Phase II Environmental Site Assessment 920 First Avenue Anchorage, Alaska

Project No. 002397.PE06.01

February 2007

Prepared for: PENCO 6000 A Street Anchorage, Alaska 99518

Prepared by:

ECOLOGY AND ENVIRONMENT, INC.

able of Contents

Section

Page

 1.1 Purpose and Objectives	. 1-1 . 1-1 2-1 . 2-1 . 2-1 . 2-1
 Report Organization	. 1-1 2-1 . 2-1 . 2-1 . 2-1
 2 Background Summary. 2.1 Site Location and Description. 2.2 Site History 2.3 Previous Investigations	2-1 . 2-1 . 2-1 . 2-1
 2 Background Summary	2-1 . 2-1 . 2-1 . 2-1
 2.1 Site Location and Description	. 2-1 . 2-1 . 2-1
 2.2 Site History 2.3 Previous Investigations	. 2-1 . 2-1
 3 Site Investigation Activities 	. 2-1
3 Site Investigation Activities	
	3-1
3.1 Field Investigation	. 3-1
3.1.1 Borehole Installation and Soil Sampling	.3-1
3.1.2 Monitoring Well Installation and Groundwater Sampling	. 3-2
4 Site Investigation Results	4-1
1 State of Alaska Cleanup Values	т. Л_1
4.1 State of Maska Cleanup Values	Λ_1
4.3 Groundwater Analytical Results	. 4-2
5 Summary and Conclusions	5 1
5 Summary and Conclusions	J-I
6 References	6-1
Appendices	

- **B** Photographs of Site Investigation
- C Data Validation Memo and Laboratory Analytical Reports

ist of Tables

Table

Page

Table 3-1	Sample Collection and Analytical Summary	3-4
Table 4-1	Subsurface Soil Samples Analytical Results Summary	4-3
Table 4-2	Water Samples Analytical Results Summary	4-4

ist of Figures

Figure

Page

Figure 1	Site Vicinity Map	1-3
Figure 2	Site Location Map	1-4
Figure 3	Sample Location Map	3-3

ist of Abbreviations and Acronyms

Acronym	Definition
ADEC	Alaska Department of Environmental Conservation
BGS	below ground surface
BH	Borehole
BTEX	benzene, toluene, ethylbenzene, and xylenes
DRO	diesel range organics
E & E	Ecology and Environment, Inc.
EPA	United States Environmental Protection Agency
GRO	gasoline range organics
mg/Kg	milligrams per kilpgram
mg/L	milligrams per liter
MW	monitoring well
ND	non-detect
PCBs	polychlorinated biphenyls
PID	photoionization detector
RRO	residual range organics
STL	Severn Trent Laboratories – Seattle
SVOCs	semi-volatile organic compounds
VOCs	volatile organic compounds

Introduction

Ecology and Environment, Inc., (E & E) under contract with Pacific Environmental Corporation (PENCO), has prepared this Phase II Environmental Site Assessment report to present the results of environmental sampling activities conducted at 920 1st Avenue in Anchorage, Alaska (see Figures 1-1 and 1-2).

1.1 Purpose and Objectives

The purpose of this report is to expand on a Phase I Environmental Site Assessment report prepared by E & E for PENCO and to present the analytical findings from sampling activities conducted at the site. The objective is to determine if the analytical data gathered indicates the presence of contamination of site soil or groundwater at concentrations exceeding a reasonable level of concern.

This report presents the analytical results with a comparison to relevant State of Alaska standards.

1.2 Report Organization

This report presents an environmental assessment based on the results, observations, and analytical data from the fieldwork performed by E & E at the site in January 2007. Following this introduction, the report is organized into the following sections:

- Section 2 presents a background summary, including a site location and description, and a summary of previous investigations provided to E & E;
- Section 3 presents a description of site investigation activities, including a summary of field efforts and methodologies used for sample collection;
- Section 4 presents a discussion of site investigation results, including a summary of analytical results, data validation, and significant findings;

- Section 5 presents a summary of results and recommendations; and
- Section 6 lists references cited in the report.

02:002397.PE06.01\Fig1-1.CDR-02/19/07-GRA



SOURCE: 1979 USGS Map, Anchorage (A-8) NW Quadrangle, Alaska, 1:25000-Scale Series (Topographic), Revised 1994.





Project: Phase II Environmental Site Assessment 920 First Avenue, Anchorage, Alaska 02:002397.PE06.01\Fig1-2.CDR-02/19/07-GRA



Approximate Scale

0

40 80 Meters

Figure 1-2 Site Location Map

Project: Phase II Environmental Site Assessment 920 First Avenue, Anchorage, Alaska

Background Summary

The following subsections summarize the site location and description, site history, and previous investigations.

2.1 Site Location and Description

The 1st Avenue property is located east of downtown Anchorage, Alaska, at the corner of 1st Avenue and Ingra Street. The legal description of the property is Lot Block 34A, East Addition. It is a sloping site of approximately 33,000 square feet. The narrow side of the property fronts on 1st Avenue, and the lot is parallel to Ingra Street. The site slopes from the south down to the north.

The general area around the property is part of the slope into the Ship Creek Valley. Whereas the area at the top of the slope near 3rd Avenue is founded on sand and gravel, the soil stratigraphy changes to silt and clay progressing further down the slope.

A business operates on the property immediately to the east of the subject property. Upslope along Ingra Street is an Auto Auction business. Across Ingra is the slope below the former Native Medical Center. To the north is the property of Municipal Light and Power.

2.2 Site History

The subject property has remained vacant for many years. Just after the 1964 earthquake, there were a number of vehicles and other materials stored on the site, but they were removed before the mid 1970s. A number of air photographs were reviewed for the subject property. The site area has changed little since before the 1964 earthquake.

2.3 Previous Investigations

No other investigations of this site have occurred.

Site Investigation Activities

The following subsections summarize site investigation activities. Field activities took place from January 10 to January 12, 2007. Field notes are contained in Appendix A of this report. Photographs from this investigation are contained in Appendix B.

3.1 Field Investigation

E & E field work included installation of five soil borings, one at each corner of the site and one in the center of the site (see Figure 3-1). Each soil boring was advanced using a Nodwell mounted rotary drill rig. Samples were collected using a 2-foot-long stainless steel split spoon sampler. The sampler was decontaminated between each use, with a rinsate sample collected to evaluate the effectiveness of the field decontamination procedure. A soil sample was collected by scooping soil from the split spoon sampler and placing it in a plastic bag with a ziplock closure. Collected soil samples were screened using a photoionization detector (PID) to determine relative presence of volatile organics. For all near-surface samples (2 to 4 feet below ground surface [bgs]) the collected soil samples were also collected for off-site analysis. A select number of subsurface soil samples were also collected for off-site analysis. Additionally, two boreholes (BH) (BH-1 and BH-2) were finished as monitoring wells.

3.1.1 Borehole Installation and Soil Sampling

Boring locations are presented on Figure 3-1, and a generalized drilling log is contained in Appendix D. Table 3-1 summarizes the depth, locations, and analysis for all samples collected at the site.

Soils were samples were collected at each BH location beginning below the frost layer, at about 2 feet bgs. Field samples were collected at the following depths for each BH:

- BH-1: Sample collected for PID and off-site analysis at 2 to 4 feet bgs; PID only at 10 to 12 feet and 15 to 17 feet bgs.
- BH-2: Sample collected for PID and off-site analysis at 2 to 4 feet bgs; and PID only at 15 to 17 feet bgs. No sample was collected at 10 to 12 feet bgs.

- BH-3: Sample collected for PID and off-site analysis at 2 to 4 feet and at 10 to 12 feet bgs, with PID only from 15 to 17 feet bgs.
- BH-4: Sample collected for PID and off-site analysis at 2 to 4 feet and for PID only at 10 to 12 feet and 15 to 17 feet bgs.
- BH-5: Sample collected for PID and off-site analysis at 2 to 4 feet and 15 to 17 feet bgs, with PID only from 10 to 12 feet bgs.

All soil samples were field screened using headspace PID protocols as recommended by Alaska Department of Environmental Conservation (ADEC). All soil samples collected from the near surface (2 to 4 feet bgs) were submitted for off-site analysis. PID screening was used to select additional samples for submittal for off-site analysis. Off-site analysis was performed by Severn Trent Laboratories – Seattle (STL), Tacoma, Washington, for the following:

- Gasoline Range Organics (GRO) by Alaska Method AK101;
- Diesel Range Organics (DRO) by Method AK102;
- Residual Range Organics (RRO) by Method AK103;
- Polychlorinated Biphenyls (PCBs) by EPA Method 8082;
- Semi-Volatile Organic Compounds (SVOCs) by EPA Method 8270;
- Volatile Organic Compounds (VOCs) by EPA Method 8260; and
- Inorganics (metals) by EPA Method 6010B/7471A.

3.1.2 Monitoring Well Installation and Groundwater Sampling

Two of the boreholes selected for completion into groundwater monitoring wells. BH-1 and BH-2, located at the lower end of the site, near 1st Avenue, were selected for completion into monitoring wells. BH-1 became MW-1, and BH-2 became MW-2. Total depth of each well was approximately 20 feet bgs with 10 feet of polyvinyl chloride screen packed with sand.

E & E collected one groundwater sample from MW-2 for off-site analysis for:

- GRO by Alaska Method AK101;
- DRO by Method AK102;
- RRO by Method AK103;
- PCBs by EPA Method 8082;
- SVOCs by EPA Method 8270;
- VOCs by EPA Method 8260; and
- Inorganics (metals) by EPA Method 6010B/7471A.







				TA	BLF	E 3-1	L						
		SAMPLE CO	DLLECTIO	N A	ND	AN	ALY	TI	CAL	SU	MM	IARY	
			FIRST A	VEN	NUE	PR	OP	ERT	Y				
			ANCH	ORA	٩GE	E, A]	LAS	SKA					
							Ana	lysis					
											(\		
				ing							171		
				een			$\overline{}$				174		
				Scr	RO	RO	RO	(10)	(0)	5)	10E		
				ld 5	9	Ξ	R	(82	826	808	(09		
				Fie	101	102	103	Cs	S (s (8	als	T ? 11	
a	Sample Date /		-	Ð	Κ	K	K	VO	00	CB	Iet	Field	
Sample ID	Time	Matrix	Depth (feet)	Р	V	A	A	S	Λ	Ρ	N	Location	Description
PEN001	1/10/2007 12:45	Subsurface Soil	2 to 4	Χ	Х	Χ	Χ	Χ	Χ	Χ	Х	BH 1	sandy gravel
PEN002	1/10/2007 13:15	Subsurface Soil	10 to 12	Χ								BH 1	silty clay with sand
PEN003	1/10/2007 13:50	Subsurface Soil	15 to 17	Χ								BH 1	silty clay
PEN004	1/10/2007 15:25	Subsurface Soil	2 to 4	Χ	Х	Х	Χ	Χ	Χ	Χ	Χ	BH 2	sandy gravel with loam
PEN005	1/10/2007 13:45	Subsurface Soil	15 to 17	Χ								BH 2	sandy silt
PEN006	1/11/2007 11:30	Subsurface Soil	2.5 to 4.5	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	BH 3	well graded sand
PEN007	1/11/2007 11:30	Subsurface Soil	2.5 to 4.5	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	BH 3	duplicate sample
PEN008	1/11/2007 11:40	Subsurface Soil	10 to 12	Χ	Χ	Χ	Χ	Χ	Χ	Χ	Χ	BH 3	sandy silt
PEN009	1/11/2007 11:50	Subsurface Soil	15 to 17	Χ								BH 3	silty clay
PEN010	1/11/2007 12:12	Subsurface Soil	2.5 to 4.5	Х	Х	Χ	Χ	Χ	Χ	Χ	Χ	BH 4	sandy gravel
PEN011	1/11/2007 12:30	Subsurface Soil	10 to 12	Х								BH 4	sandy gravel
PEN012	1/11/2007 12:40	Subsurface Soil	15 to 17	Χ								BH 4	well graded sand
PEN013	1/11/2007 13:05	Subsurface Soil	2.5 to 4.5	Х	Х	Χ	Χ	Χ	Χ	Χ	Χ	BH 5	well graded sand
PEN014	1/11/2007 13:20	Subsurface Soil	10 to 12	X								BH 5	silty sand
PEN015	1/11/2007 13:30	Subsurface Soil	15 to 17	Х	Х	X	X	Χ	Χ	Χ	Χ	BH 5	silty sand
PEN016W	1/11/2007 16:00	Rinsate Sample	na		Х	Χ	Χ	Χ	Χ	Χ	X	na	split spoon rinsate
PEN017W	1/12/2007 12:00	Groundwater	na		Х	Χ	Χ	Χ	Χ	Χ	Х	MW-2 (BH 2)	turbid water

<u>Key:</u> BH = Bore Hole

PID - Photo ionization detector

DRO = Diesel Range Organics

GRO = Gasoline Range Organics

PCBs = Polychlorinated biphenyls

RRO - Residual Range Organics

SVOCs - semi-Volitile Organic Compounds

VOCs - Volitile Organic Compounds

4

Site Investigation Results

The following subsections describe the results of the current investigation. Analytical data were validated by an E & E chemist. Data validation memoranda and laboratory analytical data reports are contained in Appendix E.

4.1 State of Alaska Cleanup Values

ADEC Method Two Soil Cleanup Levels for under 40-inch precipitation zones [18 AAC 75.341(c), (d)] were used in interpretations of analytical data from the site. To be protective, analytical results were compared to the most conservative concentration of the three categories of Soil Cleanup Levels (Ingestion, Inhalation, and Migration to Groundwater) for under 40-inch precipitation zones.

4.2 Soil Analytical Results

A total of seven primary samples and one duplicate sample were collected at the site. Five of the seven samples (PEN001, PEN004, PEN006, PEN010, and PEN013) were from near-surface soils. One sample (PEN 008) was from approximately 10 to 12 feet bgs, and one sample (PEN 0015) was collected from 15 to 17 feet bgs. Table 4-1 summarizes the analytical results for soil samples collected at the site. Because the number of VOC and SVOC analysts is extensive, Table 4-1 only lists those for which a laboratory result above non-detect was reported.

All soil samples collected appeared clean, without any odor. Analysis for GRO, DRO, VOCs, and PCBs indicates no evidence of contamination for these analytes. For SVOC analysis, two analytes were detected in sample PEN001 above non-detect (phenanthrene and pyrene) but well below ADEC cleanup levels. In sample PEN010, one analyte (bis [2-ethylhexyl] phthalate) was detected, again well below the ADEC cleanup level established for this analyte.

Soils at the site were tested for nine inorganics: arsenic, barium, cadmium, chromium, lead, selenium, silver, and mercury. Arsenic at concentrations above ADEC cleanup values were detected in all soil samples collected at the site. No evidence of a source of arsenic contamination exists at the site. Three soil samples contained chromium above the ADEC cleanup value of 26 milligrams per kilogram. The elevated chromium and arsenic values may be within soil background concentrations for the site area (Gough *et al.* 1988).

4.3 Groundwater Analytical Results

One groundwater sample (PEN017W) was collected from MW-2 (BH-2), located at the northeast corner of the site (see Table 4-2). Analytical results for ADEC fuels indicate the presence of DRO in groundwater at 0.24 mg/liter (mg/L) which is below the ADEC cleanup value for DRO in groundwater of 1.5 mg/L. Inorganics found in groundwater exceeded established ADEC cleanup values for all analytes (arsenic, barium, cadmium, chromium, lead, selenium, and mercury) except silver.

Because of the low recharge rate of the well, field filtration of the sample was not accomplished, and it is expected this lack of filtration contributed to the elevated values for the above metals. No PCB or VOC analytes were detected in groundwater. Seventeen SVOCs were detected, with concentrations exceeding ADEC cleanup values for three analytes: bis(2-ethylhexyl)phthalate (0.046 mg/L); benzo[a]pyrene (0.00029 mg/L); and, dibenz(a,h)anthracene (0.00017 mg/L).

			TA	BLE 4-1					
		SUB	SURFAC	E SOIL S	AMPLES				
		ANALY	TICAL R	ESULTS	SUMMA	RY			
		FIF	RST AVE	NUE PRO	PERTY				
		A	NCHOR	AGE, AL	ASKA				
Field Sample Number	PEN001	PEN004	PEN006	PEN007	PEN008	PEN010	PEN013	PEN015	ADEC Mathad
Depth (Feet bgs)	2 to 4	2 to 4	2.5 to 4.5	2.5 to 4.5	10 to 12	2.5 to 4.5	2.5 to 4.5	15 to 17	2 VALUES
Location	BH 1	BH 2	BH 3	BH 3	BH 3	BH 4	BH 5	BH 5	2 VALUES
ADEC Fuels (mg/kg)									
Gasoline Range Organics (GRO)	ND	ND	ND	ND	ND	ND	ND	ND	300 mg/kg
Diesel Range Organics (DRO)	ND	ND	ND	ND	ND	ND	ND	ND	250 mg/kg
Inorganics (mg/kg)									
Arsenic	3.4	5.4	2.8	2.7	8.2	3.5	3.2	3.7	2
Barium	35	48	29	36	81	29	30	38	1,100
Cadmium	ND	ND	ND	ND	ND	ND	ND	ND	5
Chromium	25	<u>33</u>	<u>28</u>	32	<u>42</u>	20	25	26	26
Lead	4.8	5.7	2.5	2.6	6.5	3.7	2.8	2.8	1,000
Selenium	ND	ND	ND	ND	ND	ND	ND	ND	3.5
Silver	ND	ND	ND	ND	ND	ND	ND	ND	21
Mercury	0.05	0.071	0.036	0.044	0.12	0.052	0.05	0.03	1.4
Polychlorinated biphenyls (mg/kg)									
PCBs	ND	ND	ND	ND	ND	ND	ND	ND	
Semivolatile Organic Compounds (mg/Kg)								
Phenanthrene	0.020	ND	ND	ND	ND	ND	ND	ND	4,300
Pyrene	0.025	ND	ND	ND	ND	ND	ND	ND	1,500
Bis(2-ethylhexyl) phthalate	ND	ND	ND	ND	26	ND	ND	ND	1,200
Volatile Organic Compounds (mg/H	Kg)								
VOCs	ND	ND	ND	ND	ND	ND	ND	ND	

Note: **Bold** type indicates the sample result is greater than the reported detection limit.

<u>Underlined</u> type indicates the sample result exceeds a screening value.

Key:

BH = Bore Hole DRO = Diesel Range Organics GRO = Gasoline Range Organics mg/Kg = milligrams per kilogram ND = Non-detect PCBs = Polychlorinated biphenyls PID - Photo ionization detector RRO - Residual Range Organics SVOCs - semi-Volitile Organic Compounds VOCs - Volitile Organic Compounds

	TABLE 4 - 2		
	WATER SAMPI	LES	
	ANALYTICAL RESULTS	SUMMARY	
	FIRST AVENUE PRO	OPERTY	
	ANCHORAGE, AL	ASKA	
Field Sample Number	PEN016W	PEN017W	
Location	Split Spoon Rinsate	MW-2 (BH 2)	ADEC values
ADEC Fuels (mg/L)			
Gasoline Range Organics (GRO)	ND	ND	1.3 mg/L
Diesel Range Organics (DRO)	ND	0.24	1.5 mg/L
Inorganics (mg/L)			
Arsenic	ND	0.45	0.05
Barium	ND	<u>6.1</u>	2
Cadmium	ND	<u>0.013</u>	0.005
Chromium	ND	<u>2.9</u>	0.1
Lead	ND	<u>0.73</u>	0.015
Selenium	ND	<u>0.16</u>	0.05
Silver	ND	ND	0.18
Mercury	ND	<u>0.021</u>	0.002
Polychlorinated biphenyls (mg/L)			
PCBs	ND	ND	
Semivolatile Organic Compounds (mg/L)		
2-Methylphenol	ND	0.0048	1.8
Fluorene	ND	0.00079	1.46
Phenanthrene	ND	0.0027	11.0
Fluoranthene	ND	0.00056	1.46
Pyrene	ND	0.00065	1.1
Butyl benzyl phthalate	ND	0.0038	7.3
Benzo[a]anthracene	ND	0.00021	0.001
Chrysene	ND	0.00075	0.1
Bis(2-ethylhexyl) phthalate	ND	<u>0.046</u>	0.006
Di-n-octyl phthalate	ND	0.0049	3.65
Benzofluoranthene	ND	0.00064	0.001*
Benzo[a]pyrene	ND	<u>0.00029</u>	0.0002
Indeno[1,2,3-cd]pyrene	ND	0.00027	0.001
Dibenz(a,h)anthracene	ND	<u>0.00017</u>	0.0001
Benzo[g,h,i]perylene	ND	0.00041	1.1
1-Methylnaphthalene	ND	0.0025	1.5
Di-n-butyl phthalate	ND	0.094	3.65
Volatile Organic Compounds (mg/l	L)		
VOCs	ND	ND	

* value for benzo(b)fluoranthene

see key on next page

Note: **Bold** type indicates the sample result is greater than the reported detection limit. <u>Underlined</u> type indicates the sample result exceeds a screening value. BH = Bore Hole DRO = Diesel Range Organics GRO = Gasoline Range Organics mg/L = milligrams per liter MW = monitoring well ND = Non-detect PCBs = Polychlorinated biphenyls PID - Photo ionization detector RRO - Residual Range Organics SVOCs - semi-Volitile Organic Compounds VOCs - Volitile Organic Compounds

Summary and Conclusions

This investigation was designed to determine if soils and groundwater at 920 First Avenue in Anchorage, Alaska, contain any environmental contaminates at concentrations of concern.

This investigation found no potential contamination sources at the site. For the current investigation, five soil borings were completed, with two of the borings finished as monitoring wells.

Based on analytical results of soils, no evidence exists of a source contributing contaminants to the environment.

Groundwater analytical results do not indicate the presence of contamination at concentrations of a concern for inorganics. The concentration of bis(2-ethylhexyl) phthalate is considered elevated. E & E recommends redevelopment and re-sampling of MW-2 and possibly MW-1 for both inorganics and SVOCs.

6 References

L.P. Gough, R.C. Severson, and H.T. Shacklette, 1988, Elemental Concentrations in Soils and Other Surficial Materials in Alaska, USGS Paper 1458.

A Site Investigation Field Notes

18 "Outdoor writing products for outdoor writing people." . Kite in the **ALL-WEATHER WRITING PAPER HORIZONTAL LINE** All-Weather Notebook No. 391 2007 Avenue RECYCLABLE ST -1 "Rite in the Rain" - A unique All-Weather Writing paper created to shed water and enhance the written image. It is widely used throughout the world for recording critical field data in all kinds of weather. PEN Available in a variety of standard and custom printed case-bound field books, loose leaf, spiral and stapled notebooks, multi-copy sets and copier paper. For best results, use a pencil or an all-weather pen. a product of 4 5/8" x 7" - 48 Numbered Pages J. L. DARLING CORPORATION Tacoma, WA 98424-1017 USA (253) 922-5000 • FAX (253) 922-5300 www.RiteintheRain.com

Wed 1/10/05 MS Wed 1/10/07 0830 - Dan Frank and Mille (ones (ESE) 1315- ELE collects "sample PENDOZ. Su Separt Br ESE Warhouse and Table on page 18 for sample description TIT instrument from 1015 - ESE erun on-site. Discovery drilling crew, on-site, ESE com-1350 - E&E collects soil sample PENDO See table on page 13 for sample description. BH-1 to be completed est as monitoring well MW-1. ducts safety meeting topics discussed include cold weather ops chemical bezards mil physical hazards Discoury will provide safety briefing on drill rig safe-1500 - Discovery Drilling sets up on book hole BH-2. Note weather overcast vou the the no has been moved into Tem 250F aces M 25 1574 - ESE collects, soil sample 1115 - Discovery setting up on BH-1 PENDOA. See take on page 18 155- Break for lunch and to pick for sample description up decon equipment 1545 - ESE, collects soil sample PENDOS, 1230- EDE brek moite See table on page 18 for sample description BH-2 to be completed 1245- ESE collects soil sample PENODI. as monitoring well MW-Z See table on page 18 for sample description. The the 1600 - Discovery to Finish MW-2 ESE off-site to Jeron split groons. tomorrow

5 Wed 1/10/07 Thurs 1/11/07 0900 - ESE crew (ones and Frit 1700 - ESE of main office Lepart EAE main office warehouse to pick up gen. End of day 1005 - EAE crew at the site. D. Note: weather overcent, temp ~200F. HIS-ERE and Discovery have so meeting, Discuss physical chemical hazards and 1120 - Discovery setting up on Bh 1130-Soil sample PENDOG collected. Sample PENDOF allected as a field duplicate 1140 - Soil sample PENDOB collected sample Hescriptions table on page Alote that field screening for - afiles performed with mini-me 2000 using heated headspace

(

6 Thurs 1/11/07 1150- Simple PENDOA callected 1212- Sample PENDID collected Thurs 1/11/07 1730 - 6-gellons jurged from MW-2. Well needs to be surged. 1280 - Samph PENDI collected 1740-ESE off-ste 1240-Smple PENCIZ collected. 1305 - Sample FENDIS collected. 1320 - Sample PENDIA collected. 1330- Sample PENDIS collected. 1600 - Collected Rinsate Sample PENDILW 770-MW-1 writes level @ 22,53' from TDC. Total Septh & 23.58 from TOC. ELE developing MW-1. I-3al purged from MW-1, 700 3 ft. 1720 - MW-2 water level @ 15.16 from TOC. Total septh @ 22.55' From TOC. TOC ZS Ft from groud surface

 \bigcirc

9 1/12/07 Fri H25-ERE t site. Well Lepth for MW-2 C 16.24' from Toc EAE beging to purge MN-2. 1200- Sample PENOI7W Collected from Monitoring well MW-2, Note 6-sollons purged from MW-2, Heavy Introdity in the sample, 1345 - Joney and Fank at ESE office. 1300 - Break for June 1330- Jones at ESE un rehouse to gackage samples for Shipping to STL Spottle, 1730 - Jones at Alaska Air Cares (Goldetreak m ie 1845 - Jones Leggerty AIC Air Cargo for ESE off 1830 - End & day

i i

 $\left(\right)$

17 16 MW-1 , , , , TOC 3,5 Θ 2 Grout 8 growt Sand -10-PVC Screen W/sand pack 19 V 20 $\langle \cdot \rangle$ ÷.

18 Semp TD PEN 001 PEN 002 PEN 003 PEN 004 PEN 005 PEN 006 PEN 007 PEN 007 PEN 007 PEN 007 PEN 007 PEN 007 PEN 007 PEN 007 PEN 007 PEN 010 PEN 012 PEN 012 PEN 013 PEN 014 PEN 015 PEN 015	×te 1/10/07 1/11/07 1/11/07 1/11/07 1/11/07 1/12/07	Tivne 1245 1315 1350 1525 1545 130 1130 1140 1150 1212 1230 1240 1305 1320 1320 1320 1320 1320	Matrix Soil	$\frac{1}{2^{\prime}-4}$ $\frac{10^{\prime}-12^{\prime}}{10^{\prime}-12^{\prime}}$ $\frac{15^{\prime}-17^{\prime}}{3.5^{\prime}-4.5^{\prime}}$ $\frac{15^{\prime}-17^{\prime}}{15^{\prime}-17^{\prime}}$ $\frac{15^{\prime}-17^{\prime}}{15^{\prime}-17^{\prime}}$ $\frac{15^{\prime}-17^{\prime}}{15^{\prime}-17^{\prime}}$ $\frac{15^{\prime}-17^{\prime}}{15^{\prime}-17}$ $\frac{15^{\prime}-17}{15^{\prime}-17}$ $\frac{15^{\prime}-17}{15^{\prime}-17}$ $\frac{15^{\prime}-17}{15^{\prime}-17}$ $\frac{15^{\prime}-17}{15^{\prime}-17}$ $\frac{15^{\prime}-17}{15^{\prime}-17}$ $\frac{15^{\prime}-17}{15^{\prime}-17}$	HS <u>PID</u> <u>Bppm</u> <u>Bppm</u> <u>Bppm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Sppm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u> <u>Appm</u>	Mandy gravel Sandy gravel silty clay w/ sand silty clay w/ sand silty clay sandy soil w/ low sandy silt well graded sand " Sandy Silt, Clay@ 165" Gravel w/ sand Sand w/ gravel Well graded sand Well graded sand Silty sand silty sand Silty sand Silty sand Silty sand	GRO/BITEX/VOCS, PCB, BHA TAL M Yes No No Yes No Yes No No No No Yes No Yes No Yes Yes Yes Yes	SVOCS 19 etals off-sete	
<u>معر</u> د المعرف ا المعرف المعرف ا	· · · · · · · · · · · · · · · · · · ·	T	I				•		

. ._..*.

B Photographs of Site Investigation



Time: 12:18 Direction: West

Date: 1/10/07 Description: Off-loading drilling equipment.



Time: 12:18 Direction: South

Date: 1/10/07 Description: Off-loading drilling equipment.



Time: 12:18 Direction: South

Date: 1/10/07 Description: Snow berms at north end of site.



Time: 12:53 Direction: Southwest

Date: 1/10/07 Description: Off-loading drilling.



Time: 12:53 Direction: South

Date: 1/10/07 Description: Off-loading drilling equipment.



Time: 2:47 Direction: Southwest

Date: 1/10/07 Description: Drilling BH-1 (MW-1).





Time: 4:54 Direction: East

Date: 1/10/07 Description: Positioning for BH-2 (MW-2).

Time:2:49Date:1/10/07Direction:DownDescription:Split-spoon with soil sample.



Time: 5:05 Direction: East Date: 1/10/07 Description: Drilling at BH-2.



Time: 5:06 Direction: North

Date: 1/10/07 Description: Drilling at BH-2; view from southwest corner of site.



Time:2:10Date:1/1/07Direction:SouthDescription:BH-1; MW-1 well stand in center.



Time:2:10Date:1/11/07Direction:EastDescription:View of BH-2;MW-2 from MW-1.
C Data Validation Memo and Laboratory Analytical Reports

ecology and environment, inc.

International Specialists in the Environment

720 Third Avenue, Suite 1700, Seattle, WA 98104 Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE:February 6, 2007TO:Jim Gill, Project Manager, E & E, Anchorage, AKFROM:Mark Woodke, Chemist, E & E, Seattle, Washington MWSUBJ:Organic Data Summary Check,
First Avenue Property, Anchorage, Alaska

REF: 002397.PE06

The data summary check of 8 soil and 1 water samples collected from the First Avenue Property site located in Anchorage, Alaska, has been completed. Analysis for Diesel Range Organics (DRO; ADEC Methods AK102/103) was performed by STL-Seattle, Inc., Tacoma, Washington.

The samples were numbered:

Soil	PEN001 PEN010	PEN004 PEN013	PEN006 PEN015	PEN007	PEN008

Data Qualifications:

Water

1. Sample Holding Times: Acceptable.

PEN016W

The samples were maintained and received within the QC limits of $4^{\circ}C \pm 2^{\circ}C$. The samples were collected between January 10 and 12, 2007, were extracted between January 16 and 18, 2007, and were analyzed by January 18, 2007, therefore meeting QC criteria of less than 7 days between collection and extraction for water samples, less than 14 days between collection and extraction for soil samples, and less than 40 days between extraction and analysis.

2. Initial and Continuing Calibration: Not Provided.

Calibration information was not provided.

3. Blanks: Acceptable.

A method blank was analyzed for each extraction batch for each matrix and analysis system. DRO were not detected in any blank.

4. System Monitoring Compounds (SMC): Acceptable.

All recoveries of the SMCs were greater than 10% and within QC criteria.

5. Matrix and Blank Spikes: Acceptable.

Matrix and blank spike results were within QC limits.

6. Duplicates: Acceptable.

Spike duplicate results were acceptable.

