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LISTING SITE INSPECTION REPORT FOR NORTHWEST PIPE AND CASING CLACKAMAS, OREGON VOLUME II

TDD F10-8906-002
PAN FOR0210XC

Report Prepared by: ECOLOGY AND ENVIRONMENT, INC.

Date: June 1990

Submitted to: J.E. Osborn, Regional Project Officer
Field Operations and Technical Support Branch
U.S. Environmental Protection Agency
Region 10
Seattle, Washington

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Appendix D

QUALITY ASSURANCE MEMORANDA AND FASP ANALYTICAL REPORT

ecology and environment, inc.
101 YESLER WAY, SEATTLE, WASHINGTON, 98104, TEL. 206/624-9537
International Specialists in the Environment

MEMORANDUM

DATE: February 20, 1990

FOR: Rhonda Wreggelsworth, RSCC, USEPA, Region 10

THRU: Jeffrey Villnow, FITOM, E & E, Seattle

FROM: Lila Accra, Chemist, E & E, Seattle
Tracy Yerian, Senior Chemist, E & E, Seattle

SUBJ: QA of Case 13324 (Inorganics)
Northwest Pipe and Casing

REF: F10-8906-002
PAN FOR1210XC

CC: John Osborn, RPO, USEPA, Region 10
Bruce Woods, ESD, USEPA, Region 10
Gerald Muth, DPO, USEPA, Region 10 Laboratory, Manchester
Kent Kitchingman, DPO, USEPA, Region 9
Deborah Flood, HWD-SM, USEPA, Region 10
Gerald Lee, FIT-PD, E & E, Seattle
Mark Ader, FIT-PM, E & E, Seattle

The Quality Assurance (QA) review of 11 samples, Case 13324, collected from Northwest Pipe and Casing, has been completed. Eleven samples were analyzed at low level for Target Compound List (TCL) Inorganics by Vegas Analytical Laboratories, Inc. of Las Vegas, Nevada. The samples were numbered:

MJE709	MJE713	MJE718
MJE710	MJE714	MJF238
MJE711	MJE715	MJF240
MJE712	MJE716	

Sample MJE712 underwent matrix spike (MS) analysis and duplicate analysis.

Data Qualifications

The following comments refer to the laboratory performance in meeting the Quality Control (QC) specifications outlined in IFB WA-87K025-027.

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1) Timeliness

Sample Number	Sample Date	Rec'd Date	ICP Anal.	AA Anal.	Hg Anal.
MJE709	12/13/89	12/15/89	12/21/89	01/11/90	12/19/89
MJE710	12/13/89	12/15/89	12/21/89	01/11/90	12/19/89
MJE711	12/13/89	12/15/89	12/21/89	01/11/90	12/19/89
MJE712	12/13/89	12/15/89	12/21/89	01/11/90	12/19/89
MJE713	12/13/89	12/15/89	12/21/89	01/11/90	12/19/89
MJE714	12/14/89	12/15/89	12/21/89	01/11/90	12/19/89
MJE715	12/14/89	12/15/89	12/21/89	01/11/90	12/19/89
MJE716	12/13/89	12/15/89	12/21/89	01/11/90	12/19/89
MJE718	12/13/89	12/15/89	12/21/89	01/11/90	12/19/89
MJF238	12/14/89	12/15/89	12/21/89	01/11/90	12/19/89
MJF240	12/14/89	12/15/89	12/21/89	01/11/90	12/19/89

ICP - Inductively Coupled Plasma
AA - Atomic Absorption
Hg - Mercury
Anal. - Analysis Date

All samples met QC holding time criteria.

2) Initial Calibration

All ICP results fell within the control limits of 90 to 110 percent of the true values. Furnace and flame AA results fell within the control limits of 90 to 110 percent of the true values for all analytes. Mercury results fell within the control limits of 80 to 120 percent of the true value.

3) Continuing Calibration

All ICP results fell within the control limits of 90 to 110 percent of the true values. Furnace AA results fell within the control limits of 90 to 110 percent of the true values for all analytes. Mercury results fell within the control limits of 80 to 120 percent of the true value.

4) Instrument Detection Limits

All Instrument Detection Limits (IDLs) for ICP, AA, and mercury analyses were equal to or less than the Contract Required Detection Limits (CRDLs).

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5) Blanks

The following blanks contained elemental contamination above the IDL but below CRDL:

Blank*	Element	Conc. µg/L	IDL µg/L	CRDL µg/L
ICB	Chromium	4.4	4.0	10
CCB-1	Zinc	4.8	3.0	20
CCB-2	Aluminum	23.6	21.0	200
	Beryllium	2.2	2.0	5
	Thallium	1.2	1.0	10
	Zinc	4.2	3.0	20
CCB-3	Aluminum	38.8	21.0	200
	Beryllium	3.0	2.0	5
	Cadmium	3.1	2.0	5
	Chromium	6.6	4.0	10
	Iron	5.6	5.0	100
	Potassium	346.9	296.0	5,000
	Vanadium	4.1	3.0	50
	Zinc	5.9	3.0	20
CCB-4	Aluminum	34.6	21.0	200
	Beryllium	2.8	2.0	5
	Chromium	6.6	4.0	10
	Zinc	5.3	3.0	20
CCB-5	Aluminum	23.6	21.0	200
	Beryllium	2.4	2.0	5
	Zinc	5.0	3.0	20
PB**	Aluminum	24.9	21.0	200
	Zinc	3.6	3.0	20

* ICB = Initial Calibration Blank; CCB = Continuing Calibration Blank; PB = Preparation Blank.
Conc. - Concentration
** Contaminant concentrations were adjusted to aqueous units by the reviewer for comparison to sample concentrations.

Sample results below five times the highest analyte level reported in the blanks were flagged UJ (not detected, estimated quantitation limit).

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6) ICP Interference Check

All parameters for the Interference Check Sample were within the control limits of 80 to 120 percent of the true values.

7) Laboratory Control Sample

The recoveries for all parameters for both ICP and AA analyses were within the control limits required by IFB WA-87K025-027.

8) Duplicate Sample Analysis

The Relative Percent Difference (RPD) values for the duplicate sample analysis were within QC criteria of less than 35 percent for sample values greater than five times the CRDL. For all sample values less than five times the CRDL, the RPD values were within ± two times the CRDL.

9) Spiked Sample Analysis

The matrix spike recovery for the following element was outside QC limits:

Sample	Element	% Recovery	QC Limits
MJE712S	Antimony	18.1	75 - 125

A post digest spike analysis was performed for antimony with a recovery of 113.8 percent.

Positive results for antimony in all samples are flagged as estimated quantities (J). Quantitation limits are flagged as unusable (R).

10) ICP Serial Dilution

The Percent Difference (%D) values for ICP serial dilution analysis were within the QC limits of 10 percent for all parameters.

11) Furnace AA

All furnace AA results met QC criteria.

12) Mercury Analysis

All mercury analyses met QC criteria.

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13) Cyanide Analysis

Cyanide analyses were not requested.

14) Sample Analysis

A CRDL sample was run.

Sample results reported that are below CRDL and above IDL are flagged as estimated quantities (J).

15) Laboratory Contact

No laboratory contact was required.

Data Use

The usefulness of the data is based on the criteria outlined in the "Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses" (R-582-5-5-01); the Data Qualifier Definitions supplied by the Office of Solid Waste and Emergency Response (September 1989); and the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989).

Upon consideration of the above comments, the data is ACCEPTABLE for use except where flagged with data qualifiers which modify the usefulness of individual values.

Additional data packages associated with this project are expected from CLP or EPA laboratories.

Data Qualifiers

U - The material was analyzed for, but was not detected. The associated numerical value is a contractual quantitation limit, adjusted for sample weight/sample volume, extraction volume, percent solids and sample dilution.

J - The analyte was analyzed for and was positively identified, but the associated numerical value may not be consistent with the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.

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UJ - The material was analyzed for, but was not detected. The associated numerical value is an estimated/adjusted quantitation limit. The associated numerical value may not accurately or precisely represent the concentration necessary to detect the analyte in this sample.

A subscript will be appended to the "J" qualifier or the "UJ" qualifier that indicates which of the following quality control criteria were not met:

1. Blank contamination: indicates possible high bias and/or false positives.

2. Calibration range exceeded: indicates possible low bias.

3. Holding times not met: indicates low bias for most analytes.

4. Other QC outside control limits: bias not readily determined.

R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJE709

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE709

Matrix (Soil/Water): SOIL Lab Sample ID: VALI 709

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 78.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS NO.	Analyte	Concentration	C
7429-90-5	Aluminum	17900.00	
7440-36-0	Antimony	4.60	U R
7440-38-2	Arsenic	5.10	
7440-39-3	Barium	126.00	
7440-41-7	Beryllium	1.70	U J
7440-43-9	Cadmium	1.30	U J
7440-70-2	Calcium	4420.00	
7440-47-3	Chromium	23.50	
7440-48-4	Cobalt	18.20	
7440-50-8	Copper	91.50	
7439-89-6	Iron	28500.00	
7439-92-1	Lead	121.00	
7439-95-4	Magnesium	3710.00	
7439-96-5	Manganese	692.00	
7439-97-6	Mercury	0.13	U
7440-02-0	Nickel	18.80	
7440-09-7	Potassium	863.00	J
7482-49-2	Selenium	0.56	U
7440-22-4	Silver	0.69	U
7440-23-5	Sodium	436.00	J
7440-28-0	Thallium	0.28	U
7440-62-2	Vanadium	83.60	
7440-66-6	Zinc	134.00	
---------	Cyanide		

Color Before: BLACK Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments :

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

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MJE710

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE709

Matrix (Soil/Water): SOIL Lab Sample ID: VALI 710

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 77.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS NO.	Analyte	Concentration	C	
7429-90-5	Aluminum	11200.00		
7440-36-0	Antimony	5.40		J J4
7440-38-2	Arsenic	3.10		
7440-39-3	Barium	109.00		
7440-41-7	Beryllium	1.50	U	J,
7440-43-9	Cadmium	1.30	U	J,
7440-70-2	Calcium	5000.00		
7440-47-3	Chromium	31.40		
7440-48-4	Cobalt	18.60		
7440-50-8	Copper	365.00		
7439-89-6	Iron	25700.00		
7439-92-1	Lead	544.00		
7439-95-4	Magnesium	3390.00		
7439-96-5	Manganese	564.00		
7439-97-6	Mercury	0.13	U	
7440-02-0	Nickel	17.10		
7440-09-7	Potassium	837.00		J
7482-49-2	Selenium	0.52	U	
7440-22-4	Silver	0.71	U	
7440-23-5	Sodium	427.00		J
7440-28-0	Thallium	0.26	U	
7440-62-2	Vanadium	69.70		
7440-66-6	Zinc	199.00		
---------	Cyanide			

Color Before: BLACK Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments :

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJE711

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE709

Matrix (Soil/Water): SOIL Lab Sample ID: VALI 711

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 73.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS NO.	Analyte	Concentration	C
7429-90-5	Aluminum	11800.00	
7440-36-0	Antimony	5.40	U R
7440-38-2	Arsenic	3.10	
7440-39-3	Barium	64.30	
7440-41-7	Beryllium	1.40	U J
7440-43-9	Cadmium	0.54	U
7440-70-2	Calcium	4080.00	
7440-47-3	Chromium	18.10	
7440-48-4	Cobalt	8.40	J
7440-50-8	Copper	20.10	
7439-89-6	Iron	17700.00	
7439-92-1	Lead	13.10	
7439-95-4	Magnesium	2360.00	
7439-96-5	Manganese	530.00	
7439-97-6	Mercury	0.14	U
7440-02-0	Nickel	13.30	
7440-09-7	Potassium	435.00	U J
7482-49-2	Selenium	0.60	U
7440-22-4	Silver	0.82	U
7440-23-5	Sodium	524.00	J
7440-28-0	Thallium	0.30	U
7440-62-2	Vanadium	54.10	
7440-66-6	Zinc	70.50	
---------	Cyanide		

Color Before: GREY Clarity Before: Texture: FINE

Color After: COLORLESS Clarity After: Artifacts:

Comments :

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO. 5

MJE712

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE709

Matrix (Soil/Water): SOIL Lab Sample ID: VALI 712

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 47.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS NO.	Analyte	Concentration	C
7429-90-5	Aluminum	15900.00	
7440-36-0	Antimony	6.40	U R
7440-38-2	Arsenic	11.80	
7440-39-3	Barium	146.00	
7440-41-7	Beryllium	1.90	U J
7440-43-9	Cadmium	0.64	U
7440-70-2	Calcium	5780.00	
7440-47-3	Chromium	26.90	
7440-48-4	Cobalt	14.50	J
7440-50-8	Copper	40.00	
7439-89-6	Iron	22900.00	
7439-92-1	Lead	34.10	
7439-95-4	Magnesium	2200.00	
7439-96-5	Manganese	808.00	
7439-97-6	Mercury	0.21	U
7440-02-0	Nickel	14.30	
7440-09-7	Potassium	769.00	J
7482-49-2	Selenium	0.77	U
7440-22-4	Silver	0.97	U
7440-23-5	Sodium	396.00	J
7440-28-0	Thallium	0.38	U
7440-62-2	Vanadium	56.40	
7440-66-6	Zinc	155.00	
---------	Cyanide		

Color Before: BLACK Clarity Before: Texture: FINE

Color After: COLORLESS Clarity After: Artifacts:

Comments :

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

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MJE713

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE709

Matrix (Soil/Water): SOIL Lab Sample ID: VALI 713

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 43.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS NO.	Analyte	Concentration	C
7429-90-5	Aluminum	25700.00	
7440-36-0	Antimony	8.40	U R
7440-38-2	Arsenic	4.10	J
7440-39-3	Barium	191.00	
7440-41-7	Beryllium	3.30	U J
7440-43-9	Cadmium	1.60	U J
7440-70-2	Calcium	6610.00	
7440-47-3	Chromium	42.00	
7440-48-4	Cobalt	31.30	
7440-50-8	Copper	38.30	
7439-89-6	Iron	43200.00	
7439-92-1	Lead	19.60	
7439-95-4	Magnesium	3650.00	
7439-96-5	Manganese	1820.00	
7439-97-6	Mercury	0.23	U
7440-02-0	Nickel	21.10	
7440-09-7	Potassium	1490.00	J
7482-49-2	Selenium	0.92	U
7440-22-4	Silver	1.30	U
7440-23-5	Sodium	368.00	J
7440-28-0	Thallium	0.46	U
7440-62-2	Vanadium	122.00	
7440-66-6	Zinc	1190.00	
---------	Cyanide		

Color Before: BLACK Clarity Before: Texture: FINE

Color After: COLORLESS Clarity After: Artifacts:

Comments :

02-14-90

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

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MJE714

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE709

Matrix (Soil/Water): SOIL Lab Sample ID: VALI 714

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 54.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS NO.	Analyte	Concentration	C
7429-90-5	Aluminum	15700.00	
7440-36-0	Antimony	6.10	U R
7440-38-2	Arsenic	4.90	
7440-39-3	Barium	138.00	
7440-41-7	Beryllium	2.00	U J
7440-43-9	Cadmium	1.80	U J
7440-70-2	Calcium	3370.00	
7440-47-3	Chromium	27.20	
7440-48-4	Cobalt	18.30	
7440-50-8	Copper	26.60	
7439-89-6	Iron	26500.00	
7439-92-1	Lead	29.10	
7439-95-4	Magnesium	2780.00	
7439-96-5	Manganese	639.00	
7439-97-6	Mercury	0.17	U
7440-02-0	Nickel	22.40	
7440-09-7	Potassium	896.00	J
7482-49-2	Selenium	0.73	U
7440-22-4	Silver	0.92	U
7440-23-5	Sodium	301.00	J
7440-28-0	Thallium	0.37	U
7440-62-2	Vanadium	68.90	
7440-66-6	Zinc	153.00	
---------	Cyanide		

Color Before: BLACK Clarity Before: Texture: FINE

Color After: COLORLESS Clarity After: Artifacts:

Comments :

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJE715

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE709

Matrix (Soil/Water): SOIL Lab Sample ID: VALI 715

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 61.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS NO.	Analyte	Concentration	C
7429-90-5	Aluminum	20800.00	
7440-36-0	Antimony	6.50	U R
7440-38-2	Arsenic	9.40	
7440-39-3	Barium	209.00	
7440-41-7	Beryllium	3.60	U J
7440-43-9	Cadmium	0.65	U
7440-70-2	Calcium	3500.00	
7440-47-3	Chromium	59.40	
7440-48-4	Cobalt	36.50	
7440-50-8	Copper	23.20	
7439-89-6	Iron	57300.00	
7439-92-1	Lead	13.20	
7439-95-4	Magnesium	3050.00	
7439-96-5	Manganese	1320.00	
7439-97-6	Mercury	0.16	
7440-02-0	Nickel	40.80	
7440-09-7	Potassium	776.00	J
7482-49-2	Selenium	0.65	U
7440-22-4	Silver	0.98	U
7440-23-5	Sodium	329.00	J
7440-28-0	Thallium	0.33	U
7440-62-2	Vanadium	133.00	
7440-66-6	Zinc	158.00	
---------	Cyanide		

Color Before: BLACK Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments :

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJE716

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE709

Matrix (Soil/Water): SOIL Lab Sample ID: VALI 716

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 62.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS NO.	Analyte	Concentration	C
7429-90-5	Aluminum	9730.00	
7440-36-0	Antimony	5.40	U R
7440-38-2	Arsenic	3.40	
7440-39-3	Barium	89.20	
7440-41-7	Beryllium	1.50	U J
7440-43-9	Cadmium	0.62	U J
7440-70-2	Calcium	5160.00	
7440-47-3	Chromium	15.40	
7440-48-4	Cobalt	13.40	J
7440-50-8	Copper	18.20	
7439-89-6	Iron	18600.00	
7439-92-1	Lead	40.90	
7439-95-4	Magnesium	3090.00	
7439-96-5	Manganese	425.00	
7439-97-6	Mercury	0.15	U
7440-02-0	Nickel	14.70	
7440-09-7	Potassium	895.00	J
7482-49-2	Selenium	0.71	U
7440-22-4	Silver	0.81	U
7440-23-5	Sodium	441.00	J
7440-28-0	Thallium	0.35	U
7440-62-2	Vanadium	48.00	
7440-66-6	Zinc	66.10	
---------	Cyanide		

Color Before: BLACK Clarity Before: Texture: FINE

Color After: COLORLESS Clarity After: Artifacts:

Comments :

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJE718

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE709

Matrix (Soil/Water): SOIL Lab Sample ID: VALI 718

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 75.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS NO.	Analyte	Concentration	C
7429-90-5	Aluminum	10900.00	
7440-36-0	Antimony	5.30	U R
7440-38-2	Arsenic	7.50	
7440-39-3	Barium	81.60	
7440-41-7	Beryllium	1.40	U J,
7440-43-9	Cadmium	1.00	U J,
7440-70-2	Calcium	2970.00	
7440-47-3	Chromium	18.30	
7440-48-4	Cobalt	11.40	J
7440-50-8	Copper	23.20	
7439-89-6	Iron	17400.00	
7439-92-1	Lead	15.00	
7439-95-4	Magnesium	2100.00	
7439-96-5	Manganese	1080.00	
7439-97-6	Mercury	0.13	U
7440-02-0	Nickel	13.50	
7440-09-7	Potassium	664.00	J
7482-49-2	Selenium	0.58	U
7440-22-4	Silver	0.79	U
7440-23-5	Sodium	294.00	J
7440-28-0	Thallium	0.29	U
7440-62-2	Vanadium	38.70	
7440-66-6	Zinc	267.00	
---	Cyanide		

Color Before: BLACK Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments :

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJF238

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE709

Matrix (Soil/Water): SOIL Lab Sample ID: VALI 238

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 44.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS NO.	Analyte	Concentration	C
7429-90-5	Aluminum	19900.00	
7440-36-0	Antimony	7.00	U R
7440-38-2	Arsenic	5.10	
7440-39-3	Barium	192.00	
7440-41-7	Beryllium	2.80	U J,
7440-43-9	Cadmium	1.50	U J,
7440-70-2	Calcium	7090.00	
7440-47-3	Chromium	30.10	
7440-48-4	Cobalt	22.80	
7440-50-8	Copper	31.50	
7439-89-6	Iron	40200.00	
7439-92-1	Lead	11.80	
7439-95-4	Magnesium	3660.00	
7439-96-5	Manganese	1030.00	
7439-97-6	Mercury	0.22	U
7440-02-0	Nickel	20.60	
7440-09-7	Potassium	765.00	J
7482-49-2	Selenium	0.77	U
7440-22-4	Silver	1.00	U
7440-23-5	Sodium	629.00	J
7440-28-0	Thallium	0.38	U
7440-62-2	Vanadium	114.00	
7440-66-6	Zinc	290.00	
---------	Cyanide		

Color Before: BLACK Clarity Before: Texture: FINE

Color After: COLORLESS Clarity After: Artifacts:

Comments :

02-14-90

U.S. EPA - CLP

1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJF240

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE709

Matrix (Soil/Water): SOIL Lab Sample ID: VALI 240

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 75.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS NO.	Analyte	Concentration	C
7429-90-5	Aluminum	17600.00	
7440-36-0	Antimony	4.80	U R
7440-38-2	Arsenic	4.80	
7440-39-3	Barium	299.00	
7440-41-7	Beryllium	1.70	U J
7440-43-9	Cadmium	0.48	U
7440-70-2	Calcium	3430.00	
7440-47-3	Chromium	18.80	
7440-48-4	Cobalt	19.40	
7440-50-8	Copper	17.60	
7439-89-6	Iron	27400.00	
7439-92-1	Lead	29.30	
7439-95-4	Magnesium	3770.00	
7439-96-5	Manganese	1310.00	
7439-97-6	Mercury	0.13	U
7440-02-0	Nickel	18.40	
7440-09-7	Potassium	2270.00	
7482-49-2	Selenium	0.53	U
7440-22-4	Silver	0.72	U
7440-23-5	Sodium	308.00	J
7440-28-0	Thallium	0.27	U
7440-62-2	Vanadium	56.90	
7440-66-6	Zinc	125.00	
---------	Cyanide		

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments :

ecology and environment, inc.
101 YESLER WAY, SEATTLE, WASHINGTON, 98104, TEL. 206/624-9537
International Specialists in the Environment

MEMORANDUM

DATE: February 20, 1990

FOR: Rhonda Wreggelsworth, RSCC, USEPA, Region 10

THRU: Jeffrey Villnow, FITOM, E & E, Seattle

FROM: Lila Accra, Chemist, E & E, Seattle
Tracy Yerian, Senior Chemist, E & E, Seattle

SUBJ: QA of Case 13324 (Inorganics)
Northwest Pipe and Casing

REF: F10-8906-002
PAN FOR1210XC

CC: John Osborn, RPO, USEPA, Region 10
Bruce Woods, ESD, USEPA, Region 10
Gerald Muth, DPO, USEPA, Region 10 Laboratory, Manchester
Kent Kitchingman, DPO, USEPA, Region 9
Deborah Flood, HWD-SM, USEPA, Region 10
Gerald Lee, FIT-PD, E & E, Seattle
Mark Ader, FIT-PM, E & E, Seattle

The Quality Assurance (QA) review of 11 samples, Case 13324, collected from Northwest Pipe and Casing, has been completed. Eleven samples were analyzed at low level for Target Compound List (TCL) Inorganics by Vegas Analytical Laboratories, Inc. of Las Vegas, Nevada. The samples were numbered:

MJE709	MJE713	MJE718
MJE710	MJE714	MJF238
MJE711	MJE715	MJF240
MJE712	MJE716	

Sample MJE712 underwent matrix spike (MS) analysis and duplicate analysis.

Data Qualifications

The following comments refer to the laboratory performance in meeting the Quality Control (QC) specifications outlined in IFB WA-87K025-027.

1) Timeliness

Sample Number	Sample Date	Rec'd Date	ICP Anal.	AA Anal.	Hg Anal.
MJE709	12/13/89	12/15/89	12/21/89	01/11/90	12/19/89
MJE710	12/13/89	12/15/89	12/21/89	01/11/90	12/19/89
MJE711	12/13/89	12/15/89	12/21/89	01/11/90	12/19/89
MJE712	12/13/89	12/15/89	12/21/89	01/11/90	12/19/89
MJE713	12/13/89	12/15/89	12/21/89	01/11/90	12/19/89
MJE714	12/14/89	12/15/89	12/21/89	01/11/90	12/19/89
MJE715	12/14/89	12/15/89	12/21/89	01/11/90	12/19/89
MJE716	12/13/89	12/15/89	12/21/89	01/11/90	12/19/89
MJE718	12/13/89	12/15/89	12/21/89	01/11/90	12/19/89
MJF238	12/14/89	12/15/89	12/21/89	01/11/90	12/19/89
MJF240	12/14/89	12/15/89	12/21/89	01/11/90	12/19/89

ICP - Inductively Coupled Plasma
AA - Atomic Absorption
Hg - Mercury
Anal. - Analysis Date

All samples met QC holding time criteria.

2) Initial Calibration

All ICP results fell within the control limits of 90 to 110 percent of the true values. Furnace and flame AA results fell within the control limits of 90 to 110 percent of the true values for all analytes. Mercury results fell within the control limits of 80 to 120 percent of the true value.

3) Continuing Calibration

All ICP results fell within the control limits of 90 to 110 percent of the true values. Furnace AA results fell within the control limits of 90 to 110 percent of the true values for all analytes. Mercury results fell within the control limits of 80 to 120 percent of the true value.

4) Instrument Detection Limits

All Instrument Detection Limits (IDLs) for ICP, AA, and mercury analyses were equal to or less than the Contract Required Detection Limits (CRDLs).

5) Blanks

The following blanks contained elemental contamination above the IDL but below CRDL:

Blank*	Element	Conc. µg/L	IDL µg/L	CRDL µg/L
ICB	Chromium	4.4	4.0	10
CCB-1	Zinc	4.8	3.0	20
CCB-2	Aluminum	23.6	21.0	200
	Beryllium	2.2	2.0	5
	Thallium	1.2	1.0	10
	Zinc	4.2	3.0	20
CCB-3	Aluminum	38.8	21.0	200
	Beryllium	3.0	2.0	5
	Cadmium	3.1	2.0	5
	Chromium	6.6	4.0	10
	Iron	5.6	5.0	100
	Potassium	346.9	296.0	5,000
	Vanadium	4.1	3.0	50
	Zinc	5.9	3.0	20
CCB-4	Aluminum	34.6	21.0	200
	Beryllium	2.8	2.0	5
	Chromium	6.6	4.0	10
	Zinc	5.3	3.0	20
CCB-5	Aluminum	23.6	21.0	200
	Beryllium	2.4	2.0	5
	Zinc	5.0	3.0	20
PB**	Aluminum	24.9	21.0	200
	Zinc	3.6	3.0	20

* ICB = Initial Calibration Blank; CCB = Continuing Calibration Blank; PB = Preparation Blank.
Conc. - Concentration
** Contaminant concentrations were adjusted to aqueous units by the reviewer for comparison to sample concentrations.

Sample results below five times the highest analyte level reported in the blanks were flagged UJ (not detected, estimated quantitation limit).

6) ICP Interference Check

All parameters for the Interference Check Sample were within the control limits of 80 to 120 percent of the true values.

7) Laboratory Control Sample

The recoveries for all parameters for both ICP and AA analyses were within the control limits required by IFB WA-87K025-027.

8) Duplicate Sample Analysis

The Relative Percent Difference (RPD) values for the duplicate sample analysis were within QC criteria of less than 35 percent for sample values greater than five times the CRDL. For all sample values less than five times the CRDL, the RPD values were within ± two times the CRDL.

9) Spiked Sample Analysis

The matrix spike recovery for the following element was outside QC limits:

Sample	Element	% Recovery	QC Limits
MJE712S	Antimony	18.1	75 - 125

A post digest spike analysis was performed for antimony with a recovery of 113.8 percent.

Positive results for antimony in all samples are flagged as estimated quantities (J). Quantitation limits are flagged as unusable (R).

10) ICP Serial Dilution

The Percent Difference (%D) values for ICP serial dilution analysis were within the QC limits of 10 percent for all parameters.

11) Furnace AA

All furnace AA results met QC criteria.

12) Mercury Analysis

All mercury analyses met QC criteria.

13) Cyanide Analysis

Cyanide analyses were not requested.

14) Sample Analysis

A CRDL sample was run.

Sample results reported that are below CRDL and above IDL are flagged as estimated quantities (J).

15) Laboratory Contact

No laboratory contact was required.

Data Use

The usefulness of the data is based on the criteria outlined in the "Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses" (R-582-5-5-01); the Data Qualifier Definitions supplied by the Office of Solid Waste and Emergency Response (September 1989); and the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989).

Upon consideration of the above comments, the data is ACCEPTABLE for use except where flagged with data qualifiers which modify the usefulness of individual values.

Additional data packages associated with this project are expected from CLP or EPA laboratories.

Data Qualifiers

U - The material was analyzed for, but was not detected. The associated numerical value is a contractual quantitation limit, adjusted for sample weight/sample volume, extraction volume, percent solids and sample dilution.

J - The analyte was analyzed for and was positively identified, but the associated numerical value may not be consistent with the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.

UJ - The material was analyzed for, but was not detected. The associated numerical value is an estimated/adjusted quantitation limit. The associated numerical value may not accurately or precisely represent the concentration necessary to detect the analyte in this sample.

A subscript will be appended to the "J" qualifier or the "UJ" qualifier that indicates which of the following quality control criteria were not met:

1. Blank contamination: indicates possible high bias and/or false positives.

2. Calibration range exceeded: indicates possible low bias.

3. Holding times not met: indicates low bias for most analytes.

4. Other QC outside control limits: bias not readily determined.

R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.

INO/13324-A

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJE709

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE709

Matrix (Soil/Water): SOIL Lab Sample ID: VALI 709

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 78.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS NO.	Analyte	Concentration Sed CKGD	C
7429-90-5	Aluminum	17900.00	
7440-36-0	Antimony	4.60	U K
7440-38-2	Arsenic	5.10	
7440-39-3	Barium	126.00	
7440-41-7	Beryllium	1.70	U J
7440-43-9	Cadmium	1.30	U J
7440-70-2	Calcium	4420.00	
7440-47-3	Chromium	23.50	
7440-48-4	Cobalt	18.20	
7440-50-8	Copper	91.50	
7439-89-6	Iron	28500.00	
7439-92-1	Lead	121.00	
7439-95-4	Magnesium	3710.00	
7439-96-5	Manganese	692.00	
7439-97-6	Mercury	0.13	U
7440-02-0	Nickel	18.80	
7440-09-7	Potassium	863.00	J
7482-49-2	Selenium	0.56	U
7440-22-4	Silver	0.69	U
7440-23-5	Sodium	436.00	J
7440-28-0	Thallium	0.28	U
7440-62-2	Vanadium	83.60	
7440-66-6	Zinc	134.00	
---------	Cyanide		

Color Before: BLACK Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments :

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

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EPA SAMPLE NO.

MJE710

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE709

Matrix (Soil/Water): SOIL Lab Sample ID: VALI 710

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 77.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS NO.	Analyte	Concentration	C
7429-90-5	Aluminum	11200.00	
7440-36-0	Antimony	5.40	J J4
7440-38-2	Arsenic	3.10	
7440-39-3	Barium	109.00	
7440-41-7	Beryllium	1.50	U J,
7440-43-9	Cadmium	1.30	U J,
7440-70-2	Calcium	5000.00	
7440-47-3	Chromium	31.40	
7440-48-4	Cobalt	18.60	
7440-50-8	Copper	365.00	
7439-89-6	Iron	25700.00	
7439-92-1	Lead	544.00	
7439-95-4	Magnesium	3390.00	
7439-96-5	Manganese	564.00	
7439-97-6	Mercury	0.13	U
7440-02-0	Nickel	17.10	
7440-09-7	Potassium	837.00	J
7482-49-2	Selenium	0.52	U
7440-22-4	Silver	0.71	U
7440-23-5	Sodium	427.00	J
7440-28-0	Thallium	0.26	U
7440-62-2	Vanadium	69.70	
7440-66-6	Zinc	199.00	
---------	Cyanide		

Color Before: BLACK Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments :

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJE711

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE709

Matrix (Soil/Water): SOIL Lab Sample ID: VALI 711

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 73.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS NO.	Analyte	Concentration	C
7429-90-5	Aluminum	11800.00	
7440-36-0	Antimony	5.40	U
7440-38-2	Arsenic	3.10	
7440-39-3	Barium	64.30	
7440-41-7	Beryllium	1.40	
7440-43-9	Cadmium	0.54	U
7440-70-2	Calcium	4080.00	
7440-47-3	Chromium	18.10	
7440-48-4	Cobalt	8.40	
7440-50-8	Copper	20.10	
7439-89-6	Iron	17700.00	
7439-92-1	Lead	13.10	
7439-95-4	Magnesium	2360.00	
7439-96-5	Manganese	530.00	
7439-97-6	Mercury	0.14	U
7440-02-0	Nickel	13.30	
7440-09-7	Potassium	435.00	
7482-49-2	Selenium	0.60	U
7440-22-4	Silver	0.82	U
7440-23-5	Sodium	524.00	
7440-28-0	Thallium	0.30	U
7440-62-2	Vanadium	54.10	
7440-66-6	Zinc	70.50	
---	Cyanide		

Color Before: GREY Clarity Before: Texture: FINE

Color After: COLORLESS Clarity After: Artifacts:

Comments :

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO. 5

MJE712

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE709

Matrix (Soil/Water): SOIL Lab Sample ID: VALI 712

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 47.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS NO.	Analyte	Concentration NWPL 2.5	C	
7429-90-5	Aluminum	15900.00		
7440-36-0	Antimony	6.40	U	R
7440-38-2	Arsenic	11.80		
7440-39-3	Barium	146.00		
7440-41-7	Beryllium	1.90	U	J,
7440-43-9	Cadmium	0.64	U	
7440-70-2	Calcium	5780.00		
7440-47-3	Chromium	26.90		
7440-48-4	Cobalt	14.50		J
7440-50-8	Copper	40.00		
7439-89-6	Iron	22900.00		
7439-92-1	Lead	34.10		
7439-95-4	Magnesium	2200.00		
7439-96-5	Manganese	808.00		
7439-97-6	Mercury	0.21	U	
7440-02-0	Nickel	14.30		
7440-09-7	Potassium	769.00		J
7482-49-2	Selenium	0.77	U	
7440-22-4	Silver	0.97	U	
7440-23-5	Sodium	396.00		J
7440-28-0	Thallium	0.38	U	
7440-62-2	Vanadium	56.40		
7440-66-6	Zinc	155.00		
---------	Cyanide			

Color Before: BLACK Clarity Before: Texture: FINE

Color After: COLORLESS Clarity After: Artifacts:

Comments :

07-14-9

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

6

MJE713

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE709

Matrix (Soil/Water): SOIL Lab Sample ID: VALI 713

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 43.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS NO.	Analyte	Concentration NWPC 23	C
7429-90-5	Aluminum	25700.00	
7440-36-0	Antimony	8.40	U R
7440-38-2	Arsenic	4.10	J
7440-39-3	Barium	191.00	
7440-41-7	Beryllium	3.30	U J
7440-43-9	Cadmium	1.60	U J
7440-70-2	Calcium	6610.00	
7440-47-3	Chromium	42.00	
7440-48-4	Cobalt	31.30	
7440-50-8	Copper	38.30	
7439-89-6	Iron	43200.00	
7439-92-1	Lead	19.60	
7439-95-4	Magnesium	3650.00	
7439-96-5	Manganese	1820.00	
7439-97-6	Mercury	0.23	U
7440-02-0	Nickel	21.10	
7440-09-7	Potassium	1490.00	J
7482-49-2	Selenium	0.92	U
7440-22-4	Silver	1.30	U
7440-23-5	Sodium	368.00	J
7440-28-0	Thallium	0.46	U
7440-62-2	Vanadium	122.00	
7440-66-6	Zinc	1190.00	
---------	Cyanide		

Color Before: BLACK Clarity Before: Texture: FINE

Color After: COLORLESS Clarity After: Artifacts:

Comments :

02-14-90

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

7

EPA SAMPLE NO.

MJE714

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE709

Matrix (Soil/Water): SOIL Lab Sample ID: VALI 714

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 54.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS NO.	Analyte	Concentration NWPL 31	C
7429-90-5	Aluminum	15700.00	
7440-36-0	Antimony	6.10	U R
7440-38-2	Arsenic	4.90	
7440-39-3	Barium	138.00	
7440-41-7	Beryllium	2.00	U J,
7440-43-9	Cadmium	1.80	U J,
7440-70-2	Calcium	3370.00	
7440-47-3	Chromium	27.20	
7440-48-4	Cobalt	18.30	
7440-50-8	Copper	26.60	
7439-89-6	Iron	26500.00	
7439-92-1	Lead	29.10	
7439-95-4	Magnesium	2780.00	
7439-96-5	Manganese	639.00	
7439-97-6	Mercury	0.17	U
7440-02-0	Nickel	22.40	
7440-09-7	Potassium	896.00	J
7482-49-2	Selenium	0.73	U
7440-22-4	Silver	0.92	U
7440-23-5	Sodium	301.00	J
7440-28-0	Thallium	0.37	U
7440-62-2	Vanadium	68.90	
7440-66-6	Zinc	153.00	
---------	Cyanide		

Color Before: BLACK Clarity Before: Texture: FINE

Color After: COLORLESS Clarity After: Artifacts:

Comments :

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJE715

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE709

Matrix (Soil/Water): SOIL Lab Sample ID: VALI 715

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 61.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS NO.	Analyte	Concentration Hgpc 33	C
7429-90-5	Aluminum	20800.00	
7440-36-0	Antimony	6.50	U R
7440-38-2	Arsenic	9.40	
7440-39-3	Barium	209.00	
7440-41-7	Beryllium	3.60	UJ,
7440-43-9	Cadmium	0.65	U
7440-70-2	Calcium	3500.00	
7440-47-3	Chromium	59.40	
7440-48-4	Cobalt	36.50	
7440-50-8	Copper	23.20	
7439-89-6	Iron	57300.00	
7439-92-1	Lead	13.20	
7439-95-4	Magnesium	3050.00	
7439-96-5	Manganese	1320.00	
7439-97-6	Mercury	0.16	
7440-02-0	Nickel	40.80	
7440-09-7	Potassium	776.00	J
7482-49-2	Selenium	0.65	U
7440-22-4	Silver	0.98	U
7440-23-5	Sodium	329.00	J
7440-28-0	Thallium	0.33	U
7440-62-2	Vanadium	133.00	
7440-66-6	Zinc	158.00	
---------	Cyanide		

Color Before: BLACK Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts:

Comments :

U.S. EPA - CLP

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJE716

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE709

Matrix (Soil/Water): SOIL Lab Sample ID: VALI 716

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 62.1

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS NO.	Analyte	Concentration HWRC 27	C
7429-90-5	Aluminum	9730.00	
7440-36-0	Antimony	5.40	U R
7440-38-2	Arsenic	3.40	
7440-39-3	Barium	89.20	
7440-41-7	Beryllium	1.50	U J
7440-43-9	Cadmium	0.62	U J
7440-70-2	Calcium	5160.00	
7440-47-3	Chromium	15.40	
7440-48-4	Cobalt	13.40	J
7440-50-8	Copper	18.20	
7439-89-6	Iron	18600.00	
7439-92-1	Lead	40.90	
7439-95-4	Magnesium	3090.00	
7439-96-5	Manganese	425.00	
7439-97-6	Mercury	0.15	U
7440-02-0	Nickel	14.70	
7440-09-7	Potassium	895.00	J
7482-49-2	Selenium	0.71	U
7440-22-4	Silver	0.81	U
7440-23-5	Sodium	441.00	J
7440-28-0	Thallium	0.35	U
7440-62-2	Vanadium	48.00	
7440-66-6	Zinc	66.10	
---------	Cyanide		

Color Before: BLACK Clarity Before: Texture: FINE

Color After: COLORLESS Clarity After: Artifacts:

Comments :

02-14-91

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJE718

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE709

Matrix (Soil/Water): SOIL Lab Sample ID: VALI 718

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 75.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS NO.	Analyte	Concentration NWBC 29	C
7429-90-5	Aluminum	10900.00	
7440-36-0	Antimony	5.30	U R
7440-38-2	Arsenic	7.50	
7440-39-3	Barium	81.60	
7440-41-7	Beryllium	1.40	U J,
7440-43-9	Cadmium	1.00	U J,
7440-70-2	Calcium	2970.00	
7440-47-3	Chromium	18.30	
7440-48-4	Cobalt	11.40	J
7440-50-8	Copper	23.20	
7439-89-6	Iron	17400.00	
7439-92-1	Lead	15.00	
7439-95-4	Magnesium	2100.00	
7439-96-5	Manganese	1080.00	
7439-97-6	Mercury	0.13	U
7440-02-0	Nickel	13.50	
7440-09-7	Potassium	664.00	J
7482-49-2	Selenium	0.58	U
7440-22-4	Silver	0.79	U
7440-23-5	Sodium	294.00	J
7440-28-0	Thallium	0.29	U
7440-62-2	Vanadium	38.70	
7440-66-6	Zinc	267.00	
---------	Cyanide		

Color Before: BLACK Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts: 14-90

Comments :

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJF238

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE709

Matrix (Soil/Water): SOIL Lab Sample ID: VALI 238

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 44.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS NO.	Analyte	Concentration NWPC 41	C
7429-90-5	Aluminum	19900.00	
7440-36-0	Antimony	7.00	U R
7440-38-2	Arsenic	5.10	
7440-39-3	Barium	192.00	
7440-41-7	Beryllium	2.80	U J,
7440-43-9	Cadmium	1.50	U J,
7440-70-2	Calcium	7090.00	
7440-47-3	Chromium	30.10	
7440-48-4	Cobalt	22.80	
7440-50-8	Copper	31.50	
7439-89-6	Iron	40200.00	
7439-92-1	Lead	11.80	
7439-95-4	Magnesium	3660.00	
7439-96-5	Manganese	1030.00	
7439-97-6	Mercury	0.22	U
7440-02-0	Nickel	20.60	
7440-09-7	Potassium	765.00	J
7482-49-2	Selenium	0.77	U
7440-22-4	Silver	1.00	U
7440-23-5	Sodium	629.00	J
7440-28-0	Thallium	0.38	U
7440-62-2	Vanadium	114.00	
7440-66-6	Zinc	290.00	
---------	Cyanide		

Color Before: BLACK Clarity Before: Texture: FINE

Color After: COLORLESS Clarity After: Artifacts:

Comments :

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJF240

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE709

Matrix (Soil/Water): SOIL Lab Sample ID: VALI 240

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 75.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS NO.	Analyte	Concentration NWPC 50	C
7429-90-5	Aluminum	17600.00	
7440-36-0	Antimony	4.80	U R
7440-38-2	Arsenic	4.80	
7440-39-3	Barium	299.00	
7440-41-7	Beryllium	1.70	U J,
7440-43-9	Cadmium	0.48	U
7440-70-2	Calcium	3430.00	
7440-47-3	Chromium	18.80	
7440-48-4	Cobalt	19.40	
7440-50-8	Copper	17.60	
7439-89-6	Iron	27400.00	
7439-92-1	Lead	29.30	
7439-95-4	Magnesium	3770.00	
7439-96-5	Manganese	1310.00	
7439-97-6	Mercury	0.13	U
7440-02-0	Nickel	18.40	
7440-09-7	Potassium	2270.00	
7482-49-2	Selenium	0.53	U
7440-22-4	Silver	0.72	U
7440-23-5	Sodium	308.00	J
7440-28-0	Thallium	0.27	U
7440-62-2	Vanadium	56.90	
7440-66-6	Zinc	125.00	
---------	Cyanide		

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: COLORLESS Clarity After: Artifacts: [illegible] 5-2-14-90

Comments :

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International Specialists in the Environment

MEMORANDUM

DATE: March 30, 1990

FOR: Rhonda Wreggelsworth, RSCC, USEPA, Region 10

THRU: Jeffrey Villnov, FITOM, E & E, Seattle

FROM: Mark Woodke, Chemist, E & E, Seattle
for Tracy Yerian, Senior Chemist, E & E, Seattle

SUBJ: QA of Case 13324 (Organics)
Northwest Pipe and Casing

REF: F10-8906-002
PAN F0R0210XC

CC: John Osborn, RPO, USEPA, Region 10
Bruce Woods, ESD, USEPA, Region 10
Gerald Muth, DPO, USEPA, Region 10 Laboratory, Manchester
Kent Kitchingman, DPO, USEPA, Region 9
Deborah Flood, HWD-SM, USEPA, Region 10
Gerald Lee, FIT-PD, E & E, Seattle
Mark Ader, FIT-PM, E & E, Seattle

The Quality Assurance (QA) review of 12 samples, Case 13324, collected from Northwest Pipe and Casing, has been completed. Twelve soil samples were analyzed at low level for Target Compound List (TCL) Organics by Chemwest Analytical Laboratory of Sacramento, California. The samples were numbered:

JE340	JE344	JE348
JE341	JE345	JE349
JE342	JE346	JE350
JE343	JE347	JE352

Sample JE340 underwent matrix spike (MS) and matrix spike duplicate (MSD) analysis.

Data Qualifications

The following comments refer to the laboratory performance in meeting the Quality Control (QC) specifications outlined in IFB WA-87K236-238, following Laboratory Data Validation Functional Guidelines for Evaluating Organics Analysis (February 1, 1988).

1) Timeliness

Sample Number	Sample Date	Rec'd Date	VOC Anal.	BNA Extr.	BNA Anal.	Pest/PCB Extr.	Pest/PCB Anal.
JE340	12/12/89	12/13/89	12/21/89	12/21/89	01/08/90	12/21/89	01/20/90
JE341	12/12/89	12/13/89	12/21/89	12/21/89	01/09/90	12/21/89	01/20/90
JE342	12/12/89	12/13/89	12/21/89	12/21/89	01/09/90	12/21/89	01/20/90
JE343	12/12/89	12/13/89	12/21/89	12/21/89	01/09/90	12/21/89	01/20/90
JE344	12/12/89	12/13/89	12/21/89	12/21/89	01/09/90	12/21/89	01/20/90
JE345	12/12/89	12/13/89	12/21/89	12/21/89	01/08/90	12/21/89	01/20/90
JE346	12/12/89	12/13/89	12/21/89	12/21/89	01/30/90	12/21/89	01/20/90
JE347	12/12/89	12/13/89	12/21/89	12/21/89	01/30/90	12/21/89	01/20/90
JE348	12/12/89	12/13/89	12/21/89	12/21/89	01/30/90	12/21/89	01/20/90
JE349	12/12/89	12/13/89	12/21/89	12/21/89	01/30/90	12/21/89	01/20/90
JE350	12/12/89	12/13/89	12/21/89	12/21/89	01/30/90	12/21/89	01/20/90
JE352	12/12/89	12/13/89	12/21/89	12/21/89	01/30/90	12/21/89	01/20/90

VOC - Volatile Organic Compounds
BNA - Base, Neutral, and Acid Semivolatile Compounds
Pest/PCB - Pesticide/Polychlorinated Biphenyl Compounds
Anal. - Analysis Date
Extr. - Extraction Date

All samples met holding time criteria for volatiles. All semivolatiles and pesticide/polychlorinated biphenyls exceeded the extraction holding time of 7 days. Samples JE346, JE347, JE348, JE349, JE350, and JE352 also exceeded the semivolatile analysis time of 40 days.

All semivolatile and pesticide/polychlorinated biphenyl results were flagged "J_3" (estimated quantity) or "UJ_3" (not detected, estimated quantitation limit) as appropriate.

2) Instrument Tuning

All tuning check compound mass abundances and ratios were within contract-required limits for volatile and semivolatile analysis.

3) Initial Calibration

All System Performance Check Compounds (SPCCs) were within contract-required limits for the initial calibration with average Relative Response Factors (RRFs) above 0.05 for volatiles and semivolatiles. All Calibration Check Compounds (CCCs) were within contract-required limits for the initial calibration with Percent Relative Standard Deviations (RSDs) below 30 percent.

All non-SPCCs had average RRFs of greater than or equal to 0.05 in the initial volatile or semivolatile calibration.

All non-CCCs had percent RSDs less than or equal to 30 percent for the initial volatile or semivolatile calibration.

4) Continuing Calibrations

All SPCCs were at or above the contract-required Relative Response Factor (RRF(50)) criteria of 0.05 for volatiles and semivolatiles. All CCCs were at or below the contract-required Percent Difference (%D) limits of 25 percent for the volatile and semivolatile continuing calibrations.

All non-SPCCs had RRF(50)s of greater than or equal to 0.05 for continuing volatile and semivolatile calibrations.

All non-CCCs that were detected in the sample had percent difference (%D) values for the continuing calibration of less than or equal to 25 percent.

5) Blanks

Frequency criteria were met for laboratory blank analysis.

The following compounds were detected in laboratory blanks at levels above Instrument Detection Limits (IDL), but below Contract Required Quantitation Limits (CRQL) for TCL compounds:

Blank ID	Fraction	Compound	Conc. (µg/kg)	CRQL (µg/kg)	Associated Samples
VBLK1	VOC	Methylene Chloride	1	5	All
		Acetone	5	10	
SBLK1	BNA	Benzoic Acid	130	1,600	All
		Di-n-butylphthalate	310	330	
		bis(2-Ethylhexyl)phthalate	34	330	

Conc. - Concentration

Reported levels of the above compounds in the samples were flagged "UJ_1" (estimated quantitation limit) if the concentrations were below five times the concentrations found in the appropriate blank (10 times for common solvents).

The following Tentatively Identified Compounds (TICs) were identified in the laboratory blanks:

Blank ID	Fraction	Compound	RT (min.)	Est. Conc. (µg/kg)	Associated Samples
SBLK1	BNA	Unknown	5.13	1,100	All
		2,3-Dimethyl Heptane	5.48	220	
		Unknown	7.20	160	
		Unknown	8.27	180	
		Unknown	9.94	28,000	

RT - Retention Time
Est. Conc. - Estimated Concentration
min. - minutes

Reported levels of these compounds found in the samples were flagged "UJ_1" (estimated quantitation limit) if the reported concentration was less than 10 times the concentration found in the appropriate blank.

6) Pesticide Standards

a) Linearity

The evaluation standards met the contract-required limits of less than 10 percent RSD for linearity.

b) DDT Retention Time

The retention time for DDT on the primary and secondary GC column met or exceeded 12 minutes for the standard runs.

c) Retention Time Windows

The retention time windows met the contract specifications.

d) Analytical Sequence

The analytical sequence met the contract-required frequency and order.

e) 4,4'-DDT/Endrin Degradation

The percent breakdown for Endrin and DDT met the contract limit of 20 percent for the individual or combined breakdown totals.

f) Dibutylchlorendate Retention Time Shift

The Percent Difference calculated for the retention time of dibutylchlorendate did not exceed 2 percent for the packed columns.

7) Surrogate Recovery

Recoveries (%R) for all surrogate compounds for volatile and semi-volatile analysis met QC criteria, except:

Sample Number	Fraction	Compound	%R	QC Limits
JE341	VOC	Toluene-d8	138	81 - 117

Sample JE341 was reanalyzed (JE341RE); toluene-d8 also was outside of QC limits in the second analysis. Sample JE341 was taken as more representative than the reanalysis (JE341RE). Positive results and sample quantitation limits were flagged as estimated (J_4 or UJ_4) in sample JE341.

Aroclor 1254 was detected in samples JE340, JE342, JE344, JE345, and JE346 at levels which required sample extract dilutions. Dibutylchlorendate was diluted out in each of these samples; no action was taken. All other recoveries for dibutylchlorendate (pesticide/PCB surrogate) met advisory QC guidelines, except sample JE341. The advisory QC limits are 20 to 150 percent while JE341 had 165 percent recovery. The high recovery is due to Aroclor 1254 interference; no action was taken for sample JE341.

All surrogate compounds met calibration QC criteria, except:

Calibration Date	Fraction	Surrogate	%D	QC Criteria
01/09/90	BNA	2,4,6-Tribromophenol	25.8	$\leq$ 25

No action was taken based on the surrogate calibration QC outlier.

8) Matrix Spike and Matrix Spike Duplicate

All MS and MSD Percent Recoveries (%Rs) met advisory QC guidelines, except:

Sample Number	Fraction	Compound	%R	QC Limits
JE340MS	BNA	Acenaphthene	201	31 - 137
		Pyrene	739	35 - 142
JE340MSD	BNA	Pyrene	457	35 - 142

All RPD values for the MS and MSD were within QC guidelines, except:

Sample Number	Fraction	Compound	RPD	QC Limit
JE340	BNA	Acenaphthene	64	19
		Pyrene	47	30

Positive results and sample quantitation limits for acenaphthene and pyrene in sample JE340 were flagged as estimated (J_4 or UJ_4).

9) Internal Standard Recovery

All internal standard areas were within established QC limits, except:

Analysis Date	Fraction	Internal Standard	Standard Area	QC Lower Limit	QC Upper Limit	Associated Sample
12/21/89	VOC	Chlorobenzene	56,200	72,000	288,000	JE341
01/09/90	BNA	Phenanthrene-d10	219,000	48,100	192,400	JE341
		Chrysene-d12	324,000	59,000	236,000	
		Perylene-d12	283,000	42,700	170,800	

Sample JE341 was reanalyzed (JE341RE) for BNA compounds due to high Internal Standard recoveries. The reanalysis was outside of the BNA analysis holding time limit of 40 days. Sample JE341 was taken as more representative than the reanalysis (JE341RE).

The sample fractions associated with the outlier internal standard areas were flagged as estimated (J_4 or UJ_4) in sample JE341.

10) Sample Analysis

Samples JE344, JE345, and JE346 were analyzed for pesticides/PCBs at diluted levels due to the presence of Aroclor 1254 in each sample. The holding times for each sample and its corresponding dilution were the same, so the diluted analysis was taken as more representative for each sample. Aroclor 1254 was not confirmed by GC/MS in sample JE346, so the result is reported as not detected.

All reported results above IDLs but below CRQLs were flagged as estimated quantities (J) on the Data Sheets.

All TICs were flagged "NJ_3" (tentatively identified, estimated quantity).

11) Laboratory Contact

No laboratory contact was required.

Data Use

The usefulness of the data is based on the criteria outlined in the "Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses" (February 1, 1988); the Data Qualifier Definitions supplied by the Office of Solid Waste and Emergency Response (September 1989); and the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989).

Upon consideration of the data qualifications noted above, the data are ACCEPTABLE for use except where flagged with data qualifiers which modify the usefulness of the individual values.

Additional data packages associated with this project are expected from CLP or EPA laboratories.

Data Qualifiers

U - The material was analyzed for, but was not detected. The associated numerical value is a contractual quantitation limit, adjusted for sample weight/sample volume, extraction volume, percent solids and sample dilution.

J - The analyte was analyzed for and was positively identified, but the associated numerical value may not be consistent with the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.

UJ - The material was analyzed for, but was not detected. The associated numerical value is an estimated/adjusted quantitation limit. The associated numerical value may not accurately or precisely represent the concentration necessary to detect the analyte in this sample.

A subscript will be appended to the "J" qualifier or the "UJ" qualifier that indicates which of the following quality control criteria were not met:

1. Blank contamination: indicates possible high bias and/or false positives.

2. Calibration range exceeded: indicates possible low bias.

3. Holding times not met: indicates low bias for most analytes with the exception of common laboratory contaminants and chlorinated ethenes (i.e., trichloroethene, 1,1-dichloroethene, and vinyl chloride).

4. Other QC outside control limits: bias not readily determined.

R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.

N - Presumptive evidence of presence of material (tentative identification). Confirmation of the analyte requires further analysis.

NJ - The analysis indicates that the analyte is tentatively identified and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

A subscript will be appended to the "NJ" qualifier that indicates which of the following situations applies:

1. DDT/Endrin breakdown evident.

2. Interference by other sample components.

3. Non-Target Compound List (TCL) compounds (confirmation is necessary using specific target compound methodology to accurately determine the concentration and identity of the detected compounds).

4. A confirmation analysis was missing or quality control criteria were not met for the confirmation analysis.

M - Mass spectral criteria for positive identification were not met. However, in the opinion of the laboratory, the identification is correct based on the analyst's professional judgement.

X - The reported result may be a combination of indistinguishable isomers.

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE340

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0326

Sample wt/vol: 5.1 (g/mL) G Lab File ID: Z032602VV

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 15 Date Analyzed: 12/21/89

Column: (pack/cap) PACK Dilution Factor: 1.000

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	7	UJ1
67-64-1	Acetone	9	UJ1 JT
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Total Xylenes	6	U

MR 3-27-90

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JE340

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0326

Sample wt/vol: 5.1 (g/mL) G Lab File ID: Z032602VV

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 15 Date Analyzed: 12/21/89

Column (pack/cap) PACK Dilution Factor: 1.000

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

FORM I VOA-TIC MM 7-27-90 1/87 Rev

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE341

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0327

Sample wt/vol: 5.0 (g/mL) G Lab File ID: Z032703VV

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 12 Date Analyzed: 12/21/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	11	UJ4
74-83-9	Bromomethane	11	UJ4
75-01-4	Vinyl Chloride	11	UJ4
75-00-3	Chloroethane	11	UJ4
75-09-2	Methylene Chloride	6	UJ1,UJ4 J
67-64-1	Acetone	14	UJ1,UJ4
75-15-0	Carbon Disulfide	6	UJ4
75-35-4	1,1-Dichloroethene	6	UJ4
75-34-3	1,1-Dichloroethane	6	UJ4
540-59-0	1,2-Dichloroethene (total)	6	UJ4
67-66-3	Chloroform	6	UJ4
107-06-2	1,2-Dichloroethane	6	UJ4
78-93-3	2-Butanone	11	UJ4
71-55-6	1,1,1-Trichloroethane	6	UJ4
56-23-5	Carbon Tetrachloride	6	UJ4
108-05-4	Vinyl Acetate	11	UJ4
75-27-4	Bromodichloromethane	6	UJ4
78-87-5	1,2-Dichloropropane	6	UJ4
10061-01-5	cis-1,3-Dichloropropene	6	UJ4
79-01-6	Trichloroethene	6	UJ4
124-48-1	Dibromochloromethane	6	UJ4
79-00-5	1,1,2-Trichloroethane	6	UJ4
71-43-2	Benzene	6	UJ4
10061-02-6	Trans-1,3-Dichloropropene	6	UJ4
75-25-2	Bromoform	6	UJ4
108-10-1	4-Methyl-2-Pentanone	11	UJ4
591-78-6	2-Hexanone	11	UJ4
127-18-4	Tetrachloroethene	6	UJ4
79-34-5	1,1,2,2-Tetrachloroethane	6	UJ4
108-88-3	Toluene	6	UJ4
108-90-7	Chlorobenzene	6	UJ4
100-41-4	Ethylbenzene	6	UJ4
100-42-5	Styrene	6	UJ4
1330-20-7	Total Xylenes	6	UJ4

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1E
VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JE341

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0327

Sample wt/vol: 5.0 (g/mL) G Lab File ID: Z032703VV

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 12 Date Analyzed: 12/21/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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EPA SAMPLE NO.

JE342

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0328

Sample wt/vol: 5.0 (g/mL) G Lab File ID: Z032803VV

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 17 Date Analyzed: 12/21/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	4	UJ, J
67-64-1	Acetone	15	UJ
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Total Xylenes	6	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JE342

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0328

Sample wt/vol: 5.0 (g/mL) G Lab File ID: Z032803VV

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 17 Date Analyzed: 12/21/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE343

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0329

Sample wt/vol: 5.1 (g/mL) G Lab File ID: Z032902VV

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 6 Date Analyzed: 12/21/89

Column: (pack/cap) PACK Dilution Factor: 1.000

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	10	U
74-83-9	Bromomethane	10	U
75-01-4	Vinyl Chloride	10	U
75-00-3	Chloroethane	10	U
75-09-2	Methylene Chloride	5	UJ, J
67-64-1	Acetone	18	UJ
75-15-0	Carbon Disulfide	5	U
75-35-4	1,1-Dichloroethene	5	U
75-34-3	1,1-Dichloroethane	5	U
540-59-0	1,2-Dichloroethene (total)	5	U
67-66-3	Chloroform	5	U
107-06-2	1,2-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
108-05-4	Vinyl Acetate	10	U
75-27-4	Bromodichloromethane	5	U
78-87-5	1,2-Dichloropropane	5	U
10061-01-5	cis-1,3-Dichloropropene	5	U
79-01-6	Trichloroethene	5	U
124-48-1	Dibromochloromethane	5	U
79-00-5	1,1,2-Trichloroethane	5	U
71-43-2	Benzene	5	U
10061-02-6	Trans-1,3-Dichloropropene	5	U
75-25-2	Bromoform	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U
108-88-3	Toluene	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
100-42-5	Styrene	5	U
1330-20-7	Total Xylenes	5	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JE343

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0329

Sample wt/vol: 5.1 (g/mL) G Lab File ID: Z032902VV

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 6 Date Analyzed: 12/21/89

Column (pack/cap) PACK Dilution Factor: 1.000

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE344

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0330

Sample wt/vol: 5.0 (g/mL) G Lab File ID: Z033002VV

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 18 Date Analyzed: 12/21/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	5	UJ, J
67-64-1	Acetone	20	UJ
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	14	
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	1	J
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Total Xylenes	6	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JE344

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0330

Sample wt/vol: 5.0 (g/mL) G Lab File ID: Z033002VV

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 18 Date Analyzed: 12/21/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE345

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0331

Sample wt/vol: 5.0 (g/mL) G Lab File ID: Z033102VV

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 16 Date Analyzed: 12/21/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	5	UJ, J
67-64-1	Acetone	9	UJ, J
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	17	
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Total Xylenes	6	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JE345

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0331

Sample wt/vol: 5.0 (g/mL) G Lab File ID: Z033102VV

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 16 Date Analyzed: 12/21/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE346

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0332

Sample wt/vol: 5.0 (g/mL) G Lab File ID: Z033202VV

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 18 Date Analyzed: 12/21/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	3	UJ, J
67-64-1	Acetone	10	UJ, J
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	12	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	9	
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Total Xylenes	6	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JE346

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0332

Sample wt/vol: 5.0 (g/mL) G Lab File ID: Z033202VV

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 19 Date Analyzed: 12/21/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE347

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0333

Sample wt/vol: 5.0 (g/mL) G Lab File ID: Z033302VV

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 21 Date Analyzed: 12/21/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	5	UJ J
67-64-1	Acetone	22	UJ
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	13	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Total Xylenes	6	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JE347

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0333

Sample wt/vol: 5.0 (g/mL) G Lab File ID: Z033302VV

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 21 Date Analyzed: 12/21/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE348

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0334

Sample wt/vol: 5.0 (g/mL) G Lab File ID: Z033403VV

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 22 Date Analyzed: 12/21/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	6	UJ, J
67-64-1	Acetone	17	UJ
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	13	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Total Xylenes	6	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JE348

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0334

Sample wt/vol: 5.0 (g/mL) G Lab File ID: Z033403VV

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 22 Date Analyzed: 12/21/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

MM 3-27-90

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE349

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0335

Sample wt/vol: 5.0 (g/mL) G Lab File ID: Z033502VV

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 20 Date Analyzed: 12/21/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	5	UJ, J
67-64-1	Acetone	13	UJ
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	13	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	6	U
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	3	J
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Total Xylenes	6	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JE349

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0335

Sample wt/vol: 5.0 (g/mL) G Lab File ID: Z033502VV

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 20 Date Analyzed: 12/21/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

MM 3-27-90

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE350

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0336

Sample wt/vol: 5.0 (g/mL) G Lab File ID: Z033603VV

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 25 Date Analyzed: 12/21/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NO.	COMPOUND		Q
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	2	UJ, J
67-64-1	Acetone	9	UJ, J
75-15-0	Carbon Disulfide	7	U
75-35-4	1,1-Dichloroethene	7	U
75-34-3	1,1-Dichloroethane	7	U
540-59-0	1,2-Dichloroethene (total)	7	U
67-66-3	Chloroform	7	U
107-06-2	1,2-Dichloroethane	7	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	7	U
56-23-5	Carbon Tetrachloride	7	U
108-05-4	Vinyl Acetate	13	U
75-27-4	Bromodichloromethane	7	U
78-87-5	1,2-Dichloropropane	7	U
10061-01-5	cis-1,3-Dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	7	U
10061-02-6	Trans-1,3-Dichloropropene	7	U
75-25-2	Bromoform	7	U
108-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	7	U
79-34-5	1,1,2,2-Tetrachloroethane	7	U
108-88-3	Toluene	7	U
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	7	U
100-42-5	Styrene	7	U
1330-20-7	Total Xylenes	7	U

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JE350

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0336

Sample wt/vol: 5.0 (g/mL) G Lab File ID: Z033603VV

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 25 Date Analyzed: 12/21/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

MW 3-27-90

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE352

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0337

Sample wt/vol: 5.0 (g/mL) G Lab File ID: Z033702VV

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 41 Date Analyzed: 12/21/89

Column: (pack/cap) PACK Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	17	U
74-83-9	Bromomethane	17	U
75-01-4	Vinyl Chloride	17	U
75-00-3	Chloroethane	17	U
75-09-2	Methylene Chloride	6	UJ
67-64-1	Acetone	43	UJ
75-15-0	Carbon Disulfide	8	U
75-35-4	1,1-Dichloroethene	8	U
75-34-3	1,1-Dichloroethane	8	U
540-59-0	1,2-Dichloroethene (total)	8	U
67-66-3	Chloroform	8	U
107-06-2	1,2-Dichloroethane	8	U
78-93-3	2-Butanone	17	U
71-55-6	1,1,1-Trichloroethane	8	U
56-23-5	Carbon Tetrachloride	8	U
108-05-4	Vinyl Acetate	17	U
75-27-4	Bromodichloromethane	8	U
78-87-5	1,2-Dichloropropane	8	U
10061-01-5	cis-1,3-Dichloropropene	8	U
79-01-6	Trichloroethene	8	U
124-48-1	Dibromochloromethane	8	U
79-00-5	1,1,2-Trichloroethane	8	U
71-43-2	Benzene	8	U
10061-02-6	Trans-1,3-Dichloropropene	8	U
75-25-2	Bromoform	8	U
108-10-1	4-Methyl-2-Pentanone	17	U
591-78-6	2-Hexanone	17	U
127-18-4	Tetrachloroethene	8	U
79-34-5	1,1,2,2-Tetrachloroethane	8	U
108-88-3	Toluene	130	
108-90-7	Chlorobenzene	8	U
100-41-4	Ethylbenzene	8	U
100-42-5	Styrene	8	U
1330-20-7	Total Xylenes	8	J

MM 3-27-90

1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JE352

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0337

Sample wt/vol: 5.0 (g/mL) G Lab File ID: Z033702VV

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 41 Date Analyzed: 12/21/89

Column (pack/cap) PACK Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

AMW 3-27-90

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE340

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0326

Sample wt/vol: 30.4 (g/mL) G Lab File ID: Z0326AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 15 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/90

GPC Cleanup: (Y/N) N pH: 6.6 Dilution Factor: 5.55

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	2100	UJ3
111-44-4	bis(2-Chloroethyl)Ether	2100	UJ3
95-57-8	2-Chlorophenol	2100	UJ3
541-73-1	1,3-Dichlorobenzene	2100	UJ3
106-46-7	1,4-Dichlorobenzene	2100	UJ3
100-51-6	Benzyl Alcohol	2100	UJ3
95-50-1	1,2-Dichlorobenzene	2100	UJ3
95-48-7	2-Methylphenol	2100	UJ3
108-60-1	bis(2-Chloroisopropyl)Ether	2100	UJ3
106-44-5	4-Methylphenol	2100	UJ3
621-64-7	N-Nitroso-Di-n-Propylamine	2100	UJ3
67-72-1	Hexachloroethane	2100	UJ3
98-95-3	Nitrobenzene	2100	UJ3
78-59-1	Isophorone	2100	UJ3
88-75-5	2-Nitrophenol	2100	UJ3
105-67-9	2,4-Dimethylphenol	2100	UJ3
65-85-0	Benzoic Acid	10000	UJ3, W1
111-91-1	bis(2-Chloroethoxy)Methane	2100	UJ3
120-83-2	2,4-Dichlorophenol	2100	UJ3
120-82-1	1,2,4-Trichlorobenzene	2100	UJ3
91-20-3	Naphthalene	2100	UJ3
106-47-8	4-Chloroaniline	2100	UJ3
87-68-3	Hexachlorobutadiene	2100	UJ3
59-50-7	4-Chloro-3-Methylphenol	2100	UJ3
91-57-6	2-Methylnaphthalene	2100	UJ3
77-47-4	Hexachlorocyclopentadiene	2100	UJ3
88-06-2	2,4,6-Trichlorophenol	2100	UJ3
95-95-4	2,4,5-Trichlorophenol	10000	UJ3
91-58-7	2-Chloronaphthalene	2100	UJ3
88-74-4	2-Nitroaniline	10000	UJ3
131-11-3	Dimethyl Phthalate	2100	UJ3
208-96-8	Acenaphthylene	2100	UJ3
606-20-2	2,6-Dinitrotoluene	2100	UJ3

recycled paper

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE340

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0326

Sample wt/vol: 30.4 (g/mL) G Lab File ID: Z0326AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 15 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/90

GPC Cleanup: (Y/N) N pH: 6.6 Dilution Factor: 5.55

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	10000	UJ3
83-32-9	Acenaphthene	390	J3,J4,J
51-28-5	2,4-Dinitrophenol	10000	UJ3
100-02-7	4-Nitrophenol	10000	UJ3
132-64-9	Dibenzofuran	2100	UJ3
121-14-2	2,4-Dinitrotoluene	2100	UJ3
84-66-2	Diethylphthalate	2100	UJ3
7005-72-3	4-Chlorophenyl-phenylether	2100	UJ3
86-73-7	Fluorene	280	J3,J
100-01-6	4-Nitroaniline	10000	UJ3
534-52-1	4,6-Dinitro-2-Methylphenol	10000	UJ3
86-30-6	N-Nitrosodiphenylamine (1)	2100	UJ3
101-55-3	4-Bromophenyl-phenylether	2100	UJ3
118-74-1	Hexachlorobenzene	2100	UJ3
87-86-5	Pentachlorophenol	10000	UJ3
85-01-8	Phenanthrene	4000	J3
120-12-7	Anthracene	1200	J3,J
84-74-2	Di-n-Butylphthalate	360	J3,UJ1
206-44-0	Fluoranthene	13000	J3
129-00-0	Pyrene	9200	J3,J4
85-68-7	Butylbenzylphthalate	2100	UJ3
91-94-1	3,3'-Dichlorobenzidine	4300	UJ3
56-55-3	Benzo(a)Anthracene	6200	J3
218-01-9	Chrysene	7800	J3
117-81-7	bis(2-Ethylhexyl)Phthalate	2100	UJ3,UJ1
117-84-0	Di-n-Octyl Phthalate	2100	UJ3
205-99-2	Benzo(b)Fluoranthene	6700	J3
207-08-9	Benzo(k)Fluoranthene	3700	J3
50-32-8	Benzo(a)Pyrene	5500	J3
193-39-5	Indeno(1,2,3-cd)Pyrene	3700	J3
53-70-3	Dibenz(a,h)Anthracene	590	J3,J
191-24-2	Benzo(g,h,i)Perylene	2800	J3

(1) - Cannot be separated from Diphenylamine

MW 3-27-90

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JE340

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0326

Sample wt/vol: 30.4 (g/mL) G Lab File ID: Z0326AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 15 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/90

GPC Cleanup: (Y/N) N pH: 6.6 Dilution Factor: 5.55

Number TICs found: 10

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	5.15	6000	NJ, UJ
2.	UNKNOWN ALKYL	21.29	250	NJ
3.	UNKNOWN	24.57	2000	NJ
4. 195-19-7	BENZO[C]PHENANTHRENE OR ISOM	25.91	3100	NJ
5. 2498-77-3	BENZ[A]ANTHRACENE, 1-METHYL-	27.51	2400	NJ
6.	UNKNOWN	27.89	1500	NJ
7.	UNKNOWN	28.39	1100	NJ
8. 192-97-2	BENZO[E]PYRENE OR ISOMER	30.31	6200	NJ
9.	UNKNOWN	35.09	1600	NJ
10.	UNKNOWN	36.56	1500	NJ

3-27-90

recycled paper

ecology and environment

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE341

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0327

Sample wt/vol: 30.1 (g/mL) G Lab File ID: Z0327AB

Level: (low/med) LOW Date Received: 12/21/89

% Moisture: not dec. 22 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) N pH: 8.1 Dilution Factor: 60.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	25000	UJ3
111-44-4	bis(2-Chloroethyl)Ether	25000	UJ3
95-57-8	2-Chlorophenol	25000	UJ3
541-73-1	1,3-Dichlorobenzene	25000	UJ3
106-46-7	1,4-Dichlorobenzene	25000	UJ3
100-51-6	Benzyl Alcohol	25000	UJ3
95-50-1	1,2-Dichlorobenzene	25000	UJ3
95-48-7	2-Methylphenol	25000	UJ3
108-60-1	bis(2-Chloroisopropyl)Ether	25000	UJ3
106-44-5	4-Methylphenol	25000	UJ3
621-64-7	N-Nitroso-Di-n-Propylamine	25000	UJ3
67-72-1	Hexachloroethane	25000	UJ3
98-95-3	Nitrobenzene	25000	UJ3
78-59-1	Isophorone	25000	UJ3
88-75-5	2-Nitrophenol	25000	UJ3
105-67-9	2,4-Dimethylphenol	25000	UJ3
65-85-0	Benzoic Acid	120000	UJ3, UJ1
111-91-1	bis(2-Chloroethoxy)Methane	25000	UJ3
120-83-2	2,4-Dichlorophenol	25000	UJ3
120-82-1	1,2,4-Trichlorobenzene	25000	UJ3
91-20-3	Naphthalene	25000	UJ3
106-47-8	4-Chloroaniline	25000	UJ3
87-68-3	Hexachlorobutadiene	25000	UJ3
59-50-7	4-Chloro-3-Methylphenol	25000	UJ3
91-57-6	2-Methylnaphthalene	25000	UJ3
77-47-4	Hexachlorocyclopentadiene	25000	UJ3
88-06-2	2,4,6-Trichlorophenol	25000	UJ3
95-95-4	2,4,5-Trichlorophenol	120000	UJ3
91-58-7	2-Chloronaphthalene	25000	UJ3
88-74-4	2-Nitroaniline	120000	UJ3
131-11-3	Dimethyl Phthalate	25000	UJ3
208-96-8	Acenaphthylene	25000	UJ3
606-20-2	2,6-Dinitrotoluene	25000	UJ3

