Diesel Extended	µg/g (ppm)	500	106	59-138

FRIEDMAN & BRUYA, INC.**ENVIRONMENTAL CHEMISTS**

Date of Report: 11/24/98

Date Received: 10/30/98

Project: BV 97011B

**QUALITY ASSURANCE RESULTS
FOR TOTAL METALS BY
INDUCTIVELY COUPLED PLASMA (ICP)
(METHOD 6010)**

Laboratory Code: 810004-02 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Cadmium	ug/g (ppm)	1	1	0	0-20
Chromium	ug/g (ppm)	10	10	0	0-20
Lead	ug/g (ppm)	110	110	0	0-20

Laboratory Code: 810004-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	RPD
Cadmium	ug/g (ppm)	50	1	118	119	50-150	1
Chromium	ug/g (ppm)	50	10	112	111	50-150	1
Lead	ug/g (ppm)	100	110	118	117	50-150	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	RPD
Cadmium	ug/g (ppm)	50	100	102	80-120	2
Chromium	ug/g (ppm)	50	103	104	80-120	1
Lead	ug/g (ppm)	100	102	104	80-120	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/24/98

Date Received: 10/30/98

Project: BV 97011B

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCHLORS 1016/1260 BY GC/ECD

Laboratory Code: 810067-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Arochlor 1016	µg/g (ppm)	<0.2	<0.2	nm	0-20
Arochlor 1260	µg/g (ppm)	<0.2	<0.2	nm	0-20

Laboratory Code: 810067-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	Relative Percent Difference
Arochlor 1016	µg/g (ppm)	1.7	<0.2	99	103	65-135	4
Arochlor 1260	µg/g (ppm)	1.7	<0.2	95	97	65-135	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	Relative Percent Difference
Arochlor 1016	µg/g (ppm)	1.7	106	104	65-135	2
Arochlor 1260	µg/g (ppm)	1.7	100	98	65-135	2

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 11/24/98

Date Received: 10/30/98

Project: BV 97011B

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260B

Laboratory Code: 811018-02 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
1,1-Dichloroethene	µg/g (ppm)	<0.04	<0.04	nm	0-20
Benzene	µg/g (ppm)	<0.04	<0.04	nm	0-20
Trichloroethene	µg/g (ppm)	<0.04	<0.04	nm	0-20
Toluene	µg/g (ppm)	<0.04	<0.04	nm	0-20
Chlorobenzene	µg/g (ppm)	<0.04	<0.04	nm	0-20

Laboratory Code: 811018-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	Acceptance Criteria
1,1-Dichloroethene	µg/g (ppm)	2	<0.04	56	35-120
Benzene	µg/g (ppm)	2	<0.04	66	45-116
Trichloroethene	µg/g (ppm)	2	<0.04	66	39-114
Toluene	µg/g (ppm)	2	<0.04	60	40-113
Chlorobenzene	µg/g (ppm)	2	<0.04	65	46-114

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	Relative Percent Difference
1,1-Dichloroethene	µg/g (ppm)	2	77	82	54-133	6
Benzene	µg/g (ppm)	2	80	83	61-126	4
Trichloroethene	µg/g (ppm)	2	75	79	57-122	5
Toluene	µg/g (ppm)	2	78	83	60-118	6
Chlorobenzene	µg/g (ppm)	2	80	83	67-119	4

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

SOUND ANALYTICAL SERVICES, INC.