7. Quantitation and Quantitation Limits: Not Provided.

Information needed to recalculate sample results and quantitation limits were not provided.

8. Laboratory Contact: Not Required.

No laboratory contact was required.

9. Overall Assessment of Data for Use

The overall usefulness of the data is based on the criteria outlined in the Sampling Plan, the OSWER Directive "Quality Assurance/Quality Control Guidance for Removal Activities, Data Validation Procedures" (EPA/540/G-90/004) and the analytical methods. Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

U - The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.

Client: Ecology and Environment, Inc.

Client Sample ID:	PEN001							
Lab Sample ID: Client Matrix:	580-4732-1 Solid	9	6 Moisture:	3.8	Da Da	te Sampled: te Received:	01/10/2007 01/17/2007	1245 1000
AK102 & 10	3 Nonhalogenat	ed Organics by Fll	D (Diesel Rar	nge Org	anics & Residu	al Range Org	anics	
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	AK102 & 103 3550B 1.0 01/18/2007 103 01/17/2007 150	Analysi Prep B 3 7	s Batch: 580- atch: 580-148	14888 45	Instrum Lab File Initial W Final W Injectio Columr	ent ID: SE D: EP /eight/Volume eight/Volume volume: ID: P	:A016 :20385.D :: 10.851: : 10 mL :RIMARY	2 g
Analyte	C	DryWt Corrected: Y	Result (mg/	Kg)	Qualifier		RL	· .
DRO (nC10- <nc25< td=""><td>)</td><td></td><td>ND</td><td></td><td></td><td></td><td>19 🔾</td><td></td></nc25<>)		ND				19 🔾	
Surrogate			%Rec			Accepta	ance Limits	
o-Terphenyi n-Triacontane-d62			84 94			60 - 1 60 - 1	20 20	

MW

Client: Ecology and Environment, Inc.

Client Sample ID:	PEN004							
Lab Sample ID:. Client Matrix:	580-4732-2 Solid	%	6 Moisture:	15.9	Date S Date R	ampled: eceived:	01/10/2007 01/17/2007	1525 1000
AK102 & 10	3 Nonhalogenated	Organics by FI) (Diesel Rai	nge Org	anics & Residual R	ange Org	anics	
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	AK102 & 103 3550B 1.0 01/18/2007 1054 01/17/2007 1507	Analysi Prep Ba	s Batch: 580- atch: 580-148	14888 945	Instrument Lab File ID: Initial Weigl Final Weigh Injection Vo Column ID:	ID: SE EP ht/Volume ht/Volume olume: P	A016 20386.D a: 10.714 : 10 mL PRIMARY	7 g
Analyte	Dry	Wt Corrected: Y	Result (mg/	Kg)	Qualifier		RL	
DRO (nC10- <nc25< td=""><td>5)</td><td></td><td>ND</td><td></td><td></td><td></td><td>22 (J</td><td></td></nc25<>	5)		ND				22 (J	
Surrogate		· ·	%Rec		,	Accepta	ance Limits	
o-Terphenyl n-Triacontane-d62			94 96			60 - 1 60 - 1	20 20	

MW VED

Client: Ecology and Environment, Inc.

Client Sample ID:	PEN006							
Lab Sample ID: Client Matrix:	580-4732-3 Solid	%	Moisture:	19.4	Date Sam Date Rec	npled: C eived: C	01/11/2007 1130 01/17/2007 1000	
AK102 & 10	3 Nonhalogenated	Organics by FII) (Diesel Ra	nge Org	anics & Residual Ran	ge Organ	ics	
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	AK102 & 103 3550B 1.0 01/18/2007 1115 01/17/2007 1507	Analysi Prep Ba	s Batch: 580 atch: 580-14	-14888 845	Instrument ID: Lab File ID: Initial Weight/\ Final Weight/\ Injection Volur Column ID:	SEA0 EP20 /olume: /olume: me: PRII	916 387.D 10.0795 g 10 mL MARY	
Analyte	DryV	Vt Corrected: Y	Result (mg	/Kg)	Qualifier		RL ,	
DRO (nC10- <nc25< td=""><td>5)</td><td></td><td>ND</td><td></td><td></td><td></td><td>25 ()</td><td></td></nc25<>	5)		ND				25 ()	
Surrogate			%Rec			Acceptanc	e Limits	
o-Terphenyl n-Triacontane-d62			89 90			60 - 120 60 - 120		

MW 2-6-87

Client: Ecology and Environment, Inc.

Client Sample ID:	PEN007					
Lab Sample ID: 580-4732-4 Client Matrix: Solid		%	% Moisture: 19.9		Date Sampled: 01/11 Date Received: 01/17	
AK102 & 10	3 Nonhalogenated Or	ganics by FII	D (Diesel Range Org	anics & Residua	l Range Org	anics
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	AK102 & 103 3550B 1.0 01/18/2007 1135 01/17/2007 1507	Analysi Prep Ba	s Batch: 580-14888 atch: 580-14845	Instrume Lab File Initial We Final We Injection Column	ent ID: SE ID: EP eight/Volume eight/Volume Volume: ID: P	A016 20388.D : 10.2607 g : 10 mL RIMARY
Analyte	DryWt	Corrected: Y	Result (mg/Kg)	Qualifier		RL L
DRO (nC10- <nc25< td=""><td>)</td><td></td><td>ND</td><td></td><td></td><td>24</td></nc25<>)		ND			24
Surrogate			%Rec		Accepta	ance Limits
o-Terphenyl n-Triacontane-d62		ine to the design of the second s	81 93	anta anto di manazia (n izranta antonia	60 - 1: 60 - 1:	20

Mr

Client: Ecology and Environment, Inc.

Client Sample ID:	PEN008						
Lab Sample ID: 580-4732-5 Client Matrix: Solid		9	% Moisture: 24.0		Date Sampled: Date Received	01/11/2007 1140 01/17/2007 1000	
AK102 & 10	3 Nonhalogenate	ed Organics by Fl	D (Diesel Rang	e Organics &	Residual Range O	rganics	
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	AK102 & 103 3550B 1.0 01/18/2007 1150 01/17/2007 150	Analys Prep B 7	s Batch: 580-14 atch: 580-14845	888	Instrument ID: S Lab File ID: E Initial Weight/Volum Final Weight/Volum Injection Volume: Column ID:	EA016 IP20389.D ne: 10.6543 g ne: 10 mL PRIMARY	
Analyte	D	ryWt Corrected: Y	Result (mg/Kg) Qualifi	er	RL (
DRO (nC10- <nc25< td=""><td>)</td><td></td><td>ND</td><td></td><td></td><td>25 U</td></nc25<>)		ND			25 U	
Surrogate			%Rec		Accep	otance Limits	
o-Terphenyl			84		60 - 120		
n-Triacontane-d62			86		60	120	

MW 2607

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	PEN010						
Lab Sample ID: Client Matrix:	580-4732-6 Solid	9	6 Moisture:	4.7	Ţ	Date Sampled: Date Received:	01/11/2007 1212 01/17/2007 1000
AK102 & 10	3 Nonhalogenated O	rganics by Fl	D (Diesel Ra	nge Org	anics & Re	esidual Range Org	anics
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	AK102 & 103 3550B 1.0 01/18/2007 1217 01/17/2007 1507	Analys Prep B	is Batch: 580 atch: 580-14	-14888 345	In Le In Fi In C	astrument ID: SE ab File ID: EF iltial Weight/Volume inal Weight/Volume ijection Volume: olumn ID: F	A016 220390.D a: 10.3155 g : 10 mL PRIMARY
Analyte	DryWt	Corrected: Y	Result (mg	/Kg)	Qualifier		RL
DRO (nC10- <nc25< td=""><td>)</td><td></td><td>ND</td><td></td><td></td><td></td><td>20 U</td></nc25<>)		ND				20 U
Surrogate			%Rec			Accept	ance Limits
o-Terphenyl n-Triacontane-d62			83 94			60 - 1 60 - 1	20 20

MW 2687

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	PEN013				
Lab Sample ID: 580-4732-7 Client Matrix: Solid		% Moisture: 7.1		Date Samp Date Recei	led: 01/11/2007 1305 ived: 01/17/2007 1000
AK102 & 10	3 Nonhalogenated Org	ganics by FIE) (Diesel Range Org	anics & Residual Range	e Organics
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	AK102 & 103 3550B 1.0 01/18/2007 1237 01/17/2007 1507	Analysis Prep Ba	s Batch: 580-14888 atch: 580-14845	Instrument ID: Lab File ID: Initial Weight/Vo Final Weight/Vo Injection Volum Column ID:	SEA016 EP20391.D olume: 10.6736 g olume: 10 mL e: PRIMARY
Analyte	DryWt (Corrected: Y	Result (mg/Kg)	Qualifier	RL (
DRO (nC10- <nc25< td=""><td>5)</td><td></td><td>ND</td><td></td><td>20</td></nc25<>	5)		ND		20
Surrogate			%Rec	Ad	cceptance Limits
o-Terphenyl n-Triacontane-d62			86 91	6	50 - 120 50 - 120

MN 2-607

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	PEN015							
Lab Sample ID: Client Matrix:	580-4732-8 Solid	% Moisture: 18.7		Date Date	Sampled: Received:	01/11/2007 01/17/2007	1330 1000	
AK102 & 10	3 Nonhalogenated Or	ganics by FID	(Diesel Ran	ge Orga	inics & Residual	Range Org	anics	
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	AK102 & 103 3550B 1.0 01/18/2007 1350 01/17/2007 1507	Analysis Prep Ba	8 Batch: 580-1 ttch: 580-1484	4888 15	Instrume Lab File Initial We Final We Injection Column I	nt ID: SE ID: EP ight/Volume ight/Volume Volume: D: P	A016 20394.D 9: 10.613 10 ml PRIMARY	8 g -
Analyte	DryWt	Corrected: Y	Result (mg/l	(g)	Qualifier		RL	
DRO (nC10- <nc25< td=""><td>5)</td><td></td><td>ND</td><td></td><td></td><td></td><td>²³ V</td><td>/</td></nc25<>	5)		ND				²³ V	/
Surrogate		%Rec			Acceptance Limits			
o-Terphenyl n-Triacontane-d62		89 89		60 - 120 60 - 120				

MM 7-6-07

Page 67 of 117

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	PEN016W			
Lab Sample ID:	580-4732-9	Date Sampled:	01/11/2007	1600
Client Matrix:	Water	Date Received:	01/17/2007	1000

AK102 & 103 Nonhalogenated Organics by FID (Diesel Range Organics & Residual Range Organics

Method: Preparation: Dilution: Date Analyzed: Date Prepared:	AK102 & 103 3510C 1.0 01/18/2007 1555 01/18/2007 1217	Analysis Batch: 580-14952 Prep Batch: 580-14876	Instrument ID: Lab File ID: Initial Weight/V Final Weight/V Injection Volum Column ID:	SEA016 EP20399.D olume: 980 mL olume: 1 mL ne: PRIMARY
Analyte		Result (mg/L)	Qualifier	RL
DRO (nC10- <nc2< td=""><td>25)</td><td>ND</td><td></td><td>0.10</td></nc2<>	25)	ND		0.10
Surrogate		%Rec	A	cceptance Limits
o-Terphenyl	. <u> </u>	80	······································	60 - 120
n-Triacontane-d6	2	84		60 - 120

mu

ecology and environment, inc.

International Specialists in the Environment

720 Third Avenue, Suite 1700, Seattle, WA 98104 Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

February 6, 2007 DATE: Jim Gill, Project Manager, E & E, Anchorage, AK TO: Mark Woodke, Chemist, E & E, Seattle, Washington FROM: Organic Data Summary Check, SUBJ: First Avenue Property, Anchorage, Alaska 002397.PE06 REF:

The data summary check of 8 soil and 1 water samples collected from the First Avenue Property site located in Anchorage, Alaska, has been completed. Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270) was performed by STL-Seattle, Inc., Tacoma, Washington.

The samples were numbered:

Soil	PEN001 PEN010	PEN004 PEN013	PEN006 PEN015	PEN007	PEN008
Water	PEN016W				

Data Oualifications:

Water

Sample Holding Times: Acceptable. 1.

The samples were maintained and received within the QC limits of $4^{\circ}C \pm 2^{\circ}C$. The samples were collected between January 10 and 12, 2007, were extracted by January 16, 2007, and were analyzed by January 18, 2007, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

Tuning: Not Provided. 2.

Tuning information was not provided.

Initial and Continuing Calibration: Not Provided. 3.

Calibration information was not provided.

4. Blanks: Acceptable.

A method blank was analyzed for each 20 sample batch per matrix. There were no detections in any method blank.

5. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

6. Matrix Spike (MS)/MS Duplicate (MSD)/Blank Spike (BS)/BS Duplicate (BSD) Analysis: Satisfactory.

All spike analyses were performed per SDG or per matrix per concentration level, whichever was more frequent. All recoveries were within the QC limits except 2-methylphenol (4 high recoveries), isophorone (3 high recoveries), diethylphthalate (1 high recovery), 4-nitroaniline (2 high recoveries), 3,3-dichlorobenzidine (1 high recovery), and n-nitroso-di-n-propylamine (2 low recoveries) in batch 14855 and 2-methylphenol, isophorone, 4-nitroaniline, 3,3-dichlorobenzidine (2 high recoveries), and 3-nitroaniline, d-n-butylphthalate, and fluoranthene (1 high recovery) in batch 14933. Positive results associated with high recovery outliers were qualified as estimated quantities (J) and all results associated with low recovery outliers were qualified as estimated quantities (J or UJ).

7. Duplicate Analysis: Acceptable.

Blank spike duplicate analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. All spike duplicate results were within QC limits.

8. Internal Standards: Not Provided.

Internal standard information was not provided.

9. Overall Assessment of Data for Use

The overall usefulness of the data is based on the criteria outlined in the OSWER Guidance Document "Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan, and Data Validation Procedures" (EPA/540/G-90/004), the analytical method, and, when applicable, the Office of Emergency and Remedial Response Publication "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review". Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

- J The associated numerical value is an estimated quantity because the reported concentrations were less than the sample quantitation limits or because quality control criteria limits were not met.
- U The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
- UJ The material was analyzed for, but not detected. The reported detection limit is estimated because quality control criteria were not met.

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID: PEN001					
Lab Sample ID: 580-4732	2-1			Date Sampled:	01/10/2007 1245
Client Matrix: Solid		% Moisture:	3.8	Date Received:	01/17/2007 1000
2270C Cambrolat	ile Compounds b	u Gas Chromato	granby/Mass Sn	ectrometry (GC/MS)	
8270C Semivolat	ne compounds b	y Gas cirromato			
Method: 8270C	A	nalysis Batch: 58	0-14932	instrument ID: SE	A002
Preparation: 3550B	P	rep Batch: 580-14	4855		
Dilution: 1.0				Initial weight voluthe	10.7102 y
Date Analyzed: 01/18/2007	1311			Hinai weight volume:	IU ML
Date Prepared: 01/18/2007	0636		••	Injection Volume:	
Analyte	DryWt Correcte	ed: Y Result (ug	g/Kg) Qualif	ier	RL ,
Phenol	***********	ND			97 ()
Bis(2-chloroethvl)ether		, ND			97
2-Chlorophenol	•	ND			97
1,3-Dichlorobenzene		ND		•	49
1,4-Dichlorobenzene		ND			49
Benzyl alcohol		ND			97
1,2-Dichlorobenzene		ND			49
2-Methylphenol		ND			97
Bis(2-chloroisopropyl) ether		ND ND			100
3 & 4 Methylphenol					97
N-Nitrosodi-n-propylamine					97
Nërebenzono		ND			97
hanherene		ND	*		97
2-Nitrophenol		ND			97
2.4-Dimethylphenol		ND		1	97
Benzoic acid		ND			2400
Bis(2-chloroethoxy)methane		ND			97
2,4-Dichlorophenol		ND			97
1,2,4-Trichlorobenzene		ND			49
Naphthalene		ND			19
4-Chloroaniline		ND			97
Hexachlorobutadiene		ND	· · ·		49
4-Chloro-3-methylphenol					10
2-Methylnaphthalene					97
Hexachlorocyclopentadiene					150
2,4,6-Trichlorophenol		ND			97
2,4,5-menorophenor		ND			19
2-Onioronaphiliaene		ND			97
Dimethyl phthalate		ND			97
Acenaphthylene		ND			19
2,6-Dinitrotoluene		ND			97
3-Nitroaniline		ND			97
Acenaphthene		ND			19
2,4-Dinitrophenol		ND			970
4-Nitrophenol		ND			970
Dibenzofuran		ND			97
2,4-Dinitrotoluene			*		97
Diethyl phthalate					97
4-Chlorophenyl phenyl ether					19
HUORENE 4 Nitroopiling					97
+-ivitiosumile					T ₩
STI Seattle		Page 24	of 117	MAN	
SIL Seattle		-		ſ	\sim
				1-10-	07
					•

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID	: PEN001							• •
Lab Sample ID:	580-4732 Solid	2-1	0/	Moisture	3.8		Date Sampled: (01/10/2007 1245
					0.0	<u>`</u>		
8270)C Semivolat	ile Compou	nds by Gas	Chromato	graphy/M	ass Spe	ctrometry (GC/MS)	
Method:	8270C		Analysi	s Batch: 580)-14932		Instrument ID: SEA	002
Preparation:	3550B		Prep Ba	atch: 580-14	855		Lab File ID: AT07	7014.D
Dilution:	1.0						Initial Weight/Volume:	10.7102 g
Date Analyzed:	01/18/2007	1311	÷	· · · · ·			Final Weight/Volume:	10 mL
Date Prepared:	01/18/2007	0636			-		Injection Volume:	
Analyte		DryWt Co	prrected: Y	Result (ug	/Kg)	Qualifie	r	RL
4,6-Dinitro-2-meth	ylphenol			ND				970 V
N-Nitrosodiphenyl	amine			ND				49
4-Bromophenyl ph	enyl ether			ND				97
Hexachlorobenzer	ne			ND				49
Pentachloropheno	I			ND				.97 👽
Phenanthrene				20				19
Anthracene				ND .				19. U
Di-n-butyl phthalat	le			ND				10
Fluoranthene				ND 25				10
Pyrene	1+4+			20				
Butyl benzyl pntna								
3,3-Dichlorobenzi	aine							24
Benzojajanunacer	le			ND				24
Chrysene Bio(2 othulbood) r	hthalata							1500
Dis(z-eurymexyr) -								190
Den-octyr primaiae Reprofilioranthony			·					39
Benzolalowrene	5			ND				29
Indono[1 2 3-cd]n	mono			ND				39
Dibonz(a h)anthra	cene			ND				39
Benzola b ilpervle	ne			ND				24
Carbazole				ND				150 /
1-Methylnaphthale	ene			ND				29 🗸
Surrogate				%Rec			Acceptan	ce Limits
2-Fluorophenol				107			36 - 145	5
Phenol-d5				100			38 - 149)
Nitrobenzene-d5			,	99			38 - 141	
2-Fluorobiphenyl				99			42 - 140)
2,4,6-Tribromophe	enol			91			28 - 143	}
Terphenyl-d14				107			42 - 151	

111V

Page 25 of 117

Client: Ecology and Environment, Inc.

Client Sample ID:	PEN004									
Lab Sample ID:	580-473	2-2					Date Sam	pied:	01/10/2007	1525
Client Matrix:	Solid		%	6 Moisture	: 15.9		Date Rece	eived:	01/17/2007	1000
82700	: Semivolat	ile Compound	s by Gas	Chromat	iography/M	ass Sp	ectrometry (GC	/MS)		
Method:	8270C		Analysi	s Batch: 5	80-14932		Instrument ID:	SEA	002	
Preparation:	3550B		Prep Ba	atch: 580-'	14855		Lab File ID:	ATC	7017.D	
Dilution:	10						Initial Weight/V	'olume:	10.571	7 g
Date Analyzed	01/18/2007	1432	•	•			Final Weight/V	olume:	10 ml	-
Date Prenared:	01/18/2007	0636					Injection Volum	ne:		
Date i Tepaleu.	01/10/2007	0000								
Analyte		DryWt Corr	ected: Y	Result (i	ıg/Kg)	Qualifi	er		RL	
Phenol	*****			ND					110	J
Bis(2-chloroethyl)eth	ner			ND		-			110	I
2-Chlorophenol				ND					110	1
1.3-Dichlorobenzen	Э			ND					56	1
1.4-Dichlorobenzene	e			ND					56	
Benzvi alcohol	-			ND					110	1
1.2-Dichlorobenzene	в			ND					56	
2-Methviphenol	- , ·		1.1	ND		* .			110	
Bis(2-chloroisopropy	/l) ether			ND		. *	1		170	
3 & 4 Methylphenol	, ,			ND ·					220	
N-Nitrosodi-n-propyl	lamine			ND					110	D D
Hexachloroethane				ND					110	
Nitrobenzene				ND					110	
Isophorone				ND		*			110	1
2-Nitrophenol				ND					110	
2,4-Dimethylphenol				ND					110	1
Benzoic acid				ND					2800	
Bis(2-chloroethoxy)	methane			ND					110	
2,4-Dichlorophenol				ND					110	
1,2,4-Trichiorobenzo	ene			ND					56	
Naphthalene				ND					22	·]
4-Chioroaniline				ND					· 1 10	
Hexachlorobutadien	ie			ND		•			56	1
4-Chloro-3-methylph	nenol			ND.					110	l l
2-Methylnaphthalen	е			ND					22	1
Hexachlorocycloper	ntadiene			ND					110	
2,4,6-Trichlorophen	ol			ND					170	1
2,4,5-Trichlorophen	ol			ND					110	
2-Chloronaphthalen	e			ND					. 22	
2-Nitroaniline				ND					110	
Dimethyl phthalate				ND					110	
Acenaphthylene				ND					22	1
2,6-Dinitrotoluene				ND					110	1
3-Nitroaniline				ND					110	
Acenaphthene				ND					22	
2,4-Dinitrophenol				ND					1100	
4-Nitrophenol				ND					1100	
Dibenzofuran				ND					110	
2,4-Dinitrotoluene				ND					110	}
Diethyl phthalate				ND					110	1
4-Chiorophenyi phe	nyl ether			ND					110	1
Fluorene				ND					22	\mathcal{A}
4-Nitroaniline				ND			- 1		110	\mathbf{V}
							/MIW			
STL Seattle				Page 2	6 of 117		· / `` 1	/		
							61-11	-A P	•	

STL Seattle

Page 26 of 117

Client: Ecology and Environment, Inc.

Client Sample ID	: PEN004									
Lab Sample ID: Client Matrix:	580-4732 Solid	2 2	9	6 Moisture:	15.9		Date S Date F	Sampled: Received:	01/10/2007 01/17/2007	1525 1000
8270)C Semivolati	le Compoun	ds by Gas	Chromato	graphy/N	lass Spe	ectrometry	(GC/MS)		
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8270C 3550B 1.0 01/18/2007 01/18/2007	1432 0636	Analysi Prep B	is Batch: 580 atch: 580-14	0-14932 855		Instrument Lab File ID Initial Weig Final Weig Injection Ve	ID: SE : AT(ht/Volume ht/Volume: plume:	A002 07017.D : 10.571 10 ml	7 g
Analyte	·	DryWt Cor	rected: Y	Result (ug	/Kg)	Qualifi	ər	۲.	RL	. (
4,6-Dinitro-2-methy N-Nitrosodiphenyla 4-Bromophenyl ph Hexachlorobenzer Pentachloropheno Phenanthrene Anthracene Di-n-butyl phthalat Fluoranthene Pyrene Butyl benzyl phthalat Sa'-Dichlorobenzia Benzo[a]anthracer Chrysene Bis(2-ethylhexyl) p Di-n-octyl phthalat Benzo[a]pyrene Indeno[1,2,3-cd]py Dibenz(a,h)anthrai Benzo[g,h,i]perylei Carbazole 1-Methylnaphthale	ylphenol amine enyl ether he l l e alate dine he dine he ohthalate e orene cene ne		· · · · · · · · · · · · · · · · · · ·	ND ND ND ND ND ND ND ND ND ND ND ND ND N					1100 56 110 56 110 22 22 220 22 220 22 220 22 22	
Surrogate				%Rec				Accepta	ince Limits	
2-Fluorophenol Phenol-d5 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophe Terphenyl-d14	enol			103 98 104 99 86 106				36 - 14 38 - 14 38 - 14 42 - 14 28 - 14 42 - 15	+5 49 41 40 43 51	

MW-

Client: Ecology and Environment, Inc.

Client Sample ID:	PEN006	i					
Lab Sample ID:	580-473	2-3	-		Date Sample	ed: 01/11/2007 1	1130
Client Matrix:	Solid	· .	% Moisture:	19.4	Date Receiv	ed: 01/17/2007 1	1000
			<u></u>			40)	
8270	C Semivolat	me Compounds by Ga	is Chromatogr	apny/wass o	pectrometry (GC/M	15)	
Method:	8270C	Analy	sis Batch: 580-1	14932	Instrument ID:	SEA002	
Preparation:	3550B	Prepl	Batch: 580-1488	55	Lab File ID:	AT07018.D	
Dilution:	1.0				Initial Weight/Vol	ume: 10.7369	g
Date Analyzed:	01/18/2007	1459			Final Weight/Voli	ume: 10 mL	
Date Prepared:	01/18/2007	0636			Injection Volume	:	
-							
Analyte		DryWt Corrected: Y	Result (ug/K	(g) Qual	lifier	RL	
Phenol			ND	•	· · ·	120	7
Bis(2-chloroethyl)et	ther		ND			120 5	r 1
2-Chlorophenol			ND			120	
1.3-Dichlorobenzer	ne		ND			58	
1.4-Dichlorobenzer	ne		ND			58	
Benzyl alcohol			ND			120	
1,2-Dichlorobenzer	ne		ND			58	
2-Methylphenol			ND	*		120	
Bis(2-chloroisoprop	yi) ether		ND			170	
3 & 4 Methylphenol	l		ND			230	-
N-Nitrosodi-n-propy	ylamine		ND			120	う
Hexachloroethane			ND			120	
Nitrobenzene			ND		•	120	
Isophorone			ND	*		120	
2-Nitrophenol			ND			120	
2,4-Dimethylpheno	1		ND			120	
Benzoic acid			ND			2900	.τ
Bis(2-chloroethoxy))methane		ND			120	
2,4-Dichlorophenol			ND			120	
1,2,4-1 richloropenz	zene					20	
Naphthalene						20	
4-Unioroaniline						58	
Hexachioroputable	ne					120	
4-Unioro-3-metryip	nenoi					23	·
Z-Meurymaphinaler Hoverblotopyelope	ntadiono					120	
2.4.6.Trichloropher			ND			170	
2 4 5-Trichloropher			ND			120	
2.Chloronanhfhalei			ND			23	
2-Nitroaniline			ND	-		120	
Dimethyl obthalate			ND			120	
Acenaphthylene			ND			23	
2.6-Dinitrotoluene			ND			120	
3-Nitroaniline			ND			120	
Acenaphthene			ND			23	
2,4-Dinitrophenol			ND			1200	
4-Nitrophenol			ND			1200	
Dibenzofuran			ND			120	
2,4-Dinitrotoluene			ND			120	
Diethyl phthalate			ND	*		120	
4-Chlorophenyl phe	enyl ether		ND			120	L
Fluorene			ND			23	1
4-Nitroaniline			ND			120	5
					Mr	•	
STL Seattle			Page 28 o	£ 117	1 1	\sim	
					1-0	OT	•
						1	

Client: Ecology and Environment, Inc.

Client Sample ID:	: PEN006	4							
Lab Sample ID: Client Matrix:	580-4732 Solid	2-3	9	6 Moisture:	19.4	Date San Date Rec	npled: 0 eived: 0	1/11/2007 1/17/2007	1130 1000
8270	C Semivolat	ile Compour	ids by Gas	Chromatog	Jraphy/Mass S	pectrometry (G	C/MS)		
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8270C 3550B 1.0 01/18/2007 01/18/2007	1459 0636	Analysi Prep B	s Batch: 580 atch: 580-14	-14932 855	Instrument ID Lab File ID: Initial Weight/ Final Weight/ Injection Volu	SEA00 AT070 Volume: /olume: me:	02 018.D 10.7369 10 mL	9 g .
Analvte		DryWt Co	rrected: Y	Result (ug/	/Kg) Qual	lifier		RL	NT.
4,6-Dinitro-2-methy N-Nitrosodiphenyla 4-Bromophenyl ph Hexachlorobenzer Pentachlorobenzer Pentachloropheno Phenanthrene Anthracene Di-n-butyl phthalat Fluoranthene Pyrene Butyl benzyl phthalat S,3'-Dichlorobenzid Benzo[a]anthracer Chrysene Bis(2-ethylhexyl) p Di-n-octyl phthalat Benzofluoranthene Benzo[a]pyrene Indeno[1,2,3-cd]py Dibenz(a,h)anthra Benzo[g,h,i]peryle Carbazole 1-Methylnaphthalat	ylphenol amine enyl ether ie l e late dine ne whthalate e wrene cene ne			ND ND ND ND ND ND ND ND ND ND ND ND ND N				1200 58 120 58 120 23 23 23 230 23 23 230 23 23 230 230	
Surrogate 2-Fluorophenol Phenol-d5 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophe	enol			%Rec 105 100 97 99 90			Acceptanc 36 - 145 38 - 149 38 - 141 42 - 140 28 - 143 42 - 151	e Limits	

MW 2-6-07

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID: PEN007			
Lab Sample ID: 580-4732-4 Client Matrix: Solid	4 % Moisture:	Date Sa 19.9 Date Re	mpled: 01/11/2007 1130 aceived: 01/17/2007 1000
8270C Semivolatile	e Compounds by Gas Chromatog	graphy/Mass Spectrometry (GC/MS)
Method:8270CPreparation:3550BDilution:1.0Date Analyzed:01/18/2007 1Date Prepared:01/18/2007 0	Analysis Batch: 580 Prep Batch: 580-14 526 636	0-14932 Instrument II 855 Lab File ID: Initial Weigh Final Weight Injection Vol	D: SEA002 AT07019.D t/Volume: 10.7332 g t/Volume: 10 mL ume:
Analyte	DryWt Corrected: Y Result (ug	/Kg) Qualifier	ŘL 1
Phenol Bis(2-chloroethyl)ether 2-Chlorophenol 1,3-Dichlorobenzene Benzyi alcohol 1,2-Dichlorobenzene 2-Methylphenol Bis(2-chloroisopropyl) ether 3 & 4 Methylphenol N-Nitrosodi-n-propylamine Hexachloroethane Nitrobenzene Isophorone 2-Nitrophenol 2,4-Dimethylphenol Benzoic acid Bis(2-chloroethoxy)methane 2,4-Dichlorophenol 1,2,4-Trichlorobenzene Naphthalene 4-Chloroa-illine Hexachlorocyclopentadiene 2,4,6-Trichlorophenol 2,4,5-Trichlorophenol 2,4,5-Trichlorophenol 2,4,5-Trichlorophenol 2,4,6-Trichlorophenol 2,4,5-Trichlorophenol 2,4,5-Trichlorophenol 2,4,5-Trichlorophenol 2,4,5-Trichlorophenol 2,4,5-Trichlorophenol 2,4,5-Trichlorophenol 2,4,5-Trichlorophenol 2,4,5-Trichlorophenol 2,4,5-Trichlorophenol 2,4,5-Trichlorophenol 2,4,5-Trichlorophenol 2,4,5-Trichlorophenol 2,4,5-Trichlorophenol 2,4,5-Trichlorophenol 2,4,5-Trichlorophenol 2,4,5-Trichlorophenol 2,4,5-Trichlorophenol 2,4-Dinitrotoluene 3-Nitroaniline Acenaphthene 2,4-Dinitrotoluene 3-Nitrophenol Dibenzofuran 2,4-Dinitrotoluene Diethyl phthaiate 4-Chlorophenyl phenyl ether Fluorene	ND ND	*	$ \begin{array}{c} 120\\ 120\\ 120\\ 120\\ 58\\ 58\\ 58\\ 120\\ 58\\ 120\\ 170\\ 230\\ 120\\ 120\\ 120\\ 120\\ 120\\ 120\\ 120\\ 12$

STL Seattle

Page 30 of 117

Į V 67/

Client: Ecology and Environment, Inc.