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE341

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0327

Sample wt/vol: 30.1 (g/mL) G Lab File ID: Z0327AB

Level: (low/med) LOW Date Received: 12/21/89

% Moisture: not dec. 22 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) N pH: 8.1 Dilution Factor: 60.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	120000	UJ3
83-32-9	Acenaphthene	25000	UJ3
51-28-5	2,4-Dinitrophenol	120000	UJ3
100-02-7	4-Nitrophenol	120000	UJ3
132-64-9	Dibenzofuran	25000	UJ3
121-14-2	2,4-Dinitrotoluene	25000	UJ3
84-66-2	Diethylphthalate	25000	UJ3
7005-72-3	4-Chlorophenyl-phenylether	25000	UJ3
86-73-7	Fluorene	25000	UJ3
100-01-6	4-Nitroaniline	120000	UJ3
534-52-1	4,6-Dinitro-2-Methylphenol	120000	UJ3,UJ4
86-30-6	N-Nitrosodiphenylamine (1)	25000	UJ3,UJ4
101-55-3	4-Bromophenyl-phenylether	25000	UJ3,UJ4
118-74-1	Hexachlorobenzene	25000	UJ3,UJ4
87-86-5	Pentachlorophenol	120000	UJ3,UJ4
85-01-8	Phenanthrene	25000	UJ3,UJ4
120-12-7	Anthracene	25000	UJ3,UJ4
84-74-2	Di-n-Butylphthalate	25000	UJ3,UJ4,UJ1
206-44-0	Fluoranthene	25000	UJ3,UJ4
129-00-0	Pyrene	25000	UJ3,UJ4
85-68-7	Butylbenzylphthalate	25000	UJ3,UJ4
91-94-1	3,3'-Dichlorobenzidine	51000	UJ3,UJ4
56-55-3	Benzo(a)Anthracene	25000	UJ3,UJ4
218-01-9	Chrysene	3700	J3, UJ4, J
117-81-7	bis(2-Ethylhexyl)Phthalate	25000	UJ3,UJ4,UJ1
117-84-0	Di-n-Octyl Phthalate	25000	UJ3,UJ4
205-99-2	Benzo(b)Fluoranthene	25000	UJ3,UJ4
207-08-9	Benzo(k)Fluoranthene	25000	UJ3,UJ4
50-32-8	Benzo(a)Pyrene	25000	UJ3,UJ4
193-39-5	Indeno(1,2,3-cd)Pyrene	25000	UJ3,UJ4
53-70-3	Dibenz(a,h)Anthracene	25000	UJ3,UJ4
191-24-2	Benzo(g,h,i)Perylene	25000	UJ3,UJ4

(1) - Cannot be separated from Diphenylamine

recycled paper

FORM I SV-2 1/87 Re

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JE341

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0327

Sample wt/vol: 30.1 (g/mL) G Lab File ID: Z0327AB

Level: (low/med) LOW Date Received: 12/21/89

% Moisture: not dec. 22 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) N pH: 8.1 Dilution Factor: 60.0

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN ALKANE	30.12	12000	NJ3

MR 3-27-90

FORM I SV-TIC 1/87 Rev

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE342

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0328

Sample wt/vol: 30.4 (g/mL) G Lab File ID: Z0328AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 17 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) N pH: 6.4 Dilution Factor: 30.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	12000	UJ
111-44-4	bis(2-Chloroethyl)Ether	12000	UJ
95-57-8	2-Chlorophenol	12000	UJ
541-73-1	1,3-Dichlorobenzene	12000	UJ
106-46-7	1,4-Dichlorobenzene	12000	UJ
100-51-6	Benzyl Alcohol	12000	UJ
95-50-1	1,2-Dichlorobenzene	12000	UJ
95-48-7	2-Methylphenol	12000	UJ
108-60-1	bis(2-Chloroisopropyl)Ether	12000	UJ
106-44-5	4-Methylphenol	12000	UJ
621-64-7	N-Nitroso-Di-n-Propylamine	12000	UJ
67-72-1	Hexachloroethane	12000	UJ
98-95-3	Nitrobenzene	12000	UJ
78-59-1	Isophorone	12000	UJ
88-75-5	2-Nitrophenol	12000	UJ
105-67-9	2,4-Dimethylphenol	12000	UJ
65-85-0	Benzoic Acid	57000	UJ, UJ
111-91-1	bis(2-Chloroethoxy)Methane	12000	UJ
120-83-2	2,4-Dichlorophenol	12000	UJ
120-82-1	1,2,4-Trichlorobenzene	12000	UJ
91-20-3	Naphthalene	12000	UJ
106-47-8	4-Chloroaniline	12000	UJ
87-68-3	Hexachlorobutadiene	12000	UJ
59-50-7	4-Chloro-3-Methylphenol	12000	UJ
91-57-6	2-Methylnaphthalene	12000	UJ
77-47-4	Hexachlorocyclopentadiene	12000	UJ
88-06-2	2,4,6-Trichlorophenol	12000	UJ
95-95-4	2,4,5-Trichlorophenol	57000	UJ
91-58-7	2-Chloronaphthalene	12000	UJ
88-74-4	2-Nitroaniline	57000	UJ
131-11-3	Dimethyl Phthalate	12000	UJ
208-96-8	Acenaphthylene	12000	UJ
606-20-2	2,6-Dinitrotoluene	12000	UJ

recycled paper

MM 3-27-90

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE342

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0328

Sample wt/vol: 30.4 (g/mL) G Lab File ID: Z0328AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 17 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) N pH: 6.4 Dilution Factor: 30.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	57000	UJ3
83-32-9	Acenaphthene	12000	UJ3
51-28-5	2,4-Dinitrophenol	57000	UJ3
100-02-7	4-Nitrophenol	57000	UJ3
132-64-9	Dibenzofuran	12000	UJ3
121-14-2	2,4-Dinitrotoluene	12000	UJ3
84-66-2	Diethylphthalate	12000	UJ3
7005-72-3	4-Chlorophenyl-phenylether	12000	UJ3
86-73-7	Fluorene	12000	UJ3
100-01-6	4-Nitroaniline	57000	UJ3
534-52-1	4,6-Dinitro-2-Methylphenol	57000	UJ3
86-30-6	N-Nitrosodiphenylamine (1)	12000	UJ3
101-55-3	4-Bromophenyl-phenylether	12000	UJ3
118-74-1	Hexachlorobenzene	12000	UJ3
87-86-5	Pentachlorophenol	57000	UJ3
85-01-8	Phenanthrene	8300	J3,J
120-12-7	Anthracene	2700	J3,J
84-74-2	Di-n-Butylphthalate	12000	UJ3,UJ1
206-44-0	Fluoranthene	25000	J3
129-00-0	Pyrene	22000	J3
85-68-7	Butylbenzylphthalate	12000	UJ3
91-94-1	3,3'-Dichlorobenzidine	24000	UJ3
56-55-3	Benzo(a)Anthracene	10000	J3,J
218-01-9	Chrysene	12000	J3
117-81-7	bis(2-Ethylhexyl)Phthalate	12000	UJ3,UJ1
117-84-0	Di-n-Octyl Phthalate	12000	UJ3
205-99-2	Benzo(b)Fluoranthene	7500	J3,J
207-08-9	Benzo(k)Fluoranthene	8400	J3,J
50-32-8	Benzo(a)Pyrene	7700	J3,J
193-39-5	Indeno(1,2,3-cd)Pyrene	5000	J3,J
53-70-3	Dibenz(a,h)Anthracene	1400	J3,J
191-24-2	Benzo(g,h,i)Perylene	4300	J3,J

(1) - Cannot be separated from Diphenylamine

MM 3-27-90

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JE342

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0328

Sample wt/vol: 30.4 (g/mL) G Lab File ID: Z0328AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 17 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) N pH: 6.4 Dilution Factor: 30.0

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 2381-21-7	PYRENE, 1-METHYL- OR ISOMER	24.25	4900	NJ
2. 192-97-2	BENZO[E]PYRENE OR ISOMER	30.24	9200	NJ
3. 205-99-2	BENZ[E]ACEPHENANTHRYLENE OR	30.72	5000	NJ

JMM 3-27-90

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE343

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0329

Sample wt/vol: 30.3 (g/mL) G Lab File ID: Z0329AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 6 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: 5.55

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1900	UJ
111-44-4	bis(2-Chloroethyl)Ether	1900	UJ
95-57-8	2-Chlorophenol	1900	UJ
541-73-1	1,3-Dichlorobenzene	1900	UJ
106-46-7	1,4-Dichlorobenzene	1900	UJ
100-51-6	Benzyl Alcohol	1900	UJ
95-50-1	1,2-Dichlorobenzene	1900	UJ
95-48-7	2-Methylphenol	1900	UJ
108-60-1	bis(2-Chloroisopropyl)Ether	1900	UJ
106-44-5	4-Methylphenol	1900	UJ
621-64-7	N-Nitroso-Di-n-Propylamine	1900	UJ
67-72-1	Hexachloroethane	1900	UJ
98-95-3	Nitrobenzene	1900	UJ
78-59-1	Isophorone	1900	UJ
88-75-5	2-Nitrophenol	1900	UJ
105-67-9	2,4-Dimethylphenol	1900	UJ
65-85-0	Benzoic Acid	9400	UJ, UJ
111-91-1	bis(2-Chloroethoxy)Methane	1900	UJ
120-83-2	2,4-Dichlorophenol	1900	UJ
120-82-1	1,2,4-Trichlorobenzene	1900	UJ
91-20-3	Naphthalene	1900	UJ
106-47-8	4-Chloroaniline	1900	UJ
87-68-3	Hexachlorobutadiene	1900	UJ
59-50-7	4-Chloro-3-Methylphenol	1900	UJ
91-57-6	2-Methylnaphthalene	1900	UJ
77-47-4	Hexachlorocyclopentadiene	1900	UJ
88-06-2	2,4,6-Trichlorophenol	1900	UJ
95-95-4	2,4,5-Trichlorophenol	9400	UJ
91-58-7	2-Chloronaphthalene	1900	UJ
88-74-4	2-Nitroaniline	9400	UJ
131-11-3	Dimethyl Phthalate	1900	UJ
208-96-8	Acenaphthylene	1900	UJ
606-20-2	2,6-Dinitrotoluene	1900	UJ

3-27-90

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE343

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0329

Sample wt/vol: 30.3 (g/mL) G Lab File ID: Z0329AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 6 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: 5.55

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	9400	UJ
83-32-9	Acenaphthene	240	J,J
51-28-5	2,4-Dinitrophenol	9400	UJ
100-02-7	4-Nitrophenol	9400	UJ
132-64-9	Dibenzofuran	1900	UJ
121-14-2	2,4-Dinitrotoluene	1900	UJ
84-66-2	Diethylphthalate	1900	UJ
7005-72-3	4-Chlorophenyl-phenylether	1900	UJ
86-73-7	Fluorene	210	J,J
100-01-6	4-Nitroaniline	9400	UJ
534-52-1	4,6-Dinitro-2-Methylphenol	9400	UJ
86-30-6	N-Nitrosodiphenylamine (1)	1900	UJ
101-55-3	4-Bromophenyl-phenylether	1900	UJ
118-74-1	Hexachlorobenzene	1900	UJ
87-86-5	Pentachlorophenol	9400	UJ
85-01-8	Phenanthrene	1600	J,J
120-12-7	Anthracene	610	J,J
84-74-2	Di-n-Butylphthalate	1900	UJ,UJ
206-44-0	Fluoranthene	5500	J,
129-00-0	Pyrene	4800	J,
85-68-7	Butylbenzylphthalate	1900	UJ
91-94-1	3,3'-Dichlorobenzidine	3900	UJ
56-55-3	Benzo(a)Anthracene	2400	J
218-01-9	Chrysene	3100	J
117-81-7	bis(2-Ethylhexyl)Phthalate	1900	UJ,UJ
117-84-0	Di-n-Octyl Phthalate	1900	UJ
205-99-2	Benzo(b)Fluoranthene	2400	J
207-08-9	Benzo(k)Fluoranthene	2600	J
50-32-8	Benzo(a)Pyrene	2100	J
193-39-5	Indeno(1,2,3-cd)Pyrene	1200	J,J
53-70-3	Dibenz(a,h)Anthracene	220	J,J
191-24-2	Benzo(g,h,i)Perylene	1000	J,J

(1) - Cannot be separated from Diphenylamine

recycled paper

3-27-90

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JE343

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0329

Sample wt/vol: 30.3 (g/mL) G Lab File ID: Z0329AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 6 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: 5.55

Number TICs found: 19

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 54105-67-8	HEPTADECANE, 2,6-DIMETHYL-OR	14.54	930	JB
2. 629-59-4	TETRADECANE	14.85	2100	JB
3. 54105-67-8	HEPTADECANE, 2,6-DIMETHYL-OR	15.70	3100	JB
4. 54105-67-8	HEPTADECANE, 2,6-DIMETHYL-OR	16.19	5300	JB
5.	UNKNOWN	16.27	2500	JB
6.	UNKNOWN	16.90	3100	JB
7.	UNKNOWN ALKANE	17.47	4300	JB
8.	UNKNOWN ALKANE	18.07	5100	JB
9.	UNKNOWN	18.67	5800	JB
10.	UNKNOWN ALKANE	18.75	11000	JB
11.	UNKNOWN ALKANE	19.80	6800	JB
12.	UNKNOWN ALKANE	19.94	8800	JB
13.	UNKNOWN ALKANE	20.82	2700	JB
14.	UNKNOWN ALKANE	20.90	6800	JB
15.	UNKNOWN ALKANE	21.94	7000	JB
16.	UNKNOWN ALKANE	22.92	3900	JB
17.	UNKNOWN ALKANE	22.92	3900	JB
18.	UNKNOWN ALKANE	23.87	1900	JB
19.	UNKNOWN	24.77	880	JB

JMW 3-27-90

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE344

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0330

Sample wt/vol: 30.1 (g/mL) G Lab File ID: Z0330AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 18 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) N pH: 6.4 Dilution Factor: 120

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	48000	UJ
111-44-4	bis(2-Chloroethyl)Ether	48000	UJ
95-57-8	2-Chlorophenol	48000	UJ
541-73-1	1,3-Dichlorobenzene	48000	UJ
106-46-7	1,4-Dichlorobenzene	48000	UJ
100-51-6	Benzyl Alcohol	48000	UJ
95-50-1	1,2-Dichlorobenzene	48000	UJ
95-48-7	2-Methylphenol	48000	UJ
108-60-1	bis(2-Chloroisopropyl)Ether	48000	UJ
106-44-5	4-Methylphenol	48000	UJ
621-64-7	N-Nitroso-Di-n-Propylamine	48000	UJ
67-72-1	Hexachloroethane	48000	UJ
98-95-3	Nitrobenzene	48000	UJ
78-59-1	Isophorone	48000	UJ
88-75-5	2-Nitrophenol	48000	UJ
105-67-9	2,4-Dimethylphenol	48000	UJ
65-85-0	Benzoic Acid	230000	UJ, UJ
111-91-1	bis(2-Chloroethoxy)Methane	48000	UJ
120-83-2	2,4-Dichlorophenol	48000	UJ
120-82-1	1,2,4-Trichlorobenzene	48000	UJ
91-20-3	Naphthalene	48000	UJ
106-47-8	4-Chloroaniline	48000	UJ
87-68-3	Hexachlorobutadiene	48000	UJ
59-50-7	4-Chloro-3-Methylphenol	48000	UJ
91-57-6	2-Methylnaphthalene	48000	UJ
77-47-4	Hexachlorocyclopentadiene	48000	UJ
88-06-2	2,4,6-Trichlorophenol	48000	UJ
95-95-4	2,4,5-Trichlorophenol	230000	UJ
91-58-7	2-Chloronaphthalene	48000	UJ
88-74-4	2-Nitroaniline	230000	UJ
131-11-3	Dimethyl Phthalate	48000	UJ
208-96-8	Acenaphthylene	6800	J,J
606-20-2	2,6-Dinitrotoluene	48000	UJ

FORM I SV-1 MM 3-27-90 1/87 R

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE344

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0330

Sample wt/vol: 30.1 (g/mL) G Lab File ID: Z0330AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 18 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) N pH: 6.4 Dilution Factor: 120

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	230000	UJ3
83-32-9	Acenaphthene	22000	J3,J
51-28-5	2,4-Dinitrophenol	230000	UJ3
100-02-7	4-Nitrophenol	230000	UJ3
132-64-9	Dibenzofuran	8900	J3,J
121-14-2	2,4-Dinitrotoluene	48000	UJ3
84-66-2	Diethylphthalate	48000	UJ3
7005-72-3	4-Chlorophenyl-phenylether	48000	UJ3
86-73-7	Fluorene	21000	J3,J
100-01-6	4-Nitroaniline	230000	UJ3
534-52-1	4,6-Dinitro-2-Methylphenol	230000	UJ3
86-30-6	N-Nitrosodiphenylamine (1)	48000	UJ3
101-55-3	4-Bromophenyl-phenylether	48000	UJ3
118-74-1	Hexachlorobenzene	48000	UJ3
87-86-5	Pentachlorophenol	230000	UJ3
85-01-8	Phenanthrene	120000	J3
120-12-7	Anthracene	150000	J3
84-74-2	Di-n-Butylphthalate	48000	UJ3,UJ1
206-44-0	Fluoranthene	640000	J3
129-00-0	Pyrene	760000	J3
85-68-7	Butylbenzylphthalate	48000	UJ3
91-94-1	3,3'-Dichlorobenzidine	97000	UJ3
56-55-3	Benzo(a)Anthracene	230000	J3
218-01-9	Chrysene	360000	J3
117-81-7	bis(2-Ethylhexyl)Phthalate	48000	UJ3,UJ1
117-84-0	Di-n-Octyl Phthalate	48000	UJ3
205-99-2	Benzo(b)Fluoranthene	270000	J3
207-08-9	Benzo(k)Fluoranthene	180000	J3
50-32-8	Benzo(a)Pyrene	210000	J3
193-39-5	Indeno(1,2,3-cd)Pyrene	72000	J3
53-70-3	Dibenz(a,h)Anthracene	14000	J3,J
191-24-2	Benzo(g,h,i)Perylene	51000	J3

(1) - Cannot be separated from Diphenylamine

recycled paper

MM 3-27-90

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JE344

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0330

Sample wt/vol: 30.1 (g/mL) G Lab File ID: Z0330AB

Level: (low/med) LOW Date Received: 12/13/89

Moisture: not dec. 18 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) N pH: 6.4 Dilution Factor: 120

Number TICs found: 19

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 230-27-3	BENZO[H]QUINOLINE OR ISOMER	19.99	78000	J
2.	UNKNOWN	20.35	29000	J
3. 832-71-3	PHENANTHRENE, 3-METHYL- OR I	21.02	27000	J
4. 610-48-0	ANTHRACENE, 1-METHYL- OR ISO	21.09	25000	J
5. 832-64-4	PHENANTHRENE, 4-METHYL- OR I	21.29	78000	J
6.	UNKNOWN	21.82	35000	J
7.	UNKNOWN	22.65	110000	J
8.	UNKNOWN	23.17	37000	J
9. 2381-21-7	PYRENE, 1-METHYL- OR ISOMER	24.25	160000	J
10. 2381-21-7	PYRENE, 1-METHYL- OR ISOMER	24.49	83000	J
11. 2381-21-7	PYRENE, 1-METHYL- OR ISOMER	24.72	88000	J
12.	UNKNOWN	25.56	63000	J
13. 195-19-7	BENZO[C]PHENANTHRENE OR ISOM	25.91	170000	J
14.	UNKNOWN ALKYL	27.49	78000	J
15.	UNKNOWN ALKYL	27.59	43000	J
16.	UNKNOWN	28.37	43000	J
17. 192-97-2	BENZO[E]PYRENE OR ISOMER	29.71	49000	J
18. 205-82-3	BENZO[J]FLUORANTHENE OR ISOM	30.29	190000	J
19. 215-58-7	BENZO[B]TRIPHENYLENE OR ISOM	36.46	49000	J

MW 3-27-90

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

JE345

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0331

Sample wt/vol: 30.7 (g/mL) G Lab File ID: Z0331AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 16 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 60.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	23000	UJ3
111-44-4	bis(2-Chloroethyl)Ether	23000	UJ3
95-57-8	2-Chlorophenol	23000	UJ3
541-73-1	1,3-Dichlorobenzene	23000	UJ3
106-46-7	1,4-Dichlorobenzene	23000	UJ3
100-51-6	Benzyl Alcohol	23000	UJ3
95-50-1	1,2-Dichlorobenzene	23000	UJ3
95-48-7	2-Methylphenol	23000	UJ3
108-60-1	bis(2-Chloroisopropyl)Ether	23000	UJ3
106-44-5	4-Methylphenol	23000	UJ3
621-64-7	N-Nitroso-Di-n-Propylamine	23000	UJ3
67-72-1	Hexachloroethane	23000	UJ3
98-95-3	Nitrobenzene	23000	UJ3
78-59-1	Isophorone	23000	UJ3
88-75-5	2-Nitrophenol	23000	UJ3
105-67-9	2,4-Dimethylphenol	23000	UJ3
65-85-0	Benzoic Acid	110000	UJ3, UJ1
111-91-1	bis(2-Chloroethoxy)Methane	23000	UJ3
120-83-2	2,4-Dichlorophenol	23000	UJ3
120-82-1	1,2,4-Trichlorobenzene	23000	UJ3
91-20-3	Naphthalene	23000	UJ3
106-47-8	4-Chloroaniline	23000	UJ3
87-68-3	Hexachlorobutadiene	23000	UJ3
59-50-7	4-Chloro-3-Methylphenol	23000	UJ3
91-57-6	2-Methylnaphthalene	23000	UJ3
77-47-4	Hexachlorocyclopentadiene	23000	UJ3
88-06-2	2,4,6-Trichlorophenol	23000	UJ3
95-95-4	2,4,5-Trichlorophenol	110000	UJ3
91-58-7	2-Chloronaphthalene	23000	UJ3
88-74-4	2-Nitroaniline	110000	UJ3
131-11-3	Dimethyl Phthalate	23000	UJ3
208-96-8	Acenaphthylene	23000	UJ3
606-20-2	2,6-Dinitrotoluene	23000	UJ3

MM 3-27-90

4

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE345

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0331

Sample wt/vol: 30.7 (g/mL) G Lab File ID: Z0331AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 16 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 60.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	110000	UJ3
83-32-9	Acenaphthene	6400	J3,J
51-28-5	2,4-Dinitrophenol	110000	UJ3
100-02-7	4-Nitrophenol	11000	J3,J
132-64-9	Dibenzofuran	23000	UJ3
121-14-2	2,4-Dinitrotoluene	23000	UJ3
84-66-2	Diethylphthalate	23000	UJ3
7005-72-3	4-Chlorophenyl-phenylether	23000	UJ3
86-73-7	Fluorene	2500	J3,J
100-01-6	4-Nitroaniline	110000	UJ
534-52-1	4,6-Dinitro-2-Methylphenol	110000	UJ3
86-30-6	N-Nitrosodiphenylamine (1)	23000	UJ3
101-55-3	4-Bromophenyl-phenylether	23000	UJ3
118-74-1	Hexachlorobenzene	23000	UJ3
87-86-5	Pentachlorophenol	5000	J3,J
85-01-8	Phenanthrene	24000	J3
120-12-7	Anthracene	4200	J3,J
84-74-2	Di-n-Butylphthalate	23000	UJ3,UJ1
206-44-0	Fluoranthene	41000	J3
129-00-0	Pyrene	43000	J3
85-68-7	Butylbenzylphthalate	23000	UJ3
91-94-1	3,3'-Dichlorobenzidine	46000	UJ3
56-55-3	Benzo(a)Anthracene	18000	J3,J
218-01-9	Chrysene	25000	J3
117-81-7	bis(2-Ethylhexyl)Phthalate	23000	UJ3,UJ1
117-84-0	Di-n-Octyl Phthalate	23000	UJ3
205-99-2	Benzo(b)Fluoranthene	15000	J3,J
207-08-9	Benzo(k)Fluoranthene	14000	J3,J
50-32-8	Benzo(a)Pyrene	18000	J3,J
193-39-5	Indeno(1,2,3-cd)Pyrene	16000	J3,J
53-70-3	Dibenz(a,h)Anthracene	3900	J3,J
191-24-2	Benzo(g,h,i)Perylene	15000	J3,J

(1) - Cannot be separated from Diphenylamine

MM 3-27-90

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE N

JE345

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0331

Sample wt/vol: 30.7 (g/mL) G Lab File ID: Z0331AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 16 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/08/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 60.0

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 205-82-3	BENZO[J]FLUORANTHENE OR ISOM	30.21	30000	J
2. 215-58-7	BENZO[B]TRIPHENYLENE OR ISOM	36.36	14000	J

3-27-90

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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE346

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0332

Sample wt/vol: 30.5 (g/mL) G Lab File ID: Z0332AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 18 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/30/90

GPC Cleanup: (Y/N) N pH: 6.5 Dilution Factor: 300

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	120000	UJ3
111-44-4	bis(2-Chloroethyl)Ether	120000	UJ3
95-57-8	2-Chlorophenol	120000	UJ3
541-73-1	1,3-Dichlorobenzene	120000	UJ3
106-46-7	1,4-Dichlorobenzene	120000	UJ3
100-51-6	Benzyl Alcohol	120000	UJ3
95-50-1	1,2-Dichlorobenzene	120000	UJ3
95-48-7	2-Methylphenol	120000	UJ3
108-60-1	bis(2-Chloroisopropyl)Ether	120000	UJ3
106-44-5	4-Methylphenol	120000	UJ3
621-64-7	N-Nitroso-Di-n-Propylamine	120000	UJ3
67-72-1	Hexachloroethane	120000	UJ3
98-95-3	Nitrobenzene	120000	UJ3
78-59-1	Isophorone	120000	UJ3
88-75-5	2-Nitrophenol	120000	UJ3
105-67-9	2,4-Dimethylphenol	120000	UJ3
65-85-0	Benzoic Acid	580000	UJ3,UJ1
111-91-1	bis(2-Chloroethoxy)Methane	120000	UJ3
120-83-2	2,4-Dichlorophenol	120000	UJ3
120-82-1	1,2,4-Trichlorobenzene	120000	UJ3
91-20-3	Naphthalene	120000	UJ3
106-47-8	4-Chloroaniline	120000	UJ3
87-68-3	Hexachlorobutadiene	120000	UJ3
59-50-7	4-Chloro-3-Methylphenol	120000	UJ3
91-57-6	2-Methylnaphthalene	120000	UJ3
77-47-4	Hexachlorocyclopentadiene	120000	UJ3
88-06-2	2,4,6-Trichlorophenol	120000	UJ3
95-95-4	2,4,5-Trichlorophenol	580000	UJ3
91-58-7	2-Chloronaphthalene	120000	UJ3
88-74-4	2-Nitroaniline	580000	UJ3
131-11-3	Dimethyl Phthalate	120000	UJ3
208-96-8	Acenaphthylene	120000	UJ3
606-20-2	2,6-Dinitrotoluene	120000	UJ3

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

JE346

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0332

Sample wt/vol: 30.5 (g/mL) G Lab File ID: Z0332AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 18 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/30/90

GPC Cleanup: (Y/N) N pH: 6.5 Dilution Factor: 300

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	580000	UJ3
83-32-9	Acenaphthene	160000	J3
51-28-5	2,4-Dinitrophenol	580000	UJ3
100-02-7	4-Nitrophenol	580000	UJ3
132-64-9	Dibenzofuran	53000	J3,J
121-14-2	2,4-Dinitrotoluene	120000	UJ3
84-66-2	Diethylphthalate	120000	UJ3
7005-72-3	4-Chlorophenyl-phenylether	120000	UJ3
86-73-7	Fluorene	130000	J3
100-01-6	4-Nitroaniline	580000	UJ3
534-52-1	4,6-Dinitro-2-Methylphenol	580000	UJ3
86-30-6	N-Nitrosodiphenylamine (1)	120000	UJ3
101-55-3	4-Bromophenyl-phenylether	120000	UJ3
118-74-1	Hexachlorobenzene	120000	UJ3
87-86-5	Pentachlorophenol	580000	UJ3
85-01-8	Phenanthrene	1200000	J3
120-12-7	Anthracene	450000	J3
84-74-2	Di-n-Butylphthalate	120000	UJ3,UJ1
206-44-0	Fluoranthene	2500000	J3
129-00-0	Pyrene	2200000	J3
85-68-7	Butylbenzylphthalate	120000	UJ3
91-94-1	3,3'-Dichlorobenzidine	240000	UJ3
56-55-3	Benzo(a)Anthracene	950000	J3
218-01-9	Chrysene	690000	J3
117-81-7	bis(2-Ethylhexyl)Phthalate	120000	UJ3,UJ1
117-84-0	Di-n-Octyl Phthalate	120000	UJ3
205-99-2	Benzo(b)Fluoranthene	800000	J3
207-08-9	Benzo(k)Fluoranthene	530000	J3
50-32-8	Benzo(a)Pyrene	410000	J3
193-39-5	Indeno(1,2,3-cd)Pyrene	250000	J3
53-70-3	Dibenz(a,h)Anthracene	89000	J3,J
191-24-2	Benzo(g,h,i)Perylene	390000	J3

(1) - Cannot be separated from Diphenylamine

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MN 3-27-90

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JE346

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0332

Sample wt/vol: 30.5 (g/mL) G Lab File ID: Z0332AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 18 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/30/90

GPC Cleanup: (Y/N) N pH: 6.5 Dilution Factor: 300

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 86-74-8	9H-CARBAZOLE OR ISOMER	20.67	210000	NJ
2. 610-48-0	ANTHRACENE, 1-METHYL- OR ISO	21.37	190000	NJ
3. 610-48-0	ANTHRACENE, 1-METHYL- OR ISO	21.44	190000	NJ
4. 203-64-5	4H-CYCLOPENTA[DEF]PHENANTHRE	21.64	430000	NJ
5. 612-94-2	NAPHTHALENE, 2-PHENYL- OR IS	22.15	190000	NJ
6. 3674-66-6	PHENANTHRENE, 2,5-DIMETHYL-	22.64	170000	NJ
7. 3674-66-6	PHENANTHRENE, 2,5-DIMETHYL-	22.84	190000	NJ
8.	UNKNOWN	22.90	140000	NJ
9.	UNKNOWN	22.97	200000	NJ
10. 3674-73-5	PHENANTHRENE, 2,3,5-TRIMETHY	24.02	230000	NJ
11. 2381-21-7	PYRENE, 1-METHYL- OR IOSMER	24.32	220000	NJ
12. 2381-21-7	PYRENE, 1-METHYL- OR ISOMER	24.60	430000	NJ
13. 2381-21-7	PYRENE, 1-METHYL- OR ISOMER	24.77	230000	NJ
14. 2381-21-7	PYRENE, 1-METHYL- OR ISOMER	24.84	200000	NJ
15.	UNKNOWN	24.92	130000	NJ
16. 2381-21-7	PYRENE, 1-METHYL- OR ISOMER	25.07	250000	NJ
17. 2381-21-7	PYRENE, 1-METHYL- OR ISOMER	25.14	140000	NJ
18. 195-19-7	BENZO[C]PHENANTHRENE OR ISOM	26.27	420000	NJ
19. 195-19-7	BENZO[C]PHENANTHRENE OR ISOM	27.06	220000	NJ
20. 1705-84-6	TRIPHENYLENE, 2-METHYL- OR I	27.89	190000	NJ

MW 3-27-90.

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE No.

JE347

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0333

Sample wt/vol: 30.5 (g/mL) G Lab File ID: Z0333AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 21 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/30/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 2.23

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	910	UJ3
111-44-4	bis(2-Chloroethyl)Ether	910	UJ3
95-57-8	2-Chlorophenol	910	UJ3
541-73-1	1,3-Dichlorobenzene	910	UJ3
106-46-7	1,4-Dichlorobenzene	910	UJ3
100-51-6	Benzyl Alcohol	910	UJ3
95-50-1	1,2-Dichlorobenzene	910	UJ3
95-48-7	2-Methylphenol	910	UJ3
108-60-1	bis(2-Chloroisopropyl)Ether	910	UJ3
106-44-5	4-Methylphenol	910	UJ3
621-64-7	N-Nitroso-Di-n-Propylamine	910	UJ3
67-72-1	Hexachloroethane	910	UJ3
98-95-3	Nitrobenzene	910	UJ3
78-59-1	Isophorone	910	UJ3
88-75-5	2-Nitrophenol	910	UJ3
105-67-9	2,4-Dimethylphenol	910	UJ3
65-85-0	Benzoic Acid	170	J3,UJ1
111-91-1	bis(2-Chloroethoxy)Methane	910	UJ3
120-83-2	2,4-Dichlorophenol	910	UJ3
120-82-1	1,2,4-Trichlorobenzene	910	UJ3
91-20-3	Naphthalene	910	UJ3
106-47-8	4-Chloroaniline	910	UJ3
87-68-3	Hexachlorobutadiene	910	UJ3
59-50-7	4-Chloro-3-Methylphenol	910	UJ3
91-57-6	2-Methylnaphthalene	910	UJ3
77-47-4	Hexachlorocyclopentadiene	910	UJ3
88-06-2	2,4,6-Trichlorophenol	910	UJ3
95-95-4	2,4,5-Trichlorophenol	4400	UJ3
91-58-7	2-Chloronaphthalene	910	UJ3
88-74-4	2-Nitroaniline	4400	UJ3
131-11-3	Dimethyl Phthalate	910	UJ3
208-96-8	Acenaphthylene	910	UJ3
606-20-2	2,6-Dinitrotoluene	910	UJ3

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE347

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0333

Sample wt/vol: 30.5 (g/mL) G Lab File ID: Z0333AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 21 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/30/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 2.23

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4400	UJ3
83-32-9	Acenaphthene	910	UJ3
51-28-5	2,4-Dinitrophenol	4400	UJ3
100-02-7	4-Nitrophenol	4400	UJ3
132-64-9	Dibenzofuran	910	UJ3
121-14-2	2,4-Dinitrotoluene	910	UJ3
84-66-2	Diethylphthalate	910	UJ3
7005-72-3	4-Chlorophenyl-phenylether	910	UJ3
86-73-7	Fluorene	910	UJ3
100-01-6	4-Nitroaniline	4400	UJ3
534-52-1	4,6-Dinitro-2-Methylphenol	4400	UJ3
86-30-6	N-Nitrosodiphenylamine (1)	910	UJ3
101-55-3	4-Bromophenyl-phenylether	910	UJ3
118-74-1	Hexachlorobenzene	910	UJ3
87-86-5	Pentachlorophenol	4400	UJ3
85-01-8	Phenanthrene	910	UJ3
120-12-7	Anthracene	910	UJ3
84-74-2	Di-n-Butylphthalate	910	UJ3, UJ1
206-44-0	Fluoranthene	910	UJ3
129-00-0	Pyrene	910	UJ3
85-68-7	Butylbenzylphthalate	910	UJ3
91-94-1	3,3'-Dichlorobenzidine	1800	UJ3
56-55-3	Benzo(a)Anthracene	910	UJ3
218-01-9	Chrysene	910	UJ3
117-81-7	bis(2-Ethylhexyl)Phthalate	100	J3, UJ1
117-84-0	Di-n-Octyl Phthalate	910	UJ3
205-99-2	Benzo(b)Fluoranthene	150	J3, J
207-08-9	Benzo(k)Fluoranthene	910	UJ3
50-32-8	Benzo(a)Pyrene	93	J3, J
193-39-5	Indeno(1,2,3-cd)Pyrene	910	UJ3
53-70-3	Dibenz(a,h)Anthracene	910	UJ3
191-24-2	Benzo(g,h,i)Perylene	910	UJ3

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 MW 3-27-90 1/87 R 6:

1F
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JE347

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0333

Sample wt/vol: 30.5 (g/mL) G Lab File ID: Z0333AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 21 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/30/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 2.23

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	5.38	3800	NJ
2.	UNKNOWN	7.62	920	NJ
3.	UNKNOWN	18.64	1700	NJ
4.	UNKNOWN ALKANE	31.04	920	NJ
5.	UNKNOWN ALKANE	34.49	570	NJ

63

recycled paper

FORM I SV-TIC

3-27-90

1/87 R

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE348

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0334

Sample wt/vol: 30.4 (g/mL) G Lab File ID: Z0334AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 22 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/30/90

GPC Cleanup: (Y/N) N pH: 6.9 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	420	UJ3
111-44-4	bis(2-Chloroethyl)Ether	420	UJ3
95-57-8	2-Chlorophenol	420	UJ3
541-73-1	1,3-Dichlorobenzene	420	UJ3
106-46-7	1,4-Dichlorobenzene	420	UJ3
100-51-6	Benzyl Alcohol	420	UJ3
95-50-1	1,2-Dichlorobenzene	420	UJ3
95-48-7	2-Methylphenol	420	UJ3
108-60-1	bis(2-Chloroisopropyl)Ether	420	UJ3
106-44-5	4-Methylphenol	420	UJ3
621-64-7	N-Nitroso-Di-n-Propylamine	420	UJ3
67-72-1	Hexachloroethane	420	UJ3
98-95-3	Nitrobenzene	420	UJ3
78-59-1	Isophorone	420	UJ3
88-75-5	2-Nitrophenol	420	UJ3
105-67-9	2,4-Dimethylphenol	420	UJ3
65-85-0	Benzoic Acid	190	J3,UJ1
111-91-1	bis(2-Chloroethoxy)Methane	420	UJ3
120-83-2	2,4-Dichlorophenol	420	UJ3
120-82-1	1,2,4-Trichlorobenzene	420	UJ3
91-20-3	Naphthalene	420	UJ3
106-47-8	4-Chloroaniline	420	UJ3
87-68-3	Hexachlorobutadiene	420	UJ3
59-50-7	4-Chloro-3-Methylphenol	420	UJ3
91-57-6	2-Methylnaphthalene	420	UJ3
77-47-4	Hexachlorocyclopentadiene	420	UJ3
88-06-2	2,4,6-Trichlorophenol	420	UJ3
95-95-4	2,4,5-Trichlorophenol	2000	UJ3
91-58-7	2-Chloronaphthalene	420	UJ3
88-74-4	2-Nitroaniline	2000	UJ3
131-11-3	Dimethyl Phthalate	420	UJ3
208-96-8	Acenaphthylene	420	UJ3
606-20-2	2,6-Dinitrotoluene	420	UJ3

MN 3-27-90

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

JE348

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0334

Sample wt/vol: 30.4 (g/mL) G Lab File ID: Z0334AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 22 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/30/90

GPC Cleanup: (Y/N) N pH: 6.9 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2000	UJ3
83-32-9	Acenaphthene	420	UJ3
51-28-5	2,4-Dinitrophenol	2000	UJ3
100-02-7	4-Nitrophenol	2000	UJ3
132-64-9	Dibenzofuran	420	UJ3
121-14-2	2,4-Dinitrotoluene	420	UJ3
84-66-2	Diethylphthalate	420	UJ3
7005-72-3	4-Chlorophenyl-phenylether	420	UJ3
86-73-7	Fluorene	420	UJ3
100-01-6	4-Nitroaniline	2000	UJ3
534-52-1	4,6-Dinitro-2-Methylphenol	2000	UJ3
86-30-6	N-Nitrosodiphenylamine (1)	420	UJ3
101-55-3	4-Bromophenyl-phenylether	420	UJ3
118-74-1	Hexachlorobenzene	420	UJ3
87-86-5	Pentachlorophenol	2000	UJ3
85-01-8	Phenanthrene	420	UJ3
120-12-7	Anthracene	420	UJ3
84-74-2	Di-n-Butylphthalate	420	UJ3, UJ1
206-44-0	Fluoranthene	420	UJ3
129-00-0	Pyrene	420	UJ3
85-68-7	Butylbenzylphthalate	420	UJ3
91-94-1	3,3'-Dichlorobenzidine	830	UJ3
56-55-3	Benzo(a)Anthracene	420	UJ3
218-01-9	Chrysene	420	UJ3
117-81-7	bis(2-Ethylhexyl)Phthalate	210	J3, UJ1
117-84-0	Di-n-Octyl Phthalate	52	J3, J
205-99-2	Benzo(b)Fluoranthene	420	UJ3
207-08-9	Benzo(k)Fluoranthene	420	UJ3
50-32-8	Benzo(a)Pyrene	420	UJ3
193-39-5	Indeno(1,2,3-cd)Pyrene	420	UJ3
53-70-3	Dibenz(a,h)Anthracene	420	UJ3
191-24-2	Benzo(g,h,i)Perylene	420	UJ3

(1) - Cannot be separated from Diphenylamine

recycled paper

MW 3-27-90

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FORM I SV-2

1/87 1

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JE348

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0334

Sample wt/vol: 30.4 (g/mL) G Lab File ID: Z0334AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 22 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/30/90

GPC Cleanup: (Y/N) N pH: 6.9 Dilution Factor: 1.00

Number TICs found: 19

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	5.38	9100	NJ
2.	UNKNOWN	7.60	1300	NJ
3.	UNKNOWN	7.80	420	NJ
4. 18641-71-9	3-HEPTANONE, 2,4-DIMETHYL- O	8.49	390	NJ
5.	UNKNOWN	20.35	220	NJ
6.	UNKNOWN	20.64	190	NJ
7.	UNKNOWN	21.49	250	NJ
8.	UNKNOWN	21.64	420	NJ
9.	UNKNOWN	21.84	930	NJ
10.	UNKNOWN	22.27	200	NJ
11.	UNKNOWN	23.62	910	NJ
12.	UNKNOWN ALKANE	25.12	390	NJ
13.	UNKNOWN	26.27	170	NJ
14.	UNKNOWN	28.66	1800	NJ
15.	UNKNOWN	30.22	1200	NJ
16.	UNKNOWN ALKANE	31.04	5900	NJ
17.	UNKNOWN ALKANE	34.47	2900	NJ
18.	UNKNOWN ALKANE	39.06	740	NJ
19.	UNKNOWN	39.54	1300	NJ

MM 3-27-90

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

JE349

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0335

Sample wt/vol: 30.8 (g/mL) G Lab File ID: Z0335AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 20 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/30/90

GPC Cleanup: (Y/N) N pH: 6.4 Dilution Factor: 2.22

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	890	UJ3
111-44-4	bis(2-Chloroethyl)Ether	890	UJ3
95-57-8	2-Chlorophenol	890	UJ3
541-73-1	1,3-Dichlorobenzene	890	UJ3
106-46-7	1,4-Dichlorobenzene	890	UJ3
100-51-6	Benzyl Alcohol	890	UJ3
95-50-1	1,2-Dichlorobenzene	890	UJ3
95-48-7	2-Methylphenol	890	UJ3
108-60-1	bis(2-Chloroisopropyl)Ether	890	UJ3
106-44-5	4-Methylphenol	890	UJ3
621-64-7	N-Nitroso-Di-n-Propylamine	890	UJ3
67-72-1	Hexachloroethane	890	UJ3
98-95-3	Nitrobenzene	890	UJ3
78-59-1	Isophorone	890	UJ3
88-75-5	2-Nitrophenol	890	UJ3
105-67-9	2,4-Dimethylphenol	890	UJ3
65-85-0	Benzoic Acid	160	J3,UJ1
111-91-1	bis(2-Chloroethoxy)Methane	890	UJ3
120-83-2	2,4-Dichlorophenol	890	UJ3
120-82-1	1,2,4-Trichlorobenzene	890	UJ3
91-20-3	Naphthalene	890	UJ3
106-47-8	4-Chloroaniline	890	UJ3
87-68-3	Hexachlorobutadiene	890	UJ3
59-50-7	4-Chloro-3-Methylphenol	890	UJ3
91-57-6	2-Methylnaphthalene	890	UJ3
77-47-4	Hexachlorocyclopentadiene	890	UJ3
88-06-2	2,4,6-Trichlorophenol	890	UJ3
95-95-4	2,4,5-Trichlorophenol	4300	UJ3
91-58-7	2-Chloronaphthalene	890	UJ3
88-74-4	2-Nitroaniline	4300	UJ3
131-11-3	Dimethyl Phthalate	890	UJ3
208-96-8	Acenaphthylene	890	UJ3
606-20-2	2,6-Dinitrotoluene	890	UJ3

MW 3-27-90

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE349

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0335

Sample wt/vol: 30.8 (g/mL) G Lab File ID: Z0335AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 20 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/30/90

GPC Cleanup: (Y/N) N pH: 6.4 Dilution Factor: 2.22

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4300	UJ3
83-32-9	Acenaphthene	890	UJ3
51-28-5	2,4-Dinitrophenol	4300	UJ3
100-02-7	4-Nitrophenol	4300	UJ3
132-64-9	Dibenzofuran	890	UJ3
121-14-2	2,4-Dinitrotoluene	890	UJ3
84-66-2	Diethylphthalate	890	UJ3
7005-72-3	4-Chlorophenyl-phenylether	890	UJ3
86-73-7	Fluorene	890	UJ3
100-01-6	4-Nitroaniline	4300	UJ3
534-52-1	4,6-Dinitro-2-Methylphenol	4300	UJ3
86-30-6	N-Nitrosodiphenylamine (1)	890	UJ3
101-55-3	4-Bromophenyl-phenylether	890	UJ3
118-74-1	Hexachlorobenzene	890	UJ3
87-86-5	Pentachlorophenol	4300	UJ3
85-01-8	Phenanthrene	110	J3,J
120-12-7	Anthracene	890	UJ3
84-74-2	Di-n-Butylphthalate	110	J3,UJ1
206-44-0	Fluoranthene	310	J3,J
129-00-0	Pyrene	320	J3,J
85-68-7	Butylbenzylphthalate	890	UJ3
91-94-1	3,3'-Dichlorobenzidine	1800	UJ3
56-55-3	Benzo(a)Anthracene	210	J3,J
218-01-9	Chrysene	350	J3,J
117-81-7	bis(2-Ethylhexyl)Phthalate	590	J3,UJ1
117-84-0	Di-n-Octyl Phthalate	890	UJ3
205-99-2	Benzo(b)Fluoranthene	460	J3,J
207-08-9	Benzo(k)Fluoranthene	320	J3,J
50-32-8	Benzo(a)Pyrene	360	J3,J
193-39-5	Indeno(1,2,3-cd)Pyrene	150	J3,J
53-70-3	Dibenz(a,h)Anthracene	890	UJ3
191-24-2	Benzo(g,h,i)Perylene	230	J3,J

(1) - Cannot be separated from Diphenylamine

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FORM I SV-2 MW 3-27-90 1/87 R

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE No.

JE349

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0335

Sample wt/vol: 30.8 (g/mL) G Lab File ID: Z0335AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 20 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/30/90

GPC Cleanup: (Y/N) N pH: 6.4 Dilution Factor: 2.22

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	5.38	6800	NJ
2.	UNKNOWN	7.80	1100	NJ
3.	UNKNOWN	8.17	950	NJ
4.	UNKNOWN	10.64	810	NJ
5. 4707-47-5	BENZOIC ACID, 2,4-DIHYDROXY-	19.14	820	NJ
6.	UNKNOWN	21.49	630	NJ
7.	UNKNOWN	21.64	520	NJ
8.	UNKNOWN	21.84	2300	NJ
9.	UNKNOWN ALKANE	22.34	560	NJ
10.	UNKNOWN	23.07	910	NJ
11.	UNKNOWN	25.44	1200	NJ
12.	UNKNOWN	25.52	1200	NJ
13.	UNKNOWN	25.59	2600	NJ
14.	UNKNOWN ALKANE	28.64	5800	NJ
15.	UNKNOWN ALKANE	31.02	3900	NJ
16.	UNKNOWN ALKANE	32.79	1100	NJ
17.	UNKNOWN ALKANE	34.61	5100	NJ
18.	UNKNOWN ALKANE	37.19	540	NJ
19.	UNKNOWN	39.06	1400	NJ
20.	UNKNOWN	39.54	3000	NJ

MM 3-27-90

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

JE350

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0336

Sample wt/vol: 30.5 (g/mL) G Lab File ID: Z0336AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 25 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/30/90

GPC Cleanup: (Y/N) N pH: 6.3 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	430	UJ
111-44-4	bis(2-Chloroethyl)Ether	430	UJ
95-57-8	2-Chlorophenol	430	UJ
541-73-1	1,3-Dichlorobenzene	430	UJ
106-46-7	1,4-Dichlorobenzene	430	UJ
100-51-6	Benzyl Alcohol	430	UJ
95-50-1	1,2-Dichlorobenzene	430	UJ
95-48-7	2-Methylphenol	430	UJ
108-60-1	bis(2-Chloroisopropyl)Ether	430	UJ
106-44-5	4-Methylphenol	430	UJ
621-64-7	N-Nitroso-Di-n-Propylamine	430	UJ
67-72-1	Hexachloroethane	430	UJ
98-95-3	Nitrobenzene	430	UJ
78-59-1	Isophorone	430	UJ
88-75-5	2-Nitrophenol	430	UJ
105-67-9	2,4-Dimethylphenol	430	UJ
65-85-0	Benzoic Acid	250	J, UJ
111-91-1	bis(2-Chloroethoxy)Methane	430	UJ
120-83-2	2,4-Dichlorophenol	430	UJ
120-82-1	1,2,4-Trichlorobenzene	430	UJ
91-20-3	Naphthalene	430	UJ
106-47-8	4-Chloroaniline	430	UJ
87-68-3	Hexachlorobutadiene	430	UJ
59-50-7	4-Chloro-3-Methylphenol	430	UJ
91-57-6	2-Methylnaphthalene	430	UJ
77-47-4	Hexachlorocyclopentadiene	430	UJ
88-06-2	2,4,6-Trichlorophenol	430	UJ
95-95-4	2,4,5-Trichlorophenol	2100	UJ
91-58-7	2-Chloronaphthalene	430	UJ
88-74-4	2-Nitroaniline	2100	UJ
131-11-3	Dimethyl Phthalate	430	UJ
208-96-8	Acenaphthylene	430	UJ
606-20-2	2,6-Dinitrotoluene	430	UJ

 MM 3-27-90

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

JE350

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0336

Sample wt/vol: 30.5 (g/mL) G Lab File ID: Z0336AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 25 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/30/90

GPC Cleanup: (Y/N) N pH: 6.3 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	2100	UJ3
83-32-9	Acenaphthene	430	UJ3
51-28-5	2,4-Dinitrophenol	2100	UJ3
100-02-7	4-Nitrophenol	2100	UJ3
132-64-9	Dibenzofuran	430	UJ3
121-14-2	2,4-Dinitrotoluene	430	UJ3
84-66-2	Diethylphthalate	430	UJ3
7005-72-3	4-Chlorophenyl-phenylether	430	UJ3
86-73-7	Fluorene	430	UJ3
100-01-6	4-Nitroaniline	2100	UJ3
534-52-1	4,6-Dinitro-2-Methylphenol	2100	UJ3
86-30-6	N-Nitrosodiphenylamine (1)	430	UJ3
101-55-3	4-Bromophenyl-phenylether	430	UJ3
118-74-1	Hexachlorobenzene	430	UJ3
87-86-5	Pentachlorophenol	2100	UJ3
85-01-8	Phenanthrene	430	UJ3
120-12-7	Anthracene	430	UJ3
84-74-2	Di-n-Butylphthalate	60	J3,UJ1
206-44-0	Fluoranthene	89	J3,J
129-00-0	Pyrene	73	J3,J
85-68-7	Butylbenzylphthalate	120	J3,J
91-94-1	3,3'-Dichlorobenzidine	870	UJ3
56-55-3	Benzo(a)Anthracene	56	J3,J
218-01-9	Chrysene	67	J3,J
117-81-7	bis(2-Ethylhexyl)Phthalate	420	J3,UJ1
117-84-0	Di-n-Octyl Phthalate	430	UJ3
205-99-2	Benzo(b)Fluoranthene	91	J3,J
207-08-9	Benzo(k)Fluoranthene	430	UJ3
50-32-8	Benzo(a)Pyrene	72	J3,J
193-39-5	Indeno(1,2,3-cd)Pyrene	430	UJ3
53-70-3	Dibenz(a,h)Anthracene	430	UJ3
191-24-2	Benzo(g,h,i)Perylene	430	UJ3

(1) - Cannot be separated from Diphenylamine

recycled paper

ecology and environment

MW 3-27-90

FORM I SV-2

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO

JE350

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0336

Sample wt/vol: 30.5 (g/mL) G Lab File ID: Z0336AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 25 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/30/90

GPC Cleanup: (Y/N) N pH: 6.3 Dilution Factor: 1.00

Number TICs found: 18

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	5.38	3500	NJ
2.	UNKNOWN ALKANE	5.72	500	NJ
3.	UNKNOWN	7.80	500	NJ
4.	UNKNOWN	19.14	750	NJ
5.	UNKNOWN	20.37	450	NJ
6.	UNKNOWN	21.49	310	NJ
7.	UNKNOWN	21.65	730	NJ
8.	UNKNOWN	21.85	2200	NJ
9.	UNKNOWN	22.27	400	NJ
10.	UNKNOWN	23.62	1500	NJ
11.	UNKNOWN	23.84	870	NJ
12.	UNKNOWN	25.06	400	NJ
13.	UNKNOWN	25.67	280	NJ
14.	UNKNOWN	28.66	4400	NJ
15.	UNKNOWN	30.22	960	NJ
16.	UNKNOWN	34.49	1200	NJ
17.	UNKNOWN	34.64	1000	NJ
18.	UNKNOWN	39.57	1500	NJ

3-27-90

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

JE352

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0337

Sample wt/vol: 30.2 (g/mL) G Lab File ID: Z0337AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 41 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/30/90

GPC Cleanup: (Y/N) N pH: 6.8 Dilution Factor: 60.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	33000	UJ3
111-44-4	bis(2-Chloroethyl)Ether	33000	UJ3
95-57-8	2-Chlorophenol	33000	UJ3
541-73-1	1,3-Dichlorobenzene	33000	UJ3
106-46-7	1,4-Dichlorobenzene	33000	UJ3
100-51-6	Benzyl Alcohol	33000	UJ3
95-50-1	1,2-Dichlorobenzene	33000	UJ3
95-48-7	2-Methylphenol	33000	UJ3
108-60-1	bis(2-Chloroisopropyl)Ether	33000	UJ3
106-44-5	4-Methylphenol	33000	UJ3
621-64-7	N-Nitroso-Di-n-Propylamine	33000	UJ3
67-72-1	Hexachloroethane	33000	UJ3
98-95-3	Nitrobenzene	33000	UJ3
78-59-1	Isophorone	33000	UJ3
88-75-5	2-Nitrophenol	33000	UJ3
105-67-9	2,4-Dimethylphenol	33000	UJ3
65-85-0	Benzoic Acid	160000	UJ3, UJ1
111-91-1	bis(2-Chloroethoxy)Methane	33000	UJ3
120-83-2	2,4-Dichlorophenol	33000	UJ3
120-82-1	1,2,4-Trichlorobenzene	33000	UJ3
91-20-3	Naphthalene	33000	UJ3
106-47-8	4-Chloroaniline	33000	UJ3
87-68-3	Hexachlorobutadiene	33000	UJ3
59-50-7	4-Chloro-3-Methylphenol	33000	UJ3
91-57-6	2-Methylnaphthalene	33000	UJ3
77-47-4	Hexachlorocyclopentadiene	33000	UJ3
88-06-2	2,4,6-Trichlorophenol	33000	UJ3
95-95-4	2,4,5-Trichlorophenol	160000	UJ3
91-58-7	2-Chloronaphthalene	33000	UJ3
88-74-4	2-Nitroaniline	160000	UJ3
131-11-3	Dimethyl Phthalate	33000	UJ3
208-96-8	Acenaphthylene	33000	UJ3
606-20-2	2,6-Dinitrotoluene	33000	UJ3

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

JE352

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0337

Sample wt/vol: 30.2 (g/mL) G Lab File ID: Z0337AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 41 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/30/90

GPC Cleanup: (Y/N) N pH: 6.8 Dilution Factor: 60.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	160000	UJ3
83-32-9	Acenaphthene	33000	UJ3
51-28-5	2,4-Dinitrophenol	160000	UJ3
100-02-7	4-Nitrophenol	160000	UJ3
132-64-9	Dibenzofuran	33000	UJ3
121-14-2	2,4-Dinitrotoluene	33000	UJ3
84-66-2	Diethylphthalate	33000	UJ3
7005-72-3	4-Chlorophenyl-phenylether	33000	UJ3
86-73-7	Fluorene	33000	UJ3
100-01-6	4-Nitroaniline	160000	UJ3
534-52-1	4,6-Dinitro-2-Methylphenol	160000	UJ3
86-30-6	N-Nitrosodiphenylamine (1)	33000	UJ3
101-55-3	4-Bromophenyl-phenylether	33000	UJ3
118-74-1	Hexachlorobenzene	33000	UJ3
87-86-5	Pentachlorophenol	160000	UJ3
85-01-8	Phenanthrene	33000	UJ3
120-12-7	Anthracene	33000	UJ3
84-74-2	Di-n-Butylphthalate	7800	J3,UJ1
206-44-0	Fluoranthene	33000	UJ3
129-00-0	Pyrene	33000	UJ3
85-68-7	Butylbenzylphthalate	33000	UJ3
91-94-1	3,3'-Dichlorobenzidine	67000	UJ3
56-55-3	Benzo(a)Anthracene	33000	UJ3
218-01-9	Chrysene	33000	UJ3
117-81-7	bis(2-Ethylhexyl)Phthalate	14000	J3,UJ1
117-84-0	Di-n-Octyl Phthalate	33000	UJ3
205-99-2	Benzo(b)Fluoranthene	33000	UJ3
207-08-9	Benzo(k)Fluoranthene	33000	UJ3
50-32-8	Benzo(a)Pyrene	33000	UJ3
193-39-5	Indeno(1,2,3-cd)Pyrene	33000	UJ3
53-70-3	Dibenz(a,h)Anthracene	33000	UJ3
191-24-2	Benzo(g,h,i)Perylene	33000	UJ3

(1) - Cannot be separated from Diphenylamine

MMR 3-27-90

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JE352

Lab Name: CHEMWEST LABS Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0337

Sample wt/vol: 30.2 (g/mL) G Lab File ID: Z0337AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 41 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/30/90

GPC Cleanup: (Y/N) N pH: 6.8 Dilution Factor: 60.0

Number TICs found: 6

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	27.56	32000	NJ
2.	UNKNOWN ALKANE	28.62	37000	NJ
3.	UNKNOWN ALKANE	30.71	180000	NJ
4.	UNKNOWN ALKANE	31.02	47000	NJ
5.	UNKNOWN	32.01	16000	NJ
6.	UNKNOWN ALKANE	34.46	27000	NJ

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE340

Lab Name: CHEMWEST Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0326

Sample wt/vol: 30.3 (g/mL) G Lab File ID: Z0326AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 15 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/20/90

GPC Cleanup: (Y/N) N pH: 6.6 Dilution Factor: 10.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	93.	UJ3
319-85-7	beta-BHC	93.	UJ3
319-86-8	delta-BHC	93.	UJ3
58-89-9	gamma-BHC (Lindane)	93.	UJ3
76-44-8	Heptachlor	93.	UJ3
309-00-2	Aldrin	93.	UJ3
1024-57-3	Heptachlor epoxide	93.	UJ3
959-98-8	Endosulfan I	93.	UJ3
60-57-1	Dieldrin	190	UJ3
72-55-9	4,4'-DDE	190	UJ3
72-20-8	Endrin	190	UJ3
33213-65-9	Endosulfan II	190	UJ3
72-54-8	4,4'-DDD	190	UJ3
1031-07-8	Endosulfan sulfate	190	UJ3
50-29-3	4,4'-DDT	190	UJ3
72-43-5	Methoxychlor	930	UJ3
53494-70-5	Endrin ketone	190	UJ3
5103-71-9	alpha-Chlordane	930	UJ3
5103-74-2	gamma-Chlordane	930	UJ3
8001-35-2	Toxaphene	1900	UJ3
12674-11-2	Aroclor-1016	930	UJ3
11104-28-2	Aroclor-1221	930	UJ3
11141-16-5	Aroclor-1232	930	UJ3
53469-21-9	Aroclor-1242	930	UJ3
12672-29-6	Aroclor-1248	930	UJ3
11097-69-1	Aroclor-1254	16000	J3
11096-82-5	Aroclor-1260	1900	UJ3

MM 3-27-90 9E

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

JE341

Lab Name: CHEMWEST Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0327

Sample wt/vol: 30.1 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 12 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/20/90

GPC Cleanup: (Y/N) N pH: ____ Dilution Factor: 2.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	18.	UJ3
319-85-7	beta-BHC	18.	UJ3
319-86-8	delta-BHC	18.	UJ3
58-89-9	gamma-BHC (Lindane)	18.	UJ3
76-44-8	Heptachlor	18.	UJ3
309-00-2	Aldrin	18.	UJ3
1024-57-3	Heptachlor epoxide	18.	UJ3
959-98-8	Endosulfan I	18.	UJ3
60-57-1	Dieldrin	36.	UJ3
72-55-9	4,4'-DDE	36.	UJ3
72-20-8	Endrin	36.	UJ3
33213-65-9	Endosulfan II	36.	UJ3
72-54-8	4,4'-DDD	36.	UJ3
1031-07-8	Endosulfan sulfate	36.	UJ3
50-29-3	4,4'-DDT	36.	UJ3
72-43-5	Methoxychlor	180	UJ3
53494-70-5	Endrin ketone	36.	UJ3
5103-71-9	alpha-Chlordane	180	UJ3
5103-74-2	gamma-Chlordane	180	UJ3
8001-35-2	Toxaphene	360	UJ3
12674-11-2	Aroclor-1016	180	UJ3
11104-28-2	Aroclor-1221	180	UJ3
11141-16-5	Aroclor-1232	180	UJ3
53469-21-9	Aroclor-1242	180	UJ3
12672-29-6	Aroclor-1248	180	UJ3
11097-69-1	Aroclor-1254	2000	J3
11096-82-5	Aroclor-1260	360	UJ3

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1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

JE342

Lab Name: CHEMWEST Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0328

Sample wt/vol: 30.4 (g/mL) G Lab File ID: Z0328AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 17 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/20/90

GPC Cleanup: (Y/N) N pH: 6.4 Dilution Factor: 5.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	48.	UJ3
319-85-7	beta-BHC	48.	UJ3
319-86-8	delta-BHC	48.	UJ3
58-89-9	gamma-BHC (Lindane)	48.	UJ3
76-44-8	Heptachlor	48.	UJ3
309-00-2	Aldrin	48.	UJ3
1024-57-3	Heptachlor epoxide	48.	UJ3
959-98-8	Endosulfan I	48.	UJ3
60-57-1	Dieldrin	95.	UJ3
72-55-9	4,4'-DDE	95.	UJ3
72-20-8	Endrin	95.	UJ3
33213-65-9	Endosulfan II	95.	UJ3
72-54-8	4,4'-DDD	95.	UJ3
1031-07-8	Endosulfan sulfate	95.	UJ3
50-29-3	4,4'-DDT	95.	UJ3
72-43-5	Methoxychlor	480	UJ3
53494-70-5	Endrin ketone	95.	UJ3
5103-71-9	alpha-Chlordane	480	UJ3
5103-74-2	gamma-Chlordane	480	UJ3
8001-35-2	Toxaphene	950	UJ3
12674-11-2	Aroclor-1016	480	UJ3
11104-28-2	Aroclor-1221	480	UJ3
11141-16-5	Aroclor-1232	480	UJ3
53469-21-9	Aroclor-1242	480	UJ3
12672-29-6	Aroclor-1248	480	UJ3
11097-69-1	Aroclor-1254	24000	J3
11096-82-5	Aroclor-1260	950	UJ3

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE343

Lab Name: CHEMWEST Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0329

Sample wt/vol: 30.3 (g/mL) G Lab File ID: Z0329AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 6 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/20/90

GPC Cleanup: (Y/N) N pH: 7.5 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	8.4	UJ3
319-85-7	beta-BHC	8.4	UJ3
319-86-8	delta-BHC	8.4	UJ3
58-89-9	gamma-BHC (Lindane)	8.4	UJ3
76-44-8	Heptachlor	8.4	UJ3
309-00-2	Aldrin	8.4	UJ3
1024-57-3	Heptachlor epoxide	8.4	UJ3
959-98-8	Endosulfan I	8.4	UJ3
60-57-1	Dieldrin	17.	UJ3
72-55-9	4,4'-DDE	17.	UJ3
72-20-8	Endrin	17.	UJ3
33213-65-9	Endosulfan II	17.	UJ3
72-54-8	4,4'-DDD	17.	UJ3
1031-07-8	Endosulfan sulfate	17.	UJ3
50-29-3	4,4'-DDT	17.	UJ3
72-43-5	Methoxychlor	84.	UJ3
53494-70-5	Endrin ketone	17.	UJ3
5103-71-9	alpha-Chlordane	84.	UJ3
5103-74-2	gamma-Chlordane	84.	UJ3
8001-35-2	Toxaphene	170	UJ3
12674-11-2	Aroclor-1016	84.	UJ3
11104-28-2	Aroclor-1221	84.	UJ3
11141-16-5	Aroclor-1232	84.	UJ3
53469-21-9	Aroclor-1242	84.	UJ3
12672-29-6	Aroclor-1248	84.	UJ3
11097-69-1	Aroclor-1254	2200	J3
11096-82-5	Aroclor-1260	170	UJ3

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE344DL

Lab Name: CHEMWEST Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0330DL

Sample wt/vol: 30.1 (g/mL) G Lab File ID: Z0330AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 18 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/20/90

GPC Cleanup: (Y/N) N pH: 6.4 Dilution Factor: 100.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	970	UJ3
319-85-7	beta-BHC	970	UJ3
319-86-8	delta-BHC	970	UJ3
58-89-9	gamma-BHC (Lindane)	970	UJ3
76-44-8	Heptachlor	970	UJ3
309-00-2	Aldrin	970	UJ3
1024-57-3	Heptachlor epoxide	970	UJ3
959-98-8	Endosulfan I	970	UJ3
60-57-1	Dieldrin	1900	UJ3
72-55-9	4,4'-DDE	1900	UJ3
72-20-8	Endrin	1900	UJ3
33213-65-9	Endosulfan II	1900	UJ3
72-54-8	4,4'-DDD	1900	UJ3
1031-07-8	Endosulfan sulfate	1900	UJ3
50-29-3	4,4'-DDT	1900	UJ3
72-43-5	Methoxychlor	9700	UJ3
53494-70-5	Endrin ketone	1900	UJ3
5103-71-9	alpha-Chlordane	9700	UJ3
5103-74-2	gamma-Chlordane	9700	UJ3
8001-35-2	Toxaphene	19000	UJ3
12674-11-2	Aroclor-1016	9700	UJ3
11104-28-2	Aroclor-1221	9700	UJ3
11141-16-5	Aroclor-1232	9700	UJ3
53469-21-9	Aroclor-1242	9700	UJ3
12672-29-6	Aroclor-1248	9700	UJ3
11097-69-1	Aroclor-1254	130000	J3
11096-82-5	Aroclor-1260	19000	UJ3

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE345DL

Lab Name: CHEMWEST Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0331DL

Sample wt/vol: 30.7 (g/mL) G Lab File ID: Z0331AB

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 16 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/20/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1000.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	9300	UJ3
319-85-7	beta-BHC	9300	UJ3
319-86-8	delta-BHC	9300	UJ3
58-89-9	gamma-BHC (Lindane)	9300	UJ3
76-44-8	Heptachlor	9300	UJ3
309-00-2	Aldrin	9300	UJ3
1024-57-3	Heptachlor epoxide	9300	UJ3
959-98-8	Endosulfan I	9300	UJ3
60-57-1	Dieldrin	19000	UJ3
72-55-9	4,4'-DDE	19000	UJ3
72-20-8	Endrin	19000	UJ3
33213-65-9	Endosulfan II	19000	UJ3
72-54-8	4,4'-DDD	19000	UJ3
1031-07-8	Endosulfan sulfate	19000	UJ3
50-29-3	4,4'-DDT	19000	UJ3
72-43-5	Methoxychlor	93000	UJ3
53494-70-5	Endrin ketone	19000	UJ3
5103-71-9	alpha-Chlordane	93000	UJ3
5103-74-2	gamma-Chlordane	93000	UJ3
8001-35-2	Toxaphene	190000	UJ3
12674-11-2	Aroclor-1016	93000	UJ3
11104-28-2	Aroclor-1221	93000	UJ3
11141-16-5	Aroclor-1232	93000	UJ3
53469-21-9	Aroclor-1242	93000	UJ3
12672-29-6	Aroclor-1248	93000	UJ3
11097-69-1	Aroclor-1254	560000	J3
11096-82-5	Aroclor-1260	190000	UJ3

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE346DL

Lab Name: CHEMWEST Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0332DL

Sample wt/vol: 30.5 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. ~~15~~ 18 (ct) 3/1/90 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/20/90

GPC Cleanup: (Y/N) N pH: 6.5 Dilution Factor: 1000.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	9600 ~~9700~~	UJ3
319-85-7	beta-BHC	9600 ~~9700~~	UJ3
319-86-8	delta-BHC	9600 ~~9700~~	UJ3
58-89-9	gamma-BHC (Lindane)	9600 ~~9700~~	UJ3
76-44-8	Heptachlor	9600 ~~9700~~	UJ3
309-00-2	Aldrin	9600 ~~9700~~	UJ3
1024-57-3	Heptachlor epoxide	9600 ~~9700~~	UJ3
959-98-8	Endosulfan I	9600 ~~9700~~	UJ3
60-57-1	Dieldrin	19000	UJ3
72-55-9	4,4'-DDE	19000	UJ3
72-20-8	Endrin	19000	UJ3
33213-65-9	Endosulfan II	19000	UJ3
72-54-8	4,4'-DDD	19000	UJ3
1031-07-8	Endosulfan sulfate	19000	UJ3
50-29-3	4,4'-DDT	19000	UJ3
72-43-5	Methoxychlor	96000 ~~97000~~	UJ3
53494-70-5	Endrin ketone	19000	UJ3
5103-71-9	alpha-Chlordane	96000 ~~97000~~	UJ3
5103-74-2	gamma-Chlordane	96000 ~~97000~~	UJ3
8001-35-2	Toxaphene	190000	UJ3
12674-11-2	Aroclor-1016	96000 ~~97000~~	UJ3
11104-28-2	Aroclor-1221	96000 ~~97000~~	UJ3
11141-16-5	Aroclor-1232	96000 ~~97000~~	UJ3
53469-21-9	Aroclor-1242	96000 ~~97000~~	UJ3
12672-29-6	Aroclor-1248	96000 ~~97000~~	UJ3
11097-69-1	Aroclor-1254	190000	UJ3
11096-82-5	Aroclor-1260	190000	UJ3

(ct) 3/1/90

3-27-90

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE347

Lab Name: CHEMWEST Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0333

Sample wt/vol: 30.5 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 21 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/20/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	10.	UJ3
319-85-7	beta-BHC	10.	UJ3
319-86-8	delta-BHC	10.	UJ3
58-89-9	gamma-BHC (Lindane)	10.	UJ3
76-44-8	Heptachlor	10.	UJ3
309-00-2	Aldrin	10.	UJ3
1024-57-3	Heptachlor epoxide	10.	UJ3
959-98-8	Endosulfan I	10.	UJ3
60-57-1	Dieldrin	20.	UJ3
72-55-9	4,4'-DDE	20.	UJ3
72-20-8	Endrin	20.	UJ3
33213-65-9	Endosulfan II	20.	UJ3
72-54-8	4,4'-DDD	20.	UJ3
1031-07-8	Endosulfan sulfate	20.	UJ3
50-29-3	4,4'-DDT	20.	UJ3
72-43-5	Methoxychlor	100	UJ3
53494-70-5	Endrin ketone	20.	UJ3
5103-71-9	alpha-Chlordane	100	UJ3
5103-74-2	gamma-Chlordane	100	UJ3
8001-35-2	Toxaphene	200	UJ3
12674-11-2	Aroclor-1016	100	UJ3
11104-28-2	Aroclor-1221	100	UJ3
11141-16-5	Aroclor-1232	100	UJ3
53469-21-9	Aroclor-1242	100	UJ3
12672-29-6	Aroclor-1248	100	UJ3
11097-69-1	Aroclor-1254	200	UJ3
11096-82-5	Aroclor-1260	200	UJ3

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE348

Lab Name: CHEMWEST Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0334

Sample wt/vol: 30.4 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 22 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/20/90

GPC Cleanup: (Y/N) N pH: 6.9 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	10.	UJ3
319-85-7	beta-BHC	10.	UJ3
319-86-8	delta-BHC	10.	UJ3
58-89-9	gamma-BHC (Lindane)	10.	UJ3
76-44-8	Heptachlor	10.	UJ3
309-00-2	Aldrin	10.	UJ3
1024-57-3	Heptachlor epoxide	10.	UJ3
959-98-8	Endosulfan I	10.	UJ3
60-57-1	Dieldrin	20.	UJ3
72-55-9	4,4'-DDE	20.	UJ3
72-20-8	Endrin	20.	UJ3
33213-65-9	Endosulfan II	20.	UJ3
72-54-8	4,4'-DDD	20.	UJ3
1031-07-8	Endosulfan sulfate	20.	UJ3
50-29-3	4,4'-DDT	20.	UJ3
72-43-5	Methoxychlor	68.	J3
53494-70-5	Endrin ketone	20.	UJ3
5103-71-9	alpha-Chlordane	100	UJ3
5103-74-2	gamma-Chlordane	100	UJ3
8001-35-2	Toxaphene	200	UJ3
12674-11-2	Aroclor-1016	100	UJ3
11104-28-2	Aroclor-1221	100	UJ3
11141-16-5	Aroclor-1232	100	UJ3
53469-21-9	Aroclor-1242	100	UJ3
12672-29-6	Aroclor-1248	100	UJ3
11097-69-1	Aroclor-1254	200	UJ3
11096-82-5	Aroclor-1260	200	UJ3

MW 3-27-90

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE349

Lab Name: CHEMWEST Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0335

Sample wt/vol: 30.8 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 20 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/20/90

GPC Cleanup: (Y/N) N pH: 6.4 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	9.7	UJ3
319-85-7	beta-BHC	9.7	UJ3
319-86-8	delta-BHC	9.7	UJ3
58-89-9	gamma-BHC (Lindane)	9.7	UJ3
76-44-8	Heptachlor	9.7	UJ3
309-00-2	Aldrin	9.7	UJ3
1024-57-3	Heptachlor epoxide	9.7	UJ3
959-98-8	Endosulfan I	9.7	UJ3
60-57-1	Dieldrin	19.	UJ3
72-55-9	4,4'-DDE	19.	UJ3
72-20-8	Endrin	19.	UJ3
33213-65-9	Endosulfan II	19.	UJ3
72-54-8	4,4'-DDD	19.	UJ3
1031-07-8	Endosulfan sulfate	19.	UJ3
50-29-3	4,4'-DDT	19.	UJ3
72-43-5	Methoxychlor	97.	UJ3
53494-70-5	Endrin ketone	19.	UJ3
5103-71-9	alpha-Chlordane	97.	UJ3
5103-74-2	gamma-Chlordane	97.	UJ3
8001-35-2	Toxaphene	190	UJ3
12674-11-2	Aroclor-1016	97.	UJ3
11104-28-2	Aroclor-1221	97.	UJ3
11141-16-5	Aroclor-1232	97.	UJ3
53469-21-9	Aroclor-1242	97.	UJ3
12672-29-6	Aroclor-1248	97.	UJ3
11097-69-1	Aroclor-1254	190	UJ3
11096-82-5	Aroclor-1260	190	UJ3

MW 3-23

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International Specialists in the Environment

MEMORANDUM

DATE: February 16, 1990

FOR: Rhonda Wreggelsworth, RSCC, USEPA, Region 10

THRU: Jeffrey Villnow, FITOM, E & E, Seattle

FROM: Andrew Riddell, Chemist, E & E, Seattle
Tracy Yerian, Senior Chemist, E & E, Seattle

SUBJ: QA of Case 13324 (Inorganics)
Northwest Pipe and Casing

REF: F10-8906-002
PAN FOR0210XC

CC: John Osborn, RPO, USEPA, Region 10
Bruce Woods, ESD, USEPA, Region 10
Gerald Muth, DPO, USEPA, Region 10 Laboratory, Manchester
Charles Sands, DPO, USEPA, Region 3
Deborah Flood, HWD-SM, USEPA, Region 10
Gerald Lee, FIT-PD, E & E, Seattle
Mark Ader, FIT-PM, E & E, Seattle

The Quality Assurance (QA) review of 13 samples, Case 13324, collected from Northwest Pipe and Casing, has been completed. Thirteen water samples were analyzed at low level for Target Compound List (TCL) Inorganics by Vegas Analytical Laboratories, Inc. of Alexandria, Virginia. The samples were numbered:

MJE012	MJE701	MJE706
MJE684	MJE702	MJE707
MJE692	MJE703	MJF236
MJE699	MJE705	MJF239
MJE700		

Sample MJF239 underwent matrix spike (MS) analysis and duplicate analysis.

Data Qualifications

The following comments refer to the laboratory performance in meeting the Quality Control (QC) specifications outlined in IFB WA-87K025-027.