Summary of Results for Sound Analytical Services Laboratory Number 76773

SAS Sample #	Client Sample ID	Date Received	Date Prepared	Date Analyzed	Matrix	% Solids	Parameter	Result	PQL	Flags	Units
76773-01	EB-15-7.5-9.5'	11/3/98	11/7/98	11/20/98	solid	94.58	Naphthalene	1	0.17		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/7/98	11/20/98	solid	94.56	2-Methylnaphthalene	0.52	0.17		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/7/98	11/20/98	solid	94.58	Acenaphthylene	ND	0.17		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/7/98	11/20/98	solid	94.58	Acenaphthene	ND	0.17		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/7/98	11/20/98	solid	94.56	Fluorene	ND	0.17		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/7/98	11/20/98	solid	94.56	Phenanthrene	ND	0.17		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/7/98	11/20/98	solid	94.58	Anthracene	ND	0.17		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/7/98	11/20/98	solid	94.55	Fluoranthene	ND	0.17		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/7/98	11/20/98	solid	94.58	Pyrene	ND	0.17		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/7/98	11/20/98	solid	94.56	Benzo(a)anthracene	ND	0.17		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/7/98	11/20/98	solid	94.56	Chrysene	ND	0.17		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/7/98	11/20/98	solid	94.56	Benzo(b)fluoranthene	ND	0.17		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/7/98	11/20/98	solid	94.56	Benzo(k)fluoranthene	ND	0.17		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/7/98	11/20/98	solid	94.56	Benzo(a)pyrene	ND	0.17		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/7/98	11/20/98	solid	94.56	Indeno(1,2,3-cd)pyrene	ND	0.17		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/7/98	11/20/98	solid	94.56	Dibenz(a,h)anthracene	ND	0.17		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/7/98	11/20/98	solid	94.56	Benzo(g,h,i)perylene	ND	0.17		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/7/98	11/20/98	solid	93.78	Naphthalene	3	0.17		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/7/98	11/20/98	solid	93.78	2-Methylnaphthalene	5.5	0.17		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/7/98	11/20/98	solid	93.78	Acenaphthylene	ND	0.17		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/7/98	11/20/98	solid	93.78	Acenaphthene	ND	0.17		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/7/98	11/20/98	solid	93.78	Fluorene	ND	0.17		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/7/98	11/20/98	solid	93.78	Phenanthrene	0.9	0.17		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/7/98	11/20/98	solid	93.78	Anthracene	ND	0.17		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/7/98	11/20/98	solid	93.78	Fluoranthene	ND	0.17		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/7/98	11/20/98	solid	93.78	Pyrene	ND	0.17		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/7/98	11/20/98	solid	93.78	Benzo(a)anthracene	ND	0.17		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/7/98	11/20/98	solid	93.78	Chrysene	ND	0.17		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/7/98	11/20/98	solid	93.78	Benzo(b)fluoranthene	ND	0.17		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/7/98	11/20/98	solid	93.78	Benzo(k)fluoranthene	ND	0.17		mg/kg

SOUND ANALYTICAL SERVICES, INC.