Client Sample ID	: PEN007							•	
Lab Sample ID: Client Matrix:	580-4732 Solid	2-4	%	Moisture:	19.9	C	Date Sampled: Date Received:	01/11/2007 01/17/2007	1130 1000
8270	C Semivolat	ile Compound	is by Gas	Chromato	graphy/N	lass Spectrom	netry (GC/MS)		
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8270C 3550B 1.0 01/18/2007 01/18/2007	1526 0636	Analysi: Prep Ba	s Batch: 580 atch: 580-14)-14932 855	Instru Lab F Initial Final Inject	ment ID: SE/ ile ID: AT(Weight/Volume: Weight/Volume: ion Volume:	A002 07019.D 10.7332 10 mL	2 g
Analyte		DryWt Corr	ected: Y	Result (ug	/Kg)	Qualifier		RL	r \
4,6-Dinitro-2-meth N-Nitrosodiphenyl 4-Bromophenyl ph Hexachlorobenzer Pentachloropheno Phenanthrene Anthracene Di-n-butyl phthalat Fluoranthene Pyrene Butyl benzyl phthalat Fluoranthene Pyrene Butyl benzyl phthalat Senzo[a]anthracei Chrysene Bis(2-ethylhexyl) p Di-n-octyl phthalat Benzo[a]anthracei Benzo[a]pyrene Indeno[1,2,3-cd]py Dibenz(a,h)anthra Benzo[g,h,i]peryle Carbazole 1-Methylnaphthalat	yiphenoi amine henyl ether he bi te alate dine he bhthalate te e yrene licene hne ane			ND ND ND ND ND ND ND ND ND ND ND ND ND N				1200 58 120 58 120 23 23 23 23 23 23 23 23 23 23 23 23 23	
Surrogate				%Rec			Accepta	nce Limits	
2-Fluorophenol Phenol-d5 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophe Terphenyl-d14	enol			101 97 95 97 85 104			36 - 14 38 - 14 38 - 14 42 - 14 28 - 14 42 - 15	₽0. 19 11 10 13 51	

mutor

Client: Ecology and Environment, Inc.

Client Sample ID:	PEN008										
Lab Sample ID:	580-4732	2-5					' Da	ate Samp	led:	01/11/2007	1140
Client Matrix:	Solid		%	Moisture:	24.0		Da	ate Receiv	ved:	01/17/2007	1000
8270	C Semivolat	ile Compounds	s by Gas	Chromato	graphy/N	lass Spe	ectrome	etry (GC/I	MS)		
Method:	8270C		Analysis	s Batch: 58	0-14932		Instrun	nent ID:	SEA	002	
Preparation:	3550B		Prep Ba	tch: 580-14	4855		Lab Fil	e ID:	ATO	7020.D	
Dilution:	1.0						Initial V	Veight/Vo	lume:	10.334	0 g
Date Analyzed:	01/18/2007	1553					Final V	Veight/Vo	lume:	10 m	_
Date Prepared:	01/18/2007	0636					Injectio	n Volume	e:		
•							•				
Analyte		DryWt Corre	cted: Y	Result (ug	g/Kg)	Qualifi	er			RL /	
Phenol				ND				1. A.		130	<u>ب</u> ل
Bis(2-chloroethyl)et	ther			ND						130	ļ
2-Chlorophenol			•	ND						130	1
1,3-Dichlorobenzen	ie -			ND						64	
1,4-Dichlorobenzen	ie ·			ND						64	
Benzyl alcohol				ND						130	
1,2-Dichlorobenzen	e			ND						64	1
2-Methylphenol				ND		*				130	
Bis(2-chloroisoprop	yl) ether			ND						. 190	
3 & 4 Methylphenol				ND						250	
N-Nitrosodi-n-propy	/lamine			ND						130	\mathbf{D}
Hexachloroethane				ND						130	1
Nitrobenzene				ND						130	1
isophorone				ND		*				130	
2-Nitrophenol		•		ND						130	1
2,4-Dimethylphenol	. •			ND						130	1
Benzoic acid				ND					-	3200	
Bis(2-chloroethoxy)	methane			ND				÷		130	
2,4-Dichlorophenol				ND						130	
1,2,4-Trichlorobenz	ene			ND						64	
Naphthalene				ND						25	
4-Chloroaniline				ND						130	
Hexachlorobutadie	ne			ND						64	
4-Chloro-3-methylp	henol	a		ND						130	
2-Methylnaphthaler	1e			ND						25	1
Hexachlorocyclope	ntadiene			ND						130	
2,4,6-Trichloropher	nol .			ND						190	1
2,4,5-Trichloropher	nol			ND						130	
2-Chloronaphthaler	ne			ND						25	1
2-Nitroaniline				ND						130	
Dimethyl phthalate				ND						130	1
Acenaphthylene				ND						25	
2,6-Dinitrotoluene				ND						130	
3-Nitroaniline				ND						130	· ·
Acenaphthene				ND						25	
2,4-Dinitrophenol				ND						1300	l
4-Nitrophenol				ND						1300	1
Dibenzofuran				ND						130	l l
2,4-Dinitrotoluene				ND						130	i.
Diethyl phthalate				ND		•				130	1
4-Chlorophenyl phe	enyl ether			ND						130	[
Fluorene				ND						25	1-
4-Nitroaniline				NU						130	\checkmark

STL Seattle

Page 32 of 117

MM-6-07

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	: PEN008							
Lab Sample ID: Client Matrix:	580-4732- Solid	-5	6 Moisture: 24.0	Date Date	Sampled: 0 Received: 0	1/11/2007 1140 1/17/2007 1000		
8270)C Semivolatil	e Compounds by Gas	Chromatography/N	lass Spectrometry	(GC/MS)			
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	Method: 8270C Preparation: 3550B Dilution: 1.0 Date Analyzed: 01/18/2007 1553 Date Prepared: 01/18/2007 0636		s Batch: 580-14932 atch: 580-14855	instrument ID: SEA002 Lab File ID: AT07020.D Initial Weight/Volume: 10.3340 g Final Weight/Volume: 10 mL Injection Volume:				
Analvte	·	DryWt Corrected: Y	Result (ug/Kg)	Qualifier		RL .		
Analyte 4,6-Dinitro-2-methy N-Nitrosodiphenyla 4-Bromophenyl ph Hexachlorobenzen Pentachlorophenol Phenanthrene Anthracene Di-n-butyl phthalat Fluoranthene Pyrene Butyl benzyl phthalat Fluoranthene Pyrene Butyl benzyl phthalat Benzo[a]anthracer Chrysene Bis(2-ethylhexyl) p Di-n-octyl phthalat Benzo[a]pyrene Indeno[1,2,3-cd]py Dibenz(a,h)anthrace Benzo[g,h,i]perylei Carbazole	ylphenol amine enyl ether he l e late dine he whthalate e o vrene cene ne	Diywr Conecleu. 1	ND ND ND ND ND ND ND ND ND ND ND ND ND N			1300 64 130 64 130 25 25 25 25 25 25 25 25 25 25 25 25 25 25 25 32 1900 250 51 32 190 38		
Surroqate			%Rec		Acceptanc	মনে e Limits		
2-Fluorophenol Phenol-d5 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophe Terphenyl-d14	enol		101 96 91 94 65 105		36 - 145 38 - 149 38 - 141 42 - 140 28 - 143 42 - 151			

MW 2-hB2

Page 33 of 117

Client: Ecology and Environment, Inc.

	-								
Client Sample ID:	PEN010	H					· ·		
Lab Sample ID: Client Matrix:	580-473 Solid	2-6	. %	6 Moisture:	4.7		Date Sampled: Date Received:	01/11/2007 01/17/2007	1212 1000
8270	C Semivolat	tile Compou	nds by Gas	Chromato	graphy/Mas	ss Spe	ectrometry (GC/MS)		
Method:	8270C		Analysi	s Batch: 580)-14932		Instrument ID: SE	A002	
Preparation:	3550B		Prep Ba	atch: 580-14	855		Lab File ID: AT	07021.D	
Dilution:	1.0						Initial Weight/Volume	: 10.690	9 g
Date Analyzed:	01/18/2007	1620					Final Weight/Volume:	10 mL	
Date Prepared:	01/18/2007	0636	•				Injection Volume:		
						·			
A		D-144 O-		Decult (ve	(1 <i>Ca</i>)	کر اور		ום	
Analyte		DIVINE	prrected: Y	Result (ug	/kg) G	Juaiiii	er		-}
Phenol Bit (0, style as the liter	u							98 🕻	<i>J</i>
Bis(Z-chioroethyr)ei	llier							50	
2-Uniorophenoi								40	L .
1,3-Dicitioroberizer								49	Į
Renzyl oloobol	ie							43	1
1 2 Dichlorobonzor				ND				49	1
2. Mothvinhenol					*	•		98	}
Bis/2-chloroisonron	vi) ether			ND				150	
3 & 4 Methvinhenol				ND				200	1
N-Nitrosodi-n-propy	/lamine			ND				98	IT
Hexachloroethane				ND				98	
Nitrobenzene				ND				98	ļ
Isophorone				ND	*	*		98	
2-Nitrophenol				ND				98	
2.4-Dimethylphenol	l			ND				98	
Benzoic acid				ND				2500	
Bis(2-chloroethoxy)	methane			ND				98	1
2,4-Dichlorophenol				ND				98	1
1,2,4-Trichlorobenz	ene			ND			* 	49	1
Naphthaiene				ND				20	
4-Chloroaniline				ND				98	
Hexachlorobutadie	ne			ND				49	
4-Chloro-3-methylp	henol			ND				98	- L
2-Methylnaphthaler	ne			ND				20	
Hexachlorocyclope	ntadiene			ND				98	1
2,4,6-Trichloropher	loi			ND				150	ļ
2,4,5-I richloropher	IOI			ND				98	
2-Chloronaphthaler	ne							20	
2-Nitroaniiine								90	1
Dimetnyi phinalate								90 20	
2.6 Dinitratoluono								08	
2,0-Dimitolouene								98	1
Acenanhthene								20	1
2 4-Dinitrophenol				ND				980	
4-Nitrophenol				ND			· .	980	
Dibenzofuran				ND	•			98	
2.4-Dinitrotoluene				ND				98	
Diethyi phthalate				ND	*	ł		98	1
4-Chlorophenyl phe	enyl ether			ND				98	1
Fluorene	<u> </u>			ND				20	12
4-Nitroaniline			۰.	ND				98	Y

Page 34 of 117

911 2607

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID: PEN	D10			
Lab Sample ID: 580-4 Client Matrix: Solid	1732-6	% Moisture: 4.7	Date Sampled: Date Received:	01/11/2007 1212 01/17/2007 1000
8270C Semiv	olatile Compounds by Ga	as Chromatography/M	lass Spectrometry (GC/MS)	
Method: 8270C Preparation: 3550B Dilution: 1.0 Date Analyzed: 01/18/20 Date Prepared: 01/18/20	Analy Prep I 007 1620 007 0636	sis Batch: 580-14932 Batch: 580-14855	Instrument ID: SEA Lab File ID: ATO Initial Weight/Volume: Final Weight/Volume: Injection Volume:	002 7021.D 10.6909 g 10 mL
Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	RL
4,6-Dinitro-2-methylphenol N-Nitrosodiphenylamine 4-Bromophenyl phenyl ether Hexachlorobenzene Pentachlorophenol Phenanthrene Anthracene Di-n-butyl phthalate Fluoranthene Pyrene Butyl benzyl phthalate 3,3'-Dichlorobenzidine Benzo[a]anthracene Chrysene Bis(2-ethylhexyl) phthalate Di-n-octyl phthalate Benzo[a]apyrene Indeno[1,2,3-cd]pyrene Dibenz(a,h)anthracene Benzo[g,h,i]perylene Carbazole 1-Methylnaphthalene		ND ND ND ND ND ND ND ND ND ND ND ND ND N		980 49 49 98 49 98 20 20 200 20 200 20 200 20 200 20 200 20 25 1500 290 39 39 25 1500 29
Surrogate		%Rec	Acceptar	nce Limits
2-Fluorophenol Phenol-d5 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophenol Terphenyl-d14		97 95 96 87 107	30 - 14 38 - 14 38 - 14 42 - 14 42 - 14 28 - 14 42 - 15	9 1 0 3 1

MM 2807

Page 35 of 117

Client: Ecology and Environment, Inc.

Client Sample ID:	PEN013									
Lab Sample ID:	580-4732	2-7	÷				Date Sam	oled: 01	/11/2007	1305
Client Matrix:	Solid		%	Moisture:	7.1		Date Rece	ived: 01	/17/2007	1000
8270	C Semivolat	ile Compound	s by Gas	Chromatog	graphy/Ma	ass Spe	ectrometry (GC	/MS)		
Method:	8270C		Analysi	s Batch: 580)-14932		Instrument ID:	SEA00	2	
Preparation:	3550B		Prep Ba	atch: 580-14	855		Lab File ID:	AT070	22.D	
Dilution:	1.0		2.1				Initial Weight/V	olume:	10.653	5 g
Date Analyzed:	01/18/2007	1647					Final Weight/Vo	olume:	10 ml	-
Date Prepared:	01/18/2007	0636					Injection Volum	e:		
Analyte		DryWt Corre	ected: Y	Result (ug	/Kg)	Qualifi	er		RL	4
Phenol				ND					100 (Ļ
Bis(2-chloroethyl)e	ther			ND					100	1
2-Chlorophenol				ND					100	
1,3-Dichlorobenzer	ne			ND					51	
1,4-Dichlorobenzer	1e			ND					51	1
Benzyl alcohol				ND					100	
1,2-Dichlorobenzer	n e			ND					51	1
2-Methylphenol				ND		*			100	
Bis(2-chloroisoprop	oyl) ether			ND					150	
3 & 4 Methylpheno]-			ND					200	1
N-Nitrosodi-n-prop	ylamine			NÐ-					100	J.
Hexachloroethane				ND					100	1
Nitrobenzene				ND					100	ł
Isophorone				ND		*			100	1
2-Nitrophenol				ND					100	
2,4-Dimethylpheno	d	•		ND					100	
Benzoic acid				ND					2500	1
Bis(2-chloroethoxy)methane			ND					100	1
2,4-Dichlorophenol	l			ND					100	1
1,2,4-Trichlorobenz	zene			ND					51	
Naphthalene				ND					20	
4-Chloroaniline				ND					100	
Hexachlorobutadie	ne			ND					51	
4-Chloro-3-methylp	pheno!			ND					100	
2-Methylnaphthale	ne			ND					20	
Hexachlorocyclope	entadiene			ND					100	
2,4,6-Trichloropher	nol			ND					150	
2,4,5-Trichloropher	nol			ND					100	
2-Chloronaphthale	ne			ND			,		20	۱.
2-Nitroaniline				ND					100	1
Dimethyl phthalate				ND					100	1
Acenaphthylene				ND					20	ł
2,6-Dinitrotoluene				ND					100	
3-Nitroaniline				ND					100	
Acenaphthene				ND					20	1
2,4-Dinitrophenol				ND					1000	
4-Nitrophenol				ND					1000	
Dibenzofuran				ND			i i		100	
2,4-Dinitrotoluene				ND					100	
Diethyl phthaiate				ND		*			100	1
4-Chlorophenyl ph	enyl ether			ND					100	1
Fluorene				ND					20	1
4-Nitroaniline				ND					100	√

STL Seattle

MW 2-607

Client: Ecology and Environment, Inc.

Client Sample ID:	PEN013								
Lab Sample ID: Client Matrix:	580-4732 Solid	2-7	۰ م	6 Moisture:	7.1	D: D:	ate Sampled: ate Received:	01/11/2007 13 01/17/2007 10	305 000
8270	C Semivolati	ile Compou	nds by Gas	Chromato	graphy/M	ass Spectrom	etry (GC/MS)		
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8270C 3550B 1.0 01/18/2007 01/18/2007	1647 0636	Analysi Prep B	s Batch: 580 atch: 580-14)-14932 855	Instrur Lab Fi Initial V Final V Injectio	nent ID: SE/ le ID: AT(Weight/Volume: Veight/Volume: on Volume:	A002)7022.D 10.6535 10 mL	g
Analyte		DryWt Co	prrected: Y	Result (ug	ı/Kg)	Qualifier		RL	
4,6-Dinitro-2-methy N-Nitrosodiphenyla 4-Bromophenyl phe Hexachlorobenzen Pentachlorophenol Phenanthrene Anthracene Di-n-butyl phthalate Fiuoranthene Pyrene Butyl benzyl phthal 3,3'-Dichlorobenzic Benzo[a]anthracen Chrysene Bis(2-ethylhexyl) p Di-n-octyl phthalate Benzo[a]pyrene Indeno[1,2,3-cd]py Dibenz(a,h)anthrac Benzo[g,h,i]peryler Carbazole 1-Methylnaphthale	viphenol amine enyl ether e l e late dine ne hthalate e s rrene cene ne	, , ,		ND ND ND ND ND ND ND ND ND ND ND ND ND N				1000 51 100 51 100 20 20 20 20 20 20 20 20 20	
Surrogate				%Rec			Accepta	nce Limits	
2-Fluorophenol Phenol-d5 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophe Terphenyl-d14	enol			102 97 99 100 88 114			36 - 14 38 - 14 38 - 14 42 - 14 28 - 14 42 - 15	+5 19 11 10 13 51	

MW 7687

Client: Ecology and Environment, Inc.

Client Sample ID:	PEN015					
Lab Sample ID:	580-4732	2-8	% Moisture:	18 7	Date Sampled:	01/11/2007 1330
		··· =::		10.1		
8270	C Semivolat	ile Compounds	s by Gas Chromate	ography/Mass S	pectrometry (GC/MS)
Method:	8270C		Analysis Batch: 58	30-14932	Instrument ID: S	EA002
Preparation:	3550B		Prep Batch: 580-1	4855	Lab File ID: A	107023.D
Dilution:	1.0				Initial weight/volun	ne: 10.9248 g
Date Analyzed:	01/18/2007	1714			Final Weight/Volum	ie: 10 mL
Date Prepared:	01/18/2007	0636			Injection Volume:	
Analyte		DryWt Corre	cted: Y Result (u	g/Kg) Qual	lifier	RL
Phenol			ND			110
Bis(2-chloroethyl)et	ther		ND			110 🧍
2-Chlorophenol			ND	· .		1 10 c
1,3-Dichlorobenzer	ne		ND			56
1,4-Dichlorobenzer	ne		ND			56
Benzyl alcohol			ND			. 110
1,2-Dichlorobenzer	ne		ND			56
2-Methylphenol			ND	*		110
Bis(2-chloroisoprop	yl) ether		ND			170
3 & 4 Methylphenol	l 		ND			110
N-Nitrosodi-n-propy	ylamine		ND			
Hexachioroethane						110
Nitropenzene	•			*		110
2 Nitrophonol			ND			110
2 4-Dimethylpheno			ND			110
2,4-Dimensipheno	1		ND			2800
Bis(2-chloroethoxy)methane		ND			110
2 4-Dichlorophenol			ND			110
1.2.4-Trichlorobenz	zene		ND			56 -
Naphthalene			ND			23
4-Chloroaniline			ND			110
Hexachlorobutadie	ne		ND			56
4-Chloro-3-methylp	henol		ND			110
2-Methylnaphthale	ne		ND			23
Hexachlorocyclope	entadiene		ND			110
2,4,6-Trichloropher	lor		ND			170
2,4,5-Trichloropher	lor		ND			
2-Chloronaphthale	ne					23
2-Nitroaniline						110
Dimethyl phthalate						23
Acenaphtnylene						110
2,6-Dimirololuene						110
Acenanhthene			ND			23
2 4-Dinitrophenol			ND			1100
4-Nitrophenol			ND	•		1100
Dibenzofuran			ND			110
2,4-Dinitrotoluene			ND			110
Diethyl phthalate			ND	*		110
4-Chlorophenyl ph	enyl ether		ND			110
Fluorene			ND			$\frac{23}{\sqrt{23}}$
4-Nitroaniline			ND			110

STL Seattle

mr 2-4 0 +

Client: Ecology and Environment, Inc.

Client Sample ID	: PEN015								
Lab Sample ID: Client Matrix:	580-473: Solid	2-8	%	Moisture	: 18.7		Date Sampled: Date Received:	01/11/2007 01/17/2007	7 1330 7 1000
827	0C Semivolat	ile Compou	inds by Gas	Chromat	tography/M	lass Spe	ctrometry (GC/MS)		
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8270C 3550B 1.0 01/18/2007 01/18/2007	1714 0636	Analysis Prep Ba	s Batch: 5 atch: 580-	80-14932 14855		Instrument ID: SE Lab File ID: AT Initial Weight/Volume Final Weight/Volume Injection Volume:	A002 07023.D a: 10.924 : 10 m	48 g L
Analyte		DryWt C	orrected: Y	Result (ug/Kg)	Qualifie	<u>۲</u>	RL	
4,6-Dinitro-2-meth N-Nitrosodiphenyl 4-Bromophenyl pł Hexachlorobenze: Pentachloropheno Phenanthrene Anthracene Di-n-butyl phthala Fluoranthene Pyrene Butyl benzyl phthala Fluoranthene Pyrene Butyl benzyl phthala Senzo[a]anthrace Chrysene Bis(2-ethylhexyl) p Di-n-octyl phthala Benzo[a]pyrene Indeno[1,2,3-cd]p Dibenz(a,h)anthra Benzo[g,h,i]peryle Carbazole 1-Methylnaphthal	hylphenol lamine henyl ether ne ol te alate idine ne phthalate te se yrene acene ene			ND ND ND ND ND ND ND ND ND ND ND ND ND N				1100 56 110 56 110 23 23 23 23 23 110 230 28 28 28 1700 230 45 34 45 45 28 170 34	
Surrogate				%Rec			Accept	ance Limits	
2-Fluorophenol Phenol-d5 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromoph Terphenyl-d14	enol			102 96 94 95 81 102			36 - ' 38 - ' 38 - ' 42 - ' 28 - ' 42 - '	45 49 41 40 43 51	

Mor 1677

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	PEN016W		
Lab Sample ID: Client Matrix:	580-4732-9 Water	Date Sampled: Date Received:	01/11/2007 1600 01/17/2007 1000

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-14933	Instrument ID:	SEA00	2
Preparation:	3510C	Prep Batch: 580-14860	Lab File ID:	AT0702	27.D
Dilution:	1.0		Initial Weight/Vo	lume:	995 mL
Date Analyzed:	01/18/2007 1903		Final Weight/Vo	lume:	10 mL
Date Prepared:	01/18/2007 0755		Injection Volume	: :	·

Analyte	Result (ug/L)	Qualifier	RL
Phenol	ND		3.0 ()
Bis(2-chloroethyl)ether	ND		2.0
2-Chlorophenol	ND		2.0 /
1,3-Dichlorobenzene	ND		2.0
1,4-Dichlorobenzene	ND		2.0
Benzyi alcohol	ND		2.0
1,2-Dichlorobenzene	ND		2.0
2-Methylphenol	ND	*	2.0
Bis(2-chloroisopropyl) ether	ND	· ·	2.0
3 & 4 Methylphenol	ND		4.0
N-Nitrosodi-n-propylamine	ND		2.0 JAN
Hexachloroethane	ND		3.0
Nitrobenzene	ND	•	2.0
lsophorone	ND	*	2.0
2-Nitrophenol	ND		2.0
2,4-Dimethylphenol	ND	· ·	10
Benzoic acid	ND		10
Bis(2-chloroethoxy)methane	ND		2.0
2.4-Dichlorophenol	ND		2.0
1,2,4-Trichlorobenzene	ND		2.0
Naphthalene	ND		2.0
4-Chloroaniline	ND		2.0
Hexachlorobutadiene	ND		3.0
4-Chloro-3-methylphenol	ND		2.0
2-Methylnaphthalene	ND		1.0
Hexachlorocyclopentadiene	ND		10
2,4,6-Trichlorophenol	ND		3.0
2,4,5-Trichlorophenol	ND		2.0
2-Chloronaphthalene	ND	•	0.30
2-Nitroaniline	ND		2.0
Dimethyl phthalate	ND		2.0
Acenaphthylene	ND		0.40
2,6-Dinitrotoiuene	ND		2.0
3-Nitroaniline	ND	*	2.0
Acenaphthene	ND		0.50
2,4-Dinitrophenol	ND		25
4-Nitrophenol	ND		10
Dibenzofuran	ND		2.0
2,4-Dinitrotoluene	ND		2.0
Diethyl phthalate	ND		2.0
4-Chlorophenyl phenyl ether	ND		2.0
Fluorene	ND		0,30
4-Nitroaniline	ND	*	3,0 \//

STL Seattle

Mr 26-07

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID	: PEN016W				
Lab Sample ID:	580-4732-9		. •	Date Sampled: (01/11/2007 1600
Client Matrix:	Water				
8270	C Semivolatile Comp	ounds by Gas Chromatography/M	lass Spe	ctrometry (GC/MS)	
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8270C 3510C 1.0 01/18/2007 1903 01/18/2007 0755	Analysis Batch: 580-14933 Prep Batch: 580-14860	· 1	instrument ID: SEA(Lab File ID: AT07 Initial Weight/Volume: Final Weight/Volume: Injection Volume:	002 7027.D 995 mL 10 mL
Analyte		Result (ug/L)	Qualifie	r	RL
A 6-Dipitro-2-meth	vinhenol	ND		*****	20 0
N-Nitrosodiphenvi	amine	ND			2.0
4-Bromophenvl ph	envl ether	ND			2.0
Hexachlorobenzei	ne	ND			2.0
Pentachloropheno)l	ND			3.5
Phenanthrene		ND			0.40
Anthracene		ND			0.20
Di-n-butyl phthalai	te	ND	*		2.0
Fluoranthene		ND	*		0.25
Pyrene		ND			0.30
Butyl benzyl phtha	alate	ND	<u>ب</u>		3.0
3,3'-Dichlorobenzi	idine	ND	~		0.20
Benzo[a]anthrace	ne	ND			0.30
Chrysene		ND			15
Bis(2-ethylhexyl)	phthalate				20
Di-n-octyl phthala	te				0.40
Benzofluoranthen	е				0.20
Benzo[a]pyrene					0.30
Indeno[1,2,3-cd]p	yrene			· .	0.30
Dibenz(a,h)anthra	acene				0.30
Benzolg,h,ijperyle	ene	ND		•	2.0
Carbazole				·	0.30
1-Methylnaphtnai	ene	IND I			
Surrogate		%Rec		Acceptar	
2-Fluorophenol		53		10 - 12	0
Phenol-d5		29		10 - 10	4 6
Nitrobenzene-d5		117		34 - 14 25 - 14	0 2
2-Fluorobiphenyl		116		30 - 14 20 4=	J
2,4,6-Tribromoph	enol	91		28-10	- 6
Terphenyl-d14		119		50 - 10	U

MW

Page 41 of 117

ecology and environment, inc.

International Specialists in the Environment

720 Third Avenue, Suite 1700, Seattle, WA 98104 Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE:February 6, 2007TO:Jim Gill, Project Manager, E & E, Anchorage, AKFROM:Mark Woodke, Chemist, E & E, Seattle, Washington WSUBJ:Organic Data Summary Check,
First Avenue Property, Anchorage, AlaskaREF:002397.PE06

The data summary check of 8 soil and 1 water samples collected from the First Avenue Property site located in Anchorage, Alaska, has been completed. Analysis for Polychlorinated Biphenyls (PCBs - EPA Method 8082) was performed by STL-Seattle, Inc., Tacoma, Washington.

The samples were numbered:

Soil	PEN001 PEN010	PEN004 PEN013	PEN006 PEN015	PEN007	PEN008

Water PEN016W

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained at $4^{\circ}C (\pm 2^{\circ}C)$. The samples were collected between January 10 and 12, 2007, were extracted by January 16, 2007, and were analyzed by January 18, 2007, therefore meeting QC criteria of less than 7 days between collection and water sample extraction (14 days for soils) and less than 40 days between extraction and analysis.

2. Instrument Performance: Not Provided.

Instrument performance information was not provided.

3. Initial and Continuing Calibration: Not Provided.

Calibration information was not provided.

4. Blanks: Acceptable.

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and for each concentration level, or every 20 samples, whichever is greater, and for each analytical system. No target analytes were detected in any blanks.

5. System Monitoring Compounds (SMCs): Acceptable.

All recoveries of the SMCs were within the established control limits.

6. Blank and Matrix Spikes: Acceptable.

Recoveries of all spiked analytes were within the appropriate control limits.

7. Duplicates: Acceptable.

Relative Percent Differences (RPDs) of all spiked analytes were within the required control limits.

8. Compound Identification: Not Provided.

Information regarding dual-column confirmation was not provided.

9. Target Compound Quantitation and Quantitation Limits: Not Provided.

Information needed to recalculate sample results and quantitation limits was not provided.

10. Laboratory Contact

No laboratory contact was required.

11. Overall Assessment

The overall usefulness of the data is based on the criteria outlined in the OSWER Guidance Document "Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan, and Data Validation Procedures" (EPA/540/G-90/004), the analytical method, and, when applicable, the Office of Emergency and Remedial Response Publication "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review". Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

U - The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	PEN001				
Lab Sample ID: Client Matrix:	580-4732- Solid	1	6 Moisture: 3.8	Date Sampled: Date Received:	01/10/2007 1245 01/17/2007 1000
	8082 Pc	olychlorinated Bipher	yls (PCBs) by Gas	Chromatography	
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8082 3550B 5.0 01/18/2007 1 01/18/2007 0	Analys Prep B 1226 0708	is Batch: 580-14910 atch: 580-14858	Instrument ID: SE Lab File ID: PC Initial Weight/Volume Final Weight/Volume: Injection Volume: Column ID: PI	A034 B5802.D : 10.5684 g 20 mL RIMARY
Analyte	-	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	RL
PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1260			ND ND ND ND ND ND ND		0.098 0.098 0.098 0.098 0.098 0.098 0.098
Surrogate			%Rec	Accepta	ince Limits
Tetrachloro-m-xyle DCB Decachlorobi	ne phenyl		92 96	45 - 11 50 - 11	55 50

MW DF-

Page 51 of 117

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	PEN004							
Lab Sample ID: Client Matrix:	580-4732 Solid	2-2	9	6 Moisture:	15.9		Date Sampled: Date Received:	01/10/2007 1525 01/17/2007 1000
	8082 P	olychlorinate	ed Bipher	ıyls (PCBs)	by Gas C	Chromato	ography	· · ·
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8082 3550B 5.0 01/18/2007 01/18/2007	1250 0708	Analysi Prep B	is Batch: 580 atch: 580-14)-14910 858		Instrument ID: SE Lab File ID: PC Initial Weight/Volume Final Weight/Volume Injection Volume: Column ID: P	A034 B5803.D : 10.9875 g : 20 mL RIMARY
Analyte		DryWt Cor	rected: Y	Result (mg	g/Kg)	Qualifie	r	RL
PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1260				ND ND ND ND ND ND				0.11 0.11 0.11 0.11 0.11 0.11 0.11 0.11
Surrogate		·		%Rec			Accepta	ance Limits
Tetrachloro-m-xyle DCB Decachlorobi	ne phenyl			96 98			45 - 1 50 - 1	55 50

MU Thot

STL Seattle

Page 52 of 117
Client: Ecology and Environment, Inc.