1) Timeliness

Sample Number	Sample Date	Rec'd Date	ICP Anal.	AA Anal.*	Hg Anal.
MJE012	12/13/89	12/15/89	12/21/89	01/04/90	12/18/89
MJE684	12/13/89	12/15/89	12/21/89	01/04/90	12/18/89
MJE692	12/13/89	12/15/89	12/21/89	01/04/90	12/18/89
MJE699	12/13/89	12/15/89	12/21/89	01/04/90	12/18/89
MJE700	12/13/89	12/15/89	12/21/89	01/04/90	12/18/89
MJE701	12/13/89	12/15/89	12/21/89	01/04/90	12/18/89
MJE702	12/13/89	12/15/89	12/21/89	01/04/90	12/18/89
MJE703	12/13/89	12/15/89	12/21/89	01/04/90	12/18/89
MJE705	12/14/89	12/15/89	12/21/89	01/04/90	12/18/89
MJE706	12/14/89	12/15/89	12/21/89	01/04/90	12/18/89
MJE707	12/15/89	12/15/89	12/21/89	01/04/90	12/18/89
MJF236	12/13/89	12/15/89	12/21/89	01/04/90	12/18/89
MJF239	12/14/89	12/15/89	12/21/89	01/04/90	12/18/89

* The date reported for AA analysis was the latest analysis date.
ICP - Inductively Coupled Plasma
AA - Atomic Absorption
Hg - Mercury
Anal. - Analysis Date

All samples met QC holding time criteria.

2) Initial Calibration

All ICP results fell within the control limits of 90 to 110 percent of the true values. Furnace results fell within the control limits of 90 to 110 percent of the true values for all analytes. Mercury results fell within the control limits of 80 to 120 percent of the true value.

3) Continuing Calibration

All ICP results fell within the control limits of 90 to 110 percent of the true values. Furnace AA results fell within the control limits of 90 to 110 percent of the true values for all analytes. Mercury results fell within the control limits of 80 to 120 percent of the true value.

4) Instrument Detection Limits

All Instrument Detection Limits (IDLs) for ICP, AA, and mercury analyses were equal to or less than the Contract Required Detection Limits (CRDLs).

5) Blanks

The following blanks contained elemental contamination above the IDL but below CRDL:

Blank*	Element	Conc. µg/L	IDL µg/L	CRDL µg/L
ICB	Chromium	4.4	4.0	10
CCB1	Zinc	4.8	3.0	20
CCB2	Aluminum	23.6	21.0	200
	Beryllium	2.2	2.0	5
	Lead	1.1	1.0	3
	Zinc	4.2	3.0	20
CCB3	Aluminum	38.8	21.0	200
	Beryllium	3.0	2.0	5
	Cadmium	3.1	2.0	5
	Chromium	6.6	4.0	10
	Iron	5.6	5.0	100
	Potassium	346.9	296.0	5,000
	Zinc	5.9	3.0	20
CCB4	Aluminum	34.6	21.0	200
	Beryllium	2.8	2.0	5
	Chromium	6.6	4.0	10
	Zinc	5.3	3.0	20
CCB5	Aluminum	23.6	21.0	200
	Beryllium	2.4	2.0	5
	Zinc	5.0	3.0	20
PB	Aluminum	95.6	21.0	200
	Beryllium	2.5	2.0	5
	Calcium	84.9	31.0	5,000
	Chromium	6.2	4.0	10
	Iron	26.5	5.0	100
	Magnesium	64.4	33.0	5,000

* ICB = Initial Calibration Blank; CCB = Continuing Calibration Blank; PB = Preparation Blank.
Conc. - Concentration

Sample results below five times the highest analyte level reported in the blanks were flagged UJ_1 (not detected, estimated quantitation limit).

6) ICP Interference Check

All parameters for the Interference Check Sample were within the control limits of 80 to 120 percent of the true values.

7) Laboratory Control Sample

The recoveries for all parameters for both ICP and AA analyses were within the control limits required by IFB WA-87K025-027.

8) Duplicate Sample Analysis

The Relative Percent Difference (RPD) values for the duplicate sample analysis were within QC criteria of less than 20 percent for sample values greater than five times the CRDL. For all sample values less than five times the CRDL, the RPD values were within ± the CRDL for water matrix.

9) Spiked Sample Analysis

The percent recoveries for matrix spike sample analysis were within the QC limits of 75 to 125 percent for all parameters.

10) ICP Serial Dilution

The Percent Difference (%D) values for ICP serial dilution analysis were within the QC limits of 10 percent for all parameters.

11) Furnace AA

All furnace AA results met QC criteria, except for the lead initial calibration:

Date	Matrix	Element	r	QC Criteria
12/21/89	Water	Lead	0.993	0.995

Positive results and analyte detection limits for lead were flagged as estimated (J_4 or UJ_4).

12) Mercury Analysis

All mercury analyses met QC criteria.

13) Cyanide Analysis

Cyanide analyses were not requested.

14) Sample Analysis

A CRDL sample was run.

Sample results reported that are below CRDL and above IDL are flagged as estimated quantities (J).

15) Laboratory Contact

No laboratory contact was required.

Data Use

The usefulness of the data is based on the criteria outlined in the "Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses" (R-582-5-5-01); the Data Qualifier Definitions supplied by the Office of Solid Waste and Emergency Response (September 1989); and the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989).

Upon consideration of the above comments, the data is ACCEPTABLE for use except where flagged with data qualifiers which modify the usefulness of individual values.

Additional data packages associated with this project are expected from CLP or EPA laboratories.

Data Qualifiers

U - The material was analyzed for, but was not detected. The associated numerical value is a contractual quantitation limit, adjusted for sample weight/sample volume, extraction volume, percent solids and sample dilution.

J - The analyte was analyzed for and was positively identified, but the associated numerical value may not be consistent with the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.

UJ - The material was analyzed for, but was not detected. The associated numerical value is an estimated/adjusted quantitation limit. The associated numerical value may not accurately or precisely represent the concentration necessary to detect the analyte in this sample.

A subscript will be appended to the "J" qualifier or the "UJ" qualifier that indicates which of the following quality control criteria were not met:

1. Blank contamination: indicates possible high bias and/or false positives.

2. Calibration range exceeded: indicates possible low bias.

3. Holding times not met: indicates low bias for most analytes.

4. Other QC outside control limits: bias not readily determined.

R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.

INO/13324-B

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJE012

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE012

Matrix (Soil/Water): WATER Lab Sample ID: VALI 12

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS NO.	Analyte	Concentration NWPL 24	C	Q	M
7429-90-5	Aluminum	111.00	UJ		
7440-36-0	Antimony	20.00	U		
7440-38-2	Arsenic	4.40	U		
7440-39-3	Barium	33.10	J		
7440-41-7	Beryllium	2.90	UJ		
7440-43-9	Cadmium	2.00	U		
7440-70-2	Calcium	21300.00			
7440-47-3	Chromium	4.00	U		
7440-48-4	Cobalt	7.00	U		
7440-50-8	Copper	3.00	U		
7439-89-6	Iron	223.00			
7439-92-1	Lead	1.10	UJ		
7439-95-4	Magnesium	5990.00			
7439-96-5	Manganese	147.00			
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	16.00	U		
7440-09-7	Potassium	1650.00	UJ		
7482-49-2	Selenium	2.80	J		
7440-22-4	Silver	3.00	U		
7440-23-5	Sodium	7180.00			
7440-28-0	Thallium	1.10	U		
7440-62-2	Vanadium	3.00	U		
7440-66-6	Zinc	173.00			
---	Cyanide				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

2-9-90

Comments :

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJE684

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE012

Matrix (Soil/Water): WATER Lab Sample ID: VALI 684

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS NO.	Analyte	Concentration NWPC 22	C	Q	M
7429-90-5	Aluminum	450.00	UJ		
7440-36-0	Antimony	20.00	U		
7440-38-2	Arsenic	4.40	U		
7440-39-3	Barium	21.00	J		
7440-41-7	Beryllium	3.00	UJ		
7440-43-9	Cadmium	2.00	U		
7440-70-2	Calcium	24800.00			
7440-47-3	Chromium	4.00	U		
7440-48-4	Cobalt	7.00	U		
7440-50-8	Copper	3.00	U		
7439-89-6	Iron	513.00			
7439-92-1	Lead	1.50	UJ	J4	
7439-95-4	Magnesium	5220.00			
7439-96-5	Manganese	31.70			
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	16.00	U		
7440-09-7	Potassium	1970.00	J		
7482-49-2	Selenium	2.20	U		
7440-22-4	Silver	3.00	U		
7440-23-5	Sodium	5540.00			
7440-28-0	Thallium	1.10	U		
7440-62-2	Vanadium	3.00	U		
7440-66-6	Zinc	53.30			
---------	Cyanide				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments :

2-9-90

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJE692

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE012

Matrix (Soil/Water): WATER Lab Sample ID: VALI 692

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS NO.	Analyte	Concentration	C	Q	M
		HWR 26			
7429-90-5	Aluminum	230.00	UJ		
7440-36-0	Antimony	20.00	U		
7440-38-2	Arsenic	4.40	U		
7440-39-3	Barium	19.80	J		
7440-41-7	Beryllium	3.50	UJ		
7440-43-9	Cadmium	2.00	U		
7440-70-2	Calcium	25500.00			
7440-47-3	Chromium	4.00	U		
7440-48-4	Cobalt	7.00	U		
7440-50-8	Copper	3.00	U		
7439-89-6	Iron	260.00			
7439-92-1	Lead	1.10	UJ		
7439-95-4	Magnesium	5140.00			
7439-96-5	Manganese	40.00			
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	16.00	U		
7440-09-7	Potassium	1640.00	UJ		
7482-49-2	Selenium	2.20	U		
7440-22-4	Silver	3.00	U		
7440-23-5	Sodium	5680.00			
7440-28-0	Thallium	1.10	U		
7440-62-2	Vanadium	3.00	U		
7440-66-6	Zinc	55.20			
---------	Cyanide				

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments :

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJE699

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE012

Matrix (Soil/Water): WATER Lab Sample ID: VALI 699

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS NO.	Analyte	Concentration NWPL 28	C	Q	M
7429-90-5	Aluminum	1680.00			
7440-36-0	Antimony	20.00	U		
7440-38-2	Arsenic	4.40	U		
7440-39-3	Barium	38.40	J		
7440-41-7	Beryllium	3.40	UJ1		
7440-43-9	Cadmium	2.00	U		
7440-70-2	Calcium	27100.00			
7440-47-3	Chromium	4.10	UJ1		
7440-48-4	Cobalt	7.00	U		
7440-50-8	Copper	3.00	U		
7439-89-6	Iron	2870.00			
7439-92-1	Lead	4.60	UJ1	J4	
7439-95-4	Magnesium	9100.00			
7439-96-5	Manganese	248.00			
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	16.00	U		
7440-09-7	Potassium	2400.00	J		
7482-49-2	Selenium	2.20	U		
7440-22-4	Silver	3.00	U		
7440-23-5	Sodium	9020.00			
7440-28-0	Thallium	1.10	U		
7440-62-2	Vanadium	9.70	J		
7440-66-6	Zinc	37.90			
---------	Cyanide				

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments :

2-9-90

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJE700

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE012

Matrix (Soil/Water): WATER Lab Sample ID: VALI 700

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS NO.	Analyte	Concentration RBL	C	Q	M
7429-90-5	Aluminum	128.00	UJ		
7440-36-0	Antimony	20.00	U		
7440-38-2	Arsenic	4.40	U		
7440-39-3	Barium	14.00	U		
7440-41-7	Beryllium	3.60	UJ		
7440-43-9	Cadmium	2.00	U		
7440-70-2	Calcium	393.00	UJ		
7440-47-3	Chromium	4.00	U		
7440-48-4	Cobalt	7.00	U		
7440-50-8	Copper	3.00	U		
7439-89-6	Iron	71.00	UJ		
7439-92-1	Lead	1.10	UJ		
7439-95-4	Magnesium	74.50	UJ		
7439-96-5	Manganese	3.60	J		
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	16.00	U		
7440-09-7	Potassium	296.00	U		
7482-49-2	Selenium	2.20	U		
7440-22-4	Silver	3.00	U		
7440-23-5	Sodium	544.00	J		
7440-28-0	Thallium	1.10	U		
7440-62-2	Vanadium	3.00	U		
7440-66-6	Zinc	33.30			
---------	Cyanide				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments :

2-9-90

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJE701

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE012

Matrix (Soil/Water): WATER Lab Sample ID: VALI 701

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS NO.	Analyte	Concentration RBZ	C	Q	M
7429-90-5	Aluminum	22.20	UJ		
7440-36-0	Antimony	20.00	U		
7440-38-2	Arsenic	4.40	U		
7440-39-3	Barium	14.00	U		
7440-41-7	Beryllium	2.00	U		
7440-43-9	Cadmium	2.00	U		
7440-70-2	Calcium	285.00	UJ		
7440-47-3	Chromium	4.00	U		
7440-48-4	Cobalt	7.00	U		
7440-50-8	Copper	3.00	U		
7439-89-6	Iron	17.30	UJ		
7439-92-1	Lead	1.10	UJ		
7439-95-4	Magnesium	33.00	U		
7439-96-5	Manganese	1.00	U		
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	16.00	U		
7440-09-7	Potassium	296.00	U		
7482-49-2	Selenium	2.20	U		
7440-22-4	Silver	3.00	U		
7440-23-5	Sodium	312.00	J		
7440-28-0	Thallium	1.10	U		
7440-62-2	Vanadium	3.00	U		
7440-66-6	Zinc	32.20			
---------	Cyanide				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments :

2-9-90

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJE702

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE012

Matrix (Soil/Water): WATER Lab Sample ID: VALI 702

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS NO.	Analyte	Concentration TB1	C	Q	M
7429-90-5	Aluminum	21.00	U		
7440-36-0	Antimony	20.00	U		
7440-38-2	Arsenic	4.40	U		
7440-39-3	Barium	14.00	U		
7440-41-7	Beryllium	2.00	U		
7440-43-9	Cadmium	2.00	U		
7440-70-2	Calcium	158.00	UJ		
7440-47-3	Chromium	4.00	U		
7440-48-4	Cobalt	7.00	U		
7440-50-8	Copper	3.00	U		
7439-89-6	Iron	19.40	UJ		
7439-92-1	Lead	1.10	UJ		
7439-95-4	Magnesium	33.00	U		
7439-96-5	Manganese	1.00	U		
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	16.00	U		
7440-09-7	Potassium	296.00	U		
7482-49-2	Selenium	2.20	U		
7440-22-4	Silver	3.00	U		
7440-23-5	Sodium	329.00	J		
7440-28-0	Thallium	1.10	U		
7440-62-2	Vanadium	3.00	U		
7440-66-6	Zinc	24.40	UJ		
---------	Cyanide				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments :

2-9-90

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJE703

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE012

Matrix (Soil/Water): WATER Lab Sample ID: VALI 703

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS NO.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	472.00	UJ		
7440-36-0	Antimony	20.00	U		
7440-38-2	Arsenic	4.40	U		
7440-39-3	Barium	22.60	J		
7440-41-7	Beryllium	2.00	U		
7440-43-9	Cadmium	2.00	U		
7440-70-2	Calcium	26000.00			
7440-47-3	Chromium	4.40	UJ		
7440-48-4	Cobalt	7.00	U		
7440-50-8	Copper	3.00	U		
7439-89-6	Iron	615.00			
7439-92-1	Lead	1.10	UJ		
7439-95-4	Magnesium	5310.00			
7439-96-5	Manganese	49.10			
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	16.00	U		
7440-09-7	Potassium	2550.00	J		
7482-49-2	Selenium	2.20	U		
7440-22-4	Silver	3.00	U		
7440-23-5	Sodium	5200.00			
7440-28-0	Thallium	1.10	U		
7440-62-2	Vanadium	4.70	J		
7440-66-6	Zinc	60.50			
---------	Cyanide				

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments :

9-90

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJE705

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE012

Matrix (Soil/Water): WATER Lab Sample ID: VALI 705

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS NO.	Analyte	Concentration	C	Q	M
		WATER			
7429-90-5	Aluminum	296.00	UJ1		
7440-36-0	Antimony	20.00	U		
7440-38-2	Arsenic	4.40	U		
7440-39-3	Barium	25.10	J		
7440-41-7	Beryllium	2.00	U		
7440-43-9	Cadmium	2.00	U		
7440-70-2	Calcium	11100.00			
7440-47-3	Chromium	6.00	J		
7440-48-4	Cobalt	7.00	U		
7440-50-8	Copper	3.00	U		
7439-89-6	Iron	585.00			
7439-92-1	Lead	1.30	UJ1	J4	
7439-95-4	Magnesium	4050.00	J		
7439-96-5	Manganese	86.30			
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	16.00	U		
7440-09-7	Potassium	2190.00	J		
7482-49-2	Selenium	2.20	U		
7440-22-4	Silver	3.00	U		
7440-23-5	Sodium	6480.00			
7440-28-0	Thallium	1.10	U		
7440-62-2	Vanadium	3.30	J		
7440-66-6	Zinc	38.50			
---------	Cyanide				

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments :

2-9-90

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INORGANIC ANALYSES DATA SHEET

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EPA SAMPLE NO.

MJE706

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE012

Matrix (Soil/Water): WATER Lab Sample ID: VALI 706

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS NO.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	291.00	UJ1		
7440-36-0	Antimony	20.00	U		
7440-38-2	Arsenic	4.40	U		
7440-39-3	Barium	27.20	J		
7440-41-7	Beryllium	2.00	U		
7440-43-9	Cadmium	2.10	UJ1		
7440-70-2	Calcium	27600.00			
7440-47-3	Chromium	4.00	U		
7440-48-4	Cobalt	7.00	U		
7440-50-8	Copper	3.00	U		
7439-89-6	Iron	432.00			
7439-92-1	Lead	1.30	UJ1	J4	
7439-95-4	Magnesium	10400.00			
7439-96-5	Manganese	46.60			
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	16.00	U		
7440-09-7	Potassium	1910.00	J		
7482-49-2	Selenium	2.20	U		
7440-22-4	Silver	3.00	U		
7440-23-5	Sodium	7800.00			
7440-28-0	Thallium	1.10	U		
7440-62-2	Vanadium	3.50	J		
7440-66-6	Zinc	114.00			
---------	Cyanide				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments :

2-9-90

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJE707

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE012

Matrix (Soil/Water): WATER Lab Sample ID: VALI 707

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS NO.	Analyte	Concentration NWPC 40	C	Q	M
7429-90-5	Aluminum	27600.00			
7440-36-0	Antimony	20.00	U		
7440-38-2	Arsenic	4.40	U		
7440-39-3	Barium	1680.00			
7440-41-7	Beryllium	3.00	UJ		
7440-43-9	Cadmium	16.30			
7440-70-2	Calcium	72700.00			
7440-47-3	Chromium	112.00			
7440-48-4	Cobalt	38.60	J		
7440-50-8	Copper	262.00			
7439-89-6	Iron	89800.00			
7439-92-1	Lead	491.00	J+		
7439-95-4	Magnesium	12100.00			
7439-96-5	Manganese	4300.00			
7439-97-6	Mercury	0.50			
7440-02-0	Nickel	74.60			
7440-09-7	Potassium	17600.00			
7482-49-2	Selenium	2.20	U		
7440-22-4	Silver	3.00	U		
7440-23-5	Sodium	27100.00			
7440-28-0	Thallium	1.10	U		
7440-62-2	Vanadium	64.80			
7440-66-6	Zinc	4800.00			
---------	Cyanide				

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments :

2-9-90

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJF236

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE012

Matrix (Soil/Water): WATER Lab Sample ID: VALI 236

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS NO.	Analyte	Concentration NWPL 23b	C	Q	M
7429-90-5	Aluminum	1830.00			
7440-36-0	Antimony	20.00	U		
7440-38-2	Arsenic	4.40	U		
7440-39-3	Barium	48.90	J		
7440-41-7	Beryllium	2.00	U		
7440-43-9	Cadmium	3.20	UJ		
7440-70-2	Calcium	22200.00			
7440-47-3	Chromium	7.60	UJ		
7440-48-4	Cobalt	7.00	U		
7440-50-8	Copper	31.70			
7439-89-6	Iron	4240.00			
7439-92-1	Lead	64.80	J		
7439-95-4	Magnesium	6740.00			
7439-96-5	Manganese	463.00			
7439-97-6	Mercury	0.20			
7440-02-0	Nickel	16.00	U		
7440-09-7	Potassium	2000.00	J		
7482-49-2	Selenium	2.20	U		
7440-22-4	Silver	3.00	U		
7440-23-5	Sodium	6950.00			
7440-28-0	Thallium	1.10	U		
7440-62-2	Vanadium	9.80	J		
7440-66-6	Zinc	215.00			
---------	Cyanide				

Color Before: GREY Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments :

2-9-90

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJF239

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE012

Matrix (Soil/Water): WATER Lab Sample ID: VALI 239

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS NO.	Analyte	Concentration MG/PC32	C	Q	M
7429-90-5	Aluminum	373.00	UJ1		
7440-36-0	Antimony	20.00	U		
7440-38-2	Arsenic	4.40	U		
7440-39-3	Barium	26.00	J		
7440-41-7	Beryllium	2.00	U		
7440-43-9	Cadmium	3.70	UJ1		
7440-70-2	Calcium	14500.00			
7440-47-3	Chromium	5.00	UJ1		
7440-48-4	Cobalt	7.00	U		
7440-50-8	Copper	20.60	J		
7439-89-6	Iron	695.00			
7439-92-1	Lead	2.30	UJ1	J4	
7439-95-4	Magnesium	5250.00			
7439-96-5	Manganese	64.60			
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	16.00	U		
7440-09-7	Potassium	2210.00	J		
7482-49-2	Selenium	2.20	U		
7440-22-4	Silver	3.00	U		
7440-23-5	Sodium	6730.00			
7440-28-0	Thallium	1.10	U		
7440-62-2	Vanadium	4.00	J		
7440-66-6	Zinc	53.60			
---------	Cyanide				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments :

2-9-90

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International Specialists in the Environment

MEMORANDUM

DATE: March 30, 1990

FOR: Rhonda Wreggelsworth, RSCC, USEPA, Region 10

THRU: Jeffrey Villnow, FITOM, E & E, Seattle

FROM: Mark Woodke, Chemist, E & E, Seattle
for Tracy Yerian, Senior Chemist, E & E, Seattle

SUBJ: QA of Case 13324 (Organics)
Northwest Pipe and Casing

REF: F10-8906-002
PAN FOR0210XC

CC: John Osborn, RPO, USEPA, Region 10
Bruce Woods, ESD, USEPA, Region 10
Gerald Muth, DPO, USEPA, Region 10 Laboratory, Manchester
Kent Kitchingman, DPO, USEPA, Region 9
Deborah Flood, HWD-SM, USEPA, Region 10
Gerald Lee, FIT-PD, E & E, Seattle
Mark Ader, FIT-PM, E & E, Seattle

The Quality Assurance (QA) review of 12 samples, Case 13324, collected from Northwest Pipe and Casing, has been completed. Twelve soil samples were analyzed at low level for Target Compound List (TCL) Organics by Chemwest Analytical Laboratory of Sacramento, California. The samples were numbered:

JE340	JE344	JE348
JE341	JE345	JE349
JE342	JE346	JE350
JE343	JE347	JE352

Sample JE340 underwent matrix spike (MS) and matrix spike duplicate (MSD) analysis.

Data Qualifications

The following comments refer to the laboratory performance in meeting the Quality Control (QC) specifications outlined in IFB WA-87K236-238, following Laboratory Data Validation Functional Guidelines for Evaluating Organics Analysis (February 1, 1988).

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1) Timeliness

Sample Number	Sample Date	Rec'd Date	VOC Anal.	BNA Extr.	BNA Anal.	Pest/PCB Extr.	Pest/PCB Anal.
JE340	12/12/89	12/13/89	12/21/89	12/21/89	01/08/90	12/21/89	01/20/90
JE341	12/12/89	12/13/89	12/21/89	12/21/89	01/09/90	12/21/89	01/20/90
JE342	12/12/89	12/13/89	12/21/89	12/21/89	01/09/90	12/21/89	01/20/90
JE343	12/12/89	12/13/89	12/21/89	12/21/89	01/09/90	12/21/89	01/20/90
JE344	12/12/89	12/13/89	12/21/89	12/21/89	01/09/90	12/21/89	01/20/90
JE345	12/12/89	12/13/89	12/21/89	12/21/89	01/08/90	12/21/89	01/20/90
JE346	12/12/89	12/13/89	12/21/89	12/21/89	01/30/90	12/21/89	01/20/90
JE347	12/12/89	12/13/89	12/21/89	12/21/89	01/30/90	12/21/89	01/20/90
JE348	12/12/89	12/13/89	12/21/89	12/21/89	01/30/90	12/21/89	01/20/90
JE349	12/12/89	12/13/89	12/21/89	12/21/89	01/30/90	12/21/89	01/20/90
JE350	12/12/89	12/13/89	12/21/89	12/21/89	01/30/90	12/21/89	01/20/90
JE352	12/12/89	12/13/89	12/21/89	12/21/89	01/30/90	12/21/89	01/20/90

VOC - Volatile Organic Compounds
BNA - Base, Neutral, and Acid Semivolatile Compounds
Pest/PCB - Pesticide/Polychlorinated Biphenyl Compounds
Anal. - Analysis Date
Extr. - Extraction Date

All samples met holding time criteria for volatiles. All semivolatiles and pesticide/polychlorinated biphenyls exceeded the extraction holding time of 7 days. Samples JE346, JE347, JE348, JE349, JE350, and JE352 also exceeded the semivolatile analysis time of 40 days.

All semivolatile and pesticide/polychlorinated biphenyl results were flagged "J_3" (estimated quantity) or "UJ_3" (not detected, estimated quantitation limit) as appropriate.

2) Instrument Tuning

All tuning check compound mass abundances and ratios were within contract-required limits for volatile and semivolatile analysis.

3) Initial Calibration

All System Performance Check Compounds (SPCCs) were within contract-required limits for the initial calibration with average Relative Response Factors (RRFs) above 0.05 for volatiles and semivolatiles. All Calibration Check Compounds (CCCs) were within contract-required limits for the initial calibration with Percent Relative Standard Deviations (RSDs) below 30 percent.

All non-SPCCs had average RRFs of greater than or equal to 0.05 in the initial volatile or semivolatile calibration.

All non-CCCs had percent RSDs less than or equal to 30 percent for the initial volatile or semivolatile calibration.

4) Continuing Calibrations

All SPCCs were at or above the contract-required Relative Response Factor (RRF(50)) criteria of 0.05 for volatiles and semivolatiles. All CCCs were at or below the contract-required Percent Difference (%D) limits of 25 percent for the volatile and semivolatile continuing calibrations.

All non-SPCCs had RRF(50)s of greater than or equal to 0.05 for continuing volatile and semivolatile calibrations.

All non-CCCs that were detected in the sample had percent difference (%D) values for the continuing calibration of less than or equal to 25 percent.

5) Blanks

Frequency criteria were met for laboratory blank analysis.

The following compounds were detected in laboratory blanks at levels above Instrument Detection Limits (IDL), but below Contract Required Quantitation Limits (CRQL) for TCL compounds:

Blank ID	Fraction	Compound	Conc. (µg/kg)	CRQL (µg/kg)	Associated Samples
VBLK1	VOC	Methylene Chloride	1	5	All
		Acetone	5	10	
SBLK1	BNA	Benzoic Acid	130	1,600	All
		Di-n-butylphthalate	310	330	
		bis(2-Ethylhexyl)phthalate	34	330	

Conc. - Concentration

Reported levels of the above compounds in the samples were flagged "UJ_1" (estimated quantitation limit) if the concentrations were below five times the concentrations found in the appropriate blank (10 times for common solvents).

The following Tentatively Identified Compounds (TICs) were identified in the laboratory blanks:

Blank ID	Fraction	Compound	RT (min.)	Est. Conc. (µg/kg)	Associated Samples
SBLK1	BNA	Unknown	5.13	1,100	All
		2,3-Dimethyl Heptane	5.48	220	
		Unknown	7.20	160	
		Unknown	8.27	180	
		Unknown	9.94	28,000	

RT - Retention Time
Est. Conc. - Estimated Concentration
min. - minutes

Reported levels of these compounds found in the samples were flagged "UJ_1" (estimated quantitation limit) if the reported concentration was less than 10 times the concentration found in the appropriate blank.

6) Pesticide Standards

a) Linearity

The evaluation standards met the contract-required limits of less than 10 percent RSD for linearity.

b) DDT Retention Time

The retention time for DDT on the primary and secondary GC column met or exceeded 12 minutes for the standard runs.

c) Retention Time Windows

The retention time windows met the contract specifications.

d) Analytical Sequence

The analytical sequence met the contract-required frequency and order.

e) 4,4'-DDT/Endrin Degradation

The percent breakdown for Endrin and DDT met the contract limit of 20 percent for the individual or combined breakdown totals.

f) Dibutylchlorendate Retention Time Shift

The Percent Difference calculated for the retention time of dibutylchlorendate did not exceed 2 percent for the packed columns.

7) Surrogate Recovery

Recoveries (%R) for all surrogate compounds for volatile and semi-volatile analysis met QC criteria, except:

Sample Number	Fraction	Compound	%R	QC Limits
JE341	VOC	Toluene-d8	138	81 - 117

Sample JE341 was reanalyzed (JE341RE); toluene-d8 also was outside of QC limits in the second analysis. Sample JE341 was taken as more representative than the reanalysis (JE341RE). Positive results and sample quantitation limits were flagged as estimated (J_4 or UJ_4) in sample JE341.

Aroclor 1254 was detected in samples JE340, JE342, JE344, JE345, and JE346 at levels which required sample extract dilutions. Dibutylchlorendate was diluted out in each of these samples; no action was taken. All other recoveries for dibutylchlorendate (pesticide/PCB surrogate) met advisory QC guidelines, except sample JE341. The advisory QC limits are 20 to 150 percent while JE341 had 165 percent recovery. The high recovery is due to Aroclor 1254 interference; no action was taken for sample JE341.

All surrogate compounds met calibration QC criteria, except:

Calibration Date	Fraction	Surrogate	%D	QC Criteria
01/09/90	BNA	2,4,6-Tribromophenol	25.8	$\leq$ 25

No action was taken based on the surrogate calibration QC outlier.

8) Matrix Spike and Matrix Spike Duplicate

All MS and MSD Percent Recoveries (%Rs) met advisory QC guidelines, except:

Sample Number	Fraction	Compound	%R	QC Limits
JE340MS	BNA	Acenaphthene	201	31 - 137
		Pyrene	739	35 - 142
JE340MSD	BNA	Pyrene	457	35 - 142

All RPD values for the MS and MSD were within QC guidelines, except:

Sample Number	Fraction	Compound	RPD	QC Limit
JE340	BNA	Acenaphthene	64	19
		Pyrene	47	30

Positive results and sample quantitation limits for acenaphthene and pyrene in sample JE340 were flagged as estimated (J_4 or UJ_4).

9) Internal Standard Recovery

All internal standard areas were within established QC limits, except:

Analysis Date	Fraction	Internal Standard	Standard Area	QC Lower Limit	QC Upper Limit	Associated Sample
12/21/89	VOC	Chlorobenzene	56,200	72,000	288,000	JE341
01/09/90	BNA	Phenanthrene-d10	219,000	48,100	192,400	JE341
		Chrysene-d12	324,000	59,000	236,000	
		Perylene-d12	283,000	42,700	170,800	

Sample JE341 was reanalyzed (JE341RE) for BNA compounds due to high Internal Standard recoveries. The reanalysis was outside of the BNA analysis holding time limit of 40 days. Sample JE341 was taken as more representative than the reanalysis (JE341RE).

The sample fractions associated with the outlier internal standard areas were flagged as estimated (J_4 or UJ_4) in sample JE341.

10) Sample Analysis

Samples JE344, JE345, and JE346 were analyzed for pesticides/PCBs at diluted levels due to the presence of Aroclor 1254 in each sample. The holding times for each sample and its corresponding dilution were the same, so the diluted analysis was taken as more representative for each sample. Aroclor 1254 was not confirmed by GC/MS in sample JE346, so the result is reported as not detected.

All reported results above IDLs but below CRQLs were flagged as estimated quantities (J) on the Data Sheets.

All TICs were flagged "NJ_3" (tentatively identified, estimated quantity).

11) Laboratory Contact

No laboratory contact was required.

Data Use

The usefulness of the data is based on the criteria outlined in the "Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses" (February 1, 1988); the Data Qualifier Definitions supplied by the Office of Solid Waste and Emergency Response (September 1989); and the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989).

Upon consideration of the data qualifications noted above, the data are ACCEPTABLE for use except where flagged with data qualifiers which modify the usefulness of the individual values.

Additional data packages associated with this project are expected from CLP or EPA laboratories.

Data Qualifiers

U - The material was analyzed for, but was not detected. The associated numerical value is a contractual quantitation limit, adjusted for sample weight/sample volume, extraction volume, percent solids and sample dilution.

J - The analyte was analyzed for and was positively identified, but the associated numerical value may not be consistent with the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.

UJ - The material was analyzed for, but was not detected. The associated numerical value is an estimated/adjusted quantitation limit. The associated numerical value may not accurately or precisely represent the concentration necessary to detect the analyte in this sample.

A subscript will be appended to the "J" qualifier or the "UJ" qualifier that indicates which of the following quality control criteria were not met:

1. Blank contamination: indicates possible high bias and/or false positives.

2. Calibration range exceeded: indicates possible low bias.

3. Holding times not met: indicates low bias for most analytes with the exception of common laboratory contaminants and chlorinated ethenes (i.e., trichloroethene, 1,1-dichloroethene, and vinyl chloride).

4. Other QC outside control limits: bias not readily determined.

R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.

N - Presumptive evidence of presence of material (tentative identification). Confirmation of the analyte requires further analysis.

NJ - The analysis indicates that the analyte is tentatively identified and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

A subscript will be appended to the "NJ" qualifier that indicates which of the following situations applies:

1. DDT/Endrin breakdown evident.

2. Interference by other sample components.

3. Non-Target Compound List (TCL) compounds (confirmation is necessary using specific target compound methodology to accurately determine the concentration and identity of the detected compounds).

4. A confirmation analysis was missing or quality control criteria were not met for the confirmation analysis.

M - Mass spectral criteria for positive identification were not met. However, in the opinion of the laboratory, the identification is correct based on the analyst's professional judgement.

X - The reported result may be a combination of indistinguishable isomers.

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MEMORANDUM

DATE: February 16, 1990

FOR: Rhonda Wreggelsworth, RSCC, USEPA, Region 10

THRU: Jeffrey Villnow, FITOM, E & E, Seattle

FROM: Andrew Riddell, Chemist, E & E, Seattle
Tracy Yerian, Senior Chemist, E & E, Seattle

SUBJ: QA of Case 13324 (Inorganics)
Northwest Pipe and Casing

REF: F10-8906-002
PAN FOR0210XC

CC: John Osborn, RPO, USEPA, Region 10
Bruce Woods, ESD, USEPA, Region 10
Gerald Muth, DPO, USEPA, Region 10 Laboratory, Manchester
Charles Sands, DPO, USEPA, Region 3
Deborah Flood, HWD-SM, USEPA, Region 10
Gerald Lee, FIT-PD, E & E, Seattle
Mark Ader, FIT-PM, E & E, Seattle

The Quality Assurance (QA) review of 13 samples, Case 13324, collected from Northwest Pipe and Casing, has been completed. Thirteen water samples were analyzed at low level for Target Compound List (TCL) Inorganics by Vegas Analytical Laboratories, Inc. of Alexandria, Virginia. The samples were numbered:

MJE012	MJE701	MJE706
MJE684	MJE702	MJE707
MJE692	MJE703	MJF236
MJE699	MJE705	MJF239
MJE700		

Sample MJF239 underwent matrix spike (MS) analysis and duplicate analysis.

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Data Qualifications

The following comments refer to the laboratory performance in meeting the Quality Control (QC) specifications outlined in IFB WA-87K025-027.

1) Timeliness

Sample Number	Sample Date	Rec'd Date	ICP Anal.	AA Anal.*	Hg Anal.
MJE012	12/13/89	12/15/89	12/21/89	01/04/90	12/18/89
MJE684	12/13/89	12/15/89	12/21/89	01/04/90	12/18/89
MJE692	12/13/89	12/15/89	12/21/89	01/04/90	12/18/89
MJE699	12/13/89	12/15/89	12/21/89	01/04/90	12/18/89
MJE700	12/13/89	12/15/89	12/21/89	01/04/90	12/18/89
MJE701	12/13/89	12/15/89	12/21/89	01/04/90	12/18/89
MJE702	12/13/89	12/15/89	12/21/89	01/04/90	12/18/89
MJE703	12/13/89	12/15/89	12/21/89	01/04/90	12/18/89
MJE705	12/14/89	12/15/89	12/21/89	01/04/90	12/18/89
MJE706	12/14/89	12/15/89	12/21/89	01/04/90	12/18/89
MJE707	12/15/89	12/15/89	12/21/89	01/04/90	12/18/89
MJF236	12/13/89	12/15/89	12/21/89	01/04/90	12/18/89
MJF239	12/14/89	12/15/89	12/21/89	01/04/90	12/18/89

* The date reported for AA analysis was the latest analysis date.
ICP - Inductively Coupled Plasma
AA - Atomic Absorption
Hg - Mercury
Anal. - Analysis Date

All samples met QC holding time criteria.

2) Initial Calibration

All ICP results fell within the control limits of 90 to 110 percent of the true values. Furnace results fell within the control limits of 90 to 110 percent of the true values for all analytes. Mercury results fell within the control limits of 80 to 120 percent of the true value.

3) Continuing Calibration

All ICP results fell within the control limits of 90 to 110 percent of the true values. Furnace AA results fell within the control limits of 90 to 110 percent of the true values for all analytes. Mercury results fell within the control limits of 80 to 120 percent of the true value.

4) Instrument Detection Limits

All Instrument Detection Limits (IDLs) for ICP, AA, and mercury analyses were equal to or less than the Contract Required Detection Limits (CRDLs).

5) Blanks

The following blanks contained elemental contamination above the IDL but below CRDL:

Blank*	Element	Conc. µg/L	IDL µg/L	CRDL µg/L
ICB	Chromium	4.4	4.0	10
CCB1	Zinc	4.8	3.0	20
CCB2	Aluminum	23.6	21.0	200
	Beryllium	2.2	2.0	5
	Lead	1.1	1.0	3
	Zinc	4.2	3.0	20
CCB3	Aluminum	38.8	21.0	200
	Beryllium	3.0	2.0	5
	Cadmium	3.1	2.0	5
	Chromium	6.6	4.0	10
	Iron	5.6	5.0	100
	Potassium	346.9	296.0	5,000
	Zinc	5.9	3.0	20
CCB4	Aluminum	34.6	21.0	200
	Beryllium	2.8	2.0	5
	Chromium	6.6	4.0	10
	Zinc	5.3	3.0	20
CCB5	Aluminum	23.6	21.0	200
	Beryllium	2.4	2.0	5
	Zinc	5.0	3.0	20
PB	Aluminum	95.6	21.0	200
	Beryllium	2.5	2.0	5
	Calcium	84.9	31.0	5,000
	Chromium	6.2	4.0	10
	Iron	26.5	5.0	100
	Magnesium	64.4	33.0	5,000

* ICB = Initial Calibration Blank; CCB = Continuing Calibration Blank; PB = Preparation Blank.
Conc. - Concentration

Sample results below five times the highest analyte level reported in the blanks were flagged UJ_1 (not detected, estimated quantitation limit).

6) ICP Interference Check

All parameters for the Interference Check Sample were within the control limits of 80 to 120 percent of the true values.

7) Laboratory Control Sample

The recoveries for all parameters for both ICP and AA analyses were within the control limits required by IFB WA-87K025-027.

8) Duplicate Sample Analysis

The Relative Percent Difference (RPD) values for the duplicate sample analysis were within QC criteria of less than 20 percent for sample values greater than five times the CRDL. For all sample values less than five times the CRDL, the RPD values were within ± the CRDL for water matrix.

9) Spiked Sample Analysis

The percent recoveries for matrix spike sample analysis were within the QC limits of 75 to 125 percent for all parameters.

10) ICP Serial Dilution

The Percent Difference (%D) values for ICP serial dilution analysis were within the QC limits of 10 percent for all parameters.

11) Furnace AA

All furnace AA results met QC criteria, except for the lead initial calibration:

Date	Matrix	Element	r	QC Criteria
12/21/89	Water	Lead	0.993	0.995

Positive results and analyte detection limits for lead were flagged as estimated (J_4 or UJ_4).

12) Mercury Analysis

All mercury analyses met QC criteria.

13) Cyanide Analysis

Cyanide analyses were not requested.

14) Sample Analysis

A CRDL sample was run.

Sample results reported that are below CRDL and above IDL are flagged as estimated quantities (J).

15) Laboratory Contact

No laboratory contact was required.

Data Use

The usefulness of the data is based on the criteria outlined in the "Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses" (R-582-5-5-01); the Data Qualifier Definitions supplied by the Office of Solid Waste and Emergency Response (September 1989); and the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989).

Upon consideration of the above comments, the data is ACCEPTABLE for use except where flagged with data qualifiers which modify the usefulness of individual values.

Additional data packages associated with this project are expected from CLP or EPA laboratories.

Data Qualifiers

U - The material was analyzed for, but was not detected. The associated numerical value is a contractual quantitation limit, adjusted for sample weight/sample volume, extraction volume, percent solids and sample dilution.

J - The analyte was analyzed for and was positively identified, but the associated numerical value may not be consistent with the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.

UJ - The material was analyzed for, but was not detected. The associated numerical value is an estimated/adjusted quantitation limit. The associated numerical value may not accurately or precisely represent the concentration necessary to detect the analyte in this sample.

A subscript will be appended to the "J" qualifier or the "UJ" qualifier that indicates which of the following quality control criteria were not met:

1. Blank contamination: indicates possible high bias and/or false positives.

2. Calibration range exceeded: indicates possible low bias.

3. Holding times not met: indicates low bias for most analytes.

4. Other QC outside control limits: bias not readily determined.

R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.

INO/13324-B

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJE012

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE012

Matrix (Soil/Water): WATER Lab Sample ID: VALI 12

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS NO.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	111.00	UJ		
7440-36-0	Antimony	20.00	U		
7440-38-2	Arsenic	4.40	U		
7440-39-3	Barium	33.10	J		
7440-41-7	Beryllium	2.90	UJ		
7440-43-9	Cadmium	2.00	U		
7440-70-2	Calcium	21300.00			
7440-47-3	Chromium	4.00	U		
7440-48-4	Cobalt	7.00	U		
7440-50-8	Copper	3.00	U		
7439-89-6	Iron	223.00			
7439-92-1	Lead	1.10	UJ		
7439-95-4	Magnesium	5990.00			
7439-96-5	Manganese	147.00			
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	16.00	U		
7440-09-7	Potassium	1650.00	UJ		
7482-49-2	Selenium	2.80	J		
7440-22-4	Silver	3.00	U		
7440-23-5	Sodium	7180.00			
7440-28-0	Thallium	1.10	U		
7440-62-2	Vanadium	3.00	U		
7440-66-6	Zinc	173.00			
---------	Cyanide				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

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Comments :

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJE684

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE012

Matrix (Soil/Water): WATER Lab Sample ID: VALI 684

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS NO.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	450.00	UJ		
7440-36-0	Antimony	20.00	U		
7440-38-2	Arsenic	4.40	U		
7440-39-3	Barium	21.00	J		
7440-41-7	Beryllium	3.00	UJ		
7440-43-9	Cadmium	2.00	U		
7440-70-2	Calcium	24800.00			
7440-47-3	Chromium	4.00	U		
7440-48-4	Cobalt	7.00	U		
7440-50-8	Copper	3.00	U		
7439-89-6	Iron	513.00			
7439-92-1	Lead	1.50	UJ	J4	
7439-95-4	Magnesium	5220.00			
7439-96-5	Manganese	31.70			
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	16.00	U		
7440-09-7	Potassium	1970.00	J		
7482-49-2	Selenium	2.20	U		
7440-22-4	Silver	3.00	U		
7440-23-5	Sodium	5540.00			
7440-28-0	Thallium	1.10	U		
7440-62-2	Vanadium	3.00	U		
7440-66-6	Zinc	53.30			
---------	Cyanide				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments :

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

4

MJE692

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE012

Matrix (Soil/Water): WATER Lab Sample ID: VALI 692

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS NO.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	230.00	UJ1		
7440-36-0	Antimony	20.00	U		
7440-38-2	Arsenic	4.40	U		
7440-39-3	Barium	19.80	J		
7440-41-7	Beryllium	3.50	UJ1		
7440-43-9	Cadmium	2.00	U		
7440-70-2	Calcium	25500.00			
7440-47-3	Chromium	4.00	U		
7440-48-4	Cobalt	7.00	U		
7440-50-8	Copper	3.00	U		
7439-89-6	Iron	260.00			
7439-92-1	Lead	1.10	UJ4		
7439-95-4	Magnesium	5140.00			
7439-96-5	Manganese	40.00			
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	16.00	U		
7440-09-7	Potassium	1640.00	UJ1		
7482-49-2	Selenium	2.20	U		
7440-22-4	Silver	3.00	U		
7440-23-5	Sodium	5680.00			
7440-28-0	Thallium	1.10	U		
7440-62-2	Vanadium	3.00	U		
7440-66-6	Zinc	55.20			
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Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments :

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJE699

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE012

Matrix (Soil/Water): WATER Lab Sample ID: VALI 699

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS NO.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1680.00			
7440-36-0	Antimony	20.00	U		
7440-38-2	Arsenic	4.40	U		
7440-39-3	Barium	38.40	J		
7440-41-7	Beryllium	3.40	UJ		
7440-43-9	Cadmium	2.00	U		
7440-70-2	Calcium	27100.00			
7440-47-3	Chromium	4.10	UJ		
7440-48-4	Cobalt	7.00	U		
7440-50-8	Copper	3.00	U		
7439-89-6	Iron	2870.00			
7439-92-1	Lead	4.60	UJ	J4	
7439-95-4	Magnesium	9100.00			
7439-96-5	Manganese	248.00			
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	16.00	U		
7440-09-7	Potassium	2400.00	J		
7482-49-2	Selenium	2.20	U		
7440-22-4	Silver	3.00	U		
7440-23-5	Sodium	9020.00			
7440-28-0	Thallium	1.10	U		
7440-62-2	Vanadium	9.70	J		
7440-66-6	Zinc	37.90			
---------	Cyanide				

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments :

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJE700

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE012

Matrix (Soil/Water): WATER Lab Sample ID: VALI 700

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS NO.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	128.00	UJ		
7440-36-0	Antimony	20.00	U		
7440-38-2	Arsenic	4.40	U		
7440-39-3	Barium	14.00	U		
7440-41-7	Beryllium	3.60	UJ		
7440-43-9	Cadmium	2.00	U		
7440-70-2	Calcium	393.00	UJ		
7440-47-3	Chromium	4.00	U		
7440-48-4	Cobalt	7.00	U		
7440-50-8	Copper	3.00	U		
7439-89-6	Iron	71.00	UJ		
7439-92-1	Lead	1.10	UJ		
7439-95-4	Magnesium	74.50	UJ		
7439-96-5	Manganese	3.60	J		
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	16.00	U		
7440-09-7	Potassium	296.00	U		
7482-49-2	Selenium	2.20	U		
7440-22-4	Silver	3.00	U		
7440-23-5	Sodium	544.00	J		
7440-28-0	Thallium	1.10	U		
7440-62-2	Vanadium	3.00	U		
7440-66-6	Zinc	33.30			
---------	Cyanide				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments :

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EPA SAMPLE NO.

MJE701

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE012

Matrix (Soil/Water): WATER Lab Sample ID: VALI 701

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS NO.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	22.20	UJ		
7440-36-0	Antimony	20.00	U		
7440-38-2	Arsenic	4.40	U		
7440-39-3	Barium	14.00	U		
7440-41-7	Beryllium	2.00	U		
7440-43-9	Cadmium	2.00	U		
7440-70-2	Calcium	285.00	UJ		
7440-47-3	Chromium	4.00	U		
7440-48-4	Cobalt	7.00	U		
7440-50-8	Copper	3.00	U		
7439-89-6	Iron	17.30	UJ		
7439-92-1	Lead	1.10	UJ		
7439-95-4	Magnesium	33.00	U		
7439-96-5	Manganese	1.00	U		
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	16.00	U		
7440-09-7	Potassium	296.00	U		
7482-49-2	Selenium	2.20	U		
7440-22-4	Silver	3.00	U		
7440-23-5	Sodium	312.00	J		
7440-28-0	Thallium	1.10	U		
7440-62-2	Vanadium	3.00	U		
7440-66-6	Zinc	32.20			
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Color After: COLORLESS Clarity After: CLEAR Artifacts:

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EPA SAMPLE NO.

MJE702

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE012

Matrix (Soil/Water): WATER Lab Sample ID: VALI 702

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS NO.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	21.00	U		
7440-36-0	Antimony	20.00	U		
7440-38-2	Arsenic	4.40	U		
7440-39-3	Barium	14.00	U		
7440-41-7	Beryllium	2.00	U		
7440-43-9	Cadmium	2.00	U		
7440-70-2	Calcium	158.00	UJ		
7440-47-3	Chromium	4.00	U		
7440-48-4	Cobalt	7.00	U		
7440-50-8	Copper	3.00	U		
7439-89-6	Iron	19.40	UJ		
7439-92-1	Lead	1.10	UJ		
7439-95-4	Magnesium	33.00	U		
7439-96-5	Manganese	1.00	U		
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	16.00	U		
7440-09-7	Potassium	296.00	U		
7482-49-2	Selenium	2.20	U		
7440-22-4	Silver	3.00	U		
7440-23-5	Sodium	329.00	J		
7440-28-0	Thallium	1.10	U		
7440-62-2	Vanadium	3.00	U		
7440-66-6	Zinc	24.40	UJ		
---------	Cyanide				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments :

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EPA SAMPLE NO.

MJE703

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE012

Matrix (Soil/Water): WATER Lab Sample ID: VALI 703

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS NO.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	472.00	UJ		
7440-36-0	Antimony	20.00	U		
7440-38-2	Arsenic	4.40	U		
7440-39-3	Barium	22.60	J		
7440-41-7	Beryllium	2.00	U		
7440-43-9	Cadmium	2.00	U		
7440-70-2	Calcium	26000.00			
7440-47-3	Chromium	4.40	UJ		
7440-48-4	Cobalt	7.00	U		
7440-50-8	Copper	3.00	U		
7439-89-6	Iron	615.00			
7439-92-1	Lead	1.10	UJ		
7439-95-4	Magnesium	5310.00			
7439-96-5	Manganese	49.10			
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	16.00	U		
7440-09-7	Potassium	2550.00	J		
7482-49-2	Selenium	2.20	U		
7440-22-4	Silver	3.00	U		
7440-23-5	Sodium	5200.00			
7440-28-0	Thallium	1.10	U		
7440-62-2	Vanadium	4.70	J		
7440-66-6	Zinc	60.50			
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Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments :

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJE705

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE012

Matrix (Soil/Water): WATER Lab Sample ID: VALI 705

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS NO.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	296.00	WJ1		
7440-36-0	Antimony	20.00	U		
7440-38-2	Arsenic	4.40	U		
7440-39-3	Barium	25.10	J		
7440-41-7	Beryllium	2.00	U		
7440-43-9	Cadmium	2.00	U		
7440-70-2	Calcium	11100.00			
7440-47-3	Chromium	6.00	J		
7440-48-4	Cobalt	7.00	U		
7440-50-8	Copper	3.00	U		
7439-89-6	Iron	585.00			
7439-92-1	Lead	1.30	WJ1	J4	
7439-95-4	Magnesium	4050.00	J		
7439-96-5	Manganese	86.30			
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	16.00	U		
7440-09-7	Potassium	2190.00	J		
7482-49-2	Selenium	2.20	U		
7440-22-4	Silver	3.00	U		
7440-23-5	Sodium	6480.00			
7440-28-0	Thallium	1.10	U		
7440-62-2	Vanadium	3.30	J		
7440-66-6	Zinc	38.50			
---------	Cyanide				

Color Before: COLORLESS Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments :

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INORGANIC ANALYSES DATA SHEET

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EPA SAMPLE NO.

MJE706

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE012

Matrix (Soil/Water): WATER Lab Sample ID: VALI 706

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS NO.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	291.00	UJ1		
7440-36-0	Antimony	20.00	U		
7440-38-2	Arsenic	4.40	U		
7440-39-3	Barium	27.20	J		
7440-41-7	Beryllium	2.00	U		
7440-43-9	Cadmium	2.10	UJ1		
7440-70-2	Calcium	27600.00			
7440-47-3	Chromium	4.00	U		
7440-48-4	Cobalt	7.00	U		
7440-50-8	Copper	3.00	U		
7439-89-6	Iron	432.00			
7439-92-1	Lead	1.30	UJ1	J4	
7439-95-4	Magnesium	10400.00			
7439-96-5	Manganese	46.60			
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	16.00	U		
7440-09-7	Potassium	1910.00	J		
7482-49-2	Selenium	2.20	U		
7440-22-4	Silver	3.00	U		
7440-23-5	Sodium	7800.00			
7440-28-0	Thallium	1.10	U		
7440-62-2	Vanadium	3.50	J		
7440-66-6	Zinc	114.00			
---------	Cyanide				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments :

2-9-90

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INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJE707

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE012

Matrix (Soil/Water): WATER Lab Sample ID: VALI 707

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS NO.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	27600.00			
7440-36-0	Antimony	20.00	U		
7440-38-2	Arsenic	4.40	U		
7440-39-3	Barium	1680.00			
7440-41-7	Beryllium	3.00	UJ		
7440-43-9	Cadmium	16.30			
7440-70-2	Calcium	72700.00			
7440-47-3	Chromium	112.00			
7440-48-4	Cobalt	38.60	J		
7440-50-8	Copper	262.00			
7439-89-6	Iron	89800.00			
7439-92-1	Lead	491.00	J+		
7439-95-4	Magnesium	12100.00			
7439-96-5	Manganese	4300.00			
7439-97-6	Mercury	0.50			
7440-02-0	Nickel	74.60			
7440-09-7	Potassium	17600.00			
7482-49-2	Selenium	2.20	U		
7440-22-4	Silver	3.00	U		
7440-23-5	Sodium	27100.00			
7440-28-0	Thallium	1.10	U		
7440-62-2	Vanadium	64.80			
7440-66-6	Zinc	4800.00			
---------	Cyanide				

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments :

2-9-90

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1
INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJF236

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE012

Matrix (Soil/Water): WATER Lab Sample ID: VALI 236

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS NO.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	1830.00			
7440-36-0	Antimony	20.00	U		
7440-38-2	Arsenic	4.40	U		
7440-39-3	Barium	48.90	J		
7440-41-7	Beryllium	2.00	U		
7440-43-9	Cadmium	3.20	UJ		
7440-70-2	Calcium	22200.00			
7440-47-3	Chromium	7.60	UJ		
7440-48-4	Cobalt	7.00	U		
7440-50-8	Copper	31.70			
7439-89-6	Iron	4240.00			
7439-92-1	Lead	64.80	J+		
7439-95-4	Magnesium	6740.00			
7439-96-5	Manganese	463.00			
7439-97-6	Mercury	0.20			
7440-02-0	Nickel	16.00	U		
7440-09-7	Potassium	2000.00	J		
7482-49-2	Selenium	2.20	U		
7440-22-4	Silver	3.00	U		
7440-23-5	Sodium	6950.00			
7440-28-0	Thallium	1.10	U		
7440-62-2	Vanadium	9.80	J		
7440-66-6	Zinc	215.00			
---------	Cyanide				

Color Before: GREY Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments :

2-9-90

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1

INORGANIC ANALYSES DATA SHEET

EPA SAMPLE NO.

MJF239

Lab Name: VEGAS ANALYTICAL LABS INC Contract: 68-W8-0081

Lab Code: VEGAS_ Case No.: 13324 SAS No.: SDG No.: MJE012

Matrix (Soil/Water): WATER Lab Sample ID: VALI 239

Level (Low/Med): LOW Date Received: 12/15/89

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS NO.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	373.00	UJ		
7440-36-0	Antimony	20.00	U		
7440-38-2	Arsenic	4.40	U		
7440-39-3	Barium	26.00	J		
7440-41-7	Beryllium	2.00	U		
7440-43-9	Cadmium	3.70	UJ		
7440-70-2	Calcium	14500.00			
7440-47-3	Chromium	5.00	UJ		
7440-48-4	Cobalt	7.00	U		
7440-50-8	Copper	20.60	J		
7439-89-6	Iron	695.00			
7439-92-1	Lead	2.30	UJ	J4	
7439-95-4	Magnesium	5250.00			
7439-96-5	Manganese	64.60			
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	16.00	U		
7440-09-7	Potassium	2210.00	J		
7482-49-2	Selenium	2.20	U		
7440-22-4	Silver	3.00	U		
7440-23-5	Sodium	6730.00			
7440-28-0	Thallium	1.10	U		
7440-62-2	Vanadium	4.00	J		
7440-66-6	Zinc	53.60			
---------	Cyanide				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments :

2-9-90

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101 YESLER WAY, SEATTLE, WASHINGTON, 98104, TEL. 206/624-9537
International Specialists in the Environment

MEMORANDUM

DATE: March 14, 1990

FOR: Rhonda Wreggelsworth, RSCC, USEPA, Region 10

THRU: Jeffrey Villnow, FITOM, E & E, Seattle

FROM: David A. Ikeda, Chemist, E & E, Seattle
Tracy Yerian, Senior Chemist, E & E, Seattle

SUBJ: QA of Case 13324 (Organics)
Northwest Pipe and Casing

REF: F10-8906-002
PAN F0R0210XC

CC: John Osborn, RPO, USEPA, Region 10
Bruce Woods, ESD, USEPA, Region 10
Gerald Muth, DPO, USEPA, Region 10 Laboratory, Manchester
Deborah Flood, HWD-SM, USEPA, Region 10
Gerald Lee, FIT-PD, E & E, Seattle
Mark Ader, FIT-PM, E & E, Seattle

The Quality Assurance (QA) review of 11 samples, Case 13324, collected from Northwest Pipe and Casing, has been completed. Eleven soil samples were analyzed at low level for Target Compound List (TCL) Organics by ECOVA of Redmond, Washington. The samples were numbered:

JD576	JD581	JD585
JD578	JD582	JD586
JD579	JD583	JE353
JD580	JD584	

Sample JD580 underwent matrix spike (MS) and matrix spike duplicate (MSD) analysis.

Data Qualifications

The following comments refer to the laboratory performance in meeting the Quality Control (QC) specifications outlined in IFB WA-87K236-238, following Laboratory Data Validation Functional Guidelines for Evaluating Organics Analysis (February 1, 1988).

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1) Timeliness

Sample Number	Sample Date	Rec'd Date	VOC Anal.	BNA Extr.	BNA Anal.	Pest/PCB Extr.	Pest/PCB Anal.
JD576	12/13/89	12/14/89	12/14/89	12/19/89	01/09/90	12/20/89	01/06/90
JD578	12/13/89	12/14/89	12/14/89	12/19/89	01/09/90	12/20/89	01/06/90
JD579	12/13/89	12/14/89	12/14/89	12/19/89	01/09/90	12/20/89	01/06/90
JD580	12/13/89	12/14/89	12/15/89	12/19/89	01/15/90	12/20/89	01/06/90
JD581	12/13/89	12/14/89	12/15/89	01/11/90	01/12/90	12/20/89	01/06/90
JD582	12/14/89	12/15/89	12/18/89	12/19/89	01/12/90	12/20/89	01/16/90
JD583	12/14/89	12/15/89	12/18/89	12/19/89	01/12/90	12/20/89	01/16/90
JD584	12/13/89	12/14/89	12/15/89	12/19/89	01/09/90	12/20/89	01/16/90
JD585	12/13/89	12/14/89	12/15/89	12/19/89	01/09/90	01/15/90	01/16/90
JD586	12/14/89	12/15/89	12/15/89	12/19/89	01/12/90	12/20/89	01/16/90
JE353	12/14/89	12/15/89	12/15/89	12/19/89	01/12/90	12/20/89	01/16/90

VOC - Volatile Organic Compounds
BNA - Base, Neutral, and Acid Semivolatile Compounds
Pest/PCB - Pesticide/Polychlorinated Biphenyl Compounds
Anal. - Analysis Date
Extr. - Extraction Date

All samples met holding time criteria for volatiles, semivolatiles, and pesticides, except:

Sample Number	Fraction	Sampling Date	Extraction Date	Time Elapsed	QC Criteria
JD581	BNA	12/13/90	01/11/90	29 days	14 days
JD585	Pest/PCB	12/13/89	01/15/90	33 days	14 days

Data, by sample and fraction, were flagged "J_3" (estimated quantity) or "UJ_3" (not detected, estimated quantitation limit) as appropriate.

2) Instrument Tuning

All tuning check compound mass abundances and ratios were within contract-required limits for volatile and semivolatile analysis.

3) Initial Calibration

All System Performance Check Compounds (SPCCs) were within contract-required limits for the initial calibration with average Relative Response Factors (RRFs) above 0.05 for volatiles and semivolatiles. All Calibration Check Compounds (CCCs) were within contract-required limits for the initial calibration with Percent Relative Standard Deviations (RSDs) below 30 percent.

All non-SPCCs had average RRFs of greater than or equal to 0.05 in the initial volatile or semivolatile calibration.

4) Continuing Calibrations

All SPCCs were at or above the contract-required Relative Response Factor (RRF(50)) criteria of 0.05 for volatiles and semivolatiles. All CCCs were at or below the contract-required Relative Percent Difference (RPD) limit of 25 percent for the volatile and semivolatile continuing calibrations.

All non-SPCCs had RRF(50)s of greater than or equal to 0.05 for continuing volatile and semivolatile calibrations.

All non-CCCs that were detected in the sample had percent difference (%D) values for the continuing calibration of less than or equal to 25 percent.

5) Blanks

Frequency criteria were met for laboratory blank analysis.

The following compounds were detected in laboratory blanks at levels above Instrument Detection Limits (IDL), but below Contract Required Quantitation Limits (CRQL) for TCL compounds:

Blank ID	Fraction	Compound	Conc. µg/kg	CRQL µg/kg	Associated Samples
VBLKAZ	VOC	2-Butanone	2	10	JD580, JD581, JD584, JD585

Conc. - Concentration

Reported levels of the above compounds in the samples were flagged "UJ_1" (estimated quantitation limit) if the concentrations were below five times the concentrations found in the appropriate blank (10 times for common solvents).

The following Tentatively Identified Compounds (TICs) were identified in the laboratory blanks:

Blank ID	Fraction	Compound	RT	Est. Conc.	Associated Samples
SBLK01	BNA	Unknown Alkane	10.02	330	*
		Unknown	11.12	1,000	*
		3-Hexene-2,5-dione	11.74	2,200	*
		Unknown	12.62	870	*
		Unknown	13.05	330	*
		Unknown	15.52	730	*
SBLK02	BNA	Unknown	30.14	730	JD581
		Unknown	32.24	330	JD581

RT - Retention Time
Est. Conc. - Estimated Concentration
* JD576, JD578, JD579, JD580, JD582, JD583, JD584, JD585, JD586, and JE353

Reported levels of these compounds found in the samples were flagged "UJ_1" (estimated quantitation limit) if the reported concentration was less than 10 times the concentration found in the appropriate blank.

6) Pesticide Standards

a) Linearity

The evaluation standards met the contract-required limits of less than 10 percent RSD for linearity.

b) DDT Retention Time

The retention time for DDT on the primary and secondary GC column met or exceeded 12 minutes for the standard runs.

c) Retention Time Windows

The retention time windows met the contract specifications.

d) Analytical Sequence

The analytical sequence met the contract-required frequency and order.

e) 4,4'-DDT/Endrin Degradation-

The percent breakdown for Endrin and DDT met the contract limit of 20 percent for the individual or combined breakdown totals.

f) Dibutylchlorendate Retention Time Shift

The Percent Difference calculated for the retention time of dibutylchlorendate did not exceed 2 percent for the packed columns.

7) Surrogate Recovery

Recoveries (%R) for all surrogate compounds for volatile and semi-volatile analysis met QC criteria, except:

Sample Number	Fraction	Compound	%R	QC Limits
JD578	BNA	2,4,6-Tribromophenol	126	19 - 122

No action was taken based on the one semivolatile surrogate outlier.

Recoveries for dibutylchlorendate (pesticide/PCB surrogate) met advisory QC guidelines.

All surrogate compounds met calibration QC criteria.

8) Matrix Spike and Matrix Spike Duplicate

All MS and MSD Percent Recoveries (%Rs) met advisory QC guidelines, except:

Sample Number	Fraction	Compound	%R	QC Limits
JD580MS	BNA	2,4-Dinitrotoluene	90	28 - 89
JD580MSD	BNA	2,4-Dinitrotoluene	94	28 - 89

No action was taken, since the above compound was not detected in sample JD580.

All RPD values for the MS and MSD were within QC guidelines.

9) Internal Standard Recovery

All internal standard areas were within established QC limits.

10) Sample Analysis

All reported results above IDLs but below CRQLs were flagged as estimated quantities (J) on the Data Sheets.

11) Laboratory Contact

The laboratory was contacted on February 16, 1990 (see attached Telephone Record Log).

Data Use

The usefulness of the data is based on the criteria outlined in the "Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses" (February 1, 1988); the Data Qualifier Definitions supplied by the Office of Solid Waste and Emergency Response (September 1989); and the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989).

Upon consideration of the data qualifications noted above, the data are ACCEPTABLE for use except where flagged with data qualifiers which modify the usefulness of the individual values.

Additional data packages associated with this project are expected from CLP or EPA laboratories.

Data Qualifiers

U - The material was analyzed for, but was not detected. The associated numerical value is a contractual quantitation limit, adjusted for sample weight/sample volume, extraction volume, percent solids and sample dilution.

J - The analyte was analyzed for and was positively identified, but the associated numerical value may not be consistent with the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.

UJ - The material was analyzed for, but was not detected. The associated numerical value is an estimated/adjusted quantitation limit. The associated numerical value may not accurately or precisely represent the concentration necessary to detect the analyte in this sample.

A subscript will be appended to the "J" qualifier or the "UJ" qualifier that indicates which of the following quality control criteria were not met:

1. Blank contamination: indicates possible high bias and/or false positives.

2. Calibration range exceeded: indicates possible low bias.

3. Holding times not met: indicates low bias for most analytes with the exception of common laboratory contaminants and chlorinated ethenes (i.e., trichloroethene, 1,1-dichloroethene, and vinyl chloride).

4. Other QC outside control limits: bias not readily determined.

R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.

N - Presumptive evidence of presence of material (tentative identification). Confirmation of the analyte requires further analysis.

NJ - The analysis indicates that the analyte is tentatively identified and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

A subscript will be appended to the "NJ" qualifier that indicates which of the following situations applies:

1. DDT/Endrin breakdown evident.

2. Interference by other sample components.

3. Non-Target Compound List (TCL) compounds (confirmation is necessary using specific target compound methodology to accurately determine the concentration and identify of the detected compounds).

4. A confirmation analysis was missing or quality control criteria were not met for the confirmation analysis.

M - Mass spectral criteria for positive identification were not met. However, in the opinion of the laboratory, the identification is correct based on the analyst's professional judgement.

X - The reported result may be a combination of indistinguishable isomers.

ORG/13324-A

In Reference to Case No(s):
13324

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Date of Call: 2/16/90

Laboratory Name: ECOVA

Lab Contact:

Region: X

Regional Contact: DAVID AKIO IKEDA

Call Initiated By: ____ Laboratory X Region

n reference to data for the following sample number(s):
JD 576, JD 578 THROUGH JD 586, AND JE 353

SDG # JD 576

mmary of Questions/Issues Discussed:
1. SAMPLE JD 580 - PEST/PCBs. CAN LAB VERIFY THE ARACLOR 1254 QUANTITATION
2. SAMPLE JD 582 - SEMIVOLATILES. TIC # 11 IS IDENTIFIED AS AN UNKNOWN, THE SPECTRA IS IDENTIFIED AS AN UNKNOWN ALKANE. WHICH IS CORRECT.
3. SAMPLE JE 353 - SEMIVOLATILES. TIC # 17 IS IDENTIFIED AS AN UNKNOWN, THE SPECTRA IS IDENTIFIED AS AN UNKNOWN ALKANE. WHICH IS CORRECT.

Summary of Resolution:
1. CORRECT QUANTITATION
2 + 3 WILL SEND CORRECTED SV TIC FORM I.

David A Ikeda
Signature

16 FEBRUARY
Date

Distribution: (1)Lab Copy, (2)Region Copy, (3)SMO Copy

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD576

Lab Name: ECOVA Contract: 68-W8-0018

Lab Code: ECOVA Case No.: 13324 SAS No.: _____ SDG No.: JD576

Matrix: (soil/water) SOIL Lab Sample ID: JD576

Sample wt/vol: 5.0 (g/mL) G Lab File ID: A3702

Level: (low/med) LOW Date Received: 12/14/89

% Moisture: not dec. 24 Date Analyzed: 12/14/89

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	7	U
67-64-1	Acetone	5	J
75-15-0	Carbon Disulfide	7	U
75-35-4	1,1-Dichloroethene	7	U
75-34-3	1,1-Dichloroethane	7	U
540-59-0	1,2-Dichloroethene (total)	7	U
67-66-3	Chloroform	7	U
107-06-2	1,2-Dichloroethane	7	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	7	U
56-23-5	Carbon Tetrachloride	7	U
108-05-4	Vinyl Acetate	13	U
75-27-4	Bromodichloromethane	7	U
78-87-5	1,2-Dichloropropane	7	U
10061-01-5	cis-1,3-Dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	7	U
10061-02-6	Trans-1,3-Dichloropropene	7	U
75-25-2	Bromoform	7	U
108-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	7	U
79-34-5	1,1,2,2-Tetrachloroethane	7	U
108-88-3	Toluene	7	U
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	7	U
100-42-5	Styrene	7	U
1330-20-7	Xylene (total)	7	U

001013

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2/8/90

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD576

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD576_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3702_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __24 Date Analyzed: 12/14/89

Column (pack/cap) PACK__ Dilution Factor: 1.0_____

Number TICs found: __0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

DAQ
2/19/90

001014

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD578

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD578_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3703_____

Level: (low/med) _LW___ Date Received: 12/14/89

% Moisture: not dec. __19 Date Analyzed: 12/14/89

Column: (pack/cap) PACK__ Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	2	J
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	1	J
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene (total)	6	U

001019

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD578

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13824_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD578_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3703_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __19 Date Analyzed: 12/14/89

Column (pack/cap) PACK__ Dilution Factor: 1.0_____

Number TICs found: __0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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EPA SAMPLE NO.

JD579

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD579_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3704_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __51 Date Analyzed: 12/14/89

Column: (pack/cap) PACK__ Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	20	U
74-83-9	Bromomethane	20	U
75-01-4	Vinyl Chloride	20	U
75-00-3	Chloroethane	20	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	20	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	20	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
108-05-4	Vinyl Acetate	20	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	Trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD579

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD579_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3704_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __51 Date Analyzed: 12/14/89

Column (pack/cap) PACK__ Dilution Factor: 1.0_____

Number TICs found: __0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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EPA SAMPLE NO.

JD580

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD580_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3708_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __48 Date Analyzed: 12/15/89

Column: (pack/cap) PACK__ Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	19	U
74-83-9	Bromomethane	19	U
75-01-4	Vinyl Chloride	19	U
75-00-3	Chloroethane	19	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	2	J
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	7	J
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	19	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
108-05-4	Vinyl Acetate	19	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	7	J
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	Trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	19	U
591-78-6	2-Hexanone	19	U
127-18-4	Tetrachloroethene	3	J
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

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TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD580

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD580_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3708_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __48 Date Analyzed: 12/15/89

Column (pack/cap) PACK__ Dilution Factor: 1.0_____

Number TICs found: __0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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EPA SAMPLE NO.

JD581

Lab Name: ECOVA Contract: 68-W8-0018

Lab Code: ECOVA Case No.: 13324 SAS No.: _____ SDG No.: JD576

Matrix: (soil/water) SOIL Lab Sample ID: JD581

Sample wt/vol: 5.0 (g/mL) G Lab File ID: A3711

Level: (low/med) LOW Date Received: 12/14/89

% Moisture: not dec. 56 Date Analyzed: 12/15/89

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	23	U
74-83-9	Bromomethane	23	U
75-01-4	Vinyl Chloride	23	U
75-00-3	Chloroethane	23	U
75-09-2	Methylene Chloride	11	U
67-64-1	Acetone	20	J
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	43	
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	23	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
108-05-4	Vinyl Acetate	23	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	36	
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	Trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	23	U
591-78-6	2-Hexanone	23	U
127-18-4	Tetrachloroethene	230	
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD581

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13824_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD581_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3711_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __56 Date Analyzed: 12/15/89

Column (pack/cap) PACK__ Dilution Factor: 1.0_____

Number TICs found: __0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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EPA SAMPLE NO.

JD582

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD582_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3718_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. __45 Date Analyzed: 12/18/89

Column: (pack/cap) PACK__ Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	18	U
74-83-9	Bromomethane	18	U
75-01-4	Vinyl Chloride	18	U
75-00-3	Chloroethane	18	U
75-09-2	Methylene Chloride	9	U
67-64-1	Acetone	48	
75-15-0	Carbon Disulfide	9	U
75-35-4	1,1-Dichloroethene	9	U
75-34-3	1,1-Dichloroethane	9	U
540-59-0	1,2-Dichloroethene (total)	9	U
67-66-3	Chloroform	9	U
107-06-2	1,2-Dichloroethane	9	U
78-93-3	2-Butanone	8	J
71-55-6	1,1,1-Trichloroethane	9	U
56-23-5	Carbon Tetrachloride	9	U
108-05-4	Vinyl Acetate	18	U
75-27-4	Bromodichloromethane	9	U
78-87-5	1,2-Dichloropropane	9	U
10061-01-5	cis-1,3-Dichloropropene	9	U
79-01-6	Trichloroethene	9	U
124-48-1	Dibromochloromethane	9	U
79-00-5	1,1,2-Trichloroethane	9	U
71-43-2	Benzene	9	U
10061-02-6	Trans-1,3-Dichloropropene	9	U
75-25-2	Bromoform	9	U
108-10-1	4-Methyl-2-Pentanone	18	U
591-78-6	2-Hexanone	18	U
127-18-4	Tetrachloroethene	9	U
79-34-5	1,1,2,2-Tetrachloroethane	9	U
108-88-3	Toluene	9	U
108-90-7	Chlorobenzene	9	U
100-41-4	Ethylbenzene	9	U
100-42-5	Styrene	9	U
1330-20-7	Xylene (total)	9	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
JD582

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13824_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD582_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3718_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. __45 Date Analyzed: 12/18/89

Column (pack/cap) PACK__ Dilution Factor: 1.0_____

Number TICs found: __0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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EPA SAMPLE NO.