76773-02	EB-24-7.5-9.0'	11/3/98	11/7/98	11/20/98	solid	93.78	Benzo(a)pyrene	ND	0.17		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/7/98	11/20/98	solid	93.78	Indeno(1,2,3-cd)pyrene	ND	0.17		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/7/98	11/20/98	solid	93.78	Dibenz(a,h)anthracene	ND	0.17		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/7/98	11/20/98	solid	93.78	Benzo(g,h,i)perylene	ND	0.17		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/7/98	11/16/98	solid	94.56	C8-C10 Aliphatics	31	2.2		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/7/98	11/16/98	solid	94.56	C10-C12 Aliphatics	89	2.2		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/7/98	11/16/98	solid	94.56	C12-C16 Aliphatics	190	2.2		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/7/98	11/16/98	solid	94.56	C18-C21 Aliphatics	1800	44	D	mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/7/98	11/16/98	solid	94.56	C21-C34 Aliphatics	20000	88	D	mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/7/98	11/16/98	solid	94.56	C10-C12 Aromatics	20	2.2		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/7/98	11/16/98	solid	94.56	C12-C16 Aromatics	39	2.2		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/7/98	11/16/98	solid	94.56	C18-C21 Aromatics	540	4.4		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/7/98	11/16/98	solid	94.56	C21-C34 Aromatics	3800	4.4		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/7/98	11/16/98	solid	93.78	C8-C10 Aliphatics	72	2.2		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/7/98	11/16/98	solid	93.78	C10-C12 Aliphatics	130	2.2		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/7/98	11/16/98	solid	93.78	C12-C16 Aliphatics	260	2.2		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/7/98	11/16/98	solid	93.78	C18-C21 Aliphatics	4400	440	D	mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/7/98	11/16/98	solid	93.78	C21-C34 Aliphatics	28000	860	D	mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/7/98	11/16/98	solid	93.78	C10-C12 Aromatics	31	2.2		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/7/98	11/16/98	solid	93.78	C12-C16 Aromatics	66	2.2		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/7/98	11/16/98	solid	93.78	C18-C21 Aromatics	740	4.3		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/7/98	11/16/98	solid	93.78	C21-C34 Aromatics	3300	4.3		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/10/98	11/11/98	solid	94.56	EC 5-8 Aliphatics	ND	1.2		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/10/98	11/11/98	solid	94.56	EC >8-8 Aliphatics	ND	0.83		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/10/98	11/11/98	solid	94.56	EC >8-10 Aliphatics	ND	2.5	J	mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/10/98	11/11/98	solid	94.56	EC >8-10 Aromatics	23	2.1		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/10/98	11/11/98	solid	94.56	MTBE	ND	0.41		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/10/98	11/11/98	solid	94.56	Benzene	ND	0.41		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/10/98	11/11/98	solid	94.56	Toluene	ND	0.41		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/10/98	11/11/98	solid	94.56	Ethylbenzene	ND	0.41		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/10/98	11/11/98	solid	94.56	m- & p-Xylene	ND	0.83		mg/kg
76773-01	EB-15-7.5-9.5'	11/3/98	11/10/98	11/11/98	solid	94.56	o-Xylene	0.49	0.41		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/10/98	11/11/98	solid	93.78	EC 5-8 Aliphatics	2.8	1.2		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/10/98	11/11/98	solid	93.78	EC >8-8 Aliphatics	3.1	0.82		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/10/98	11/11/98	solid	93.78	EC >8-10 Aliphatics	ND	2.5	J	mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/10/98	11/11/98	solid	93.78	EC >8-10 Aromatics	40	2		mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/10/98	11/11/98	solid	93.78	MTBE	ND	0.41		mg/kg

SOUND ANALYTICAL SERVICES, INC.

76773-02	EB-24-7.5-9.0'	11/3/98	11/10/98	11/11/98	solid	93.78	Benzene	ND	0.41	mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/10/98	11/11/98	solid	93.78	Toluene	2.2	0.41	mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/10/98	11/11/98	solid	93.78	Ethylbenzene	0.78	0.41	mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/10/98	11/11/98	solid	93.78	m- & p-Xylene	2.7	0.82	mg/kg
76773-02	EB-24-7.5-9.0'	11/3/98	11/10/98	11/11/98	solid	93.78	o-Xylene	2	0.41	mg/kg



Work Order #

18939 120th Avenue N.E., Suite 101, Bothell, WA 98011-9508 (206) 481-9200 FAX 485-2992
 East 11115 Montgomery, Suite B, Spokane, WA 99206-4779 (509) 924-9200 FAX 924-9290
 9405 S.W. Nimbus Avenue, Beaverton, OR 97008-7132 (503) 643-9200 FAX 644-2202

TURNAROUND REQUEST in Business Days •

Organic & Inorganic Analyses

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Day

Fuels & Hydrocarbon Analyses

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5
Student

OTHER

Specify:

• Turnaround Requests less than standard may incur Rush Charges.