Client Sample ID:	PEN006				· · ·	
Lab Sample ID: Client Matrix:	580-4732 Solid	2-3	% Moisture:	19.4	Date Sampled: Date Received:	01/11/2007 1130 01/17/2007 1000
	8082 P	olychlorinated Bi	phenyls (PCBs)	by Gas C	Chromatography	
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8082 3550B 5.0 01/18/2007 01/18/2007	Ar Pr 1314 0708	alysis Batch: 580 ep Batch: 580-14)-14910 858	instrument ID: SEA Lab File ID: PCB Initial Weight/Volume: Final Weight/Volume: Injection Volume: Column ID: PR	034 5804.D 10.5546 g 20 mL IMARY
Analyte		DryWt Correcte	d: Y Result (m	g/Kg)	Qualifier	RL
PCB-1016			ND			0.12
PCB-1221			· ND			0.12
PCB-1232			ND			0.12
PCB-1242			ND			0.12
PCB-1248			ND			0.12
PCB-1254			ND			0.12
PCB-1260			ND		. · · ·	0.12 🕎
Surrogate	4 A.		%Rec		Acceptan	ce Limits
Tetrachloro-m-xvle	ne		93		45 - 158	5
DCB Decachlorobi	phenyl		98		50 - 150)

MW 2607

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	PEN007	•					
Lab Sample ID: Client Matrix:	580-4732-4 Solid	c	% Moisture:	19.9	• •	Date Sampled: Date Received:	01/11/2007 1130 01/17/2007 1000
	8082 Polyc	hlorinated Bipher	nyis (PCBs) i	by Gas C	hromato	graphy	· · · · · · · · · · · · · · · · · · ·
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8082 3550B 5.0 01/18/2007 133 01/18/2007 0708	Analys Prep E 7 8	is Batch: 580 atch: 580-14	-14910 858	lı L F Iı C	nstrument ID: SE ab File ID: PC nitial Weight/Volume Final Weight/Volume njection Volume: Column ID: F	EA034 CB5805.D e: 10.6841 g e: 20 mL PRIMARY
Analyte	D	ryWt Corrected: Y	Result (mg	/Kg)	Qualifier		RL
PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1254 PCB-1260 Surrogate	·		ND ND ND ND ND ND %Rec			Accept	0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12
Tetrachloro-m-xyle DCB Decachlorobi	ne phenyl	******	95 102	. <u></u>		45 - 1 50 - 1	55 50

MW 2607

Page 54 of 117

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	PEN008					
Lab Sample ID: Client Matrix:	580-4732 Solid	2-5	9	6 Moisture:	24.0	Date Sampled: 01/11/2007 1140 Date Received: 01/17/2007 1000
	8082 F	Polychiorina	ited Bipher	yis (PCBs)	by Gas (Chromatography
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8082 3550B 5.0 01/18/2007 01/18/2007	1401 0708	Analysi Prep B	s Batch: 580 atch: 580-14	0-14910 858	Instrument ID: SEA034 Lab File ID: PCB5806.D Initial Weight/Volume: 10.1413 g Final Weight/Volume: 20 mL Injection Volume: Column ID: PRIMARY
Analyte		DryWt Co	prrected: Y	Result (mg	g/Kg)	Qualifier RL
PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1254				ND ND ND ND ND ND	. · ·	0.13 () 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13
Surrogate	·			%Rec		Acceptance Limits
Tetrachloro-m-xyle DCB Decachlorobi	ne phenyl			97 102		45 - 155 50 - 150

MW

Page 55 of 117

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	PEN010									
Lab Sample ID: Client Matrix:	580-4732 Solid	2-6	9	6 Moisture:	4.7	• .	Date Samp Date Recei	led: ved:	01/11/2007 1212 01/17/2007 1000	
	8082 F	Polychlori	nated Bipher	yls (PCBs)	by Gas C	Chromato	graphy			
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8082 3550B 5.0 01/18/2007 01/18/2007	1425 0708	Analysi Prep B	s Batch: 580 atch: 580-14)-14910 1858	וו L F נו ג	nstrument ID: .ab File ID: nitial Weight/Vo Final Weight/Vo njection Volume Column ID:	SEA PCI lume: lume: e: PI	A034 B5807.D : 10.9159 g 20 mL RIMARY	
Analyte		DryWt (Corrected: Y	Result (m	g/Kg)	Qualifier	-		RL	
PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1254				ND ND ND ND ND ND ND	•				0.096 0.096 0.096 0.096 0.096 0.096 0.096	
Surrogate				%Rec			Ac	cepta	ince Limits	
Tetrachloro-m-xyle DCB Decachlorobi	ne phenyl			97 99	t		4	15 - 15 50 - 15	55 50	

MM 2687

Page 56 of 117

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	PEN013				н. 1		
Lab Sample ID: Client Matrix:	580-4732 Solid	2-7		6 Moisture: 7.1	Date Sa Date Re	ampled: 01/11/2007 1305 eceived: 01/17/2007 1000	
	8082 F	olychlorinat	ed Bipher	nyls (PCBs) by Gas	Chromatography		
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8082 3550B 5.0 01/18/2007 01/18/2007	1623 0708	Analys Prep B	is Batch: 580-14910 atch: 580-14858	Instrument II Lab File ID: Initial Weigh Final Weigh Injection Vol Column ID:	D: SEA034 PCB5812.D it/Volume: 10.3764 g t/Volume: 20 mL lume: PRIMARY	
Analyte		DryWt Co	rrected: Y	Result (mg/Kg)	Qualifier	RL ; j	
PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1260				ND ND ND ND ND ND ND	- - - -	0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10	
Surrogate	-			701480			
Tetrachloro-m-xylene DCB Decachlorobiphenyl			97 95			45 - 155 50 - 150	

MW 2407

Page 57 of 117

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	PEN015									
Lab Sample ID: Client Matrix:	580-4732 Solid	-8	9	6 Moisture:	18.7		Date Sa Date Re	mpled: ceived:	01/11/2007 01/17/2007	7 1330 7 1000
· ·	8082 P	olychlorin	ated Bipher	ıyls (PCBs) i	oy Gas C	hromatog	iraphy			
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8082 3550B 5.0 01/18/2007 01/18/2007	1646 0708	Analysi Prep B	is Batch: 580 atch: 580-14ł	-14910 358	In La In Fi In C	strument II ab File ID: itial Weigh inal Weight jection Vol olumn ID:	D: SE PC t/Volume /Volume: ume: P	A034 :B5813.D : 10.644 : 20 m RIMARY	48 g L
Analyte		DryWt C	orrected: Y	Result (mg	/Kg)	Qualifier			RL	<u>^</u>
PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1260				ND ND ND ND ND ND ND			• •		0.12 0.12 0.12 0.12 0.12 0.12 0.12	
Surrogate		•		%Rec				Accepta	ance Limits	
Tetrachloro-m-xyle DCB Decachlorobi	ne phenyl			98 97				45 - 1 50 - 1	55 50	

Mw 7-607

Page 58 of 117

Client: Ecology and Environment, Inc.

Client Sample ID:	PEN016W		
Lab Sample ID: Client Matrix:	580-4732-9 Water		Date Sampled: 01/11/2007 1600 Date Received: 01/17/2007 1000
	8082 Polychlorin	ated Biphenyis (PCBs) by Gas C	Chromatography
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8082 3510C 1.0 01/18/2007 2241 01/18/2007 0756	Analysis Batch: 580-14914 Prep Batch: 580-14862	Instrument ID: SEA034 Lab File ID: PCB5828.D Initial Weight/Volume: 970 mL Final Weight/Volume: 10 mL Injection Volume: Column ID: PRIMARY
Analyte		Result (ug/L)	Qualifier RL
PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1254		ND ND ND ND ND ND ND	0.52 0.52 0.52 0.52 0.52 0.52 0.52 0.52 0.52
Surrogate		%Rec	Acceptance Limits
Tetrachloro-m-xyle DCB Decachlorobi	ne phenyl	85 63	60 - 150 40 - 135

MW 2607

ecology and environment, inc.

International Specialists in the Environment

720 Third Avenue, Suite 1700, Seattle, WA 98104 Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE:	February 6, 2007
TO:	Jim Gill, Project Manager, E & E, Anchorage, AK
FROM:	Mark Woodke, Chemist, E & E, Seattle, Washington MW
SUBJ:	Organic Data Summary Check, First Avenue Property, Anchorage, Alaska
REF:	002397.PE06

The data summary check of 8 soil and 1 water samples collected from the First Avenue Property site located in Anchorage, Alaska, has been completed. Target Analyte List (TAL) metals analyses (EPA Methods 6010 and 7471) were performed by STL-Seattle, Inc., Tacoma, Washington.

The samples were numbered:

Soil	PEN001	PEN004	PEN006	PEN007	PEN008
	PEN010	PEN013	PEN015		

Water PEN016W

Data Qualifications:

1. Sample Holding Times: Acceptable.

All liquid samples were preserved to a pH < 2. The samples were maintained at $4^{\circ}C (\pm 2^{\circ}C)$. The samples were collected between January 10 and 12, 2007, and were analyzed by January 25, 2007, therefore meeting QC criteria of less than 6 months between collection, extraction, and analysis (28 days for mercury).

2. Initial and Continuing Calibration: Not Provided.

Calibration information was not provided.

3. Blanks: Acceptable.

A preparation blank was analyzed for each 20 samples or per matrix per concentration level. There were no detections in the blanks.

4. ICP Interference Check Sample: Not Provided.

Interference Check Sample information was not provided.

5. ICP Serial Dilution: Not Provided.

Serial dilution information was not provided.

6. Matrix Spike Analysis: Acceptable.

A matrix spike analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. Spike and spike duplicate recoveries were within the QC limits.

7. Duplicate Analysis: Satisfactory.

A laboratory duplicate analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. All duplicate results were within QC limits except the arsenic result in the water duplicate. Arsenic in the water sample was qualified as an estimated quantity (UJ).

8. Laboratory Control Sample Analysis: Acceptable.

A Laboratory Control Sample (LCS) was analyzed per SDG per matrix. All LCS results were within the established control limits.

9. Overall Assessment of Data for Use

The overall usefulness of the data is based on the criteria outlined in the OSWER Guidance Document "Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan, and Data Validation Procedures" (EPA/540/G-90/004), the analytical methods, and, when applicable, the Office of Emergency and Remedial Response Publication "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review". Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

- U The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
- UJ The material was analyzed for, but not detected. The reported detection limit is estimated because quality control criteria were not met.

Client: Ecology and Environment, Inc.

Client Sample ID: PEN001

,

Job Number: 580-4732-1

Lab Sample ID: Client Matrix:	580-4732-1 Solid	% Moisture: 3.8	Date Sampled: Date Received:	01/10/2007 1245 01/17/2007 1000
	6010B Induct	ively Coupled Plasma - Atomic E	mission Spectrometry	
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	6010B 3050B 1.0 01/18/2007 1450 01/18/2007 1100	Analysis Batch: 580-14896 Prep Batch: 580-14871	Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume:	SEA027 N/A 1.0026 g 50 mL
Analyte	DryWt Correcte	d: Y Result (mg/Kg)	Qualifier	RL
Arsenic Barium Cadmium Chromium Lead Selenium Silver		3.4 35 ND 25 4.8 ND ND		2.6 0.26 0.26 0.52 0.78 2.6 0.52
	7471A Mercury in	Solid or Semisolid Waste (Man	ual Cold Vapor Technique)	
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	7471A 7471A 1.0 01/18/2007 1150 01/18/2007 1000	Analysis Batch: 580-14883 Prep Batch: 580-14868	Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume:	SEA029 N/A 0.5951 g 50 mL
Analyte	DryWt Correcte	d: Y Result (mg/Kg)	Qualifier	RL
Mercury	ang pang ng mang ng man	0.050	n yezhoù e yezhoù e dago e	0.017

MW 7-6-07

Page 69 of 117

Client: Ecology and Environment, Inc.

Client Sample I	D: PEN004	×			
Lab Sample ID: Client Matrix:	580-4732-2 Solid	·	% Moisture: 15.9	Date Sampled: Date Received:	01/10/2007 1525 01/17/2007 1000
	6010B In	ductively Co	upled Plasma - Atomic	Emission Spectrometry	·
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	6010B 3050B 1.0 01/18/2007 1517 01/18/2007 1100	Analy Prep I	sis Batch: 580-14896 Batch: 580-14871	Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume:	SEA027 N/A 1.0668 g 50 mL
Analyte	DryWt Cor	rected: Y	Result (mg/Kg)	Qualifier	RL
Arsenic Barium Cadmium Chromium Lead Selenium Silver			5.4 48 ND 33 5.7 ND ND		2.8 0.28 0.28 0.56 0.84 2.8 0.56
· · · ·	7471A Mercu	ary in Solid o	or Semisolid Waste (Ma	nual Cold Vapor Technique)	
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	7471A 7471A 1.0 01/18/2007 1214 01/18/2007 1000	Analy Prep	sis Batch: 580-14883 Batch: 580-14868	instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume:	SEA029 N/A 0.5378 g 50 mL
Analyte	DryWt Cor	rected: Y	Result (mg/Kg)	Qualifier	RL
Mercury			0.071	ana kana kana kana kana kana kana kana	0.022

MN 2607

Client: Ecology and Environment, Inc.

PEN006

Client Sample ID:

Job Number: 580-4732-1

Date Sampled: 01/11/2007 1130 Lab Sample ID: 580-4732-3 Date Received: 01/17/2007 1000 Client Matrix: Solid % Moisture: 19.4 6010B Inductively Coupled Plasma - Atomic Emission Spectrometry Analysis Batch: 580-14896 Instrument ID: **SEA027** Method: 6010B Prep Batch: 580-14871 Lab File ID: N/A Preparation: 3050B Initial Weight/Volume: 1.2718 g Dilution: 1.0 Final Weight/Volume: 50 mL Date Analyzed: 01/18/2007 1520 Date Prepared: 01/18/2007 1100 Qualifier RL DryWt Corrected: Y Result (mg/Kg) Analyte 2.4 2.8 Arsenic 0.24 Barium 29 ND 0.24 () Cadmium 0.49 Chromium 28 Lead 2.5 0.73 2.4 Selenium ND 0.49 U ND Silver . 7471A Mercury in Solid or Semisolid Waste (Manual Cold Vapor Technique) Analysis Batch: 580-14883 Instrument ID: **SEA029** Method: 7471A Lab File ID: N/A Prep Batch: 580-14868 Preparation: 7471A Initial Weight/Volume: Dilution: 1.0 0.6863 g Final Weight/Volume: 50 mL Date Analyzed: 01/18/2007 1219 Date Prepared: 01/18/2007 1000 RL Result (mg/Kg) Qualifier Analyte DryWt Corrected: Y 0.036 0.018 Mercury

 $\sim N$

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID: PEN007

Lab Sample ID: Client Matrix:	580-4732-4 Solid		% Moisture: 19.9	Date Sampled: Date Received:	01/11/2007 1130 01/17/2007 1000
	6010	3 inductively Co	oupled Plasma - Atomic	Emission Spectrometry	
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	6010B 3050B 1.0 01/18/2007 1524 01/18/2007 1100	Analy Prep	sis Batch: 580-14896 Batch: 580-14871	Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume:	SEA027 N/A 1.1911 g 50 mL
Analyte	DryWt	Corrected: Y	Result (mg/Kg)	Qualifier	RL
Arsenic Barium Cadmium Chromium Lead Selenium Silver			2.7 36 ND 32 2.6 ND ND		2.6 0.26 0.26 0.52 0.79 2.6 0.52 0.52
	7471A Me	ercury in Solid c	r Semisolid Waste (Ma	nual Cold Vapor Technique)	
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	7471A 7471A 1.0 01/18/2007 1224 01/18/2007 1000	Analy Prep I	sis Batch: 580-14883 Batch: 580-14868	Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume:	SEA029 N/A 0.5627 g 50 mL
Analyte	DryWt	Corrected: Y	Result (mg/Kg)	Qualifier	RL
Mercury			0.044	αποληθείουπο πολεθεία στα πολεμβά το διαδούδια στα πολεγγά το πολεγγάζου στη στη τη βάργη τη τη διαφοριατη της Τ	0.022

Mr. 2607

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID: PEN008

Lab Sample ID: Client Matrix:	580-4732-5 Solid		% Moisture: 24.0	Date Sampled: Date Received:	01/11/2007 1140 01/17/2007 1000
-	6010B Indu	ctively Co	upled Plasma - Atomic	Emission Spectrometry	· · · · ·
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	6010B 3050B 1.0 01/18/2007 1527 01/18/2007 1100	Analysis Batch: 580-14896 Prep Batch: 580-14871		Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume:	SEA027 N/A 1.0120 g 50 mL
Analyte	DryWt Corre	cted: Y	Result (mg/Kg)	Qualifier	RL
Arsenic Barium Cadmium Chromium Lead Selenium Silver			8.2 81 ND 42 6.5 ND ND		3.2 0.32 0.32 0.65 0.97 3.2 0.65
	7471A Mercury	/ in Solid o	or Semisolid Waste (Ma	nual Cold Vapor Technique)	
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	7471A 7471A 1.0 01/18/2007 1228 01/18/2007 1000	Analy Prep I	sis Batch: 580-14883 3atch: 580-14868	Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume:	SEA029 N/A 0.5412 g 50 mL
Analyte	DryWt Corre	cted: Y	Result (mg/Kg)	Qualifier	RL
Mercury		******	0.12		0.024

Mn 1607

Client: Ecology and Environment, Inc.

Client Sample II	D: PEN010				
Lab Sample ID: Client Matrix:	580-4732-6 Solid % Moisture: 4.7		% Moisture: 4.7	Date Sampled: Date Received:	01/11/2007 1212 01/17/2007 1000
	60	10B Inductively Co	oupled Plasma - Atomic	Emission Spectrometry	
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	6010B 3050B 1.0 01/18/2007 1 01/18/2007 1	Analy Prep 529 100	vsis Batch: 580-14896 Batch: 580-14871	Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume:	SEA027 N/A 1.1524 g 50 mL
Analyte	Dry	Wt Corrected: Y	Result (mg/Kg)	Qualifier	RL
Arsenic Barium Cadmium Chromium Lead Selenium Silver			3.5 29 ND 20 3.7 ND ND		2.3 0.23 0.46 0.68 2.3 0.46
	74714	A Mercury in Solid	or Semisolid Waste (Ma	nual Cold Vapor Technique)	
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	7471A 7471A 1.0 01/18/2007 1 01/18/2007 1	Analysis Batch: 580-148 Prep Batch: 580-14868 1233 1000		Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume:	SEA029 N/A 0.5288 g 50 mL
Analvte	Dry	/Wt Corrected: Y	Result (mg/Kg)	Qualifier	RL
Mercury			0.052		0.020

MW 7-bor

Client: Ecology and Environment, Inc.

Client Sample II	D: PEN013			· · · ·	· .
Lab Sample ID: Client Matrix:	580-4732-7 Solid		% Moisture: 7.1	Date Sampled: Date Received:	01/11/2007 1305 01/17/2007 1000
	6010B Ind	uctively Co	upled Plasma - Atomic	Emission Spectrometry	-
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	6010B 3050B 1.0 d: 01/18/2007 1532 d: 01/18/2007 1100		sis Batch: 580-14896 Batch: 580-14871	Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume:	SEA027 N/A 1.1598 g 50 mL
Analyte	DryWt Corre	ected: Y	Result (mg/Kg)	Qualifier	RL
Arsenic Barium Cadmium Chromium Lead Selenium Silver			3.2 30 ND 25 2.8 ND ND		2.3 0.23 0.23 (J 0.46 0.70 2.3 (J 0.46 (J
	7471A Mercu	y in Solid o	r Semisolid Waste (Ma	nual Cold Vapor Technique)	
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	7471A 7471A 1.0 01/18/2007 1248 01/18/2007 1000	Analys Prep I	sis Batch: 580-14883 Batch: 580-14868	Instrument ID: Lab File ID: Initia! Weight/Volume: Final Weight/Volume:	SEA029 N/A 0.6232 g 50 mL
Analyte	DryWt Corr	ected: Y	Result (mg/Kg)	Qualifier	RÌ
Mercury			0.050		0.017

MW 7-607

Client: Ecology and Environment, Inc.

Client Sample I	D: PEN015						
Lab Sample ID: Client Matrix:	ble ID: 580-4732-8 trix: Solid		% Moisture: 18.7	Date Sampled: Date Received:	01/11/2007 1330 01/17/2007 1000		
	6010B Indu	ctively Co	upled Plasma - Atomic	Emission Spectrometry			
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	6010B 3050B 1.0 01/18/2007 1536 01/18/2007 1100	Analys Prep E	sis Batch: 580-14896 Batch: 580-14871	Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume:	SEA027 N/A 1.1304 g 50 mL		
Analyte	DryWt Correc	ted: Y	Result (mg/Kg)	Qualifier	RL		
Arsenic Barium Cadmium Chromium Lead Selenium Silver			3.7 38 ND 26 2.8 ND ND	•	2.7 0.27 0.27 0.54 0.82 2.7 0.54		
1i	7471A Mercury	in Solid o	r Semisolid Waste (Ma	nual Cold Vapor Technique)			
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	7471A 7471A 1.0 01/18/2007 1253 01/18/2007 1000	Analysis Batch: 580-14883 Prep Batch: 580-14868		instrument ID: SEA029 Lab File ID: N/A Initial Weight/Volume: 0.6500 g Final Weight/Volume: 50 mL			
Analyte	DryWt Correc	ted: Y	Result (mg/Kg)	Qualifier	RL		
Mercury	, , , , , , , , , , , , , , , , , , , 		0.030		0.019		

MW 7-6-07

Job Number: 580-4732-1

Client: Ecology and Environment, Inc.

Client Sample I	D: PEN016W				•
Lab Sample ID: Client Matrix:	580-4732-9 Water)		Date Sampled: Date Received:	01/11/2007 1600 01/17/2007 1000
	6010B Induc	ctively Coup	ied Plasma - Atomic Emissic	n Spectrometry-Total Recover	able
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	6010B 3005A 1.0 01/25/2007 01 01/24/2007 14	145 409	Analysis Batch: 580-15062 Prep Batch: 580-15049	Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume:	SEA027 N/A 50 mL 50 mL
Analyte			Result (mg/L)	Qualifier	RL
Arsenic Barium Cadmium Chromium Lead Selenium Silver			ND ND ND ND ND ND ND		0.050 0.0050 0.0050 0.010 0.015 0.050 0.010
		7470A Mercu	ıry in Liquid Waste (Manual (Cold Vapor Technique)	
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	7470A 7470A 1.0 01/24/2007 12 01/24/2007 09	256 937	Analysis Batch: 580-15057 Prep Batch: 580-15026	Instrument ID: Lab File ID: Initial Weight/Volume: Final Weight/Volume:	SEA029 N/A 50 mL 50 mL
Analyte			Result (mg/L)	Qualifier	RL
Mercury	•		ND	MW 2-6-6	0.00020 U
					· · · · · · · · ·
STL Seattle			Page 77 of 117		

ecology and environment, inc.

International Specialists in the Environment

720 Third Avenue, Suite 1700, Seattle, WA 98104 Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: February 6, 2007

TO: Jim Gill, Project Manager, E & E, Anchorage, AK

FROM: Mark Woodke, Chemist, E & E, Seattle, Washington

- SUBJ: Organic Data Summary Check, First Avenue Property, Anchorage, Alaska
- REF: 002397.PE06

The data summary check of 9 soil samples collected from the First Avenue Property site located in Anchorage, Alaska, has been completed. Analysis for Gasoline Range Organics (GROs; ADEC Method AK-101) analyses was performed by STL-Seattle, Inc., Tacoma, Washington.

The samples were numbered:

Soil	PEN001	PEN004	PEN006	PEN007	PEN008
	PEN010	PEN013	PEN015	Trip Blank	•

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained and received within the QC limits of $4^{\circ}C \pm 2^{\circ}C$. The samples were collected between January 10 and 12, 2007, and were analyzed by January 19, 2007, therefore meeting QC criteria of less than 14 days between collection and analysis for soil samples.

2. Initial and Continuing Calibration: Not Provided.

Calibration information was not provided.

3. Internal Standards: Not Provided.

Internal standard information was not provided.

4. Blanks: Acceptable.

A method blank was analyzed at the required frequency of every 12 hours for each matrix, preparation technique, and analysis system. GROs were not detected in any blank.

5. System Monitoring Compounds (SMC): Acceptable.

All recoveries of the SMCs were greater than 10% and within QC criteria.

6. Blank Spikes: Acceptable.

Blank spike results were within laboratory QC limits.

7. Duplicates: Acceptable.

Laboratory spike duplicate results were within laboratory QC limits.

8. Quantitation and Quantitation Limits: Acceptable.

Sample quantitation and sample quantitation limits were correctly calculated.

9. Laboratory Contact: Not Required.

No laboratory contact was required.

10. Overall Assessment of Data for Use

The overall usefulness of the data is based on the criteria outlined in the OSWER Directive "Quality Assurance/Quality Control Guidance for Removal Activities, Data Validation Procedures" (EPA/540/G-90/004) and the analytical method. Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

U - The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	PEN001						
Lab Sample ID: Client Matrix:	580-4732-1 Solid	%	Moisture: 3.8	Date S Date R	Date Sampled: 0 Date Received: 0		
		AK101 Gasol	ine Range Organic	S			
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	AK101 5035 1.0 01/19/2007 1704 01/19/2007 1000	Analysi Prep Ba	s Batch: 580-14994 atch: 580-14919	Instrument Lab File ID Initial Weig Final Weigl Injection Vo Column ID	ID: SEA : CS1 ht/Volume: ht/Volume: blume: : PR	003 69095.D 23.98 g 1000 mL	
Analvte	Dry ¹	Nt Corrected: Y	Result (mg/Kg)	Qualifier		RL	
Gasoline Range O	rganics (GRO)-C6-C	10	ND			4.3 U	
Surrogate	0		%Rec		Acceptance Limits		
Trifluorotoluene (S 4-Bromofluoroben Ethylbenzene-d10 Fluorobenzene (S Toluene-d8 (Surr)	Surr) zene (Surr) urr)		99 108 114 104 115		60 - 12 60 - 12 60 - 12 60 - 12 60 - 12	0 0 0 0	

MW

.

Page 42 of 117

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	PEN004						Deta Complete 01/10/2007 152			
Lab Sample ID: Client Matrix:	580-4732- Solid	2	% Moisture:		15.9	Date Sampi Date Receiv		01/17/2007	1020	
		A	K101 Gasoli	ne Range	Organics		·			
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	AK101 5035 1.0 01/19/2007 01/19/2007	1642 1000	Analysis Prep Ba	Batch: 580 tch: 580-14)-14994 1919 ,	Insti Lab initia Fina Inje Coli	rument ID: S File ID: C al Weight/Volun I Weight/Volum ction Volume: umn ID:	EA003 S169094.D ne: 18.71 ne: 1000 PRIMARY	g mL	
		DryWt Cr	orrected: Y	Result (m	g/Kg)	Qualifier		RL		
Analyte				ND				6.4	U ^r	
Gasoline Range O	rganics (GRO	-00-010		0/ Pac			Acce	ptance Limits	-	
Surrogate				000			60 ·	120		
Trifluorotoluene (S	Surr)			90 103			60 -	- 120		
4-Bromofluoroben	izene (Surr)			114			60 -	- 120		
Ethylbenzene-d10)			101			60 ·	- 120		
Fluorobenzene (S	iurr)			115			60 -	- 120	-	
Toluene-d8 (Surr)										

Mw 2602

STL Seattle

Page 43 of 117

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	PEN006								
Lab Sample ID: Client Matrix:	580-4732- Solid	3	%	Moisture:	19.4	1	Date Sampled: Date Received	01/11/2007 1 01/17/2007 1	130 000
		AK1	01 Gasol	ine Range (Organics				
Method:AK101Preparation:5035Dilution:1.0Date Analyzed:01/18/2007Date Prepared:01/18/2007		Analysis Batch: 580-14880 Prep Batch: 580-14864		Instrument ID: SEA003 Lab File ID: CS169076.D Initial Weight/Volume: 18.51 g Final Weight/Volume: 1000 mL Injection Volume: Column ID: PRIMARY			L		
Analyte		DryWt Corre	ected: Y	Result (mg	g/Kg)	Qualifier		RL	
Gasoline Range O	rganics (GRO)	-C6-C10	ND				6.7 U		
Surrogate				%Rec		Acceptance Limits			
Trifluorotoluene (Surr) 4-Bromofluorobenzene (Surr) Ethylbenzene-d10 Fluorobenzene (Surr) Toluene-d8 (Surr)		82 100 110 97 112		60 - 120 60 - 120 60 - 120 60 - 120 60 - 120					

Jobot Mw

STL Seattle

Page 44 of 117

Client: Ecology and Environment, Inc.

.....

Job Number: 580-4732-1

Client Sample ID:	PENUU/						·		
Lab Sample ID: Client Matrix:	580-4732 Solid	2-4	% Moisture: 19.9		Date Sampled: 01/11/2007 Date Received: 01/17/2007)7 1130)7 1000	
		A	K101 Gasol	ine Range (Organics				
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	AK101 5035 1.0 01/18/2007 01/18/2007	1212 0840	Analysi Prep Ba	s Batch: 580 atch: 580-14	-14880 864	Instrum Lab File Initial V Final W Injectio Colum	nent ID: SE e ID: CS Veight/Volume /eight/Volume n Volume: n ID: P	A003 169077.D : 19.52 : 1000 PRIMARY	2 g mL
Analyte		DryWt C	orrected: Y	Result (m	J/Kg)	Qualifier		RL	
Gasoline Range O	rganics (GRC)-C6-C10		ND				6.4	\cup
Surrogate				%Rec		Acceptance Limits			
Trifluorotoluene (S 4-Bromofluorobenz Ethylbenzene-d10 Fluorobenzene (Su Toluene-d8 (Surr)	urr) zene (Surr) urr)	ning also ann an stàitean dh'i shàinn dh		88 101 110 98 111	•		60 - 1 60 - 1 60 - 1 60 - 1 60 - 1	20 20 20 20 20 20	

MN 2607

STL Seattle

Page 45 of 117

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	PEN008					
Lab Sample ID: Client Matrix:	580-4732-5 Solid	, %	Moisture: 24.0	Date Sa Date Re	mpled: 01/11/20 ceived: 01/17/20	07 1140 07 1000
		AK101 Gasol	ine Range Organic	:5		
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	AK101 5035 1.0 01/19/2007 1619 01/19/2007 1000	Analysi Prep Ba	s Batch: 580-14994 atch: 580-14919	Instrument II Lab File ID: Initial Weight Final Weight Injection Vol Column ID:	D: SEA003 CS169093.D I/Volume: 30.1 /Volume: 1000 ume: PRIMARY	3 g) mL
Analyte	Dry	Wt Corrected: Y	Result (mg/Kg)	Qualifier	RL	<u>. </u>
Gasoline Range Or	ganics (GRO)-C6-0	010	ND		4.4	U
Surrogate			%Rec		Acceptance Limits	
Trifluorotoluene (Su 4-Bromofluorobenz Ethylbenzene-d10 Fluorobenzene (Su Toluene-d8 (Surr)	urr) rene (Surr) rrr)		86 103 114 101 115		60 - 120 60 - 120 60 - 120 60 - 120 60 - 120	

Mw 2-607

Page 46 of 117

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	PEN010								
Lab Sample ID: Client Matrix:	580-4732 Solid	580-4732-6 Solid		% Moisture: 4.7		Date Sampled: 01/11/2007 1 Date Received: 01/17/2007 1			2 · 0
		4	K101 Gasol	ine Range (Organics				
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	AK101 5035 1.0 01/19/2007 01/19/2007	1557 1000	Analysi Prep Ba	s Batch: 580 atch: 580-14	-14994 919	Instrument Lab File ID: Initial Weigl Final Weigh Injection Vc Column ID:	ID: SE CS ht/Volume nt/Volume: olume: P	A003 169092.D : 18.64 g : 1000 mL RIMARY	
Analyte		DryWt C	orrected: Y	Result (mg	J/Kg)	Qualifier		RL / A	
Gasoline Range O	rganics (GRO)-C6-C10	ND					5.6 U	
Surrogate				%Rec	-		Accepta	ance Limits	
Trifluorotoluene (S 4-Bromofluoroben: Ethylbenzene-d10 Fluorobenzene (Si Toluene-d8 (Surr)	urr) zene (Surr) urr)			100 102 114 101 116			60 - 1; 60 - 1; 60 - 1; 60 - 1; 60 - 1;	20 20 20 20 20	

MN 2-607

STL Seattle

Page 47 of 117

Client: Ecology and Environment, Inc.