JD583

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD583_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3719_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. __35 Date Analyzed: 12/18/89

Column: (pack/cap) PACK__ Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	15	U
74-83-9	Bromomethane	15	U
75-01-4	Vinyl Chloride	15	U
75-00-3	Chloroethane	15	U
75-09-2	Methylene Chloride	8	U
67-64-1	Acetone	15	U
75-15-0	Carbon Disulfide	8	U
75-35-4	1,1-Dichloroethene	8	U
75-34-3	1,1-Dichloroethane	8	U
540-59-0	1,2-Dichloroethene (total)	8	U
67-66-3	Chloroform	8	U
107-06-2	1,2-Dichloroethane	8	U
78-93-3	2-Butanone	3	J
71-55-6	1,1,1-Trichloroethane	8	U
56-23-5	Carbon Tetrachloride	8	U
108-05-4	Vinyl Acetate	15	U
75-27-4	Bromodichloromethane	8	U
78-87-5	1,2-Dichloropropane	8	U
10061-01-5	cis-1,3-Dichloropropene	8	U
79-01-6	Trichloroethene	8	U
124-48-1	Dibromochloromethane	8	U
79-00-5	1,1,2-Trichloroethane	8	U
71-43-2	Benzene	8	U
10061-02-6	Trans-1,3-Dichloropropene	8	U
75-25-2	Bromoform	8	U
108-10-1	4-Methyl-2-Pentanone	15	U
591-78-6	2-Hexanone	15	U
127-18-4	Tetrachloroethene	8	U
79-34-5	1,1,2,2-Tetrachloroethane	8	U
108-88-3	Toluene	8	U
108-90-7	Chlorobenzene	8	U
100-41-4	Ethylbenzene	8	U
100-42-5	Styrene	8	U
1330-20-7	Xylene (total)	8	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD583

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13824_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD583_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3719_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. __35 Date Analyzed: 12/18/89

Column (pack/cap) PACK__ Dilution Factor: 1.0_____

Number TICs found: __0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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EPA SAMPLE NO.

JD584

Lab Name: ECOVA Contract: 68-W8-0018

Lab Code: ECOVA Case No.: 13324 SAS No.: _____ SDG No.: JD576

Matrix: (soil/water) SOIL Lab Sample ID: JD584

Sample wt/vol: 5.0 (g/mL) ___ Lab File ID: A3712

Level: (low/med) LOW Date Received: 12/14/89

% Moisture: not dec. 95 Date Analyzed: 12/15/89

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	15	U
74-83-9	Bromomethane	15	U
75-01-4	Vinyl Chloride	15	U
75-00-3	Chloroethane	15	U
75-09-2	Methylene Chloride	8	U
67-64-1	Acetone	54	
75-15-0	Carbon Disulfide	8	U
75-35-4	1,1-Dichloroethene	8	U
75-34-3	1,1-Dichloroethane	8	U
540-59-0	1,2-Dichloroethene (total)	8	U
67-66-3	Chloroform	8	U
107-06-2	1,2-Dichloroethane	8	U
78-93-3	2-Butanone	7	UJ
71-55-6	1,1,1-Trichloroethane	8	U
56-23-5	Carbon Tetrachloride	8	U
108-05-4	Vinyl Acetate	15	U
75-27-4	Bromodichloromethane	8	U
78-87-5	1,2-Dichloropropane	8	U
10061-01-5	cis-1,3-Dichloropropene	8	U
79-01-6	Trichloroethene	8	U
124-48-1	Dibromochloromethane	8	U
79-00-5	1,1,2-Trichloroethane	8	U
71-43-2	Benzene	8	U
10061-02-6	Trans-1,3-Dichloropropene	8	U
75-25-2	Bromoform	8	U
108-10-1	4-Methyl-2-Pentanone	15	U
591-78-6	2-Hexanone	15	U
127-18-4	Tetrachloroethene	8	U
79-34-5	1,1,2,2-Tetrachloroethane	8	U
108-88-3	Toluene	8	U
108-90-7	Chlorobenzene	8	U
100-41-4	Ethylbenzene	8	U
100-42-5	Styrene	8	U
1330-20-7	Xylene (total)	8	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD584

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD584_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3712_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __35 Date Analyzed: 12/15/89

Column (pack/cap) PACK__ Dilution Factor: 1.0_____

Number TICs found: __2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON C10H16	28.07	26	J
2. 127913	.beta.-Pinene	28.69	9	J

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD585

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD585_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3713_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __37 Date Analyzed: 12/15/89

Column: (pack/cap) PACK__ Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	16	U
74-83-9	Bromomethane	16	U
75-01-4	Vinyl Chloride	16	U
75-00-3	Chloroethane	16	U
75-09-2	Methylene Chloride	8	U
67-64-1	Acetone	11	J
75-15-0	Carbon Disulfide	8	U
75-35-4	1,1-Dichloroethene	8	U
75-34-3	1,1-Dichloroethane	8	U
540-59-0	1,2-Dichloroethene (total)	2	J
67-66-3	Chloroform	8	U
107-06-2	1,2-Dichloroethane	8	U
78-93-3	2-Butanone	16	U
71-55-6	1,1,1-Trichloroethane	8	U
56-23-5	Carbon Tetrachloride	8	U
108-05-4	Vinyl Acetate	16	U
75-27-4	Bromodichloromethane	8	U
78-87-5	1,2-Dichloropropane	8	U
10061-01-5	cis-1,3-Dichloropropene	8	U
79-01-6	Trichloroethene	2	J
124-48-1	Dibromochloromethane	8	U
79-00-5	1,1,2-Trichloroethane	8	U
71-43-2	Benzene	8	U
10061-02-6	Trans-1,3-Dichloropropene	8	U
75-25-2	Bromoform	8	U
108-10-1	4-Methyl-2-Pentanone	16	U
591-78-6	2-Hexanone	16	U
127-18-4	Tetrachloroethene	3	J
79-34-5	1,1,2,2-Tetrachloroethane	8	U
108-88-3	Toluene	8	U
108-90-7	Chlorobenzene	8	U
100-41-4	Ethylbenzene	8	U
100-42-5	Styrene	8	U
1330-20-7	Xylene (total)	8	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD585

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD578_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD585_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3713_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __37 Date Analyzed: 12/15/89

Column (pack/cap) PACK__ Dilution Factor: 1.0_____

Number TICs found: __0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

2/19/90

001072

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD586

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD586_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3720_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. __54 Date Analyzed: 12/18/89

Column: (pack/cap) PACK__ Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	22	U
74-83-9	Bromomethane	22	U
75-01-4	Vinyl Chloride	22	U
75-00-3	Chloroethane	22	U
75-09-2	Methylene Chloride	11	U
67-64-1	Acetone	35	
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	8	J
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
108-05-4	Vinyl Acetate	22	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	Trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	22	U
591-78-6	2-Hexanone	22	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

1080

FORM I VOA

1/87 Rev.

2/9/90

ecology and environment

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD586

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD586_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3730_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. __54 Date Analyzed: 12/18/89

Column (pack/cap) PACK__ Dilution Factor: 1.0_____

Number TICs found: __0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

2/19/90

001081

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE353

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JE353_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3717_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. __24 Date Analyzed: 12/18/89

Column: (pack/cap) PACK__ Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	7	U
67-64-1	Acetone	4	J
75-15-0	Carbon Disulfide	7	U
75-35-4	1,1-Dichloroethene	7	U
75-34-3	1,1-Dichloroethane	7	U
540-59-0	1,2-Dichloroethene (total)	7	U
67-66-3	Chloroform	7	U
107-06-2	1,2-Dichloroethane	7	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	7	U
56-23-5	Carbon Tetrachloride	7	U
108-05-4	Vinyl Acetate	13	U
75-27-4	Bromodichloromethane	7	U
78-87-5	1,2-Dichloropropane	7	U
10061-01-5	cis-1,3-Dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	7	U
10061-02-6	Trans-1,3-Dichloropropene	7	U
75-25-2	Bromoform	7	U
108-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	7	U
79-34-5	1,1,2,2-Tetrachloroethane	7	U
108-88-3	Toluene	7	U
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	7	U
100-42-5	Styrene	7	U
1330-20-7	Xylene (total)	7	U

001087

FORM I VOA 1/87 Rev.

2/19/90

ecology and environment

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JE353

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JE353_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3717_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. __24 Date Analyzed: 12/18/89

Column (pack/cap) PACK__ Dilution Factor: 1.0_____

Number TICs found: __0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

2/19/90

001088

1D
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD576

Lab Name: ECOVA_____ Contract: 68-W8-0019_

Lab Code: ECOVA__ Case No.: 10304_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD576_____

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BF807__

Level: (low/med) LOW_ Date Received: 12/14/89

% Moisture: not dec. 24 dec. ____ Date Extracted: 12/17/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y__ pH: 6.5 Dilution Factor: 1.0____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	870	U
111-44-4	bis(2-Chloroethyl)Ether	870	U
95-57-8	2-Chlorophenol	870	U
541-73-1	1,3-Dichlorobenzene	870	U
106-46-7	1,4-Dichlorobenzene	870	U
100-51-6	Benzyl Alcohol	870	U
95-50-1	1,2-Dichlorobenzene	870	U
95-48-7	2-Methylphenol	870	U
108-60-1	bis(2-Chloroisopropyl)Ether	870	U
106-44-5	4-Methylphenol	870	U
621-64-7	N-Nitroso-Di-n-Propylamine	870	U
67-72-1	Hexachloroethane	870	U
98-95-3	Nitrobenzene	870	U
78-59-1	Isophorone	870	U
88-75-5	2-Nitrophenol	870	U
105-67-9	2,4-Dimethylphenol	870	U
65-85-0	Benzoic Acid	4200	U
111-91-1	bis(2-Chloroethoxy)Methane	870	U
120-83-2	2,4-Dichlorophenol	870	U
120-82-1	1,2,4-Trichlorobenzene	870	U
91-20-3	Naphthalene	870	U
106-47-8	4-Chloroaniline	870	U
87-68-3	Hexachlorobutadiene	870	U
59-50-7	4-Chloro-3-Methylphenol	870	U
91-57-6	2-Methylnaphthalene	870	U
77-47-4	Hexachlorocyclopentadiene	870	U
88-06-2	2,4,6-Trichlorophenol	870	U
95-95-4	2,4,5-Trichlorophenol	4200	U
91-58-7	2-Chloronaphthalene	870	U
88-74-4	2-Nitroaniline	4200	U
131-11-3	Dimethyl Phthalate	870	U
208-96-8	Acenaphthylene	870	U
606-20-2	2,6-Dinitrotoluene	870	U

FORM I SV-1

2/9/90

2016

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD576

Lab Name: ECOVA Contract: 68-W8-0018

Lab Code: ECOVA Case No.: 1432 SAS No.: SDG No.: JD576

Matrix: (soil/water) SOIL Lab Sample ID: JD576

Sample wt/vol: 30.0 (g/mL) Lab File ID: BF807

Level: (Low/med) Date Received: 12/14/89

% Moisture: not dec. 24 dec. Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4200	U
83-32-9	Acenaphthene	180	J
51-28-5	2,4-Dinitrophenol	4200	U
100-02-7	4-Nitrophenol	4200	U
132-64-9	Dibenzofuran	870	U
121-14-2	2,4-Dinitrotoluene	870	U
84-66-2	Diethylphthalate	870	U
7005-72-3	4-Chlorophenyl-phenylether	870	U
86-73-7	Fluorene	140	J
100-01-6	4-Nitroaniline	4200	U
534-52-1	4,6-Dinitro-2-Methylphenol	4200	U
86-30-6	N-Nitrosodiphenylamine (1)	870	U
101-55-3	4-Bromophenyl-phenylether	870	U
118-74-1	Hexachlorobenzene	870	U
87-86-5	Pentachlorophenol	4200	U
85-01-8	Phenanthrene	1600	
120-12-7	Anthracene	350	J
84-74-2	Di-n-Butylphthalate	160	J
206-44-0	Fluoranthene	3900	
129-00-0	Pyrene	4500	
85-68-7	Butylbenzylphthalate	300	J
91-94-1	3,3'-Dichlorobenzidine	1700	U
56-55-3	Benzo(a)Anthracene	2200	
117-81-7	bis(2-Ethylhexyl)Phthalate	640	J
218-01-9	Chrysene	2700	
117-84-0	Di-n-Octyl Phthalate	470	J
205-99-2	Benzo(b)Fluoranthene	2600	
207-08-9	Benzo(k)Fluoranthene	2400	
50-32-8	Benzo(a)Pyrene	1900	
193-39-5	Indeno(1,2,3-cd)Pyrene	1400	
53-70-3	Dibenz(a,h)Anthracene	770	J
191-24-2	Benzo(g,h,i)Perylene	1400	

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

2/19/90

2017

recycled paper

ecology and environment

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD576

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD576_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF807_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __24 dec. ____ Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y__ pH: __6.5 Dilution Factor: 1.0_____

Number TICs found: _20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	11.12	1200	BJ
2.	UNKNOWN	11.40	1600	J
3. 4436753	3-Hexene-2,5-dione (8CI9CI)	11.72	2500	BJ
4.	UNKNOWN	12.62	2600	BJ
5.	UNKNOWN	13.62	2100	J
6.	UNKNOWN	13.85	5500	J
7.	UNKNOWN	23.42	1800	J
8.	UNKNOWN	26.87	700	J
9.	UNKNOWN ALKANE	29.84	610	J
10.	UNKNOWN, C17H12	29.94	1100	J
11.	UNKNOWN, C17H12	30.12	610	J
12.	UNKNOWN, C17H12	30.24	440	J
13.	UNKNOWN	31.17	610	J
14.	UNKNOWN	31.42	880	J
15.	UNKNOWN	31.79	790	J
16.	UNKNOWN, C18H12	31.89	970	J
17.	UNKNOWN, C18H10	31.97	610	J
18.	UNKNOWN, C18H12	33.11	530	J
19.	UNKNOWN	34.31	700	J
20.	UNKNOWN, C20H12	39.31	1600	J

2/8/90

2018

recycled paper

ecology and environment

1B.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD578

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD578_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD578_____

Sample wt/vol: 30.0 (g/mL) G___ Lab File ID: BF808_____

Level: (low/med) LOW__ Date Received: 12/14/89

% Moisture: not dec. __19 dec. ____ Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y__ pH: __6.6 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	810	U
111-44-4	bis(2-Chloroethyl)Ether	810	U
95-57-8	2-Chlorophenol	810	U
541-73-1	1,3-Dichlorobenzene	810	U
106-46-7	1,4-Dichlorobenzene	810	U
100-51-6	Benzyl Alcohol	810	U
95-50-1	1,2-Dichlorobenzene	810	U
95-48-7	2-Methylphenol	810	U
108-60-1	bis(2-Chloroisopropyl)Ether	810	U
106-44-5	4-Methylphenol	810	U
621-64-7	N-Nitroso-Di-n-Propylamine	810	U
67-72-1	Hexachloroethane	810	U
98-95-3	Nitrobenzene	810	U
78-59-1	Isophorone	810	U
88-75-5	2-Nitrophenol	810	U
105-67-9	2,4-Dimethylphenol	810	U
65-85-0	Benzoic Acid	210	J
111-91-1	bis(2-Chloroethoxy)Methane	810	U
120-83-2	2,4-Dichlorophenol	810	U
120-82-1	1,2,4-Trichlorobenzene	810	U
91-20-3	Naphthalene	810	U
106-47-8	4-Chloroaniline	810	U
87-68-3	Hexachlorobutadiene	810	U
59-50-7	4-Chloro-3-Methylphenol	810	U
91-57-6	2-Methylnaphthalene	810	U
77-47-4	Hexachlorocyclopentadiene	810	U
88-06-2	2,4,6-Trichlorophenol	810	U
95-95-4	2,4,5-Trichlorophenol	4000	U
91-58-7	2-Chloronaphthalene	810	U
88-74-4	2-Nitroaniline	4000	U
131-11-3	Dimethylphthalate	810	U
208-96-8	Acenaphthylene	810	U
606-20-2	2,6-Dinitrotoluene	810	U

2062

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1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD578

Lab Name: ECOVA Contract: 68-W8-0018

Lab Code: ECOVA Case No.: 13324 SAS No.: _____ SDG No.: JD576

Matrix: (soil/water) SOIL Lab Sample ID: JD578

Sample wt/vol: 30.0 (g/ml) G Lab File ID: BF808

Level: (low/med) LOW Date Received: 12/14/89

% Moisture: not dec. 19 dec. Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) N pH: Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4000	U
83-32-9	Acenaphthene	810	U
51-28-5	2,4-Dinitrophenol	4000	U
100-02-7	4-Nitrophenol	4000	U
132-64-9	Dibenzofuran	810	U
121-14-2	2,4-Dinitrotoluene	810	U
84-66-2	Diethylphthalate	810	U
7005-72-3	4-Chlorophenyl-phenylether	810	U
86-73-7	Fluorene	810	U
100-01-6	4-Nitroaniline	4000	U
534-52-1	4,6-Dinitro 2-Methylphenol	4000	U
86-30-6	N-Nitrosodiphenylamine (1)	810	U
101-55-3	4-Bromophenyl-phenylether	810	U
118-74-1	Hexachlorobenzene	810	U
87-86-5	Pentachlorophenol	140	J
85-01-8	Phenanthrene	550	J
120-12-7	Anthracene	150	J
84-74-2	Di-n-Butylphthalate	410	J
206-44-0	Fluoranthene	1200	
129-00-0	Pyrene	1600	
85-68-7	Butylbenzylphthalate	1700	
91-94-1	3,3'-Dichlorobenzidine	1600	U
56-55-3	Benzo(a)Anthracene	670	J
117-81-7	bis(2-Ethylhexyl)Phthalate	1300	
218-01-9	Chrysene	940	
117-84-0	Di-n-Octyl Phthalate	810	U
205-99-2	Benzo(b)Fluoranthene	730	J
207-08-9	Benzo(k)Fluoranthene	720	J
50-32-8	Benzo(a)Pyrene	520	J
193-39-5	Indeno(1,2,3-cd)Pyrene	400	J
53-70-3	Dibenz(a,h)Anthracene	180	J
191-24-2	Benzo(g,h,i)Perylene	450	J

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 2/19/90

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD578

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13304 SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD578_____

Sample wt/vol: 30.0 (g/mL) G___ Lab File ID: SF808_____

Level: (low/med) LOW___ Date Received: 12/14/89

Moisture: not dec. __19 dec. ____ Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y__ pH: __6.6 Dilution Factor: 1.0_____

Number TICs found: 20

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	11.12	1200	UJ
2.	UNKNOWN	11.40	2100	J
3. 4436753	3-Hexene-2,5-dione (8CI,9CI)	11.74	3800	UJ
4.	UNKNOWN	12.64	3400	UJ
5.	UNKNOWN	13.62	1700	J
6.	UNKNOWN	13.85	4200	J
7.	UNKNOWN	21.57	410	J
8.	UNKNOWN	22.90	410	J
9.	UNKNOWN	24.17	2200	J
10.	UNKNOWN ALKANE	26.89	490	J
11.	UNKNOWN ALKANE	27.92	820	J
12.	UNKNOWN ALKANE	28.91	330	J
13.	UNKNOWN	29.67	1800	J
14.	UNKNOWN ALKANE	29.84	2400	J
15.	UNKNOWN ALKANE	31.79	1500	J
16.	UNKNOWN	31.87	1900	J
17.	UNKNOWN ALKANE	34.34	1500	J
18.	UNKNOWN	34.47	1700	J
19.	UNKNOWN	42.78	1600	J
20.	UNKNOWN	43.39	3200	J

2/19/90

2064

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD579

Lab Name: ECOVA Contract: 68-W8-0013

Lab Code: ECOVA Case No.: 13704 SAS No.: _____ SDG No.: JD579

Matrix: (soil/water) SOIL Lab Sample ID: JDE79

Sample wt/vol: 30.0 (g/ml) ___ Lab File ID: BF807

Level: (low/med) LOW Date Received: 12/14/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y pH: 7.2 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	890	U
111-44-4	bis(2-Chloroethyl)Ether	890	U
95-57-8	2-Chlorophenol	890	U
541-73-1	1,3-Dichlorobenzene	890	U
106-46-7	1,4-Dichlorobenzene	890	U
100-51-6	Benzyl Alcohol	890	U
95-50-1	1,2-Dichlorobenzene	890	U
95-48-7	2-Methylphenol	890	U
108-60-1	bis(2-Chloroisopropyl)Ether	890	U
106-44-5	4-Methylphenol	890	U
621-64-7	N-Nitroso-Di-n-Propylamine	890	U
67-72-1	hexachloroethane	890	U
98-95-3	Nitrobenzene	890	U
78-59-1	Isophorone	890	U
88-75-5	2-Nitrophenol	890	U
105-67-9	2,4-Dimethylphenol	890	U
65-85-0	Benzoic Acid	4300	U
111-91-1	bis(2-Chloroethoxy)Methane	890	U
120-83-2	2,4-Dichlorophenol	890	U
120-82-1	1,2,4-Trichlorobenzene	890	U
91-20-3	Naphthalene	890	U
106-47-8	4-Chloroaniline	890	U
87-68-3	Hexachlorobutadiene	890	U
59-50-7	4-Chloro-3-Methylphenol	890	U
91-57-6	2-Methylnaphthalene	890	U
77-47-4	Hexachlorocyclopentadiene	890	U
88-06-2	2,4,6-Trichlorophenol	890	U
95-95-4	2,4,5-Trichlorophenol	4300	U
91-58-7	2-Chloronaphthalene	890	U
88-74-4	2-Nitroaniline	4300	U
131-11-3	Dimethylphthalate	890	U
208-96-8	Acenaphthylene	890	U
606-20-2	2,6-Dinitrotoluene	890	U

FORM I SV-1

2/19/90

EPA SAMPLE NO.

JD579

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD579_____

Sample wt/vol: 30.0 (g/mL) G___ Lab File ID: BF809_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ____ dec. __26 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y__ pH: __7.2 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4300	U
83-32-9	Acenaphthene	890	U
51-28-5	2,4-Dinitrophenol	4300	U
100-02-7	4-Nitrophenol	4300	U
132-64-9	Dibenzofuran	890	U
121-14-2	2,4-Dinitrotoluene	890	U
84-66-2	Diethylphthalate	890	U
7005-72-3	4-Chlorophenyl-phenylether	890	U
86-73-7	Fluorene	890	U
100-01-6	4-Nitroaniline	4300	U
534-52-1	4,6-Dinitro-2-Methylphenol	4300	U
86-30-6	N-Nitrosodiphenylamine (1)	890	U
101-55-3	4-Bromophenyl-phenylether	890	U
118-74-1	Hexachlorobenzene	890	U
87-86-5	Pentachlorophenol	4300	U
85-01-8	Phenanthrene	130	J
120-12-7	Anthracene	890	U
84-74-2	Di-n-Butylphthalate	890	U
206-44-0	Fluoranthene	440	J
129-00-0	Pyrene	520	J
85-68-7	Butylbenzylphthalate	890	U
91-94-1	3,3'-Dichlorobenzidine	1800	U
56-55-3	Benzo(a)Anthracene	220	J
117-81-7	bis(2-Ethylhexyl)Phthalate	120	J
218-01-9	Chrysene	260	J
117-84-0	Di-n-Octyl Phthalate	890	U
205-99-2	Benzo(b)Fluoranthene	260	J
207-08-9	Benzo(k)Fluoranthene	240	J
50-32-8	Benzo(a)Pyrene	220	J
193-39-5	Indeno(1,2,3-cd)Pyrene	110	J
53-70-3	Dibenz(a,h)Anthracene	890	U
191-24-2	Benzo(g,h,i)Perylene	890	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 2/19/90 2108 Rev.

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO

JD579

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD579_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF809_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ____ dec. __26 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y__ pH: __7.2 Dilution Factor: 1.0_____

Number TICs found: _12

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN ALKANE	10.02	450	UJ
2.	UNKNOWN	11.12	1400	UJ
3.	UNKNOWN	11.40	1400	J
4. 4436753	3-Hexene-2,5-dione (8CI9CI)	11.74	2500	UJ
5.	UNKNOWN	12.64	3200	UJ
6.	UNKNOWN	13.05	360	UJ
7.	UNKNOWN	13.62	1400	J
8.	UNKNOWN	13.84	7600	J
9.	UNKNOWN ALKANE	27.91	450	J
10.	UNKNOWN ALKANE	29.82	720	J
11.	UNKNOWN	31.84	360	J
12.	UNKNOWN	34.16	2100	J

2/19/90

recycled paper

ecology and environment

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD580

Lab Name: ECOVA Contract: 68-W8-0018

Lab Code: ECOVA Case No.: 13324 SAS No.: _____ SDG No.: JD576

Matrix: (soil/water) SOIL Lab Sample ID: JD580

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BF850

Level: (low/med) LOW Date Received: 12/14/89

% Moisture: not dec. ____ dec. 42 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/15/90

GPC Cleanup: (Y/N) Y pH: 6.9 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)Ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl Alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-Chloroisopropyl)Ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	N-Nitroso-Di-n-Propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
65-85-0	Benzoic Acid	120	J
111-91-1	bis(2-Chloroethoxy)Methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-Methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	5500	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	5500	U
131-11-3	Dimethyl Phthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U

2/19/90

2137

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO
JD580

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576

Matrix: (soil/water) SOIL__ Lab Sample ID: JD580

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF850

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ____ dec. __42 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/15/90

GPC Cleanup: (Y/N) Y__ pH: __6.9 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	5500	U
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	5500	U
100-02-7	4-Nitrophenol	5500	U
132-64-9	Dibenzofuran	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
86-73-7	Fluorene	1100	U
100-01-6	4-Nitroaniline	5500	U
534-52-1	4,6-Dinitro-2-Methylphenol	5500	U
86-30-6	N-Nitrosodiphenylamine (1)	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	320	J
85-01-8	Phenanthrene	370	J
120-12-7	Anthracene	230	J
84-74-2	Di-n-Butylphthalate	1100	U
206-44-0	Fluoranthene	1200	
129-00-0	Pyrene	1400	
85-68-7	Butylbenzylphthalate	1100	U
91-94-1	3,3'-Dichlorobenzidine	2300	U
56-55-3	Benzo(a)Anthracene	630	J
117-81-7	bis(2-Ethylhexyl)Phthalate	200	J
218-01-9	Chrysene	880	J
117-84-0	Di-n-Octyl Phthalate	1100	U
205-99-2	Benzo(b)Fluoranthene	1200	
207-08-9	Benzo(k)Fluoranthene	930	J
50-32-8	Benzo(a)Pyrene	670	J
193-39-5	Indeno(1,2,3-cd)Pyrene	740	J
53-70-3	Dibenz(a,h)Anthracene	240	J
191-24-2	Benzo(g,h,i)Perylene	730	J

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD580

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD580_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF850_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ____ dec. __42 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/15/90

GPC Cleanup: (Y/N) Y__ pH: __6.9 Dilution Factor: 1.0_____

Number TICs found: _20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	11.09	1500	uJ
2.	UNKNOWN	11.39	3500	J
3. 4436753	3-Hexene-2,5-dione (8CI9CI)	11.70	4100	uJ
4.	UNKNOWN	12.60	3600	uJ
5.	UNKNOWN	13.80	5100	J
6.	UNKNOWN	29.72	690	J
7.	UNKNOWN	31.71	2800	J
8.	UNKNOWN	33.42	580	J
9.	UNKNOWN	34.26	3500	J
10.	UNKNOWN ALKANE	37.79	2000	J
11.	UNKNOWN	37.87	2300	J
12.	UNKNOWN, C20H12	39.22	1000	J
13.	UNKNOWN	41.24	580	J
14.	UNKNOWN	42.34	810	J
15.	UNKNOWN ALKANE	42.84	1600	J
16.	UNKNOWN	43.08	580	J
17.	UNKNOWN	43.63	460	J
18.	UNKNOWN	44.46	690	J
19.	UNKNOWN	47.34	810	J
20.	UNKNOWN	50.39	690	J

2/19/90

FORM I SV-TIC

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD581

Lab Name: ECOVA Contract: 68-W8-0018

Lab Code: ECOVA Case No.: 13324 SAS No.: SDG No.: JD576

Matrix: (soil/water) SOIL Lab Sample ID: JD581

Sample wt/vol: 30.0 g/mL G Lab File ID: BF947

Level: (low/med) LOW Date Received: 12/14/89

% Moisture: not dec. dec. 53 Date Extracted: 01/11/90

Extraction: (Sep/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y pH: 6.6 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1400	U J3
111-44-4	bis(2-Chloroethyl)Ether	1400	U J3
95-57-8	2-Chlorophenol	1400	U J3
541-73-1	1,3-Dichlorobenzene	1400	U J3
106-46-7	1,4-Dichlorobenzene	1400	U J3
100-51-6	Benzyl Alcohol	1400	U J3
95-50-1	1,2-Dichlorobenzene	1400	U J3
95-48-7	2-Methylphenol	1400	U J3
108-60-1	bis(2-Chloroisopropyl)Ether	1400	U J3
106-44-5	4-Methylphenol	1400	U J3
621-64-7	N-Nitroso-Di-n-Propylamine	1400	U J3
67-72-1	Hexachloroethane	1400	U J3
98-95-3	Nitrobenzene	1400	U J3
78-59-1	Isophorone	1400	U J3
88-75-5	2-Nitrophenol	1400	U J3
105-67-9	2,4-Dimethylphenol	1400	U J3
65-85-0	Benzoic Acid	6800	U J3
111-91-1	bis(2-Chloroethoxy)Methane	1400	U J3
120-83-2	2,4-Dichlorophenol	1400	U J3
120-82-1	1,2,4-Trichlorobenzene	1400	U J3
91-20-3	Naphthalene	1400	U J3
106-47-8	4-Chloroaniline	1400	U J3
87-68-3	Hexachlorobutadiene	1400	U J3
59-50-7	4-Chloro-3-Methylphenol	1400	U J3
91-57-6	2-Methylnaphthalene	1400	U J3
77-47-4	Hexachlorocyclopentadiene	1400	U J3
88-06-2	2,4,6-Trichlorophenol	1400	U J3
95-95-4	2,4,5-Trichlorophenol	6800	U J3
91-58-7	2-Chloronaphthalene	1400	U J3
88-74-4	2-Nitroaniline	6800	U J3
131-11-3	Dimethylphthalate	1400	U J3
208-96-8	Acenaphthylene	1400	U J3
606-20-2	2,6-Dinitrotoluene	1400	U J3

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD581

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13904_ SAS No.: _____ SDG No.: JD571_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD581_____

Sample wt/vol: 30.0 (g/ml) ___ Lab File ID: BF847_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ____ dec. __30 Date Extracted: 01/11/90

Extraction: (Sep/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y__ pH: __6.6 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	6800	U J3
83-32-9	Acenaphthene	1400	U J3
51-28-5	2,4-Dinitrophenol	6800	U J3
100-02-7	4-Nitrophenol	6800	U J3
132-64-9	Dibenzofuran	1400	U J3
121-14-2	2,4-Dinitrotoluene	1400	U J3
84-66-2	Diethylphthalate	1400	U J3
7005-72-3	4-Chlorophenyl-phenylether	1400	U J3
86-73-7	Fluorene	1400	U J3
100-01-6	4-Nitroaniline	6800	U J3
534-52-1	4,6-Dinitro-2-Methylphenol	6800	U J3
86-30-6	N-Nitrosodiphenylamine (1)	1400	U J3
101-55-3	4-Bromophenyl-phenylether	1400	U J3
118-74-1	Hexachlorobenzene	1400	U J3
87-86-5	Pentachlorophenol	6800	U J3
85-01-8	Phenanthrene	410	J3
120-12-7	Anthracene	210	J3
84-74-2	Di-n-Butylphthalate	1400	U J3
206-44-0	Fluoranthene	1700	J3
129-00-0	Pyrene	2600	J3
85-68-7	Butylbenzylphthalate	1400	U J3
91-94-1	3,3'-Dichlorobenzidine	2800	U J3
56-55-3	Benzo(a)Anthracene	980	J3
117-81-7	bis(2-Ethylhexyl)Phthalate	220	J3
218-01-9	Chrysene	1300	J3
117-84-0	Di-n-Octyl Phthalate	1400	U J3
205-99-2	Benzo(b)Fluoranthene	1400	J3
207-08-9	Benzo(k)Fluoranthene	1200	J3
50-32-8	Benzo(a)Pyrene	1100	J3
193-39-5	Indeno(1,2,3-cd)Pyrene	1000	J3
53-70-3	Dibenz(a,h)Anthracene	210	J3
191-24-2	Benzo(g,h,i)Perylene	1100	J3

(1) - Cannot be separated from Diphenylamine

2/19/90

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO

JD581

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD581_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF847_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ____ dec. __53 Date Extracted: 01/11/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y__ pH: __6.6 Dilution Factor: 1.0_____

Number TICs found: __9

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN, C17H12	29.96	570	J
2.	UNKNOWN	30.09	1600	UJ
3.	UNKNOWN, C17H12	30.24	570	J
4.	UNKNOWN	32.17	990	UJ
5.	UNKNOWN ALKANE	34.34	710	J
6.	UNKNOWN ALKANE	37.87	710	J
7.	UNKNOWN, C20H12	39.37	1600	J
8.	UNKNOWN ALKANE	43.03	1800	J
9.	UNKNOWN	44.69	710	J

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD582

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: [illegible] SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD582_____

Sample wt/vol: 30.0 (g/mL) G__ Lab File ID: BF840_____

Level: (low/med) LOW___ Date Received: 12/13/89

% Moisture: not dec. ____ dec. 37 Date Extracted: 12/19/89

Extraction: (Sep/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y__ pH: 6.8 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1000	U
111-44-4	bis(2-Chloroethyl)Ether	1000	U
95-57-8	2-Chlorophenol	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
100-51-6	Benzyl Alcohol	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
95-48-7	2-Methylphenol	1000	U
108-60-1	bis(2-Chloroisopropyl)Ether	1000	U
106-44-5	4-Methylphenol	1000	U
621-64-7	N-Nitroso-Di-n-Propylamine	1000	U
67-72-1	Hexachloroethane	1000	U
98-95-3	Nitrobenzene	1000	U
78-59-1	Isophorone	1000	U
88-75-5	2-Nitrophenol	1000	U
105-67-9	2,4-Dimethylphenol	1000	U
65-85-0	Benzoic Acid	5100	U
111-91-1	bis(2-Chloroethoxy)Methane	1000	U
120-83-2	2,4-Dichlorophenol	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
91-20-3	Naphthalene	1000	U
106-47-8	4-Chloroaniline	1000	U
87-68-3	Hexachlorobutadiene	1000	U
59-50-7	4-Chloro-3-Methylphenol	1000	U
91-57-6	2-Methylnaphthalene	1000	U
77-47-4	Hexachlorocyclopentadiene	1000	U
88-06-2	2,4,6-Trichlorophenol	1000	U
95-95-4	2,4,5-Trichlorophenol	5100	U
91-58-7	2-Chloronaphthalene	1000	U
88-74-4	2-Nitroaniline	5100	U
131-11-3	Dimethyl Phthalate	1000	U
208-96-8	Acenaphthylene	1000	U
606-20-2	2,6-Dinitrotoluene	1000	U

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2/9/90

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD582

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: [illegible] SAS No.: _____ SDG No.: JD574_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD582_____

Sample wt/vol: 30.0 (g/mL) G___ Lab File ID: BF840_____

Level: (low/med) LOW___ Date Received: 12/15/89

Moisture: not dec. ____ dec. 10% Date Extracted: 12/17/89

Extraction: (Sep/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y__ pH: [illegible] Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	5100	U
83-32-9	Acenaphthene	1000	U
51-28-5	2,4-Dinitrophenol	5100	U
100-02-7	4-Nitrophenol	5100	U
132-64-9	Dibenzofuran	1000	U
121-14-2	2,4-Dinitrotoluene	1000	U
84-66-2	Diethylphthalate	1000	U
7005-72-3	4-Chlorophenyl-phenylether	1000	U
86-73-7	Fluorene	1000	U
100-01-6	4-Nitroaniline	5100	U
534-52-1	4,6-Dinitro-2-Methylphenol	5100	U
86-30-6	N-Nitrosodiphenylamine (1)	1000	U
101-55-3	4-Bromophenyl-phenylether	1000	U
118-74-1	Hexachlorobenzene	1000	U
87-86-5	Pentachlorophenol	5100	U
85-01-8	Phenanthrene	1000	U
120-12-7	Anthracene	1000	U
84-74-2	Di-n-Butylphthalate	1000	U
206-44-0	Fluoranthene	170	J
129-00-0	Pyrene	170	J
85-68-7	Butylbenzylphthalate	110	J
91-94-1	3,3'-Dichlorobenzidine	2100	U
56-55-3	Benzo(a)Anthracene	1000	U
117-81-7	bis(2-Ethylhexyl)Phthalate	360	J
218-01-9	Chrysene	1000	U
117-84-0	Di-n-Octylphthalate	1000	U
205-99-2	Benzo(b)Fluoranthene	1000	U
207-08-9	Benzo(k)Fluoranthene	1000	U
50-32-8	Benzo(a)Pyrene	1000	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1000	U
53-70-3	Dibenz(a,h)Anthracene	1000	U
191-24-2	Benzo(g,h,i)Perylene	1000	U

(1) - Cannot be separated from Diphenylamine

2/19/90

FORM I SV-2

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD582

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD582_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF840_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. ____ dec. __37 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y__ pH: __6.8 Dilution Factor: 1.0_____

Number TICs found: _20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	11.14	1200	UJ
2.	UNKNOWN	11.42	950	J
3. 4436753	3-Hexene-2,5-dione (8CI9CI)	11.74	3000	UJ
4.	UNKNOWN	12.64	2400	UJ
5.	UNKNOWN	13.57	1600	J
6.	UNKNOWN	13.95	950	J
7.	UNKNOWN	28.14	740	J
8.	UNKNOWN	28.57	640	J
9.	UNKNOWN	29.84	1500	J
10.	UNKNOWN	30.22	1100	J
11.	UNKNOWN	30.74	740	J
12.	UNKNOWN ALKANE	31.79	1800	J
13.	UNKNOWN	32.32	2000	J
14.	UNKNOWN ALKANE	34.31	2600	J
15.	UNKNOWN	35.07	850	J
16.	UNKNOWN ALKANE	35.92	740	J
17.	UNKNOWN	36.74	1500	J
18.	UNKNOWN ALKANE	37.86	4100	J
19.	UNKNOWN	41.42	950	J
20.	UNKNOWN ALKANE	42.98	2500	J

2/19/90

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

JD583

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD583_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF842_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. ____ dec. __28 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y__ pH: __6.9 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	920	U
111-44-4	bis(2-Chloroethyl)Ether	920	U
95-57-8	2-Chlorophenol	920	U
541-73-1	1,3-Dichlorobenzene	920	U
106-46-7	1,4-Dichlorobenzene	920	U
100-51-6	Benzyl Alcohol	920	U
95-50-1	1,2-Dichlorobenzene	920	U
95-48-7	2-Methylphenol	920	U
108-60-1	bis(2-Chloroisopropyl)Ether	920	U
106-44-5	4-Methylphenol	920	U
621-64-7	N-Nitroso-Di-n-Propylamine	920	U
67-72-1	Hexachloroethane	920	U
98-95-3	Nitrobenzene	920	U
78-59-1	Isophorone	920	U
88-75-5	2-Nitrophenol	920	U
105-67-9	2,4-Dimethylphenol	920	U
65-85-0	Benzoic Acid	4400	U
111-91-1	bis(2-Chloroethoxy)Methane	920	U
120-83-2	2,4-Dichlorophenol	920	U
120-82-1	1,2,4-Trichlorobenzene	920	U
91-20-3	Naphthalene	920	U
106-47-8	4-Chloroaniline	920	U
87-68-3	Hexachlorobutadiene	920	U
59-50-7	4-Chloro-3-Methylphenol	920	U
91-57-6	2-Methylnaphthalene	920	U
77-47-4	Hexachlorocyclopentadiene	920	U
88-06-2	2,4,6-Trichlorophenol	920	U
95-95-4	2,4,5-Trichlorophenol	4400	U
91-58-7	2-Chloronaphthalene	920	U
88-74-4	2-Nitroaniline	4400	U
131-11-3	Dimethyl Phthalate	920	U
208-96-8	Acenaphthylene	920	U
606-20-2	2,6-Dinitrotoluene	920	U

FORM I SV-1 1/87 R

2242

2/19/90

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ecology and environment

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD583

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD583_____

Sample wt/vol: 30.0 (g/mL) G___ Lab File ID: BF842_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. ____ dec. __28 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y__ pH: __6.9 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4400	U
83-32-9	Acenaphthene	920	U
51-28-5	2,4-Dinitrophenol	4400	U
100-02-7	4-Nitrophenol	4400	U
132-64-9	Dibenzofuran	920	U
121-14-2	2,4-Dinitrotoluene	920	U
84-66-2	Diethylphthalate	920	U
7005-72-3	4-Chlorophenyl-phenylether	920	U
86-73-7	Fluorene	920	U
100-01-6	4-Nitroaniline	4400	U
534-52-1	4,6-Dinitro-2-Methylphenol	4400	U
86-30-6	N-Nitrosodiphenylamine (1)	920	U
101-55-3	4-Bromophenyl-phenylether	920	U
118-74-1	Hexachlorobenzene	920	U
87-86-5	Pentachlorophenol	4400	U
85-01-8	Phenanthrene	920	U
120-12-7	Anthracene	920	U
84-74-2	Di-n-Butylphthalate	920	U
206-44-0	Fluoranthene	920	U
129-00-0	Pyrene	920	U
85-68-7	Butylbenzylphthalate	920	U
91-94-1	3,3'-Dichlorobenzidine	1800	U
56-55-3	Benzo(a)Anthracene	920	U
117-81-7	bis(2-Ethylhexyl)Phthalate	160	J
218-01-9	Chrysene	920	U
117-84-0	Di-n-Octyl Phthalate	920	U
205-99-2	Benzo(b)Fluoranthene	920	U
207-08-9	Benzo(k)Fluoranthene	920	U
50-32-8	Benzo(a)Pyrene	920	U
193-39-5	Indeno(1,2,3-cd)Pyrene	920	U
53-70-3	Dibenz(a,h)Anthracene	920	U
191-24-2	Benzo(g,h,i)Perylene	920	U

(1) - Cannot be separated from Diphenylamine

2/19/90

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO

JD583

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA___ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD583_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF842_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. ____ dec. __28 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y__ pH: __6.9 Dilution Factor: 1.0_____

Number TICs found: _13

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	11.12	930	UJ
2.	UNKNOWN	11.42	1000	J
3. 4436753	3-Hexene-2,5-dione (SCI9CI)	11.72	1900	UJ
4.	UNKNOWN	12.62	2800	UJ
5.	UNKNOWN	13.60	650	J
6.	UNKNOWN	13.84	1700	J
7.	UNKNOWN	30.17	460	J
8.	UNKNOWN ALKANE	31.77	830	J
9.	UNKNOWN ALKANE	34.31	830	J
10.	UNKNOWN ALKANE	35.92	370	J
11.	UNKNOWN	36.74	370	J
12.	UNKNOWN ALKANE	37.84	1000	J
13.	UNKNOWN	42.96	370	J

2/9/90

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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

JD584

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD584_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF811_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ____ dec. __23 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y__ pH: __8.1 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	860	U
111-44-4	bis(2-Chloroethyl)Ether	860	U
95-57-8	2-Chlorophenol	860	U
541-73-1	1,3-Dichlorobenzene	860	U
106-46-7	1,4-Dichlorobenzene	860	U
100-51-6	Benzyl Alcohol	860	U
95-50-1	1,2-Dichlorobenzene	860	U
95-48-7	2-Methylphenol	860	U
108-60-1	bis(2-Chloroisopropyl)Ether	860	U
106-44-5	4-Methylphenol	860	U
621-64-7	N-Nitroso-Di-n-Propylamine	860	U
67-72-1	Hexachloroethane	860	U
98-95-3	Nitrobenzene	860	U
78-59-1	Isophorone	860	U
88-75-5	2-Nitrophenol	860	U
105-67-9	2,4-Dimethylphenol	860	U
65-85-0	Benzoic Acid	4200	U
111-91-1	bis(2-Chloroethoxy)Methane	860	U
120-83-2	2,4-Dichlorophenol	860	U
120-82-1	1,2,4-Trichlorobenzene	860	U
91-20-3	Naphthalene	860	U
106-47-8	4-Chloroaniline	860	U
87-68-3	Hexachlorobutadiene	860	U
59-50-7	4-Chloro-3-Methylphenol	860	U
91-57-6	2-Methylnaphthalene	860	U
77-47-4	Hexachlorocyclopentadiene	860	U
88-06-2	2,4,6-Trichlorophenol	860	U
95-95-4	2,4,5-Trichlorophenol	4200	U
91-58-7	2-Chloronaphthalene	860	U
88-74-4	2-Nitroaniline	4200	U
131-11-3	Dimethyl Phthalate	860	U
208-96-8	Acenaphthylene	860	U
606-20-2	2,6-Dinitrotoluene	860	U

FORM I SV-1

2/19/90

1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD584

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD584_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF811_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ____ dec. __23 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y__ pH: __8.1 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4200	U
83-32-9	Acenaphthene	860	U
51-28-5	2,4-Dinitrophenol	4200	U
100-02-7	4-Nitrophenol	4200	U
132-64-9	Dibenzofuran	860	U
121-14-2	2,4-Dinitrotoluene	860	U
84-66-2	Diethylphthalate	860	U
7005-72-3	4-Chlorophenyl-phenylether	860	U
86-73-7	Fluorene	860	U
100-01-6	4-Nitroaniline	4200	U
534-52-1	4,6-Dinitro-2-Methylphenol	4200	U
86-30-6	N-Nitrosodiphenylamine (1)	860	U
101-55-3	4-Bromophenyl-phenylether	860	U
118-74-1	Hexachlorobenzene	860	U
87-86-5	Pentachlorophenol	4200	U
85-01-8	Phenanthrene	230	J
120-12-7	Anthracene	140	J
84-74-2	Di-n-Butylphthalate	150	J
206-44-0	Fluoranthene	470	J
129-00-0	Pyrene	600	J
85-68-7	Butylbenzylphthalate	390	J
91-94-1	3,3'-Dichlorobenzidine	1700	U
56-55-3	Benzo(a)Anthracene	330	J
117-81-7	bis(2-Ethylhexyl)Phthalate	870	
218-01-9	Chrysene	460	J
117-84-0	Di-n-Octyl Phthalate	410	J
205-99-2	Benzo(b)Fluoranthene	320	J
207-08-9	Benzo(k)Fluoranthene	360	J
50-32-8	Benzo(a)Pyrene	270	J
193-39-5	Indeno(1,2,3-cd)Pyrene	120	J
53-70-3	Dibenz(a,h)Anthracene	860	U
191-24-2	Benzo(g,h,i)Perylene	130	J

(1) - Cannot be separated from Diphenylamine

2265

2/19/90

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD584

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13024_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD584_____

Sample wt/vol: 30.0 (g/mL) G___ Lab File ID: BF811_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ____ dec. __23 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y__ pH: __8.1 Dilution Factor: 1.0_____

Number TICs found: 20

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	11.12	950	UJ
2.	UNKNOWN	11.40	1600	J
3. 4436753	3-Hexene-2,5-dione (8CI9CI)	11.72	2600	UJ
4.	UNKNOWN	12.62	2300	UJ
5.	UNKNOWN	13.82	4400	J
6.	UNKNOWN ALKANE	22.25	520	J
7.	UNKNOWN ALKANE	23.50	520	J
8.	UNKNOWN ALKANE	23.59	430	J
9.	UNKNOWN ALKANE	24.69	610	J
10.	UNKNOWN ALKANE	24.82	520	J
11.	UNKNOWN ALKANE	25.82	610	J
12.	UNKNOWN ALKANE	26.87	780	J
13.	UNKNOWN ALKANE	27.69	430	J
14.	UNKNOWN ALKANE	27.91	780	J
15.	UNKNOWN ALKANE	28.89	950	J
16.	UNKNOWN ALKANE	29.82	3100	J
17.	UNKNOWN	30.79	1200	J
18.	UNKNOWN ALKANE	31.77	2900	J
19.	UNKNOWN ALKANE	34.29	1600	J
20.	UNKNOWN ALKANE	37.82	2300	J

2/19/90

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

JD585

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD585_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF812_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ____ dec. __30 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y__ pH: __7.3 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	940	U
111-44-4	bis(2-Chloroethyl)Ether	940	U
95-57-8	2-Chlorophenol	940	U
541-73-1	1,3-Dichlorobenzene	940	U
106-46-7	1,4-Dichlorobenzene	940	U
100-51-6	Benzyl Alcohol	940	U
95-50-1	1,2-Dichlorobenzene	940	U
95-48-7	2-Methylphenol	940	U
108-60-1	bis(2-Chloroisopropyl)Ether	940	U
106-44-5	4-Methylphenol	940	U
621-64-7	N-Nitroso-Di-n-Propylamine	940	U
67-72-1	Hexachloroethane	940	U
98-95-3	Nitrobenzene	940	U
78-59-1	Isophorone	940	U
88-75-5	2-Nitrophenol	940	U
105-67-9	2,4-Dimethylphenol	940	U
65-85-0	Benzoic Acid	4600	U
111-91-1	bis(2-Chloroethoxy)Methane	940	U
120-83-2	2,4-Dichlorophenol	940	U
120-82-1	1,2,4-Trichlorobenzene	940	U
91-20-3	Naphthalene	940	U
106-47-8	4-Chloroaniline	940	U
87-68-3	Hexachlorobutadiene	940	U
59-50-7	4-Chloro-3-Methylphenol	940	U
91-57-6	2-Methylnaphthalene	940	U
77-47-4	Hexachlorocyclopentadiene	940	U
88-06-2	2,4,6-Trichlorophenol	940	U
95-95-4	2,4,5-Trichlorophenol	4600	U
91-58-7	2-Chloronaphthalene	940	U
88-74-4	2-Nitroaniline	4600	U
131-11-3	Dimethyl Phthalate	940	U
208-96-8	Acenaphthylene	940	U
606-20-2	2,6-Dinitrotoluene	940	U

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2/9/90

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

JD585

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD585_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF812_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ____ dec. __30 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y__ pH: __7.3 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4600	U
83-32-9	Acenaphthene	940	U
51-28-5	2,4-Dinitrophenol	4600	U
100-02-7	4-Nitrophenol	4600	U
132-64-9	Dibenzofuran	940	U
121-14-2	2,4-Dinitrotoluene	940	U
84-66-2	Diethylphthalate	940	U
7005-72-3	4-Chlorophenyl-phenylether	940	U
86-73-7	Fluorene	940	U
100-01-6	4-Nitroaniline	4600	U
534-52-1	4,6-Dinitro-2-Methylphenol	4600	U
86-30-6	N-Nitrosodiphenylamine (1)	940	U
101-55-3	4-Bromophenyl-phenylether	940	U
118-74-1	Hexachlorobenzene	940	U
87-86-5	Pentachlorophenol	4600	U
85-01-8	Phenanthrene	130	J
120-12-7	Anthracene	940	U
84-74-2	Di-n-Butylphthalate	940	U
206-44-0	Fluoranthene	270	J
129-00-0	Pyrene	470	J
85-68-7	Butylbenzylphthalate	940	U
91-94-1	3,3'-Dichlorobenzidine	1900	U
56-55-3	Benzo(a)Anthracene	190	J
117-81-7	bis(2-Ethylhexyl)Phthalate	280	J
218-01-9	Chrysene	250	J
117-84-0	Di-n-Octyl Phthalate	940	U
205-99-2	Benzo(b)Fluoranthene	450	J
207-08-9	Benzo(k)Fluoranthene	330	J
50-32-8	Benzo(a)Pyrene	280	J
193-39-5	Indeno(1,2,3-cd)Pyrene	620	J
53-70-3	Dibenz(a,h)Anthracene	940	U
191-24-2	Benzo(g,h,i)Perylene	770	J

(1) - Cannot be separated from Diphenylamine

2/19/90

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO

JD585

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA_____ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD585_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF812_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ____ dec. __30 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y__ pH: __7.3 Dilution Factor: 1.0_____

Number TICs found: _20

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN ALKANE	10.00	480	UJ
2.	UNKNOWN	11.12	1600	UJ
3.	UNKNOWN	11.40	2100	J
4. 4436753	3-Hexene-2,5-dione (SCI9CI)	11.74	2800	UJ
5.	UNKNOWN	12.62	4000	U
6.	UNKNOWN	13.62	2500	J
7.	UNKNOWN	13.84	4800	J
8.	UNKNOWN ALKANE	27.92	670	J
9.	UNKNOWN ALKANE	29.82	1000	J
10.	UNKNOWN	30.09	480	J
11.	UNKNOWN	30.82	860	J
12.	UNKNOWN	36.32	1200	J
13.	UNKNOWN ALKANE	37.56	2900	J
14.	UNKNOWN	38.16	950	J
15.	UNKNOWN	38.66	760	J
16.	UNKNOWN	40.99	670	J
17.	UNKNOWN	41.37	670	J
18.	UNKNOWN	42.48	1000	J
19.	UNKNOWN	44.64	1300	J
20.	UNKNOWN	47.53	760	J

2/19/90

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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD586

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA_1 Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD586_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF844_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. ____ dec. __33 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y__ pH: __7.6 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	990	U
111-44-4	bis(2-Chloroethyl)Ether	990	U
95-57-8	2-Chlorophenol	990	U
541-73-1	1,3-Dichlorobenzene	990	U
106-46-7	1,4-Dichlorobenzene	990	U
100-51-6	Benzyl Alcohol	990	U
95-50-1	1,2-Dichlorobenzene	990	U
95-48-7	2-Methylphenol	990	U
108-60-1	bis(2-Chloroisopropyl)Ether	990	U
106-44-5	4-Methylphenol	990	U
621-64-7	N-Nitroso-Di-n-Propylamine	990	U
67-72-1	Hexachloroethane	990	U
98-95-3	Nitrobenzene	990	U
78-59-1	Isophorone	990	U
88-75-5	2-Nitrophenol	990	U
105-67-9	2,4-Dimethylphenol	990	U
65-85-0	Benzoic Acid	4800	U
111-91-1	bis(2-Chloroethoxy)Methane	990	U
120-83-2	2,4-Dichlorophenol	990	U
120-82-1	1,2,4-Trichlorobenzene	990	U
91-20-3	Naphthalene	990	U
106-47-8	4-Chloroaniline	990	U
87-68-3	Hexachlorobutadiene	990	U
59-50-7	4-Chloro-3-Methylphenol	990	U
91-57-6	2-Methylnaphthalene	990	U
77-47-4	Hexachlorocyclopentadiene	990	U
88-06-2	2,4,6-Trichlorophenol	990	U
95-95-4	2,4,5-Trichlorophenol	4800	U
91-58-7	2-Chloronaphthalene	990	U
88-74-4	2-Nitroaniline	4800	U
131-11-3	Dimethyl Phthalate	990	U
208-96-8	Acenaphthylene	990	U
606-20-2	2,6-Dinitrotoluene	990	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

JD586

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD586_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF844_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. ____ dec. __33 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y__ pH: __7.6 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4800	U
83-32-9	Acenaphthene	990	U
51-28-5	2,4-Dinitrophenol	4800	U
100-02-7	4-Nitrophenol	4800	U
132-64-9	Dibenzofuran	990	U
121-14-2	2,4-Dinitrotoluene	990	U
84-66-2	Diethylphthalate	990	U
7005-72-3	4-Chlorophenyl-phenylether	990	U
86-73-7	Fluorene	990	U
100-01-6	4-Nitroaniline	4800	U
534-52-1	4,6-Dinitro-2-Methylphenol	4800	U
86-30-6	N-Nitrosodiphenylamine (1)	990	U
101-55-3	4-Bromophenyl-phenylether	990	U
118-74-1	Hexachlorobenzene	990	U
87-86-5	Pentachlorophenol	4800	U
85-01-8	Phenanthrene	990	U
120-12-7	Anthracene	990	U
84-74-2	Di-n-Butylphthalate	990	U
206-44-0	Fluoranthene	990	U
129-00-0	Pyrene	990	U
85-68-7	Butylbenzylphthalate	990	U
91-94-1	3,3'-Dichlorobenzidine	2000	U
56-55-3	Benzo(a)Anthracene	990	U
117-81-7	bis(2-Ethylhexyl)Phthalate	280	J
218-01-9	Chrysene	990	U
117-84-0	Di-n-Octyl Phthalate	990	U
205-99-2	Benzo(b)Fluoranthene	990	U
207-08-9	Benzo(k)Fluoranthene	990	U
50-32-8	Benzo(a)Pyrene	990	U
193-39-5	Indeno(1,2,3-cd)Pyrene	990	U
53-70-3	Dibenz(a,h)Anthracene	990	U
191-24-2	Benzo(g,h,i)Perylene	990	U

(1) - Cannot be separated from Diphenylamine

2/19/90

FORM I SV-2

1/87 R

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ecology and environment

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO

JD586

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD586_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF844_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. ____ dec. __33 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y__ pH: __7.6 Dilution Factor: 1.0_____

Number TICs found: _20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	11.15	1800	uJ
2.	UNKNOWN	11.44	1200	J
3. 4436753	3-Hexene-2,5-dione (SCI9CI)	11.77	5000	uJ
4.	UNKNOWN	12.67	4300	uJ
5.	UNKNOWN	13.59	700	J
6.	UNKNOWN	13.87	2400	J
7.	UNKNOWN	13.97	500	J
8.	UNKNOWN	27.74	800	J
9.	UNKNOWN ALKANE	27.94	900	J
10.	UNKNOWN ALKANE	29.84	800	J
11.	UNKNOWN ALKANE	31.81	1500	J
12.	UNKNOWN	32.24	600	J
13.	UNKNOWN	33.52	700	J
14.	UNKNOWN ALKANE	34.34	1800	J
15.	UNKNOWN	35.01	800	J
16.	UNKNOWN	36.77	1300	J
17.	UNKNOWN ALKANE	37.57	900	J
18.	UNKNOWN ALKANE	37.87	3000	J
19.	UNKNOWN	38.87	2300	J
20.	UNKNOWN ALKANE	43.01	900	J

2/9/90

2348

1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE No.
JE353

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JE353_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF845_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. __24 dec. ____ Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y__ pH: __6.7 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	870	U
111-44-4	bis(2-Chloroethyl)Ether	870	U
95-57-8	2-Chlorophenol	870	U
541-73-1	1,3-Dichlorobenzene	870	U
106-46-7	1,4-Dichlorobenzene	870	U
100-51-6	Benzyl Alcohol	870	U
95-50-1	1,2-Dichlorobenzene	870	U
95-48-7	2-Methylphenol	870	U
108-60-1	bis(2-Chloroisopropyl)Ether	870	U
106-44-5	4-Methylphenol	870	U
621-64-7	N-Nitroso-Di-n-Propylamine	870	U
67-72-1	Hexachloroethane	870	U
98-95-3	Nitrobenzene	870	U
78-59-1	Isophorone	870	U
88-75-5	2-Nitrophenol	870	U
105-67-9	2,4-Dimethylphenol	870	U
65-85-0	Benzoic Acid	4200	U
111-91-1	bis(2-Chloroethoxy)Methane	870	U
120-83-2	2,4-Dichlorophenol	870	U
120-82-1	1,2,4-Trichlorobenzene	870	U
91-20-3	Naphthalene	870	U
106-47-8	4-Chloroaniline	870	U
87-68-3	Hexachlorobutadiene	870	U
59-50-7	4-Chloro-3-Methylphenol	870	U
91-57-6	2-Methylnaphthalene	870	U
77-47-4	Hexachlorocyclopentadiene	870	U
88-06-2	2,4,6-Trichlorophenol	870	U
95-95-4	2,4,5-Trichlorophenol	4200	U
91-58-7	2-Chloronaphthalene	870	U
88-74-4	2-Nitroaniline	4200	U
131-11-3	Dimethyl Phthalate	870	U
208-96-8	Acenaphthylene	870	U
606-20-2	2,6-Dinitrotoluene	870	U

2/9/90

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1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

JE353

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JE353_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF845_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. __24 dec. ____ Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y__ pH: __6.7 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4200	U
83-32-9	Acenaphthene	870	U
51-28-5	2,4-Dinitrophenol	4200	U
100-02-7	4-Nitrophenol	4200	U
132-64-9	Dibenzofuran	870	U
121-14-2	2,4-Dinitrotoluene	870	U
84-66-2	Diethylphthalate	870	U
7005-72-3	4-Chlorophenyl-phenylether	870	U
86-73-7	Fluorene	870	U
100-01-6	4-Nitroaniline	4200	U
534-52-1	4,6-Dinitro-2-Methylphenol	4200	U
86-30-6	N-Nitrosodiphenylamine (1)	870	U
101-55-3	4-Bromophenyl-phenylether	870	U
118-74-1	Hexachlorobenzene	870	U
87-86-5	Pentachlorophenol	4200	U
85-01-8	Phenanthrene	870	U
120-12-7	Anthracene	870	U
84-74-2	Di-n-Butylphthalate	870	U
206-44-0	Fluoranthene	870	U
129-00-0	Pyrene	110	J
85-68-7	Butylbenzylphthalate	870	U
91-94-1	3,3'-Dichlorobenzidine	1700	U
56-55-3	Benzo(a)Anthracene	870	U
117-81-7	bis(2-Ethylhexyl)Phthalate	120	J
218-01-9	Chrysene	110	J
117-84-0	Di-n-Octyl Phthalate	870	U
205-99-2	Benzo(b)Fluoranthene	870	U
207-08-9	Benzo(k)Fluoranthene	870	U
50-32-8	Benzo(a)Pyrene	870	U
193-39-5	Indeno(1,2,3-cd)Pyrene	870	U
53-70-3	Dibenz(a,h)Anthracene	870	U
191-24-2	Benzo(g,h,i)Perylene	870	U

(1) - Cannot be separated from Diphenylamine

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO

JE353

Lab Name: ECOVA_____ Contract: 68-WS-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576

Matrix: (soil/water) SOIL__ Lab Sample ID: JE353_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF845_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. __24 dec. ____ Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y__ pH: __6.7 Dilution Factor: 1.0_____

Number TICs found: _20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	11.14	1500	UJ
2.	UNKNOWN	11.42	2700	J
3. 4436753	3-Hexene-2,5-dione (8CI9CI)	11.74	3400	UJ
4.	UNKNOWN	12.64	1800	UJ
5.	UNKNOWN	13.62	1500	J
6.	UNKNOWN	13.87	1400	J
7.	UNKNOWN	29.97	790	J
8.	UNKNOWN	30.12	1100	J
9.	UNKNOWN	32.22	1300	J
10.	UNKNOWN ALKANE	34.34	700	J
11.	UNKNOWN	35.01	790	J
12.	UNKNOWN	36.77	1800	J
13.	UNKNOWN ALKANE	37.89	3200	J
14.	UNKNOWN	38.72	3300	J
15.	UNKNOWN	41.36	1500	J
16.	UNKNOWN	42.54	1600	J
17.	UNKNOWN	43.03	1300	J
18.	UNKNOWN	43.34	970	J
19.	UNKNOWN	44.71	1100	J
20.	UNKNOWN	47.59	2100	J

2/19/90

2377

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

JD576

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA_ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD576_____

Sample wt/vol: 30.0 (g/mL) G___ Lab File ID: _____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __24 dec. ____ Date Extracted: 12/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/06/90

GPC Cleanup: (Y/N) Y__ pH: __6.5 Dilution Factor: 10_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	210	U
319-85-7	beta-BHC	210	U
319-86-8	delta-BHC	210	U
58-89-9	Lindane	210	U
76-44-8	Heptachlor	210	U
309-00-2	Aldrin	210	U
1024-57-3	Heptachlor epoxide	210	U
959-98-8	Endosulfan I	210	U
60-57-1	Dieldrin	420	U
72-55-9	4,4'-DDE	420	U
72-20-8	Endrin	420	U
33213-65-9	Endosulfan II	420	U
72-54-8	4,4'-DDD	420	U
1031-07-8	Endosulfan sulfate	420	U
50-29-3	4,4'-DDT	420	U
72-43-5	Methoxychlor	2100	U
53494-70-5	Endrin ketone	420	U
5103-71-9	alpha-Chlordane	2100	U
5103-74-2	gamma-Chlordane	2100	U
8001-35-2	Toxaphene	4200	U
12674-11	Aroclor-1016	2100	U
11104-28	Aroclor-1221	2100	U
11141-16	Aroclor-1232	2100	U
53469-21	Aroclor-1242	2100	U
12672-29	Aroclor-1248	2100	U
11097-69-1	Aroclor-1254	2500	J
11096-82-5	Aroclor-1260	4200	U

2/19/90

003005

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE N

JD578

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA___ Case No.: 13014_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD578_____

Sample wt/vol: 30.0 (g/mL) G___ Lab File ID: _____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __19 dec. ____ Date Extracted: 12/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/06/90

GPC Cleanup: (Y/N) Y__ pH: __8.6 Dilution Factor: 10_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	200	U
319-85-7	beta-BHC	200	U
319-86-8	delta-BHC	200	U
58-89-9	Lindane	200	U
76-44-8	Heptachlor	200	U
309-00-2	Aldrin	200	U
1024-57-3	Heptachlor epoxide	200	U
959-98-8	Endosulfan I	200	U
60-57-1	Dieldrin	400	U
72-55-9	4,4'-DDE	400	U
72-20-8	Endrin	400	U
33213-65-9	Endosulfan II	400	U
72-54-8	4,4'-DDD	400	U
1031-07-8	Endosulfan sulfate	400	U
50-29-3	4,4'-DDT	400	U
72-43-5	Methoxychlor	2000	U
53494-70-5	Endrin ketone	400	U
5103-71-9	alpha-Chlordane	2000	U
5103-74-2	gamma-Chlordane	2000	U
8001-35-2	Toxaphene	4000	U
12674-1[illegible]	Aroclor-1016	2000	U
11104-2[illegible]	Aroclor-1221	2000	U
11141-1[illegible]	Aroclor-1232	2000	U
53469-2[illegible]	Aroclor-1242	2000	U
12672-2[illegible]	Aroclor-1248	2000	U
11097-69-1	Aroclor-1254	4000	U
11096-82-5	Aroclor-1260	4300	

2/19/90

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD579

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA_____ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD579_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: _____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ___0 dec. __26 Date Extracted: 12/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/06/90

GPC Cleanup: (Y/N) Y__ pH: __7.2 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	22	U
319-85-7	beta-BHC	22	U
319-86-8	delta-BHC	22	U
58-89-9	Lindane	22	U
76-44-8	Heptachlor	22	U
309-00-2	Aldrin	22	U
1024-57-3	Heptachlor epoxide	22	U
959-98-8	Endosulfan I	22	U
60-57-1	Dieldrin	43	U
72-55-9	4,4'-DDE	43	U
72-20-8	Endrin	43	U
33213-65-9	Endosulfan II	43	U
72-54-8	4,4'-DDD	43	U
1031-07-8	Endosulfan sulfate	43	U
50-29-3	4,4'-DDT	43	U
72-43-5	Methoxychlor	220	U
53494-70-5	Endrin ketone	43	U
5103-71-9	alpha-Chlordane	220	U
5103-74-2	gamma-Chlordane	220	U
8001-35-2	Toxaphene	430	U
12674-1[illegible]	Aroclor-1016	220	U
11104-2[illegible]	Aroclor-1221	220	U
11141-1[illegible]	Aroclor-1232	220	U
53469-2[illegible]	Aroclor-1242	220	U
12672-29[illegible]	Aroclor-1248	220	U
11097-69-1	Aroclor-1254	190	J
11096-82-5	Aroclor-1260	430	U

2/19/90

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD580

Lab Name: ECOVA Contract: 68-W8-0018

Lab Code: ECOVA Case No.: 13324 SAS No.: _____ SDG No.: JD576

Matrix: (soil/water) SOIL Lab Sample ID: JD580

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 12/14/89

% Moisture: not dec. 0 dec. 42 Date Extracted: 12/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/06/90

GPC Cleanup: (Y/N) Y pH: 6.9 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	28	U
319-85-7	beta-BHC	28	U
319-86-8	delta-BHC	28	U
58-89-9	Lindane	28	U
76-44-8	Heptachlor	28	U
309-00-2	Aldrin	28	U
1024-57-3	Heptachlor epoxide	28	U
959-98-8	Endosulfan I	28	U
60-57-1	Dieldrin	55	U
72-55-9	4,4'-DDE	55	U
72-20-8	Endrin	55	U
33213-65-9	Endosulfan II	55	U
72-54-8	4,4'-DDD	55	U
1031-07-8	Endosulfan sulfate	55	U
50-29-3	4,4'-DDT	55	U
72-43-5	Methoxychlor	280	U
53494-70-5	Endrin ketone	55	U
5103-71-9	alpha-Chlordane	280	U
5103-74-2	gamma-Chlordane	280	U
8001-35-2	Toxaphene	550	U
12674-11	Aroclor-1016	280	U
11104-2	Aroclor-1221	280	U
11141-1	Aroclor-1232	280	U
53469-21	Aroclor-1242	280	U
12672-2	Aroclor-1248	280	U
11097-69-1	Aroclor-1254	490	J
11096-82-5	Aroclor-1260	550	U

2/19/90

FORM I PEST 1/87 R

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

JD581

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA___ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD581_____

Sample wt/vol: 30.0 (g/mL) G___ Lab File ID: _____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ___0 dec. __53 Date Extracted: 12/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/06/90

GPC Cleanup: (Y/N) Y__ pH: __6.6 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	34	U
319-85-7	beta-BHC	34	U
319-86-8	delta-BHC	34	U
58-89-9	Lindane	34	U
76-44-8	Heptachlor	34	U
309-00-2	Aldrin	34	U
1024-57-3	Heptachlor epoxide	34	U
959-98-8	Endosulfan I	34	U
60-57-1	Dieldrin	68	U
72-55-9	4,4'-DDE	68	U
72-20-8	Endrin	68	U
33213-65-9	Endosulfan II	68	U
72-54-8	4,4'-DDD	68	U
1031-07-8	Endosulfan sulfate	68	U
50-29-3	4,4'-DDT	68	U
72-43-5	Methoxychlor	340	U
53494-70-5	Endrin ketone	68	U
5103-71-9	alpha-Chlordane	340	U
5103-74-2	gamma-Chlordane	340	U
8001-35-2	Toxaphene	680	U
12674-1[illegible]	Aroclor-1016	340	U
11104-2[illegible]	Aroclor-1221	340	U
11141-1[illegible]	Aroclor-1232	340	U
53469-2[illegible]	Aroclor-1242	340	U
12672-2[illegible]	Aroclor-1248	340	U
11097-69-1	Aroclor-1254	1200	
11096-82-5	Aroclor-1260	680	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD582

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA_____ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD582_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: _____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. ___0 dec. __37 Date Extracted: 12/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/16/90

GPC Cleanup: (Y/N) Y__ pH: __6.8 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	25	U
319-85-7	beta-BHC	25	U
319-86-8	delta-BHC	25	U
58-89-9	Lindane	25	U
76-44-8	Heptachlor	25	U
309-00-2	Aldrin	25	U
1024-57-3	Heptachlor epoxide	25	U
959-98-8	Endosulfan I	25	U
60-57-1	Dieldrin	51	U
72-55-9	4,4'-DDE	51	U
72-20-8	Endrin	51	U
33213-65-9	Endosulfan II	51	U
72-54-8	4,4'-DDD	51	U
1031-07-8	Endosulfan sulfate	51	U
50-29-3	4,4'-DDT	51	U
72-43-5	Methoxychlor	250	U
53494-70-5	Endrin ketone	51	U
5103-71-9	alpha-Chlordane	250	U
5103-74-2	gamma-Chlordane	250	U
8001-35-2	Toxaphene	510	U
12674-1[illegible]	Aroclor-1016	250	U
11104-[illegible]	Aroclor-1221	250	U
11141-[illegible]	Aroclor-1232	250	U
53469-2[illegible]	Aroclor-1242	250	U
12672-29[illegible]	Aroclor-1248	250	U
11097-69-1	Aroclor-1254	510	U
11096-82-5	Aroclor-1260	510	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO
JD583

Lab Name: ECOVA[redacted] Contract: 68-W8-0018_

Lab Code: ECOVA[redacted] Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD583_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: _____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. ___0 dec. __28 Date Extracted: 12/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/16/90

GPC Cleanup: (Y/N) Y__ pH: __6.9 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	22	U
319-85-7	beta-BHC	22	U
319-86-8	delta-BHC	22	U
58-89-9	Lindane	22	U
76-44-8	Heptachlor	22	U
309-00-2	Aldrin	22	U
1024-57-3	Heptachlor epoxide	22	U
959-98-8	Endosulfan I	22	U
60-57-1	Dieldrin	44	U
72-55-9	4,4'-DDE	44	U
72-20-8	Endrin	44	U
33213-65-9	Endosulfan II	44	U
72-54-8	4,4'-DDD	44	U
1031-07-8	Endosulfan sulfate	44	U
50-29-3	4,4'-DDT	44	U
72-43-5	Methoxychlor	220	U
53494-70-5	Endrin ketone	44	U
5103-71-9	alpha-Chlordane	220	U
5103-74-2	gamma-Chlordane	220	U
8001-35-2	Toxaphene	440	U
12674-[redacted]	Aroclor-1016	220	U
11104-[redacted]	Aroclor-1221	220	U
11141-[redacted]	Aroclor-1232	220	U
53469-[redacted]	Aroclor-1242	220	U
12672-[redacted]	Aroclor-1248	220	U
11097-69-[redacted]	Aroclor-1254	440	U
11096-82-5	Aroclor-1260	440	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

JD584

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD584_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: _____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ___0 dec. __23 Date Extracted: 12/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/16/90

GPC Cleanup: (Y/N) Y__ pH: __8.1 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	21	U
319-85-7	beta-BHC	21	U
319-86-8	delta-BHC	21	U
58-89-9	Lindane	21	U
76-44-8	Heptachlor	21	U
309-00-2	Aldrin	21	U
1024-57-3	Heptachlor epoxide	21	U
959-98-8	Endosulfan I	21	U
60-57-1	Dieldrin	42	U
72-55-9	4,4'-DDE	42	U
72-20-8	Endrin	42	U
33213-65-9	Endosulfan II	42	U
72-54-8	4,4'-DDD	42	U
1031-07-8	Endosulfan sulfate	42	U
50-29-3	4,4'-DDT	42	U
72-43-5	Methoxychlor	210	U
53494-70-5	Endrin ketone	42	U
5103-71-9	alpha-Chlordane	210	U
5103-74-2	gamma-Chlordane	210	U
8001-35-2	Toxaphene	420	U
12674-11[illegible]	Aroclor-1016	210	U
11104-28[illegible]	Aroclor-1221	210	U
11141-1[illegible]	Aroclor-1232	210	U
53469-21[illegible]	Aroclor-1242	210	U
12672-29[illegible]	Aroclor-1248	210	U
11097-69-1	Aroclor-1254	82	J
11096-82-5	Aroclor-1260	420	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE N

JD585

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD585_____

Sample wt/vol: 30.0 (g/mL) G___ Lab File ID: _____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ___0 dec. __30 Date Extracted: 01/15/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/16/90

GPC Cleanup: (Y/N) Y__ pH: __7.3 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	23	U
319-85-7	beta-BHC	23	U
319-86-8	delta-BHC	23	U
58-89-9	Lindane	23	U
76-44-8	Heptachlor	23	U
309-00-2	Aldrin	23	U
1024-57-3	Heptachlor epoxide	23	U
959-98-8	Endosulfan I	23	U
60-57-1	Dieldrin	46	U
72-55-9	4,4'-DDE	46	U
72-20-8	Endrin	46	U
33213-65-9	Endosulfan II	46	U
72-54-8	4,4'-DDD	46	U
1031-07-8	Endosulfan sulfate	46	U
50-29-3	4,4'-DDT	46	U
72-43-5	Methoxychlor	230	U
53494-70-5	Endrin ketone	46	U
5103-71-9	alpha-Chlordane	230	U
5103-74-2	gamma-Chlordane	230	U
8001-35-2	Toxaphene	460	U
12674-11[illegible]	Aroclor-1016	230	U
11104-28[illegible]	Aroclor-1221	230	U
11141-16[illegible]	Aroclor-1232	230	U
53469-2[illegible]	Aroclor-1242	230	U
12672-29[illegible]	Aroclor-1248	230	U
11097-69-1	Aroclor-1254	400	J
11096-82-5	Aroclor-1260	460	U

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE N

JD586

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA___ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD586_____

Sample wt/vol: 30.0 (g/mL) G___ Lab File ID: _____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. ___0 dec. __33 Date Extracted: 12/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/16/90

GPC Cleanup: (Y/N) Y__ pH: __7.6 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	24	U
319-85-7	beta-BHC	24	U
319-86-8	delta-BHC	24	U
58-89-9	Lindane	24	U
76-44-8	Heptachlor	24	U
309-00-2	Aldrin	24	U
1024-57-3	Heptachlor epoxide	24	U
959-98-8	Endosulfan I	24	U
60-57-1	Dieldrin	48	U
72-55-9	4,4'-DDE	48	U
72-20-8	Endrin	48	U
33213-65-9	Endosulfan II	48	U
72-54-8	4,4'-DDD	48	U
1031-07-8	Endosulfan sulfate	48	U
50-29-3	4,4'-DDT	48	U
72-43-5	Methoxychlor	240	U
53494-70-5	Endrin ketone	48	U
5103-71-9	alpha-Chlordane	240	U
5103-74-2	gamma-Chlordane	240	U
8001-35-2	Toxaphene	480	U
12674-11[illegible]	Aroclor-1016	240	U
11104-28[illegible]	Aroclor-1221	240	U
11141-16[illegible]	Aroclor-1232	240	U
53469-21[illegible]	Aroclor-1242	240	U
12672-29[illegible]	Aroclor-1248	240	U
11097-69-1	Aroclor-1254	98	J
11096-82-5	Aroclor-1260	480	U

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MEMORANDUM

DATE: March 14, 1990

FOR: Rhonda Wreggelsworth, RSCC, USEPA, Region 10

THRU: Jeffrey Villnow, FITOM, E & E, Seattle

FROM: David A. Ikeda, Chemist, E & E, Seattle
Tracy Yerian, Senior Chemist, E & E, Seattle

SUBJ: QA of Case 13324 (Organics)
Northwest Pipe and Casing

REF: F10-8906-002
PAN FOR0210XC

CC: John Osborn, RPO, USEPA, Region 10
Bruce Woods, ESD, USEPA, Region 10
Gerald Muth, DPO, USEPA, Region 10 Laboratory, Manchester
Deborah Flood, HWD-SM, USEPA, Region 10
Gerald Lee, FIT-PD, E & E, Seattle
Mark Ader, FIT-PM, E & E, Seattle

The Quality Assurance (QA) review of 11 samples, Case 13324, collected from Northwest Pipe and Casing, has been completed. Eleven soil samples were analyzed at low level for Target Compound List (TCL) Organics by ECOVA of Redmond, Washington. The samples were numbered:

JD576	JD581	JD585
JD578	JD582	JD586
JD579	JD583	JE353
JD580	JD584	

Sample JD580 underwent matrix spike (MS) and matrix spike duplicate (MSD) analysis.