MATRIX
(W. S. A. O)

[illegible]

COMMENTS

REPORT TO: CHP GOODHUE - AEST

ATTENTION:

ADDRESS: 179 MADRONA LANE N
BAINBRIDGE IS WA 98110

PHONE: 206-786-9370 FAX: 9438

PROJECT NAME: CHUCK OLSON CENTER

PROJECT NUMBER: BV97011B

SAMPLED BY: WVB/RC

INVOICE TO:

ATTENTION:

ADDRESS:

P.O. NUMBER:

NCA QUOTE #

Analysis Request:

TPH-DATA
VOC-8260
EPA-VPH
METALS (CO, CR, PB)
PCBS
TPH-6

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)
1. EB-24-7.5-9.0	10/30-10/30	11
2. EB-21-13'	10/29 1256	12
3. EB-22-15'	10/30 800	13
4. EB-18-2.5'	10/28 4:10	14
5. EB-24-32'	10/30 130	15
6. EB-15b-25'	10/30 200	16
7. EB-17-10'	10/30 240	17
8. EB-17-20	10/30 305	18
9.		
10.		

RELINQUISHED BY (Signature): _____

DATE: 10/30

RECEIVED BY (Signature)

DATE _____

PRINT NAME:

FIRM:

TIME: 3/0

PRINT NAME: _____

ETD M.

Figure 2. (continued)

RELINQUISHED BY (Signature): _____

DATE:

RECEIVED BY (Signature of Agent)

Fig. 2. *See text.*

PRINT NAME: _____

FIRM:

TIME:

PRINT NAME: _____

FIG. 14.

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ADDITIONAL REMARKS:

PAGE 2 OF 2



**NORTH
CREEK
ANALYTICAL**
Environmental Laboratory Services

f4B 810182 C5 10-30-88 E03

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CHAIN OF CUSTODY REPORT

Work Order #

1012

REPORT TO: CHP GOODHUE - ACSI			INVOICE TO: SAINT		
ATTENTION:			ATTENTION:		
ADDRESS: 179 MADRONA LANE N BAINBRIDGE ISLAND, WA			ADDRESS:		
PHONE: 206-730-9370 FAX: 9438			P.O. NUMBER: NCA QUOTE #:		
PROJECT NAME: CHUCK OLSON CHAIR ROCKET			Analysis Request: TPH-DET 10C-8260B EPH/UPH METALS (CD) PCBS TPH-G		
PROJECT NUMBER: BV 970113					
SAMPLED BY: RB/WVG			OTHER: ☐ Specify:		
CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	NCA SAMPLE ID (Laboratory Use Only)	TURNAROUND REQUEST in Business Days *		
			☒ 10 Standard ☐ 7 ☐ 5 ☐ 4 ☐ 3 ☐ 2 ☐ 1 ☐ Same Day ☒ 5 Standard ☐ 3-4 ☐ 2 ☐ 1 ☐ Same Day		
			☐ OTHER Specify: * Turnaround Requests less than standard may incur Rush Charges.		
			MATRIX (W, S, A, O)	# OF CONTAINERS	COMMENTS
1. EB-12-7.5	10/28 1110	01	X	1	
2. EB-13-15'	10/28 1025	02	X	1	
3. EB-14-15'	10/28 1155	03	X	1	
4. EB-15-7.5'-9.5'	10/28 115	04	X X X X	4	
5. EB-16-20'	10/28 345	05	X	1	
6. EB-18-15'	10/28 435	06	X	1	
7. EB-19-10'	10/30 0900	07	X X	1	
8. EB-19-20'	10/30 925	08	X	1	
9. EB-20-10'	10/29 800	09	X	1	
10. EB-13-10'	10/28 1010	10	X X	2	
RELINQUISHED BY (Signature): William Goodhue			RECEIVED BY (Signature): Champion Lee		
DATE: 10/30			DATE: 10/30		
PRINT NAME: William Goodhue FIRM: ACSI TIME: 310			PRINT NAME: H. K. Lee FIRM: F&B Inc. TIME: 310		
RELINQUISHED BY (Signature):			RECEIVED BY (Signature): S. Oborn		
DATE:			DATE: 10/30/88		
PRINT NAME:			PRINT NAME: S. Oborn		
FIRM:			FIRM:		
TIME:			TIME: 5pm		
ADDITIONAL REMARKS:					