Client Sample ID:	PEN013						
Lab Sample ID: Client Matrix:	580-4732 Solid	-7	% Moisture:	7.1	Date Sampled: Date Received	01/11/2007 1305 01/17/2007 1000	
		AK1	01 Gasoline Range	Organics			
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	AK101 5035 1.0 01/19/2007 01/19/2007	1534 1000	Analysis Batch: 58 Prep Batch: 580-14	D-14994 1919	Instrument ID: S Lab File ID: C Initial Weight/Volum Final Weight/Volum Injection Volume: Column ID:	EA003 S169091.D ne: 22.60 g e: 1000 mL PRIMARY	
Analyte		DryWt Corre	ected: Y Result (m	g/Kg) Qualif	fier	RL (1	
Gasoline Range O	rganics (GRO)-C6-C10	ND			4.8 0	
Surrogate			%Rec		Acceptance Limits		
Trifluorotoluene (S 4-Bromofluorobenz Ethylbenzene-d10 Fluorobenzene (Su Toluene-d8 (Surr)	urr) żene (Surr) urr)	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	95 104 114 101 116		60 - 60 - 60 - 60 - 60 -	120 120 120 120 120 120	

M. - - -

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	PEN015					
Lab Sample ID: Client Matrix:	580-4732-8 Solid	% Moisture:	18.7	Date Sampled: Date Received:	01/11/2007 1330 01/17/2007 1000	
		AK101 Gasoline Range 0	Organics	· · · · · ·		
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	AK101 5035 1.0 01/19/2007 1512 01/19/2007 1000	Analysis Batch: 580 Prep Batch: 580-14	-14994 919	Instrument ID: SE Lab File ID: CS Initial Weight/Volume Final Weight/Volume: Injection Volume: Column ID: Pl	A003 169090.D : 21.32 g : 1000 mL RIMARY	
Analyte	DryW	t Corrected: Y Result (mg	/Kg) Qualit	fier	RL	
Gasoline Range Or	ganics (GRO)-C6-C10	D ND			5.8	
Surrogate		%Rec		Acceptance Limits		
Trifluorotoluene (Surr) 4-Bromofluorobenzene (Surr) Ethylbenzene-d10 Fluorobenzene (Surr)		93 104 114 101 115		60 - 120 60 - 120 60 - 120 60 - 120 60 - 120		

¥ U

Page 49 of 117

Client: Ecology and Environment, Inc.

Client Sample ID:	: Trip Blank						
Lab Sample ID: Client Matrix:	580-4732-10 Solid	· · ·		Date San Date Rec	npled: 01/11/200 eived: 01/17/200	7 0000 7 1000	
		AK101 Gaso	line Range Organics	1		-	
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	AK101 5035 1.0 01/19/2007 1449 01/19/2007 1000	Analysi Prep Ba	s Batch: 580-14994 atch: 580-14919	Instrument ID: Lab File ID: Initial Weight/\ Final Weight/\ Injection Volut Column ID:	SEA003 CS169089.D Volume: 25 g Volume: 1000 me: PRIMARY	mL	
Analyte	Dry	Vt Corrected: N	Result (mg/Kg)	Qualifier	RL	1	
Gasoline Range O	rganics (GRO)-C6-C	10	ND	·		7	
Surrogate			%Rec	Acceptance Limits			
Trifluorotoluene (S 4-Bromofluorobenz Ethylbenzene-d10 Fluorobenzene (Su Toluene-d8 (Surr)	urr) zene (Surr) urr)		104 102 114 101 115	60 - 120 60 - 120 60 - 120 60 - 120 60 - 120 60 - 120			

MW JAZZ

ecology and environment, inc.

International Specialists in the Environment

720 Third Avenue, Suite 1700, Seattle, WA 98104 Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

- DATE: February 6, 2007

TO: Jim Gill, Project Manager, E & E, Anchorage, AK

FROM: Mark Woodke, Chemist, E & E, Seattle, Washington MW

- SUBJ: Organic Data Summary Check, First Avenue Property, Anchorage, Alaska
- REF: 002397.PE06

The data summary check of 9 soil samples collected from the First Avenue Property site located in Anchorage, Alaska, has been completed. Volatile Organic Compound (VOC) analysis (EPA Method 8260) was performed by STL-Seattle, Inc., Tacoma, Washington.

The samples were numbered:

Soil	PEN001	PEN004	PEN006	PEN007	PEN008
	PEN010	PEN013	PEN015	Trip Blank	

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained and received within the QC limits of $4^{\circ}C \pm 2^{\circ}C$. The samples were collected between January 10 and 12, 2007, and were analyzed by January 18, 2007, therefore meeting QC criteria of less than 14 days between collection and analysis for soil samples.

2. Tuning: Not Provided.

Tuning information was not provided.

3. Initial and Continuing Calibration: Not Provided.

Calibration information was not provided.

4. Blanks: Acceptable.

A method blank was analyzed for each 20 sample batch per matrix. There were no detections in any method blank.

5. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within OC limits.

6. Blank Spike (BS)/BS Duplicate (BSD) Analysis: Satisfactory.

BS and BSD analyses were performed per SDG or per matrix per concentration level, whichever was more frequent. All recoveries were within QC limits except chloroethane (two low recoveries) and chlorobromomethane (one high recovery). Positive results and sample quantitation limits associated with the low recovery outlier were qualified as estimated quantities (J or UJ). Positive results associated with the high recovery outlier were qualified as estimated quantities (J).

7. Duplicate Analysis: Satisfactory.

Laboratory duplicate analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. All duplicate results were within QC limits except trichlorofluoromethane; no action was taken based on this outlier alone.

8. Internal Standards: Not Provided.

Internal standard information was not provided.

9. Overall Assessment of Data for Use

The overall usefulness of the data is based on the criteria outlined in the OSWER Guidance Document "Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan, and Data Validation Procedures" (EPA/540/G-90/004), the analytical method, and, when applicable, the Office of Emergency and Remedial Response Publication "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review". Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

- J The associated numerical value is an estimated quantity because the reported concentrations were less than the sample quantitation limits or because quality control criteria limits were not met.
- U The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
- UJ The material was analyzed for, but not detected. The reported detection limit is estimated because quality control criteria were not met.

Client: Ecology and Environment, Inc.

Client Sample ID:	PEN001		• · ·							
Lab Sample ID:	580-4732	2-1.					Date Sa	ampled:	01/10/2007	1245
Client Matrix:	Solid		•	% Moisture:	3.8		Date Re	eceived:	01/17/2007	1000
						00000		-		
		8260B	Volatile Org	anic Comp	ounas by	GC/IVIS				
Method: 8	3260B		Analys	sis Batch: 58	0-14881		Instrument li	D: SEA	001	
Preparation: 5	5035		/Prep E	Batch: 580-1	4844		Lab File ID:	AG3	30614.D	
Dilution: 1	1.0		· · ·				Initial Weigh	t/Volume:	23.98	g
Date Analyzed: 0)1/17/2007	1923					Final Weigh	t/Volume:	1000	mL
Date Prepared: 0)1/17/2007	1500								
			1	· .					•	
		D-1144	Dama ata da M	Deput (u		Ovalifia	r		RI	
Analyte		Dryvvt	Corrected: Y		y/rg)	Quante			43	-)
Dichlorodifluorometh	ane	÷							43	۲.
Chloromethane									17	}
Vinyi chioride									220	1.
Bromomethane					· .	*			220	
Chloroethane						*			43	
I richlorofluorometha	шe								17	1
1,1-Dichloroethene							_		43	· ·
Methylene Chloride							•		43	í
trans-1,2-Dichloroetr	nene								43	1
1,1-Dichloroethane									43	1
2,2-Dichloropropane				ND					43	l
cis-1,2-Dichloroether	ne					*			43	4
Chlorobromomethan	e								43	
Chloroform									17	1
1,1,1-Trichloroethan	е								17	
Carbon tetrachloride	1			ND					12	
1,1-Dichloropropene	ţ	1		ND					43	1 ·
Benzene				ND					4.2	1
1,2-Dichloroethane				ND				,	40	1
Trichloroethene				ND		·			17	1
1,2-Dichloropropane	•			ND					. 0.1	
Dibromomethane				ND					43	1
Dichlorobromometha	ane			ND					43	
cis-1,3-Dichloroprop	ene			ND					43	
Toluene		1		· ND					40	
trans-1,3-Dichloropr	opene			ND			•		43	
1,1,2-Trichloroethan	e			ND					43	
Tetrachloroethene				ND					21	
1,3-Dichloropropane)			ND	187				17	
Chlorodibromomethe	ane			ND					43	
Ethylene Dibromide				ND					43	
Chlorobenzene				ND					43	
Ethylbenzene				ND					43	[
1,1,1,2-Tetrachloroe	ethane			ND					43	1
1,1,2,2-Tetrachloroe	ethane			ND					8.7	/
m-Xylene & p-Xylen	e .			ND					43	
o-Xylene				ND					43	
Styrene	· .			ND					43	
Bromoform		-		ND		1			43	
lsopropylbenzene				ND					43	
Bromobenzene				ND		+	·		43	l de la companya de l
N-Propylbenzene				ND					43	
1,2,3-Trichloropropa	ane			ND	•				43 \	<u> </u>
						,		0 (0		·
STL Seattle				Page 6	or 117	,	///\`	₩V <i>*</i> /~	LJ	u
							(·		VUJ	

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	: PEN001							
Lab Sample ID: Client Matrix:	580-473 Solid	2-1	% Moisture:	3.8	Date Date	Sampled: Received:	01/10/2007 01/17/2007	1245 1000
	•	8260B Vola	tile Organic Compo	unds by GC/	/MS			
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8260B 5035 1.0 01/17/2007 01/17/2007	1923 1500	Analysis Batch: 580 Prep Batch: 580-14)-14881 844	Instrume Lab File I Initial We Final We	nt ID: SE ID: AG ight/Volume ight/Volume:	A001 30614.D : 23.98 : 1000	g nL
Analyte		DryWt Corre	ected: Y Result (ug	/Kg) Qı	ualifier		RL .	
2-Chlorotoluene 1,3,5-Trimethylben 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylben sec-Butylbenzene 1,3-Dichlorobenze 1,4-Dichlorobenze 1,4-Dichlorobenzen 1,2-Dibromo-3-Chi 1,2,4-Trichlorobenzen 1,2,3-Trichlorobenzen Hexachlorobutadie Naphthalene	nzene ne ne loropropane zene zene ane		ND ND ND ND ND ND ND ND ND ND ND ND ND N				43 43 43 43 43 43 43 43 43 43 43 43 43 4	
Surrogate			%Rec			Accepta	ance Limits	
Fluorobenzene (St Toiuene-d8 (Surr) Ethylbenzene-d10 4-Bromofluoroben Trifluorotoluene (S	urr) zene (Surr) Surr)		92 93 95 91 109			75 - 1: 75 - 1: 75 - 1: 75 - 1: 75 - 1: 75 - 1:	25 25 25 25 25 25	

MW

Page 7 of 117

Job Number: 580-4732-1

Client: Ecology and Environment, Inc.

PEN004 **Client Sample ID:** 01/10/2007 1525 580-4732-2 Date Sampled: Lab Sample ID: Date Received: 01/17/2007 1000 % Moisture: 15.9 Solid **Client Matrix:** 8260B Volatile Organic Compounds by GC/MS SEA001 instrument ID: 8260B Analysis Batch: 580-14881 Method: AG30615.D Lab File ID: 5035 Prep Batch: 580-14844 Preparation: 18.71 g Initial Weight/Volume: Dilution: 1.0 Final Weight/Volume: 1000 mL 01/17/2007 1942 Date Analyzed: 01/17/2007 1500 Date Prepared: Qualifier RL Result (ug/Kg) DryWt Corrected: Y Analyte 64 ND Dichlorodifluoromethane 64 ND Chloromethane 25 Vinyl chloride ND 320 ND Bromomethane 320 ND Chloroethane 64 ND Trichlorofluoromethane 25 ND 1.1-Dichloroethene 64 ND Methylene Chloride 64 ND trans-1.2-Dichloroethene 64 ND 1.1-Dichloroethane 64 ND 2.2-Dichloropropane ND 64 cis-1,2-Dichloroethene 64 ND Chlorobromomethane 64 ND Chloroform 25 ND 1,1,1-Trichloroethane 25 ND Carbon tetrachloride ND 64 1.1-Dichloropropene 13 ND Benzene 64 ND 1.2-Dichloroethane 25 ND Trichloroethene 13 ND 1.2-Dichloropropane 64 ND Dibromomethane 64 ND Dichiorobromomethane 64 ND cis-1,3-Dichloropropene ND 64 Toluene ND 64 trans-1,3-Dichloropropene ND 64 1,1,2-Trichloroethane 40 Tetrachloroethene ND 25 ND 1,3-Dichloropropane 64 ND Chlorodibromomethane 64 ND Ethylene Dibromide 64 ND Chlorobenzene 64 ND Ethylbenzene 64 ND 1,1,1,2-Tetrachloroethane 13 ND 1,1,2,2-Tetrachloroethane 64 m-Xylene & p-Xylene ND 64 o-Xylene ND 64 ND Styrene 64 ND Bromoform 64 ND Isopropylbenzene ND 64 Bromobenzene NÐ 64 N-Propylbenzene 64 ND 1,2,3-Trichloropropane.

STL Seattie

Page 8 of 117

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID	: PEN004									
Lab Sample ID: Client Matrix:	580-473; Solid	2-2	9	6 Moisture:	15.9		Date S Date F	Sampled: Received:	01/10/200 01/17/200	17 1525 17 1000
		8260B Vo	latile Orga	anic Compo	unds by (GC/MS				
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8260B 5035 1.0 01/17/2007 01/17/2007	1942 1500	Analysis Batch: 580-14881 Prep Batch: 580-14844			·	Instrument ID: SEA001 Lab File ID: AG30615.D Initial Weight/Volume: 18.71 g Final Weight/Volume: 1000 mL			
Analyte		DryWt Co	rected: Y	Result (ug	/Kg)	Qualifi	er		RĹ	· · ·
2-Chlorotoluene 1,3,5-Trimethylber 4-Chiorotoluene terl-Butylbenzene 1,2,4-Trimethylber sec-Butylbenzene 1,3-Dichlorobenze 4-Isopropyltoluene 1,4-Dichlorobenze n-Butylbenzene 1,2-Dichlorobenze 1,2-Dibromo-3-Ch 1,2,4-Trichloroben 1,2,3-Trichloroben 1,2,3-Trichloroben Nanhthalene	nzene nzene ene loropropane izene ene			ND ND ND ND ND ND ND ND ND ND ND ND ND N					64 64 64 64 64 64 64 64 64 64 64 64 64 6	
Surrogate				%Rec				Accept	ance Limits	•
Fluorobenzene (S Toluene-d8 (Surr) Ethylbenzene-d10 4-Bromofluoroben Trifluorotoluene (S	urr)) izene (Surr) Surr)			92 90 94 91 103				75 - 1 75 - 1 75 - 1 75 - 1 75 - 1 75 - 1	25 25 25 25 25 25	

Page 9 of 117

STL Seattle

Client: Ecology and Environment, Inc.

Client Sample ID:	PEN006				
Lab Sample ID: Client Matrix:	580-4732 Solid	2-3 % Moisture:	19.4	Date Sampled: Date Received:	01/11/2007 1130 01/17/2007 1000
4		8260B Volatile Organic Compour	nds by GC/MS		
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8260B 5035 1.0 01/17/2007 01/17/2007	Analysis Batch: 580-1 Prep Batch: 580-1484 2000 1500	4881 4 	nstrument ID: SE Lab File ID: AG Initial Weight/Volume Final Weight/Volume	A001 330616.D a: 18.51 g a: 1000 mL

Analyte	DryWt Corrected: Y	Result (ug/Kg)	Qualifier	
Dichlorodifluoromethane		ND		67 . U
Chloromethane		ND		67
Vinyl chloride		ND		27
Bromomethane	·	ND		340
Chloroethane		ND	*	340
Trichlorofluoromethane		ND	*	 67
1,1-Dichloroethene		ND		27
Methylene Chloride		ND		67
trans-1,2-Dichloroethene		ND		67
1,1-Dichloroethane		ND		67
2,2-Dichloropropane		ND		67
cis-1,2-Dichloroethene		ND		67
Chlorobromomethane		ND	*	67
Chloroform		ND	3	67
1,1,1-Trichloroethane		ND		27
Carbon tetrachloride		ND		27
1,1-Dichloropropene		ND		67
Benzene		ND		13
1,2-Dichloroethane		ND .		67
Trichloroethene		ND		27
1,2-Dichloropropane		ND		13
Dibromomethane		ND		67
Dichlorobromomethane		ND		67
cis-1,3-Dichloropropene		ND		67
Toluene		ND		67
trans-1,3-Dichloropropene		ND		67
1,1,2-Trichloroethane		ND		67
Tetrachloroethene		ND		42
1,3-Dichloropropane		ND		27
Chiorodibromomethane		ND		67
Ethylene Dibromide		ND		67
Chlorobenzene		ND		67
Ethylbenzene		ND		67
1,1,1,2-Tetrachloroethane	·	ND		67
1,1,2,2-Tetrachloroethane		ND		 13
m-Xylene & p-Xylene		ND		67
o-Xylene		ND		67
Styrene		ND		67
Bromoform		ND		67
isopropylbenzene		ND		67
Bromobenzene	· · · · · · · · · · · · · · · · · · ·	ND	E 8 1994 1997 1997 1	 67
N-Propylbenzene	<u></u>	ND		 -67
1,2,3-Trichloropropane		ND	· · · · · · · · · · · · · · · · · · ·	 67 🖤

STL Seattle
Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	PEN006		
Lab Sample ID: Client Matrix:	580-4732-3 Soiid	% Moisture: 19.4	Date Sampled: 01/11/2007 1130 Date Received: 01/17/2007 1000
 	8260B V	olatile Organic Compounds b	by GC/MS
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8260B 5035 1.0 01/17/2007 2000 01/17/2007 1500	Analysis Batch: 580-1488 Prep Batch: 580-14844	1 Instrument ID: SEA001 Lab File ID: AG30616.D Initial Weight/Volume: 18.51 g Final Weight/Volume: 1000 mL
Analyte	DryWt C	orrected: Y Result (ug/Kg)	Qualifier RL
2-Chlorotoluene 1,3,5-Trimethylben 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylben sec-Butylbenzene 1,3-Dichlorobenzel 4-Isopropyltoluene 1,4-Dichlorobenzel 1,2-Dichlorobenzel 1,2-Dibromo-3-Chl 1,2,4-Trichlorobenz Hexachlorobutadie Naphthalene	zene zene ne ne oropropane zene zene zene	ND ND ND ND ND ND ND ND ND ND ND ND ND N	67 67 67 67 67 67 67 67 67 67
Surrogate		%Rec	Acceptance Limits
Fluorobenzene (St Toluene-d8 (Surr) Ethylbenzene-d10 4-Bromofluoroben: Trifluorotoluene (S	urr) zene (Surr) urr)	92 91 94 89 95	75 - 125 75 - 125 75 - 125 75 - 125 75 - 125 75 - 125

Page 11 of 117

.

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID	: PEN007								
Lab Sample ID:	580-4732	2-4					Date Sampled	: 01/11/200	7 1130
Client Matrix:	Solid		%	Moisture:	19.9		Date Received	l: 01/17/200	7 1000
		8260B Vola	tile Orga	nic Compo	unds by G	C/MS	·		
Method:	8260B		Analysis	s Batch: 580)-14881		Instrument ID: S	SEA001	
Preparation:	5035		Prep Ba	atch: 580-14	844		Lab File ID: /	AG30617.D	
Dilution:	1.0						Initial Weight/Volur	ne: 19.52	g
Date Analyzed:	01/17/2007	2019					Final Weight/Volun	ne: 1000	mL
Date Prepared:	01/17/2007	1500					, , , , , , , , , , , , , , , , , , ,		
Analyte	·	DryWt Corre	cted: Y	Result (ug	/Kg)	Qualifie	er .	RL	
Dichlorodifluorome	ethane			ND				64	Į
Chioromethane	· .			ND				64	1
Vinyl chloride				ND				26	1
Bromomethane			2	ND				320	
Chloroethane	·.			ND		*		320	こ
Trichlorofluoromet	hane			ND		*		64	
1.1-Dichloroethene	9			ND				26	. 1.
Methylene Chlorid	e			ND				64	
trans-1 2-Dichloro	ethene			ND				64	
1 1-Dichloroethan				ND				64	
2 2-Dichloropropa	ne Ne			ND				64	
pic 1.2 Dichloroeth				ND				64	
Chlorobromometh	ana			ND		*		64	1
Chloroform	ane			ND				64	
d f d Trichlerooth				ND				26	
1,1,1-1 richioroeuna				ND				- 26	
Carbon tetrachion				ND				64	
1,1-Dicnioroprope	ne			ND	1			13	· ·
Benzene				ND				64	
1,2-Dichloroethan	e				-			- 26	
Trichloroethene								10	1
1,2-Dichloropropa	ne			ND				13	
Dibromomethane				ND				64	
Dichlorobromome	thane			ND				64	1
cis-1,3-Dichloropro	opene			ND				64	1
Toluene				ND				64	
trans-1,3-Dichloro	propene			ND				64	
1,1,2-Trichloroetha	ane			ND				64	
Tetrachloroethene	•			ND				40	
1,3-Dichioropropa	ne			ND				26	
Chlorodibromome	thane			ND				64	1
Ethylene Dibromic	ie		•	ND				64	i i
Chiorobenzene				ND				64	
Ethylbenzene				ND				64	1
1,1,1,2-Tetrachlor	oethane			ND				64	
1,1,2,2-Tetrachlor	oethane			ND				13	
m-Xylene & p-Xyle	ene			ND				64	1
o-Xvlene				ND				64	1
Styrene				ND				64	
Bromoform				ND				64	1
isopropylbenzene				ND				64	
Bromohenzene				ND				64	
N-Pronvlhenzene		·, ·		ND				64	
1.2.3-Trichloropro	pane_			ND				64	
راميل الراميل الرامين الراسية المراد المطرعة متر متيين معدوبيته وساور وسيب	······								

STL Seattle

MW 2607

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	PEN007								
Lab Sample ID:	580-4732	2-4	-			Da	ate Sampled:	01/11/200	7 1130
Client Matrix:	Solid		. %	Moisture: 19.9		Da	ate Received:	01/17/200	7 1000
		8260B	Volatile Orga	nic Compounds b	y GC/MS				
Method:	8260B		Analysi	s Batch: 580-14881		Instrum	nent ID: SE	EA001	
Preparation:	5035		Prep Ba	atch: 580-14844		Lab Fil	eID: AC	30617.D	
Dilution:	1.0					initial V	Veight/Volume	e: 19.52	2 g
Date Analvzed:	01/17/2007	2019				Final W	eight/Volume	e: 1000	mL
Date Prepared:	01/17/2007	1500							
·				. '	x				
Anaiyte		DryWt	Corrected: Y	Result (ug/Kg)	Qualif	ier		RL	<u>.</u>
2-Chlorotoluene				ND				64	Ų
1,3,5-Trimethylben	zene			ND				64	1.
4-Chlorotoluene				ND				64	
tert-Butylbenzene				ND				. 64	1
1,2,4-Trimethylben	izene			ND				64	{
sec-Butylbenzene				ND				64	1
1,3-Dichlorobenze	ne			ND				64	
4-isopropyltoluene				ND				64	
1,4-Dichlorobenze	ne			ND				. 64	
n-Butylbenzene				ND				64	
1,2-Dichlorobenze	ne							64	
1,2-Dibromo-3-Chi	oropropane							64	4
1,2,4-1 richloroben:	zene							64	
1,2,3-1 richloroben:	zene							64	
Hexachioroputable	ene							64	.lr
Naphulaiene									Ø.
Surrogate				%Rec			Accept	ance Limits	
Fluorobenzene (S	urr)			90			75 - 1	25	
Toluene-d8 (Surr)				90			75 - 1	25	
Ethylbenzene-d10				96			75 - 1	25	
4-Bromofluoroben:	zene (Surr)			91			75-1	25	
Trifiuorotoluene (S	Surr)			93			/5~1	25	

MW Act-

Page 13 of 117

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	PEN008	•.																					
Lab Sample ID: Client Matrix:	580-473 Solid	2-5		9	6 Moisture:	24.0		Date Samp Date Recei	led: 01/ ved: 01/	11/2007 17/2007	1140 1000												
1		826	0B Vola	tile Orga	nic Compo	ounds by	GC/MS																
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8260B 5035 1.0 01/17/2007 01/17/2007	2038 1500	- - -	Analysi Prep Ba	s Batch: 580 atch: 580-14	0-14881 1844		Instrument ID: Lab File ID: Initial Weight/Vo Final Weight/Vo	SEA00 AG306 Iume: Iume:	1 18.D 30.13 1000 r	g nL												
Analyte		Dry\	Nt Corre	ected: Y	Result (ug	J/Kg)	Qualifi	er		RL													
Jichlorodifluoromet Chloromethane Vinyl chloride Bromomethane Chloroethane Trichlorofluorometh 1,1-Dichloroethane Z,2-Dichloroethane Z,2-Dichloroethane Z,2-Dichloroethane Chlorobromometha Chloroform 1,1,1-Trichloroetha Carbon tetrachlorid 1,1-Dichloropropen Benzene 1,2-Dichloroethane Trichloroethane 1,2-Dichloroptopen Benzene 1,2-Dichloroptopen Benzene 1,2-Dichloroptopen Benzene 1,2-Dichloroptopen Dibromomethane Dichlorobromometti cis-1,3-Dichloropto Toluene trans-1,3-Dichloropto 1,1,2-Trichloroethan Tetrachloroethene 1,3-Dichloroptopan Chlorodibromometti Ethylene Dibromide Chlorobenzene Ethylbenzene 1,1,2,2-Tetrachloroo 1,1,2,2-Tetrachloroo 1,1,2,2-Tetrachloroo m-Xylene & p-Xyle o-Xylene Bromoform Isopropylbenzene	thane thane ane thene ene ine ne le le le hane pene ne ne hane he hane he hane he hane he hane he hane he hane he hane he hane he hane									44 44 17 220 44 17 44 44 <tr <="" td=""><td>5</td></tr> <tr><td>N-Propylbenzene 1,2,3-Trichloroprop</td><td>ane</td><td></td><td></td><td><u></u></td><td>ND ND</td><td></td><td></td><td></td><td></td><td>-44 44</td><td>V</td></tr>	5	N-Propylbenzene 1,2,3-Trichloroprop	ane			<u></u>	ND ND					-44 44	V
5																							
N-Propylbenzene 1,2,3-Trichloroprop	ane			<u></u>	ND ND					-44 44	V												

Page 14 of 117

2-607

61

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	: PEN008	•						
Lab Sample ID: Client Matrix:	580-473 Solid	2-5	9	6 Moisture:	24.0	,	Date Sampled: Date Received:	01/11/2007 1140 01/17/2007 1000
· · · · · · · · · · · · · · · · · · ·		8260B Vo	latile Orga	anic Comp	ounds by	GC/MS		
Method: Preparation:	8260B 5035		Analysi Prep Ba	s Batch: 58 atch: 580-1	0-14881 4844		Instrument ID: Si Lab File ID: A	EA001 G30618.D
Dilution:	1.0		,				Initial Weight/Volum	e: 30.13 g
Date Analyzed: Date Prepared:	01/17/2007 01/17/2007	2038 1500	÷.			•	Final Weight/Volum	e; 1000 mL
Analyte		DryWt Cor	rected: Y	Result (u	g/Kg)	Qualif	ier	RL r
2-Chlorotoluene	· .			ND	•		,	44 U
1,3,5-Trimethylben	izene	•		ND				44
4-Chlorotoluene				ND				44
tert-Butylbenzene				ND				44
1,2,4-Trimethylben	nzene			ND				- 44
sec-Butylbenzene				ND				44
1,3-Dichlorobenze	ne						1	44.
4-Isopropyltoluene	: 							44
1,4-Dichloropenze	ne							44
n-Butyidenzene	n 0			ND				44
1.2 Dibromo 3 Ch				ND				44
1.2 4-Trichloroben	zene			ND				44
1 2 3-Trichloroben	zene		÷	ND				44
Hexachiorobutadie	ne			ND				44
Naphthalene				ND				44
Surrogate		· .		%Rec			Accep	tance Limits
Fluorobenzene (Si	urr)			90			75 -	125
Toluene-d8 (Surr)	-			92	÷.,		75 -	125
Ethylbenzene-d10	L .			93			75 -	125
4-Bromofluoroben	zene (Surr)			89			.75 -	125
Trifluorotoluene (S	Surr)			87			75 -	125

MN

STL Seattle

Page 15 of 117

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID	: PEN010)					4	-			
Lab Sample ID: Client Matrix:	580-473 Solid	2-6	. 9	6 Moisture:	4.7		Date S Date F	Sampled: Received:	01/11/200 01/17/200	7 1212 7 100	2
	· · ·	8260B V	/olatile Orga	anic Compo	unds by	GC/MS					
Method: Preparation: Dilution: Date Analyzed:	8260B 5035 1.0 01/17/2007	2057	Analysi Prep Ba	is Batch: 580 atch: 580-14)-14881 ¦844		Instrument Lab File ID Initial Weig Final Weigl	ID: SEA : AG3 ht/Volume: ht/Volume:	001 0619.D 18.64 1000	·g mL	
Date Prepared:	01/17/2007	1500									
		- -		·.				•			
Analyte		Drv/Wf C	orrected: Y	Result (un	(Ka)	Oualifie	٩r		RI .		
Diploradifluoromo	thono	Diymeo	oncoled. T		<u>///g/</u>	Guaine			56	<u>`_)</u>	
Chloromethane Vinyl chloride Bromomethane				ND ND ND			•		56 23 280		
Chloroethane Trichlorofluorometi	hane			ND ND ND		*	·		280 56 23	μ	
Methylene Chloride trans-1,2-Dichloroe	e ethene								56 56		
1.1-Dichloroethane 2.2-Dichloropropar cis-1.2-Dichloroeth	e ne iene			ND ND ND			· .		56 56 56		
Chlorobromometha Chloroform	ane			ND ND		*			56 56		
Carbon tetrachloric 1,1-Dichloroproper	le le			ND ND ND					23 23 56		. · · ·
Benzene 1,2-Dichloroethane Trichloroethane	•								11 56 22		
1,2-Dichloropropar Dibromomethane	ie								11 56		
Dichlorobromometi cis-1,3-Dichloropro Toluene	hane Ipene			ND ND ND					56 56 56		
trans-1,3-Dichlorop 1,1,2-Trichloroetha	propene Ine			ND ND					56 56		
1,3-Dichloropropan Chlorodibromometl	ie hane			ND ND ND					35 23 56	i .	
Ethylene Dibromide Chlorobenzene Ethylbenzene	3			ND ND ND					56 56 56		
1,1,1,2-Tetrachioro 1,1,2,2-Tetrachioro	ethane ethane			ND ND					56 11		
o-Xylene Styrene	116			ND ND					56 56		·
Bromoform Isopropylbenzene Bromobenzene-									56 56		
N-Propylbenzene 1.2.3-Trichloroprop				ND ND					- <u>56</u>		