Data Qualifications

The following comments refer to the laboratory performance in meeting the Quality Control (QC) specifications outlined in IFB WA-87K236-238, following Laboratory Data Validation Functional Guidelines for Evaluating Organics Analysis (February 1, 1988).

1) Timeliness

Sample Number	Sample Date	Rec'd Date	VOC Anal.	BNA Extr.	BNA Anal.	Pest/PCB Extr.	Pest/PCB Anal.
JD576	12/13/89	12/14/89	12/14/89	12/19/89	01/09/90	12/20/89	01/06/90
JD578	12/13/89	12/14/89	12/14/89	12/19/89	01/09/90	12/20/89	01/06/90
JD579	12/13/89	12/14/89	12/14/89	12/19/89	01/09/90	12/20/89	01/06/90
JD580	12/13/89	12/14/89	12/15/89	12/19/89	01/15/90	12/20/89	01/06/90
JD581	12/13/89	12/14/89	12/15/89	01/11/90	01/12/90	12/20/89	01/06/90
JD582	12/14/89	12/15/89	12/18/89	12/19/89	01/12/90	12/20/89	01/16/90
JD583	12/14/89	12/15/89	12/18/89	12/19/89	01/12/90	12/20/89	01/16/90
JD584	12/13/89	12/14/89	12/15/89	12/19/89	01/09/90	12/20/89	01/16/90
JD585	12/13/89	12/14/89	12/15/89	12/19/89	01/09/90	01/15/90	01/16/90
JD586	12/14/89	12/15/89	12/15/89	12/19/89	01/12/90	12/20/89	01/16/90
JE353	12/14/89	12/15/89	12/15/89	12/19/89	01/12/90	12/20/89	01/16/90

VOC - Volatile Organic Compounds
BNA - Base, Neutral, and Acid Semivolatile Compounds
Pest/PCB - Pesticide/Polychlorinated Biphenyl Compounds
Anal. - Analysis Date
Extr. - Extraction Date

All samples met holding time criteria for volatiles, semivolatiles, and pesticides, except:

Sample Number	Fraction	Sampling Date	Extraction Date	Time Elapsed	QC Criteria
JD581	BNA	12/13/90	01/11/90	29 days	14 days
JD585	Pest/PCB	12/13/89	01/15/90	33 days	14 days

Data, by sample and fraction, were flagged "J_3" (estimated quantity) or "UJ_3" (not detected, estimated quantitation limit) as appropriate.

2) Instrument Tuning

All tuning check compound mass abundances and ratios were within contract-required limits for volatile and semivolatile analysis.

3) Initial Calibration

All System Performance Check Compounds (SPCCs) were within contract-required limits for the initial calibration with average Relative Response Factors (RRFs) above 0.05 for volatiles and semivolatiles. All Calibration Check Compounds (CCCs) were within contract-required limits for the initial calibration with Percent Relative Standard Deviations (RSDs) below 30 percent.

All non-SPCCs had average RRFs of greater than or equal to 0.05 in the initial volatile or semivolatile calibration.

4) Continuing Calibrations

All SPCCs were at or above the contract-required Relative Response Factor (RRF(50)) criteria of 0.05 for volatiles and semivolatiles. All CCCs were at or below the contract-required Relative Percent Difference (RPD) limit of 25 percent for the volatile and semivolatile continuing calibrations.

All non-SPCCs had RRF(50)s of greater than or equal to 0.05 for continuing volatile and semivolatile calibrations.

All non-CCCs that were detected in the sample had percent difference (%D) values for the continuing calibration of less than or equal to 25 percent.

5) Blanks

Frequency criteria were met for laboratory blank analysis.

The following compounds were detected in laboratory blanks at levels above Instrument Detection Limits (IDL), but below Contract Required Quantitation Limits (CRQL) for TCL compounds:

Blank ID	Fraction	Compound	Conc. µg/kg	CRQL µg/kg	Associated Samples
VBLKAZ	VOC	2-Butanone	2	10	JD580, JD581, JD584, JD585

Conc. - Concentration

Reported levels of the above compounds in the samples were flagged "UJ_1" (estimated quantitation limit) if the concentrations were below five times the concentrations found in the appropriate blank (10 times for common solvents).

The following Tentatively Identified Compounds (TICs) were identified in the laboratory blanks:

Blank ID	Fraction	Compound	RT	Est. Conc.	Associated Samples
SBLK01	BNA	Unknown Alkane	10.02	330	*
		Unknown	11.12	1,000	*
		3-Hexene-2,5-dione	11.74	2,200	*
		Unknown	12.62	870	*
		Unknown	13.05	330	*
		Unknown	15.52	730	*
SBLK02	BNA	Unknown	30.14	730	JD581
		Unknown	32.24	330	JD581

RT - Retention Time
Est. Conc. - Estimated Concentration
* JD576, JD578, JD579, JD580, JD582, JD583, JD584, JD585, JD586, and JE353

Reported levels of these compounds found in the samples were flagged "UJ_1" (estimated quantitation limit) if the reported concentration was less than 10 times the concentration found in the appropriate blank.

6) Pesticide Standards

a) Linearity

The evaluation standards met the contract-required limits of less than 10 percent RSD for linearity.

b) DDT Retention Time

The retention time for DDT on the primary and secondary GC column met or exceeded 12 minutes for the standard runs.

c) Retention Time Windows

The retention time windows met the contract specifications.

d) Analytical Sequence

The analytical sequence met the contract-required frequency and order.

e) 4,4'-DDT/Endrin Degradation-

The percent breakdown for Endrin and DDT met the contract limit of 20 percent for the individual or combined breakdown totals.

f) Dibutylchlorendate Retention Time Shift

The Percent Difference calculated for the retention time of dibutylchlorendate did not exceed 2 percent for the packed columns.

7) Surrogate Recovery

Recoveries (%R) for all surrogate compounds for volatile and semivolatile analysis met QC criteria, except:

Sample Number	Fraction	Compound	%R	QC Limits
JD578	BNA	2,4,6-Tribromophenol	126	19 - 122

No action was taken based on the one semivolatile surrogate outlier.

Recoveries for dibutylchlorendate (pesticide/PCB surrogate) met advisory QC guidelines.

All surrogate compounds met calibration QC criteria.

8) Matrix Spike and Matrix Spike Duplicate

All MS and MSD Percent Recoveries (%Rs) met advisory QC guidelines, except:

Sample Number	Fraction	Compound	%R	QC Limits
JD580MS	BNA	2,4-Dinitrotoluene	90	28 - 89
JD580MSD	BNA	2,4-Dinitrotoluene	94	28 - 89

No action was taken, since the above compound was not detected in sample JD580.

All RPD values for the MS and MSD were within QC guidelines.

9) Internal Standard Recovery

All internal standard areas were within established QC limits.

10) Sample Analysis

All reported results above IDLs but below CRQLs were flagged as estimated quantities (J) on the Data Sheets.

11) Laboratory Contact

The laboratory was contacted on February 16, 1990 (see attached Telephone Record Log).

Data Use

The usefulness of the data is based on the criteria outlined in the "Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses" (February 1, 1988); the Data Qualifier Definitions supplied by the Office of Solid Waste and Emergency Response (September 1989); and the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989).

Upon consideration of the data qualifications noted above, the data are ACCEPTABLE for use except where flagged with data qualifiers which modify the usefulness of the individual values.

Additional data packages associated with this project are expected from CLP or EPA laboratories.

Data Qualifiers

U - The material was analyzed for, but was not detected. The associated numerical value is a contractual quantitation limit, adjusted for sample weight/sample volume, extraction volume, percent solids and sample dilution.

J - The analyte was analyzed for and was positively identified, but the associated numerical value may not be consistent with the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.

UJ - The material was analyzed for, but was not detected. The associated numerical value is an estimated/adjusted quantitation limit. The associated numerical value may not accurately or precisely represent the concentration necessary to detect the analyte in this sample.

A subscript will be appended to the "J" qualifier or the "UJ" qualifier that indicates which of the following quality control criteria were not met:

1. Blank contamination: indicates possible high bias and/or false positives.

2. Calibration range exceeded: indicates possible low bias.

3. Holding times not met: indicates low bias for most analytes with the exception of common laboratory contaminants and chlorinated ethenes (i.e., trichloroethene, 1,1-dichloroethene, and vinyl chloride).

4. Other QC outside control limits: bias not readily determined.

R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.

N - Presumptive evidence of presence of material (tentative identification). Confirmation of the analyte requires further analysis.

NJ - The analysis indicates that the analyte is tentatively identified and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

A subscript will be appended to the "NJ" qualifier that indicates which of the following situations applies:

1. DDT/Endrin breakdown evident.

2. Interference by other sample components.

3. Non-Target Compound List (TCL) compounds (confirmation is necessary using specific target compound methodology to accurately determine the concentration and identify of the detected compounds).

4. A confirmation analysis was missing or quality control criteria were not met for the confirmation analysis.

M - Mass spectral criteria for positive identification were not met. However, in the opinion of the laboratory, the identification is correct based on the analyst's professional judgement.

X - The reported result may be a combination of indistinguishable isomers.

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In Reference to Case No(s):
13324

Contract Laboratory Program
REGIONAL/LABORATORY COMMUNICATION SYSTEM

Telephone Record Log

Date of Call: 2/16/90

Laboratory Name: ECOVA

Lab Contact:

Region: X

Regional Contact: DAVID AKIO IKEDA

Call Initiated By: ____ Laboratory X Region

In reference to data for the following sample number(s):
JD 576, JD 578 THROUGH JD 586, AND JE 353

SDG # JD 576

Summary of Questions/Issues Discussed:
1. SAMPLE JD 580 - PEST/PCBs. CAN LAB VERIFY THE AROCLOR 1254 QUANTITATION
2. SAMPLE JD 582 - SEMIVOLATILES. TIC #11 IS IDENTIFIED AS AN UNKNOWN, THE SPECTRA IS IDENTIFIED AS AN UNKNOWN ALKANE. WHICH IS CORRECT.
3. SAMPLE JE 353 - SEMIVOLATILES. TIC #17 IS IDENTIFIED AS AN UNKNOWN, THE SPECTRA IS IDENTIFIED AS AN UNKNOWN ALKANE. WHICH IS CORRECT.

Summary of Resolution:
1. CORRECT QUANTITATION
2 + 3 WILL SEND CORRECTED SV TIC FORM I.

David A Ikeda
Signature

16 FEBRUARY
Date

Distribution: (1)Lab Copy, (2)Region Copy, (3)SMO Copy

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD576

ab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA___ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

atrix: (soil/water) SOIL__ Lab Sample ID: JD576_____

ample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3702_____

Level: (low/med) LOW___ Date Received: 12/14/89

Moisture: not dec. __24 Date Analyzed: 12/14/89

Column: (pack/cap) PACK__ Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	7	U
67-64-1	Acetone	5	J
75-15-0	Carbon Disulfide	7	U
75-35-4	1,1-Dichloroethene	7	U
75-34-3	1,1-Dichloroethane	7	U
540-59-0	1,2-Dichloroethene (total)	7	U
67-66-3	Chloroform	7	U
107-06-2	1,2-Dichloroethane	7	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	7	U
56-23-5	Carbon Tetrachloride	7	U
108-05-4	Vinyl Acetate	13	U
75-27-4	Bromodichloromethane	7	U
78-87-5	1,2-Dichloropropane	7	U
10061-01-5	cis-1,3-Dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	7	U
10061-02-6	Trans-1,3-Dichloropropene	7	U
75-25-2	Bromoform	7	U
108-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	7	U
79-34-5	1,1,2,2-Tetrachloroethane	7	U
108-88-3	Toluene	7	U
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	7	U
100-42-5	Styrene	7	U
1330-20-7	Xylene (total)	7	U

001013

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD576

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD576_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3702_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __24 Date Analyzed: 12/14/89

Column (pack/cap) PACK__ Dilution Factor: 1.0_____

Number TICs found: __0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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001014

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD578

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD578_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3703_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __19 Date Analyzed: 12/14/89

Column: (pack/cap) PACK__ Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	12	U
74-83-9	Bromomethane	12	U
75-01-4	Vinyl Chloride	12	U
75-00-3	Chloroethane	12	U
75-09-2	Methylene Chloride	6	U
67-64-1	Acetone	12	U
75-15-0	Carbon Disulfide	6	U
75-35-4	1,1-Dichloroethene	6	U
75-34-3	1,1-Dichloroethane	6	U
540-59-0	1,2-Dichloroethene (total)	6	U
67-66-3	Chloroform	6	U
107-06-2	1,2-Dichloroethane	6	U
78-93-3	2-Butanone	2	J
71-55-6	1,1,1-Trichloroethane	6	U
56-23-5	Carbon Tetrachloride	6	U
108-05-4	Vinyl Acetate	12	U
75-27-4	Bromodichloromethane	6	U
78-87-5	1,2-Dichloropropane	6	U
10061-01-5	cis-1,3-Dichloropropene	6	U
79-01-6	Trichloroethene	6	U
124-48-1	Dibromochloromethane	6	U
79-00-5	1,1,2-Trichloroethane	6	U
71-43-2	Benzene	6	U
10061-02-6	Trans-1,3-Dichloropropene	6	U
75-25-2	Bromoform	6	U
108-10-1	4-Methyl-2-Pentanone	12	U
591-78-6	2-Hexanone	12	U
127-18-4	Tetrachloroethene	1	J
79-34-5	1,1,2,2-Tetrachloroethane	6	U
108-88-3	Toluene	6	U
108-90-7	Chlorobenzene	6	U
100-41-4	Ethylbenzene	6	U
100-42-5	Styrene	6	U
1330-20-7	Xylene (total)	6	U

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EPA SAMPLE NO.

JD578

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD578_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3703_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __19 Date Analyzed: 12/14/89

Column (pack/cap) PACK__ Dilution Factor: 1.0_____

Number TICs found: __0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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EPA SAMPLE NO.

JD579

Lab Name: ECOVA Contract: 68-W8-0018

Lab Code: ECOVA Case No.: 13324 SAS No.: _____ SDG No.: JD576

Matrix: (soil/water) SOIL Lab Sample ID: JD579

Sample wt/vol: 5.0 (g/mL) G Lab File ID: A3704

Level: (low/med) LOW Date Received: 12/14/89

Moisture: not dec. 51 Date Analyzed: 12/14/89

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	20	U
74-83-9	Bromomethane	20	U
75-01-4	Vinyl Chloride	20	U
75-00-3	Chloroethane	20	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	20	U
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	20	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
108-05-4	Vinyl Acetate	20	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	10	U
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	Trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	20	U
591-78-6	2-Hexanone	20	U
127-18-4	Tetrachloroethene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JD579

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD579_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3704_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __51 Date Analyzed: 12/14/89

Column (pack/cap) PACK__ Dilution Factor: 1.0_____

Number TICs found: __0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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EPA SAMPLE NO.

JD580

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD580_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3708_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __48 Date Analyzed: 12/15/89

Column: (pack/cap) PACK__ Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	19	U
74-83-9	Bromomethane	19	U
75-01-4	Vinyl Chloride	19	U
75-00-3	Chloroethane	19	U
75-09-2	Methylene Chloride	10	U
67-64-1	Acetone	2	J
75-15-0	Carbon Disulfide	10	U
75-35-4	1,1-Dichloroethene	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	7	J
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
78-93-3	2-Butanone	19	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
108-05-4	Vinyl Acetate	19	U
75-27-4	Bromodichloromethane	10	U
78-87-5	1,2-Dichloropropane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
79-01-6	Trichloroethene	7	J
124-48-1	Dibromochloromethane	10	U
79-00-5	1,1,2-Trichloroethane	10	U
71-43-2	Benzene	10	U
10061-02-6	Trans-1,3-Dichloropropene	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	19	U
591-78-6	2-Hexanone	19	U
127-18-4	Tetrachloroethene	3	J
79-34-5	1,1,2,2-Tetrachloroethane	10	U
108-88-3	Toluene	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	10	U
100-42-5	Styrene	10	U
1330-20-7	Xylene (total)	10	U

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EPA SAMPLE NO.

JD580

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD580_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3708_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __48 Date Analyzed: 12/15/89

Column (pack/cap) PACK__ Dilution Factor: 1.0_____

Number TICs found: __0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD581

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD581_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3711_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __56 Date Analyzed: 12/15/89

Column: (pack/cap) PACK__ Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	23	U
74-83-9	Bromomethane	23	U
75-01-4	Vinyl Chloride	23	U
75-00-3	Chloroethane	23	U
75-09-2	Methylene Chloride	11	U
67-64-1	Acetone	20	J
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	43	
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	23	U
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
108-05-4	Vinyl Acetate	23	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	36	
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	Trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	23	U
591-78-6	2-Hexanone	23	U
127-18-4	Tetrachloroethene	230	
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JD581

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD581_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3711_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __56 Date Analyzed: 12/15/89

Column (pack/cap) PACK__ Dilution Factor: 1.0_____

Number TICs found: __0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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EPA SAMPLE NO.

JD582

Lab Name: ECOVA Contract: 68-W8-0018

Lab Code: ECOVA Case No.: 13324 SAS No.: _____ SDG No.: JD576

Matrix: (soil/water) SOIL Lab Sample ID: JD582

Sample wt/vol: 5.0 (g/mL) G Lab File ID: A3718

Level: (low/med) LOW Date Received: 12/15/89

% Moisture: not dec. 45 Date Analyzed: 12/18/89

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	18	U
74-83-9	Bromomethane	18	U
75-01-4	Vinyl Chloride	18	U
75-00-3	Chloroethane	18	U
75-09-2	Methylene Chloride	9	U
67-64-1	Acetone	48	
75-15-0	Carbon Disulfide	9	U
75-35-4	1,1-Dichloroethene	9	U
75-34-3	1,1-Dichloroethane	9	U
540-59-0	1,2-Dichloroethene (total)	9	U
67-66-3	Chloroform	9	U
107-06-2	1,2-Dichloroethane	9	U
78-93-3	2-Butanone	8	J
71-55-6	1,1,1-Trichloroethane	9	U
56-23-5	Carbon Tetrachloride	9	U
108-05-4	Vinyl Acetate	18	U
75-27-4	Bromodichloromethane	9	U
78-87-5	1,2-Dichloropropane	9	U
10061-01-5	cis-1,3-Dichloropropene	9	U
79-01-6	Trichloroethene	9	U
124-48-1	Dibromochloromethane	9	U
79-00-5	1,1,2-Trichloroethane	9	U
71-43-2	Benzene	9	U
10061-02-6	Trans-1,3-Dichloropropene	9	U
75-25-2	Bromoform	9	U
108-10-1	4-Methyl-2-Pentanone	18	U
591-78-6	2-Hexanone	18	U
127-18-4	Tetrachloroethene	9	U
79-34-5	1,1,2,2-Tetrachloroethane	9	U
108-88-3	Toluene	9	U
108-90-7	Chlorobenzene	9	U
100-41-4	Ethylbenzene	9	U
100-42-5	Styrene	9	U
1330-20-7	Xylene (total)	9	U

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD582

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD582_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3718_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. __45 Date Analyzed: 12/18/89

Column (pack/cap) PACK__ Dilution Factor: 1.0_____

Number TICs found: __0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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EPA SAMPLE NO.

JD583

Lab Name: ECOVA Contract: 68-W8-0018

Lab Code: ECOVA Case No.: 13324 SAS No.: _____ SDG No.: JD576

Matrix: (soil/water) SOIL Lab Sample ID: JD583

Sample wt/vol: 5.0 (g/mL) G Lab File ID: A3719

Level: (low/med) LOW Date Received: 12/15/89

% Moisture: not dec. 35 Date Analyzed: 12/18/89

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	15	U
74-83-9	Bromomethane	15	U
75-01-4	Vinyl Chloride	15	U
75-00-3	Chloroethane	15	U
75-09-2	Methylene Chloride	8	U
67-64-1	Acetone	15	U
75-15-0	Carbon Disulfide	8	U
75-35-4	1,1-Dichloroethene	8	U
75-34-3	1,1-Dichloroethane	8	U
540-59-0	1,2-Dichloroethene (total)	8	U
67-66-3	Chloroform	8	U
107-06-2	1,2-Dichloroethane	8	U
78-93-3	2-Butanone	3	J
71-55-6	1,1,1-Trichloroethane	8	U
56-23-5	Carbon Tetrachloride	8	U
108-05-4	Vinyl Acetate	15	U
75-27-4	Bromodichloromethane	8	U
78-87-5	1,2-Dichloropropane	8	U
10061-01-5	cis-1,3-Dichloropropene	8	U
79-01-6	Trichloroethene	8	U
124-48-1	Dibromochloromethane	8	U
79-00-5	1,1,2-Trichloroethane	8	U
71-43-2	Benzene	8	U
10061-02-6	Trans-1,3-Dichloropropene	8	U
75-25-2	Bromoform	8	U
108-10-1	4-Methyl-2-Pentanone	15	U
591-78-6	2-Hexanone	15	U
127-18-4	Tetrachloroethene	8	U
79-34-5	1,1,2,2-Tetrachloroethane	8	U
108-88-3	Toluene	8	U
108-90-7	Chlorobenzene	8	U
100-41-4	Ethylbenzene	8	U
100-42-5	Styrene	8	U
1330-20-7	Xylene (total)	8	U

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EPA SAMPLE NO.

JD583

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD583_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3719_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. __35 Date Analyzed: 12/18/89

Column (pack/cap) PACK__ Dilution Factor: 1.0_____

Number TICs found: __0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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EPA SAMPLE NO.

JD584

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD584_____

Sample wt/vol: __5.0 (g/mL) ___ Lab File ID: A3712_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __35 Date Analyzed: 12/15/89

Column: (pack/cap) PACK__ Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	15	U
74-83-9	Bromomethane	15	U
75-01-4	Vinyl Chloride	15	U
75-00-3	Chloroethane	15	U
75-09-2	Methylene Chloride	8	U
67-64-1	Acetone	54	
75-15-0	Carbon Disulfide	8	U
75-35-4	1,1-Dichloroethene	8	U
75-34-3	1,1-Dichloroethane	8	U
540-59-0	1,2-Dichloroethene (total)	8	U
67-66-3	Chloroform	8	U
107-06-2	1,2-Dichloroethane	8	U
78-93-3	2-Butanone	7	uJ
71-55-6	1,1,1-Trichloroethane	8	U
56-23-5	Carbon Tetrachloride	8	U
108-05-4	Vinyl Acetate	15	U
75-27-4	Bromodichloromethane	8	U
78-87-5	1,2-Dichloropropane	8	U
10061-01-5	cis-1,3-Dichloropropene	8	U
79-01-6	Trichloroethene	8	U
124-48-1	Dibromochloromethane	8	U
79-00-5	1,1,2-Trichloroethane	8	U
71-43-2	Benzene	8	U
10061-02-6	Trans-1,3-Dichloropropene	8	U
75-25-2	Bromoform	8	U
108-10-1	4-Methyl-2-Pentanone	15	U
591-78-6	2-Hexanone	15	U
127-18-4	Tetrachloroethene	8	U
79-34-5	1,1,2,2-Tetrachloroethane	8	U
108-88-3	Toluene	8	U
108-90-7	Chlorobenzene	8	U
100-41-4	Ethylbenzene	8	U
100-42-5	Styrene	8	U
1330-20-7	Xylene (total)	8	U

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2/8/90

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
JD584

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD584_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3712_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __35 Date Analyzed: 12/15/89

Column (pack/cap) PACK__ Dilution Factor: 1.0_____

Number TICs found: __2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	- COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN HYDROCARBON C10H16	28.07	26	J
2. 127913	.beta.-Pinene	28.69	9	J

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1A
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EPA SAMPLE NO.

JD585

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD585_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3713_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __37 Date Analyzed: 12/15/89

Column: (pack/cap) PACK__ Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	16	U
74-83-9	Bromomethane	16	U
75-01-4	Vinyl Chloride	16	U
75-00-3	Chloroethane	16	U
75-09-2	Methylene Chloride	8	U
67-64-1	Acetone	11	J
75-15-0	Carbon Disulfide	8	U
75-35-4	1,1-Dichloroethene	8	U
75-34-3	1,1-Dichloroethane	8	U
540-59-0	1,2-Dichloroethene (total)	2	J
67-66-3	Chloroform	8	U
107-06-2	1,2-Dichloroethane	8	U
78-93-3	2-Butanone	16	U
71-55-6	1,1,1-Trichloroethane	8	U
56-23-5	Carbon Tetrachloride	8	U
108-05-4	Vinyl Acetate	16	U
75-27-4	Bromodichloromethane	8	U
78-87-5	1,2-Dichloropropane	8	U
10061-01-5	cis-1,3-Dichloropropene	8	U
79-01-6	Trichloroethene	2	J
124-48-1	Dibromochloromethane	8	U
79-00-5	1,1,2-Trichloroethane	8	U
71-43-2	Benzene	8	U
10061-02-6	Trans-1,3-Dichloropropene	8	U
75-25-2	Bromoform	8	U
108-10-1	4-Methyl-2-Pentanone	16	U
591-78-6	2-Hexanone	16	U
127-18-4	Tetrachloroethene	3	J
79-34-5	1,1,2,2-Tetrachloroethane	8	U
108-88-3	Toluene	8	U
108-90-7	Chlorobenzene	8	U
100-41-4	Ethylbenzene	8	U
100-42-5	Styrene	8	U
1330-20-7	Xylene (total)	8	U

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VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JD585

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD585_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3713_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __37 Date Analyzed: 12/15/89

Column (pack/cap) PACK__ Dilution Factor: 1.0_____

Number TICs found: __0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD586

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA___ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD586_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3720_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. __54 Date Analyzed: 12/18/89

Column: (pack/cap) PACK__ Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	22	U
74-83-9	Bromomethane	22	U
75-01-4	Vinyl Chloride	22	U
75-00-3	Chloroethane	22	U
75-09-2	Methylene Chloride	11	U
67-64-1	Acetone	35	
75-15-0	Carbon Disulfide	11	U
75-35-4	1,1-Dichloroethene	11	U
75-34-3	1,1-Dichloroethane	11	U
540-59-0	1,2-Dichloroethene (total)	11	U
67-66-3	Chloroform	11	U
107-06-2	1,2-Dichloroethane	11	U
78-93-3	2-Butanone	8	J
71-55-6	1,1,1-Trichloroethane	11	U
56-23-5	Carbon Tetrachloride	11	U
108-05-4	Vinyl Acetate	22	U
75-27-4	Bromodichloromethane	11	U
78-87-5	1,2-Dichloropropane	11	U
10061-01-5	cis-1,3-Dichloropropene	11	U
79-01-6	Trichloroethene	11	U
124-48-1	Dibromochloromethane	11	U
79-00-5	1,1,2-Trichloroethane	11	U
71-43-2	Benzene	11	U
10061-02-6	Trans-1,3-Dichloropropene	11	U
75-25-2	Bromoform	11	U
108-10-1	4-Methyl-2-Pentanone	22	U
591-78-6	2-Hexanone	22	U
127-18-4	Tetrachloroethene	11	U
79-34-5	1,1,2,2-Tetrachloroethane	11	U
108-88-3	Toluene	11	U
108-90-7	Chlorobenzene	11	U
100-41-4	Ethylbenzene	11	U
100-42-5	Styrene	11	U
1330-20-7	Xylene (total)	11	U

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1E

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD586

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD586_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3720_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. __54 Date Analyzed: 12/18/89

Column (pack/cap) PACK__ Dilution Factor: 1.0_____

Number TICs found: __0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE353

Lab Name: ECOVA Contract: 68-W8-0018

Lab Code: ECOVA Case No.: 13324 SAS No.: _____ SDG No.: JD576

Matrix: (soil/water) SOIL Lab Sample ID: JE353

Sample wt/vol: 5.0 (g/mL) G Lab File ID: A3717

Level: (low/med) LOW Date Received: 12/15/89

% Moisture: not dec. 24 Date Analyzed: 12/18/89

Column: (pack/cap) PACK Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
74-87-3	Chloromethane	13	U
74-83-9	Bromomethane	13	U
75-01-4	Vinyl Chloride	13	U
75-00-3	Chloroethane	13	U
75-09-2	Methylene Chloride	7	U
67-64-1	Acetone	4	J
75-15-0	Carbon Disulfide	7	U
75-35-4	1,1-Dichloroethene	7	U
75-34-3	1,1-Dichloroethane	7	U
540-59-0	1,2-Dichloroethene (total)	7	U
67-66-3	Chloroform	7	U
107-06-2	1,2-Dichloroethane	7	U
78-93-3	2-Butanone	13	U
71-55-6	1,1,1-Trichloroethane	7	U
56-23-5	Carbon Tetrachloride	7	U
108-05-4	Vinyl Acetate	13	U
75-27-4	Bromodichloromethane	7	U
78-87-5	1,2-Dichloropropane	7	U
10061-01-5	cis-1,3-Dichloropropene	7	U
79-01-6	Trichloroethene	7	U
124-48-1	Dibromochloromethane	7	U
79-00-5	1,1,2-Trichloroethane	7	U
71-43-2	Benzene	7	U
10061-02-6	Trans-1,3-Dichloropropene	7	U
75-25-2	Bromoform	7	U
108-10-1	4-Methyl-2-Pentanone	13	U
591-78-6	2-Hexanone	13	U
127-18-4	Tetrachloroethene	7	U
79-34-5	1,1,2,2-Tetrachloroethane	7	U
108-88-3	Toluene	7	U
108-90-7	Chlorobenzene	7	U
100-41-4	Ethylbenzene	7	U
100-42-5	Styrene	7	U
1330-20-7	Xylene (total)	7	U

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EPA SAMPLE NO.

JE353

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JE353_____

Sample wt/vol: __5.0 (g/mL) G___ Lab File ID: A3717_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. __24 Date Analyzed: 12/18/89

Column (pack/cap) PACK__ Dilution Factor: 1.0_____

Number TICs found: __0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q

2/19/90

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1D

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD576

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13824_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD576_____

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BF807__

Level: (low/med) LOW Date Received: 12/14/89

% Moisture: not dec. 24 dec. ____ Date Extracted: 12/17/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y pH: 6.5 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	870	U
111-44-4	bis(2-Chloroethyl)Ether	870	U
95-57-8	2-Chlorophenol	870	U
541-73-1	1,3-Dichlorobenzene	870	U
106-46-7	1,4-Dichlorobenzene	870	U
100-51-6	Benzyl Alcohol	870	U
95-50-1	1,2-Dichlorobenzene	870	U
95-48-7	2-Methylphenol	870	U
108-60-1	bis(2-Chloroisopropyl)Ether	870	U
106-44-5	4-Methylphenol	870	U
621-64-7	N-Nitroso-Di-n-Propylamine	870	U
67-72-1	Hexachloroethane	870	U
98-95-3	Nitrobenzene	870	U
78-59-1	Isophorone	870	U
88-75-5	2-Nitrophenol	870	U
105-67-9	2,4-Dimethylphenol	870	U
65-85-0	Benzoic Acid	4200	U
111-91-1	bis(2-Chloroethoxy)Methane	870	U
120-83-2	2,4-Dichlorophenol	870	U
120-82-1	1,2,4-Trichlorobenzene	870	U
91-20-3	Naphthalene	870	U
106-47-8	4-Chloroaniline	870	U
87-68-3	Hexachlorobutadiene	870	U
59-50-7	4-Chloro-3-Methylphenol	870	U
91-57-6	2-Methylnaphthalene	870	U
77-47-4	Hexachlorocyclopentadiene	870	U
88-06-2	2,4,6-Trichlorophenol	870	U
95-95-4	2,4,5-Trichlorophenol	4200	U
91-58-7	2-Chloronaphthalene	870	U
88-74-4	2-Nitroaniline	4200	U
131-11-3	Dimethyl Phthalate	870	U
208-96-8	Acenaphthylene	870	U
606-20-2	2,6-Dinitrotoluene	870	U

FORM I SV-1

2/9/90

2016

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD576

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 1932[illegible] SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD576_____

Sample wt/vol: 30.0 (g/mL) ___ Lab File ID: BF807_____

Level: (Low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __24 dec. ____ Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y__ pH: __[illegible].5 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4200	U
83-32-9	Acenaphthene	180	J
51-28-5	2,4-Dinitrophenol	4200	U
100-02-7	4-Nitrophenol	4200	U
132-64-9	Dibenzofuran	870	U
121-14-2	2,4-Dinitrotoluene	870	U
84-66-2	Diethylphthalate	870	U
7005-72-3	4-Chlorophenyl-phenylether	870	U
86-73-7	Fluorene	140	J
100-01-6	4-Nitroaniline	4200	U
534-52-1	4,6-Dinitro-2-Methylphenol	4200	U
86-30-6	N-Nitrosodiphenylamine (1)	870	U
101-55-3	4-Bromophenyl-phenylether	870	U
118-74-1	Hexachlorobenzene	870	U
87-86-5	Pentachlorophenol	4200	U
85-01-8	Phenanthrene	1600	
120-12-7	Anthracene	350	J
84-74-2	Di-n-Butylphthalate	160	J
206-44-0	Fluoranthene	3900	
129-00-0	Pyrene	4500	
85-68-7	Butylbenzylphthalate	300	J
91-94-1	3,3'-Dichlorobenzidine	1700	U
56-55-3	Benzo(a)Anthracene	2200	
117-81-7	bis(2-Ethylhexyl)Phthalate	640	J
218-01-9	Chrysene	2700	
117-84-0	Di-n-Octyl Phthalate	470	J
205-99-2	Benzo(b)Fluoranthene	2600	
207-08-9	Benzo(k)Fluoranthene	2400	
50-32-8	Benzo(a)Pyrene	1900	
193-39-5	Indeno(1,2,3-cd)Pyrene	1400	
53-70-3	Dibenz(a,h)Anthracene	770	J
191-24-2	Benzo(g,h,i)Perylene	1400	

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

2017

2/19/90

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD576

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD576_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF807_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __24 dec. ____ Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y__ pH: __6.5 Dilution Factor: 1.0_____

Number TICs found: _20

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	11.12	1200	BJ
2.	UNKNOWN	11.40	1600	J
3. 4436753	3-Hexene-2,5-dione (8CI9CI)	11.72	2500	BJ
4.	UNKNOWN	12.62	2600	BJ
5.	UNKNOWN	13.62	2100	J
6.	UNKNOWN	13.85	5500	J
7.	UNKNOWN	23.42	1800	J
8.	UNKNOWN	26.87	700	J
9.	UNKNOWN ALKANE	29.84	610	J
10.	UNKNOWN, C17H12	29.94	1100	J
11.	UNKNOWN, C17H12	30.12	610	J
12.	UNKNOWN, C17H12	30.24	440	J
13.	UNKNOWN	31.17	610	J
14.	UNKNOWN	31.42	880	J
15.	UNKNOWN	31.79	790	J
16.	UNKNOWN, C18H12	31.89	970	J
17.	UNKNOWN, C18H10	31.97	610	J
18.	UNKNOWN, C18H12	33.11	530	J
19.	UNKNOWN	34.31	700	J
20.	UNKNOWN, C20H12	39.31	1600	J

2/9/90

2018

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD578

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD578_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD578_____

Sample wt/vol: 30.0 (g/mL) ____ Lab File ID: BF808_____

Level: (low/med) LOW__ Date Received: 12/14/89

% Moisture: not dec. __19 dec. ____ Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y__ pH: __6.6 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	810	U
111-44-4	bis(2-Chloroethyl)Ether	810	U
95-57-8	2-Chlorophenol	810	U
541-73-1	1,3-Dichlorobenzene	810	U
106-46-7	1,4-Dichlorobenzene	810	U
100-51-6	Benzyl Alcohol	810	U
95-50-1	1,2-Dichlorobenzene	810	U
95-48-7	2-Methylphenol	810	U
108-60-1	bis(2-Chloroisopropyl)Ether	810	U
106-44-5	4-Methylphenol	810	U
621-64-7	N-Nitroso-Di-n-Propylamine	810	U
67-72-1	Hexachloroethane	810	U
98-95-3	Nitrobenzene	810	U
78-59-1	Isophorone	810	U
88-75-5	2-Nitrophenol	810	U
105-67-9	2,4-Dimethylphenol	810	U
65-85-0	Benzoic Acid	210	J
111-91-1	bis(2-Chloroethoxy)Methane	810	U
120-83-2	2,4-Dichlorophenol	810	U
120-82-1	1,2,4-Trichlorobenzene	810	U
91-20-3	Naphthalene	810	U
106-47-8	4-Chloroaniline	810	U
87-68-3	Hexachlorobutadiene	810	U
59-50-7	4-Chloro-3-Methylphenol	810	U
91-57-6	2-Methylnaphthalene	810	U
77-47-4	Hexachlorocyclopentadiene	810	U
88-06-2	2,4,6-Trichlorophenol	810	U
95-95-4	2,4,5-Trichlorophenol	4000	U
91-58-7	2-Chloronaphthalene	810	U
88-74-4	2-Nitroaniline	4000	U
131-11-3	Dimethylphthalate	810	U
208-96-8	Acenaphthylene	810	U
606-20-2	2,6-Dinitrotoluene	810	U

FORM 1 SV-1

2/19/90

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1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD578

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13924_ SAS No.: _____ SDG No.: JD578_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD578_____

Sample wt/vol: 30.0 (g/ml) G_____ Lab File ID: BF808_____

Level: (low/med) LOW_____ Date Received: 12/14/89

% Moisture: not dec. 19 dec. _____ Date Extracted: 12/17/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4000	U
83-32-9	Acenaphthene	810	U
51-28-5	2,4-Dinitrophenol	4000	U
100-02-7	4-Nitrophenol	4000	U
132-64-9	Dibenzofuran	810	U
121-14-2	2,4-Dinitrotoluene	810	U
84-66-2	Diethylphthalate	810	U
7005-72-3	4-Chlorophenyl-phenylether	810	U
86-73-7	Fluorene	810	U
100-01-6	4-Nitroaniline	4000	U
534-52-1	4,6-Dinitro 2-Methylphenol	4000	U
86-30-6	N-Nitrosodiphenylamine (1)	810	U
101-55-3	4-Bromophenyl-phenylether	810	U
118-74-1	Hexachlorobenzene	810	U
87-86-5	Pentachlorophenol	140	J
85-01-8	Phenanthrene	550	J
120-12-7	Anthracene	150	J
84-74-2	Di-n-Butylphthalate	410	J
206-44-0	Fluoranthene	1200	
129-00-0	Pyrene	1300	
85-68-7	Butylbenzylphthalate	1700	
91-94-1	3,3'-Dichlorobenzidine	1600	U
56-55-3	Benzo(a)Anthracene	670	J
117-81-7	bis(2-Ethylhexyl)Phthalate	1300	
218-01-9	Chrysene	940	
117-84-0	Di-n-Octyl Phthalate	810	U
205-99-2	Benzo(b)Fluoranthene	730	J
207-08-9	Benzo(k)Fluoranthene	720	J
50-32-8	Benzo(a)Pyrene	620	J
193-39-5	Indeno(1,2,3-cd)Pyrene	400	J
53-70-3	Dibenz(a,h)Anthracene	180	J
191-24-2	Benzo(g,h,i)Perylene	450	J

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 2/19/90 2063

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JD578

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324 SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD578_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF808_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __19 dec. ____ Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y__ pH: __6.6 Dilution Factor: 1.0_____

Number TICs found: _20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	11.12	1200	UJ
2.	UNKNOWN	11.40	2100	J
3. 4436753	3-Hexene-2,5-dione (8CI9CI)	11.74	3800	UJ
4.	UNKNOWN	12.64	3400	UJ
5.	UNKNOWN	13.62	1700	J
6.	UNKNOWN	13.85	4200	J
7.	UNKNOWN	21.57	410	J
8.	UNKNOWN	22.90	410	J
9.	UNKNOWN	24.17	2200	J
10.	UNKNOWN ALKANE	26.89	490	J
11.	UNKNOWN ALKANE	27.92	820	J
12.	UNKNOWN ALKANE	28.91	330	J
13.	UNKNOWN	29.67	1800	J
14.	UNKNOWN ALKANE	29.84	2400	J
15.	UNKNOWN ALKANE	31.79	1500	J
16.	UNKNOWN	31.87	1900	J
17.	UNKNOWN ALKANE	34.34	1500	J
18.	UNKNOWN	34.47	1700	J
19.	UNKNOWN	42.78	1600	J
20.	UNKNOWN	43.39	3200	J

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2064

FORM I SV-TIC

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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD579

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13904 SAS No.: _____ SDG No.: JD576

Matrix: (soil/water) SOIL__ Lab Sample ID: JD579_____

Sample wt/vol: 30.0 (g/ml) ___ Lab File ID: BF807_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ____ dec. ____ Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y__ pH: 7.2 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	890	U
111-44-4	bis(2-Chloroethyl)Ether	890	U
95-57-8	2-Chlorophenol	890	U
541-73-1	1,3-Dichlorobenzene	890	U
106-46-7	1,4-Dichlorobenzene	890	U
100-51-6	Benzyl Alcohol	890	U
95-50-1	1,2-Dichlorobenzene	890	U
95-48-7	2-Methylphenol	890	U
108-60-1	bis(2-Chloroisopropyl)Ether	890	U
106-44-5	4-Methylphenol	890	U
621-64-7	N-Nitroso-Di-n-Propylamine	890	U
67-72-1	Hexachloroethane	890	U
98-95-3	Nitrobenzene	890	U
78-59-1	Isophorone	890	U
88-75-5	2-Nitrophenol	890	U
105-67-9	2,4-Dimethylphenol	890	U
65-85-0	Benzoic Acid	4300	U
111-91-1	bis(2-Chloroethoxy)Methane	890	U
120-83-2	2,4-Dichlorophenol	890	U
120-82-1	1,2,4-Trichlorobenzene	890	U
91-20-3	Naphthalene	890	U
106-47-8	4-Chloroaniline	890	U
87-68-3	Hexachlorobutadiene	890	U
59-50-7	4-Chloro-3-Methylphenol	890	U
91-57-6	2-Methylnaphthalene	890	U
77-47-4	Hexachlorocyclopentadiene	890	U
88-06-2	2,4,6-Trichlorophenol	890	U
95-95-4	2,4,5-Trichlorophenol	4300	U
91-58-7	2-Chloronaphthalene	890	U
88-74-4	2-Nitroaniline	4300	U
131-11-3	Dimethylphthalate	890	U
208-96-8	Acenaphthylene	890	U
606-20-2	2,6-Dinitrotoluene	890	U

FORM I SV-1

2/19/90

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD579

Lab Name: ECOVA Contract: 68-W8-0018

Lab Code: ECOVA Case No.: 13324 SAS No.: SDG No.: JD576

Matrix: (soil/water) SOIL Lab Sample ID: JD579

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BF809

Level: (low med) LOW Date Received: 12/14/89

% Moisture: not dec. dec. 26 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y pH: 7.2 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4300	U
83-32-9	Acenaphthene	890	U
51-28-5	2,4-Dinitrophenol	4300	U
100-02-7	4-Nitrophenol	4300	U
132-64-9	Dibenzofuran	890	U
121-14-2	2,4-Dinitrotoluene	890	U
84-66-2	Diethylphthalate	890	U
7005-72-3	4-Chlorophenyl-phenylether	890	U
86-73-7	Fluorene	890	U
100-01-6	4-Nitroaniline	4300	U
534-52-1	4,6-Dinitro-2-Methylphenol	4300	U
86-30-6	N-Nitrosodiphenylamine (1)	890	U
101-55-3	4-Bromophenyl-phenylether	890	U
118-74-1	Hexachlorobenzene	890	U
87-86-5	Pentachlorophenol	4300	U
85-01-8	Phenanthrene	130	J
120-12-7	Anthracene	890	U
84-74-2	Di-n-Butylphthalate	890	U
206-44-0	Fluoranthene	440	J
129-00-0	Pyrene	520	J
85-68-7	Butylbenzylphthalate	890	U
91-94-1	3,3'-Dichlorobenzidine	1800	U
56-55-3	Benzo(a)Anthracene	220	J
117-81-7	bis(2-Ethylhexyl)Phthalate	120	J
218-01-9	Chrysene	260	J
117-84-0	Di-n-Octyl Phthalate	890	U
205-99-2	Benzo(b)Fluoranthene	260	J
207-08-9	Benzo(k)Fluoranthene	240	J
50-32-8	Benzo(a)Pyrene	220	J
193-39-5	Indeno(1,2,3-cd)Pyrene	110	J
53-70-3	Dibenz(a,h)Anthracene	890	U
191-24-2	Benzo(g,h,i)Perylene	890	U

(1) - Cannot be separated from Diphenylamine

FORM I SV-2 2/19/90 2108 1/87 Rev.

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD579

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD579_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF809_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ____ dec. __26 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y__ pH: __7.2 Dilution Factor: 1.0_____

Number TICs found: _12

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN ALKANE	10.02	450	UJ
2.	UNKNOWN	11.12	1400	UJ
3.	UNKNOWN	11.40	1400	J
4. 4436753	3-Hexene-2,5-dione (8CI9CI)	11.74	2500	UJ
5.	UNKNOWN	12.64	3200	UJ
6.	UNKNOWN	13.05	360	UJ
7.	UNKNOWN	13.62	1400	J
8.	UNKNOWN	13.84	7600	J
9.	UNKNOWN ALKANE	27.91	450	J
10.	UNKNOWN ALKANE	29.82	720	J
11.	UNKNOWN	31.84	360	J
12.	UNKNOWN	34.16	2100	J

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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD580

Lab Name: ECOVA Contract: 68-W8-0018

Lab Code: ECOVA Case No.: 13324 SAS No.: _____ SDG No.: JD576

Matrix: (soil/water) SOIL Lab Sample ID: JD580

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BF850

Level: (low/med) LOW Date Received: 12/14/89

% Moisture: not dec. ____ dec. 42 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/15/90

GPC Cleanup: (Y/N) Y pH: 6.9 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1100	U
111-44-4	bis(2-Chloroethyl)Ether	1100	U
95-57-8	2-Chlorophenol	1100	U
541-73-1	1,3-Dichlorobenzene	1100	U
106-46-7	1,4-Dichlorobenzene	1100	U
100-51-6	Benzyl Alcohol	1100	U
95-50-1	1,2-Dichlorobenzene	1100	U
95-48-7	2-Methylphenol	1100	U
108-60-1	bis(2-Chloroisopropyl)Ether	1100	U
106-44-5	4-Methylphenol	1100	U
621-64-7	N-Nitroso-Di-n-Propylamine	1100	U
67-72-1	Hexachloroethane	1100	U
98-95-3	Nitrobenzene	1100	U
78-59-1	Isophorone	1100	U
88-75-5	2-Nitrophenol	1100	U
105-67-9	2,4-Dimethylphenol	1100	U
65-85-0	Benzoic Acid	120	J
111-91-1	bis(2-Chloroethoxy)Methane	1100	U
120-83-2	2,4-Dichlorophenol	1100	U
120-82-1	1,2,4-Trichlorobenzene	1100	U
91-20-3	Naphthalene	1100	U
106-47-8	4-Chloroaniline	1100	U
87-68-3	Hexachlorobutadiene	1100	U
59-50-7	4-Chloro-3-Methylphenol	1100	U
91-57-6	2-Methylnaphthalene	1100	U
77-47-4	Hexachlorocyclopentadiene	1100	U
88-06-2	2,4,6-Trichlorophenol	1100	U
95-95-4	2,4,5-Trichlorophenol	5500	U
91-58-7	2-Chloronaphthalene	1100	U
88-74-4	2-Nitroaniline	5500	U
131-11-3	Dimethyl Phthalate	1100	U
208-96-8	Acenaphthylene	1100	U
606-20-2	2,6-Dinitrotoluene	1100	U

2/19/90

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1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD580

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD580_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF850_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ____ dec. __42 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/15/90

GPC Cleanup: (Y/N) Y__ pH: __6.9 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	5500	U
83-32-9	Acenaphthene	1100	U
51-28-5	2,4-Dinitrophenol	5500	U
100-02-7	4-Nitrophenol	5500	U
132-64-9	Dibenzofuran	1100	U
121-14-2	2,4-Dinitrotoluene	1100	U
84-66-2	Diethylphthalate	1100	U
7005-72-3	4-Chlorophenyl-phenylether	1100	U
86-73-7	Fluorene	1100	U
100-01-6	4-Nitroaniline	5500	U
534-52-1	4,6-Dinitro-2-Methylphenol	5500	U
86-30-6	N-Nitrosodiphenylamine (1)	1100	U
101-55-3	4-Bromophenyl-phenylether	1100	U
118-74-1	Hexachlorobenzene	1100	U
87-86-5	Pentachlorophenol	320	J
85-01-8	Phenanthrene	370	J
120-12-7	Anthracene	230	J
84-74-2	Di-n-Butylphthalate	1100	U
206-44-0	Fluoranthene	1200	
129-00-0	Pyrene	1400	
85-68-7	Butylbenzylphthalate	1100	U
91-94-1	3,3'-Dichlorobenzidine	2300	U
56-55-3	Benzo(a)Anthracene	630	J
117-81-7	bis(2-Ethylhexyl)Phthalate	200	J
218-01-9	Chrysene	880	J
117-84-0	Di-n-Octyl Phthalate	1100	U
205-99-2	Benzo(b)Fluoranthene	1200	
207-08-9	Benzo(k)Fluoranthene	930	J
50-32-8	Benzo(a)Pyrene	670	J
193-39-5	Indeno(1,2,3-cd)Pyrene	740	J
53-70-3	Dibenz(a,h)Anthracene	240	J
191-24-2	Benzo(g,h,i)Perylene	730	J

(1) - Cannot be separated from Diphenylamine

2/19/90

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD580

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD580_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF850_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ____ dec. __42 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/15/90

GPC Cleanup: (Y/N) Y__ pH: __6.9 Dilution Factor: 1.0_____

Number TICs found: _20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	11.09	1500	UJ
2.	UNKNOWN	11.39	3500	J
3. 4436753	3-Hexene-2,5-dione (8CI9CI)	11.70	4100	UJ
4.	UNKNOWN	12.60	3600	UJ
5.	UNKNOWN	13.80	5100	J
6.	UNKNOWN	29.72	690	J
7.	UNKNOWN	31.71	2800	J
8.	UNKNOWN	33.42	580	J
9.	UNKNOWN	34.26	3500	J
10.	UNKNOWN ALKANE	37.79	2000	J
11.	UNKNOWN	37.87	2300	J
12.	UNKNOWN, C20H12	39.22	1000	J
13.	UNKNOWN	41.24	580	J
14.	UNKNOWN	42.34	810	J
15.	UNKNOWN ALKANE	42.84	1600	J
16.	UNKNOWN	43.08	580	J
17.	UNKNOWN	43.63	460	J
18.	UNKNOWN	44.46	690	J
19.	UNKNOWN	47.34	810	J
20.	UNKNOWN	50.39	690	J

2/19/90

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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD5C1

Lab Name: ECOVA Contract: 68-W8-0018

Lab Code: ECOVA Case No.: 19214 SAS No.: SDG No.: JD97

Matrix: (soil/water) SOIL Lab Sample ID: JD581

Sample wt/vol: 30.0 (g/ml) G Lab File ID: BF947

Level: (low/med) LOW Date Received: 12/14/89

% Moisture: not dec. dec. 50 Date Extracted: 01/11/90

Extraction: (Sep/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y pH: 6.6 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1400	U
111-44-4	bis(2-Chloroethyl)Ether	1400	U
95-57-8	2-Chlorophenol	1400	U
541-73-1	1,3-Dichlorobenzene	1400	U
106-46-7	1,4-Dichlorobenzene	1400	U
100-51-6	Benzyl Alcohol	1400	U
95-50-1	1,2-Dichlorobenzene	1400	U
95-48-7	2-Methylphenol	1400	U
108-60-1	bis(2-Chloroisopropyl)Ether	1400	U
106-44-5	4-Methylphenol	1400	U
621-64-7	N-Nitroso-Di-n-Propylamine	1400	U
67-72-1	Hexachloroethane	1400	U
98-95-3	Nitrobenzene	1400	U
78-59-1	Isophorone	1400	U
88-75-5	2-Nitrophenol	1400	U
105-67-9	2,4-Dimethylphenol	1400	U
65-85-0	Benzoic Acid	6800	U
111-91-1	bis(2-Chloroethoxy)Methane	1400	U
120-83-2	2,4-Dichlorophenol	1400	U
120-82-1	1,2,4-Trichlorobenzene	1400	U
91-20-3	Naphthalene	1400	U
106-47-8	4-Chloroaniline	1400	U
87-68-3	Hexachlorobutadiene	1400	U
59-50-7	4-Chloro-3-Methylphenol	1400	U
91-57-6	2-Methylnaphthalene	1400	U
77-47-4	Hexachlorocyclopentadiene	1400	U
88-06-2	2,4,6-Trichlorophenol	1400	U
95-95-4	2,4,5-Trichlorophenol	6800	U
91-58-7	2-Chloronaphthalene	1400	U
88-74-4	2-Nitroaniline	6800	U
131-11-3	Dimethylphthalate	1400	U
208-96-8	Acenaphthylene	1400	U
606-20-2	2,6-Dinitrotoluene	1400	U

FORM I SV-1

2/19/90

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD581

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13304_ SAS No.: _____ SDG No.: JD573_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD581_____

Sample wt/vol: 30.0 (g/mL) ___ Lab File ID: BF847_____

Level: (low/med) LOW__ Date Received: 12/14/89

% Moisture: not dec. ____ dec. 33 Date Extracted: 01/11/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y__ pH: ___ Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	6800	U J3
83-32-9	Acenaphthene	1400	U J3
51-28-5	2,4-Dinitrophenol	6800	U J3
100-02-7	4-Nitrophenol	6800	U J3
132-64-9	Dibenzofuran	1400	U J3
121-14-2	2,4-Dinitrotoluene	1400	U J3
84-66-2	Diethylphthalate	1400	U J3
7005-72-3	4-Chlorophenyl-phenylether	1400	U J3
86-73-7	Fluorene	1400	U J3
100-01-6	4-Nitroaniline	6800	U J3
534-52-1	4,6-Dinitro-2-Methylphenol	6800	U J3
86-30-6	N-Nitrosodiphenylamine (1)	1400	U J3
101-55-3	4-Bromophenyl-phenylether	1400	U J3
118-74-1	Hexachlorobenzene	1400	U J3
87-86-5	Pentachlorophenol	6800	U J3
85-01-8	Phenanthrene	410	J3
120-12-7	Anthracene	210	J3
84-74-2	Di-n-Butylphthalate	1400	U J3
206-44-0	Fluoranthene	1700	J3
129-00-0	Pyrene	2600	J3
85-68-7	Butylbenzylphthalate	1400	U J3
91-94-1	3,3'-Dichlorobenzidine	2800	U J3
56-55-3	Benzo(a)Anthracene	980	J3
117-81-7	bis(2-Ethylhexyl)Phthalate	220	J3
218-01-9	Chrysene	1300	J3
117-84-0	Di-n-Octylphthalate	1400	U J3
205-99-2	Benzo(b)Fluoranthene	1400	J3
207-08-9	Benzo(k)Fluoranthene	1200	J3
50-32-8	Benzo(a)Pyrene	1100	J3
193-39-5	Indeno(1,2,3-cd)Pyrene	1000	J3
53-70-3	Dibenz(a,h)Anthracene	230	J3
191-24-2	Benzo(g,h,i)Perylene	1100	J3

(1) - Cannot be separated from Diphenylamine

FORM I SV-2

2/19/90

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD581

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD581_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF847_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ____ dec. __53 Date Extracted: 01/11/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y__ pH: __6.6 Dilution Factor: 1.0_____

Number TICs found: __9

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN, C17H12	29.96	570	J
2.	UNKNOWN	30.09	1600	UJ
3.	UNKNOWN, C17H12	30.24	570	J
4.	UNKNOWN	32.17	990	UJ
5.	UNKNOWN ALKANE	34.34	710	J
6.	UNKNOWN ALKANE	37.87	710	J
7.	UNKNOWN, C20H12	39.37	1600	J
8.	UNKNOWN ALKANE	43.03	1800	J
9.	UNKNOWN	44.69	710	J

2/19/90

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD582

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 10821 SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD582_____

Sample wt/vol: 30.0 (g/mL) G__ Lab File ID: BF840_____

Level: (low/med) LOW__ Date Received: 12/13/89

% Moisture: not dec. ____ dec. 37 Date Extracted: 12/19/89

Extraction: (Sep/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y__ pH: 6.8 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1000	U
111-44-4	bis(2-Chloroethyl)Ether	1000	U
95-57-8	2-Chlorophenol	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
100-51-6	Benzyl Alcohol	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
95-48-7	2-Methylphenol	1000	U
108-60-1	bis(2-Chloroisopropyl)Ether	1000	U
106-44-5	4-Methylphenol	1000	U
621-64-7	N-Nitroso-Di-n-Propylamine	1000	U
67-72-1	Hexachloroethane	1000	U
98-95-3	Nitrobenzene	1000	U
78-59-1	Isophorone	1000	U
88-75-5	2-Nitrophenol	1000	U
105-67-9	2,4-Dimethylphenol	1000	U
65-85-0	Benzoic Acid	5100	U
111-91-1	bis(2-Chloroethoxy)Methane	1000	U
120-83-2	2,4-Dichlorophenol	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
91-20-3	Naphthalene	1000	U
106-47-8	4-Chloroaniline	1000	U
87-68-3	Hexachlorobutadiene	1000	U
59-50-7	4-Chloro-3-Methylphenol	1000	U
91-57-6	2-Methylnaphthalene	1000	U
77-47-4	Hexachlorocyclopentadiene	1000	U
88-06-2	2,4,6-Trichlorophenol	1000	U
95-95-4	2,4,5-Trichlorophenol	5100	U
91-58-7	2-Chloronaphthalene	1000	U
88-74-4	2-Nitroaniline	5100	U
131-11-3	Dimethyl Phthalate	1000	U
208-96-8	Acenaphthylene	1000	U
606-20-2	2,6-Dinitrotoluene	1000	U

FORM I SV-1

2/19/90

2210

recycled paper
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD582

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13824_ SAS No.: _____ SDG No.: JD574_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD582_____

Sample wt/vol: 30.0 (g/ml) G___ Lab File ID: SF840_____

Level: (low/med) LOW___ Date Received: 12/15/89

Moisture: not dec. ____ dec. DRY Date Extracted: 12/19/89

Extraction: (Sep/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y__ pH: 6.8 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	5100	U
83-32-9	Acenaphthene	1000	U
51-28-5	2,4-Dinitrophenol	5100	U
100-02-7	4-Nitrophenol	5100	U
132-64-9	Dibenzofuran	1000	U
121-14-2	2,4-Dinitrotoluene	1000	U
84-66-2	Diethylphthalate	1000	U
7005-72-3	4-Chlorophenyl-phenylether	1000	U
86-73-7	Fluorene	1000	U
100-01-6	4-Nitroaniline	5100	U
534-52-1	4,6-Dinitro-2-Methylphenol	5100	U
86-30-6	N-Nitrosodiphenylamine (1)	1000	U
101-55-3	4-Bromophenyl-phenylether	1000	U
118-74-1	Hexachlorobenzene	1000	U
87-86-5	Pentachlorophenol	5100	U
85-01-8	Phenanthrene	1000	U
120-12-7	Anthracene	1000	U
84-74-2	Di-n-Butylphthalate	1000	U
206-44-0	Fluoranthene	170	J
129-00-0	Pyrene	170	J
85-68-7	Butylbenzylphthalate	110	J
91-94-1	3,3'-Dichlorobenzidine	2100	U
56-55-3	Benzo(a)Anthracene	1000	U
117-81-7	bis(2-Ethylhexyl)Phthalate	360	J
218-01-9	Chrysene	1000	U
117-84-0	Di-n-Octylphthalate	1000	U
205-99-2	Benzo(b)Fluoranthene	1000	U
207-08-9	Benzo(k)Fluoranthene	1000	U
50-32-8	Benzo(a)Pyrene	1000	U
193-39-5	Indeno(1,2,3-cd)Pyrene	1000	U
53-70-3	Dibenz(a,h)Anthracene	1000	U
191-24-2	Benzo(g,h,i)Perylene	1000	U

(1) - Cannot be separated from Diphenylamine

2/19/90

FORM I SV-2

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD582

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD582_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF840_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. ____ dec. __37 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y__ pH: __6.8 Dilution Factor: 1.0_____

Number TICs found: _20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	11.14	1200	UJ
2.	UNKNOWN	11.42	950	J
3. 4436753	3-Hexene-2,5-dione (8CI9CI)	11.74	3000	UJ
4.	UNKNOWN	12.64	2400	UJ
5.	UNKNOWN	13.57	1600	J
6.	UNKNOWN	13.95	950	J
7.	UNKNOWN	28.14	740	J
8.	UNKNOWN	28.57	640	J
9.	UNKNOWN	29.84	1500	J
10.	UNKNOWN	30.22	1100	J
11.	UNKNOWN	30.74	740	J
12.	UNKNOWN ALKANE	31.79	1800	J
13.	UNKNOWN	32.32	2000	J
14.	UNKNOWN ALKANE	34.31	2600	J
15.	UNKNOWN	35.07	850	J
16.	UNKNOWN ALKANE	35.92	740	J
17.	UNKNOWN	36.74	1500	J
18.	UNKNOWN ALKANE	37.86	4100	J
19.	UNKNOWN	41.42	950	J
20.	UNKNOWN ALKANE	42.98	2500	J

2/9/90

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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD583

Lab Name: ECOVA Contract: 68-W8-0018

Lab Code: ECOVA Case No.: 13324 SAS No.: _____ SDG No.: JD576

Matrix: (soil/water) SOIL Lab Sample ID: JD583

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BF842

Level: (low/med) LOW Date Received: 12/15/89

% Moisture: not dec. ____ dec. 28 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y pH: 6.9 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	920	U
111-44-4	bis(2-Chloroethyl)Ether	920	U
95-57-8	2-Chlorophenol	920	U
541-73-1	1,3-Dichlorobenzene	920	U
106-46-7	1,4-Dichlorobenzene	920	U
100-51-6	Benzyl Alcohol	920	U
95-50-1	1,2-Dichlorobenzene	920	U
95-48-7	2-Methylphenol	920	U
108-60-1	bis(2-Chloroisopropyl)Ether	920	U
106-44-5	4-Methylphenol	920	U
621-64-7	N-Nitroso-Di-n-Propylamine	920	U
67-72-1	Hexachloroethane	920	U
98-95-3	Nitrobenzene	920	U
78-59-1	Isophorone	920	U
88-75-5	2-Nitrophenol	920	U
105-67-9	2,4-Dimethylphenol	920	U
65-85-0	Benzoic Acid	4400	U
111-91-1	bis(2-Chloroethoxy)Methane	920	U
120-83-2	2,4-Dichlorophenol	920	U
120-82-1	1,2,4-Trichlorobenzene	920	U
91-20-3	Naphthalene	920	U
106-47-8	4-Chloroaniline	920	U
87-68-3	Hexachlorobutadiene	920	U
59-50-7	4-Chloro-3-Methylphenol	920	U
91-57-6	2-Methylnaphthalene	920	U
77-47-4	Hexachlorocyclopentadiene	920	U
88-06-2	2,4,6-Trichlorophenol	920	U
95-95-4	2,4,5-Trichlorophenol	4400	U
91-58-7	2-Chloronaphthalene	920	U
88-74-4	2-Nitroaniline	4400	U
131-11-3	Dimethyl Phthalate	920	U
208-96-8	Acenaphthylene	920	U
606-20-2	2,6-Dinitrotoluene	920	U

2/19/90

2242

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD583

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD583_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF842_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. ____ dec. __28 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y__ pH: __6.9 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4400	U
83-32-9	Acenaphthene	920	U
51-28-5	2,4-Dinitrophenol	4400	U
100-02-7	4-Nitrophenol	4400	U
132-64-9	Dibenzofuran	920	U
121-14-2	2,4-Dinitrotoluene	920	U
84-66-2	Diethylphthalate	920	U
7005-72-3	4-Chlorophenyl-phenylether	920	U
86-73-7	Fluorene	920	U
100-01-6	4-Nitroaniline	4400	U
534-52-1	4,6-Dinitro-2-Methylphenol	4400	U
86-30-6	N-Nitrosodiphenylamine (1)	920	U
101-55-3	4-Bromophenyl-phenylether	920	U
118-74-1	Hexachlorobenzene	920	U
87-86-5	Pentachlorophenol	4400	U
85-01-8	Phenanthrene	920	U
120-12-7	Anthracene	920	U
84-74-2	Di-n-Butylphthalate	920	U
206-44-0	Fluoranthene	920	U
129-00-0	Pyrene	920	U
85-68-7	Butylbenzylphthalate	920	U
91-94-1	3,3'-Dichlorobenzidine	1800	U
56-55-3	Benzo(a)Anthracene	920	U
117-81-7	bis(2-Ethylhexyl)Phthalate	160	J
218-01-9	Chrysene	920	U
117-84-0	Di-n-Octyl Phthalate	920	U
205-99-2	Benzo(b)Fluoranthene	920	U
207-08-9	Benzo(k)Fluoranthene	920	U
50-32-8	Benzo(a)Pyrene	920	U
193-39-5	Indeno(1,2,3-cd)Pyrene	920	U
53-70-3	Dibenz(a,h)Anthracene	920	U
191-24-2	Benzo(g,h,i)Perylene	920	U

(1) - Cannot be separated from Diphenylamine

2/9/90

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD583

Lab Name: ECOVA Contract: 68-W8-0018

Lab Code: ECOVA Case No.: 13324 SAS No.: _____ SDG No.: JD576

Matrix: (soil/water) SOIL Lab Sample ID: JD583

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BF842

Level: (low/med) LOW Date Received: 12/15/89

% Moisture: not dec. ____ dec. 23 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y pH: 6.9 Dilution Factor: 1.0

Number TICs found: 13

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	11.12	930	UJ
2.	UNKNOWN	11.42	1000	J
3. 4436753	3-Hexene-2,5-dione (SCI9CI)	11.72	1900	UJ
4.	UNKNOWN	12.62	2800	UJ
5.	UNKNOWN	13.60	650	J
6.	UNKNOWN	13.84	1700	J
7.	UNKNOWN	30.17	460	J
8.	UNKNOWN ALKANE	31.77	830	J
9.	UNKNOWN ALKANE	34.31	830	J
10.	UNKNOWN ALKANE	35.92	370	J
11.	UNKNOWN	36.74	370	J
12.	UNKNOWN ALKANE	37.84	1000	J
13.	UNKNOWN	42.96	370	J

2/9/90

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD584

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD584_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF811_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ____ dec. __23 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y__ pH: __8.1 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	860	U
111-44-4	bis(2-Chloroethyl)Ether	860	U
95-57-8	2-Chlorophenol	860	U
541-73-1	1,3-Dichlorobenzene	860	U
106-46-7	1,4-Dichlorobenzene	860	U
100-51-6	Benzyl Alcohol	860	U
95-50-1	1,2-Dichlorobenzene	860	U
95-48-7	2-Methylphenol	860	U
108-60-1	bis(2-Chloroisopropyl)Ether	860	U
106-44-5	4-Methylphenol	860	U
621-64-7	N-Nitroso-Di-n-Propylamine	860	U
67-72-1	Hexachloroethane	860	U
98-95-3	Nitrobenzene	860	U
78-59-1	Isophorone	860	U
88-75-5	2-Nitrophenol	860	U
105-67-9	2,4-Dimethylphenol	860	U
65-85-0	Benzoic Acid	4200	U
111-91-1	bis(2-Chloroethoxy)Methane	860	U
120-83-2	2,4-Dichlorophenol	860	U
120-82-1	1,2,4-Trichlorobenzene	860	U
91-20-3	Naphthalene	860	U
106-47-8	4-Chloroaniline	860	U
87-68-3	Hexachlorobutadiene	860	U
59-50-7	4-Chloro-3-Methylphenol	860	U
91-57-6	2-Methylnaphthalene	860	U
77-47-4	Hexachlorocyclopentadiene	860	U
88-06-2	2,4,6-Trichlorophenol	860	U
95-95-4	2,4,5-Trichlorophenol	4200	U
91-58-7	2-Chloronaphthalene	860	U
88-74-4	2-Nitroaniline	4200	U
131-11-3	Dimethyl Phthalate	860	U
208-96-8	Acenaphthylene	860	U
606-20-2	2,6-Dinitrotoluene	860	U

2/19/90

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1C
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD584

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD584_____

Sample wt/vol: 30.0 (g/mL) G___ Lab File ID: BF811_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ____ dec. __23 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y__ pH: __8.1 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4200	U
83-32-9	Acenaphthene	860	U
51-28-5	2,4-Dinitrophenol	4200	U
100-02-7	4-Nitrophenol	4200	U
132-64-9	Dibenzofuran	860	U
121-14-2	2,4-Dinitrotoluene	860	U
84-66-2	Diethylphthalate	860	U
7005-72-3	4-Chlorophenyl-phenylether	860	U
86-73-7	Fluorene	860	U
100-01-6	4-Nitroaniline	4200	U
534-52-1	4,6-Dinitro-2-Methylphenol	4200	U
86-30-6	N-Nitrosodiphenylamine (1)	860	U
101-55-3	4-Bromophenyl-phenylether	860	U
118-74-1	Hexachlorobenzene	860	U
87-86-5	Pentachlorophenol	4200	U
85-01-8	Phenanthrene	230	J
120-12-7	Anthracene	140	J
84-74-2	Di-n-Butylphthalate	150	J
206-44-0	Fluoranthene	470	J
129-00-0	Pyrene	600	J
85-68-7	Butylbenzylphthalate	390	J
91-94-1	3,3'-Dichlorobenzidine	1700	U
56-55-3	Benzo(a)Anthracene	330	J
117-81-7	bis(2-Ethylhexyl)Phthalate	870	
218-01-9	Chrysene	460	J
117-84-0	Di-n-Octyl Phthalate	410	J
205-99-2	Benzo(b)Fluoranthene	320	J
207-08-9	Benzo(k)Fluoranthene	360	J
50-32-8	Benzo(a)Pyrene	270	J
193-39-5	Indeno(1,2,3-cd)Pyrene	120	J
53-70-3	Dibenz(a,h)Anthracene	860	U
191-24-2	Benzo(g,h,i)Perylene	130	J

(1) - Cannot be separated from Diphenylamine

2/8/90

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.
JD584

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13024_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD584_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF811_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ____ dec. __23 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y__ pH: __8.1 Dilution Factor: 1.0_____

Number TICs found: _20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	11.12	950	UJ
2.	UNKNOWN	11.40	1600	J
3. 4436753	3-Hexene-2,5-dione (8CI9CI)	11.72	2600	UJ
4.	UNKNOWN	12.62	2300	UJ
5.	UNKNOWN	13.82	4400	J
6.	UNKNOWN ALKANE	22.25	520	J
7.	UNKNOWN ALKANE	23.50	520	J
8.	UNKNOWN ALKANE	23.59	430	J
9.	UNKNOWN ALKANE	24.69	610	J
10.	UNKNOWN ALKANE	24.82	520	J
11.	UNKNOWN ALKANE	25.82	610	J
12.	UNKNOWN ALKANE	26.87	780	J
13.	UNKNOWN ALKANE	27.69	430	J
14.	UNKNOWN ALKANE	27.91	780	J
15.	UNKNOWN ALKANE	28.89	950	J
16.	UNKNOWN ALKANE	29.82	3100	J
17.	UNKNOWN	30.79	1200	J
18.	UNKNOWN ALKANE	31.77	2900	J
19.	UNKNOWN ALKANE	34.29	1600	J
20.	UNKNOWN ALKANE	37.82	2300	J

2/19/90

FORM I SV-TIC 1/87 Rev.