Attachment 3 – Tabular Summary of Analytical Data

Table 1
Soil Sample Analytical Results - Hydrocarbon Analyses
Former Chuck Olson Chevrolet Facility
Shoreline, Washington
(all results reported as mg/kg)

PRELIMINARY

Sample Information					Analyses									
Sample Location	Sample Identification	Sample Date	Sample Depth, feet	Field Screening (Odors)	WTPH-HCID			WTPH-D (extended)		WTPH-G	Method 8020A or 8260A			
					Gasoline	Diesel	Heavy Oil	Diesel Range	Heavy Oil Range	TPH-G	Benzene	Toluene	Ethyl-Benzene	Total Xylenes
Sump	IB-1	4/14/97	2.5-3	ND	< 20.0	DET	DET	< 10.0	< 25.0	NA	NA	NA	NA	NA
Bay #9	IB-2	4/14/97	8	ND	DET	DET	DET	5,050	17,400	< 10.0	< 0.1	< 0.1	< 0.1	< 0.2
Former UST Area	IB-3.1	5/13/97	8	ND	< 20.0	< 50.0	< 100.0	NA	NA	NA	NA	NA	NA	NA
Former UST Area	IB-4.1	5/13/97	7	ND	< 20.0	< 50.0	DET	116	253	NA	NA	NA	NA	NA
Bay #1	IB-5.1	5/13/97	8	M/S	DET	DET	DET	18,300	52,400	30.6	< 0.05	< 0.05	< 0.05	0.113
Bay #1	EB-12	10/28/98	7.5	ND	NA	NA	NA	< 10	1,800	NA	NA	NA	NA	NA
Bay #1	EB-13	10/28/98	10	S/M	NA	NA	NA	< 10	< 50	NA	< 0.04	< 0.04	< 0.04	< 0.04
Bay #1	EB-13	10/28/98	15	ND	NA	NA	NA	< 10	< 50	NA	NA	NA	NA	NA
Bay #3	IB-7.1	5/13/97	8	ND	< 20.0	< 50.0	< 100.0	NA	NA	NA	NA	NA	NA	NA
Bay #4	IB-8.1	5/13/97	7	ND	< 20.0	DET	DET	3,260	5,820	NA	NA	NA	NA	NA
Bay #4	EB-14	10/28/98	15	ND	NA	NA	NA	< 10	1,800	NA	NA	NA	NA	NA
Bay #5	IB-9.1	5/13/97	7.5	S/M	DET	DET	DET	13,800	34,300	NA	NA	NA	NA	NA
Bay #5	IB-9.3	5/13/97	13.5	S/M	DET	DET	DET	5,150	20,900	NA	NA	NA	NA	NA
Bay #5	EB-15	10/28/98	7.5-9.5	M/S	NA	NA	NA	90	17,000	NA	< 0.04	0.17	0.10	0.72
Bay #5	EB-15B	10/30/98	25	ND	NA	NA	NA	< 10	< 50	NA	NA	NA	NA	NA
Bay #5	EB-16	10/28/98	20	ND	NA	NA	NA	< 10	< 50	NA	NA	NA	NA	NA
Bay #6	EB-17	10/30/98	10	S/M	NA	NA	NA	610	12,000	NA	< 0.04	< 0.04	< 0.04	0.47
Bay #6	EB-17	10/30/98	20	S/M	NA	NA	NA	< 10	60	NA	NA	NA	NA	NA
Bay #7	IB-10.1	5/13/97	7	S/M	DET	DET	DET	16,900	44,800	419	< 0.500	0.58	1.03	10.50
Bay #7	EB-18	10/28/98	2.5	S/M	NA	NA	NA	< 10	< 50	< 1	NA	NA	NA	NA
Bay #7	EB-18	10/28/98	15	ND	NA	NA	NA	< 10	< 50	< 1	NA	NA	NA	NA
Bay #8	EB-19	10/30/98	10	S/M	NA	NA	NA	30	2,800	2	< 0.04	< 0.04	< 0.04	< 0.04
Bay #8	EB-19	10/30/98	20	ND	NA	NA	NA	< 10	< 50	NA	NA	NA	NA	NA
Bay #8/9	EB-20	10/29/98	10	ND	NA	NA	NA	< 10	< 50	NA	NA	NA	NA	NA
Bay #9	EB-21	10/29/98	13	S/M	NA	NA	NA	< 10	< 50	NA	< 0.04	< 0.04	< 0.04	< 0.04
Bay #10	EB-22	10/30/98	15	ND	NA	NA	NA	< 10	< 50	NA	NA	NA	NA	NA
Bay #12	IB-11.1	5/13/97	5	S/M-solvent	DET	DET	DET	9,080	20,400	567	< 0.5	< 0.5	0.62	7.00
Bay #12	EB-24	10/30/98	7.5-9.0	M/S	NA	NA	NA	290	29,000	NA	NA	NA	NA	NA
Bay #12	EB-24	10/30/98	32	ND	NA	NA	NA	< 10	60	NA	< 0.04	< 0.04	< 0.04	< 0.04
Former Parts Area	IB-12.1	5/13/97	2.5	ND	NA	NA	NA	NA	NA	NA	< 0.2	< 0.2	< 0.2	< 0.2