STL Seattle

MN2607

							. •	·	Analy	tical Data
Client: Ecology	and Enviro	nment, Inc.						Job 1	Number:	580-4732-1
Client Sample ID	: PEN010)								· ·
Lab Sample ID: Client Matrix:	580-473 Solid	2-6	9	% Moisture:	4.7	. ·	Date Samp Date Rece	oled: (ived: (01/11/2007 01/17/2007	7 1212 7 1000
		8260B V	olatile Orga	anic Compo	ounds by	/ GC/MS				· · ·
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8260B 5035 1.0 01/17/2007 01/17/2007	2057 1500	Analys Prep B	is Batch: 58 atch: 580-1	0-14881 4844		Instrument ID: Lab File ID: Initial Weight/Vo Final Weight/Vo	SEA(AG3(olume: olume:	001 0619.D 18.64 1000	g mL
Analyte		DryWt Co	orrected: Y	Result (u	g/Kg)	Qualifie	er		RL	·
2-Chlorotoluene 1,3,5-Trimethylber 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylber sec-Butylbenzene 1,3-Dichlorobenze 4-Isopropyltoluene 1,4-Dichlorobenze 1,2-Dichlorobenze 1,2-Dibromo-3-Chl 1,2,4-Trichloroben Hexachlorobutadie Naphthalene	nzene ne ne loropropane zene zene ene								56 56 56 56 56 56 56 56 56 56 56 56 56 5	
Surrogate				%Rec			Ad	ceptan	ce Limits	
Fluorobenzene (Su Toluene-d8 (Surr) Ethylbenzene-d10 4-Bromofluoroben: Trifluorotoluene (S	urr) zene (Surr) Surr)			90 91 93 89 108				(5 - 125 75 - 125 75 - 125 75 - 125 75 - 125		

MW 2-607

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID: PEN013	3				· · · ·	
Lab Sample ID: 580-473	32-7		,	Date Sampled:	01/11/2007 1	1305
Client Matrix: Solid		% Moisture: 7.1		Date Received:	01/17/2007 1	1000
\sim	8260B Volatile Or	ganic Compounds by	y GC/MS		۰.	
Method: 8260B	Analy	sis Batch: 580-14881	Inst	rumeņt ID: SE	A001	
Preparation: 5035	: Prep	Batch: 580-14844	Lab	File ID: AG	30620.D	
Dilution: 1.0			Initia	al Weight/Volume	: 22,60 g	
Date Analyzed: 01/17/2007	2116		Fina	al Weight/Volume	: 1000 m	L
Date Prepared: 01/17/2007	1500			<u> </u>		
•		1				•
Analyte	DryWt Corrected:)	∕ Result (ug/Kg)	Qualifier		RL	
Dichlorodifluoromethane		ND			48 U	
Chloromethane		ND			48 [
Vinyl chloride		ND			19	
Bromomethane		ND			240	-
Chloroethane		ND	*		240 🕦	
Trichlorofluoromethane		ND	*		48	
1,1-Dichloroethene		ND			_ 19	
Methylene Chloride		ND			48	
trans-1,2-Dichloroethene		ND			48	
1,1-Dichloroethane		ND		2	48	
2,2-Dichloropropane		ND			48	
cis-1,2-Dichloroethene		ND			48	
Chlorobromomethane		ND	*		48	
Chloroform		ND			48	
1,1,1-Trichloroethane		ND			19	
Carbon tetrachloride		ND	,		19	
1,1-Dichloropropene		ND		•	48	
Benzene		ND			9.5	
1.2-Dichloroethane		ND			48	
Trichloroethene		ND			19	
1.2-Dichloropropane		ND			9.5	
Dibromomethane		ND			48	
Dichlorobromomethane		ND			48	
cis-1 3-Dichloronropene		ND			48	
Toluene	,	ND			48	
trans-1 3-Dichloropropene		ND			48	
1 1 2-Trichloroethane		ND			48	
Tetrachloroethene		ND			30	
1 3-Dichloropropage		ND			19	
Chlorodibromomethane		ND			48	
Ethylene Dibromide		ND			40	
Chlorobenzene					48	
Ethylbenzene					40	
1 1 1 2 Totrophoroothono					40	
1,1,2,2 Tetrachleroothono					40	
m Yulono & n Yulono		ND			9.0 AQ	
					40	,
Chylelle Styropo					40	
Bromoform					40	
					48	
				· · ·	48	
					<u>40</u>	·
	•				40	
1,2,3-1 richloropropane					<u>46 V</u>	·

STL Seattle

My. 6-8P

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID	: PEN013					. · · · ·		
Lab Sample ID: Client Matrix:	580-473 Solid	2-7	% Moistu	re: 7.1		Date Sampled: Date Received:	01/11/2007 01/17/2007	1305 1000
		8260B Vola	tile Organic Cor	npounds by G(C/MS		•	
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8260B 5035 1.0 01/17/2007 01/17/2007	2116 1500	Analysis Batch: Prep Batch: 580	580-14881)-14844		Instrument ID: SEA Lab File ID: AG3 Initial Weight/Volume: Final Weight/Volume:	001 0620.D 22.60 1000 r	g nL
Analyte		DryWt Corre	cted: Y Result	(ug/Kg) C	Qualifie	r ·	RL	
2-Chiorotoluene 1,3,5-Trimethylber 4-Chiorotoluene tert-Butylbenzene 1,2,4-Trimethylber sec-Butylbenzene 1,3-Dichlorobenze 4-Isopropyltoluene 1,4-Dichlorobenze 1,2-Dichlorobenze 1,2-Dichlorobenze 1,2-Dibromo-3-Ch 1,2,4-Trichloroben 1,2,3-Trichloroben Hexachlorobutadie Naphthalene	nzene ne ne loropropane zene zene ene		ND ND ND ND ND ND ND ND ND ND ND ND ND N				48 48 48 48 48 48 48 48 48 48 48 48 48 4	
Surrogate			%Rec	-		Acceptan	ce Limits	
Fluorobenzene (S Toluene-d8 (Surr) Ethylbenzene-d10 4-Bromofluoroben Trifluorotoluene (S	urr) zene (Surr) Surr)	арын алан алан алан алан алан алан алан ал	90 91 94 90 101			75 - 125 75 - 125 75 - 125 75 - 125 75 - 125 75 - 125	5 5 5 5	

MW 7-407

STL Seattle

Page 19 of 117

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	PEN015	i			•							
Lab Sample ID:	580-473	2-8					, D	Date Sam	oled:	01/11/2007	7 1330	
Client Matrix:	Solid			6 Moisture:	18.7		E	Date Rece	ived:	01/17/2007	7 1000	
		8260B Vol	atile Orga	inic Compo	unds by	GC/MS						
Method:	8260B		Analysi	s Batch: 580)-14881		Instru	ment ID:	SEA	4001		
Preparation:	5035		Prep Ba	atch: 580-14	844		Lab F	ile ID:	AG	30621.D		÷ .
Dilution:	1.0						Initial	Weight/V	olume:	21.32	g .	
Date Analyzed:	01/17/2007	2135		1		•	Final	Weight/V	olume:	1000	mL	
Date Prepared:	01/17/2007	1500						0				
Analyte		DryWt Corr	ected: Y	Result (ug	/Kg)	Qualifi	er			RL	. t	
Dichlorodifluoromet	hane			ND						58 🐧	ר ר	
Chioromethane				ND						58		
Vinyl chloride				ND						23		
Bromomethane				ND						290		
Chloroethane				ND		*				290	Ű	
Trichlorofluorometh	ane			ND		*				58	-	
1,1-Dichloroethene				ND						23		
Methylene Chloride	et e			ND						58		
trans-1,2-Dichloroe	thene			ND			•			58		
1,1-Dichioroethane				ND						58		
2,2-Dichloropropan	e			ND						58	1	
cis-1,2-Dichloroethe	ene			ND						58		
Chlorobromometha	ne			ND		*				58		
Chloroform				ND						58		
1.1.1-Trichloroethar	ne			ND						23		
Carbon tetrachlorid	ė			ND						23	1	
1.1-Dichloropropen	e			ND						58		
Benzene	-			ND						12	.]	
1.2-Dichloroethane				ND						58		
Trichioroethene				ND						23		
1 2-Dichloropropan	e			ND						12		
Dibromomethane	0			ND						58		
Dichlorobromometh	ana			ND						58		
cis_1 3-Dichloropror				ND						58		
Toluono	30110	•	•	ND						58		
trans_1.2_Dicbloron	ropono									58		
1 1 2 Trisblorootbor	ropene									59		
T, T, Z- McMoroethan	le									36		
1 2 Dichlerenrenen	~									30	1	
Chiere dibromomorphil										20		•
Chlorodibromomeur	lane									00		
Ethylene Dibromide	1									20		
Chioropenzene										58		
Ethylbenzene				ND						58		
1,1,1,2-1 etrachloroe	ethane			ND						58	1	
1,1,2,2-1 etrachloroe	etnane									12	1	
m-xylene & p-Xyler	ie									58		•
o-Xylene				ND						58		
Styrene				ND						58	1	
Bromoform				ND				-		58	1.	
Isopropylbenzene				ND						58		
Bromobenzene				ND		·				58	1	
N-Propylbenzene				ND				·			\sim	
1,2,3-Trichloropropa	ane	· · ·		ND						58	r	

STL Seattle

76-07

Client: Ecology and Environment, Inc. Job Number: 580-4732-1 **Client Sample ID: PEN015** Date Sampled: 01/11/2007 1330 Lab Sample ID: 580-4732-8 Date Received: Client Matrix: Solid % Moisture: 18.7 01/17/2007 1000 8260B Volatile Organic Compounds by GC/MS SEA001 Analysis Batch: 580-14881 Instrument ID: 8260B Method: Prep Batch: 580-14844 AG30621.D Lab File ID: 5035 Preparation: 21.32 g initial Weight/Volume: Dilution: 1.0 Final Weight/Volume: 1000 mL Date Analyzed: 01/17/2007 2135 Date Prepared: 01/17/2007 1500 RL Qualifier DryWt Corrected: Y Result (ug/Kg) Analyte 58 2-Chlorotoluene ND 58 ND 1,3,5-Trimethylbenzene 58 ND 4-Chlorotoluene 58 ND tert-Butylbenzene ND 58 1,2,4-Trimethylbenzene 58 sec-Butylbenzene ND 58 ND 1,3-Dichlorobenzene 58 4-Isopropyltoluene ND 58 1,4-Dichlorobenzene ND 58 n-Butylbenzene ND 58 ND 1,2-Dichlorobenzene 58 ND 1,2-Dibromo-3-Chioropropane 58 1,2,4-Trichlorobenzene ND 58 ND 1,2,3-Trichlorobenzene 58 ND Hexachlorobutadiene 58 Naphthalene ND Acceptance Limits %Rec Surrogate 75 - 125 90 Fluorobenzene (Surr) 75 - 125 92 Toluene-d8 (Surr) 75 - 125 96 Ethvlbenzene-d10 75 - 125 93 4-Bromofluorobenzene (Surr) 75 - 125 97 Trifluorotoluene (Surr)

STL Seattle

Page 21 of 117

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	Trip Bla	nk				•	
Lab Sample ID: Client Matrix:	580-473; Solid	2-10		•	Date Sampled: Date Received:	01/11/2007 0000 01/17/2007 1000	
		8260B Vola	tile Organic Compound	s by GC/MS		······································	
Method:	8260B	· .	Analysis Batch: 580-148	381	Instrument ID: SE	A001	
Preparation:	5035		Prep Batch: 580-14844		Lab File ID: AG	30622.D	
Dilution:	1.0				Initial Weight/Volume	: 25 g	
Date Analyzed:	01/17/2007	2154			Final Weight/Volume	: 1000 mL	•
Date Prepared:	01/17/2007	1500		•	· .		
Analyte		DryWt Corre	cted: N Result (ug/Kg)	Qualifi	er	RL	****
Dichlorodifluoromet	hane		ND	· · · ·		40 U	
Chloromethane			ND			40 (
Vinyl chloride			ND			- 16	
Bromomethane			ND			200	
Chloroethane			ND	*		200	
Trichlorofluorometh	ane		ND	*		40	
1,1-Dichloroethene		· · ·	ND			16	
Vethylene Chloride			ND	· · · ·		40	
rans-1,2-Dichloroe	thene		ND			40	
1,1-Dichloroethane			.ND			40	
2,2-Dichloropropan	е		ND			40	
cis-1,2-Dichloroethe	ene		ND	+		40	÷
Chlorobromometha	ne		ND			40	
Chloroform			ND			40	
1,1,1-I fichioroethal	ne					10	
Carbon tetrachiorid	e				,	40	
1,1-Dichloropropen	е		ND	1		40 8 0	
Senzene			ND			40	
1,2-Dicnioroetnane						16	
i richioroethene						80	
1,2-Dicnioropropan	e					40	
Dipromomeinarie			ND			40	
Dichloropromomeu						40	
cis-1,3-Dichiotoproj	heue		ND			40	
rono 1.2 Dichloron	ropopo		ND			40	·
1 1 2 Trichlorootha	nopene		ND		r	40	
Tetrachloroethene	iic .		ND			25	
1 3-Dichloronronan	6		ND			16	
Chlorodibromomett	hane		ND			40	
Ethylene Dibromide			ND			40	
Chlorobenzene	•		ND			40	
Ethvihenzene			ND			40	
1 1 1 2-Tetrachioro	ethane		ND			40	
1 1 2 2-Tetrachioro	ethane		ND			8.0	
m-Xvlene & n-Xvlei	ne	• •	ND			40	
n-Xvlene			ND			40	
Stvrene			ND			40	
Bromoform			ND			40	
sopropylbenzene			ND			40	
Bromobenzene			ND		· · · · · · · · · · · · · · · · · · ·	40	
N-Propylbenzene			ND			40	_
1,2,3-Trichloroprop	ane		ND			40	

Page 22 of 117

NW

2-6-5

P

Client: Ecology and Environment, Inc.

Job Number: 580-4732-1

Client Sample ID:	Trip Blank					
Lab Sample ID: Client Matrix:	580-4732-10 Solid				Date Sampled: Date Received:	01/11/2007 0000 01/17/2007 1000
	826	0B Volatile Orga	anic Compounds by	GC/MS	· . ·	
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8260B 5035 1.0 01/17/2007 2154 01/17/2007 1500	Analys Prep B	is Batch: 580-14881 atch: 580-14844		Instrument ID: SE Lab File ID: AG Initial Weight/Volume Final Weight/Volume:	A001 30622.D : 25 g : 1000 mL
Analyte	Dry	Wt Corrected: N	Result (ug/Kg)	Qualif	ier	RL
2-Chiorotoluene 1,3,5-Trimethylben 4-Chiorotoluene tert-Butylbenzene 1,2,4-Trimethylben sec-Butylbenzene 1,3-Dichlorobenze 1,3-Dichlorobenze 1,4-Dichlorobenze 1,2-Dichlorobenze 1,2-Dibromo-3-Chi 1,2,4-Trichloroben Hexachlorobutadie Naphthalene	nzene nzene ne ne oropropane zene zene zene		ND ND ND ND ND ND ND ND ND ND ND ND ND N			40 40 40 40 40 40 40 40 40 40
Surrogate			%Rec		Accepta	ance Limits
Fluorobenzene (Si Toluene-d8 (Surr) Ethylbenzene-d10 4-Bromofluoroben Trifluorotoluene (S	urr) zene (Surr) surr)	· · .	90 92 95 92 111		75 - 1: 75 - 1: 75 - 1: 75 - 1: 75 - 1: 75 - 1:	25 25 25 25 25 25

MW 7-1-1-15 57

Page 23 of 117

ecology and environment, inc.

International Specialists in the Environment

720 Third Avenue, Suite 1700, Seattle, WA 98104 Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: February 6, 2007

TO: Jim Gill, Project Manager, E & E, Anchorage, AK

FROM: Mark Woodke, Chemist, E & E, Seattle, Washington/MW

- SUBJ: Organic Data Summary Check, First Avenue Property, Anchorage, Alaska
- REF: 002397.PE06

The data summary check of 1 water sample collected from the First Avenue Property site located in Anchorage, Alaska, has been completed. Analysis for Diesel Range Organics (DRO; ADEC Methods AK102/103) was performed by STL-Seattle, Inc., Tacoma, Washington.

The sample was numbered:

Water PEN 017 W

Data Qualifications:

1. Sample Holding Times: Acceptable.

The sample was maintained and received within the QC limits of $4^{\circ}C \pm 2^{\circ}C$. The sample was collected on January 12, 2007, was extracted on January 16, 2007, and was analyzed on January 16, 2007, therefore meeting QC criteria of less than 7 days between collection and extraction for water samples and less than 40 days between extraction and analysis.

2. Initial and Continuing Calibration: Not Provided.

Calibration information was not provided.

3. Blanks: Acceptable.

A method blank was analyzed for each extraction batch for each matrix and analysis system. DRO were not detected in any blank.

4. System Monitoring Compounds (SMC): Acceptable.

All recoveries of the SMCs were greater than 10% and within QC criteria.

5. Matrix and Blank Spikes: Acceptable.

Matrix and blank spike results were within QC limits.

6. Duplicates: Acceptable.

Spike duplicate results were acceptable.

7. Quantitation and Quantitation Limits: Not Provided.

Information needed to recalculate sample results and quantitation limits were not provided.

8. Laboratory Contact: Not Required.

No laboratory contact was required.

9. Overall Assessment of Data for Use

The overall usefulness of the data is based on the criteria outlined in the Sampling Plan, the OSWER Directive "Quality Assurance/Quality Control Guidance for Removal Activities, Data Validation Procedures" (EPA/540/G-90/004) and the analytical methods. Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

U - The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.

Client: Ecology and Environment, Inc.

Job Number: 580-4721-1

				_	 			
Lab Sample ID: Client Matrix:	580-4721-1 Water		• •		 Date Sampled: Date Received:	01/12/2007 01/15/2007	1200 1200	
Client Sample ID:	PEN 017 W				· .			

AK102 & 103 Nonhalogenated Organics by FID (Diesel Range Organics & Residual Range Organics

Method: Preparation: Dilution: Date Analyzed: Date Prepared:	AK102 & 103 3510C 1.0 01/16/2007 1456 01/16/2007 0909	Analysis Batch: 580-14817 Prep Batch: 580-14775	instrument ID: SEA016 Lab File ID: EP20376.D Initial Weight/Volume: 520 mL Final Weight/Volume: 1 mL Injection Volume: Column ID: PRIMARY		
Analyte	• •	Result (mg/L)	Qualifier	RL	
DRO (nC10- <nc25< td=""><td>5)</td><td>0.24</td><td></td><td>0.19</td><td></td></nc25<>	5)	0.24		0.19	
Surrogate		%Rec	1	Acceptance Limits	
o-Terphenyl n-Triacontane-d62	n de la galante de la composition de la N	69 79		60 - 120 60 - 120	

MM JANA

ecology and environment, inc.

International Specialists in the Environment

720 Third Avenue, Suite 1700, Seattle, WA 98104 Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: February 6, 2007

TO: Jim Gill, Project Manager, E & E, Anchorage, AK

FROM: Mark Woodke, Chemist, E & E, Seattle, Washington M~

SUBJ: Organic Data Summary Check, First Avenue Property, Anchorage, Alaska

REF: 002397.PE06

The data summary check of 1 water sample collected from the First Avenue Property site located in Anchorage, Alaska, has been completed. Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270) was performed by STL-Seattle, Inc., Tacoma, Washington.

The sample was numbered:

Water PEN 017 W

Data Qualifications:

1. Sample Holding Times: Acceptable.

The sample was maintained and received within the QC limits of $4^{\circ}C \pm 2^{\circ}C$. The sample was collected on January 12, 2007, was extracted by January 16, 2007, and was analyzed by January 17, 2007, therefore meeting holding time criteria of less than 7 days between collection and extraction and less than 40 days between extraction and analysis.

2. Tuning: Not Provided.

Tuning information was not provided.

3. Initial and Continuing Calibration: Not Provided.

Calibration information was not provided.

4. Blanks: Acceptable.

A method blank was analyzed for each 20 sample batch per matrix. There were no detections in any method blank.

5. System Monitoring Compounds (SMCs): Satisfactory.

All SMC recoveries were within QC limits except the 2,4,6-tribromophenol recovery. No action was taken based on one outlier per sample per fraction.

6. Matrix Spike (MS)/MS Duplicate (MSD)/Blank Spike (BS)/BS Duplicate (BSD) Analysis: Satisfactory.

All spike analyses were performed per SDG or per matrix per concentration level, whichever was more frequent. All recoveries were within the QC limits except 4-chloroaniline (one low recovery) and 3-nitroaniline (two 0 % recoveries). The 4-chloroaniline result was qualified as an estimated quantity (UJ) and the 3-nitroaniline result was rejected (R).

7. Duplicate Analysis: Satisfactory.

Blank spike duplicate analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. All spike duplicate results were within QC limits except 2-chlorophenol, acenaphthene, phenanthrene, and benzo(a)pyrene; no action was taken based on duplicated outliers alone.

8. Internal Standards: Not Provided.

Internal standard information was not provided.

9. Overall Assessment of Data for Use

The overall usefulness of the data is based on the criteria outlined in the OSWER Guidance Document "Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan, and Data Validation Procedures" (EPA/540/G-90/004), the analytical method, and, when applicable, the Office of Emergency and Remedial Response Publication "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review". Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

R - The associated result is rejected.

- U The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.
- UJ The material was analyzed for, but not detected. The reported detection limit is estimated because quality control criteria were not met.

Client: Ecology and Environment, Inc.

Job Number: 580-4721-1

Client Sample ID:	PEN 017 W			· .		· .	
Lab Sample ID: Client Matrix:	580-4721-1 Water		8 - 19 8		Date Sampled: Date Received:	01/12/2007 1200	
						017.072001 1200	

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method: Preparation:	8270C 3510C	Analysis Batch: 580-14809 Prep Batch: 580-14776	Instrument ID: SEA04 Lab File ID: ak0077	0 '60.D
Dilution:	1.0	· · · · · · · · · · · · · · · · · · ·	Initial Weight/Volume:	990 mL
Date Analyzed:	01/16/2007 1409		Final Weight/Volume:	5 mL
Date Prepared:	01/16/2007 0911		Injection Volume:	

Analyte	Result (ug/L)	Qualifier	RL
Phenol	ND		1.5
Bis(2-chloroethyl)ether	ND		1.0 👖
2-Chlorophenol	ND	*	1.0
1,3-Dichlorobenzene	ND		1.0
1,4-Dichlorobenzene	ND	•	1.0
Benzyl alcohol	ND		1.0
1,2-Dichlorobenzene	ND		1.0
2-Methylphenol	ND		1.0
Bis(2-chloroisopropyl) ether	ND		1.0
3 & 4 Methylphenol	ND		2.0
N-Nitrosodi-n-propylamine	ND		1.0
Hexachloroethane	ND		1.5
Nitrobenzene	ND		1.0
Isophorone	ND		1.0
2-Nitrophenol	ND		1.0
2,4-Dimethylphenol	ND		5.1
Benzoic acid	ND		5.1
Bis(2-chloroethoxy)methane	ND		1.0
2,4-Dichlorophenol	ND		1.0
1,2,4-Trichlorobenzene	ND		1.0
Naphthalene	ND		1.0
4-Chloroaniline	ND	*	1.0
Hexachlorobutadiene	ND		1.5
4-Chloro-3-methylphenol	ND		1.0 V
2-Methylnaphthalene	4.8		0.51
Hexachlorocyclopentadiene	ND		5.1 Ų
2,4,6-Trichlorophenol	ND		1.5
2,4,5-Trichlorophenol	ND		1.0
2-Chloronaphthalene	ND		0.15
2-Nitroaniline	ND		1.0
Dimethyl phthalate	ND		1.0
Acenaphthylene	ND		0.20
2,6-Dinitrotoluene	ND ND		1.0
3-Nitroaniline	"ND		1.0
Acenaphthene	ND	*	0.25
2,4-Dinitrophenol	ND		13
4-Nitrophenol	ND		5.1
Dibenzofuran	ND	·	1.0
2,4-Dinitrotoluene	ND		1.0
Diethyl phthalate	ND	•	1.0
4-Chlorophenyl phenyl ether	ND		1.0 1
Fluorene	0.79		-0.15
4-Nitroaniline	ND		1.5 (J

STL Seattle

MW 26

Client: Ecology and Environment, Inc.

Job Number: 580-4721-1

Client Sample ID:	PEN 017 W					
Lab Sample ID: Client Matrix:	580-4721-1 Water		:	Date Sampled: Date Received:	01/12/2007 01/15/2007	1200 1200

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method:	8270C	Analysis Batch: 580-14809	Instrument ID:	SEA04	40
Preparation:	3510C	Prep Batch: 580-14776	Lab File ID:	ak007	760.D
Dilution:	1.0	· · ·	Initial Weight/Vo	lume:	990 mL
Date Analyzed:	01/16/2007 1409	· · ·	Final Weight/Vo	lume:	5 mL
Date Prepared:	01/16/2007 0911		Injection Volume	e:	

Analyte	Result (ug/L)	Qualifier	RL
4,6-Dinitro-2-methylphenol	ND		10 U
N-Nitrosodiphenylamine	ND		1.0
4-Bromophenyl phenyl ether	ND		1.0
Hexachlorobenzene	ND		1.0
Pentachlorophenol	ND		1.8
Phenanthrene	2.7	. *	0.20
Anthracene	ND		0.10
Fluoranthene	0.56	*	0.13 🎽
Pyrene	0.65		0.15
Butyl benzyl phthalate	3.8		1.5
3,3'-Dichlorobenzidine	ND		5.1
Benzo[a]anthracene	0.21		0.15 💙
Chrysene	0.75		0.10
Di-n-octyl phthalate	4.9		1.0
Benzofluoranthene	0.64		0.20
Benzo[a]pyrene	0.29	*	0.10
Indeno[1,2,3-cd]pyrene	0.27		0.15
Dibenz(a,h)anthracene	0.17		0.15
Benzo[g,h,i]peryiene	0.41		0.15
Carbazole	· ND		1.0 ()
1-Methylnaphthalene	2.5		0.15
Surrogate	%Rec		Acceptance Limits
2-Fluorophenol	11		10 - 120
Phenol-d5	10		10 - 102
Nitrobenzene-d5	39		34 - 146
2-Fluorobiphenyl	47		35 - 143
2,4,6-Tribromophenol	14	IX	29 - 151
Terphenyl-d14	50		35 - 166

MW

.

Client: Ecology and Environment, Inc.

Job Number: 580-4721-1

Client Sample ID:PEN 017 WLab Sample ID:580-4721-1Client Matrix:WaterDate Received:01/12/2007 1200Date Received:01/15/2007 1200

8270C Semivolatile Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

Method: Preparation:	8270C 3510C	Analysis Batch: 580-14809 Prep Batch: 580-14776	Instrument ID:	SEA040 ak00776	B.D	
Dilution:	5.0		initial Weight/Volu	me:	990 5 m	mL
Date Prepared:	01/16/2007 0911		Injection Volume:	ille.	0 11	16-

Analyte	Result (ug/L)	Qualifier RL	
Bis(2-ethylhexyl) phthalate	46	38	

Mu

Client: Ecology and Environment, Inc.

Job Number: 580-4721-1

Client Sample ID	: PEN 017 W					
Lab Sample ID: Client Matrix:	580-4721-1 Water		$x_{ij} = \frac{1}{2} \sum_{i=1}^{n} \frac{1}{2} \sum_{i=1}$		Date Sampled: 0 Date Received: 0	1/12/2007 1200 1/15/2007 1200
827	DC Semivolatile Com	pound	s by Gas Chromatography/N	lass Sp	ectrometry (GC/MS)	
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8270C 3510C 10 01/16/2007 1547 01/16/2007 0911		Analysis Batch: 580-14809 Prep Batch: 580-14776	· .	Instrument ID: SEA0 Lab File ID: ak007 Initial Weight/Volume: Final Weight/Volume: Injection Volume:	40 762.D 990 m!_ 5 mL
Analyte			Result (ug/L)	Qualifi	er	RL
Di-n-butyl phthalai	te .		94		· ·	10
				-		
			. •			
	· .					
			·			

MW 2607

ecology and environment, inc.

International Specialists in the Environment

720 Third Avenue, Suite 1700, Seattle, WA 98104 Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE:	February 6, 2007
TO:	Jim Gill, Project Manager, E & E, Anchorage, AK
FROM:	Mark Woodke, Chemist, E & E, Seattle, Washington $\mathcal{M}\mathcal{W}$
SUBJ:	Organic Data Summary Check, First Avenue Property, Anchorage, Alaska

REF: 002397.PE06

The data summary check of 1 water sample collected from the First Avenue Property site located in Anchorage, Alaska, has been completed. Analysis for Polychlorinated Biphenyls (PCBs - EPA Method 8082) was performed by STL-Seattle, Inc., Tacoma, Washington.

The sample was numbered:

Water PEN 017 W

Data Qualifications:

1. Sample Holding Times: Acceptable.

The sample was maintained at $4^{\circ}C$ ($\pm 2^{\circ}C$). The sample was collected on January 12, 2007, was extracted by January 16, 2007, and was analyzed by January 17, 2007, therefore meeting QC criteria of less than 7 days between collection and water sample extraction and less than 40 days between extraction and analysis.

2. Instrument Performance: Not Provided.

Instrument performance information was not provided.

3. Initial and Continuing Calibration: Not Provided.

Calibration information was not provided.

4. Blanks: Acceptable.

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and for each concentration level, or every 20 samples, whichever is greater, and for each analytical system. No target analytes were detected in any blanks.

5. System Monitoring Compounds (SMCs): Satisfactory.

All recoveries of the SMCs were within the established control limits except both SMCs in the sample with low recoveries. Associated sample results were qualified as estimated quantities (UJ).

6. Blank and Matrix Spikes: Acceptable.

Recoveries of all spiked analytes were within the appropriate control limits except all four spike results with high recoveries. No action was taken based on these outliers as there were no detections in the sample.

7. Duplicates: Acceptable.

Relative Percent Differences (RPDs) of all spiked analytes were within the required control limits.

8. Compound Identification: Not Provided.

Information regarding dual-column confirmation was not provided.

9. Target Compound Quantitation and Quantitation Limits: Not Provided.

Information needed to recalculate sample results and quantitation limits was not provided.

10. Laboratory Contact

No laboratory contact was required.

11. Overall Assessment

The overall usefulness of the data is based on the criteria outlined in the OSWER Guidance Document "Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan, and Data Validation Procedures" (EPA/540/G-90/004), the analytical method, and, when applicable, the Office of Emergency and Remedial Response Publication "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review". Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

UJ - The material was analyzed for but was not detected. The associated numerical value is the estimated sample quantitation limit.

Client: Ecology and Environment, Inc.