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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD585

Lab Name: ECOVA Contract: 68-W8-0018

Lab Code: ECOVA Case No.: 13324 SAS No.: _____ SDG No.: JD576

Matrix: (soil/water) SOIL Lab Sample ID: JD585

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BF812

Level: (low/med) LOW Date Received: 12/14/89

% Moisture: not dec. ____ dec. 30 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y pH: 7.3 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	940	U
111-44-4	bis(2-Chloroethyl)Ether	940	U
95-57-8	2-Chlorophenol	940	U
541-73-1	1,3-Dichlorobenzene	940	U
106-46-7	1,4-Dichlorobenzene	940	U
100-51-6	Benzyl Alcohol	940	U
95-50-1	1,2-Dichlorobenzene	940	U
95-48-7	2-Methylphenol	940	U
108-60-1	bis(2-Chloroisopropyl)Ether	940	U
106-44-5	4-Methylphenol	940	U
621-64-7	N-Nitroso-Di-n-Propylamine	940	U
67-72-1	Hexachloroethane	940	U
98-95-3	Nitrobenzene	940	U
78-59-1	Isophorone	940	U
88-75-5	2-Nitrophenol	940	U
105-67-9	2,4-Dimethylphenol	940	U
65-85-0	Benzoic Acid	4600	U
111-91-1	bis(2-Chloroethoxy)Methane	940	U
120-83-2	2,4-Dichlorophenol	940	U
120-82-1	1,2,4-Trichlorobenzene	940	U
91-20-3	Naphthalene	940	U
106-47-8	4-Chloroaniline	940	U
87-68-3	Hexachlorobutadiene	940	U
59-50-7	4-Chloro-3-Methylphenol	940	U
91-57-6	2-Methylnaphthalene	940	U
77-47-4	Hexachlorocyclopentadiene	940	U
88-06-2	2,4,6-Trichlorophenol	940	U
95-95-4	2,4,5-Trichlorophenol	4600	U
91-58-7	2-Chloronaphthalene	940	U
88-74-4	2-Nitroaniline	4600	U
131-11-3	Dimethyl Phthalate	940	U
208-96-8	Acenaphthylene	940	U
606-20-2	2,6-Dinitrotoluene	940	U

2/9/90

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD585

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD585_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF812_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ____ dec. __30 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y__ pH: __7.3 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4600	U
83-32-9	Acenaphthene	940	U
51-28-5	2,4-Dinitrophenol	4600	U
100-02-7	4-Nitrophenol	4600	U
132-64-9	Dibenzofuran	940	U
121-14-2	2,4-Dinitrotoluene	940	U
84-66-2	Diethylphthalate	940	U
7005-72-3	4-Chlorophenyl-phenylether	940	U
86-73-7	Fluorene	940	U
100-01-6	4-Nitroaniline	4600	U
534-52-1	4,6-Dinitro-2-Methylphenol	4600	U
86-30-6	N-Nitrosodiphenylamine (1)	940	U
101-55-3	4-Bromophenyl-phenylether	940	U
118-74-1	Hexachlorobenzene	940	U
87-86-5	Pentachlorophenol	4600	U
85-01-8	Phenanthrene	130	J
120-12-7	Anthracene	940	U
84-74-2	Di-n-Butylphthalate	940	U
206-44-0	Fluoranthene	270	J
129-00-0	Pyrene	470	J
85-68-7	Butylbenzylphthalate	940	U
91-94-1	3,3'-Dichlorobenzidine	1900	U
56-55-3	Benzo(a)Anthracene	190	J
117-81-7	bis(2-Ethylhexyl)Phthalate	280	J
218-01-9	Chrysene	250	J
117-84-0	Di-n-Octyl Phthalate	940	U
205-99-2	Benzo(b)Fluoranthene	450	J
207-08-9	Benzo(k)Fluoranthene	330	J
50-32-8	Benzo(a)Pyrene	280	J
193-39-5	Indeno(1,2,3-cd)Pyrene	620	J
53-70-3	Dibenz(a,h)Anthracene	940	U
191-24-2	Benzo(g,h,i)Perylene	770	J

(1) - Cannot be separated from Diphenylamine

2/19/90

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JD585

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA___ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD585_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF812_____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ____ dec. __30 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/09/90

GPC Cleanup: (Y/N) Y__ pH: __7.3 Dilution Factor: 1.0_____

Number TICs found: _20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		UNKNOWN ALKANE	10.00	480	uJ
2.		UNKNOWN	11.12	1600	uJ
3.		UNKNOWN	11.40	2100	J
4.	4436753	3-Hexene-2,5-dione (8CI9CI)	11.74	2800	uJ
5.		UNKNOWN	12.62	4000	uJ
6.		UNKNOWN	13.62	2500	J
7.		UNKNOWN	13.84	4800	J
8.		UNKNOWN ALKANE	27.92	670	J
9.		UNKNOWN ALKANE	29.82	1000	J
10.		UNKNOWN	30.09	480	J
11.		UNKNOWN	30.82	860	J
12.		UNKNOWN	36.32	1200	J
13.		UNKNOWN ALKANE	37.56	2900	J
14.		UNKNOWN	38.16	950	J
15.		UNKNOWN	38.66	760	J
16.		UNKNOWN	40.99	670	J
17.		UNKNOWN	41.37	670	J
18.		UNKNOWN	42.48	1000	J
19.		UNKNOWN	44.64	1300	J
20.		UNKNOWN	47.53	760	J

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

JD586

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA_ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD586_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF844_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. ____ dec. __33 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y__ pH: __7.6 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	990	U
111-44-4	bis(2-Chloroethyl)Ether	990	U
95-57-8	2-Chlorophenol	990	U
541-73-1	1,3-Dichlorobenzene	990	U
106-46-7	1,4-Dichlorobenzene	990	U
100-51-6	Benzyl Alcohol	990	U
95-50-1	1,2-Dichlorobenzene	990	U
95-48-7	2-Methylphenol	990	U
108-60-1	bis(2-Chloroisopropyl)Ether	990	U
106-44-5	4-Methylphenol	990	U
621-64-7	N-Nitroso-Di-n-Propylamine	990	U
67-72-1	Hexachloroethane	990	U
98-95-3	Nitrobenzene	990	U
78-59-1	Isophorone	990	U
88-75-5	2-Nitrophenol	990	U
105-67-9	2,4-Dimethylphenol	990	U
65-85-0	Benzoic Acid	4800	U
111-91-1	bis(2-Chloroethoxy)Methane	990	U
120-83-2	2,4-Dichlorophenol	990	U
120-82-1	1,2,4-Trichlorobenzene	990	U
91-20-3	Naphthalene	990	U
106-47-8	4-Chloroaniline	990	U
87-68-3	Hexachlorobutadiene	990	U
59-50-7	4-Chloro-3-Methylphenol	990	U
91-57-6	2-Methylnaphthalene	990	U
77-47-4	Hexachlorocyclopentadiene	990	U
88-06-2	2,4,6-Trichlorophenol	990	U
95-95-4	2,4,5-Trichlorophenol	4800	U
91-58-7	2-Chloronaphthalene	990	U
88-74-4	2-Nitroaniline	4800	U
131-11-3	Dimethyl Phthalate	990	U
208-96-8	Acenaphthylene	990	U
606-20-2	2,6-Dinitrotoluene	990	U

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1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD586

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD586_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF844_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. ____ dec. __33 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y__ pH: __7.6 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4800	U
83-32-9	Acenaphthene	990	U
51-28-5	2,4-Dinitrophenol	4800	U
100-02-7	4-Nitrophenol	4800	U
132-64-9	Dibenzofuran	990	U
121-14-2	2,4-Dinitrotoluene	990	U
84-66-2	Diethylphthalate	990	U
7005-72-3	4-Chlorophenyl-phenylether	990	U
86-73-7	Fluorene	990	U
100-01-6	4-Nitroaniline	4800	U
534-52-1	4,6-Dinitro-2-Methylphenol	4800	U
86-30-6	N-Nitrosodiphenylamine (1)	990	U
101-55-3	4-Bromophenyl-phenylether	990	U
118-74-1	Hexachlorobenzene	990	U
87-86-5	Pentachlorophenol	4800	U
85-01-8	Phenanthrene	990	U
120-12-7	Anthracene	990	U
84-74-2	Di-n-Butylphthalate	990	U
206-44-0	Fluoranthene	990	U
129-00-0	Pyrene	990	U
85-68-7	Butylbenzylphthalate	990	U
91-94-1	3,3'-Dichlorobenzidine	2000	U
56-55-3	Benzo(a)Anthracene	990	U
117-81-7	bis(2-Ethylhexyl)Phthalate	280	J
218-01-9	Chrysene	990	U
117-84-0	Di-n-Octyl Phthalate	990	U
205-99-2	Benzo(b)Fluoranthene	990	U
207-08-9	Benzo(k)Fluoranthene	990	U
50-32-8	Benzo(a)Pyrene	990	U
193-39-5	Indeno(1,2,3-cd)Pyrene	990	U
53-70-3	Dibenz(a,h)Anthracene	990	U
191-24-2	Benzo(g,h,i)Perylene	990	U

(1) - Cannot be separated from Diphenylamine

2/19/90

EPA SAMPLE NO.

JD586

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD586_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF844_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. ____ dec. __33 Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y__ pH: __7.6 Dilution Factor: 1.0_____

Number TICs found: _20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	11.15	1800	UJ
2.	UNKNOWN	11.44	1200	J
3. 4436753	3-Hexene-2,5-dione (8CI9CI)	11.77	5000	UJ
4.	UNKNOWN	12.67	4300	UJ
5.	UNKNOWN	13.59	700	J
6.	UNKNOWN	13.87	2400	J
7.	UNKNOWN	13.97	500	J
8.	UNKNOWN	27.74	800	J
9.	UNKNOWN ALKANE	27.94	900	J
10.	UNKNOWN ALKANE	29.84	800	J
11.	UNKNOWN ALKANE	31.81	1500	J
12.	UNKNOWN	32.24	600	J
13.	UNKNOWN	33.52	700	J
14.	UNKNOWN ALKANE	34.34	1800	J
15.	UNKNOWN	35.01	800	J
16.	UNKNOWN	36.77	1300	J
17.	UNKNOWN ALKANE	37.57	900	J
18.	UNKNOWN ALKANE	37.87	3000	J
19.	UNKNOWN	38.87	2300	J
20.	UNKNOWN ALKANE	43.01	900	J

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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE353

Lab Name: ECOVA Contract: 68-W8-0018

Lab Code: ECOVA Case No.: 13324 SAS No.: _____ SDG No.: JD576

Matrix: (soil/water) SOIL Lab Sample ID: JE353

Sample wt/vol: 30.0 (g/mL) G Lab File ID: BF845

Level: (low/med) LOW Date Received: 12/15/89

% Moisture: not dec. 24 dec. ____ Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y pH: 6.7 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	870	U
111-44-4	bis(2-Chloroethyl)Ether	870	U
95-57-8	2-Chlorophenol	870	U
541-73-1	1,3-Dichlorobenzene	870	U
106-46-7	1,4-Dichlorobenzene	870	U
100-51-6	Benzyl Alcohol	870	U
95-50-1	1,2-Dichlorobenzene	870	U
95-48-7	2-Methylphenol	870	U
108-60-1	bis(2-Chloroisopropyl)Ether	870	U
106-44-5	4-Methylphenol	870	U
621-64-7	N-Nitroso-Di-n-Propylamine	870	U
67-72-1	Hexachloroethane	870	U
98-95-3	Nitrobenzene	870	U
78-59-1	Isophorone	870	U
88-75-5	2-Nitrophenol	870	U
105-67-9	2,4-Dimethylphenol	870	U
65-85-0	Benzoic Acid	4200	U
111-91-1	bis(2-Chloroethoxy)Methane	870	U
120-83-2	2,4-Dichlorophenol	870	U
120-82-1	1,2,4-Trichlorobenzene	870	U
91-20-3	Naphthalene	870	U
106-47-8	4-Chloroaniline	870	U
87-68-3	Hexachlorobutadiene	870	U
59-50-7	4-Chloro-3-Methylphenol	870	U
91-57-6	2-Methylnaphthalene	870	U
77-47-4	Hexachlorocyclopentadiene	870	U
88-06-2	2,4,6-Trichlorophenol	870	U
95-95-4	2,4,5-Trichlorophenol	4200	U
91-58-7	2-Chloronaphthalene	870	U
88-74-4	2-Nitroaniline	4200	U
131-11-3	Dimethyl Phthalate	870	U
208-96-8	Acenaphthylene	870	U
606-20-2	2,6-Dinitrotoluene	870	U

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JE353

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JE353_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF845_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. __24 dec. ____ Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y__ pH: __6.7 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
99-09-2	3-Nitroaniline	4200	U
83-32-9	Acenaphthene	870	U
51-28-5	2,4-Dinitrophenol	4200	U
100-02-7	4-Nitrophenol	4200	U
132-64-9	Dibenzofuran	870	U
121-14-2	2,4-Dinitrotoluene	870	U
84-66-2	Diethylphthalate	870	U
7005-72-3	4-Chlorophenyl-phenylether	870	U
86-73-7	Fluorene	870	U
100-01-6	4-Nitroaniline	4200	U
534-52-1	4,6-Dinitro-2-Methylphenol	4200	U
86-30-6	N-Nitrosodiphenylamine (1)	870	U
101-55-3	4-Bromophenyl-phenylether	870	U
118-74-1	Hexachlorobenzene	870	U
87-86-5	Pentachlorophenol	4200	U
85-01-8	Phenanthrene	870	U
120-12-7	Anthracene	870	U
84-74-2	Di-n-Butylphthalate	870	U
206-44-0	Fluoranthene	870	U
129-00-0	Pyrene	110	J
85-68-7	Butylbenzylphthalate	870	U
91-94-1	3,3'-Dichlorobenzidine	1700	U
56-55-3	Benzo(a)Anthracene	870	U
117-81-7	bis(2-Ethylhexyl)Phthalate	120	J
218-01-9	Chrysene	110	J
117-84-0	Di-n-Octyl Phthalate	870	U
205-99-2	Benzo(b)Fluoranthene	870	U
207-08-9	Benzo(k)Fluoranthene	870	U
50-32-8	Benzo(a)Pyrene	870	U
193-39-5	Indeno(1,2,3-cd)Pyrene	870	U
53-70-3	Dibenz(a,h)Anthracene	870	U
191-24-2	Benzo(g,h,i)Perylene	870	U

(1) - Cannot be separated from Diphenylamine

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

JE353

Lab Name: ECOVA_____ Contract: 68-WS-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JE353_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: BF845_____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. __24 dec. ____ Date Extracted: 12/19/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/12/90

GPC Cleanup: (Y/N) Y__ pH: __8.7 Dilution Factor: 1.0_____

Number TICs found: _20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	11.14	1500	J
2.	UNKNOWN	11.42	2700	J
3. 4436753	3-Hexene-2,5-dione (8CI9CI)	11.74	3400	J
4.	UNKNOWN	12.64	1800	J
5.	UNKNOWN	13.62	1500	J
6.	UNKNOWN	13.87	1400	J
7.	UNKNOWN	29.97	790	J
8.	UNKNOWN	30.12	1100	J
9.	UNKNOWN	32.22	1300	J
10.	UNKNOWN ALKANE	34.34	700	J
11.	UNKNOWN	35.01	790	J
12.	UNKNOWN	36.77	1800	J
13.	UNKNOWN ALKANE	37.89	3200	J
14.	UNKNOWN	38.72	3300	J
15.	UNKNOWN	41.36	1500	J
16.	UNKNOWN	42.54	1600	J
17.	UNKNOWN	43.03	1300	J
18.	UNKNOWN	43.34	970	J
19.	UNKNOWN	44.71	1100	J
20.	UNKNOWN	47.59	2100	J

2/19/90

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD576

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA_____ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD576_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: _____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __24 dec. ____ Date Extracted: 12/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/06/90

GPC Cleanup: (Y/N) Y__ pH: __6.5 Dilution Factor: 10_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	210	U
319-85-7	beta-BHC	210	U
319-86-8	delta-BHC	210	U
58-89-9	Lindane	210	U
76-44-8	Heptachlor	210	U
309-00-2	Aldrin	210	U
1024-57-3	Heptachlor epoxide	210	U
959-98-8	Endosulfan I	210	U
60-57-1	Dieldrin	420	U
72-55-9	4,4'-DDE	420	U
72-20-8	Endrin	420	U
33213-65-9	Endosulfan II	420	U
72-54-8	4,4'-DDD	420	U
1031-07-8	Endosulfan sulfate	420	U
50-29-3	4,4'-DDT	420	U
72-43-5	Methoxychlor	2100	U
53494-70-5	Endrin ketone	420	U
5103-71-9	alpha-Chlordane	2100	U
5103-74-2	gamma-Chlordane	2100	U
8001-35-2	Toxaphene	4200	U
12674-11	Aroclor-1016	2100	U
11104-2	Aroclor-1221	2100	U
11141-1	Aroclor-1232	2100	U
53469-2	Aroclor-1242	2100	U
12672-29	Aroclor-1248	2100	U
11097-69-1	Aroclor-1254	2500	J
11096-82-5	Aroclor-1260	4200	U

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JD578

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA___ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD578_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: _____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. __19 dec. ____ Date Extracted: 12/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/06/90

GPC Cleanup: (Y/N) Y__ pH: __6.6 Dilution Factor: 10_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	200	U
319-85-7	beta-BHC	200	U
319-86-8	delta-BHC	200	U
58-89-9	Lindane	200	U
76-44-8	Heptachlor	200	U
309-00-2	Aldrin	200	U
1024-57-3	Heptachlor epoxide	200	U
959-98-8	Endosulfan I	200	U
60-57-1	Dieldrin	400	U
72-55-9	4,4'-DDE	400	U
72-20-8	Endrin	400	U
33213-65-9	Endosulfan II	400	U
72-54-8	4,4'-DDD	400	U
1031-07-8	Endosulfan sulfate	400	U
50-29-3	4,4'-DDT	400	U
72-43-5	Methoxychlor	2000	U
53494-70-5	Endrin ketone	400	U
5103-71-9	alpha-Chlordane	2000	U
5103-74-2	gamma-Chlordane	2000	U
8001-35-2	Toxaphene	4000	U
12674-1[illegible]	Aroclor-1016	2000	U
11104-2[illegible]	Aroclor-1221	2000	U
11141-4[illegible]	Aroclor-1232	2000	U
53469-2[illegible]	Aroclor-1242	2000	U
12672-2[illegible]	Aroclor-1248	2000	U
11097-69-1	Aroclor-1254	4000	U
11096-82-5	Aroclor-1260	4300	

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EPA SAMPLE NO.

JD579

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA_____ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD579_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: _____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ___0 dec. __26 Date Extracted: 12/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/06/90

GPC Cleanup: (Y/N) Y__ pH: __7.2 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	22	U
319-85-7	beta-BHC	22	U
319-86-8	delta-BHC	22	U
58-89-9	Lindane	22	U
76-44-8	Heptachlor	22	U
309-00-2	Aldrin	22	U
1024-57-3	Heptachlor epoxide	22	U
959-98-8	Endosulfan I	22	U
60-57-1	Dieldrin	43	U
72-55-9	4,4'-DDE	43	U
72-20-8	Endrin	43	U
33213-65-9	Endosulfan II	43	U
72-54-8	4,4'-DDD	43	U
1031-07-8	Endosulfan sulfate	43	U
50-29-3	4,4'-DDT	43	U
72-43-5	Methoxychlor	220	U
53494-70-5	Endrin ketone	43	U
5103-71-9	alpha-Chlordane	220	U
5103-74-2	gamma-Chlordane	220	U
8001-35-2	Toxaphene	430	U
12674-1[illegible]	Aroclor-1016	220	U
11104-2[illegible]	Aroclor-1221	220	U
11141-1[illegible]	Aroclor-1232	220	U
53469-2[illegible]	Aroclor-1242	220	U
12672-29[illegible]	Aroclor-1248	220	U
11097-69-1	Aroclor-1254	190	J
11096-82-5	Aroclor-1260	430	U

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EPA SAMPLE NO.

JD580

Lab Name: ECOVA Contract: 68-W8-0018

Lab Code: ECOVA Case No.: 13324 SAS No.: _____ SDG No.: JD576

Matrix: (soil/water) SOIL Lab Sample ID: JD580

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 12/14/89

% Moisture: not dec. 0 dec. 42 Date Extracted: 12/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/06/90

GPC Cleanup: (Y/N) Y pH: 6.9 Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	28	U
319-85-7	beta-BHC	28	U
319-86-8	delta-BHC	28	U
58-89-9	Lindane	28	U
76-44-8	Heptachlor	28	U
309-00-2	Aldrin	28	U
1024-57-3	Heptachlor epoxide	28	U
959-98-8	Endosulfan I	28	U
60-57-1	Dieldrin	55	U
72-55-9	4,4'-DDE	55	U
72-20-8	Endrin	55	U
33213-65-9	Endosulfan II	55	U
72-54-8	4,4'-DDD	55	U
1031-07-8	Endosulfan sulfate	55	U
50-29-3	4,4'-DDT	55	U
72-43-5	Methoxychlor	280	U
53494-70-5	Endrin ketone	55	U
5103-71-9	alpha-Chlordane	280	U
5103-74-2	gamma-Chlordane	280	U
8001-35-2	Toxaphene	550	U
12674-11	Aroclor-1016	280	U
11104-2	Aroclor-1221	280	U
11141-1	Aroclor-1232	280	U
53469-21	Aroclor-1242	280	U
12672-29	Aroclor-1248	280	U
11097-69-1	Aroclor-1254	490	J
11096-82-5	Aroclor-1260	550	U

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EPA SAMPLE NO.

JD581

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA___ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD581_____

Sample wt/vol: 30.0 (g/mL) G___ Lab File ID: _____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ___0 dec. __53 Date Extracted: 12/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/06/90

GPC Cleanup: (Y/N) Y__ pH: __6.6 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	34	U
319-85-7	beta-BHC	34	U
319-86-8	delta-BHC	34	U
58-89-9	Lindane	34	U
76-44-8	Heptachlor	34	U
309-00-2	Aldrin	34	U
1024-57-3	Heptachlor epoxide	34	U
959-98-8	Endosulfan I	34	U
60-57-1	Dieldrin	68	U
72-55-9	4,4'-DDE	68	U
72-20-8	Endrin	68	U
33213-65-9	Endosulfan II	68	U
72-54-8	4,4'-DDD	68	U
1031-07-8	Endosulfan sulfate	68	U
50-29-3	4,4'-DDT	68	U
72-43-5	Methoxychlor	340	U
53494-70-5	Endrin ketone	68	U
5103-71-9	alpha-Chlordane	340	U
5103-74-2	gamma-Chlordane	340	U
8001-35-2	Toxaphene	680	U
12674-1[illegible]	Aroclor-1016	340	U
11104-2[illegible]	Aroclor-1221	340	U
11141-1[illegible]	Aroclor-1232	340	U
53469-2[illegible]	Aroclor-1242	340	U
12672-2[illegible]	Aroclor-1248	340	U
11097-69-1	Aroclor-1254	1200	
11096-82-5	Aroclor-1260	680	U

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EPA SAMPLE NO.

JD582

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA___ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD582_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: _____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. ___0 dec. __37 Date Extracted: 12/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/16/90

GPC Cleanup: (Y/N) Y__ pH: __6.8 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	25	U
319-85-7	beta-BHC	25	U
319-86-8	delta-BHC	25	U
58-89-9	Lindane	25	U
76-44-8	Heptachlor	25	U
309-00-2	Aldrin	25	U
1024-57-3	Heptachlor epoxide	25	U
959-98-8	Endosulfan I	25	U
60-57-1	Dieldrin	51	U
72-55-9	4,4'-DDE	51	U
72-20-8	Endrin	51	U
33213-65-9	Endosulfan II	51	U
72-54-8	4,4'-DDD	51	U
1031-07-8	Endosulfan sulfate	51	U
50-29-3	4,4'-DDT	51	U
72-43-5	Methoxychlor	250	U
53494-70-5	Endrin ketone	51	U
5103-71-9	alpha-Chlordane	250	U
5103-74-2	gamma-Chlordane	250	U
8001-35-2	Toxaphene	510	U
12674-11	Aroclor-1016	250	U
11104-	Aroclor-1221	250	U
11141-	Aroclor-1232	250	U
53469-21	Aroclor-1242	250	U
12672-29	Aroclor-1248	250	U
11097-69-1	Aroclor-1254	510	U
11096-82-5	Aroclor-1260	510	U

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EPA SAMPLE NO.

JD583

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA_____ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD583_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: _____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. ___0 dec. __28 Date Extracted: 12/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/16/90

GPC Cleanup: (Y/N) Y__ pH: __6.9 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	22	U
319-85-7	beta-BHC	22	U
319-86-8	delta-BHC	22	U
58-89-9	Lindane	22	U
76-44-8	Heptachlor	22	U
309-00-2	Aldrin	22	U
1024-57-3	Heptachlor epoxide	22	U
959-98-8	Endosulfan I	22	U
60-57-1	Dieldrin	44	U
72-55-9	4,4'-DDE	44	U
72-20-8	Endrin	44	U
33213-65-9	Endosulfan II	44	U
72-54-8	4,4'-DDD	44	U
1031-07-8	Endosulfan sulfate	44	U
50-29-3	4,4'-DDT	44	U
72-43-5	Methoxychlor	220	U
53494-70-5	Endrin ketone	44	U
5103-71-9	alpha-Chlordane	220	U
5103-74-2	gamma-Chlordane	220	U
8001-35-2	Toxaphene	440	U
12674-[illegible]	Aroclor-1016	220	U
11104-2[illegible]	Aroclor-1221	220	U
11141-[illegible]	Aroclor-1232	220	U
53469-2[illegible]	Aroclor-1242	220	U
12672-2[illegible]	Aroclor-1248	220	U
11097-69[illegible]	Aroclor-1254	440	U
11096-82-5	Aroclor-1260	440	U

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EPA SAMPLE NO.

JD584

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD584_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: _____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ___0 dec. __23 Date Extracted: 12/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/16/90

GPC Cleanup: (Y/N) Y__ pH: __8.1 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	21	U
319-85-7	beta-BHC	21	U
319-86-8	delta-BHC	21	U
58-89-9	Lindane	21	U
76-44-8	Heptachlor	21	U
309-00-2	Aldrin	21	U
1024-57-3	Heptachlor epoxide	21	U
959-98-8	Endosulfan I	21	U
60-57-1	Dieldrin	42	U
72-55-9	4,4'-DDE	42	U
72-20-8	Endrin	42	U
33213-65-9	Endosulfan II	42	U
72-54-8	4,4'-DDD	42	U
1031-07-8	Endosulfan sulfate	42	U
50-29-3	4,4'-DDT	42	U
72-43-5	Methoxychlor	210	U
53494-70-5	Endrin ketone	42	U
5103-71-9	alpha-Chlordane	210	U
5103-74-2	gamma-Chlordane	210	U
8001-35-2	Toxaphene	420	U
12674-1[illegible]	Aroclor-1016	210	U
11104-28[illegible]	Aroclor-1221	210	U
11141-1[illegible]	Aroclor-1232	210	U
53469-21[illegible]	Aroclor-1242	210	U
12672-29[illegible]	Aroclor-1248	210	U
11097-69-1	Aroclor-1254	82	J
11096-82-5	Aroclor-1260	420	U

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EPA SAMPLE NO.

JD585

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA__ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD585_____

Sample wt/vol: 30.0 (g/mL) G___ Lab File ID: _____

Level: (low/med) LOW___ Date Received: 12/14/89

% Moisture: not dec. ___0 dec. __30 Date Extracted: 01/15/90

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/16/90

GPC Cleanup: (Y/N) Y__ pH: __7.3 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	23	U
319-85-7	beta-BHC	23	U
319-86-8	delta-BHC	23	U
58-89-9	Lindane	23	U
76-44-8	Heptachlor	23	U
309-00-2	Aldrin	23	U
1024-57-3	Heptachlor epoxide	23	U
959-98-8	Endosulfan I	23	U
60-57-1	Dieldrin	46	U
72-55-9	4,4'-DDE	46	U
72-20-8	Endrin	46	U
33213-65-9	Endosulfan II	46	U
72-54-8	4,4'-DDD	46	U
1031-07-8	Endosulfan sulfate	46	U
50-29-3	4,4'-DDT	46	U
72-43-5	Methoxychlor	230	U
53494-70-5	Endrin ketone	46	U
5103-71-9	alpha-Chlordane	230	U
5103-74-2	gamma-Chlordane	230	U
8001-35-2	Toxaphene	460	U
12674-11	Aroclor-1016	230	U
11104-28	Aroclor-1221	230	U
11141-16	Aroclor-1232	230	U
53469-21	Aroclor-1242	230	U
12672-29	Aroclor-1248	230	U
11097-69-1	Aroclor-1254	400	J
11096-82-5	Aroclor-1260	460	U

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EPA SAMPLE NO.

JD586

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA___ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JD586_____

Sample wt/vol: 30.0 (g/mL) G___ Lab File ID: _____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. ___0 dec. __33 Date Extracted: 12/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/16/90

GPC Cleanup: (Y/N) Y__ pH: __7.6 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	24	U
319-85-7	beta-BHC	24	U
319-86-8	delta-BHC	24	U
58-89-9	Lindane	24	U
76-44-8	Heptachlor	24	U
309-00-2	Aldrin	24	U
1024-57-3	Heptachlor epoxide	24	U
959-98-8	Endosulfan I	24	U
60-57-1	Dieldrin	48	U
72-55-9	4,4'-DDE	48	U
72-20-8	Endrin	48	U
33213-65-9	Endosulfan II	48	U
72-54-8	4,4'-DDD	48	U
1031-07-8	Endosulfan sulfate	48	U
50-29-3	4,4'-DDT	48	U
72-43-5	Methoxychlor	240	U
53494-70-5	Endrin ketone	48	U
5103-71-9	alpha-Chlordane	240	U
5103-74-2	gamma-Chlordane	240	U
8001-35-2	Toxaphene	480	U
12674-11[illegible]	Aroclor-1016	240	U
11104-28[illegible]	Aroclor-1221	240	U
11141-16[illegible]	Aroclor-1232	240	U
53469-21[illegible]	Aroclor-1242	240	U
12672-29[illegible]	Aroclor-1248	240	U
11097-69-1	Aroclor-1254	98	J
11096-82-5	Aroclor-1260	480	U

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EPA SAMPLE NO.

JE353

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA___ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JE353_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: _____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. __24 dec. ____ Date Extracted: 12/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/16/90

GPC Cleanup: (Y/N) Y__ pH: __6.7 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	21	U
319-85-7	beta-BHC	21	U
319-86-8	delta-BHC	21	U
58-89-9	Lindane	21	U
76-44-8	Heptachlor	21	U
309-00-2	Aldrin	21	U
1024-57-3	Heptachlor epoxide	21	U
959-98-8	Endosulfan I	21	U
60-57-1	Dieldrin	42	U
72-55-9	4,4'-DDE	42	U
72-20-8	Endrin	42	U
33213-65-9	Endosulfan II	42	U
72-54-8	4,4'-DDD	42	U
1031-07-8	Endosulfan sulfate	42	U
50-29-3	4,4'-DDT	42	U
72-43-5	Methoxychlor	210	U
53494-70-5	Endrin ketone	42	U
5103-71-9	alpha-Chlordane	210	U
5103-74-2	gamma-Chlordane	210	U
8001-35-2	Toxaphene	420	U
12674-11	Aroclor-1016	210	U
11104-28	Aroclor-1221	210	U
11141-16	Aroclor-1232	210	U
53469-21	Aroclor-1242	210	U
12672-29	Aroclor-1248	210	U
11097-69-1	Aroclor-1254	420	U
11096-82-5	Aroclor-1260	420	U

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EPA SAMPLE No.

JE353

Lab Name: ECOVA_____ Contract: 68-W8-0018_

Lab Code: ECOVA___ Case No.: 13324_ SAS No.: _____ SDG No.: JD576_

Matrix: (soil/water) SOIL__ Lab Sample ID: JE353_____

Sample wt/vol: _30.0 (g/mL) G___ Lab File ID: _____

Level: (low/med) LOW___ Date Received: 12/15/89

% Moisture: not dec. __24 dec. ____ Date Extracted: 12/20/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/16/90

GPC Cleanup: (Y/N) Y__ pH: __6.7 Dilution Factor: 1.0_____

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	21	U
319-85-7	beta-BHC	21	U
319-86-8	delta-BHC	21	U
58-89-9	Lindane	21	U
76-44-8	Heptachlor	21	U
309-00-2	Aldrin	21	U
1024-57-3	Heptachlor epoxide	21	U
959-98-8	Endosulfan I	21	U
60-57-1	Dieldrin	42	U
72-55-9	4,4'-DDE	42	U
72-20-8	Endrin	42	U
33213-65-9	Endosulfan II	42	U
72-54-8	4,4'-DDD	42	U
1031-07-8	Endosulfan sulfate	42	U
50-29-3	4,4'-DDT	42	U
72-43-5	Methoxychlor	210	U
53494-70-5	Endrin ketone	42	U
5103-71-9	alpha-Chlordane	210	U
5103-74-2	gamma-Chlordane	210	U
8001-35-2	Toxaphene	420	U
12674-11[illegible]	Aroclor-1016	210	U
11104-28[illegible]	Aroclor-1221	210	U
11141-16[illegible]	Aroclor-1232	210	U
53469-21[illegible]	Aroclor-1242	210	U
12672-29[illegible]	Aroclor-1248	210	U
11097-69-1	Aroclor-1254	420	U
11096-82-5	Aroclor-1260	420	U

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EPA SAMPLE NO.

JE350

Lab Name: CHEMWEST Contract: 68-W8-0010

Lab Code: CHEMW Case No.: 13324 SAS No.: _____ SDG No.: JE340

Matrix: (soil/water) SOIL Lab Sample ID: Z0336

Sample wt/vol: 30.5 (g/mL) G Lab File ID: _____

Level: (low/med) LOW Date Received: 12/13/89

% Moisture: not dec. 25 dec. ____ Date Extracted: 12/21/89

Extraction: (SepF/Cont/Sonc) SONC Date Analyzed: 01/20/90

GPC Cleanup: (Y/N) N pH: 6.3 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	10.	UJ
319-85-7	beta-BHC	10.	UJ
319-86-8	delta-BHC	10.	UJ
58-89-9	gamma-BHC (Lindane)	10.	UJ
76-44-8	Heptachlor	10.	UJ
309-00-2	Aldrin	10.	UJ
1024-57-3	Heptachlor epoxide	10.	UJ
959-98-8	Endosulfan I	10.	UJ
60-57-1	Dieldrin	21.	UJ
72-55-9	4,4'-DDE	21.	UJ
72-20-8	Endrin	21.	UJ
33213-65-9	Endosulfan II	21.	UJ
72-54-8	4,4'-DDD	21.	UJ
1031-07-8	Endosulfan sulfate	21.	UJ
50-29-3	4,4'-DDT	21.	UJ
72-43-5	Methoxychlor	100	UJ
53494-70-5	Endrin ketone	21.	UJ
5103-71-9	alpha-Chlordane	100	UJ
5103-74-2	gamma-Chlordane	100	UJ
8001-35-2	Toxaphene	210	UJ
12674-11-2	Aroclor-1016	100	UJ
11104-28-2	Aroclor-1221	100	UJ
11141-16-5	Aroclor-1232	100	UJ
53469-21-9	Aroclor-1242	100	UJ
12672-29-6	Aroclor-1248	100	UJ
11097-69-1	Aroclor-1254	210	UJ
11096-82-5	Aroclor-1260	210	UJ

MW 3-23-

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International Specialists in the Environment

MEMORANDUM

DATE: February 06, 1990

FOR: Rhonda Wreggelsworth, RSCC, USEPA, Region 10

THRU: Jeffrey Villnow, FITOM, E & E, Seattle

FROM: David A. Ikeda, Chemist, E & E, Seattle
Tracy Yerian, Senior Chemist, E & E, Seattle

SUBJ: QA of Case 13324 (Inorganics)
Northwest Pipe and Casing

REF: F10-8906-002
PAN FOR0210XC

CC: John Osborn, RPO, USEPA, Region 10
Bruce Woods, ESD, USEPA, Region 10
Gerald Muth, DPO, USEPA, Region 10 Laboratory, Manchester
Debra Szaro, DPO, USEPA, Region 1
Deborah Flood, HWD-SM, USEPA, Region 10
Gerald Lee, FIT-PD, E & E, Seattle
Mark Ader, FIT-PM, E & E, Seattle

The Quality Assurance (QA) review of 12 samples, Case 13324, collected from Northwest Pipe and Casing, has been completed. Twelve soil samples were analyzed at low level for Target Compound List (TCL) Inorganics by Skinner and Sherman Laboratories, Inc. of Waltham, Massachusetts. The samples were numbered:

MJF225	MJF229	MJF233
MJF226	MJF230	MJF234
MJF227	MJF231	MJF235
MJF228	MJF232	MJF237

Sample MJF225 underwent matrix spike (MS) and duplicate analysis.

Data Qualifications

The following comments refer to the laboratory performance in meeting the Quality Control (QC) specifications outlined in IFB WA-87K025-027.

1) Timeliness

Sample Number	Sample Date	Rec'd Date	ICP Anal.	AA Anal.	Hg Anal.
MJF225	12/11/89	12/14/89	01/10/90	01/07/90	01/05/90
MJF226	12/11/89	12/14/89	01/10/90	01/07/90	01/05/90
MJF227	12/11/89	12/14/89	01/10/90	01/07/90	01/05/90
MJF228	12/11/89	12/14/89	01/10/90	01/07/90	01/05/90
MJF229	12/11/89	12/14/89	01/10/90	01/07/90	01/05/90
MJF230	12/11/89	12/14/89	01/10/90	01/07/90	01/05/90
MJF231	12/11/89	12/14/89	01/10/90	01/07/90	01/05/90
MJF232	12/11/89	12/14/89	01/10/90	01/07/90	01/05/90
MJF233	12/11/89	12/14/89	01/10/90	01/07/90	01/05/90
MJF234	12/11/89	12/14/89	01/10/90	01/07/90	01/05/90
MJF235	12/11/89	12/14/89	01/10/90	01/07/90	01/05/90
MJF237	12/11/89	12/14/89	01/10/90	01/07/90	01/05/90

ICP - Inductively Coupled Plasma
AA - Atomic Absorption
Hg - Mercury
Anal. - Analysis Date

All samples met QC holding time criteria.

2) Initial Calibration

All ICP results fell within the control limits of 90 to 110 percent of the true values. Furnace AA results fell within the control limits of 90 to 110 percent of the true values for all analytes. Mercury results fell within the control limits of 80 to 120 percent of the true value.

3) Continuing Calibration

All ICP results fell within the control limits of 90 to 110 percent of the true values. Furnace AA results fell within the control limits of 90 to 110 percent of the true values for all analytes. Mercury results fell within the control limits of 80 to 120 percent of the true value.

4) Instrument Detection Limits

All Instrument Detection Limits (IDLs) for ICP, AA, and mercury analyses were equal to or less than the Contract Required Detection Limits (CRDLs).

5) Blanks

The following blanks contained elemental contamination above the IDL but below CRDL:

Blank*	Element	Conc. µg/L	IDL µg/L	CRDL µg/L
ICB1	Aluminum	69.3	22.0	200
	Iron	6.0	6.0	100
	Silver	4.1	4.0	10
	Zinc	6.3	6.0	20
CCB1	Aluminum	61.1	22.0	200
	Cadmium	2.5	2.0	5
	Iron	24.2	6.0	100
	Manganese	3.2	2.0	15
CCB2	Cadmium	2.5	2.0	5
	Iron	28.2	6.0	100
CCB3	Antimony	14.2	13	60
	Barium	2.4	2.0	200
	Iron	42.4	6.0	100
	Manganese	3.2	2.0	15
CCB4	Iron	21.7	6.0	100
	Manganese	3.5	2.0	15
PB	Antimony	14.1[b]	13	60
	Cadmium	3.5[b]	2.0	5
	Chromium	5.3[b]	5.0	10
	Iron	12.6[b]	6.0	100

* ICB = Initial Calibration Blank; CCB = Continuing Calibration Blank; PB = Preparation Blank.
Conc. - Concentration
[b] Blank results were converted from original units (mg/kg) to µg/L by the reviewer for comparison to IDL and CRDL.

Sample results below five times the highest analyte level reported in the blanks were flagged UJ_1 (not detected, estimated quantitation limit).

6) ICP Interference Check

All parameters for the Interference Check Sample were within the control limits of 80 to 120 percent of the true values.

7) Laboratory Control Sample

The recoveries for all parameters for both ICP and AA analyses were within the control limits required by IFB WA-87K025-027.

8) Duplicate Sample Analysis

The Relative Percent Difference (RPD) values for the duplicate sample analysis were within QC criteria of less than 20 percent for sample values greater than five times the CRDL. For all sample values less than five times the CRDL, the RPD values were within ± the CRDL for water matrix or ± two times the CRDL for soil matrix.

9) Spiked Sample Analysis

The matrix spike recoveries for the following elements were outside QC limits:

Sample	Element	% Recovery	QC Limits
MJF225	Antimony	57.9	75 - 125
	Arsenic	67.0	75 - 125
	Cadmium	53.3	75 - 125
	Lead	25.9	75 - 125
	Mercury	126.1	75 - 125
	Selenium	0	75 - 125

In sample MJF237, the mercury result was flagged as estimated (J_4). No other action was taken in the other samples based on the mercury spike recovery. All sample results for antimony, arsenic, cadmium, and lead were flagged as estimated (J_4 or UJ_4). All sample results for selenium were flagged as rejected (R).

10) ICP Serial Dilution

The Percent Difference values for the following elements exceeded QC limits:

Sample	Element	%D	QC Limits
MJF225	Iron	10.4	0 - 10
	Zinc	18.9	0 - 10

In all samples, iron and zinc results were flagged as estimated (J_4 or UJ_4).

11) Furnace AA

All furnace AA results met QC criteria.

12) Mercury Analysis

All mercury analyses met QC criteria, except matrix spike results.

13) Sample Analysis

A CRDL sample was run.

Sample results reported that were below CRDL and above IDL were flagged as estimated quantities (J).

14) Laboratory Contact

No laboratory contact was required.

Data Use

The usefulness of the data is based on the criteria outlined in the "Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses" (R-582-5-5-01); the Data Qualifier Definitions supplied by the Office of Solid Waste and Emergency Response (September 1989); and the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989).

Upon consideration of the above comments, the data is ACCEPTABLE for use except where flagged with data qualifiers which modify the usefulness of individual values.

Additional data packages associated with this project are expected from CLP or EPA laboratories.

Data Qualifiers

U - The material was analyzed for, but was not detected. The associated numerical value is a contractual quantitation limit, adjusted for sample weight/sample volume, extraction volume, percent solids and sample dilution.

J - The analyte was analyzed for and was positively identified, but the associated numerical value may not be consistent with the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.

UJ - The material was analyzed for, but was not detected. The associated numerical value is an estimated/adjusted quantitation limit. The associated numerical value may not accurately or precisely represent the concentration necessary to detect the analyte in this sample.

A subscript will be appended to the "J" qualifier or the "UJ" qualifier that indicates which of the following quality control criteria were not met:

1. Blank contamination: indicates possible high bias and/or false positives.

2. Calibration range exceeded: indicates possible low bias.

3. Holding times not met: indicates low bias for most analytes.

4. Other QC outside control limits: bias not readily determined.

R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.

INO/13324

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF225

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D9-0088

L b Code: SKINER Case No.: 13324 SAS No.: SDG No.: MJF225

Matrix (soil/water): SOIL Lab Sample ID: 12156-01S

Level (low/med): LOW Date Received: 12/14/89

% Solids: 84.3

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C		
7429-90-5	Aluminum	17500.00			
7440-36-0	Antimony	12.50	uJ		
7440-38-2	Arsenic	3.40	J4		
7440-39-3	Barium	107.00			
7440-41-7	Beryllium	0.44	U		
7440-41-7	Cadmium	0.44	uJ4		
7440-70-2	Calcium	4800.00			
7440-47-3	Chromium	23.90			
7440-48-4	Cobalt	20.40			
7440-50-8	Copper	28.50			
7439-89-6	Iron	41500.00	J4		
7439-92-1	Lead	19.70	J4		
7439-95-4	Magnesium	3700.00			
7439-96-5	Manganese	896.00			
7439-97-6	Mercury	0.12	u		
7440-02-0	Nickel	19.60			
7440-09-7	Potassium	584.00	J		
7782-49-2	Selenium	3.40	uR		
7440-22-4	Silver	0.89	U		
7440-23-5	Sodium	335.00	J		
7440-28-0	Thallium	0.68	U		
7440-62-2	Vanadium	115.00			
7440-66-6	Zinc	93.50	J4		
	Cyanide				

1/20/90

Color Before: BLACK Clarity Before: Texture: MEDIUM

Color After: BLACK Clarity After: Artifacts: YES

Comments:

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF226

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D9-0088

Lab Code: SKINER Case No.: 13324 SAS No.: SDG No.: MJF225

Matrix (soil/water): SOIL Lab Sample ID: 12156-02S

Level (low/med): LOW Date Received: 12/14/89

% Solids: 84.9

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	
7429-90-5	Aluminum	6860.00			
7440-36-0	Antimony	8.00	UJ		
7440-38-2	Arsenic	3.70	J4		
7440-39-3	Barium	1580.00			
7440-41-7	Beryllium	0.66	J		
7440-41-7	Cadmium	0.46	UJ4		
7440-70-2	Calcium	4780.00			
7440-47-3	Chromium	55.10			
7440-48-4	Cobalt	12.80			
7440-50-8	Copper	21.30			
7439-89-6	Iron	31900.00	J4		
7439-92-1	Lead	16.90	J4		
7439-95-4	Magnesium	3700.00			
7439-96-5	Manganese	520.00			
7439-97-6	Mercury	0.12	U		
7440-02-0	Nickel	23.80			
7440-09-7	Potassium	554.00	J		
7782-49-2	Selenium	3.40	UR		
7440-22-4	Silver	0.92	U		
7440-23-5	Sodium	293.00	J		
7440-28-0	Thallium	0.67	U		
7440-62-2	Vanadium	55.70			
7440-66-6	Zinc	97.50	J4		
	Cyanide				

1/26/90

Color Before: BLACK Clarity Before: Texture: MEDIUM

Color After: BLACK Clarity After: Artifacts: YES

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF227

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D9-0088

L b Code: SKINER Case No.: 13324 SAS No.: SDG No.: MJF225

Matrix (soil/water): SOIL Lab Sample ID: 12156-03S

Level (low/med): LOW Date Received: 12/14/89

% Solids: 82.3

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C		
7429-90-5	Aluminum	16900.00			
7440-36-0	Antimony	11.40	UJ		
7440-38-2	Arsenic	2.80	J		
7440-39-3	Barium	109.00			
7440-41-7	Beryllium	0.48	U		
7440-41-7	Cadmium	0.48	UJ		
7440-70-2	Calcium	4630.00			
7440-47-3	Chromium	27.10			
7440-48-4	Cobalt	18.20			
7440-50-8	Copper	34.20			
7439-89-6	Iron	41000.00	J		
7439-92-1	Lead	19.00	J		
7439-95-4	Magnesium	3570.00			
7439-96-5	Manganese	680.00			
7439-97-6	Mercury	0.11	U		
7440-02-0	Nickel	19.30			
7440-09-7	Potassium	574.00	J		
7782-49-2	Selenium	3.50	UR		
7440-22-4	Silver	0.96	U		
7440-23-5	Sodium	318.00	J		
7440-28-0	Thallium	0.70	U		
7440-62-2	Vanadium	97.40			
7440-66-6	Zinc	80.80	J		
	Cyanide				

1/26/90

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts: YES

Comments:

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EPA SAMPLE NO.

MJF228

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D9-0088

Lab Code: SKINER Case No.: 13324 SAS No.: SDG No.: MJF225

Matrix (soil/water): SOIL Lab Sample ID: 12156-04S

Level (low/med): LOW Date Received: 12/14/89

% Solids: 92.6

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C		
7429-90-5	Aluminum	8630.00			
7440-36-0	Antimony	9.50	UJ1		
7440-38-2	Arsenic	1.10	J4		
7440-39-3	Barium	43.40			
7440-41-7	Beryllium	0.41	U		
7440-41-7	Cadmium	0.41	UJ4		
7440-70-2	Calcium	7040.00			
7440-47-3	Chromium	32.20			
7440-48-4	Cobalt	13.90			
7440-50-8	Copper	51.00			
7439-89-6	Iron	35400.00	J4		
7439-92-1	Lead	4.70	J4		
7439-95-4	Magnesium	4870.00			
7439-96-5	Manganese	434.00			
7439-97-6	Mercury	0.10	U		
7440-02-0	Nickel	24.00			
7440-09-7	Potassium	386.00	J		
7782-49-2	Selenium	3.10	UJR		
7440-22-4	Silver	0.82	U		
7440-23-5	Sodium	730.00	J		
7440-28-0	Thallium	0.63	U		
7440-62-2	Vanadium	79.60			
7440-66-6	Zinc	50.90	J4		
	Cyanide				

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Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts: YES

Comments:

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EPA SAMPLE NO.

MJF229

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D9-0088

Lab Code: SKINER Case No.: 13324 SAS No.: SDG No.: MJF225

Matrix (soil/water): SOIL Lab Sample ID: 12156-05S

Level (low/med): LOW Date Received: 12/14/89

% Solids: 80.8

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C		
7429-90-5	Aluminum	28400.00			
7440-36-0	Antimony	13.80	UJ		
7440-38-2	Arsenic	1.60	J		
7440-39-3	Barium	182.00			
7440-41-7	Beryllium	0.47	U		
7440-41-7	Cadmium	0.47	UJ		
7440-70-2	Calcium	3490.00			
7440-47-3	Chromium	33.30			
7440-48-4	Cobalt	19.10			
7440-50-8	Copper	23.60			
7439-89-6	Iron	35900.00	J		
7439-92-1	Lead	8.70	J		
7439-95-4	Magnesium	3810.00			
7439-96-5	Manganese	691.00			
7439-97-6	Mercury	0.11	U		
7440-02-0	Nickel	21.40			
7440-09-7	Potassium	865.00	J		
7782-49-2	Selenium	3.60	UR		
7440-22-4	Silver	0.93	U		
7440-23-5	Sodium	165.00	J		
7440-28-0	Thallium	0.71	U		
7440-62-2	Vanadium	106.00			
7440-66-6	Zinc	90.00	J		
	Cyanide				

1/26/90

Color Before: BLACK Clarity Before: Texture: MEDIUM

Color After: BLACK Clarity After: Artifacts: YES

Comments:

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EPA SAMPLE NO.

MJF230

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D9-0088

Lab Code: SKINER Case No.: 13324 SAS No.: SDG No.: MJF225

Matrix (soil/water): SOIL Lab Sample ID: 12156-06S

Level (low/med): LOW Date Received: 12/14/89

% Solids: 77.7

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C		
7429-90-5	Aluminum	14200.00			
7440-36-0	Antimony	25.60	J4		
7440-38-2	Arsenic	13.30	J4		
7440-39-3	Barium	93.10			
7440-41-7	Beryllium	0.48	U		
7440-41-7	Cadmium	0.48	UJ4		
7440-70-2	Calcium	4370.00			
7440-47-3	Chromium	124.00			
7440-48-4	Cobalt	21.70			
7440-50-8	Copper	160.00			
7439-89-6	Iron	114000.00	J4		
7439-92-1	Lead	28.30	J4		
7439-95-4	Magnesium	3050.00			
7439-96-5	Manganese	950.00			
7439-97-6	Mercury	0.12	U		
7440-02-0	Nickel	98.80			
7440-09-7	Potassium	533.00	J		
7782-49-2	Selenium	3.60	UR		
7440-22-4	Silver	0.96	U		
7440-23-5	Sodium	362.00	J		
7440-28-0	Thallium	0.72	U		
7440-62-2	Vanadium	89.60			
7440-66-6	Zinc	807.00	J4		
	Cyanide				

1/26/90

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts: YES

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF231

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D9-0088

Lab Code: SKINER Case No.: 13324 SAS No.: SDG No.: MJF225

Matrix (soil/water): SOIL Lab Sample ID: 12156-07S

Level (low/med): LOW Date Received: 12/14/89

Solids: 80.8

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C		
7429-90-5	Aluminum	27700.00			
7440-36-0	Antimony	13.90	UJ		
7440-38-2	Arsenic	2.30	J		
7440-39-3	Barium	177.00			
7440-41-7	Beryllium	0.48	U		
7440-41-7	Cadmium	0.48	UJ		
7440-70-2	Calcium	3560.00			
7440-47-3	Chromium	35.30			
7440-48-4	Cobalt	19.40			
7440-50-8	Copper	29.70			
7439-89-6	Iron	36900.00	J		
7439-92-1	Lead	9.50	J		
7439-95-4	Magnesium	3870.00			
7439-96-5	Manganese	691.00			
7439-97-6	Mercury	0.11	U		
7440-02-0	Nickel	23.70			
7440-09-7	Potassium	878.00	J		
7782-49-2	Selenium	3.50	UR		
7440-22-4	Silver	0.96	U		
7440-23-5	Sodium	156.00	J		
7440-28-0	Thallium	0.71	U		
7440-62-2	Vanadium	105.00			
7440-66-6	Zinc	90.60	J		
	Cyanide				

1/26/90

Color Before: BLACK Clarity Before: Texture: MEDIUM

Color After: BLACK Clarity After: Artifacts: YES

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF232

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D9-0088

Lab Code: SKINER Case No.: 13324 SAS No.: SDG No.: MJF225

Matrix (soil/water): SOIL Lab Sample ID: 12156-08S

Level (low/med): LOW Date Received: 12/14/89

% Solids: 78.7

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C		
7429-90-5	Aluminum	31300.00			
7440-36-0	Antimony	14.70	J4		
7440-38-2	Arsenic	2.50	J4		
7440-39-3	Barium	154.00			
7440-41-7	Beryllium	0.48	U		
7440-41-7	Cadmium	0.48	UJ4		
7440-70-2	Calcium	4570.00			
7440-47-3	Chromium	29.20			
7440-48-4	Cobalt	20.80			
7440-50-8	Copper	20.90			
7439-89-6	Iron	38500.00	J4		
7439-92-1	Lead	20.40	J4		
7439-95-4	Magnesium	4390.00			
7439-96-5	Manganese	801.00			
7439-97-6	Mercury	0.13	U		
7440-02-0	Nickel	19.60			
7440-09-7	Potassium	1150.00	J		
7782-49-2	Selenium	3.70	UR		
7440-22-4	Silver	0.95	U		
7440-23-5	Sodium	193.00	J		
7440-28-0	Thallium	0.75	U		
7440-62-2	Vanadium	111.00			
7440-66-6	Zinc	77.50	J4		
	Cyanide				

1/26/90

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts: YES

Comments:

STONES

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF233

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D9-0088

Lab Code: SKINER Case No.: 13324 SAS No.: SDG No.: MJF225

Matrix (soil/water): SOIL Lab Sample ID: 12156-09S

Level (low/med): LOW Date Received: 12/14/89

% Solids: 77.5

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C		
7429-90-5	Aluminum	15800.00			
7440-36-0	Antimony	11.70	UJ1		
7440-38-2	Arsenic	1.70	J4		
7440-39-3	Barium	126.00			
7440-41-7	Beryllium	0.51	U		
7440-41-7	Cadmium	0.51	UJ4		
7440-70-2	Calcium	6960.00			
7440-47-3	Chromium	26.40			
7440-48-4	Cobalt	16.70			
7440-50-8	Copper	19.40			
7439-89-6	Iron	29700.00	J4		
7439-92-1	Lead	20.20	J4		
7439-95-4	Magnesium	5310.00			
7439-96-5	Manganese	621.00			
7439-97-6	Mercury	0.11	U		
7440-02-0	Nickel	21.60			
7440-09-7	Potassium	1670.00			
7782-49-2	Selenium	3.80	UR		
7440-22-4	Silver	1.00	U		
7440-23-5	Sodium	295.00	J		
7440-28-0	Thallium	0.75	U		
7440-62-2	Vanadium	81.80			
7440-66-6	Zinc	203.00	J4		
	Cyanide				

1/26/90

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts: YES

Comments:

STONES

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF235

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D9-0088

Lab Code: SKINER Case No.: 13324 SAS No.: SDG No.: MJF225

Matrix (soil/water): SOIL Lab Sample ID: 12156-11S

Level (low/med): LOW Date Received: 12/14/89

% Solids: 74.0

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C		
7429-90-5	Aluminum	33200.00			
7440-36-0	Antimony	13.40	UJ1		
7440-38-2	Arsenic	4.60	J4		
7440-39-3	Barium	190.00			
7440-41-7	Beryllium	0.53	U		
7440-41-7	Cadmium	0.53	UJ4		
7440-70-2	Calcium	5290.00			
7440-47-3	Chromium	39.70			
7440-48-4	Cobalt	22.50			
7440-50-8	Copper	29.80			
7439-89-6	Iron	40900.00	J4		
7439-92-1	Lead	50.90	J4		
7439-95-4	Magnesium	4770.00			
7439-96-5	Manganese	995.00			
7439-97-6	Mercury	0.13	U		
7440-02-0	Nickel	24.00			
7440-09-7	Potassium	1710.00			
7782-49-2	Selenium	3.90	U	R	
7440-22-4	Silver	1.10	U		
7440-23-5	Sodium	161.00	J		
7440-28-0	Thallium	0.78	U		
7440-62-2	Vanadium	126.00			
7440-66-6	Zinc	112.00	J4		
	Cyanide				

1/26/90

Color Before: BROWN Clarity Before: Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts: YES

Comments:

STONES

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF234

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D9-0088

Lab Code: SKINER Case No.: 13324 SAS No.: SDG No.: MJF225

Matrix (soil/water): SOIL Lab Sample ID: 12156-10S

Level (low/med): LOW Date Received: 12/14/89

% Solids: 74.7

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C		
7429-90-5	Aluminum	19500.00			
7440-36-0	Antimony	10.30	UJ		
7440-38-2	Arsenic	2.10	J4		
7440-39-3	Barium	105.00			
7440-41-7	Beryllium	0.50	U		
7440-41-7	Cadmium	0.50	UJ4		
7440-70-2	Calcium	6400.00			
7440-47-3	Chromium	25.70			
7440-48-4	Cobalt	16.40			
7440-50-8	Copper	34.70			
7439-89-6	Iron	31500.00	J4		
7439-92-1	Lead	74.50	J4		
7439-95-4	Magnesium	3930.00			
7439-96-5	Manganese	553.00			
7439-97-6	Mercury	0.12	U		
7440-02-0	Nickel	23.30			
7440-09-7	Potassium	1040.00	J		
7782-49-2	Selenium	0.78	UR		
7440-22-4	Silver	0.99	U		
7440-23-5	Sodium	502.00	J		
7440-28-0	Thallium	0.78	U		
7440-62-2	Vanadium	95.30			
7440-66-6	Zinc	117.00	J4		
	Cyanide				

1/26/90

Color Before: BROWN Clarity Before: - Texture: MEDIUM

Color After: BROWN Clarity After: Artifacts: YES

Comments:

STONES

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF237

Lab Name: SKINNER & SHERMAN LABS. Contract: 68-D9-0088

Lab Code: SKINER Case No.: 13324 SAS No.: SDG No.: MJF225

Matrix (soil/water): SOIL Lab Sample ID: 12156-12S

Level (low/med): LOW Date Received: 12/14/89

% Solids: 65.4

Concentration Units (ug/L or mg/Kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C		
7429-90-5	Aluminum	25400.00			
7440-36-0	Antimony	11.40	UJ		
7440-38-2	Arsenic	3.50	J4		
7440-39-3	Barium	149.00			
7440-41-7	Beryllium	0.57	U		
7440-41-7	Cadmium	0.57	UJ4		
7440-70-2	Calcium	4880.00			
7440-47-3	Chromium	41.10			
7440-48-4	Cobalt	23.30			
7440-50-8	Copper	77.90			
7439-89-6	Iron	37800.00	J4		
7439-92-1	Lead	175.00	J4		
7439-95-4	Magnesium	4290.00			
7439-96-5	Manganese	713.00			
7439-97-6	Mercury	0.18	J4		
7440-02-0	Nickel	23.60			
7440-09-7	Potassium	806.00	J		
7782-49-2	Selenium	0.86	UR		
7440-22-4	Silver	1.40	UJ		
7440-23-5	Sodium	456.00	J		
7440-28-0	Thallium	0.86	U		
7440-62-2	Vanadium	94.10			
7440-66-6	Zinc	192.00	J4		
	Cyanide				

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Color Before: BLACK Clarity Before: Texture: MEDIUM

Color After: BLACK Clarity After: Artifacts: YES

Comments:

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International Specialists in the Environment

MEMORANDUM

DATE: March 22, 1990

FOR: Rhonda Wreggelsworth, RSCC, USEPA, Region 10

THRU: Jeffrey Villnow, FITOM, E & E, Seattle

FROM: Andrew Riddell, Chemist, E & E, Seattle
Tracy Yerian, Senior Chemist, E & E, Seattle

SUBJ: QA of Case 13558 (Inorganics)
Northwest Pipe and Casing

REF: F10-8906-002
PAN FOR0210XC

CC: John Osborn, RPO, USEPA, Region 10
Bruce Woods, ESD, USEPA, Region 10
Gerald Muth, DPO, USEPA, Region 10 Laboratory, Manchester
Deborah Flood, HWD-SM, USEPA, Region 10
Gerald Lee, FIT-PD, E & E, Seattle
Mark Ader, FIT-PM, E & E, Seattle

The Quality Assurance (QA) review of 19 samples, Case 13558, collected from Northwest Pipe and Casing, has been completed. Nineteen water samples were analyzed at low level for Target Compound List (TCL) Inorganics by Columbia Analytical, Inc. of Kelso, Washington. The samples were numbered:

MJF601	MJF606	MJF611	MJF616
MJF602	MJF607	MJF612	MJF621
MJF603	MJF608	MJF613	MJF622
MJF604	MJF609	MJF614	MJF623
MJF605	MJF610	MJF615	

Sample MJF604 underwent matrix spike (MS) analysis and duplicate analysis.

Data Qualifications

The following comments refer to the laboratory performance in meeting the Quality Control (QC) specifications outlined in IFB WA-87K025-027.

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1) Timeliness

Sample Number	Sample Date	Rec'd Date	ICP Anal.	AA Anal.*	Hg Anal.
MJF601	02/13/90	02/14/90	02/29/90	02/27/90	02/23/90
MJF602	02/13/90	02/14/90	02/29/90	02/27/90	02/23/90
MJF603	02/14/90	02/15/90	02/29/90	02/27/90	02/23/90
MJF604	02/14/90	02/15/90	02/29/90	02/27/90	02/23/90
MJF605	02/14/90	02/15/90	02/29/90	02/27/90	02/23/90
MJF606	02/14/90	02/15/90	02/29/90	02/27/90	02/23/90
MJF607	02/14/90	02/15/90	02/29/90	02/27/90	02/23/90
MJF608	02/12/90	02/14/90	02/29/90	02/27/90	02/23/90
MJF609	02/12/90	02/14/90	02/29/90	02/27/90	02/23/90
MJF610	02/13/90	02/14/90	02/29/90	02/27/90	02/23/90
MJF611	02/13/90	02/14/90	02/29/90	02/27/90	02/23/90
MJF612	02/13/90	02/14/90	02/29/90	02/27/90	02/23/90
MJF613	02/13/90	02/14/90	02/29/90	02/27/90	02/23/90
MJF614	02/14/90	02/15/90	02/29/90	02/27/90	02/23/90
MJF615	02/12/90	02/14/90	02/29/90	02/27/90	02/23/90
MJF616	02/12/90	02/14/90	02/29/90	02/27/90	02/23/90
MJF621	02/12/90	02/14/90	02/29/90	02/27/90	02/23/90
MJF622	02/12/90	02/14/90	02/29/90	02/27/90	02/23/90
MJF623	02/14/90	02/15/90	02/29/90	02/27/90	02/23/90

ICP - Inductively Coupled Plasma
AA - Atomic Absorption
Hg - Mercury
Anal. - Analysis Date
* Date reported for AA analysis is latest analysis date.

All samples met QC holding time criteria.

2) Initial Calibration

All ICP results fell within the control limits of 90 to 110 percent of the true values. Furnace AA results fell within the control limits of 90 to 110 percent of the true values for all analytes. Mercury results fell within the control limits of 80 to 120 percent of the true value.

3) Continuing Calibration

All ICP results fell within the control limits of 90 to 110 percent of the true values. Furnace AA results fell within the control limits of 90 to 110 percent of the true values for all analytes. Mercury results fell within the control limits of 80 to 120 percent of the true value.

4) Instrument Detection Limits

All Instrument Detection Limits (IDLs) for ICP, AA, and mercury analyses were equal to or less than the Contract Required Detection Limits (CRDLs).

5) Blanks

The following blanks contained elemental contamination above the IDL but below CRDL:

Blank*	Element	Conc. µg/L	IDL µg/L	CRDL µg/L
ICB	Barium	5.4	1.0	200
	Beryllium	1.2	1.0	5
	Calcium	123.1	5.0	5,000
	Iron	3.6	3.0	100
	Magnesium	30.2	30.0	5,000
	Manganese	1.0	1.0	15
	Sodium	134.7	30.0	5,000
	Thallium	1.1	1.0	10
	Zinc	7.8	2.0	20
CCB2	Calcium	22.4	5.0	5,000
	Iron	17.6	3.0	100
	Potassium	654.6	300	5,000
	Thallium	1.1	1.0	10
CCB3	Arsenic	1.0	1.0	10
	Barium	1.0	1.0	200
	Cadmium	3.2	2.0	5
	Calcium	18.9	5.0	5,000
	Iron	12.6	3.0	100
	Potassium	581.9	300	5,000
	Sodium	59.9	30.0	5,000
	Zinc	2.7	2.0	20

Table Cont.

Blank*	Element	Conc. µg/L	IDL µg/L	CRDL µg/L
CCB4	Barium	1.7	1.0	200
	Calcium	39.5	5.0	5,000
	Iron	14.2	3.0	100
	Potassium	2,036.6	300	5,000
	Sodium	71.4	30.0	5,000
CCB5	Aluminum	22.6	20.0	200
	Barium	1.5	1.0	200
	Cadmium	3.1	2.0	5
	Calcium	52.0	5.0	5,000
	Iron	31.7	3.0	100
	Potassium	1,194.3	300	5,000
	Sodium	62.2	30.0	5,000
	Zinc	2.0	2.0	20
CCB8	Selenium	1.1	1.0	5
PB	Calcium	36.6	5.0	5,000
	Iron	20.0	3.0	100
	Sodium	31.6	30.0	5,000
	Thallium	1.1	1.0	10

* ICB = Initial Calibration Blank; CCB = Continuing Calibration Blank; PB = Preparation Blank.
Conc. - Concentration

Sample results below five times the highest analyte level reported in the blanks were flagged UJ_1 (not detected, estimated quantitation limit).

6) ICP Interference Check

All parameters for the Interference Check Sample were within the control limits of 80 to 120 percent of the true values.

7) Laboratory Control Sample

The recoveries for all parameters for both ICP and AA analyses were within the control limits required by IFB WA-87K025-027.

8) Duplicate Sample Analysis

The Relative Percent Difference (RPD) values for the duplicate sample analysis were within QC criteria of less than 20 percent for sample values greater than five times the CRDL. For all sample values less than five times the CRDL, the RPD values were within ± the CRDL for water matrix.

9) Spiked Sample Analysis

The matrix spike recoveries for the following elements were outside QC limits:

Sample	Matrix	Element	% Recovery	QC Limits
MJF604	Water	Antimony	42.6%	75 - 125%
		Arsenic	65.2%	75 - 125%
		Selenium	24.0%	75 - 125%

All positive results and analyte detection limits for antimony and arsenic were flagged as estimated (J_4 or UJ_4). Positive results for selenium were flagged as estimated (J_4) and detection limits were rejected (R) in all samples.

10) ICP Serial Dilution

The Percent Difference values (%D) for the following elements exceeded QC limits:

Sample	Matrix	Element	%D	QC Limits
MJF605	Water	Potassium	21.3%	10%

All positive results and analyte detection limits for potassium were flagged as estimated (J_4 or UJ_4).

11) Furnace AA

All furnace AA results met QC criteria.

12) Mercury Analysis

All mercury analyses met QC criteria.

13) Cyanide Analysis

Cyanide analyses were not requested.

14) Sample Analysis

A CRDL sample was run.

Sample results reported that are below CRDL and above IDL are flagged as estimated quantities (J).

15) Laboratory Contact

No laboratory contact was required.

Data Use

The usefulness of the data is based on the criteria outlined in the "Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses" (R-582-5-5-01); the Data Qualifier Definitions supplied by the Office of Solid Waste and Emergency Response (September 1989); and the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989).

Upon consideration of the above comments, the data is ACCEPTABLE for use except where flagged with data qualifiers which modify the usefulness of individual values.

Additional data packages associated with this project are expected from CLP or EPA laboratories.

Data Qualifiers

U - The material was analyzed for, but was not detected. The associated numerical value is a contractual quantitation limit, adjusted for sample weight/sample volume, extraction volume, percent solids and sample dilution.

J - The analyte was analyzed for and was positively identified, but the associated numerical value may not be consistent with the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.

UJ - The material was analyzed for, but was not detected. The associated numerical value is an estimated/adjusted quantitation limit. The associated numerical value may not accurately or precisely represent the concentration necessary to detect the analyte in this sample.

A subscript will be appended to the "J" qualifier or the "UJ" qualifier that indicates which of the following quality control criteria were not met:

1. Blank contamination: indicates possible high bias and/or false positives.

2. Calibration range exceeded: indicates possible low bias.

3. Holding times not met: indicates low bias for most analytes.

4. Other QC outside control limits: bias not readily determined.

R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF601

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 13558 SAS No.: SDG No.: MJF601

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 02/14/90

Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11900			
7440-36-0	Antimony	20.0	U	J4	
7440-38-2	Arsenic	5.4	J	J4	
7440-39-3	Barium	108	J		
7440-41-7	Beryllium	1.0	U		
7440-43-9	Cadmium	2.0	U		
7440-70-2	Calcium	34600			
7440-47-3	Chromium	11.6			
7440-48-4	Cobalt	3.7	J		
7440-50-8	Copper	17.8	J		
7439-89-6	Iron	19300			
7439-92-1	Lead	9.1			
7439-95-4	Magnesium	18700			
7439-96-5	Manganese	634			
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	10.0	U		
7440-09-7	Potassium	4870	UJ	J4	
7782-49-2	Selenium	1.0	R		
7440-22-4	Silver	2.0	U		
7440-23-5	Sodium	10600			
7440-28-0	Thallium	1.7	UJ		
7440-62-2	Vanadium	45.7	J		
7440-66-6	Zinc	44.8			
	Cyanide				

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

3-22-90

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF602

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 13558 SAS No.: SDG No.: MJF601

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 02/14/90

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	58100			
7440-36-0	Antimony	20.0	U	J4	
7440-38-2	Arsenic	13.1	J4		
7440-39-3	Barium	342			
7440-41-7	Beryllium	2.8	UJ1		
7440-43-9	Cadmium	2.0	U		
7440-70-2	Calcium	42400			
7440-47-3	Chromium	32.4			
7440-48-4	Cobalt	54.5			
7440-50-8	Copper	66.3			
7439-89-6	Iron	69900			
7439-92-1	Lead	17.6			
7439-95-4	Magnesium	25100			
7439-96-5	Manganese	3510			
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	29.0	J		
7440-09-7	Potassium	5450	UJ1	J4	
7782-49-2	Selenium	5.5	J4		
7440-22-4	Silver	2.0	U		
7440-23-5	Sodium	15100			
7440-28-0	Thallium	2.1	UJ1		
7440-62-2	Vanadium	165			
7440-66-6	Zinc	103			
	Cyanide				

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

3-22-90

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF603

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 13558 SAS No.: SDG No.: MJF601

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 02/15/90

Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2110			-
7440-36-0	Antimony	20.0	U	J4	-
7440-38-2	Arsenic	2.5	UJ1	J4	-
7440-39-3	Barium	62.5	J		-
7440-41-7	Beryllium	1.0	U		-
7440-43-9	Cadmium	2.0	U		-
7440-70-2	Calcium	84400			-
7440-47-3	Chromium	3.0	U		-
7440-48-4	Cobalt	3.0	U		-
7440-50-8	Copper	3.3	J		-
7439-89-6	Iron	2640			-
7439-92-1	Lead	2.7	J		-
7439-95-4	Magnesium	43400			-
7439-96-5	Manganese	1080			-
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	10.0	U		-
7440-09-7	Potassium	6840	UJ1	J4	-
7782-49-2	Selenium	1.0	R		-
7440-22-4	Silver	2.0	U		-
7440-23-5	Sodium	19000			-
7440-28-0	Thallium	1.0	U		-
7440-62-2	Vanadium	7.7	J		-
7440-66-6	Zinc	13.0	UJ1		-
	Cyanide				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3-22-90

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF604

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 13558 SAS No.: SDG No.: MJF601

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 02/15/90

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	68900			-
7440-36-0	Antimony	25.7	J	J4	-
7440-38-2	Arsenic	7.1	J	J4	-
7440-39-3	Barium	299			-
7440-41-7	Beryllium	2.8	UJ		-
7440-43-9	Cadmium	2.0	U		-
7440-70-2	Calcium	67500			-
7440-47-3	Chromium	50.9			-
7440-48-4	Cobalt	36.9	J		-
7440-50-8	Copper	66.0			-
7439-89-6	Iron	73900			-
7439-92-1	Lead	14.9			-
7439-95-4	Magnesium	27600			-
7439-96-5	Manganese	3780			-
7439-97-6	Mercury	0.20	U		-
7440-02-0	Nickel	37.7	J		-
7440-09-7	Potassium	4710	UJ	J4	-
7782-49-2	Selenium	1.0	R		-
7440-22-4	Silver	2.0	U		-
7440-23-5	Sodium	14400			-
7440-28-0	Thallium	1.0	UJ		-
7440-62-2	Vanadium	164			-
7440-66-6	Zinc	126			-
	Cyanide				

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: YELLOW Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF605

b Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

ab Code: COLUMB Case No.: 13558 SAS No.: SDG No.: MJF601

Matrix (soil/water): WATER Lab Sample ID:

evel (low/med): LOW Date Received: 02/15/90

Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	193000			
7440-36-0	Antimony	54.4	J	J4	
7440-38-2	Arsenic	5.3	J	J4	
7440-39-3	Barium	1050			
7440-41-7	Beryllium	10.2			
7440-43-9	Cadmium	2.0	U		
7440-70-2	Calcium	150000			
7440-47-3	Chromium	293			
7440-48-4	Cobalt	138			
7440-50-8	Copper	334			
7439-89-6	Iron	275000			
7439-92-1	Lead	64.0			
7439-95-4	Magnesium	107000			
7439-96-5	Manganese	5930			
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	155			
7440-09-7	Potassium	19200	J4		
7782-49-2	Selenium	5.0	R		
7440-22-4	Silver	2.0	U		
7440-23-5	Sodium	23500			
7440-28-0	Thallium	2.0	UJ		
7440-62-2	Vanadium	888			
7440-66-6	Zinc	617			
	Cyanide				

Cc or Before: BROWN Clarity Before: CLOUDY Texture:

Color After: YELLOW Clarity After: CLEAR Artifacts:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF606

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 13558 SAS No.: SDG No.: MJF601

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 02/15/90

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13400			
7440-36-0	Antimony	20.0	U	J4	
7440-38-2	Arsenic	2.7	UJ	J4	
7440-39-3	Barium	101	J		
7440-41-7	Beryllium	1.0	U		
7440-43-9	Cadmium	2.0	U		
7440-70-2	Calcium	33200			
7440-47-3	Chromium	12.8			
7440-48-4	Cobalt	11.2	J		
7440-50-8	Copper	17.5	J		
7439-89-6	Iron	15900			
7439-92-1	Lead	5.2			
7439-95-4	Magnesium	11200			
7439-96-5	Manganese	2830			
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	10.6	J		
7440-09-7	Potassium	3640	UJ	J4	
7782-49-2	Selenium	1.0	R		
7440-22-4	Silver	2.0	U		
7440-23-5	Sodium	9310			
7440-28-0	Thallium	1.0	U		
7440-62-2	Vanadium	33.8	J		
7440-66-6	Zinc	30.6	UJ		
	Cyanide				

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: BROWN Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF607

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 13558 SAS No.: SDG No.: MJF601

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 02/15/90

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4360			-
7440-36-0	Antimony	20.0	U	J4	-
7440-38-2	Arsenic	1.6	UJ	J4	-
7440-39-3	Barium	69.2	J		-
7440-41-7	Beryllium	1.0	U		-
7440-43-9	Cadmium	2.0	U		-
7440-70-2	Calcium	37500			-
7440-47-3	Chromium	3.0	U		-
7440-48-4	Cobalt	3.0	U		-
7440-50-8	Copper	8.3	J		-
7439-89-6	Iron	4130			-
7439-92-1	Lead	3.1			-
7439-95-4	Magnesium	18500			-
7439-96-5	Manganese	1640			-
7439-97-6	Mercury	0.20	U		-
7440-02-0	Nickel	10.0	U		-
7440-09-7	Potassium	4810	UJ	J4	-
7782-49-2	Selenium	1.0	R		-
7440-22-4	Silver	2.0	U		-
7440-23-5	Sodium	11200			-
7440-28-0	Thallium	1.0	U		-
7440-62-2	Vanadium	9.4	J		-
7440-66-6	Zinc	10.4	UJ		-
	Cyanide				-

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF608

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 13558 SAS No.: SDG No.: MJF601

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 02/14/90

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	331			-
7440-36-0	Antimony	20.0	U	J4	-
7440-38-2	Arsenic	1.0	U	J4	-
7440-39-3	Barium	13.3	UJ		-
7440-41-7	Beryllium	1.0	U		-
7440-43-9	Cadmium	2.0	U		-
7440-70-2	Calcium	10200			-
7440-47-3	Chromium	3.0	U		-
7440-48-4	Cobalt	3.0	U		-
7440-50-8	Copper	8.3	J		-
7439-89-6	Iron	327			-
7439-92-1	Lead	1.2	J		-
7439-95-4	Magnesium	3150	J		-
7439-96-5	Manganese	50.6			-
7439-97-6	Mercury	0.20	U		-
7440-02-0	Nickel	10.0	U		-
7440-09-7	Potassium	1220	UJ	J4	-
7782-49-2	Selenium	1.0	R		-
7440-22-4	Silver	2.0	U		-
7440-23-5	Sodium	5830			-
7440-28-0	Thallium	1.0	U		-
7440-62-2	Vanadium	2.0	U		-
7440-66-6	Zinc	15.9	UJ		-
	Cyanide				-

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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EPA SAMPLE NO.