NA = Not Analyzed

DET = Detected

Table 2
Soil Sample Analytical Results - VOC Analyses by Method 8260B
Former Chuck Olson Chevrolet Facility
Shoreline, Washington
(all results reported as mg/kg)

PRELIMINARY

	Parts Area	Bay #1	Bay #5	Bay #6	Bay #8	Bay #9	Bay #11	Bay #12	Bay #12
Sample Identification:	IB-12.1	EB-13	EB-15	EB-17	EB-19	EB-21	IB-1	IB-11.1	EB-24
Sample Depth, feet:	8'	10'	7.5'-9.5'	10'	10'	13'	3'	5'	32'
Sample Date:	5/13/97	10/28/98	10/28/98	10/30/98	10/30/98	10/29/98	4/14/97	5/13/97	10/30/98
n-Butylbenzene	< 0.200	NA	NA	NA	NA	NA	< 0.200	0.91	-
sec-Butylbenzene	< 0.200	< 0.04	0.11	0.45	< 0.04	< 0.04	< 0.200	0.429	< 0.04
Ethylbenzene	< 0.200	< 0.04	0.10	< 0.04	< 0.04	< 0.04	< 0.200	0.259	< 0.04
Isopropylbenzene	< 0.200	< 0.04	< 0.04	0.08	< 0.04	< 0.04	< 0.200	0.323	< 0.04
p-Isopropyltoluene	< 0.200	< 0.04	0.23	0.51	< 0.04	< 0.04	< 0.200	1.2	< 0.04
Naphthalene	< 0.200	< 0.04	0.36	0.17	< 0.04	< 0.04	< 0.200	1.56	< 0.04
n-Propylbenzene	< 0.200	< 0.04	0.13	0.35	< 0.04	< 0.04	< 0.200	0.723	< 0.04
Tetrachloroethene	< 0.200	< 0.04	0.53	0.06	0.04	< 0.04	0.488	3.19	< 0.04
Toluene	< 0.200	< 0.04	0.17	< 0.04	< 0.04	< 0.04	< 0.200	0.293	< 0.04
1,1,1-Trichloroethane	< 0.200	< 0.04	< 0.04	< 0.04	< 0.04	< 0.04	0.317	2.74	< 0.04
1,2,4-Trimethylbenzene	< 0.200	< 0.04	1.4	3.4	< 0.04	< 0.04	< 0.200	7.04	< 0.04
1,3,5-Trimethylbenzene	< 0.200	< 0.04	0.71	1.5	< 0.04	< 0.04	< 0.200	2.02	< 0.04
o-Xylene	< 0.200	< 0.04	0.27	0.21	< 0.04	< 0.04	< 0.200	1.16	< 0.04
m,p-Xylene	< 0.200	< 0.04	0.45	0.26	< 0.04	< 0.04	< 0.200	1.94	< 0.04