Job Number: 580-4721-1

Client Sample ID	: PEN 017 W				
Lab Sample ID: Client Matrix:	580-4721-1 Water	· ·	Date Sampled: 01/12/2007 1200 Date Received: 01/15/2007 1200		
	8082 Polychlorir	nated Biphenyls (PCBs) by Gas	Chromatogi	raphy	
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8082 3510C 1.0 01/17/2007 1122 01/16/2007 1252	Analysis Batch: 580-14831 Prep Batch: 580-14791	Ins La Ini Fir Inj Co	strument ID: SEA034 b File ID: PCB5740.D tial Weight/Volume: 865 mL hal Weight/Volume: 10 mL ection Volume: plumn ID: PRIMARY	
Analyte		Result (ug/L)	Qualifier	RL	
PCB-1016 PCB-1221 PCB-1232 PCB-1242 PCB-1248 PCB-1254 PCB-1260		ND ND ND ND ND ND ND	* .	0.58 0.58 0.58 0.58 0.58 0.58 0.58 0.58	
Surrogate		%Rec		Acceptance Limits	
Tetrachloro-m-xylene DCB Decachlorobiphenyl		38 37	X X	60 - 150 40 - 135	

MN

ecology and environment, inc.

International Specialists in the Environment

720 Third Avenue, Suite 1700, Seattle, WA 98104 Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: February 6, 2007
TO: Jim Gill, Project Manager, E & E, Anchorage, AK
FROM: Mark Woodke, Chemist, E & E, Seattle, Washington M
SUBJ: Organic Data Summary Check, First Avenue Property, Anchorage, Alaska
REF: 002397.PE06

The data summary check of 1 water sample collected from the First Avenue Property site located in Anchorage, Alaska, has been completed. Target Analyte List (TAL) metals analyses (EPA Methods 6010 and 7471) were performed by STL-Seattle, Inc., Tacoma, Washington.

The sample was numbered:

Water PEN 017 W

Data Qualifications:

1. Sample Holding Times: Acceptable.

The liquid sample was preserved to a pH < 2. The sample was maintained at 4°C (\pm 2°C). The sample was collected on January 12, 2007, and was analyzed by January 17, 2007, therefore meeting QC criteria of less than 6 months between collection, extraction, and analysis (28 days for mercury).

2. Initial and Continuing Calibration: Not Provided.

Calibration information was not provided.

3. Blanks: Acceptable.

A preparation blank was analyzed for each 20 samples or per matrix per concentration level. There were no detections in the blanks.

4. ICP Interference Check Sample: Not Provided.

Interference Check Sample information was not provided.

5. ICP Serial Dilution: Not Provided.

Serial dilution information was not provided.

6. Matrix Spike Analysis: Acceptable.

A matrix spike analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. Spike and spike duplicate recoveries were within the QC limits.

7. Duplicate Analysis: Acceptable.

A laboratory duplicate analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. All duplicate results were within QC limits.

8. Laboratory Control Sample Analysis: Acceptable.

A Laboratory Control Sample (LCS) was analyzed per SDG per matrix. All LCS results were within the established control limits.

9. Overall Assessment of Data for Use

The overall usefulness of the data is based on the criteria outlined in the OSWER Guidance Document "Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan, and Data Validation Procedures" (EPA/540/G-90/004), the analytical methods, and, when applicable, the Office of Emergency and Remedial Response Publication "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review". Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

U - The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.

Job Number: 580-4721-1

Client: Ecology and Environment, Inc.

Client Sample ID: PEN 017 W

Lab Sample ID: 580-4721-1 Date Sampled: 01/12/2007 1200 **Client Matrix:** Water Date Received: 01/15/2007 1200 6010B Inductively Coupled Plasma - Atomic Emission Spectrometry-Total Recoverable Method: 6010B Analysis Batch: 580-14815 Instrument ID: SEA027 Preparation: 3005A Prep Batch: 580-14786 Lab File ID: N/A Dilution: 1.0 Initial Weight/Volume: 50 mL Date Analyzed: 01/16/2007 1756 Final Weight/Volume: 50 mL Date Prepared: 01/16/2007 1220 Analyte Result (mg/L) Qualifier RL Arsenic 0.45 0.050 Barium 6.1 0.0050 Cadmium 0.013 0.0050 Chromium 2.9 0.010 Lead 0.73 0.015 Selenium 0.16 0.050 Silver ND 0.010 7470A Mercury in Liquid Waste (Manual Cold Vapor Technique) Method: 7470A Anaiysis Batch: 580-14836 Instrument ID: **SEA029** Preparation: 7470A Prep Batch: 580-14812 Lab File ID: N/A Dilution: 1.0 Initial Weight/Volume: 5 mL Date Analyzed: 01/17/2007 1313 Final Weight/Volume: -50 mL Date Prepared: 01/17/2007 0937 Analyte Result (mg/L) Qualifier RL Mercury 0.021 0.0020

Page 20 of 43

ecology and environment, inc.

International Specialists in the Environment

720 Third Avenue, Suite 1700, Seattle, WA 98104 Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: February 6, 2007

TO: Jim Gill, Project Manager, E & E, Anchorage, AK

FROM: Mark Woodke, Chemist, E & E, Seattle, Washington

- SUBJ: Organic Data Summary Check, First Avenue Property, Anchorage, Alaska
- REF: 002397.PE06

The data summary check of 3 water samples collected from the First Avenue Property site located in Anchorage, Alaska, has been completed. Analysis for Gasoline Range Organics (GROs; ADEC Method AK-101) analyses was performed by STL-Seattle, Inc., Tacoma, Washington.

The samples were numbered:

Water PEN 016 W PEN 017 W Trip Blanks

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were preserved to a pH < 2. The samples were maintained and received within the QC limits of $4^{\circ}C \pm 2^{\circ}C$. The samples were collected between January 11 and 12, 2007, and were analyzed by January 16, 2007, therefore meeting QC criteria of less than 14 days between collection and analysis for preserved water samples.

2. Initial and Continuing Calibration: Not Provided.

Calibration information was not provided.

3. Internal Standards: Not Provided.

Internal standard information was not provided.

4. Blanks: Acceptable.

A method blank was analyzed at the required frequency of every 12 hours for each matrix, preparation technique, and analysis system. GROs were not detected in any blank.

5. System Monitoring Compounds (SMC): Acceptable.

All recoveries of the SMCs were greater than 10% and within QC criteria.

6. Blank Spikes/Blank Spike Duplicates: Acceptable.

Blank spike results were within laboratory QC limits.

7. Duplicates: Acceptable.

Laboratory spike duplicate results were within laboratory QC limits.

8. Quantitation and Quantitation Limits: Acceptable.

Sample quantitation and sample quantitation limits were correctly calculated.

9. Laboratory Contact: Not Required.

No laboratory contact was required.

10. Overall Assessment of Data for Use

The overall usefulness of the data is based on the criteria outlined in the OSWER Directive "Quality Assurance/Quality Control Guidance for Removal Activities, Data Validation Procedures" (EPA/540/G-90/004) and the analytical method. Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

U - The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.

Client: Ecology and Environment, Inc.

Job Number: 580-4721-1

Client Sample ID:	PEN 017 W				
Lab Sample ID:	580-4721-1		Date Sampled: 01/12/2007 1200		
Client Matrix:	Water	·	Date Received: 01/15/2007 1200		
,	A	K101 Gasoline Range Organics	3		
Method:	AK101	Analysis Batch: 580-14835	Instrument ID: SEA003		
Preparation:	5030B		Lab File ID: CS169022.D		
Dilution:	2.0	· .	Initial Weight/Volume: 5 mL		
Date Analyzed:	01/16/2007 1605		Final Weight/Volume: 5 mL		
Date Prepared:	01/16/2007 1605		Injection Volume:		
			Column ID: PRIMARY		
Analyte		Result (mg/L)	Qualifier RL 1		
Gasoline Range Organics (GRO)-C6-C10		ND	0.10		
Surrogate		%Rec	Acceptance Limits		
Trifluorotoluene (Surr)		99	60 - 120		
4-Bromofluorobenzene (Surr)		102	60 - 120		
Ethylbenzene-d10		111	60 - 120		
Fluorobenzene (Surr)		100	60 - 120		
Toluene-d8 (Surr)		113	60 - 120		

MW

Client: Ecology and Environment, Inc.

Job Number: 580-4721-1

Client Sample ID:	: TRIP BLANKS				
Lab Sample ID: Client Matrix:	580-4721-2 Water		Date San Date Rec	npled: 01/12/2007 ;eived: 01/15/2007	0000 1200
· · · · · · · · · · · · · · · · · · ·	A	K101 Gasoline Range Organics			
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	AK101 5030B 1.0 01/16/2007 1519 01/16/2007 1519	Analysis Batch: 580-14835	Instrument ID Lab File ID: Initial Weight/ Final Weight/ Injection Volu Column ID:	: SEA003 CS169020.D Volume: 5 mL Volume: 5 mL me: PRIMARY	
Analvte		Result (mg/L)	Qualifier		
Gasoline Range C	organics (GRO)-C6-C10	ND		0.050	U
Surrogate		%Rec		Acceptance Limits	
Trifluorotoluene (Surr) 4-Bromofluorobenzene (Surr) Ethylbenzene-d10 Fluorobenzene (Surr) Toluene-d8 (Surr)		68 102 111 100 113	60 - 120 60 - 120 60 - 120 60 - 120 60 - 120		

MW 2407

STL Seattie

Page 16 of 43

Client: Ecology and Environment, Inc.

Job Number: 580-4721-1

Client Sample ID	: PEN 016 W				
Lab Sample ID: Client Matrix:	580-4721-3 Water		Date Sampled: Date Received:	01/11/2007 1600 01/15/2007 1200	
		AK101 Gasoline Range Organics			
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	AK101 5030B 1.0 01/16/2007 1712 01/16/2007 1712	Analysis Batch: 580-14835	Instrument ID: SI Lab File ID: CS Initial Weight/Volume Final Weight/Volume Injection Volume: Column ID: I	EA003 S169025.D e: 5 mL e: 5 mL PRIMARY	
Analyte		Result (mg/L)	Qualifier	RL	
Gasoline Range C	rganics (GRO)-C6-C10	ND		0.050	
Surrogate		%Rec	Accept	ance Limits	
Trifluorotoluene (Surr) 4-Bromofluorobenzene (Surr) Ethylbenzene-d10 Fluorobenzene (Surr) Toluene-d8 (Surr)		101 102 111 99 113	60 - 120 60 - 120 60 - 120 60 - 120 60 - 120 60 - 120		
		-			

MW 7-6-87

ecology and environment, inc.

International Specialists in the Environment

720 Third Avenue, Suite 1700, Seattle, WA 98104 Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE:		February 6, 2007
TO:	3	Jim Gill, Project Manager, E & E, Anchorage, AK
FROM:	,	Mark Woodke, Chemist, E & E, Seattle, Washington MW
SUBJ:		Organic Data Summary Check, First Avenue Property, Anchorage, Alaska

REF: 002397.PE06

The data summary check of 3 water samples collected from the First Avenue Property site located in Anchorage, Alaska, has been completed. Volatile Organic Compound (VOC) analysis (EPA Method 8260) was performed by STL-Seattle, Inc., Tacoma, Washington.

The samples were numbered:

Water PEN 016 W PEN 017 W Trip Blanks

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained and received within the QC limits of $4^{\circ}C \pm 2^{\circ}C$. The samples were collected between January 11 and 12, 2007, and were analyzed by January 16, 2007, therefore meeting QC criteria of less than 14 days between collection and analysis for preserved water samples.

2. Tuning: Not Provided.

Tuning information was not provided.

3. Initial and Continuing Calibration: Not Provided.

Calibration information was not provided.

4. Blanks: Acceptable.

A method blank was analyzed for each 20 sample batch per matrix. There were no detections in any method blank.

5. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

6. Blank Spike (BS)/BS Duplicate (BSD) Analysis: Acceptable.

BS and BSD analyses were performed per SDG or per matrix per concentration level, whichever was more frequent. All recoveries were within QC limits.

7. Duplicate Analysis: Acceptable.

Laboratory duplicate analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. All duplicate results were within QC limits.

8. Internal Standards: Not Provided.

Internal standard information was not provided.

9. Overall Assessment of Data for Use

The overall usefulness of the data is based on the criteria outlined in the OSWER Guidance Document "Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan, and Data Validation Procedures" (EPA/540/G-90/004), the analytical method, and, when applicable, the Office of Emergency and Remedial Response Publication "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review". Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

U - The material was analyzed for but was not detected. The associated numerical value is the sample quantitation limit.

Client: Ecology and Environment, Inc.

Job Number: 580-4721-1

Client Sample ID:	PEN 017	W					
Lab Sample ID: Client Matrix:	580 -472 1 Water	1-1		-		Date Sampled: Date Received:	01/12/2007 1200 01/15/2007 1200
		8260B Vol	atile Organic Comp	ounds by (GC/MS		· · · ·
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8260B 5030B 2.0 01/16/2007 01/16/2007	1239 1239	Analysis Batch: 5	80-14799		Instrument ID: SE Lab File ID: HF Initial Weight/Volume Final Weight/Volume	EA036 P13722.D e: 5 mL e: 5 mL
Analyte			Result (ug/L)	Qualifi	ər	RL
Analyte	thopo		ND	<u> </u>			2.0
Vinyl chloride Bromomethane Chloroethane Trichlorofluorometh 1,1-Dichloroethene Methylene Chloride trans-1,2-Dichloroeth 1,1-Dichloroethane 2,2-Dichloroethane 2,2-Dichloroethane Chloroform 1,1,1-Trichloroetha Carbon tetrachlorid 1,1-Dichloroprope: Benzene 1,2-Dichloroethane Trichloroethene 1,2-Dichloropropai Dibromomethane Dichlorobromomet cis-1,3-Dichloropro 1,1,2-Trichloroethane 1,3-Dichloropropai Chloroibromomet 1,3-Dichloropropai Chloroibromome Ethylene Dibromic Chiorobenzene Ethylbenzene 1,1,2-Tetrachlori	nane ethene ene ane de ne bane propene ane propene ane e thane de coethane						$\begin{array}{c} 2.0\\ 10\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.0\\ 2.$
m-Xylene & p-Xyl o-Xylene Styrene Bromoform Isopropylbenzene Bromobenzene N-Propylbenzene 1,2,3-Trichloropro	ene		ND ND ND ND ND ND			Øb a	2.0 2.0 2.0 2.0 2.0 2.0 2.0

2-1-5
Client: Ecology and Environment, Inc.

Job Number: 580-4721-1

Client Sample ID:	PEN 017 W					
Lab Sample ID:	580-4721-1	-	Date Sampled:	01/12/2007	1200	
Client Matrix:	Water		Date Received:	01/15/2007	1200	
j		 				

8260B Volatile Organic Compounds by GC/MS

Method: Preparation:	8260B 5030B	Analysis Batch: 580-14799	Instrument ID: SEA036 Lab File ID: HP13722	.D
Dilution:	2.0		Initial Weight/Volume:	5 mL
Date Analyzed:	01/16/2007 1239		Final Weight/Volume:	5 mL _
Date Prepared:	01/16/2007 1239			

Analyte	Result (ug/L)	Qualifier	RL (A
2-Chlorotoluene	ND		2.0
1,3,5-Trimethylbenzene	ND		2.0
4-Chlorotoluene	ND		2.0
tert-Butylbenzene	ND		2.0
1,2,4-Trimethylbenzene	ND		2.0
sec-Butylbenzene	ND		2.0
1,3-Dichlorobenzene	ND		2.0
4-isopropyltoluene	ND		2.0
1,4-Dichlorobenzene	ND		2.0
n-Butylbenzene	ND		2.0
1,2-Dichlorobenzene	ND		2.0
1,2-Dibromo-3-Chloropropane	ND		4.0
1,2,4-Trichlorobenzene	ND		2.0
1,2,3-Trichlorobenzene	ND		2.0
Hexachlorobutadiene	ND		2.0
Naphthalene	ND	-	2.0 V
Surrogate	%Rec		Acceptance Limits
Fluorobenzene (Surr)	94 -		80 - 120
Toluene-d8 (Surr)	98		80 - 120
Ethylbenzene-d10	100		80 - 120
4-Bromofluorobenzene (Surr)	100		80 - 120
Trifluorotoluene (Surr)	111		80 - 120

MW 1607

Client: Ecology and Environment, Inc.

Job Number: 580-4721-1

Client Sample ID:	TRIP BLANKS		
Lab Sample ID:	580-4721-2	Date Sampled:	01/12/2007 0000
Client Matrix:	Water	Date Received:	01/15/2007 1200
		· · · · · · · · · · · · · · · · · · ·	

. 8260B Volatile Organic Compounds by GC/MS

Dilution:1.0Initial Weight/Volume:5 mLDate Analyzed:01/16/2007 1158Final Weight/Volume:5 mLDate Prepared:01/16/2007 1158Final Weight/Volume:5 mL	Method: Prenaration:	8260B	Analysis Batch: 580-14799	Instrument ID: SEA036	6 0 0
Date Analyzed: 01/16/2007 1158 Final Weight/Volume: 5 mL Date Prepared: 01/16/2007 1158 Final Weight/Volume: 5 mL	Dilution:	1.0		Initial Weight/Volume:	5 mL
Date Prepared: 01/16/2007 1158	Date Analyzed:	01/16/2007 1158		Final Weight/Volume:	5 mL
	Date Prepared:	01/16/2007 1158			

DichlorodifluoromethaneND1.0ChloromethaneND1.0Vinyi chlorideND1.0BromomethaneND1.0ChloroethaneND1.0ChloroethaneND5.0TrichlorofluoromethaneND1.01,1-DichloroetheneND1.01,1-DichloroetheneND1.01,1-DichloroetheneND1.01,1-DichloroetheneND1.01,1-DichloroetheneND1.01,1-DichloroetheneND1.01,1-DichloroetheneND1.01,1-DichloroetheneND1.01,1-DichloroetheneND1.01,1-DichloroetheneND1.01,1-DichloroetheneND1.01,1-DichloroetheneND1.0ChloroformND1.0ChloroformND1.01,1-TrichloroethaneND1.01,1-DichloroptopeneND1.01,1-DichloroethaneND1.01,1-DichloroethaneND1.01,1-DichloroethaneND1.01,1-DichloroptopeneND1.01,1-DichloroptopeneND1.01,1-DichloroptopeneND1.01,2-DichloroethaneND1.01,2-DichloroethaneND1.01,2-DichloroethaneND1.01,2-DichloroethaneND1.01,2-DichloroethaneND1.0	
ChioromethaneND1.0Vinyi chlorideND1.0BromomethaneND1.0ChloroethaneND5.0TrichlorofluoromethaneND1.01,1-DichloroetheneND1.01,1-DichloroetheneND1.0Methylene ChlorideND1.0trans-1,2-DichloroetheneND1.01,1-DichloroetheneND1.01,1-DichloroetheneND1.01,2-DichloroetheneND1.01,1-DichloroethaneND1.02,2-DichloroetheneND1.01,1-DichloroetheneND1.01,1,1-TrichloroethaneND1.01,1,1-TrichloroethaneND1.01,1,1-TrichloroethaneND1.01,1-DichloropeneND1.01,1-DichloroethaneND1.01,1-DichloroethaneND1.01,1,2-DichloroethaneND1.01,1-DichloroethaneND1.01,1-DichloroethaneND1.01,1-DichloroethaneND1.01,1-DichloroethaneND1.01,1-DichloroethaneND1.01,1-DichloroethaneND1.01,1-DichloroethaneND1.01,2-DichloroethaneND1.01,2-DichloroethaneND1.01,2-DichloroethaneND1.01,2-DichloroethaneND1.01,2-DichloroethaneND1.01,2-Dichloroethane <td< td=""><td></td></td<>	
Vinyi chlorideND1.0BromomethaneND1.0ChloroethaneND5.0TrichlorofiuoromethaneND1.01,1-DichloroetheneND1.0Methylene ChlorideND1.0trans-1,2-DichloroetheneND1.01,1-DichloroetheneND1.01,1-DichloroetheneND1.01,1-DichloroetheneND1.01,1-DichloroetheneND1.01,2-DichloroetheneND1.01,2-DichloroetheneND1.01,1-DichloroetheneND1.01,1,1-TrichloroethaneND1.01,1-DichloropeneND1.01,1-DichloroethaneND1.01,1-DichloroethaneND1.01,1-DichloroethaneND1.01,1-DichloroethaneND1.01,1-DichloropopeneND1.01,2-DichloropeneND1.01,2-DichloroethaneND1.01,2-DichloroethaneND1.01,2-DichloropeneND1.01,2-DichloropeneND1.0	
BromomethaneND1.0ChloroethaneND5.0TrichlorofluoromethaneND1.01,1-DichloroetheneND1.0Methylene ChlorideND1.0trans-1,2-DichloroetheneND1.01,1-DichloroetheneND1.01,1-DichloroetheneND1.0cis-1,2-DichloroetheneND1.02,2-DichloropropaneND1.0cis-1,2-DichloroetheneND1.0ChlorobromomethaneND1.0ChloroformND1.01,1-TrichloroethaneND1.01,1-DichloroptopaneND1.01,1-DichloroethaneND1.01,1-DichloroethaneND1.01,1-TrichloroethaneND1.01,2-DichloroptopeneND1.01,2-DichloroptopeneND1.01,2-DichloroptopeneND1.0	
ChloroethaneND5.0TrichlorofluoromethaneND1.01,1-DichloroetheneND1.0Methylene ChlorideND1.0trans-1,2-DichloroetheneND1.01,1-DichloroethaneND1.02,2-DichloropropaneND1.0cis-1,2-DichloroetheneND1.0ChlorobromomethaneND1.01,1-TrichloroetheneND1.0ChloroformND1.01,1,1-TrichloroethaneND1.01,1,1-TrichloroethaneND1.01,1,1-TrichloroethaneND1.01,1,1-TrichloroethaneND1.01,2-DichloropropaneND1.01,2-DichloropropaneND1.01,2-DichloroethaneND1.01,1-DichloropropeneND1.01,2-DichloropropeneND1.01,2-DichloroethaneND1.01,2-DichloroethaneND1.01,2-DichloroethaneND1.01,2-DichloroethaneND1.01,2-DichloroethaneND1.01,2-DichloroethaneND1.0	
TrichlorofluoromethaneND1.01,1-DichloroetheneND1.0Methylene ChlorideND1.0trans-1,2-DichloroetheneND1.01,1-DichloroethaneND1.02,2-DichloropropaneND1.0cis-1,2-DichloroetheneND1.0ChlorobromomethaneND1.0ChloroformND1.01,1-TrichloroethaneND1.01,1,1-TrichloroethaneND1.01,1,1-TrichloroethaneND1.01,1-DichloropropaneND1.01,2-DichloropropaneND1.01,2-DichloroethaneND1.01,1-DichloroethaneND1.01,2-DichloropropaneND1.01,2-DichloropropaneND1.01,2-DichloropropaneND1.0	
1,1-DichloroetheneND1.0Methylene ChlorideND1.0trans-1,2-DichloroetheneND1.01,1-DichloroethaneND1.02,2-DichloropropaneND1.0cis-1,2-DichloroetheneND1.0ChlorobromomethaneND1.0ChloroformND1.01,1-TrichloroethaneND1.01,1,1-TrichloroethaneND1.01,1,1-TrichloroethaneND1.01,1-DichloropropeneND1.01,2-DichloropropeneND1.01,2-DichloropropeneND1.01,2-DichloroethaneND1.0	
Methylene ChlorideND1.0trans-1,2-DichloroetheneND1.01,1-DichloroethaneND1.02,2-DichloropropaneND1.0cis-1,2-DichloroetheneND1.0ChlorobromomethaneND1.0ChloroformND1.01,1-TrichloroethaneND1.01,1,1-TrichloroethaneND1.01,1,1-TrichloroethaneND1.01,1-DichloropropeneND1.01,2-DichloropropeneND1.01,2-DichloroethaneND1.0	
trans-1,2-DichloroetheneND1.01,1-DichloroethaneND1.02,2-DichloropropaneND1.0cis-1,2-DichloroetheneND1.0ChlorobromomethaneND1.0ChloroformND1.01,1,1-TrichloroethaneND1.01,1,1-TrichloroethaneND1.01,1-DichloropropeneND1.01,1-DichloropropeneND1.01,2-DichloroethaneND1.01,2-DichloropropeneND1.01,2-DichloroethaneND1.0	
1,1-DichloroethaneND1.02,2-DichloropropaneND1.0cis-1,2-DichloroethaneND1.0ChlorobromomethaneND1.0ChloroformND1.01,1,1-TrichloroethaneND1.01,1,1-TrichloroethaneND1.01,1-DichloropropeneND1.01,1-DichloropropeneND1.01,2-DichloroethaneND1.01,2-DichloroethaneND1.0	
2,2-DichloropropaneND1.0cis-1,2-DichloroetheneND1.0ChlorobromomethaneND1.0ChloroformND1.01,1,1-TrichloroethaneND1.0Carbon tetrachlorideND1.01,1-DichloropropeneND1.01,2-DichloroethaneND1.01,2-DichloroethaneND1.0	
cis-1,2-DichloroetheneND1.0ChlorobromomethaneND1.0ChloroformND1.01,1,1-TrichloroethaneND1.0Carbon tetrachlorideND1.01,1-DichloropropeneND1.0BenzeneND1.01,2-DichloroethaneND1.0	
ChlorobromomethaneND1.0ChloroformND1.01,1,1-TrichloroethaneND1.0Carbon tetrachlorideND1.01,1-DichloropropeneND1.0BenzeneND1.01,2-DichloroethaneND1.0	
ChloroformND1.01,1,1-TrichloroethaneND1.0Carbon tetrachlorideND1.01,1-DichloropropeneND1.0BenzeneND1.01,2-DichloroethaneND1.0	
1,1,1-TrichloroethaneND1.0Carbon tetrachlorideND1.01,1-DichloropropeneND1.0BenzeneND1.01,2-DichloroethaneND1.0	
Carbon tetrachlorideND1.01,1-DichloropropeneND1.0BenzeneND1.01,2-DichloroethaneND1.0	
1,1-DichloropropeneND1.0BenzeneND1.01,2-DichloroethaneND1.0	
BenzeneND1.01,2-DichloroethaneND1.0	
1,2-Dichloroethane ND 1.0	
Trichloroethene ND 1.0	
1,2-Dichloropropane ND 1.0	
Dibromomethane ND 1.0	
Dichlorobromomethane ND 1.0	
cis-1,3-Dichloropropene ND 1.0	
Toluene ND 1.0	
trans-1,3-Dichloropropene ND 1.0	
1,1,2-Trichloroethane ND 1.0	
Tetrachloroethene ND 1.0	
1,3-Dichloropropane ND 1.0	
Chlorodibromomethane ND 1.0	
Ethylene Dibromide ND 1.0	
Chlorobenzene ND 1.0	
Ethylbenzene ND 1.0	
1,1,1,2-Tetrachioroethane ND 1.0	
1,1,2,2-Tetrachloroethane ND 1.0	
m-Xylene & p-Xylene ND 2.0	
o-Xylene ND 1.0	
Styrene ND 1.0	
Bromoform ND 1.0	
Isopropylbenzene ND 1.0	
Bromobenzene ND 1.0	
N-Propylbenzene ND 1.0 V	
1,2,3-Trichloropropane ND 1.0 V	

(NAV 26-07

Client: Ecology and Environment, Inc.

Job Number: 580-4721-1

Client Sample II	D: TRIP BLANKS			
Lab Sample ID: Client Matrix:	580-4721-2 Water		Date Sam Date Rec	pled: 01/12/2007 0000 eived: 01/15/2007 1200
	8260B V	olatile Organic Compounds b	y GC/MS	· · · · · ·
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8260B 5030B 1.0 01/16/2007 1158 01/16/2007 1158	Analysis Batch: 580-14799	Instrument ID: Lab File ID: Initial Weight∕∖ Final Weight/∨	SEA036 HP13720.D /olume: 5 mL /olume: 5 mL
Analyte		Result (ug/L)	Qualifier	RL
2-Chlorotoluene 1,3,5-Trimethylbe 4-Chlorotoluene tert-Butylbenzene 1,2,4-Trimethylbe sec-Butylbenzene 1,3-Dichlorobenze 4-Isopropyltolueni 1,4-Dichlorobenze n-Butylbenzene 1,2-Dichlorobenze 1,2-Dibromo-3-Ci 1,2,4-Trichlorober 1,2,3-Trichlorober Hexachlorobutadi Naphthalene	nzene nzene e ene e ene ene nloropropane nzene nzene nzene ene	ND ND ND ND ND ND ND ND ND ND ND ND ND N		1.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0
Surrogate		%Rec	م	cceptance Limits
Fluorobenzene (S Toluene-d8 (Surr) Ethylbenzene-d10 4-Bromofluorober Trifluorotoiuene (S	Surr))) nzene (Surr) Surr)	94 98 99 98 106		80 - 120 80 - 120 80 - 120 80 - 120 80 - 120 80 - 120

MW 7-607

Page 8 of 43

Client: Ecology and Environment, Inc.

Job Number: 580-4721-1

Client Sample ID: P	PEN UTO W				
Lab Sample ID: 5 Client Matrix: V	80-4721-3 Vater		Date Sampled: Date Received:	01/11/2007 01/15/2007	1600 1200

8260B Volatile Organic Compounds by GC/MS

Method: Preparation: Dilution: Date Analyzed: Date Broggrad	8260B 5030B 1.0 01/16/2007 01/16/2007	1219 1219	Analysis Batch: 580-14799	Instrument ID: SEA03 Lab File ID: HP137 initial Weight/Volume: Final Weight/Volume:	36 721.D 5 mL 5 mL
Date Prepared:	01/16/2007	1219	·.		