MJF609

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 13558 SAS No.: SDG No.: MJF601

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 02/14/90

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	19800			
7440-36-0	Antimony	20.0	U	J4	
7440-38-2	Arsenic	3.1	UJ	J4	
7440-39-3	Barium	98.9	J		
7440-41-7	Beryllium	1.3	UJ		
7440-43-9	Cadmium	2.0	U		
7440-70-2	Calcium	28900			
7440-47-3	Chromium	9.7	J		
7440-48-4	Cobalt	10.7	J		
7440-50-8	Copper	28.2			
7439-89-6	Iron	23000			
7439-92-1	Lead	19.8			
7439-95-4	Magnesium	11100			
7439-96-5	Manganese	932			
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	10.0	U		
7440-09-7	Potassium	3880	UJ	J4	
7782-49-2	Selenium	1.0	R		
7440-22-4	Silver	2.0	U		
7440-23-5	Sodium	12100			
7440-28-0	Thallium	1.0	U		
7440-62-2	Vanadium	42.3	J		
7440-66-6	Zinc	51.9			
	Cyanide				

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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EPA SAMPLE NO.

MJF610

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 13558 SAS No.: SDG No.: MJF601

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 02/14/90

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	20.0	U		-
7440-36-0	Antimony	20.0	U	J4	-
7440-38-2	Arsenic	1.4	UJ	J4	-
7440-39-3	Barium	16.7	UJ		-
7440-41-7	Beryllium	1.0	U		-
7440-43-9	Cadmium	2.0	U		-
7440-70-2	Calcium	24400			-
7440-47-3	Chromium	3.0	U		-
7440-48-4	Cobalt	3.0	U		-
7440-50-8	Copper	7.3	J		-
7439-89-6	Iron	1290			-
7439-92-1	Lead	1.0	U		-
7439-95-4	Magnesium	15700			-
7439-96-5	Manganese	627			-
7439-97-6	Mercury	0.20	U		-
7440-02-0	Nickel	10.0	U		-
7440-09-7	Potassium	3690	UJ	J4	-
7782-49-2	Selenium	1.0	R		-
7440-22-4	Silver	2.0	U		-
7440-23-5	Sodium	9890			-
7440-28-0	Thallium	1.0	U		-
7440-62-2	Vanadium	2.0	U		-
7440-66-6	Zinc	26.4	UJ		-
	Cyanide				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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EPA SAMPLE NO.

MJF611

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 13558 SAS No.: SDG No.: MJF601

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 02/14/90

Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	87.1	UJ		-
7440-36-0	Antimony	20.0	U	J4	-
7440-38-2	Arsenic	1.9	UJ	J4	-
7440-39-3	Barium	35.7	J		-
7440-41-7	Beryllium	1.0	U		-
7440-43-9	Cadmium	2.0	U		-
7440-70-2	Calcium	25200			-
7440-47-3	Chromium	3.0	U		-
7440-48-4	Cobalt	3.0	U		-
7440-50-8	Copper	18.8	J		-
7439-89-6	Iron	2090			-
7439-92-1	Lead	1.5	J		-
7439-95-4	Magnesium	17700			-
7439-96-5	Manganese	630			-
7439-97-6	Mercury	0.20	U		-
7440-02-0	Nickel	10.0	U		-
7440-09-7	Potassium	3480	UJ	J4	-
7782-49-2	Selenium	1.0	R		-
7440-22-4	Silver	2.0	U		-
7440-23-5	Sodium	10300			-
7440-28-0	Thallium	1.0	U		-
7440-62-2	Vanadium	2.0	U		-
7440-66-6	Zinc	14.7	UJ		-
	Cyanide				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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EPA SAMPLE NO.

MJF612

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 13558 SAS No.: SDG No.: MJF601

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 02/14/90

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	20.0	U		-
7440-36-0	Antimony	20.0	U	J4	-
7440-38-2	Arsenic	1.0	U	J4	-
7440-39-3	Barium	5.7	UJ		-
7440-41-7	Beryllium	1.0	U		-
7440-43-9	Cadmium	2.0	U		-
7440-70-2	Calcium	8860			-
7440-47-3	Chromium	3.0	U		-
7440-48-4	Cobalt	3.0	U		-
7440-50-8	Copper	28.4			-
7439-89-6	Iron	176			-
7439-92-1	Lead	4.8			-
7439-95-4	Magnesium	3680	J		-
7439-96-5	Manganese	13.1	J		-
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	10.0	U		-
7440-09-7	Potassium	2090	UJ	J4	-
7782-49-2	Selenium	1.0	R		-
7440-22-4	Silver	2.0	U		-
7440-23-5	Sodium	5300			-
7440-28-0	Thallium	1.0	U		-
7440-62-2	Vanadium	3.2	J		-
7440-66-6	Zinc	2280			-
	Cyanide				-

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF613

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 13558 SAS No.: SDG No.: MJF601

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 02/14/90

Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	20.0	U		-
7440-36-0	Antimony	20.0	U	J4	-
7440-38-2	Arsenic	1.0	U	J4	-
7440-39-3	Barium	21.4	UJ		-
7440-41-7	Beryllium	1.0	U		-
7440-43-9	Cadmium	2.0	U		-
7440-70-2	Calcium	13900			-
7440-47-3	Chromium	3.0	U		-
7440-48-4	Cobalt	3.0	U		-
7440-50-8	Copper	3.0	U		-
7439-89-6	Iron	1040			-
7439-92-1	Lead	1.0	U		-
7439-95-4	Magnesium	4440	J		-
7439-96-5	Manganese	7.6	J		-
7439-97-6	Mercury	0.20	U		-
7440-02-0	Nickel	10.0	U		-
7440-09-7	Potassium	3050	UJ	J4	-
7782-49-2	Selenium	1.0	R		-
7440-22-4	Silver	2.0	U		-
7440-23-5	Sodium	6960			-
7440-28-0	Thallium	1.0	U		-
7440-62-2	Vanadium	2.0	U		-
7440-66-6	Zinc	263			-
	Cyanide				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF614

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 13558 SAS No.: SDG No.: MJF601

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 02/15/90

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	20.0	U		-
7440-36-0	Antimony	20.0	U	J4	-
7440-38-2	Arsenic	8.8	J	J4	-
7440-39-3	Barium	74.3	J		-
7440-41-7	Beryllium	1.0	U		-
7440-43-9	Cadmium	2.0	U		-
7440-70-2	Calcium	17500			-
7440-47-3	Chromium	3.0	U		-
7440-48-4	Cobalt	3.0	U		-
7440-50-8	Copper	10.1	J		-
7439-89-6	Iron	4010			-
7439-92-1	Lead	2.4	J		-
7439-95-4	Magnesium	16800			-
7439-96-5	Manganese	1850			-
7439-97-6	Mercury	0.20	U		-
7440-02-0	Nickel	10.0	U		-
7440-09-7	Potassium	3310	UJ	J4	-
7782-49-2	Selenium	1.0	R		-
7440-22-4	Silver	2.0	U		-
7440-23-5	Sodium	10500			-
7440-28-0	Thallium	1.0	U		-
7440-62-2	Vanadium	2.0	U		-
7440-66-6	Zinc	1180			-
	Cyanide				-

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF615

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 13558 SAS No.: SDG No.: MJF601

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 02/14/90

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	20.0	U		-
7440-36-0	Antimony	20.0	U	J4	-
7440-38-2	Arsenic	1.9	UJ1	J4	-
7440-39-3	Barium	4.2	UJ1		-
7440-41-7	Beryllium	1.0	U		-
7440-43-9	Cadmium	2.0	U		-
7440-70-2	Calcium	13500			-
7440-47-3	Chromium	3.0	U		-
7440-48-4	Cobalt	3.0	U		-
7440-50-8	Copper	3.0	U		-
7439-89-6	Iron	16.0	UJ1		-
7439-92-1	Lead	1.0	U		-
7439-95-4	Magnesium	12000			-
7439-96-5	Manganese	2.1	UJ1		-
7439-97-6	Mercury	0.20	U		-
7440-02-0	Nickel	10.0	U		-
7440-09-7	Potassium	2480	UJ1	J4	-
7782-49-2	Selenium	1.0	R		-
7440-22-4	Silver	2.0	U		-
7440-23-5	Sodium	7050			-
7440-28-0	Thallium	1.0	U		-
7440-62-2	Vanadium	6.6	J		-
7440-66-6	Zinc	2.0	UJ1		-
	Cyanide				-

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

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INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF616

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 13558 SAS No.: SDG No.: MJF601

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 02/14/90

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	20.0	U		-
7440-36-0	Antimony	20.0	U	J4	-
7440-38-2	Arsenic	3.7	UJ	J4	-
7440-39-3	Barium	7.6	UJ		-
7440-41-7	Beryllium	1.0	U		-
7440-43-9	Cadmium	2.0	U		-
7440-70-2	Calcium	11200			-
7440-47-3	Chromium	3.0	U		-
7440-48-4	Cobalt	3.0	U		-
7440-50-8	Copper	3.0	U		-
7439-89-6	Iron	83.4	UJ		-
7439-92-1	Lead	1.0	U		-
7439-95-4	Magnesium	10900			-
7439-96-5	Manganese	27.6			-
7439-97-6	Mercury	0.20	U		-
7440-02-0	Nickel	10.0	U		-
7440-09-7	Potassium	3100	UJ	J4	-
7782-49-2	Selenium	1.0	UJ	J4	-
7440-22-4	Silver	2.0	U		-
7440-23-5	Sodium	6790			-
7440-28-0	Thallium	1.0	U		-
7440-62-2	Vanadium	2.0	U		-
7440-66-6	Zinc	2.4	UJ		-
	Cyanide				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3-22-90

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF621

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 13558 SAS No.: SDG No.: MJF601

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 02/14/90

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	20.0	U		-
7440-36-0	Antimony	20.0	U	J4	-
7440-38-2	Arsenic	1.0	U	J4	-
7440-39-3	Barium	2.5	UJ1		-
7440-41-7	Beryllium	1.0	U		-
7440-43-9	Cadmium	2.0	U		-
7440-70-2	Calcium	54.0	UJ1		-
7440-47-3	Chromium	3.0	U		-
7440-48-4	Cobalt	3.0	U		-
7440-50-8	Copper	3.0	U		-
7439-89-6	Iron	18.4	UJ1		-
7439-92-1	Lead	1.0	U		-
7439-95-4	Magnesium	30.0	U		-
7439-96-5	Manganese	1.0	U		-
7439-97-6	Mercury	0.20	U		-
7440-02-0	Nickel	10.0	U		-
7440-09-7	Potassium	1490	UJ	J4	-
7782-49-2	Selenium	1.0	R		-
7440-22-4	Silver	2.0	U		-
7440-23-5	Sodium	191	UJ		-
7440-28-0	Thallium	1.0	U		-
7440-62-2	Vanadium	2.0	U		-
7440-66-6	Zinc	2.0	U		-
	Cyanide				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3-22-90

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

MJF622

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 13558 SAS No.: SDG No.: MJF601

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 02/14/90

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	20.0	U		-
7440-36-0	Antimony	20.0	U	UJ	-
7440-38-2	Arsenic	1.0	U	UJ	-
7440-39-3	Barium	3.4	UJ		-
7440-41-7	Beryllium	1.0	U		-
7440-43-9	Cadmium	2.0	U		-
7440-70-2	Calcium	51.1	UJ		-
7440-47-3	Chromium	3.0	U		-
7440-48-4	Cobalt	3.0	U		-
7440-50-8	Copper	3.0	U		-
7439-89-6	Iron	13.7	UJ		-
7439-92-1	Lead	1.0	U		-
7439-95-4	Magnesium	30.0	U		-
7439-96-5	Manganese	1.0	U		-
7439-97-6	Mercury	0.20	U		-
7440-02-0	Nickel	10.0	U		-
7440-09-7	Potassium	1340	UJ	J	-
7782-49-2	Selenium	1.0	R		-
7440-22-4	Silver	2.0	U		-
7440-23-5	Sodium	191	UJ		-
7440-28-0	Thallium	1.0	U		-
7440-62-2	Vanadium	2.0	U		-
7440-66-6	Zinc	2.0	U		-
	Cyanide				

Color Before: COLORLESS Clarity Before: CLEAR Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3-22-90

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EPA SAMPLE NO.

1

INORGANIC ANALYSIS DATA SHEET

MJF623

Lab Name: COLUMBIA ANALYTICAL INC. Contract: 68-D9-0085

Lab Code: COLUMB Case No.: 13558 SAS No.: SDG No.: MJF601

Matrix (soil/water): WATER Lab Sample ID:

Level (low/med): LOW Date Received: 02/15/90

% Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4470			
7440-36-0	Antimony	20.0	U	J4	
7440-38-2	Arsenic	1.0	U	J4	
7440-39-3	Barium	57.8	J		
7440-41-7	Beryllium	1.0	U		
7440-43-9	Cadmium	2.0	U		
7440-70-2	Calcium	112000			
7440-47-3	Chromium	11.9			
7440-48-4	Cobalt	3.0	U		
7440-50-8	Copper	6.6	J		
7439-89-6	Iron	5870			
7439-92-1	Lead	7.4			
7439-95-4	Magnesium	1800	J		
7439-96-5	Manganese	492			
7439-97-6	Mercury	0.20	U		
7440-02-0	Nickel	10.0	U		
7440-09-7	Potassium	6290	UJ1	J4	
7782-49-2	Selenium	1.0	R		
7440-22-4	Silver	2.0	U		
7440-23-5	Sodium	14900			
7440-28-0	Thallium	1.0	U		
7440-62-2	Vanadium	27.4	J		
7440-66-6	Zinc	24.2	UJ1		
	Cyanide				

Color Before: BROWN Clarity Before: CLOUDY Texture:

Color After: COLORLESS Clarity After: CLEAR Artifacts:

Comments:

3-22-90

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO
JF6119

Lab Name: PEI Contract: 68-D9-0137

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF6118

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-02A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JFP609

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec._____ Date Extracted: 2/16/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 2/27/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	.050	U
319-85-7	beta-BHC	.050	U
319-86-8	delta-BHC	.050	U
58-89-9	gamma-BHC	.050	U
76-44-8	Heptachlor	.050	U
309-00-2	Aldrin	.050	U
1024-57-3	Heptachlor epoxide	.050	U
959-98-8	Endosulfan I	.050	U
60-57-1	Dieldrin	.10	U
72-55-9	4,4'-DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4,4'-DDD	.10	U
1031-07-8	Endosulfan sulfate	.10	U
50-29-3	4,4'-DDT	.10	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin ketone	.10	U
5103-71-9	alpha-Chlordane	.50	U
5103-74-2	gamma-Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	.50	U
11104-28-2	Aroclor-1221	.50	U
11141-16-5	Aroclor-1232	.50	U
53469-21-9	Aroclor-1242	.50	U
12672-29-6	Aroclor-1248	.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

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1F

EPA SAMPLE NO. 10509

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JF609

ab Name: PEI Contract: 68-D9-0037

ab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

atrix: (soil/water) WATER Lab Sample ID: X0-02-121-02A

ample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF609

evel: (low/med) LOW Date Received: 2/14/90

Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

xtraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

PC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	G
1. - -	UNKNOWN	7.35	10.	J
2. - -	UNKNOWN	7.80	60.	UJ
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EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

JF609

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-02A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF609

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	10.	U
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from diphenylamine

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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF609

ab Name: PEI Contract: 68-D9-0037

ab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

atrix: (soil/water) WATER Lab Sample ID: X0-02-121-02A

ample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF609

evel: (low/med) LOW Date Received: 2/14/90

Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

xtraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

PC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	bis(2-Chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

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1E

EPA SAMPLE NO.

00220

JF609

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

ab Name: PEI Contract: 68-D9-0037

ab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

at ix: (soil/water) WATER Lab Sample ID: X0-02-121-02B

ample wt/vol: 5.000 (g/mL) ML Lab File ID: JF609

evel: (low/med) LOW Date Received: 2/14/90

M isture: not dec. 100. Date Analyzed: 2/21/90

olumn: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF609

ab Name: PEI Contract: 68-D9-0037

ab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

atrix: (soil/water) WATER Lab Sample ID: X0-02-121-02B

ample wt/vol: 5.000 (g/mL) ML Lab File ID: JF609

.evel: (low/med) LOW Date Received: 2/14/90

: Moisture: not dec. 100. Date Analyzed: 2/21/90

:olumn: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	6.	
67-64-1	Acetone	5.	UJ, J4
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	4.	J
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JFA08

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JFA08

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-01A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JFP608

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec._____ Date Extracted: 2/16/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 2/22/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	.050	U
319-85-7	beta-BHC	.050	U
319-86-8	delta-BHC	.050	U
58-89-9	gamma-BHC	.050	U
76-44-8	Heptachlor	.050	U
309-00-2	Aldrin	.050	U
1024-57-3	Heptachlor epoxide	.050	U
959-98-8	Endosulfan I	.050	U
60-57-1	Dieldrin	.10	U
72-55-9	4,4'-DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4,4'-DDD	.10	U
1031-07-8	Endosulfan sulf	.10	U
50-29-3	4,4'-DDT	.10	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin ketone	.10	U
5103-71-9	alpha-Chlordane	.50	U
5103-74-2	gamma-Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	.50	U
11104-28-2	Aroclor-1221	.50	U
11141-16-5	Aroclor-1232	.50	U
53469-21-9	Aroclor-1242	.50	U
12672-29-6	Aroclor-1248	.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

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1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JF608

b Name: PEI Contract: 68-D9-0037

b Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

trix: (soil/water) WATER Lab Sample ID: X0-02-121-01A

mple wt/vol: 1000.0 (g/mL) ML Lab File ID: JF608

vel: (low/med) LOW Date Received: 2/14/90

Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

traction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

PC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 1

CONCENTRATION UNITS.
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. - -	UNKNOWN	7.83	40.	UJ,
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MEMORANDUM

DATE: May 17, 1990

FOR: Carolyn Wilson, RSCC, USEPA, Region 10

THRU: Andrew Hafferty, FITOM, E & E, Seattle

FROM: Andrew Riddell, Chemist, E & E, Seattle
Tracy Yerian, Senior Chemist, E & E, Seattle

SUBJ: QA of Case 13558 (Organics)
Northwest Pipe and Casing

REF: F10-8906-002
PAN FOR0210XC

CC: John Osborn, RPO, USEPA, Region 10
Bruce Woods, ESD, USEPA, Region 10
Gerald Muth, DPO, USEPA, Region 10 Laboratory, Manchester
Chuck Elly, DPO, USEPA, Region 5
Deborah Flood, HWD-SM, USEPA, Region 10
Gerald Lee, FIT-PD, E & E, Seattle
Mark Ader, FIT-PM, E & E, Seattle

This memorandum replaces the previous Quality Assurance (QA) memorandum for Case 13558, Northwest Pipe and Casing, dated May 3, 1990. Data qualifications to samples JF604, JF606, and JF607 semivolatile fractions were revised. The revised semivolatile Form I's with corrected qualifiers for samples JF604, JF606, and JF607 are included.

The QA review of 19 samples, Case 13558, collected from Northwest Pipe and Casing, has been completed. Nineteen water samples were analyzed at low level for Target Compound List (TCL) Organics by PEI Associates, Inc. of Cincinnati, Ohio. The samples were numbered:

JF601	JF606	JF611	JF616
JF602	JF607	JF612	JF621
JF603	JF608	JF613	JF622
JF604	JF609	JF614	JF623
JF605	JF610	JF615	

Sample JF604 underwent matrix spike (MS) and matrix spike duplicate (MSD) analysis.

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Data Qualifications

The following comments refer to the laboratory performance in meeting the Quality Control (QC) specifications outlined in IFB WA-87K236-238, following Laboratory Data Validation Functional Guidelines for Evaluating Organics Analysis (February 1, 1988).

1) Timeliness

Sample Number	Sample Date	Rec'd Date	VOC Anal.	BNA Extr.	BNA Anal.	Pest/PCB Extr.	Pest/PCB Anal.
JF601	02/13/90	02/15/90	02/21/90	02/18/90	03/08/90	02/16/90	03/15/90
JF602	02/13/90	02/15/90	02/22/90	02/18/90	03/08/90	02/16/90	03/15/90
JF603	02/14/90	02/15/90	02/22/90	02/18/90	03/08/90	02/16/90	03/15/90
JF604	02/14/90	02/15/90	02/22/90	02/18/90	03/08/90	02/16/90	03/15/90
JF605	02/14/90	02/15/90	02/22/90	02/18/90	03/08/90	02/16/90	03/15/90
JF606	02/14/90	02/15/90	02/22/90	02/18/90	03/12/90	02/16/90	03/15/90
JF607	02/14/90	02/15/90	02/22/90	02/18/90	03/16/90	02/16/90	03/08/90
JF608	02/12/90	02/14/90	02/21/90	02/18/90	03/08/90	02/16/90	03/08/90
JF609	02/12/90	02/14/90	02/21/90	02/18/90	03/08/90	02/16/90	03/08/90
JF610	02/13/90	02/14/90	02/21/90	02/18/90	03/08/90	02/16/90	03/08/90
JF611	02/13/90	02/14/90	02/21/90	02/18/90	03/08/90	02/16/90	03/08/90
JF612	02/13/90	02/14/90	02/21/90	02/18/90	03/08/90	02/16/90	03/08/90
JF613	02/13/90	02/15/90	02/22/90	02/18/90	03/08/90	02/16/90	03/08/90
JF614	02/14/90	02/15/90	02/22/90	02/18/90	03/12/90	02/16/90	03/08/90
JF615	02/12/90	02/14/90	02/21/90	02/18/90	03/08/90	02/16/90	03/15/90
JF616	02/12/90	02/14/90	02/22/90	02/18/90	03/08/90	02/16/90	03/15/90
JF621	02/12/90	02/14/90	02/22/90	02/18/90	03/08/90	02/16/90	03/15/90
JF622	02/12/90	02/14/90	02/22/90	02/18/90	03/08/90	02/16/90	03/15/90
JF623	02/14/90	02/15/90	02/22/90	02/18/90	03/12/90	02/16/90	03/08/90

VOC - Volatile Organic Compounds
BNA - Base, Neutral, and Acid Semivolatile Compounds
Pest/PCB - Pesticide/Polychlorinated Biphenyl Compounds
Anal. - Analysis Date
Extr. - Extraction Date

All samples met holding time criteria for volatiles, semivolatiles, and pesticides.

2) Instrument Tuning

All tuning check compound mass abundances and ratios were within contract-required limits for volatile and semivolatile analysis.

3) Initial Calibration

All System Performance Check Compounds (SPCCs) were within contract-required limits for the initial calibration with average Relative Response Factors (RRFs) above 0.05 for volatiles and semivolatiles. All Calibration Check Compounds (CCCs) were within contract-required limits for the initial calibration with Percent Relative Standard Deviations (RSDs) below 30 percent.

No action was taken based on initial calibration response factors.

All non-CCCs had percent RSDs less than or equal to 30 percent for the initial volatile or semivolatile calibration, except:

Date	Fraction	Compound	%RSD	Associated Samples
02/21/90	VOC	Acetone	33.5	All

For samples associated with the corresponding calibration and TCL compounds listed above, positive results and sample quantitation limits were flagged as estimated quantities (J_4 or UJ_4), as a high RSD is indicative of poor system linearity.

4) Continuing Calibrations

All SPCCs were at or above the contract-required Relative Response Factor (RRF(50)) criteria of 0.05 for volatiles and semivolatiles. All CCCs were at or below the contract-required Relative Percent Difference (RPD) limits of 25 percent for the volatile and semivolatile continuing calibrations.

All non-SPCCs had RRF(50)s of greater than or equal to 0.05 for continuing volatile and semivolatile calibrations.

All non-CCCs that were detected in the sample had percent difference (%D) values for the continuing calibration of less than or equal to 25 percent, except:

Date	Time	Fraction	Compound	%D	Associated Samples
02/21/90	1613	VOC	Acetone	40.8	*
			1,1,1-Trichloroethane	26.3	JF622
03/07/90	1307	BNA	bis(2-Ethylhexyl)phthalate	40.2	**
			Benzoic Acid	37.6	JF601, JF605
03/08/90	0935	BNA	bis(2-Ethylhexyl)phthalate	51.4	JF604, JF613

* JF609, JF611, JF616, JF621, JF622
** JF601, JF605, JF606

For samples associated with the corresponding calibration and TCL compounds listed above, positive results were flagged as estimated (J_4).

5) Blanks

Frequency criteria were met for laboratory blank analysis.

The following compounds were detected in laboratory blanks at levels above Instrument Detection Limits (IDL), but below Contract Required Quantitation Limits (CRQL) for TCL compounds:

Blank ID	Fraction	Compound	Conc. µg/L	CRQL µg/L	Associated Samples
VBLKN3	VOC	Acetone	2	10	*
VBLKN4	VOC	Acetone	4	10	**
		2-Butanone	3	10	**
SBLKX9[a]	BNA	Di-n-butylphthalate	5	10	***

Conc. - Concentration
* JF601, JF602, JF608, JF609, JF610, JF611, JF612, JF615, JF616, JF621, JF622
** JF603, JF604, JF605, JF606, JF607, JF613, JF614, JF623
*** JF601, JF602, JF603, JF604, JF605, JF606, JF607, JF613, JF614, JF623
[a] Samples associated with SBLKX9 were analyzed on two separate days; sample results were flagged on the basis of both analyses.

Reported levels of the above compounds in the samples were flagged "UJ_1" (estimated quantitation limit) if the concentrations were below five times the concentrations found in the appropriate blank (10 times for common solvents).

The following Tentatively Identified Compounds (TICs) were identified in the laboratory blanks:

Blank ID	Fraction	Compound	RT	Est. Conc.	Associated Samples
SBLKX7	BNA	Unknown	7.80	10	*
SBLKX9[a]	BNA	Unknown	6.17	50	**
		Unknown	6.43	40	
		Unknown	7.43	10	
		Unknown	29.37	60	

RT - Retention Time
Est. Conc. - Estimated Concentration
* JF608, JF609, JF610, JF611, JF612, JF615, JF616, JF621, JF622
** JF601, JF602, JF603, JF604, JF605, JF606, JF607, JF613, JF614, JF623
[a] Samples associated with SBLKX9 were analyzed on two separate days; sample results were flagged on the basis of both analyses.

Reported levels of these compounds found in the samples were flagged "UJ_1" (estimated quantitation limit) if the reported concentration was less than 10 times the concentration found in the appropriate blank.

6) Pesticide Standards

a) Linearity

The evaluation standards met the contract-required limits of less than 10 percent RSD for linearity.

b) DDT Retention Time

The retention time for DDT on the primary and secondary GC column met or exceeded 12 minutes for the standard runs.

c) Retention Time Windows

The retention time windows met the contract specifications.

d) Analytical Sequence

The analytical sequence met the contract-required frequency and order.

e) 4,4'-DDT/Endrin Degradation

The percent breakdown for Endrin and DDT met the contract limit of 20 percent for the individual or combined breakdown totals.

f) Dibutylchlorendate Retention Time Shift

The Percent Difference calculated for the retention time of dibutylchlorendate did not exceed 2 percent for the packed columns.

7) Surrogate Recovery

Recoveries (%R) for all surrogate compounds for volatile and semi-volatile analysis met QC criteria, except:

Sample Number	Fraction	Compound	%R	QC Limits
JF603	BNA	2-Fluorophenol	12	21 - 100
JF604	BNA	Terphenyl-d14	31	33 - 141
		2-Fluorobiphenyl	19	43 - 116
JF605	BNA	Terphenyl-d14	21	33 - 141
JF606	BNA	Phenol-d6	1	10 - 94
		2-Fluorobiphenyl	1	43 - 116
		2,4,6-Tribromophenol	2	10 - 123
JF607	BNA	Phenol-d6	2	10 - 94
		2-Fluorobiphenyl	2	43 - 116
		2,4,6-Tribromophenol	2	10 - 123
JF609	BNA	Terphenyl-d14	32	33 - 141
JF610	BNA	2-Fluorophenol	13	21 - 100
JF611	BNA	2-Fluorophenol	15	21 - 100
JF614	BNA	2-Fluorophenol	16	21 - 100

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Positive results and quantitation limits for all base fraction compounds in sample JF604 were flagged as estimated (J_4 or UJ_4).

Positive results for samples JF606, and JF607 were flagged as estimated (J_4). Quantitation limits for the JF606 and JF607 semivolatile fractions were rejected (R).

No action was taken based on the single semivolatile surrogate outliers for samples JF603, JF605, JF609, JF610, JF611, and JF614.

All volatile surrogate analysis met contract specifications.

Recoveries for dibutylchlorendate (pesticide/PCB surrogate) met advisory QC guidelines.

All surrogate compounds met calibration QC criteria, except:

Calibration Date	Time	Surrogate	%D	QC Criteria
03/06/90	0830	2,4,6-Tribromophenol	32.2	≤25
03/07/90	1307	2,4,6-Tribromophenol	48.4	≤25
03/08/90	0935	2,4,6-Tribromophenol	31.3	≤25

No action was taken.

8) Matrix Spike and Matrix Spike Duplicate

All MS and MSD Percent Recoveries (%Rs) met advisory QC guidelines, except:

Sample Number	Fraction	Compound	%R	QC Limits
JF604MS	VOC	Trichloroethene	823	71 - 120
JF604MSD	VOC	Trichloroethene	644	71 - 120
JF604MS	BNA	4-Nitrophenol	92	10 - 80
JF604MSD	BNA	4-Nitrophenol	101	10 - 80

The positive result for trichloroethene in sample JF604 was flagged as an estimated quantity (J_4). No action was taken based on the semi-volatile spike recoveries.

All RPD values for the MS and MSD were within QC guidelines.

9) Internal Standard Recovery

All internal standard areas were within established QC limits.

10) Sample Analysis

All reported results above IDLs but below CRQLs were flagged as estimated quantities (J) on the Data Sheets.

11) Laboratory Contact

No laboratory contact was required.

Data Use

The usefulness of the data is based on the criteria outlined in the "Laboratory Data Validation Functional Guidelines for Evaluating Organics Analyses" (February 1, 1988); the Data Qualifier Definitions supplied by the Office of Solid Waste and Emergency Response (September 1989); and the Regional Protocol for Holding Times, Blanks, and VOA Preservation (April 13, 1989).

Upon consideration of the data qualifications noted above, the data are ACCEPTABLE for use except where flagged with data qualifiers which modify the usefulness of the individual values.

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This QA memorandum completes the series of QA reviews of CLP and/or EPA laboratory data for samples collected during the Site Inspection identified on the cover page under the heading Northwest Pipe and Casing.

Data Qualifiers

U - The material was analyzed for, but was not detected. The associated numerical value is a contractual quantitation limit, adjusted for sample weight/sample volume, extraction volume, percent solids and sample dilution.

J - The analyte was analyzed for and was positively identified, but the associated numerical value may not be consistent with the amount actually present in the environmental sample. The data should be seriously considered for decision-making and are usable for many purposes.

UJ - The material was analyzed for, but was not detected. The associated numerical value is an estimated/adjusted quantitation limit. The associated numerical value may not accurately or precisely represent the concentration necessary to detect the analyte in this sample.

A subscript will be appended to the "J" qualifier or the "UJ" qualifier that indicates which of the following quality control criteria were not met:

1. Blank contamination: indicates possible high bias and/or false positives.

2. Calibration range exceeded: indicates possible low bias.

3. Holding times not met: indicates low bias for most analytes with the exception of common laboratory contaminants and chlorinated ethenes (i.e., trichloroethene, 1,1-dichloroethene, and vinyl chloride).

4. Other QC outside control limits: bias not readily determined.

R - Quality Control indicates that data are unusable for all purposes. The analyte was analyzed for, but the presence or absence of the analyte has not been verified. Resampling and reanalysis are necessary for verification to confirm or deny the presence of an analyte.

N - Presumptive evidence of presence of material (tentative identification). Confirmation of the analyte requires further analysis.

NJ - The analysis indicates that the analyte is tentatively identified and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

A subscript will be appended to the "NJ" qualifier that indicates which of the following situations applies:

1. DDT/Endrin breakdown evident.

2. Interference by other sample components.

3. Non-Target Compound List (TCL) compounds (confirmation is necessary using specific target compound methodology to accurately determine the concentration and identity of the detected compounds).

4. A confirmation analysis was missing or quality control criteria were not met for the confirmation analysis.

M - Mass spectral criteria for positive identification were not met. However, in the opinion of the laboratory, the identification is correct based on the analyst's professional judgement.

X - The reported result may be a combination of indistinguishable isomers.

ORG/13558

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO. 00035

JF601

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-01B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF601

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. Date Analyzed: 2/21/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	3.	J
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	8.	
67-64-1	Acetone	10.	UJ+
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	2.	J
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	170.	
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	940* ~~910~~	
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

*hand transcribed from diluted sample analysis.

FORM I VOA 1/87 Rev.

4-27-90

1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JF601

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-01B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF601

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. Date Analyzed: 2/21/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF601

.ab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

1atrix: (soil/water) WATER Lab Sample ID: X0-02-130-01A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF601RE

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 7/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	bis(2-Chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	1.	JJ4
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

4-27-90

CFM SAMPLE NO. 005

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

JF601

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-130-01A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF601RE

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 7/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	2.	UJ
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	2.	JJ
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from diphenylamine

FORM I SV-2 1/87 Rev

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3-27-90

1F

EPA SAMPLE NO.
00504

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JF601

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-01A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF601RE

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 7/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	127-18-4	Ethene, tetrachloro-	5.65	300.	J
2.	- -	UNKNOWN	6.47	40.	UJ
3.	- -	UNKNOWN	7.73	30.	J
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FORM I SV-TIC 1/87 Rev.

3-27-90

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO
JFA01

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JFA08

Matrix: (soil/water) WATER Lab Sample ID: X0-02-131-01A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JFP601

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec._____ Date Extracted: 2/16/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 2/23/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	.050	U
319-85-7	beta-BHC	.050	U
319-86-8	delta-BHC	.050	U
58-89-9	gamma-BHC	.050	U
76-44-8	Heptachlor	.050	U
309-00-2	Aldrin	.050	U
1024-57-3	Heptachlor epoxide	.050	U
959-98-8	Endosulfan I	.050	U
60-57-1	Dieldrin	.10	U
72-55-9	4,4'-DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4,4'-DDD	.10	U
1031-07-8	Endosulfan sulfate	.10	U
50-29-3	4,4'-DDT	.10	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin ketone	.10	U
5103-71-9	alpha-Chlordane	.50	U
5103-74-2	gamma-Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	.50	U
11104-28-2	Aroclor-1221	.50	U
11141-16-5	Aroclor-1232	.50	U
53469-21-9	Aroclor-1242	.50	U
12672-29-6	Aroclor-1248	.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

2-27-90

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF602

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-130-02B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF602

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. Date Analyzed: 2/22/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	6.	J
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	8.	
67-64-1	Acetone	10.	UJ
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	100C* ~~670~~ AJR	
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	79.	
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	54.	
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	1.	J
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

*hand transcribed from diluted sample analy:

FORM I VOA 1/87 Rev.

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1E

EPA SAMPLE NO.

JF602

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-02B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF602

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. Date Analyzed: 2/22/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC 1/87 Rev

2-7-90

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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF602

00519

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-02A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF602

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	bis(2-Chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	69.	
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	8.	J
606-20-2	2,6-Dinitrotoluene	10.	U

4-27-90

1C

EPA SAMPLE NO. 005

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

JF602

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-02A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF602

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	3400* ~~2700~~ AJR	
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	1200* ~~1000~~ AJR	
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	1400* ~~1100~~ AJR	
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	5000* ~~4200~~ AJR	
120-12-7	Anthracene	260.	
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	2500* ~~2500~~ AJR	
129-00-0	Pyrene	2300* ~~1900~~ AJR	
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	260.	
218-01-9	Chrysene	210.	
117-81-7	bis(2-Ethylhexyl)phthalate	25.	
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	47.	
207-08-9	Benzo(k)fluoranthene	38.	
50-32-8	Benzo(a)pyrene	33.	
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from diphenylamine

*hand transcribed from diluted sample analysis

FORM I SV-2 1/87 Rev

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4-27

1F

EPA SAMPLE NO.

00521

JF602

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-130-02A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF602

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 14

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	575-41-7	Naphthalene, 1,3-dimethyl-	17.07	200.	J
2.	- -	UNKNOWN AROMATIC	19.48	200.	J
3.	- -	UNKNOWN AROMATIC	19.57	300.	J
4.	- -	UNKNOWN	21.17	300.	J
5.	132-65-0	Dibenzothiophene	21.45	4000.	J
6.	- -	UNKNOWN AROMATIC	23.05	400.	J
7.	- -	UNKNOWN AROMATIC	23.13	400.	J
8.	- -	UNKNOWN AROMATIC	23.82	300.	J
9.	- -	UNKNOWN AROMATIC	24.33	200.	J
10.	- -	UNKNOWN AROMATIC	24.53	200.	J
11.	- -	UNKNOWN	25.75	900.	J
12.	- -	UNKNOWN AROMATIC	26.33	800.	J
13.	- -	UNKNOWN AROMATIC	26.50	600.	J
14.	- -	UNKNOWN	26.67	600.	J
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4-27-90

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
JF6112

Lab Name: PEI Contract: 68-D9-0137

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-07

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JFP602

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec._____ Date Extracted: 2/16/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 2/23/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	.050	U
319-85-7	beta-BHC	.050	U
319-86-8	delta-BHC	.050	U
58-89-9	gamma-BHC	.050	U
76-44-8	Heptachlor	.050	U
309-00-2	Aldrin	.050	U
1024-57-3	Heptachlor epoxide	.050	U
959-98-8	Endosulfan I	.050	U
60-57-1	Dieldrin	.10	U
72-55-9	4,4'-DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4,4'-DDD	.10	U
1031-07-8	Endosulfan sulfate	.10	U
50-29-3	4,4'-DDT	.10	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin ketone	.10	U
5103-71-9	alpha-Chlordane	.50	U
5103-74-2	gamma-Chlordane	.83	
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	.50	U
11104-28-2	Aroclor-1221	.50	U
11141-16-5	Aroclor-1232	.50	U
53469-21-9	Aroclor-1242	.50	U
12672-29-6	Aroclor-1248	.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

4-27-90

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO. 0008

JF603

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-03B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF603RE

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. Date Analyzed: 2/22/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	3.	J
67-64-1	Acetone	10.	UJ
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	1.	J
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

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2-27-90

1E

EPA SAMPLE NO.

JF603

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-130-03B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF603RE

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. Date Analyzed: 2/22/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC 1/87 Re

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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF603

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-03A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF603RE

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 7/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	bis(2-Chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	1.	J
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

JF603

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-03A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF603RE

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 7/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	3.	J
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	1.	J
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	2.	J
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	7.	J
120-12-7	Anthracene	2.	J
84-74-2	Di-n-butylphthalate	2.	UJ
206-44-0	Fluoranthene	2.	J
129-00-0	Pyrene	2.	J
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	10.	U
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from diphenylamine

FORM I SV-2 1/87 R

recycled paper

4-27-90

1F

EPA SAMPLE NO.
00601

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JF603

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-130-03A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF603RE

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 7/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	6.48	30.	UJ
2.	- -	UNKNOWN	7.13	10.	J
3.	- -	UNKNOWN	7.28	10.	J
4.	- -	UNKNOWN	7.77	60.	J
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FORM I SV-TIC 1/87 Rev.

4-27-90

01205

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JFA113

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JFA08

Matrix: (soil/water) WATER Lab Sample ID: X0-09-130-03A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JFPA03

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec._____ Date Extracted: 2/16/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 2/23/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	.050	U
319-85-7	beta-BHC	.050	U
319-86-8	delta-BHC	.050	U
58-89-9	gamma-BHC	.050	U
76-44-8	Heptachlor	.050	U
309-00-2	Aldrin	.050	U
1024-57-3	Heptachlor epoxide	.050	U
959-98-8	Endosulfan I	.050	U
60-57-1	Dieldrin	.10	U
72-55-9	4,4'-DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4,4'-DDD	.10	U
1031-07-8	Endosulfan sulfate	.10	U
50-29-3	4,4'-DDT	.10	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin ketone	.10	U
5103-71-9	alpha-Chlordane	.50	U
5103-74-2	gamma-Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	.50	U
11104-28-2	Aroclor-1221	.50	U
11141-16-5	Aroclor-1232	.50	U
53469-21-9	Aroclor-1242	.50	U
12672-29-6	Aroclor-1248	.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

2-27-90

recycled paper

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF604

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-04B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF604

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. Date Analyzed: 2/22/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	91* ~~540~~ AJR	
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	6.	
67-64-1	Acetone	10.	UJ4
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	14.	
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	4200* ~~3900~~ AJR	
67-66-3	Chloroform	32.	
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	41.	
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	1100* ~~1600~~ AJR	J4
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	J
71-43-2	Benzene	2.	J
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	4200* ~~4400~~ AJR	
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	21.	
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	19.	
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	41.	

*hand transcribed from diluted sample analysis.

FORM I VOA 1/87 Rev.

2-90

1E

EPA SAMPLE NO.
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JF604

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-130-04B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF604

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. Date Analyzed: 2/22/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 6

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. - -	UNKNOWN AROMATIC	15.12	5.	J
2. - -	UNKNOWN AROMATIC	15.65	10.	J
3. - -	UNKNOWN AROMATIC	15.92	10.	J
4. - -	UNKNOWN AROMATIC	16.08	20.	J
5. - -	UNKNOWN AROMATIC	16.47	8.	J
6. - -	UNKNOWN AROMATIC	16.63	30.	J
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FORM I VOA-TIC

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2-27-90

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ecology and environment

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE No. 00621

JF604

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-04A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF604RE2

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 8/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	UJ4
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	UJ4
106-46-7	1,4-Dichlorobenzene	10.	UJ4
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	UJ4
95-48-7	2-Methylphenol	10.	U
108-60-1	bis(2-Chloroisopropyl)ether	10.	UJ4
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	UJ4
67-72-1	Hexachloroethane	10.	UJ4
98-95-3	Nitrobenzene	10.	UJ4
78-59-1	Isophorone	10.	UJ4
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	2.	J
111-91-1	bis(2-Chloroethoxy)methane	10.	UJ4
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	UJ4
91-20-3	Naphthalene	15.	J4
106-47-8	4-Chloroaniline	10.	UJ4
87-68-3	Hexachlorobutadiene	10.	UJ4
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	3.	J J4
77-47-4	Hexachlorocyclopentadiene	10.	UJ4
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	UJ4
88-74-4	2-Nitroaniline	50.	UJ4
131-11-3	Dimethylphthalate	10.	UJ4
208-96-8	Acenaphthylene	1.	J J4
606-20-2	2,6-Dinitrotoluene	10.	UJ4

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

JF604

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-130-04A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF604RE2

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 8/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50.	UJ4
83-32-9	Acenaphthene	51.	J4
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	27.	J4
121-14-2	2,4-Dinitrotoluene	10.	UJ4
84-66-2	Diethylphthalate	2.	JJ4
7005-72-3	4-Chlorophenyl-phenylether	10.	UJ4
86-73-7	Fluorene	6.	JJ4
100-01-6	4-Nitroaniline	50.	UJ4
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	UJ4
101-55-3	4-Bromophenyl-phenylether	10.	UJ4
118-74-1	Hexachlorobenzene	10.	UJ4
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	7.	JJ4
120-12-7	Anthracene	2.	JJ4
84-74-2	Di-n-butylphthalate	3.	UJ4
206-44-0	Fluoranthene	5.	JJ4
129-00-0	Pyrene	3.	JJ4
85-68-7	Butylbenzylphthalate	2.	JJ4
91-94-1	3,3'-Dichlorobenzidine	20.	UJ4
56-55-3	Benzo(a)anthracene	10.	UJ4
218-01-9	Chrysene	10.	UJ4
117-81-7	bis(2-Ethylhexyl)phthalate	4.	JJ4
117-84-0	Di-n-octylphthalate	10.	UJ4
205-99-2	Benzo(b)fluoranthene	10.	UJ4
207-08-9	Benzo(k)fluoranthene	10.	UJ4
50-32-8	Benzo(a)pyrene	10.	UJ4
193-39-5	Indeno(1,2,3-cd)pyrene	10.	UJ4
53-70-3	Dibenz(a,h)anthracene	10.	UJ4
191-24-2	Benzo(g,h,i)perylene	10.	UJ4

(1) - Cannot be separated from diphenylamine

FORM I SV-2 1/87 R

5/8/90 4-24-90

1F

EPA SAMPLE NO. 0062

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JF604

ab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

atrix: (soil/water) WATER Lab Sample ID: X0-02-130-04A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF604RE2

evel: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

xtraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 8/90

PC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 15

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	6.30	40.	UJ
2.	100-41-4	Benzene, ethyl-	6.78	10.	J
3.	- -	UNKNOWN	6.98	20.	J
4.	- -	UNKNOWN	7.13	10.	J
5.	108-38-3	Benzene, 1,3-dimethyl-	7.55	20.	J
6.	- -	UNKNOWN	7.62	70.	J
7.	- -	UNKNOWN	10.32	40.	J
8.	- -	UNKNOWN AROMATIC	10.75	50.	J
9.	- -	UNKNOWN	15.47	10.	J
10.	- -	UNKNOWN	20.38	20.	J
11.	- -	UNKNOWN	20.53	30.	J
12.	- -	UNKNOWN	22.08	20.	J
13.	- -	UNKNOWN	22.22	10.	J
14.	3244-86-8	4-Amino-9-fluorenone	25.98	20.	J
15.	- -	UNKNOWN	38.18	10.	J
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FORM I SV-TIC

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1/87 Rev.

01214

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF6114

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-04

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JFP604

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec._____ Date Extracted: 2/16/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 2/23/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	.50	U
319-85-7	beta-BHC	.050	U
319-86-8	delta-BHC	.50	U
58-89-9	gamma-BHC	.050	U
76-44-8	Heptachlor	.050	U
309-00-2	Aldrin	.050	U
1024-57-3	Heptachlor epoxide	.050	U
959-98-8	Endosulfan I	.050	U
60-57-1	Dieldrin	.10	U
72-55-9	4,4'-DDE	1.0	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4,4'-DDD	1.0	U
1031-07-8	Endosulfan sulfate	1.0	U
50-29-3	4,4'-DDT	1.0	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin ketone	.10	U
5103-71-9	alpha-Chlordane	.50	U
5103-74-2	gamma-Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	.50	U
11104-28-2	Aroclor-1221	.50	U
11141-16-5	Aroclor-1232	.50	U
53469-21-9	Aroclor-1242	.50	U
12672-29-6	Aroclor-1248	.50	U
11097-69-1	Aroclor-1254	15.	
11096-82-5	Aroclor-1260	1.0	U

4-27-90

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO. 0014

JF605

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-05B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF605RE

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. Date Analyzed: 2/22/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	1.	J
67-64-1	Acetone	10.	UJ4
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	2.	J
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	1.	J
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	1.	J
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	J

FORM I VOA

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1E

EPA SAMPLE NO.

JF605

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-130-05B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF605RE

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. Date Analyzed: 2/22/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN AROMATIC	16.63	10.	J
2.	91-20-3	Naphthalene (ACN)(DOT)	18.30	70.	J
3.					
4.					
5.					
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FORM I VOA-TIC 1/87

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ecology and environment

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
00666

JF605

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-054

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF605

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 7/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	bis(2-Chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	7.	JJ
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	4.	J
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	3.	J
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

VOLATILE ORGANICS AN
TENTATIVELY IDENTI

Lab Name: PEI

Lab Code: PEI Case No.: 1355

Matrix: (soil/water) WATER

Sample wt/vol: 5.000 (g/mL)

Level: (low/med) LOW

% Moisture: not dec. 100.

Column: (pack/cap) CAP

Number TICs found: 2

	CAS NUMBER	COMPOUND
1.	- -	UNKNOWN AROMATIC
2.	91-20-3	Naphthalene (ACN
3.		
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EPA SAMPLE NO.

JF605

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-05A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF605

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 7/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 16

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	6.47	40.	UJ
2.	- -	UNKNOWN	7.78	90.	J
3.	- -	UNKNOWN	19.37	10.	J
4.	- -	UNKNOWN	20.05	20.	J
5.	132-65-0	Dibenzothiophene	21.22	20.	J
6.	260-94-6	Acridine	21.77	10.	J
7.	7599-23-7	1,1'-Biphenyl, 2-azido-	22.12	90.	J
8.	- -	UNKNOWN AROMATIC	22.82	20.	J
9.	- -	UNKNOWN AROMATIC	22.88	20.	J
10.	- -	UNKNOWN AROMATIC	22.98	10.	J
11.	- -	UNKNOWN	23.10	40.	J
12.	- -	UNKNOWN AROMATIC	23.60	9.	J
13.	- -	UNKNOWN	25.02	10.	J
14.	- -	UNKNOWN	25.83	10.	J
15.	- -	UNKNOWN AROMATIC	26.08	20.	J
16.	- -	UNKNOWN AROMATIC	26.25	10.	J
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1C

EPA SAMPLE NO.
0066

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

JF605

b Name: PEI Contract: 68-D9-0037

ab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

atrix: (soil/water) WATER Lab Sample ID: X0-02-130-05A

ample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF605

.evel: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 7/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	66.	
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	35.	
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	55.	
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	270.	
120-12-7	Anthracene	83.	
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	210.	
129-00-0	Pyrene	190.	
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	72.	
218-01-9	Chrysene	54.	
117-81-7	bis(2-Ethylhexyl)phthalate	3.	JJ4
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	78.	
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	41.	
193-39-5	Indeno(1,2,3-cd)pyrene	22.	
53-70-3	Dibenz(a,h)anthracene	10.	J
191-24-2	Benzo(g,h,i)perylene	20.	

(1) - Cannot be separated from diphenylamine

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF606 00156

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-06B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF606

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. Date Analyzed: 2/22/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	73.	
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	3.	J
67-64-1	Acetone	10.	UJ4
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	3.	J
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	940* ~~880~~ AJR	
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	350* ~~360~~ AJR	
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	160.	
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

*hand transcribed from diluted sample analys.

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1E

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JF606 00157

'EI Contract: 68-D9-0037

'EI Case No.: 13558 SAS No.: SDG No.: JF608

)il/water) WATER Lab Sample ID: XO-02-130-06B

/ol: 5.000 (g/mL) ML Lab File ID: JF606

low/med) LOW Date Received: 2/15/90

not dec. 100. Date Analyzed: 2/22/90

)ack/cap) CAP Dilution Factor: 1.00

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

:s found: 0

BER	COMPOUND NAME	RT	EST. CONC.	Q

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF606

ab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No : 13558 SAS No.: SDG No.: JF608

atrix: (soil/water) WATER Lab Sample ID: X0-02-130-06A

ample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF606.

Level: (low/med) LOW Date Received: 2/15/90

Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 7/90

PC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	UR
111-44-4	bis(2-Chloroethyl)ether	10.	UR
95-57-8	2-Chlorophenol	10.	UR
541-73-1	1,3-Dichlorobenzene	10.	UR
106-46-7	1,4-Dichlorobenzene	10.	UR
100-51-6	Benzyl alcohol	10.	UR
95-50-1	1,2-Dichlorobenzene	10.	UR
95-48-7	2-Methylphenol	10.	UR
108-60-1	bis(2-Chloroisopropyl)ether	10.	UR
106-44-5	4-Methylphenol	10.	UR
621-64-7	N-Nitroso-di-n-propylamine	10.	UR
67-72-1	Hexachloroethane	10.	UR
98-95-3	Nitrobenzene	10.	UR
78-59-1	Isophorone	10.	UR
88-75-5	2-Nitrophenol	10.	UR
105-67-9	2,4-Dimethylphenol	10.	UR
65-85-0	Benzoic acid	50.	UR
111-91-1	bis(2-Chloroethoxy)methane	10.	UR
120-83-2	2,4-Dichlorophenol	10.	UR
120-82-1	1,2,4-Trichlorobenzene	10.	UR
91-20-3	Naphthalene	10.	UR
106-47-8	4-Chloroaniline	10.	UR
87-68-3	Hexachlorobutadiene	10.	UR
59-50-7	4-Chloro-3-methylphenol	10.	UR
91-57-6	2-Methylnaphthalene	10.	UR
77-47-4	Hexachlorocyclopentadiene	10.	UR
88-06-2	2,4,6-Trichlorophenol	10.	UR
95-95-4	2,4,5-Trichlorophenol	50.	UR
91-58-7	2-Chloronaphthalene	10.	UR
88-74-4	2-Nitroaniline	50.	UR
131-11-3	Dimethylphthalate	10.	UR
208-96-8	Acenaphthylene	10.	UR
606-20-2	2,6-Dinitrotoluene	10.	UR

00714 EPA SAMPLE NO

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

JF606

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-06A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF606

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 7/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50.	UR
83-32-9	Acenaphthene	2.	JJ4
51-28-5	2,4-Dinitrophenol	50.	UR
100-02-7	4-Nitrophenol	50.	UR
132-64-9	Dibenzofuran	10.	UR
121-14-2	2,4-Dinitrotoluene	10.	UR
84-66-2	Diethylphthalate	10.	UR
7005-72-3	4-Chlorophenyl-phenylether	10.	UR
86-73-7	Fluorene	2.	JJ4
100-01-6	4-Nitroaniline	50.	UR
534-52-1	4,6-Dinitro-2-methylphenol	50.	UR
86-30-6	N-Nitrosodiphenylamine (1)	10.	UR
101-55-3	4-Bromophenyl-phenylether	10.	UR
118-74-1	Hexachlorobenzene	10.	UR
87-86-5	Pentachlorophenol	50.	UR
85-01-8	Phenanthrene	4.	JJ4
120-12-7	Anthracene	1.	JJ4
84-74-2	Di-n-butylphthalate	2.	UJ1
206-44-0	Fluoranthene	6.	JJ4
129-00-0	Pyrene	7.	JJ4
85-68-7	Butylbenzylphthalate	10.	UR
91-94-1	3,3'-Dichlorobenzidine	20.	UR
56-55-3	Benzo(a)anthracene	10.	UR
218-01-9	Chrysene	2.	JJ4
117-81-7	bis(2-Ethylhexyl)phthalate	1.	JJ4
117-84-0	Di-n-octylphthalate	10.	UR
205-99-2	Benzo(b)fluoranthene	10.	UR
207-08-9	Benzo(k)fluoranthene	10.	UR
50-32-8	Benzo(a)pyrene	10.	UR
193-39-5	Indeno(1,2,3-cd)pyrene	10.	UR
53-70-3	Dibenz(a,h)anthracene	10.	UR
191-24-2	Benzo(g,h,i)perylene	10.	UR

(1) - Cannot be separated from diphenylamine

FORM I SV-2

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EPA SAMPLE NO.

JF606

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-06A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF606

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 7/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 5

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	127-18-4	Ethene, tetrachloro-	5.60	30.	J
2.	- -	UNKNOWN	6.47	40.	UJ
3.	- -	UNKNOWN	7.13	20.	J
4.	- -	UNKNOWN	7.28	20.	J
5.	- -	UNKNOWN	7.77	80.	J
6.					
7.					
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FORM I SV-TIC

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO
JF608

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-06

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JFP606

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec.____ Date Extracted: 2/16/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 2/23/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	.050	U
319-85-7	beta-BHC	.050	U
319-86-8	delta-BHC	.050	U
58-89-9	gamma-BHC	.050	U
76-44-8	Heptachlor	.050	U
309-00-2	Aldrin	.050	U
1024-57-3	Heptachlor epoxide	.050	U
959-98-8	Endosulfan I	.050	U
60-57-1	Dieldrin	.10	U
72-55-9	4,4'-DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4,4'-DDD	.10	U
1031-07-8	Endosulfan sulfate	.10	U
50-29-3	4,4'-DDT	.10	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin ketone	.10	U
5103-71-9	alpha-Chlordane	.50	U
5103-74-2	gamma-Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	.50	U
11104-28-2	Aroclor-1221	.50	U
11141-16-5	Aroclor-1232	.50	U
53469-21-9	Aroclor-1242	.50	U
12672-29-6	Aroclor-1248	.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

4-27-91

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF607 00183

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-130-07B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF607

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. Date Analyzed: 2/22/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	38.	
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	2.	J
67-64-1	Acetone	10.	UJ4
75-15-0	Carbon Disulfide	8.	
75-35-4	1,1-Dichloroethene	3.	J
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	430* ~~380~~ ATR	
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	120.	
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	27.	
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

*hand transcribed from diluted sample analys

FORM I VOA 1/87 Rev.

1E

EPA SAMPLE NO.

JF607 00184

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-130-07B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF607

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. Date Analyzed: 2/22/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	G
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FORM I VOA-TIC 1/87

4-27-90

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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF607

ab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

atrix: (soil/water) WATER Lab Sample ID: X0-02-130-07A

ample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF607RE

Level: (low/med) LOW Date Received: 2/15/90

Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 8/90

PC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	UR
111-44-4	bis(2-Chloroethyl)ether	10.	UR
95-57-8	2-Chlorophenol	10.	UR
541-73-1	1,3-Dichlorobenzene	10.	UR
106-46-7	1,4-Dichlorobenzene	10.	UR
100-51-6	Benzyl alcohol	10.	UR
95-50-1	1,2-Dichlorobenzene	10.	UR
95-48-7	2-Methylphenol	10.	UR
108-60-1	bis(2-Chloroisopropyl)ether	10.	UR
106-44-5	4-Methylphenol	10.	UR
621-64-7	N-Nitroso-di-n-propylamine	10.	UR
67-72-1	Hexachloroethane	10.	UR
98-95-3	Nitrobenzene	10.	UR
78-59-1	Isophorone	10.	UR
88-75-5	2-Nitrophenol	10.	UR
105-67-9	2,4-Dimethylphenol	10.	UR
65-85-0	Benzoic acid	50.	UR
111-91-1	bis(2-Chloroethoxy)methane	10.	UR
120-83-2	2,4-Dichlorophenol	10.	UR
120-82-1	1,2,4-Trichlorobenzene	10.	UR
91-20-3	Naphthalene	10.	UR
106-47-8	4-Chloroaniline	10.	UR
87-68-3	Hexachlorobutadiene	10.	UR
59-50-7	4-Chloro-3-methylphenol	10.	UR
91-57-6	2-Methylnaphthalene	10.	UR
77-47-4	Hexachlorocyclopentadiene	10.	UR
88-06-2	2,4,6-Trichlorophenol	10.	UR
95-95-4	2,4,5-Trichlorophenol	50.	UR
91-58-7	2-Chloronaphthalene	10.	UR
88-74-4	2-Nitroaniline	50.	UR
131-11-3	Dimethylphthalate	10.	UR
208-96-8	Acenaphthylene	10.	UR
606-20-2	2,6-Dinitrotoluene	10.	UR

5/8/90

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

N 0076

JF607

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-07A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF607RE

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 8/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50.	UR
83-32-9	Acenaphthene	10.	UR
51-28-5	2,4-Dinitrophenol	50.	UR
100-02-7	4-Nitrophenol	50.	UR
132-64-9	Dibenzofuran	10.	UR
121-14-2	2,4-Dinitrotoluene	10.	UR
84-66-2	Diethylphthalate	10.	UR
7005-72-3	4-Chlorophenyl-phenylether	10.	UR
86-73-7	Fluorene	10.	UR
100-01-6	4-Nitroaniline	50.	UR
534-52-1	4,6-Dinitro-2-methylphenol	50.	UR
86-30-6	N-Nitrosodiphenylamine (1)	10.	UR
101-55-3	4-Bromophenyl-phenylether	10.	UR
118-74-1	Hexachlorobenzene	10.	UR
87-86-5	Pentachlorophenol	50.	UR
85-01-8	Phenanthrene	10.	UR
120-12-7	Anthracene	10.	UR
84-74-2	Di-n-butylphthalate	3.	UJ
206-44-0	Fluoranthene	10.	UR
129-00-0	Pyrene	10.	UR
85-68-7	Butylbenzylphthalate	10.	UR
91-94-1	3,3'-Dichlorobenzidine	20.	UR
56-55-3	Benzo(a)anthracene	10.	UR
218-01-9	Chrysene	10.	UR
117-81-7	bis(2-Ethylhexyl)phthalate	10.	UR
117-84-0	Di-n-octylphthalate	10.	UR
205-99-2	Benzo(b)fluoranthene	10.	UR
207-08-9	Benzo(k)fluoranthene	10.	UR
50-32-8	Benzo(a)pyrene	10.	UR
193-39-5	Indeno(1,2,3-cd)pyrene	10.	UR
53-70-3	Dibenz(a,h)anthracene	10.	UR
191-24-2	Benzo(g,h,i)perylene	10.	UR

(1) - Cannot be separated from diphenylamine

FORM I SV-2 1/87 Re

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5/8/90

2-7-90

1F

EPA SAMPLE NO.

JF607

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-07A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF607RE

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 8/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 4

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	6.27	40.	UJ
2.	- -	UNKNOWN	6.65	9.	J
3.	- -	UNKNOWN	6.97	30.	J
4.	- -	UNKNOWN	7.58	40.	J
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FORM I SV-TIC 1/87 Rev.

4-27-90

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE
JF6117

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF6108

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-C

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JFP607

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec._____ Date Extracted: 2/16/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 2/22/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	.050	U
319-85-7	beta-BHC	.050	U
319-86-8	delta-BHC	.050	U
58-89-9	gamma-BHC	.050	U
76-44-8	Heptachlor	.050	U
309-00-2	Aldrin	.050	U
1024-57-3	Heptachlor epoxide	.050	U
959-98-8	Endosulfan I	.050	U
60-57-1	Dieldrin	.10	U
72-55-9	4,4'-DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4,4'-DDD	.10	U
1031-07-8	Endosulfan sulfate	.10	U
50-29-3	4,4'-DDT	.10	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin ketone	.10	U
5103-71-9	alpha-Chlordane	.50	U
5103-74-2	gamma-Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	.50	U
11104-28-2	Aroclor-1221	.50	U
11141-16-5	Aroclor-1232	.50	U
53469-21-9	Aroclor-1242	.50	U
12672-29-6	Aroclor-1248	.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

4-27

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF608 0209

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-121-01B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF608

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. Date Analyzed: 2/21/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	3.	J
67-64-1	Acetone	10.	UJ
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	2.	J
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	3.	J
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

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1-27-90

1E

EPA SAMPLE NO.
002

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JF608

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-121-01B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF608

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. Date Analyzed: 2/21/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC 1/87

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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF608

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-01A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF608

Level: (low/med) LOW Date Received: 2/14/90

Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

PC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	bis(2-Chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

4-27-90

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

JF608

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-121-01A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF608

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	10.	U
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from diphenylamine

FORM I SV-2 1/87 Rev

2-27-90

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1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JF608

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-01A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF608

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 1

CONCENTRATION UNITS.
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	7.83	40.	UJ,
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FORM I SV-TIC

4-27-90

1/87 Rev.

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE
JF608

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-0

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JFP608

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec._____ Date Extracted: 2/16/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 2/22/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	.050	U
319-85-7	beta-BHC	.050	U
319-86-8	delta-BHC	.050	U
58-89-9	gamma-BHC	.050	U
76-44-8	Heptachlor	.050	U
309-00-2	Aldrin	.050	U
1024-57-3	Heptachlor epoxide	.050	U
959-98-8	Endosulfan I	.050	U
60-57-1	Dieldrin	.10	U
72-55-9	4,4'-DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4,4'-DDD	.10	U
1031-07-8	Endosulfan sulf	.10	U
50-29-3	4,4'-DDT	.10	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin ketone	.10	U
5103-71-9	alpha-Chlordane	.50	U
5103-74-2	gamma-Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	.50	U
11104-28-2	Aroclor-1221	.50	U
11141-16-5	Aroclor-1232	.50	U
53469-21-9	Aroclor-1242	.50	U
12672-29-6	Aroclor-1248	.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF609

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-121-02B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF609

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. Date Analyzed: 2/21/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	6.	
67-64-1	Acetone	5.	UJ, J4
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	4.	J
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

2-27-90

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EPA SAMPLE NO.

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JF609

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-02B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF609

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. Date Analyzed: 2/21/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC 1/87

4-27-90

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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF609

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-121-02A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF609

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	bis(2-Chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

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EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

JF609

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-121-02A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF609

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	10.	U
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from diphenylamine

FORM I SV-2 1/87 Re

4-27-90

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EPA SAMPLE NO. 00509

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JF609

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-02A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF609

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. - -	UNKNOWN	7.35	10.	J
2. - -	UNKNOWN	7.80	60.	UJ1
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FORM I SV-TIC

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PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
JF609

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-0

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JFP609

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec._____ Date Extracted: 2/16/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 2/27/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	.050	U
319-85-7	beta-BHC	.050	U
319-86-8	delta-BHC	.050	U
58-89-9	gamma-BHC	.050	U
76-44-8	Heptachlor	.050	U
309-00-2	Aldrin	.050	U
1024-57-3	Heptachlor epoxide	.050	U
959-98-8	Endosulfan I	.050	U
60-57-1	Dieldrin	.10	U
72-55-9	4,4'-DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4,4'-DDD	.10	U
1031-07-8	Endosulfan sulfate	.10	U
50-29-3	4,4'-DDT	.10	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin ketone	.10	U
5103-71-9	alpha-Chlordane	.50	U
5103-74-2	gamma-Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	.50	U
11104-28-2	Aroclor-1221	.50	U
11141-16-5	Aroclor-1232	.50	U
53469-21-9	Aroclor-1242	.50	U
12672-29-6	Aroclor-1248	.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

4-27-90

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FORM I PEST

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF610

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-121-03B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF610

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. Date Analyzed: 2/21/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	7.	
67-64-1	Acetone	10.	UJ
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

FORM I VOA

4-27-90 1/87 Rev.

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EPA SAMPLE NO.
0023

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JF610

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-03B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF610

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. Date Analyzed: 2/21/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC

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ecology and environment

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF610

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-03A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF610

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	bis(2-Chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

JF610

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-03A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF610

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	10.	U
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from diphenylamine

FORM I SV-2 /87 Rev.

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EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JF610

Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No. JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-121-03A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF610

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	7.80	40.	UJ
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FORM I SV-TIC

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JFP610

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JFP610

Matrix: (soil/water) WATER Lab Sample ID: XU-02-121-035

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JFP610

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec._____ Date Extracted: 2/16/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 2/22/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	.050	U
319-85-7	beta-BHC	.050	U
319-86-8	delta-BHC	.050	U
58-89-9	gamma-BHC	.050	U
76-44-8	Heptachlor	.050	U
309-00-2	Aldrin	.050	U
1024-57-3	Heptachlor epoxide	.050	U
959-98-8	Endosulfan I	.050	U
60-57-1	Dieldrin	.10	U
72-55-9	4,4'-DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4,4'-DDD	.10	U
1031-07-8	Endosulfan sulfate	.10	U
50-29-3	4,4'-DDT	.10	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin ketone	.10	U
5103-71-9	alpha-Chlordane	.50	U
5103-74-2	gamma-Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	.50	U
11104-28-2	Aroclor-1221	.50	U
11141-16-5	Aroclor-1232	.50	U
53469-21-9	Aroclor-1242	.50	U
12672-29-6	Aroclor-1248	.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF611

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-121-04B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF611

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. Date Analyzed: 2/21/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	6.	
67-64-1	Acetone	4.	UJ, J4
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

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EPA SAMPLE NO.

00239

JF611

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-121-04B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF611

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. Date Analyzed: 2/21/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

JF611

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF605

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-04A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF611

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	bis(2-Chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

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00831 EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

JF611

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-04A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF611

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	10.	U
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from diphenylamine

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EPA SAMPLE NO.

JF611

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-121-04A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF611

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. - -	UNKNOWN	7.80	40.	UJ
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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JFA11

Lab Name: PEI Contract: 68-D9-0032

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JFA11R

Matrix: (soil/water) WATER Lab Sample ID: XU-02-121-044

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JFPA11

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec._____ Date Extracted: 2/16/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 2/22/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	.050	U
319-85-7	beta-BHC	.050	U
319-86-8	delta-BHC	.050	U
58-89-9	gamma-BHC	.050	U
76-44-8	Heptachlor	.050	U
309-00-2	Aldrin	.050	U
1024-57-3	Heptachlor epoxide	.050	U
959-98-8	Endosulfan I	.050	U
60-57-1	Dieldrin	.10	U
72-55-9	4,4'-DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4,4'-DDD	.10	U
1031-07-8	Endosulfan sulfate	.10	U
50-29-3	4,4'-DDT	.10	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin ketone	.10	U
5103-71-9	alpha-Chlordane	.50	U
5103-74-2	gamma-Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	.50	U
11104-28-2	Aroclor-1221	.50	U
11141-16-5	Aroclor-1232	.50	U
53469-21-9	Aroclor-1242	.50	U
12672-29-6	Aroclor-1248	.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF612

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-121-058

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF612

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. Date Analyzed: 2/21/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	8.	
67-64-1	Acetone	10.	UJ4
75-15-0	Carbon Disulfide	4.	J
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	13.	
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

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EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JF612

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-121-05B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF612

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. Date Analyzed: 2/21/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

JF612 00841

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-05A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF612

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	bis(2-Chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

JF612

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-121-05A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF612

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	10.	U
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from diphenylamine

FORM I SV-2 1/87 Rev.

4-27-90

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EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JF612

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-121-05A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF612

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. - -	UNKNOWN	7.32	20.	J
2. - -	UNKNOWN	7.78	80.	UJ,
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FORM I SV-TIC

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1/87 Rev

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JFP612

Lab Name: PEI Contract: 68-D9-0137

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JFA118

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-05-

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: JFP612

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec._____ Date Extracted: 2/16/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 2/22/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	.050	U
319-85-7	beta-BHC	.050	U
319-86-8	delta-BHC	.050	U
58-89-9	gamma-BHC	.050	U
76-44-8	Heptachlor	.050	U
309-00-2	Aldrin	.050	U
1024-57-3	Heptachlor epoxide	.050	U
959-98-8	Endosulfan I	.050	U
60-57-1	Dieldrin	.10	U
72-55-9	4,4'-DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4,4'-DDD	.10	U
1031-07-8	Endosulfan sulfate	.10	U
50-29-3	4,4'-DDT	.10	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin ketone	.10	U
5103-71-9	alpha-Chlordane	.50	U
5103-74-2	gamma-Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	.50	U
11104-28-2	Aroclor-1221	.50	U
11141-16-5	Aroclor-1232	.50	U
53469-21-9	Aroclor-1242	.50	U
12672-29-6	Aroclor-1248	.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

4-27-90

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO. 00257

JF613

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-131-08B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF613

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. Date Analyzed: 2/22/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	3.	J
67-64-1	Acetone	10.	U J4
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	1.	J
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	7.	
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

4-27-90

FORM I VOA 1/87 Rev.

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EPA SAMPLE NO.
0025

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JF613

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-131-08B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF613

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. Date Analyzed: 2/22/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 2 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. - -	UNKNOWN	17.30	30.	J
2. - -	UNKNOWN	15.65	20.	J
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF613

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-09A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF613RE

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 8/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	bis(2-Chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

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EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

00851

JF613

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-08A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF613RE

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 8/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	1.	UJ1
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	1.	JJ4
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from diphenylamine

FORM I SV-2

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1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

~~B 0085~~
JF613

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-08A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF613RE

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 8/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 3

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. - -	UNKNOWN	6.27	40.	UJ,
2. - -	UNKNOWN	7.12	30.	J
3. - -	UNKNOWN	7.63	200.	J
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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JFA13

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JFA0R

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-054

Sample wt/vol: 1000.0 (g/ml) ML Lab File ID: JFP613

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec._____ Date Extracted: 2/16/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 2/22/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	.050	U
319-85-7	beta-BHC	.050	U
319-86-8	delta-BHC	.050	U
58-89-9	gamma-BHC	.050	U
76-44-8	Heptachlor	.050	U
309-00-2	Aldrin	.050	U
1024-57-3	Heptachlor epoxide	.050	U
959-98-8	Endosulfan I	.050	U
60-57-1	Dieldrin	.10	U
72-55-9	4,4'-DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4,4'-DDD	.10	U
1031-07-8	Endosulfan sulfate	.10	U
50-29-3	4,4'-DDT	.10	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin ketone	.10	U
5103-71-9	alpha-Chlordane	.50	U
5103-74-2	gamma-Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	.50	U
11104-28-2	Aroclor-1221	.50	U
11141-16-5	Aroclor-1232	.50	U
53469-21-9	Aroclor-1242	.50	U
12672-29-6	Aroclor-1248	.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

1-27-90

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1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO. 00269

JF614

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-09B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF614

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. Date Analyzed: 2/22/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	G
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	3.	J
67-64-1	Acetone	10.	U J4
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	6.	
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	8.	
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

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1E

EPA SAMPLE NO.
00270

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JF614

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-130-09B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF614

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. Date Analyzed: 2/22/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF614

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-09A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF614

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/12/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	G
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	bis(2-Chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

4-27-90 1/87 Rev

00869 EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

JF614

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-09A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF614

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/12/90

GPC Cleanup: (Y/N) N pH 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	G
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	10.	U
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from diphenylamine

1F

00870 EPA SAMPLE NO

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JF614

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-09A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF614

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/12/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 7

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	6.18	50.	uJ,
2.	- -	UNKNOWN	6.53	9.	J
3.	- -	UNKNOWN	7.45	30.	uJ,
4.	- -	UNKNOWN	7.90	20.	J
5.	- -	UNKNOWN	31.57	30.	J
6.	- -	UNKNOWN	31.98	30.	J
7.	- -	UNKNOWN	39.58	10.	J
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4-27-90

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1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JFP614

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-094

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JFP614

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec._____ Date Extracted: 2/16/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 2/22/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	.050	U
319-85-7	beta-BHC	.050	U
319-86-8	delta-BHC	.050	U
58-89-9	gamma-BHC	.050	U
76-44-8	Heptachlor	.050	U
309-00-2	Aldrin	.050	U
1024-57-3	Heptachlor epoxide	.050	U
959-98-8	Endosulfan I	.050	U
60-57-1	Dieldrin	.10	U
72-55-9	4,4'-DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4,4'-DDD	.10	U
1031-07-8	Endosulfan sulfate	.10	U
50-29-3	4,4'-DDT	.10	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin ketone	.10	U
5103-71-9	alpha-Chlordane	.50	U
5103-74-2	gamma-Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	.50	U
11104-28-2	Aroclor-1221	.50	U
11141-16-5	Aroclor-1232	.50	U
53469-21-9	Aroclor-1242	.50	U
12672-29-6	Aroclor-1248	.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

4-27-90

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FORM I PEST

ecology and environment
ecology and environment
ecology and environment

1/87 Re

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF615

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-06B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF615

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. Date Analyzed: 2/21/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	7.	
67-64-1	Acetone	10.	UJ
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

FORM I VOA

4-27-87 Rev.

1E

EPA SAMPLE NO.

JF615

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-068

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF615

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. Date Analyzed: 2/21/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. - -	UNKNOWN	12.70	10.	J
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FORM I VOA-TIC

4-27-90

1/87 Rev

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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

00885

JF615

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-121-06A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF615

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	bis(2-Chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

4-27-90

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

JF615

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-121-06A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF615

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	G
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	10.	U
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from diphenylamine

FORM I SV-2

4-27-90 1/87 Rev.