Results reported only for compounds detected in one or more samples

NA = Not Analyzed

Table 3
Soil Sample Analytical Results - Metals and PCBs
Former Chuck Olson Chevrolet Facility
Shoreline, Washington
(all results reported as mg/kg)

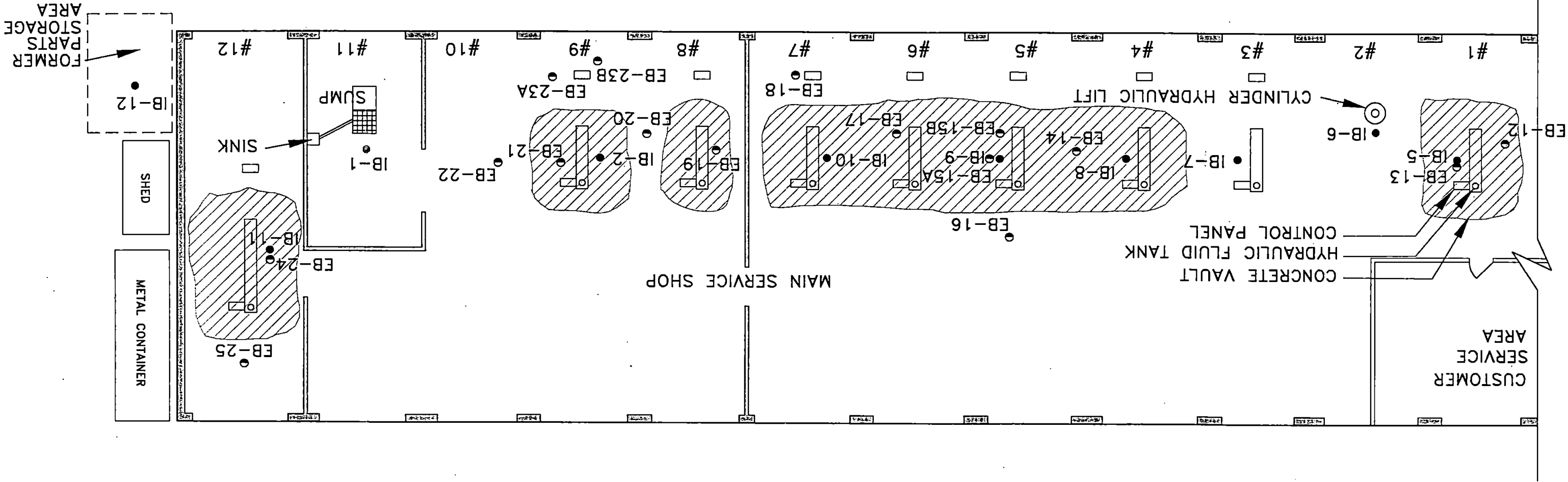
PRELIMINARY

Sample Information				Metals (Method 6010)			PCBs (Method 8080)
Sample Location	Sample Identification	Sample Date	Sample Depth, feet	Cadmium	Chromium	Lead	Total Arochlors
Bay #5	EB-15	10/28/98	7.5-9.5	<1	4	<2	NA
Bay #12	EB-24	10/30/98	7.5-9.0	<1	4	57	<0.2

NA = Not Analyzed

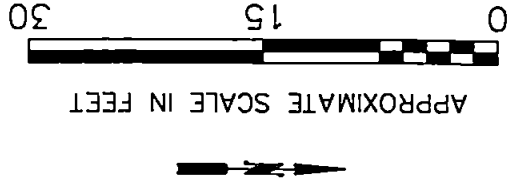
Attachment 4 – Site Plan

PARKING



LEGEND

- Hydraulic Lift
- Cylinder Hydraulic Lift
- Geoprobe Boring (1997)
- Hollow Stem Auger Boring (1998)
- Estimated Lateral Extent of Impacted Soil



Site Plan
Former Chuck Olson Chevrolet Facility