Dichorodifluoromethane ND 1.0 Chioromethane ND 1.0 Chioromethane ND 1.0 Bromomethane ND 1.0 Chiorothane ND 1.0 Trichlorofluoromethane ND 1.0 1.1-Dichlorofluoromethane ND 1.0 Trichlorofluoromethane ND 1.0 1.1-Dichlorofluoromethane ND 1.0 1.1-Dichlorofluoromethane ND 1.0 1.1-Dichloroflane ND 1.0 2.2-Dichloropropane ND 1.0 cist-1.2-Dichloroethane ND 1.0 Chiorofm ND 1.0 Chioropomomethane ND 1.0 Chioropome ND 1.0 Chioropomethane ND 1.0 Chioropomomethane ND 1.0 Chioropomethane ND 1.0 Chioropomethane ND 1.0 Chioropopane ND 1.0 Chioropopane ND 1.0 I_1-Dichloropropane ND 1.0 I_2-Dichloropropane ND 1.0 Dichloropropane ND 1.0 Dichloropropane ND 1.0	Analyte	Result (ug/L)	Qualifier	RL A
Chloromethane ND 1.0 Viny choice ND 1.0 Sromomethane ND 1.0 Chicorothane ND 1.0 Chicorothane ND 1.0 Chicorothane ND 1.0 Chicorothane ND 1.0 Ichibiorothane ND 1.0 Methylene Chloride ND 1.0 Methylene Chloride ND 1.0 In-Dichlorothane ND 1.0 1,1-Dichlorothane ND 1.0 1,2-Dichlorophane ND 1.0 Chlorobromomethane ND 1.0 Chlorobromomethane ND 1.0 Chlorobromomethane ND 1.0 Chlorobropopane ND 1.0 Chlorobropopane ND 1.0 1,1-Dichloropopopane ND 1.0 1,2-Dichloropropane ND 1.0 1,2-Dichloropropane ND 1.0 Dichoropropane ND 1.0 <td>Dichlorodifluoromethane</td> <td>ND</td> <td></td> <td>1.0 🕖</td>	Dichlorodifluoromethane	ND		1.0 🕖
Viny chloride ND 1.0 Brommethane ND 1.0 Brommethane ND 5.0 Chloroethane ND 5.0 Trichlorofturomethane ND 1.0 1.1-Dichloroethane ND 1.0 Mathytene Chloride ND 1.0 Trichloroethane ND 1.0 1.1-Dichloroethane ND 1.0 2.2-Dichloroethane ND 1.0 2.2-Dichloroethane ND 1.0 Chloroform ND 1.0 Chloroform ND 1.0 Chloroform ND 1.0 Chloroform ND 1.0 1.1-Dichloroethane ND 1.0 1.1-Dichloropropene ND 1.0 1.2-Dichloropropene ND 1.	Chloromethane	ND		1.0
BromomethaneND1.0ChicroethaneND5.0ChicroethaneND1.01,1-DichloroetheneND1.01,1-DichloroetheneND1.01,1-DichloroetheneND1.01,1-DichloroetheneND1.01,1-DichloroetheneND1.02,2-DichloroetheneND1.02,2-DichloroetheneND1.02,2-DichloroetheneND1.02,2-DichloroethaneND1.0ChicroformND1.0ChicroformND1.01,1-TrichloroethaneND1.0ChicroformND1.01,1-TrichloroethaneND1.01,1-TrichloroethaneND1.01,1-DichloropropeneND1.01,2-DichloroethaneND1.01,2-DichloroethaneND1.01,2-DichloropropeneND1.01,2-DichloropropeneND1.01,2-DichloropropeneND1.01,2-DichloropropeneND1.01,2-DichloropropeneND1.01,3-DichloropropeneND1.01,3-DichloropropeneND1.01,1,2-TrichloroethaneND1.01,1,2-TrichloroethaneND1.01,1,2-TetrachloroethaneND1.01,1,2-TetrachloroethaneND1.01,1,2-TetrachloroethaneND1.01,1,2-TetrachloroethaneND1.01,1,2-Tetrachloroethane<	Vinvl chloride	ND		1.0
ChioroethaneND5.0TrichiorofluoromethaneND1.0TrichiorofluoromethaneND1.0Methylene ChlorideND1.0In-DichioroethaneND1.01,1-DichioroethaneND1.02,2-DichioropropaneND1.0chirl,2-DichioroethaneND1.02,2-DichioropropaneND1.0chirl,2-DichioroethaneND1.0ChioroformND1.0ChioroformND1.0ChioroformND1.0ChioroformND1.0ChioroformND1.0Carbon tetrachlorideND1.0I,1-DichioropropaneND1.0I,1-DichioropropaneND1.0I,2-DichioropropaneND1.0I,2-DichioropropaneND1.0DichiorobromomethaneND1.0I,2-DichioropropaneND1.0DichiorobromomethaneND1.0I,2-DichioropropaneND1.0DichiorobromomethaneND1.0I,1,2-TictikoroethaneND1.0I,1,2-TictikoroethaneND1.0I,1,2-TictikoroethaneND1.0I,1,2-TictikoroethaneND1.0I,1,2-TictikoroethaneND1.0I,1,2-TictikoroethaneND1.0I,1,2-TictikoroethaneND1.0I,1,2-TictikoroethaneND1.0I,1,2-TictikoroethaneND1.0I,1,2-Tictik	Bromomethane	ND		1.0
TrichloroftuoromethaneND1.01,1-DichloroetheneND1.01,1-DichloroetheneND1.01,1-DichloroetheneND1.01,1-DichloroetheneND1.02,2-DichloroetheneND1.02,2-DichloroetheneND1.0ChlorobromethaneND1.0ChlorobromethaneND1.0ChlorobromethaneND1.0ChlorobromethaneND1.0ChlorobromethaneND1.0ChlorobromethaneND1.0ChlorobromethaneND1.0ChlorobromethaneND1.0ChlorobromethaneND1.01,1-TichloroethaneND1.01,2-DichloropropaneND1.01,2-DichloropropaneND1.01,2-DichloropropaneND1.01,2-DichloropropaneND1.01,2-DichloropropaneND1.01,2-DichloropropaneND1.01,2-DichloropropaneND1.01,2-DichloropropaneND1.01,2-DichloropropaneND1.01,2-DichloropropaneND1.01,1,2-TrichloroethaneND1.01,1,2-TrichloropropaneND1.01,1,2-TrichloropropaneND1.01,1,2-TrichloropropaneND1.01,1,2-TrichloropropaneND1.01,1,2-TetrachloroethaneND1.01,1,1,2-TetrachloroethaneND1.0<	Chloroethane	ND	·	5.0
1,1-DichloroetheneND1.0Methylene ChlorideND1.01,1-DichloroetheneND1.01,1-DichloroetheneND1.02,2-DichloropropaneND1.0cis,1,2-DichloroetheneND1.0ChloroformND1.0ChloroformND1.01,1-TrichloroethaneND1.0ChloroformND1.01,1-TrichloroethaneND1.02,2-DichloropropaneND1.01,1-TrichloroethaneND1.01,1-DichloropropaneND1.01,1-DichloropropaneND1.01,1-DichloropropaneND1.01,2-DichloropropaneND1.01,2-DichloropropaneND1.01,2-DichloropropaneND1.01,2-DichloropropaneND1.0DibromomethaneND1.01,1-1,2-TrichloroethaneND1.01,1,2-TrichloroethaneND1.01,1,2-TrichloroethaneND1.01,1,2-TrichloroethaneND1.01,1,2-TrichloroethaneND1.01,1,2-TetrachloroethaneND1.01,1,1,2-TetrachloroethaneND1.01,1,1,2-TetrachloroethaneND1.01,1,1,2-TetrachloroethaneND1.01,1,1,2-TetrachloroethaneND1.01,1,1,2-TetrachloroethaneND1.01,1,1,2-TetrachloroethaneND1.01,1,1,2-Tetrachloroethane<	Trichlorofluoromethane	ND	•	1.0
Methylene Chloride ND 1.0 trans-1,2-Dichioroethane ND 1.0 1,1-Dichioroethane ND 1.0 2,2-Dichioropropane ND 1.0 cis-1,2-Dichioroethane ND 1.0 cis-1,2-Dichioroethane ND 1.0 Chiorobromomethane ND 1.0 Chiorobromomethane ND 1.0 Chiorobromomethane ND 1.0 Carbon tetrachloride ND 1.0 1,1-Tickibroethane ND 1.0 Carbon tetrachloride ND 1.0 1,1-Tickibroethane ND 1.0 1,2-Dichioropropane ND 1.0 1,2-Dichioropropane ND 1.0 1,2-Dichioropropane ND 1.0 Dibromomethane ND 1.0 Dichiorobropropene ND 1.0 Dichioropropene ND 1.0 1,1,2-Trichioroethane ND 1.0 1,1,2-Trichioroethane ND 1.0 <tr< td=""><td>1.1-Dichloroethene</td><td>ND</td><td></td><td>1.0</td></tr<>	1.1-Dichloroethene	ND		1.0
trans-1,2-Dichloroethene ND 1.0 1,1-Dichloroethene ND 1.0 cls-1,2-Dichloroethene ND 1.0 cls-1,2-Dichloroethene ND 1.0 Chloroform ND 1.0 Chloroform ND 1.0 1,1-Trichloroethane ND 1.0 Carbon tetrachloride ND 1.0 1,1-Dichloroethane ND 1.0 1,1-Dichloropropane ND 1.0 1,1-Dichloropropane ND 1.0 1,2-Dichloropropane ND 1.0 1,2-Dichloropropane ND 1.0 1,2-Dichloropropane ND 1.0 1,2-Dichloropropane ND 1.0 Dichlorobromethane ND 1.0 1,3-Dichloropropane ND 1.0 1,1,1-Z-Tichloroethane ND 1.0 trans-1,3-Dichloropropane ND 1.0 1,1,1,2-Tichloroethane ND 1.0 trans-1,3-Dichloropropane ND 1.0 <td>Methylene Chloride</td> <td>ND</td> <td></td> <td>1.0</td>	Methylene Chloride	ND		1.0
1,1-Dichloroethane ND 1.0 2,2-Dichloropropane ND 1.0 cbi-1,2-Dichloroethane ND 1.0 Chloroform ND 1.0 1,1-Trichloroethane ND 1.0 Carbon tetrachloride ND 1.0 1,1-Dichloropropane ND 1.0 Earzane ND 1.0 1,2-Dichloropropane ND 1.0 1,2-Dichloropropane ND 1.0 1,2-Dichloropropane ND 1.0 Dichlorobromethane ND 1.0 1,3-Dichloropropene ND 1.0 1,3-Dichloropropene ND 1.0 1,3-Dichloropropene ND 1.0 1,3-Dichloropropane ND 1.0 1,3-Dichloropropane ND 1.0 1,3-Dichloropropane ND </td <td>trans-1,2-Dichloroethene</td> <td>ND</td> <td></td> <td>1.0</td>	trans-1,2-Dichloroethene	ND		1.0
2.2-Dichloropropane ND 1.0 cis-1.2-Dichloropthene ND 1.0 Chlorobornomethane ND 1.0 1.1-Dichloroptopene ND 1.0 Sarbon tetrachoride ND 1.0 1.2-Dichloroptopene ND 1.0 Sarbon tetrachoride ND 1.0 1.2-Dichloroptopane ND 1.0 1.2-Dichloroptopane ND 1.0 1.2-Dichloroptopane ND 1.0 1.2-Dichloroptopene ND 1.0 Dibromomethane ND 1.0 1.2-Dichloroptopene ND 1.0 1.3-Dichloroptopene ND 1.0 1.3-Dichloroptopane ND 1.0 1.3-Dichloroptopane ND 1.0 1.3-Dichloroptopane ND 1.0	1.1-Dichloroethane	ND		1.0
cis-1,2-Dichloroethene ND 1.0 Chloroform ND 1.0 1,1,1-Trichloroethane ND 1.0 Carbon tetrachloride ND 1.0 1,1-Dichloropenene ND 1.0 Benzene ND 1.0 1,2-Dichloroethane ND 1.0 1,2-Dichloroethane ND 1.0 1,2-Dichloroethane ND 1.0 1,2-Dichloropropane ND 1.0 1,2-Dichloropropane ND 1.0 Dibromomethane ND 1.0 1,2-Dichloropropane ND 1.0 Dichlorobromomethane ND 1.0 cis-1,3-Dichloropropene ND 1.0 rds-1,3-Dichloropropene ND 1.0 rds-1,3-Dichloropropene ND 1.0 rds-1,3-Dichloropropane ND 1.0 rds-1,3-Dichloropropane ND 1.0 rds-1,2-Tetrachloroethane ND 1.0 rds-1,2-Tetrachloroethane ND 1.0 <td>2.2-Dichloropropane</td> <td>ND</td> <td></td> <td>1.0</td>	2.2-Dichloropropane	ND		1.0
ChlorobromomethaneND1.0ChlorobromND1.0ChlorobromND1.0Carbon tstrachlorideND1.01,1-TrichloroethaneND1.01,1-DichloropropeneND1.0SenzeneND1.01,2-DichloroethaneND1.01,2-DichloropropaneND1.01,2-DichloropropaneND1.0DibromomethaneND1.001.01.001.01.01,2-DichloropropaneND1.0DibromomethaneND1.001.01.01,2-DichloropropeneND1.01,12-TrichloropropeneND1.01,12-TrichloropropeneND1.01,12-TrichloropropeneND1.01,12-TrichloropropeneND1.01,12-TrichloropropeneND1.01,12-TrichloropropeneND1.01,12-TrichloropropeneND1.01,1,2-TretrachloroethaneND1.01,1,2-TetrachloroethaneND1.01,1,2-TetrachloroethaneND1.01,1,2-TetrachloroethaneND1.01,1,2-TetrachloroethaneND1.01,1,2-TetrachloroethaneND1.01,1,2-TetrachloroethaneND1.01,1,2-TetrachloroethaneND1.01,1,2-TetrachloroethaneND1.01,1,2-TetrachloroethaneND1.01,1,2-Tetrachloroethane <td>cis-1,2-Dichloroethene</td> <td>ND</td> <td></td> <td>1.0</td>	cis-1,2-Dichloroethene	ND		1.0
Chloroform ND 1.0 1,1,1-Trichbroethane ND 1.0 Carbon tetrachloride ND 1.0 1,1-Dichloropropene ND 1.0 Benzene ND 1.0 1,2-Dichloroethane ND 1.0 1,2-Dichloropthane ND 1.0 1,2-Dichloroptopane ND 1.0 Dibromomethane ND 1.0 Dibromomethane ND 1.0 Dichloroptropane ND 1.0 Dichloroptropene ND 1.0 Totuene ND 1.0 trans-1,3-Dichloropropene ND 1.0 1,1,2-Trichloroethane ND 1.0 1,3-Dichloropropane ND 1.0 Chlorodibromomethane ND 1.0 1,1,2-Trichloroethane ND 1.0 1,3-Dichloropropane ND 1.0 Chlorodibromomethane ND 1.0 Chlorodibromomethane ND 1.0 1,1,2-Tetrachloroethan	Chlorobromomethane	ND		1.0
1,1,1-TrichloroethaneND1.0Carbon tetrachlorideND1.01,1-DichloropropeneND1.0EnzeneND1.01,2-DichloroethaneND1.01,2-DichloropropaneND1.0DibromomethaneND1.0DibromomethaneND1.0DichloropropaneND1.0DichloropropaneND1.0DichloropropaneND1.0DichloropropaneND1.0DichloropropaneND1.0DichloropropeneND1.0I,2-DichloropropeneND1.0I,2-TrichloroptopeneND1.0I,2-TrichloropthaneND1.0I,2-TrichloroethaneND1.0I,2-DichloroptopeneND1.0I,2-DichloropthaneND1.0I,2-TrichloroethaneND1.0I,2-DichloroptopaneND1.0I,2-DichloroptopaneND1.0I,1,2-TetrachloroethaneND1.0I,1,2-TetrachloroethaneND1.0I,1,2-TetrachloroethaneND1.0I,1,2-TetrachloroethaneND1.0I,1,2-TetrachloroethaneND1.0I,1,2-TetrachloroethaneND1.0I,1,2-TetrachloroethaneND1.0I,1,2-TetrachloroethaneND1.0I,1,2-TetrachloroethaneND1.0I,1,2-TetrachloroethaneND1.0I,1,2-TetrachloroethaneND1.0 <td>Chloroform</td> <td>ND</td> <td></td> <td>1.0</td>	Chloroform	ND		1.0
Carbon tetrachlorideND1.01,1-DichloropropeneND1.0BenzeneND1.01,2-DichloroethaneND1.01,2-DichloropropaneND1.0DibromomethaneND1.0DichlorobromomethaneND1.0DichlorobromomethaneND1.0TothloropropaneND1.0DichlorobromomethaneND1.0TolueneND1.0TolueneND1.0trans-1,3-DichloropropeneND1.0trans-1,2-Tetrachloroethane	1.1.1-Trichloroethane	ND		1.0
1.1-DichloropropeneND1.0BenzeneND1.01,2-DichloroethaneND1.01,2-DichloroethaneND1.01,2-DichloropropaneND1.0DibromomethaneND1.0DichlorobromomethaneND1.0DichlorobromomethaneND1.0Cis-1,3-DichloropropeneND1.0TolueneND1.0trans-1,3-DichloropropeneND1.0TolueneND1.0trans-1,3-DichloropropeneND1.01,1,2-TrichloroethaneND1.01,3-DichloropropaneND1.01,1,2-TrichloroethaneND1.01,1,2-TrichloroethaneND1.01,1,2-TrichloroethaneND1.01,1,2-TrichloroethaneND1.01,1,2-TrichloroethaneND1.01,1,2-TetrachloroethaneND1.01,1,2-TetrachloroethaneND1.01,1,2-TetrachloroethaneND1.01,1,2-TetrachloroethaneND1.01,1,2-TetrachloroethaneND1.01,1,2-TetrachloroethaneND1.0StyreneND1.0BromoformND1.0IsoropoylbenzeneND1.0N-PropylbenzeneND1.0N-PropylbenzeneND1.0N-PropylbenzeneND1.0N-PropylbenzeneND1.0N-PropylbenzeneND1.0N-Propylbenzene	Carbon tetrachloride	ND		1.0
Benzene ND 1.0 1,2-Dichloroethane ND 1.0 Trichloroethane ND 1.0 Trichloropropane ND 1.0 Dibromomethane ND 1.0 Dibromomethane ND 1.0 Dichloropropane ND 1.0 Dichloropropone ND 1.0 Cis-1,3-Dichloropropene ND 1.0 trans-1,3-Dichloropropene ND 1.0 trans-1,3-Dichloropropene ND 1.0 trans-1,3-Dichloropropene ND 1.0 1,1,2-Trichloroethane ND 1.0 1,3-Dichloropropane ND 1.0 Chlorodibromomethane ND 1.0 1,3-Dichloropropane ND 1.0 Chlorodibromomethane ND 1.0 Chlorodibromomethane ND 1.0 Ethylene Dibromide ND 1.0 Chlorobenzane ND 1.0 thylene & p-Xylene ND 1.0 1,1,2	1,1-Dichloropropene	ND		1.0
1.2-Dichloroethane ND 1.0 Trichloroethene ND 1.0 1.2-Dichloropropane ND 1.0 1.2-Dichloropropane ND 1.0 Dichomomethane ND 1.0 Dichloropropene ND 1.0 Dichloropropene ND 1.0 Toluene ND 1.0 Trans-1,3-Dichloropropene ND 1.0 1,1,2-Trichloroethane ND 1.0 1,3-Dichloropropane ND 1.0 1,3-Dichloropropane ND 1.0 1,3-Dichloropropane ND 1.0 1,3-Dichloropropane ND 1.0 Chlorodibromomethane ND 1.0 Ethylene Dibromide ND 1.0 Chlorodbrazene ND 1.0 1,1,1,2-Tetrachloroethane ND 1.0 1,1,1,2-Tetrachloroethane ND 1.0 1,1,1,2,2-Tetrachloroethane ND 1.0 1,1,2,2-Tetrachloroethane ND 1.0 Styrene ND 1.0 Bromoform N	Benzene	ND		1.0
TrichloroetheneND1.01,2-DichloropropaneND1.0DibromomethaneND1.0DichlorobromomethaneND1.0DichlorobropopeneND1.0TolueneND1.0trans-1,3-DichloropropeneND1.01,1,2-TrichloroethaneND1.01,1,2-TrichloroethaneND1.01,3-DichloropropaneND1.01,3-DichloropropaneND1.01,3-DichloropropaneND1.01,3-DichloropropaneND1.01,3-DichloropropaneND1.01,3-DichloropropaneND1.0ChiorodibromomethaneND1.0ChlorobenzeneND1.0Ethylene DibromideND1.01,1,1,2-TetrachloroethaneND1.01,1,1,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.0StyreneND1.0BromoformND1.0IsopropylbenzeneND1.0BromobenzeneND1.0N-PropylbenzeneND1.0N-PropylbenzeneND1.0N-PropylbenzeneND1.0N-PropylbenzeneND1.0N-PropylbenzeneND1.0N-Propylbenzene <td>1,2-Dichloroethane</td> <td>ND</td> <td></td> <td>1.0</td>	1,2-Dichloroethane	ND		1.0
1,2-DichloropropaneND1.0DibromomethaneND1.0DichlorobromomethaneND1.0DichlorobromomethaneND1.0Cis-1,3-DichloropropeneND1.0TolueneND1.0trans-1,3-DichloropropeneND1.01,1,2-TrichloroothaneND1.0(1,3-DichloropropaneND1.0ChlorodibromomethaneND1.0(1,3-DichloropropaneND1.0ChlorodibromomethaneND1.0ChlorobenzeneND1.0EthylenzeneND1.01,1,1,2-TetrachloroethaneND1.01,1,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.01,2,2-TetrachloroethaneND1.0StyreneND1.0BromoformND1.0BromoformND1.0N-PropylbenzeneND1.0N-PropylbenzeneND1.0N-PropylbenzeneND1.0N-PropylbenzeneND1.0N-PropylbenzeneND1.0N-PropylbenzeneND1.0N-PropylbenzeneND1.0N-PropylbenzeneND1.0N-PropylbenzeneND1.0N-PropylbenzeneND1.0N-PropylbenzeneND1.0N-PropylbenzeneND1.0 <td>Trichloroethene</td> <td>ND</td> <td></td> <td>1.0</td>	Trichloroethene	ND		1.0
DibromomethaneND1.0DichlorobromomethaneND1.0cis-1,3-DichloropropeneND1.0TolueneND1.0trans-1,3-DichloropropeneND1.01,1,2-TrichloroethaneND1.01,3-DichloropropeneND1.01,3-DichloropropeneND1.01,3-DichloropropeneND1.01,3-DichloropropeneND1.01,3-DichloropropeneND1.01,3-DichloropropeneND1.01,3-DichloropropeneND1.0ChlorodibromomethaneND1.0Ethylene DibromideND1.0ChlorobenzeneND1.0Ethylene DibromideND1.01,1,2-TetrachloroethaneND1.01,1,2-TetrachloroethaneND1.01,1,2-TetrachloroethaneND1.01,1,2-TetrachloroethaneND1.01,1,2-TetrachloroethaneND1.01,1,2-TetrachloroethaneND1.01,1,2-TetrachloroethaneND1.01,1,2-TetrachloroethaneND1.01,2,3-TrichloroptopeneND1.0IsopropylbenzeneND1.0IsopropylbenzeneND1.0N-PropylbenzeneND1.01,2,3-TrichloropropaneND1.01,2,3-TrichloropropaneND1.0	1,2-Dichloropropane	ND		1.0
DichlorobromomethaneND1.0cis-1,3-DichloropropeneND1.0TolueneND1.0trans-1,3-DichloropropeneND1.0trans-1,3-DichloropropeneND1.01,1,2-TrichloroethaneND1.0tetrachloroethaneND1.0tetrachloroethaneND1.01,3-DichloropropaneND1.0ChlorodibromomethaneND1.0Ethylene DibromideND1.0ChlorobenzeneND1.0thylene bibromideND1.01,1,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.0n-Xylene & p-XyleneND1.0StyreneND1.0BromoformND1.0IsopropylbenzeneND1.0ND1.01.0IsopropylbenzeneND1.0N-PropylbenzeneND1.0N-PropylbenzeneND1.01,2,3-TrichloropropaneND1.01,2,3-TrichloropropaneND1.0	Dibromomethane	ND		1.0
cis-1,3-DichloropropeneND1.0TolueneND1.0trans-1,3-DichloropropeneND1.01,1,2-TrichloroethaneND1.01,3-DichloropropaneND1.0ChlorodibromomethaneND1.0ChlorodibromomethaneND1.0Ethylene DibromideND1.0ChlorobenzeneND1.0ChlorobenzeneND1.0I,1,2-TetrachloroethaneND1.0I,1,2-TetrachloroethaneND1.0I,1,2-TetrachloroethaneND1.0I,1,2-TetrachloroethaneND1.0I,1,2-TetrachloroethaneND1.0I,1,2-TetrachloroethaneND1.0StyreneND1.0StyreneND1.0StyreneND1.0BromoformND1.0IsopropylbenzeneND1.0N-PropylbenzeneND1.0N-PropylbenzeneND1.01,2,3-TrichloropropaneND1.01,2,3-TrichloropropaneND1.01,2,3-TrichloropropaneND1.01,2,3-TrichloropropaneND1.01,2,3-TrichloropropaneND1.01,2,3-TrichloropropaneND1.01,2,3-TrichloropropaneND1.01,2,3-Trichloropropane1.01,2,3-Trichloropropane1.01,2,3-Trichloropropane1.01,2,3-Trichloropropane1.01,2,3-Trichloropropane1.0<	Dichlorobromomethane	ND	•	1.0
TolueneND1.0trans-1,3-DichloropropeneND1.01,1,2-TrichloroethaneND1.0TetrachloroethaneND1.01,3-DichloropropaneND1.01,3-DichloropropaneND1.0ChlorodibromomethaneND1.0Ethylene DibromideND1.0ChlorobenzeneND1.0EthylenzeneND1.01,1,1,2-TetrachloroethaneND1.01,1,1,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.0StyreneND1.0BromoformND1.0IsopropylbenzeneND1.0ND1.01.0PropylbenzeneND1.0N-PropylbenzeneND1.01,2,3-TrichloropropaneND1.01,2,3-TrichloropropaneND1.01,2,3-TrichloropropaneND1.0	cis-1,3-Dichloropropene	ND		1.0
trans-1,3-DichloropropeneND1.01,1,2-TrichloroethaneND1.0TetrachloroethaneND1.01,3-DichloropropaneND1.01,3-DichloropropaneND1.0ChlorodibromomethaneND1.0Ethylene DibromideND1.0ChlorobenzeneND1.0EthylbenzeneND1.01,1,1,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.0StyreneND1.0BromoformND1.0IsopropylbenzeneND1.0BromobenzeneND1.0N-PropylbenzeneND1.01,2,3-TrichloropropaneND1.0	Toluene	ND		1.0
1,1,2-TrichloroethaneND1.0TetrachloroetheneND1.01,3-DichloropropaneND1.0ChlorodibromomethaneND1.0Ethylene DibromideND1.0ChlorobenzeneND1.0EthylbenzeneND1.01,1,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.0StyreneND1.0BromoformND1.0IsopropylbenzeneND1.0BromobenzeneND1.0Jorophenzene </td <td>trans-1,3-Dichloropropene</td> <td>ND</td> <td></td> <td>1.0</td>	trans-1,3-Dichloropropene	ND		1.0
TetrachloroetheneND1.01,3-DichloropropaneND1.0ChlorodibromomethaneND1.0Ethylene DibromideND1.0ChlorobenzeneND1.0EthylbenzeneND1.01,1,2,-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.0n-Xylene & p-XyleneND1.0o-XyleneND1.0StyreneND1.0BromoformND1.0IsopropylbenzeneND1.0Jorophenzene<	1,1,2-Trichloroethane	ND		1.0
1,3-DichloropropaneND1.0ChlorodibromomethaneND1.0Ethylene DibromideND1.0ChlorobenzeneND1.0EthylbenzeneND1.01,1,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.0n-Xylene & p-XyleneND1.0o-XyleneND1.0StyreneND1.0BromoformND1.0IsopropylbenzeneND1.0BromobenzeneND1.0Jordenzene1.	Tetrachloroethene	ND		1.0
ChlorodibromomethaneND1.0Ethylene DibromideND1.0ChlorobenzeneND1.0ChlorobenzeneND1.0EthylbenzeneND1.01,1,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.0n-Xylene & p-XyleneND2.0o-XyleneND1.0StyreneND1.0BromoformND1.0IsopropylbenzeneND1.0BromobenzeneND1.0N-PropylbenzeneND1.01,2,3-TrichloropropaneND1.0	1,3-Dichloropropane	ND		1.0
Ethylene DibromideND1.0ChlorobenzeneND1.0EthylbenzeneND1.01,1,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND2.0m-Xylene & p-XyleneND1.0o-XyleneND1.0StyreneND1.0BromoformND1.0IsopropylbenzeneND1.0BromobenzeneND1.0N-PropylbenzeneND1.01,2,3-TrichloropropaneND1.0	Chlorodibromomethane	ND		1.0
ChlorobenzeneND1.0EthylbenzeneND1.01,1,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND2.0m-Xylene & p-XyleneND2.0o-XyleneND1.0StyreneND1.0BromoformND1.0IsopropylbenzeneND1.0BromobenzeneND1.0N-PropylbenzeneND1.01,2,3-TrichloropropaneND1.0	Ethylene Dibromide	ND		1.0
EthylbenzeneND1.01,1,2,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.0m-Xylene & p-XyleneND2.0o-XyleneND1.0StyreneND1.0BromoformND1.0IsopropylbenzeneND1.0BromobenzeneND1.0N-PropylbenzeneND1.01,2,3-TrichloropropaneND1.0	Chlorobenzene	ND		1.0
1,1,2-TetrachloroethaneND1.01,1,2,2-TetrachloroethaneND1.0m-Xylene & p-XyleneND2.0o-XyleneND1.0StyreneND1.0BromoformND1.0IsopropylbenzeneND1.0BromobenzeneND1.0N-PropylbenzeneND1.01,2,3-TrichloropropaneND1.0	Ethylbenzene	ND		1.0
1,1,2,2-TetrachloroethaneND1.0m-Xylene & p-XyleneND2.0o-XyleneND1.0StyreneND1.0BromoformND1.0IsopropylbenzeneND1.0BromobenzeneND1.0N-PropylbenzeneND1.01,2,3-TrichloropropaneND1.0	1,1,1,2-Tetrachloroethane	ND		1.0
m-Xylene & p-XyleneND2.0o-XyleneND1.0StyreneND1.0BromoformND1.0IsopropylbenzeneND1.0BromobenzeneND1.0N-PropylbenzeneND1.01,2,3-TrichloropropaneND1.0	1,1,2,2-Tetrachloroethane	ND		1.0
o-XyleneND1.0StyreneND1.0BromoformND1.0IsopropylbenzeneND1.0BromobenzeneND1.0N-PropylbenzeneND1.01,2,3-TrichloropropaneND1.0	m-Xylene & p-Xylene	ND		2.0
StyreneND1.0BromoformND1.0IsopropylbenzeneND1.0BromobenzeneND1.0N-PropylbenzeneND1.01,2,3-TrichloropropaneND1.0	o-Xylene	ND		1.0
BromoformND1.0IsopropylbenzeneND1.0BromobenzeneND1.0N-PropylbenzeneND1.01,2,3-TrichloropropaneND1.0	Styrene	ND		1.0
IsopropylbenzeneND1.0BromobenzeneND1.0N-PropylbenzeneND1.01,2,3-TrichloropropaneND1.0	Bromoform	ND		1.0
BromobenzeneND1.0N-PropylbenzeneND1.01,2,3-TrichloropropaneND1.0	Isopropylbenzene	ND		
N-Propylbenzene ND 1.0 1,2,3-Trichloropropane ND 1.0	Bromobenzene	ND		1.0
1,2,3-Trichloropropane ND 1.0	N-Propylbenzene	ND		
	1,2,3-Trichloropropane	ND		

Page 9 of 43

Client: Ecology and Environment, Inc.

Job Number: 580-4721-1

Client Sample ID	: PEN 016 W			
Lab Sample ID:	580-4721-3		Date Sa	ampled: 01/11/2007 1600
Client Matrix: Water			Date Re	eceived: 01/15/2007 1200
	8260B 1	Volatile Organic Compounds by	GC/MS	
Method: Preparation: Dilution: Date Analyzed: Date Prepared:	8260B 5030B 1.0 01/16/2007 1219 01/16/2007 1219	Analysis Batch: 580-14799	Instrument II Lab File ID: Initial Weigh Final Weight	D: SEA036 HP13721.D t/Volume: 5 mL /Volume: 5 mL
Analyte		Result (ug/L)	Qualifier	RL .
2-Chlorotoluene		ND	******	1.0 \
1,3,5-Trimethylben	zene	ND		1.0
4-Chlorotoluene		ND		1.0
tert-Butylbenzene		ND		1.0
1,2,4-Trimethylben	zene	ND ·		1.0
sec-Butylbenzene		ND		1.0
1,3-Dichlorobenzei	ne ·	ND		1.0
4-Isopropyltoluene		ND ND		1.0
1,4-Dichlorobenzei	ne	ND		1.0
n-Butylbenzene		ND		1.0
1,2-Dichlorobenzei	ne	ŅD		1.0
1,2-Dibromo-3-Chl	oropropane	ND		2.0
1,2,4-Trichlorobenzene		ND		1.0
1,2,3-Trichloroben:	zene	ND		1.0
Hexachlorobutadie	ne	ND		1.0
Naphthalene	•	ND		1.0 💜
Surrogate		%Rec		Acceptance Limits
Fluorobenzene (Si	urr)	94		80 - 120
Toluene-d8 (Surr)		99		80 - 120
Ethylbenzene-d10		100		80 - 120
4-Bromofluoroben:	zene (Surr)	101		80 - 120
Trifiuorotoluene (S	urr)	108		80 - 120

MN 7-6-07