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1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JF615

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-06A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF615

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	7.78	20.	UJ
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FORM I SV-TIC

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1/87 Rev.

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
JF615

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XU-02-121-064

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JFP615

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec._____ Date Extracted: 2/16/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 2/21/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	.050	U
319-85-7	beta-BHC	.050	U
319-86-8	delta-BHC	.050	U
58-89-9	gamma-BHC	.050	U
76-44-8	Heptachlor	.050	U
309-00-2	Aldrin	.050	U
1024-57-3	Heptachlor epoxide	.050	U
959-98-8	Endosulfan I	.050	U
60-57-1	Dieldrin	.10	U
72-55-9	4,4'-DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4,4'-DDD	.10	U
1031-07-8	Endosulfan sulfate	.10	U
50-29-3	4,4'-DDT	.10	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin ketone	.10	U
5103-71-9	alpha-Chlordane	.50	U
5103-74-2	gamma-Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	.50	U
11104-28-2	Aroclor-1221	.50	U
11141-16-5	Aroclor-1232	.50	U
53469-21-9	Aroclor-1242	.50	U
12672-29-6	Aroclor-1248	.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

4-27-90

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF616

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-07B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF616

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. Date Analyzed: 2/21/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	7.	
67-64-1	Acetone	5.	UJ, J
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

FORM I VOA

4-27-90 1/87 Rev.

1E

LIM SAMPLE NO.

JF616

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-121-07B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF616

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. Date Analyzed: 2/21/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC 1/87 Re

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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF616

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-07A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF616

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	bis(2-Chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

JF616

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-121-07A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF616

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	10.	U
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from diphenylamine

FORM I SV-2

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CFM SAMPLE NO. 0898

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JF616

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-07A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF616

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. - -	UNKNOWN	7.32	10.	J
2. - -	UNKNOWN	7.77	50.	UJ
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4-27-90 1/87 Rev.

01321

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF616

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF6118

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-07A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JFP616

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec._____ Date Extracted: 2/16/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 2/22/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	.050	U
319-85-7	beta-BHC	.050	U
319-86-8	delta-BHC	.050	U
58-89-9	gamma-BHC	.050	U
76-44-8	Heptachlor	.050	U
309-00-2	Aldrin	.050	U
1024-57-3	Heptachlor epoxide	.050	U
959-98-8	Endosulfan I	.050	U
60-57-1	Dieldrin	.10	U
72-55-9	4,4'-DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4,4'-DDD	.10	U
1031-07-8	Endosulfan sulfate	.10	U
50-29-3	4,4'-DDT	.10	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin ketone	.10	U
5103-71-9	alpha-Chlordane	.50	U
5103-74-2	gamma-Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	.50	U
11104-28-2	Aroclor-1221	.50	U
11141-16-5	Aroclor-1232	.50	U
53469-21-9	Aroclor-1242	.50	U
12672-29-6	Aroclor-1248	.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

4-27-90

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF621

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-08B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF621

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. Date Analyzed: 2/21/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	7.	
67-64-1	Acetone	4.	UJ, J4
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

FORM I VOA

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1C

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JF621

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-08B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF621

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. Date Analyzed: 2/21/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC 1/87 Rev

4-27-90

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1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO

00908

JF621

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-121-08A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF621

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	bis(2-Chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

4-27-90

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

JF621

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-121-08A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF621

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	10.	U
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from diphenylamine

FORM I SV-2

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1F

EPA SAMPLE NO.

JF621

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-08A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF621

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 3

CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	7.32	10.	J
2.	- -	UNKNOWN	7.77	50.	UJ
3.	- -	UNKNOWN	8.07	9.	J
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FORM I SV-TIC 1/87 Rev.

4-27-90

01329

EPA SAMPLE NO

JF621

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XD-02-121-DRA

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JFP621

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec._____ Date Extracted: 2/16/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 2/22/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	.050	U
319-85-7	beta-BHC	.050	U
319-86-8	delta-BHC	.050	U
58-89-9	gamma-BHC	.050	U
76-44-8	Heptachlor	.050	U
309-00-2	Aldrin	.050	U
1024-57-3	Heptachlor epoxide	.050	U
959-98-8	Endosulfan I	.050	U
60-57-1	Dieldrin	.10	U
72-55-9	4,4'-DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4,4'-DDD	.10	U
1031-07-8	Endosulfan sulfate	.10	U
50-29-3	4,4'-DDT	.10	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin ketone	.10	U
5103-71-9	alpha-Chlordane	.50	U
5103-74-2	gamma-Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	.50	U
11104-28-2	Aroclor-1221	.50	U
11141-16-5	Aroclor-1232	.50	U
53469-21-9	Aroclor-1242	.50	U
12672-29-6	Aroclor-1248	.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

2-27-90

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF622

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-121-09B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF622

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. Date Analyzed: 2/21/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	10.	U
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	8.	
67-64-1	Acetone	6.	UJ, J4
75-15-0	Carbon Disulfide	30.	
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	5.	U
67-66-3	Chloroform	5.	U
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	1.	J J4
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	5.	U
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	5.	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

FORM I VOA

4-27-90 1/87 Rev.

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JF622

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-121-09B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF622

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. Date Analyzed: 2/21/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 0 CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
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FORM I VOA-TIC 4-27-90 1/87 Rev.

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00921

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF622

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-121-09A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF622

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	bis(2-Chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	50.	U
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

4-27-90

EPA SAMPLE NO. 00922

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

JF622

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-09A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF622

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	10.	U
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	10.	U
206-44-0	Fluoranthene	10.	U
129-00-0	Pyrene	10.	U
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	10.	U
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from diphenylamine

FORM I SV-2 1/87 Rev.

7-90

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1F

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JF622

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-121-09A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF622

Level: (low/med) LOW Date Received: 2/14/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/ 6/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 2

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	7.32	9.	J
2.	- -	UNKNOWN	7.77	50.	UJ
3.					
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FORM I SV-TIC

4-27-90 1/87 Rev.

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
JF622

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XN-02-121-09

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JFP622

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec._____ Date Extracted: 2/16/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 2/23/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	.050	U
319-85-7	beta-BHC	.050	U
319-86-8	delta-BHC	.050	U
58-89-9	gamma-BHC	.050	U
76-44-8	Heptachlor	.050	U
309-00-2	Aldrin	.050	U
1024-57-3	Heptachlor epoxide	.050	U
959-98-8	Endosulfan I	.050	U
60-57-1	Dieldrin	.10	U
72-55-9	4,4'-DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4,4'-DDD	.10	U
1031-07-8	Endosulfan sulfate	.10	U
50-29-3	4,4'-DDT	.10	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin ketone	.10	U
5103-71-9	alpha-Chlordane	.50	U
5103-74-2	gamma-Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	.50	U
11104-28-2	Aroclor-1221	.50	U
11141-16-5	Aroclor-1232	.50	U
53469-21-9	Aroclor-1242	.50	U
12672-29-6	Aroclor-1248	.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

2-27-90

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ecology and environment

1A
VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF623

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-108

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF623

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. Date Analyzed: 2/22/90

Column: (pack/cap) CAP Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10.	U
74-83-9	Bromomethane	10.	U
75-01-4	Vinyl Chloride	13.	
75-00-3	Chloroethane	10.	U
75-09-2	Methylene Chloride	4.	J
67-64-1	Acetone	10.	UJ4
75-15-0	Carbon Disulfide	5.	U
75-35-4	1,1-Dichloroethene	5.	U
75-34-3	1,1-Dichloroethane	5.	U
540-59-0	1,2-Dichloroethene (total)	250* ~~280~~ ATR	
67-66-3	Chloroform	2.	J
107-06-2	1,2-Dichloroethane	5.	U
78-93-3	2-Butanone	10.	U
71-55-6	1,1,1-Trichloroethane	5.	U
56-23-5	Carbon Tetrachloride	5.	U
108-05-4	Vinyl Acetate	10.	U
75-27-4	Bromodichloromethane	5.	U
78-87-5	1,2-Dichloropropane	5.	U
10061-01-5	cis-1,3-Dichloropropene	5.	U
79-01-6	Trichloroethene	84.	
124-48-1	Dibromochloromethane	5.	U
79-00-5	1,1,2-Trichloroethane	5.	U
71-43-2	Benzene	5.	U
10061-02-6	trans-1,3-Dichloropropene	5.	U
75-25-2	Bromoform	5.	U
108-10-1	4-Methyl-2-Pentanone	10.	U
591-78-6	2-Hexanone	10.	U
127-18-4	Tetrachloroethene	31.	
79-34-5	1,1,2,2-Tetrachloroethane	5.	U
108-88-3	Toluene	5.	U
108-90-7	Chlorobenzene	5.	U
100-41-4	Ethylbenzene	5.	U
100-42-5	Styrene	5.	U
1330-20-7	Xylene (total)	5.	U

*hand transcribed from diluted sample analysis

FORM I VOA 1/87 Rev.

4-27-90

00318

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

JF623

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: XO-02-130-10B

Sample wt/vol: 5.000 (g/mL) ML Lab File ID: JF623

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. Date Analyzed: 2/22/90

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 1

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. - -	UNKNOWN HYDROCARBON	13.08	10.	J
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FORM I VOA-TIC 1/87 Rev.

4-27-90

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1B
SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF623

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-10A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF623

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/12/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10.	U
111-44-4	bis(2-Chloroethyl)ether	10.	U
95-57-8	2-Chlorophenol	10.	U
541-73-1	1,3-Dichlorobenzene	10.	U
106-46-7	1,4-Dichlorobenzene	10.	U
100-51-6	Benzyl alcohol	10.	U
95-50-1	1,2-Dichlorobenzene	10.	U
95-48-7	2-Methylphenol	10.	U
108-60-1	bis(2-Chloroisopropyl)ether	10.	U
106-44-5	4-Methylphenol	10.	U
621-64-7	N-Nitroso-di-n-propylamine	10.	U
67-72-1	Hexachloroethane	10.	U
98-95-3	Nitrobenzene	10.	U
78-59-1	Isophorone	10.	U
88-75-5	2-Nitrophenol	10.	U
105-67-9	2,4-Dimethylphenol	10.	U
65-85-0	Benzoic acid	20.	J
111-91-1	bis(2-Chloroethoxy)methane	10.	U
120-83-2	2,4-Dichlorophenol	10.	U
120-82-1	1,2,4-Trichlorobenzene	10.	U
91-20-3	Naphthalene	10.	U
106-47-8	4-Chloroaniline	10.	U
87-68-3	Hexachlorobutadiene	10.	U
59-50-7	4-Chloro-3-methylphenol	10.	U
91-57-6	2-Methylnaphthalene	10.	U
77-47-4	Hexachlorocyclopentadiene	10.	U
88-06-2	2,4,6-Trichlorophenol	10.	U
95-95-4	2,4,5-Trichlorophenol	50.	U
91-58-7	2-Chloronaphthalene	10.	U
88-74-4	2-Nitroaniline	50.	U
131-11-3	Dimethylphthalate	10.	U
208-96-8	Acenaphthylene	10.	U
606-20-2	2,6-Dinitrotoluene	10.	U

1C

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

JF623

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-10A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF623

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/12/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
99-09-2	3-Nitroaniline	50.	U
83-32-9	Acenaphthene	10.	U
51-28-5	2,4-Dinitrophenol	50.	U
100-02-7	4-Nitrophenol	50.	U
132-64-9	Dibenzofuran	10.	U
121-14-2	2,4-Dinitrotoluene	10.	U
84-66-2	Diethylphthalate	10.	U
7005-72-3	4-Chlorophenyl-phenylether	10.	U
86-73-7	Fluorene	10.	U
100-01-6	4-Nitroaniline	50.	U
534-52-1	4,6-Dinitro-2-methylphenol	50.	U
86-30-6	N-Nitrosodiphenylamine (1)	10.	U
101-55-3	4-Bromophenyl-phenylether	10.	U
118-74-1	Hexachlorobenzene	10.	U
87-86-5	Pentachlorophenol	50.	U
85-01-8	Phenanthrene	2.	J
120-12-7	Anthracene	10.	U
84-74-2	Di-n-butylphthalate	1.	BJ
206-44-0	Fluoranthene	2.	J
129-00-0	Pyrene	2.	J
85-68-7	Butylbenzylphthalate	10.	U
91-94-1	3,3'-Dichlorobenzidine	20.	U
56-55-3	Benzo(a)anthracene	10.	U
218-01-9	Chrysene	10.	U
117-81-7	bis(2-Ethylhexyl)phthalate	1.	J
117-84-0	Di-n-octylphthalate	10.	U
205-99-2	Benzo(b)fluoranthene	10.	U
207-08-9	Benzo(k)fluoranthene	10.	U
50-32-8	Benzo(a)pyrene	10.	U
193-39-5	Indeno(1,2,3-cd)pyrene	10.	U
53-70-3	Dibenz(a,h)anthracene	10.	U
191-24-2	Benzo(g,h,i)perylene	10.	U

(1) - Cannot be separated from diphenylamine

1F

EPA SAMPLE NO.

JF623

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-10A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JF623

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec. _____ Date Extracted: 2/18/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 3/12/90

GPC Cleanup: (Y/N) N pH: 7.0 Dilution Factor: 1.00

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	- -	UNKNOWN	5.05	80.	J
2.	66-25-1	Hexanal	5.15	40.	J
3.	- -	UNKNOWN	6.22	40.	J
4.	- -	UNKNOWN	7.48	70.	UJ
5.	- -	UNKNOWN	10.10	10.	J
6.	- -	UNKNOWN	14.25	10.	J
7.	- -	UNKNOWN	18.00	30.	J
8.	- -	UNKNOWN	21.03	20.	J
9.	- -	UNKNOWN HYDROCARBON	24.60	20.	J
10.	- -	UNKNOWN	40.25	20.	J
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01345

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

JF623

Lab Name: PEI Contract: 68-D9-0037

Lab Code: PEI Case No.: 13558 SAS No.: SDG No.: JF608

Matrix: (soil/water) WATER Lab Sample ID: X0-02-130-10A

Sample wt/vol: 1000.0 (g/mL) ML Lab File ID: JFP623

Level: (low/med) LOW Date Received: 2/15/90

% Moisture: not dec. 100. dec._____ Date Extracted: 2/16/90

Extraction: (SepF/Cont/Sonc) CONT Date Analyzed: 2/27/90

GPC Cleanup: (Y/N) N pH: 12.0 Dilution Factor: 1.00

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	.050	U
319-85-7	beta-BHC	.050	U
319-86-8	delta-BHC	.050	U
58-89-9	gamma-BHC	.050	U
76-44-8	Heptachlor	.050	U
309-00-2	Aldrin	.050	U
1024-57-3	Heptachlor epoxide	.050	U
959-98-8	Endosulfan I	.050	U
60-57-1	Dieldrin	.10	U
72-55-9	4,4'-DDE	.10	U
72-20-8	Endrin	.10	U
33213-65-9	Endosulfan II	.10	U
72-54-8	4,4'-DDD	.10	U
1031-07-8	Endosulfan sulfate	.10	U
50-29-3	4,4'-DDT	.10	U
72-43-5	Methoxychlor	.50	U
53494-70-5	Endrin ketone	.10	U
5103-71-9	alpha-Chlordane	.50	U
5103-74-2	gamma-Chlordane	.50	U
8001-35-2	Toxaphene	1.0	U
12674-11-2	Aroclor-1016	.50	U
11104-28-2	Aroclor-1221	.50	U
11141-16-5	Aroclor-1232	.50	U
53469-21-9	Aroclor-1242	.50	U
12672-29-6	Aroclor-1248	.50	U
11097-69-1	Aroclor-1254	1.0	U
11096-82-5	Aroclor-1260	1.0	U

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MEMORANDUM

DATE: February 9, 1990

TO: John Osborn, FIT-RPO, USEPA, Region 10

THRU: for Jeffrey Villnow, FITOM, E & E, Seattle

FROM: Lila Accra, Chemist, E & E, Seattle
Tracy Yerian, Senior Chemist, E & E, Seattle

SUBJ: Volatile Organic Compounds, Polychlorinated Biphenyl Compounds, and Polycyclic Aromatic Hydrocarbons in Soil FASP Results
Northwest Pipe and Casing
Clackamas, Oregon

REF: TDD F10-8911-001
PAN FOR0210XB, FOR0210XD

CC: Andrew Hafferty, AFITOM, E & E, Seattle
Gerald Muth, DPO, USEPA, Region 10
Bruce Woods, ESD, USEPA, Region 10
Gerald Lee, FIT-PD, E & E, Seattle
Mark Ader, FIT-PM, E & E, Seattle

Transmitted herewith are the results for the Field Analytical Support Project (FASP) analyses at Northwest Pipe and Casing, Clackamas, Oregon. A representative portion of these samples were split and sent to a Contract Laboratory Program (CLP) laboratory for confirmatory analysis.

LA:rls

Enclosures

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VOLATILE ORGANIC COMPOUNDS, POLYCHLORINATED BIPHENYL COMPOUNDS, AND POLYCYCLIC AROMATIC HYDROCARBONS IN SOIL FASP RESULTS NORTHWEST PIPE AND CASING CLACKAMAS, OREGON

FASP TDD F10-8911-001
FASP PAN FOR0210XB, FOR0210XD

SSI TDD F10-8906-002
SSI PAN FOR0210XA, FOR0210XC

Investigation Date: December 1989

FIT Analytical Team: Lila Accra, David Ikeda, Andrew Riddell, Mark Woodke, and Tracy Yerian

Report Prepared by: ECOLOGY AND ENVIRONMENT, INC.

Date: February 1990

Submitted to: J.E. Osborn, Regional Project Officer
Field Operations and Technical Support Branch
U.S. Environmental Protection Agency
Region 10
Seattle, Washington

ecology and environment, inc.
101 YESLER WAY, SEATTLE, WASHINGTON, 98104, TEL. 206/624-9537
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1.0 INTRODUCTION

Analysis of 58 soil samples, collected from Northwest Pipe and Casing, was performed by Ecology and Environment, Inc. (E & E) Field Investigation Team (FIT) chemists under Technical Directive Document (TDD) F10-8911-001, utilizing the E & E base laboratory in Seattle, Washington. The samples were analyzed for volatile organic compounds (VOCs), polychlorinated biphenyl compounds (PCBs), and polycyclic aromatic hydrocarbons (PAHs) to acquire analytical data as an integral part of the Listing Site Investigation (LSI). In addition, 13 quality control samples were analyzed for VOCs, 13 quality control samples were analyzed for PCBs, and 13 quality control samples were analyzed for PAHs to monitor analytical method performance and to ensure data validity.

Samples were analyzed using Field Analytical Support Project (FASP) techniques described in Sections 2.0, 3.0, and 4.0 of this report. As required by the United States Environmental Protection Agency (EPA) Region 10, FASP data are annotated with the data qualifier "F", indicating that field analytical methodologies were employed to generate the data. As such, qualitative data is defined as tentatively identified, and quantitative data should be interpreted as estimated quantities.

Samples were analyzed for the following VOCs, PCBs, and PAHs:

VOCs:

trans-1,2-Dichloroethene
cis-1,3-Dichloropropene
trans-1,3-Dichloropropene
Methylene Chloride
Trichlorofluoromethane
1,1-Dichloroethene
1,1-Dichloroethane
Chloroform
1,1,2-Trichloroethane
1,1,2,2-Tetrachloroethane
Benzene
Toluene
Ethylbenzene
Bromodichloromethane
1,1,1-Trichloroethane
Bromoform
1,2-Dichloropropane
Trichloroethene
Tetrachloroethene
Chlorobenzene
Dibromochloromethane
1,2-Dichloroethane
Carbon Tetrachloride

PCBs:

Aroclor 1016
Aroclor 1221
Aroclor 1232
Aroclor 1242
Aroclor 1248
Aroclor 1254
Aroclor 1260

PAHs:

Naphthalene	Acenaphthylene
Acenaphthene	Fluorene
Phenanthrene	Anthracene
Fluoranthene	Pyrene
Chrysene	Benzo(a)anthracene
Benzo(b)fluoranthene	Benzo(k)fluoranthene
Benzo(a)pyrene	Indeno(1,2,3-c,d)pyrene
Dibenzo(a,h)anthracene	Benzo(g,h,i)perylene

The primary objective of these analyses was to provide analyt: data in a timely manner for the LSI at Northwest Pipe and Casing. Specific target compounds previously had been identified through th Screening Site Investigation (SSI). Sample results are reported o "As Received" basis; no dry weights are employed.

The samples were received at the laboratory on December 13, 1· 15, 1989. Sample extractions were performed within 24 hours of sar receipt. All analyses were completed by December 22, 1989.

The samples were numbered:

A-1	C-5	E-5	004
A-2	C-6	E-6	005 (BKGD-1)
A-3	D-1	F-1	006 (BKGD-2)
A-4	D-2	F-2	007
B-1	D-3	F-3	008
B-1R	D-4	F-4	009
B-2	D-5	F-5	010
B-3	D-6	G-1	011
B-4	D-7	G-2	012
B-4R	E-1	G-3	013
B-5	E-2	G-4	014
C-1	E-3	001	015
C-2	E-3R	002	016
C-3	E-4	003	017
C-4	E-4R		

2.0 FASP ANALYTICAL METHODOLOGY FOR VOLATILE ORGANIC COMPOUNDS

2.1 Sample Preparation Method

The sample extraction technique for VOCs in soil is as follow

1) Weigh a 5-g sample of soil contained in a tared 22-mL sa bottle. Clean the mouth of the bottle with a Kim Wipe.

2) Inject 2-µL of 200 ng/µL (ppm) internal standard (IS) mi the soil sample in the soil sample vial. The IS mix inc bromochloromethane, fluorobenzene, and p-bromofluorobenz methanol, all at concentrations of 80 µg/kg at the time purge.

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3) Immediately attach the vial to the sparging apparatus.

4) Fill the 5-mL luer lock tip gas tight syringe to the 5-mL mark with reagent grade water.

5) Attach the syringe to the three-way valve. Turn valve lever till the arrow points to the sample inlet port.

6) Inject the water into the sparge vessel. Turn the valve lever to the back or left. Remove the syringe. Pull some air into the syringe and inject into the sparge vessel to clear sample from the valve and injector line. Close the three-way valve.

7) Make sure the trap temperature is at 30°C or less. Turn purge timer to 12 minutes.

8) If sample is of an unknown matrix, make sure the sample does not foam before leaving the equipment.

2.2 Sample Analysis

1) Preheat the trap column to 60°C before advancing to desorb. Desorb the soil sample 4 minutes, with the trap column heated to a final temperature of 160°C. The sample is transferred via a heated line to a Shimadzu GC Mini-3 equipped with an HNu PID detector connected in series with an O.I. Corporation Electrolytic Conductivity (Hall) detector.

2) After desorption, bake the column for 5 minutes at 200°C (the analyst may wish to bake the trap longer if large amounts of contaminants are found on the sample chromatogram).

3) Cool the trap column between every analysis. Make sure there is no foreign material on the Teflon seal.

2.3 Instrument Parameters

2.3.1 Extraction

Instrument:	Tekmar LSC-1 Liquid Sample Concentrator
Sample Trap Column:	34% Silica Gel; 65% Tenax; 1% SP1000
Purge Gas:	Ultrapure helium - flow 20 mL/min.
Trap Column Temperature:	Purge at ambient temperature; preheat trap to 60°C. Desorb 4 minutes at 160°C; bake 5 minutes at 200°C.

2.3.2 Analysis

Instrument:	Shimadzu GC Mini-3 with an HNu Photo ionization Detector (PID) and an O. Hall Detector
Integrator:	Nelson Analytical PC Integrator wit dual channel interface and 30MB har disk drive for data storage
Column:	J&W 30 meter x 0.53mm fused silica megabore capillary with DB-624 phas
Carrier Gas:	Ultrapure helium - flow approximate 10 mL/min.
Makeup Gas:	Ultrapure helium - flow approximate 40 mL/min.
Initial Temperature:	35°C
Initial Time:	5 minutes
Ramp Rate:	4°C/min.
Final Temperature:	105°C
Detector/Injector:	150°C

2.4 Calibration

Identification and quantitation of FASP Target Compound List (I VOCs is based on the internal standard method. An initial five-poir calibration curve was generated using serial dilutions of Purgeable Mixes A and B purchased from Supelco. Standard analyte concentratic ranging from 6 µg/L to 80 µg/L were used to establish detector liner ity. The corresponding ISs for each FTCL compound are listed ir 2.4.1 (PID) and 2.4.2 (Hall Detector). A compound which was dete both the PID and Hall Detector was quantitated using the detector w gave the higher response for that specific compound. The second detector was used for confirmation of the presence of that compound

Table 2.4.1

FTCL VOLATILE ORGANIC COMPOUNDS DETECTED BY PID AND THEIR CORRESPONDING INTERNAL STANDARDS

IS1 (Fluorobenzene)	IS3 (p-Bromofluorobenzene)
1,1-Dichloroethene	Toluene
trans-1,2-Dichloroethene	trans-1,3-Dichloropropene
Benzene	Tetrachloroethene
Trichloroethene	Chlorobenzene
cis-1,3-Dichloropropene	Ethylbenzene

The peak areas of the ISs were monitored and evaluated for each standard, sample, and blank. If the peak area for an IS in any sample changed by more than a factor of two (-50 percent to +100 percent) when compared to the corresponding continuing calibration, positive results for analytes quantitated on the IS were flagged with an asterisk.

Table 2.4.2

FTCL VOLATILE ORGANIC COMPOUNDS DETECTED BY THE HALL DETECTOR AND THEIR CORRESPONDING INTERNAL STANDARD

IS2 (Bromochloromethane)	IS3 (p-Bromofluorobenzene)
Trichlorofluoromethane	cis-1,3-Dichloropropene
1,1-Dichloroethene	trans-1,3-Dichloropropene
Methylene Chloride	1,1,2-Trichloroethane
trans-1,2-Dichloroethene	Tetrachloroethene
1,1-Dichloroethane	Dibromochloromethane
Chloroform	Chlorobenzene
1,1,1-Trichloroethane	Bromoform
Carbon Tetrachloride	1,1,2,2-Tetrachloroethane
1,2-Dichloroethane	
Trichloroethene	
1,2-Dichloropropane	
Bromodichloromethane	

Each calibration standard was analyzed by injecting the calibration solutions and the internal standard spiking solution directly into a 5-mL luer lock syringe containing 5-mL of reagent water. The area response of each target analyte was tabulated against the amount injected in nanograms for each compound and IS, and relative response factors (RRFs) were calculated for each target analyte using the following equation.

$$RRF = \frac{A_x}{A_{is}} \times \frac{C_{is}}{C_x}$$

where:

A_x = Area of the peak for the analyte of interest
A_{is} = Area of the peak for the appropriate internal standard
C_{is} = Amount of the internal standard injected (µg)
C_x = Amount injected of the analyte to be measured (µg)

Using the RRFs calculated above, the percent relative sta[illegible] deviation (%RSD) was calculated for each target analyte at all [illegible] using the equation below. The %RSD was less than or equal to 25.0 percent for each target analyte.

$$\% \text{ RSD} = \frac{SD}{\bar{X}} \times 100$$

where Standard Deviation (SD) =

$$\sqrt{\sum_{i=1}^{N} \frac{(X_i - \bar{X})^2}{N-1}}$$

where: X_i = Individual relative response factor (per analyte
$\bar{X}$ = Mean of all initial relative response factors (p
analyte)
N = Number of calibration standards

Sample quantitation was based on analyte RRFs calculated from [illegible]tinuing calibrations. Mid-range standards for all initial cal[illegible]a target analytes were analyzed at specified intervals (less th[illegible]or to 24 hours).

The maximum allowable relative percent difference (RPD), calc for each analyte using the equation below, was 25 percent.

$$RPD = \left(\frac{\overline{RRF}_I - RRF_C}{\left[\frac{\overline{RRF}_I + RRF_C}{2} \right]} \right) \times 100$$

where: $\overline{RRF}_I$ = Mean relative response factor from the initial calibration for each analyte
RRF_C = Measured relative response factor from the continuing calibration for the same analyte

2.5 Sample Quantitation

The concentration of the analyte(s) in the sample was calcula using the following equation. The relative response was measured automated relative peak height or relative peak area measurements an integrator.

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The RRFs from the continuing calibration analysis were used to calculate the concentration of analytes in the sample. The RRF was used as determined in Section 2.4 and the equations below.

$$\text{Concentration (mg/kg)} = \frac{(A_x)(I_s)}{(A_{is})(RRF)(W_o)}$$

where: A_x = Area of the peak for the analyte to be measured
A_{is} = Area of the peak for the specific IS from Table 2.4.1 or 2.4.2
I_s = Amount of IS added in micrograms (µg)
W_o = Weight of soil sample purged in grams

Results were reported in milligrams per kilogram (mg/kg) <u>without correction</u> for blank, spike recovery, or percent moisture.

Coeluted analytes were quantitated and reported as the combination of the unseparated VOC target analytes.

Sample chromatograms may not match identically with those of analytical standards. When positive identification was questionable, the chemist may have calculated and reported a maximum possible concentration (flagged as < the numerical value) which allows the data user to determine if additional (e.g., Contract Laboratory Program [CLP] Regular Analytical Services [RAS] or Special Analytical Services [SAS]) work was required or if the reported concentration was below action levels and project objectives and Data Quality Objectives (DQOs) were met.

Similarly, when sample concentration exceeded the linear range, the analyst may have reported a probable minimum level (flagged as > the numerical value) which allows the data user to determine if additional (e.g., CLP RAS or SAS) work was required or if the reported concentration was above action levels and project objectives and DQOs were met.

Quality Control (QC) criteria (as described in 2.4) were met for all VOC analyses, except as noted.

2.6 <u>Chromatography</u>

2.6.1 Volatile Organic Compound Identification

Qualitative identification of FTCL VOCs is based on both detector selectivity and relative retention time as compared to known standards, using the IS method.

For a compound which is detected on both the PID and the Hall Detector, the compound must be identified in both chromatograms for a positive identification to be made.

Generally, individual peak relative retention time windows should be less than ±5 percent for packed column analysis or less than ±2 percent for megabore capillary columns.

It is possible that interferences may preclude positive identi tion of an analyte. In such cases, the chemists reported the p of interference(s) with the maximum VOC concentration possible.

2.6.2 Examples of VOC Standard Chromatograms

The VOCs on the example stand d chromatogram (Figure 1) from PID detector are numbered 1 through 12; the numbers correspond to t following elution order:

1) 1,1-Dichloroethene
2) trans-1,2-Dichloroethene
3) Benzene
4) Fluorobenzene (Internal Standard)
5) Trichloroethene
6) cis-1,3-Dichloropropene
7) Toluene
8) trans-1,3-Dichloropr
9) Tetrachloroethene
10) Chlorobenzene
11) Ethylbenzene
12) p-Bromofluorobenzene (Internal Standard)

The VOCs on the example standard chromatogram (Figure 2) from Hall Detector are numbered 1 through 22; the numbers correspond to following elution order:

1) Trichlorofluoromethane
2) 1,1-Dichloroethene
3) Methylene Chloride
4) trans-1,2-Dichloroethene
5) 1,1-Dichloroethane
6) Bromochloromethane (Internal Standard)
7) Chloroform
8) 1,1,1-Trichloroethane
9) Carbon Tetrachloride
10) 1,2-Dichloroethane
11) Trichloroethene
12) 1,2-Dichloropropane
13) Bromodichloromethane
14) cis-1,3-Dichloroprop
15) trans-1,3-Dichloropr
16) 1,1,2-Trichloroe n
17) Tetrachloroethene
18) Dibromochloromethane
19) Chlorobenzene
20) Bromoform
22) p-Bromofluorobenzene (Internal Standard)
22) 1,1,2,2-Tetrachloroe

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Figure 1

FTCL Volatile Organic Compounds: PID

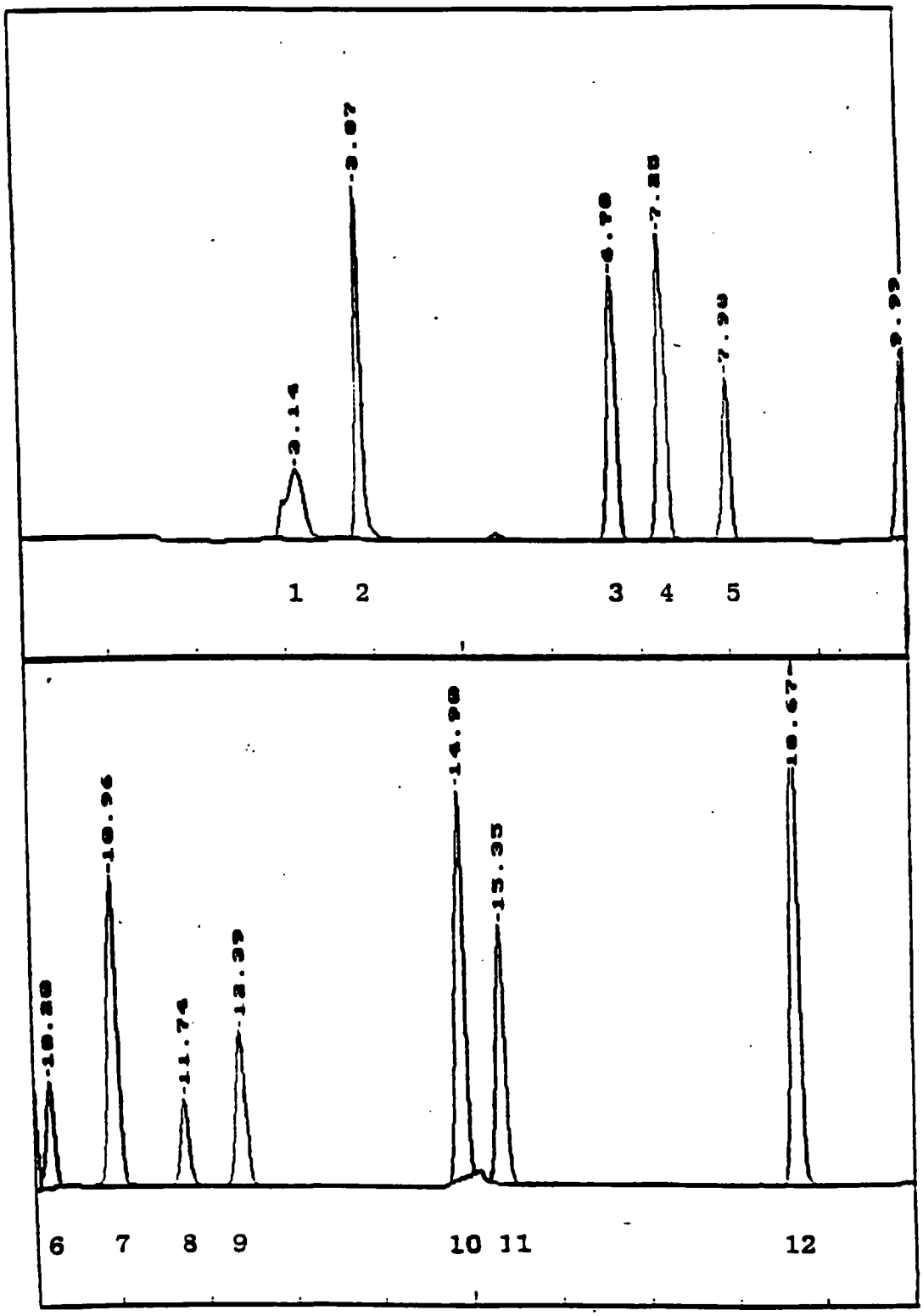
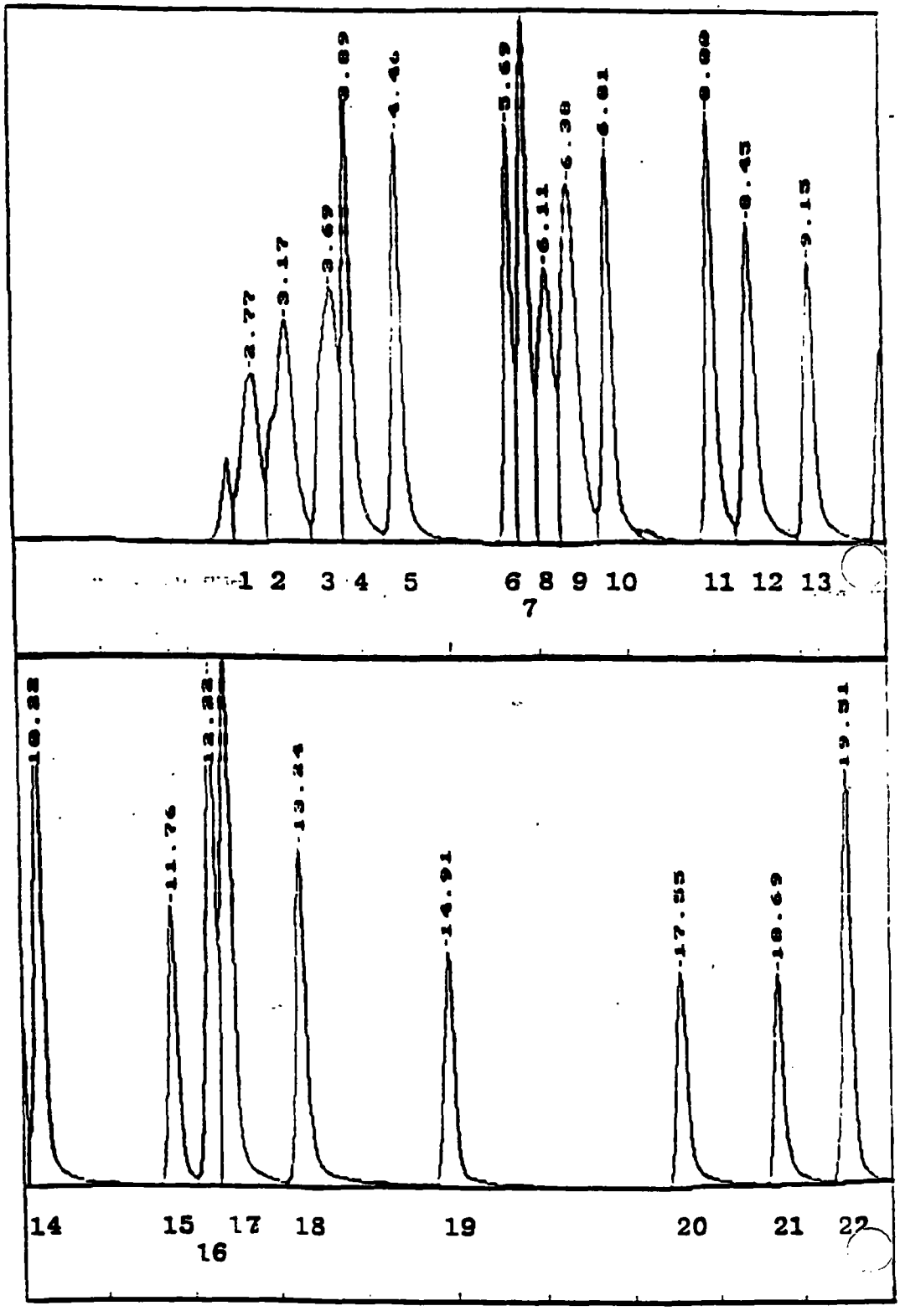


Figure 2

FTCL Volatile Organic Compounds; Hall Detector



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3.0 FASP ANALYTICAL METHODOLOGY FOR POLYCHLORINATED BIPHENYL COMPOUNDS

3.1 Sample Extraction Procedure

The sample extraction technique for PCBs in soil is as follows:

1) Add 2 to 3 grams of soil to a tared and labeled culture tube, weigh and record to the nearest 0.01 g.

2) Add 1 mL of nanograde methanol to the culture tube.

3) Vortex for 30 seconds to break dry soil clods.

4) Add 10 mL nanograde hexane to the culture tube.

5) Vortex for 60 seconds.

6) Centrifuge for 5 minutes.

3.2 Sample Cleanup Procedure

1) Transfer a 3- to 5-mL aliquot of the hexane extract to a second, labeled culture tube.

2) Add 1.0 mL concentrated sulfuric acid.

3) Vortex for 60 seconds.

4) Centrifuge for 5 minutes.

5) Transfer a 2- to 4-mL aliquot of the extract to a third, labeled culture tube.

6) Sample is ready for injection.

3.3 Sample Analysis

The solvent flush injection technique was used for PCB analyses. Two microliters of nanograde hexane, 0.5 µL of air, and 2 µL of sample were drawn into a 10-µL syringe and immediately injected into a Shimadzu GC Mini-2 equipped with an Electron Capture Detector (ECD).

3.4 Instrument Parameters

Instrument:	Shimadzu GC Mini-2 with ECD
Integrator:	Shimadzu Chromatopac C-R3A Data Processor
Columns:	1.8m x 3mm 1.5% SP-2250/1.95% SP-2401 or 1.8m x 3mm 3% OV-1 on 100/120 Supelcoport
Carrier Gas:	Ultrapure 5% methane in argon - flow 40 mL/min.
Oven:	225°C - Isothermal
Detector/Injector:	250°C
Injection Volume:	2 microliters
G.C. Analysis Time:	25 minutes

3.5 Calibration

Samples were quantitated using the external standard method. Aroclor 1254 standards were prepared by dilution of a primary stan Prior to sample analysis, an initial calibration was performed to detector calibration factors (CFs), using the following equation:

$$CF = \frac{\text{Standard Peak Area}}{\text{Amount of Standard Injected (ng)}}$$

During the initial calibration, CFs were determined by genera three point calibration curve of Aroclor 1254. Standard concentra of 0.5 mg/L, 1.0 mg/L, and 5.0 mg/L were selected to bracket expe sample extract concentrations. To ensure detector linearity, the for the CFs, as calculated by the equation below, was confirmed as than 25 percent.

$$\% \text{ RSD} = \frac{SD}{\overline{CF}} \times 100$$

where SD =

$$\sqrt{\sum_{i=1}^{N} \frac{(X_i - \bar{X})^2}{N-1}}$$

where: X_i = Individual relative response factor
$\bar{X}$ = Mean of all initial relative response factors
N = Number of calibration standards

A one point calibration of 1.0 mg/L was performed for all other A detected (or suspected) in the samples.

A continuing calibration was performed daily to ensure detec stability and to generate a CF for sample quantitation. A 1.0 mg Aroclor 1254 standard was injected in the gas chromatograph and t CF was calculated. The RPD between the CF for the continuing cal tion standards and the mean CF ($\overline{CF}$) for the initial calibration standards were calculated using the following equation:

$$RPD = \left(\frac{\overline{CF}_I - CF_C}{\left[\frac{\overline{CF}_I + CF_C}{2} \right]} \right)$$

where: $\overline{CF}_I$ = Mean calibration factor from the initial calibration
CF_C = Measured calibration factor from the continuing calibration

CFs stored in the integrator were updated with new values daily unless the RPD between the CF_C and the $\overline{CF}_I$ exceeded 25 percent. When this occurred, a new initial calibration was performed.

3.6 Sample Quantitation

Following instrument calibration, a 2.0-µL aliquot of the hexane extract was injected into the GC for analysis. The time required for chromatographic analysis to ensure all compounds had eluted off the column was 25 to 30 minutes.

Sample and standard chromatograms were printed out on the integrator at the end of each run. Aroclors were identified utilizing peak pattern matching of sample and standard chromatograms. If a pattern was identified as a specific PCB, the sum of five characteristic peak areas was used to compute the concentration by the following equation:

$$\text{Concentration (mg/kg) (wet weight)} = \frac{(A_x)(I_s)(V_t)(D)}{(A_s)(V_i)(W_s)}$$

where:

A_s = Sum of peak areas for the external standard
A_x = Sum of peak areas for the sample
I_s = Amount of standard injected in nanograms (ng)
V_i = Volume of extract injected (µL)
V_t = Total extract volume (mL)
W_s = Weight of sample extracted (g)
D = Dilution Factor (if employed)

The integrator can be programmed to make all or part of these calculations. An injection volume of 2 µL, a sample weight of 2.0 grams, and an extract volume of 10 mL was programmed into the integrator. Five peaks were selected for identification and pattern matching of each Aroclor that was quantitated. Concentrations were corrected by the analyst to actual sample weight and dilution factor. Qualitative identifications were based on pattern matching and retention times compared to known standards analyzed under the same analytical conditions.

If the PCB concentration in the sample exceeded the concentrati highest PCB standard. the sample extract was diluted with hexan analyzed.

Sample chromatograms may not match identically with those of analytical standards. When positive identification was questionabl the chemist may have calculated and reported a maximum possible co: centration (flagged as < the numerical value) which allows the dat to determine if additional (e.g., CLP RAS or SAS) work was requirec if the reported concentration was below action levels and project objectives and DQOs were met.

Reported results are in milligrams per kilogram <u>without</u> <u>corre</u> for blank, spike recovery, or percent moisture.

Similarly, when sample concentration exceeded the linear range analyst may have reported a probable minimum level (flagged as > t numerical value) which allows the data user to determine if additi (e.g., CLP RAS or SAS) work was required or if the reported concent tion was above action levels and project objectives and DQOs were

QC criteria (as described in Section 3.5) were met for all PC analyses.

3.7 Chromatography

3.7.1 Polychlorinated Biphenyl Compound Identification

Qualitative identification of FTCL PCBs is based on both patt matching and retention times as compared to known standards, using external standard method. Generally, individual peak retention ti windows should be less than ±5 percent for packed column analysis. is possible that interferences may preclude positive identificatio an analyte. In such cases, the chemists reported the presence of interference(s) with the maximum PCB concentration possible.

3.7.2 Examples of Standard PCB Chromatograms

Examples of Aroclor 1254 and Aroclor 1260 are shown in Figure 4, respectively.

4.0 FASP ANALYTICAL METHODOLOGY FOR POLYCYCLIC AROMATIC HYDROCARB

4.1 Sample Extraction Procedure

The sample extraction technique for PAHs in soil is as follow

1) Add 2 to 3 grams of well homogenized sample to a tared a labeled 150mm culture tube; reweigh to the nearest 0.01 Record weight.

2) Add 6 mL of methylene chloride to the culture tube a c

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Figure 3

Aroclor 1254

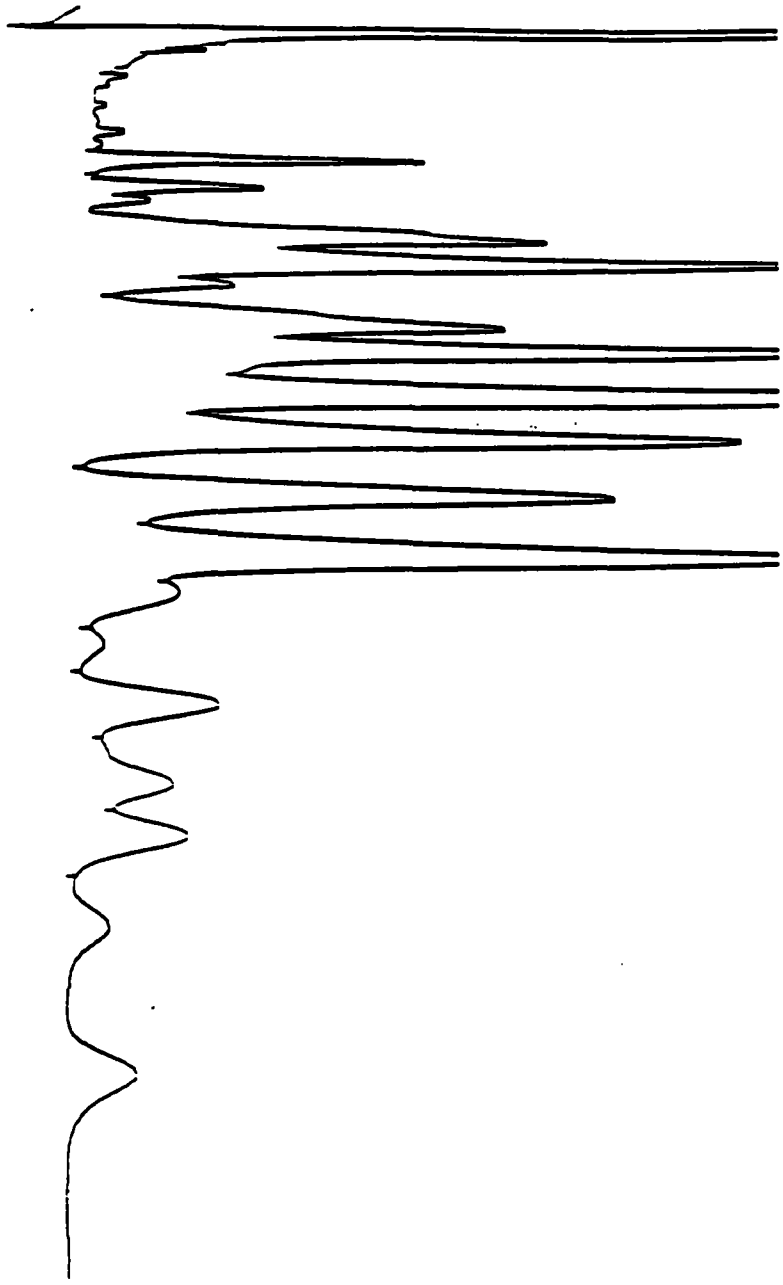
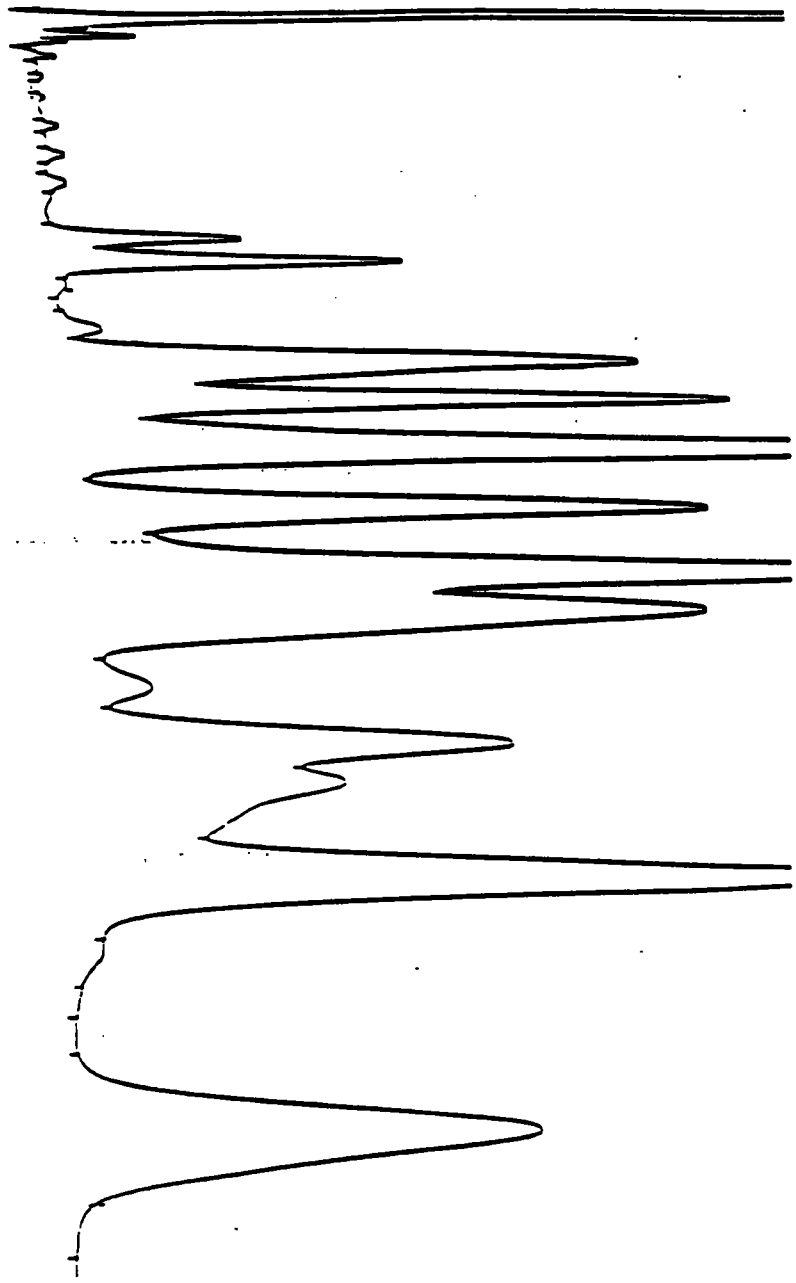


Figure 4

Aroclor 1260



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3) Vortex at maximum speed for 2 minutes.

4) Centrifuge sample for 5 minutes.

5) Quantitatively decant the solvent into a clean 150-mm culture tube using a disposable pasteur pipet.

6) Repeat steps 2 through 5 combining the extracts.

7) Add a small quantity of anhydrous sodium sulfate to the extract and vortex for 30 seconds.

8) Add 2 mL of isooctane and vortex for 10 seconds.

9) Reduce the solvent volume to approximately 1.0 mL with gentle heat under a N_2 stream.

10) The extract is ready for cleanup.

4.2 Sample Cleanup Procedure

4.2.1 Silica Gel Column Preparation

1) Place a small slug of muffle-furnaced glass wool into a 10mm outer diameter (o.d.) (4 mL) giant pipet.

2) Add 1.8 g of activated silica gel to the column.

3) Add a 1-cm layer of anhydrous sodium sulfate on top of the silica gel.

4) Rinse the column with 10 mL of methylene chloride and discard the rinsate. From this point on, the column must not be allowed to go dry until the cleanup is completed.

5) Rinse the column with 10 mL of petroleum ether and discard the rinsate.

4.2.2 Extract Cleanup

1) Add the concentrated sample extract to the column using a small disposable pipet.

2) Rinse the extract culture tube with two 0.5-mL aliquots of isooctane and add the rinsate to the column.

3) Elute the column with 6.0 mL of petroleum ether and discard the solvent.

4) Elute the column with 10 mL of methylene chloride. Collect the first 10 mL of eluted solvent in a graduated centrifuge tube.

5) For highly contaminated samples. the extract is now read: GC injection. However, in most cases. greater sensit required and is achieved by proceeding as described in-s through 8.

6) Reduce the solvent volume to less than 1 mL with low hea under a nitrogen stream.

7) Stopper the centrifuge tube and allow it to cool. Adjus volume to 1 mL with methylene chloride.

8) The sample extract is now ready for GC injection.

4.3 Sample Analysis

Solvent flush manual injection was used for the PAH analyses. microliters of nanograde methylene chloride, 0.5 microliters of ai 2.0 to 4.0 microliters (measured to the nearest 0.05 µL) of sample extract were sequentially drawn into a 10-microliter syringe and i. ately injected into the GC.

4.4 Instrument Parameters

Instrument:	Shimadzu GC-Mini 2 and a GC-14A equipp with Flame Ionization Detectors (FIDs) modified to accept megabore capillary columns and a Shimadzu TP-M2R temperat programmer.
Integrator:	Nelson Analytical PC integrator with a channel interface and 30MB hard disk d for data storage.
Columns:	J&W 15 meter × 0.53mm inner diameter (DB-5 fused silica megabore capillary c or Supelco 30 meter × 0.75mm i.d. SPB- borosilicate wide bore capillary colum
Carrier Gas:	Ultrapure helium at a flowrate of appr mately 10 mL/min.
Make-Up Gas:	Ultrapure helium at a flow rate of app mately 40 mL/min.
Detector Gases:	Zero grade air at a flowrate of approx mately 300 mL/min; ultrapure hydrogen flowrate of approximately 40 mL/min.
Column (oven) Temperature Program:	Initial temperature: 100°C Initial time: 2 minutes Ramp rate: 15°C/min. Final temperature: 310°C Final time: 7 minutes

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Injector Temperature: 330°C

Detector Temperature: 330°C

GC Analysis Time: Approximately 30 minutes.

4.5 Calibration

Samples were quantitated using the external standard method. An initial three-point calibration curve was generated using serial dilutions of Supelpreme-HC PAH mixture purchased from Supelco. Standard analyte concentrations ranging from 4 mg/L to 250 mg/L were used to establish detector linearity.

Gas chromatographic response to PAH target analytes was measured by determining CFs which are the ratio of the response (peak area or height) to the mass injected. In the case of coeluted analytes, the summed areas and masses were employed to generate a combined CF for the target analyte PAHs. The CF for each PAH target analyte in the Initial Calibration was calculated. The integrator may have been employed to make all of these computations.

$$CF = \frac{\text{Area of Peak}}{\text{Mass Injected (in nanograms)}}$$

Using the CFs calculated as shown above, the %RSD was calculated for each PAH target analyte at the three concentration levels using the equation below. The %RSD was less than or equal to 25.0 percent for each analyte.

$$\% \text{ RSD} = \frac{SD}{\bar{X}} \times 100$$

where SD =

$$\sqrt{\sum_{i=1}^{N} \frac{(X_i - \bar{X})^2}{N-1}}$$

where: X_i = Individual calibration factor (per analyte)
$\bar{X}$ = Mean of initial three calibration factors (per analyte)
N = Number of calibration standards

Sample quantitation was based on analyte calibration factor culated from continuing calibrations. Mid-range standards for all target analytes were analyzed at specified intervals (less than or to 24 hours).

The maximum allowable RPD calculated using the equation below each analyte was less than or equal to 25 percent.

$$RPD = \left(\frac{\overline{CF}_I - CF_C}{\left[\frac{\overline{CF}_I + CF_C}{2} \right]} \right) \times 100$$

where: $\overline{CF}_I$ = Mean calibration factor from the initial calibr. for each analyte
CF_C = Measured calibration factor from the continuing calibration for the same analyte

4.6 Sample Quantitation

The concentration of the analyte(s) in the sample was calcula using the following equation. The response was measured by automa peak area measurements from an integrator. Sample quantitatior based on analyte calibration factors calculated from continuing ca brations.

$$\text{Concentration (mg/kg) (wet weight)} = \frac{(A_x)(I_s)(V_t)(D)}{(A_s)(V_i)(W_s)}$$

where: A_s = Response for the external standard
A_x = Response for the analyte to be measured
I_s = Amount of standard injected in nanograms (ng)
V_i = Volume of extract injected (µL)
V_t = Volume of total extract (mL)
W_s = Weight of sample extracted (g)
D = Dilution factor (if employed)

Reported results are in milligrams per kilogram (mg/kg) withc correction for blank, spike recovery, or percent moisture.

Coeluted analytes were quantitated and reported as the combir of the unseparated PAH target analytes.

Sample chromatograms may not match identically with those of analytical standards. When positive identification was questionat the chemist may have calculated and reported a maximum possible cc tration (flagged as < the numerical value) which allows the da

determine if additional (e.g., CLP RAS or SAS) work was required or if the reported concentration was below action levels and project objectives and DQOs were met.

Similarly, when sample concentration exceeded the linear range, the analyst may have reported a probable minimum level (flagged as > the numerical value) which allows the data user to determine if additional (e.g., CLP RAS or SAS) work was required or if the reported concentration was above action levels and project objectives and DQOs were met.

QC criteria (as described in 4.5) were met for all PAH analyses.

4.7 Chromatography

4.7.1 Polycyclic Aromatic Hydrocarbon Identification

Qualitative identification of PAHs was based on both detector selectivity and retention time as compared to known standards, using the external standard method.

Generally, individual peak retention time windows should be less than ±2 percent for megabore capillary columns.

It may not be possible or practical to separate all target analyte PAHs on a single column. In such cases, these target analytes were denoted as the appropriate combination of PAHs.

It is possible that interferences may preclude positive identification of an analyte. In such cases, the chemists reported the presence of the interferent(s) with the maximum PAH concentration possible.

4.7.2 Example of a PAH Standard Chromatogram

The PAHs on the example standard chromatogram (Figure 5) are numbered 1 through 12.

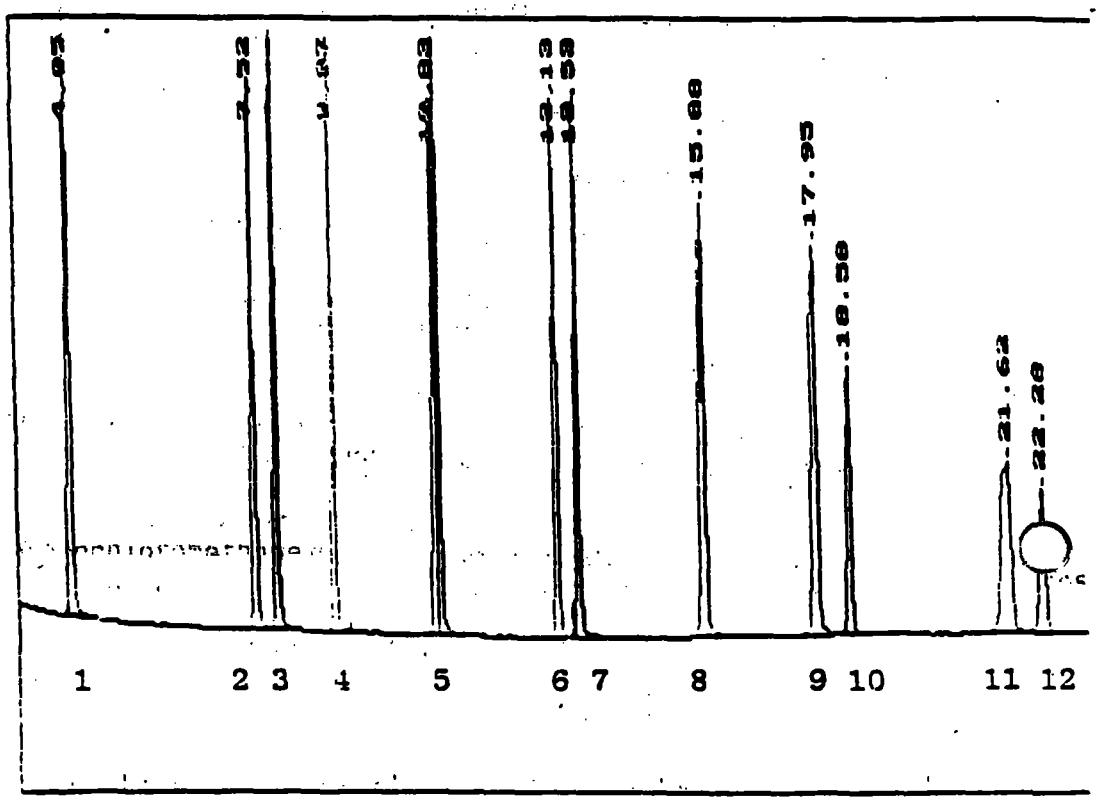
5.0 SAMPLE DATA

Samples were collected, handled, preserved, and shipped maintaining a chain-of-custody following current EPA regulations and recommendations in force at the time of sample collection. The sole exception to this rule was the sample volume required by the laboratory. Soil samples were shipped in 4-oz wide-mouth glass jars with Teflon-lined caps for PCB and PAH analysis and in 22-mL vials with Teflon-lined caps for VOC analysis. This volume is less than the standard 8-oz jar sample.

The use of chain-of-custody records as described in the EPA "CLP User's Guide" (9240.0-1), December 1988, is required for sample tracking. The maximum holding time for VOA, PCB, and PAH in soil samples is 7 days between collection and extraction, and 40 days between extraction and analysis for PCBs and PAHs. Holding time requirements were met for all analyses, except as noted.

Figure 5

FTCL Polycyclic Aromatic Hydrocarbons



1) Naphthalene
2) Acenaphthylene
3) Acenaphthene
4) Fluorene
5) Phenanthrene/Anthracene
6) Fluoranthene
7) Pyrene
8) Chrysene/Benzo(a)anthracen
9) Benzo(b)fluoranthene/ Benzo(k)fluoranthene
10) Benzo(a)pyrene
11) Indeno(1,2,3-c,d)pyrene/ Dibenzo(a,h)anthracene
12) Benzo(g,h,i)perylene

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5.1 Volatile Organic Compound Results

Table 5.1.1

SOIL SAMPLE RESULTS
VOLATILE ORGANIC COMPOUND ANALYSIS
Northwest Pipe and Casing, Clackamas, Oregon
(mg/kg)

Compound	Sample Number A-1		A-2		A-3		A-4	
Trichlorofluoromethane	0.0050	UF	0.0047	UF	0.0049	UF	0.0050	UF
1,1-Dichloroethene	0.0050	UF	0.0047	UF	0.0049	UF	0.0050	UF
Methylene Chloride	0.025	UF	0.023	UF	0.022	UF	0.54	UF
trans-1,2-Dichloroethene	0.0050	UF	0.0047	UF	0.0049	UF	0.0050	UF
1,1-Dichloroethane	0.0050	UF	0.0047	UF	0.0049	UF	0.0050	UF
Chloroform	0.020	UF	0.019	UF	0.020	UF	0.020	UF
1,1,1-Trichloroethane	0.0050	UF	0.0056	F	0.0049	UF	0.0050	UF
Carbon Tetrachloride	0.0050	UF	0.0047	UF	0.0049	UF	0.0050	UF
Benzene	0.0050	UF	0.0047	UF	0.0049	UF	0.0050	UF
1,2-Dichloroethane	0.0050	UF	0.0047	UF	0.0049	UF	0.0050	UF
Trichloroethene	0.0050	UF	0.0047	UF	0.0049	UF	0.0050	UF
1,2-Dichloropropane	0.0050	UF	0.0047	UF	0.0049	UF	0.0050	UF
Bromodichloromethane	0.0050	UF	0.0047	UF	0.0049	UF	0.0050	UF
cis-1,3-Dichloropropene	0.0050	UF	0.0047	UF	0.0049	UF	0.0050	UF
Toluene	0.0050	UF	0.0076	F	0.0067	F	0.0050	UF
trans-1,3-Dichloropropene	0.0050	UF	0.0047	UF	0.0049	UF	0.0050	UF
1,1,2-Trichloroethane	0.0050	UF	0.0047	UF	0.0049	UF	0.0050	UF
Tetrachloroethene	0.0050	UF	0.0047	UF	0.0049	UF	0.0050	UF
Dibromochloromethane	0.0050	UF	0.0047	UF	0.0049	UF	0.0050	UF
Chlorobenzene	0.0050	UF	0.0047	UF	0.0049	UF	0.0050	UF
Ethylbenzene	0.0050	UF	0.0047	UF	0.0049	UF	0.0050	UF
Bromoform	0.0050	UF	0.0047	UF	0.0049	UF	0.0050	UF
1,1,2,2-Tetrachloroethane	0.0050	UF	0.0047	UF	0.0049	UF	0.0050	UF

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

Table 5.1.1 (Cont.)

Compound	Sample Number B-1	B-1R	B-2	B
Trichlorofluoromethane	0.0049 UF	0.0050 UF	0.0050 UF	0.0
1,1-Dichloroethene	0.0049 UF	0.0050 UF	0.0050 UF	0.0-
Methylene Chloride	0.15 UF	0.086 UF	0.056 UF	0.0
trans-1,2-Dichloroethene	0.0049 UF	0.0050 UF	0.0050 UF	0.0
1,1-Dichloroethane	0.0049 UF	0.0050 UF	0.0050 UF	0.0
Chloroform	0.020 UF	0.020 UF	0.020 UF	0.0
1,1,1-Trichloroethane	0.0049 UF	0.0050 UF	0.0050 UF	0.0
Carbon Tetrachloride	0.0049 UF	0.0050 UF	0.0050 UF	0.0
Benzene	0.0049 UF	0.0050 UF	0.0050 UF	0.0
1,2-Dichloroethane	0.0049 UF	0.0050 UF	0.0050 UF	0.0
Trichloroethene	0.0049 UF	0.0050 UF	0.0050 UF	0.0
1,2-Dichloropropane	0.0049 UF	0.0050 UF	0.0050 UF	0.0
Bromodichloromethane	0.0049 UF	0.0050 UF	0.0050 UF	0.0
cis-1,3-Dichloropropene	0.0049 UF	0.0050 UF	0.0050 UF	0.0
Toluene	0.0080 F*	0.0066 F*	0.0063 F	0.0
trans-1,3-Dichloropropene	0.0049 UF	0.0050 UF	0.0050 UF	0.0
1,1,2-Trichloroethane	0.0049 UF	0.0050 UF	0.0050 UF	0.0
Tetrachloroethene	0.0049 UF	0.0050 UF	0.0050 UF	0.0
Dibromochloromethane	0.0049 UF	0.0050 UF	0.0050 UF	0.0
Chlorobenzene	0.0049 UF	0.0050 UF	0.0050 UF	0.0
Ethylbenzene	0.0049 UF	0.0050 UF	0.0050 UF	0.0
Bromoform	0.0049 UF	0.0050 UF	0.0050 UF	0.0
1,1,2,2-Tetrachloroethane	0.0049 UF	0.0050 UF	0.0050 UF	0.0

* Internal Standard area did not meet QC criteria for this quanti
Internal Standard area did not meet criteria when sample was re-analyzed.

U - The material was analyzed for but was not detected. The asso
numerical value is an instrumental detection limit, adjusted
sample weight.

F - Data have been generated using FASP methodologies. Analytes
tentatively identified and concentrations are quantitative estimates.

Table 5.1.1 (Cont.)

Compound	Sample Number B-4	B-4R	B-5	C-1
Trichlorofluoromethane	0.0051 UF	0.0050 UF	0.0050 UF	0.0047 UF
1,1-Dichloroethene	0.0051 UF	0.0050 UF	0.0050 UF	0.0047 UF
Methylene Chloride	0.085 UF	0.054 UF	0.041 UF	0.032 UF
trans-1,2-Dichloroethene	0.0051 UF	0.0050 UF	0.0050 UF	0.0047 UF
1,1-Dichloroethane	0.0051 UF	0.0050 UF	0.0050 UF	0.0047 UF
Chloroform	0.020 UF	0.020 UF	0.020 UF	0.019 UF
1,1,1-Trichloroethane	0.0051 UF	0.0050 UF	0.0050 UF	0.0047 UF
Carbon Tetrachloride	0.0051 UF	0.0050 UF	0.0050 UF	0.0047 UF
Benzene	0.0051 UF	0.0050 UF	0.0050 UF	0.0047 UF
1,2-Dichloroethane	0.0051 UF	0.0050 UF	0.0050 UF	0.0047 UF
Trichloroethene	0.0051 UF	0.0050 UF	0.0050 UF	0.0047 UF
1,2-Dichloropropane	0.0051 UF	0.0050 UF	0.0050 UF	0.0047 UF
Bromodichloromethane	0.0051 UF	0.0050 UF	0.0050 UF	0.0047 UF
cis-1,3-Dichloropropene	0.0051 UF	0.0050 UF	0.0050 UF	0.0047 UF
Toluene	0.0051 F	0.0050 UF	0.0055 F*	0.0088 F
trans-1,3-Dichloropropene	0.0051 UF	0.0050 UF	0.0050 UF	0.0047 UF
1,1,2-Trichloroethane	0.0051 UF	0.0050 UF	0.0050 UF	0.0047 UF
Tetrachloroethene	0.0051 UF	0.0050 UF	0.0050 UF	0.0055 F
Dibromochloromethane	0.0051 UF	0.0050 UF	0.0050 UF	0.0047 UF
Chlorobenzene	0.0051 UF	0.0050 UF	0.0050 UF	0.0047 UF
Ethylbenzene	0.0051 UF	0.0050 UF	0.0050 UF	0.0047 UF
Bromoform	0.0051 UF	0.0050 UF	0.0050 UF	0.0047 UF
1,1,2,2-Tetrachloroethane	0.0051 UF	0.0050 UF	0.0050 UF	0.0047 UF

* Internal Standard area did not meet QC criteria for this quantitation. Internal Standard area did not meet criteria when sample was re-analyzed.

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

Table 5.1.1 (Cont.)

Compound	Sample Number C-2	C-3	C-4	C-5
Trichlorofluoromethane	0.0050 UF	0.0049 UF	0.0050 UF	0.005
1,1-Dichloroethene	0.0050 UF	0.0049 UF	0.0050 UF	0.005
Methylene Chloride	0.040 UF	0.070 UF	0.024 UF	0.029
trans-1,2-Dichloroethene	0.0050 UF	0.0049 UF	0.0050 UF	0.005
1,1-Dichloroethane	0.0050 UF	0.0049 UF	0.0050 UF	0.005
Chloroform	0.020 UF	0.020 UF	0.020 UF	0.020
1,1,1-Trichloroethane	0.0050 UF	0.0049 UF	0.0050 UF	0.005
Carbon Tetrachloride	0.0050 UF	0.0049 UF	0.0050 UF	0.005
Benzene	0.0050 UF	0.0049 UF	0.0050 UF	0.005
1,2-Dichloroethane	0.0050 UF	0.0049 UF	0.0050 UF	0.005
Trichloroethene	0.0050 UF	0.0049 UF	0.0050 UF	0.005
1,2-Dichloropropane	0.0050 UF	0.0049 UF	0.0050 UF	0.005
Bromodichloromethane	0.0050 UF	0.0049 UF	0.0050 UF	0.005
cis-1,3-Dichloropropene	0.0050 UF	0.0049 UF	0.0050 UF	0.005
Toluene	0.0050 UF	0.0049 UF	0.0050 UF	0.005
trans-1,3-Dichloropropene	0.0050 UF	0.0049 UF	0.0050 UF	0.005
1,1,2-Trichloroethane	0.0050 UF	0.0049 UF	0.0050 UF	0.005
Tetrachloroethene	0.0050 UF	0.0049 UF	0.0050 UF	0.005
Dibromochloromethane	0.0050 UF	0.0049 UF	0.0050 UF	0.005
Chlorobenzene	0.0050 UF	0.0049 UF	0.0050 UF	0.005
Ethylbenzene	0.0050 UF	0.0049 UF	0.0050 UF	0.005
Bromoform	0.0050 UF	0.0049 UF	0.0050 UF	0.005
1,1,2,2-Tetrachloroethane	0.0050 UF	0.0049 UF	0.0050 UF	0.005

U - The material was analyzed for but was not detected. The associa numerical value is an instrumental detection limit, adjusted fo sample weight.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

Table 5.1.1 (Cont.)

Compound	Sample Number			
	C-6	D-1	D-2+(1)	D-3
Trichlorofluoromethane	0.0049 UF	0.0051 UF	0.0047 UF	0.0052 UF
1,1-Dichloroethene	0.0049 UF	0.0051 UF	0.0047 UF	0.0052 UF
Methylene Chloride	0.044 UF	0.050 UF	0.010 UF	0.046 UF
trans-1,2-Dichloroethene	0.0049 UF	0.0051 UF	0.0047 UF	0.0052 UF
1,1-Dichloroethane	0.0049 UF	0.0051 UF	0.0047 UF	0.0052 UF
Chloroform	0.020 UF	0.020 UF	0.019 UF	0.021 UF
1,1,1-Trichloroethane	0.0049 UF	0.0051 UF	0.0047 UF	0.0052 UF
Carbon Tetrachloride	0.0049 UF	0.0051 UF	0.0047 UF	0.0052 UF
Benzene	0.0049 UF	0.0051 UF	0.0047 UF	0.0052 UF
1,2-Dichloroethane	0.0049 UF	0.0051 UF	0.0047 UF	0.0052 UF
Trichloroethene	0.0049 UF	0.0051 UF	0.0047 UF	0.0052 UF
1,2-Dichloropropane	0.0049 UF	0.0051 UF	0.0047 UF	0.0052 UF
Bromodichloromethane	0.0049 UF	0.0051 UF	0.0047 UF	0.0052 UF
cis-1,3-Dichloropropene	0.0049 UF	0.0051 UF	0.0047 UF	0.0052 UF
Toluene	0.0049 UF	0.0055 F	0.0047 UF	0.0088 F
trans-1,3-Dichloropropene	0.0049 UF	0.0051 UF	0.0047 UF	0.0052 UF
1,1,2-Trichloroethane	0.0049 UF	0.0051 UF	0.0047 UF	0.0052 UF
Tetrachloroethene	0.0049 UF	0.0051 UF	0.0057 F	0.010 F
Dibromochloromethane	0.0049 UF	0.0051 UF	0.0047 UF	0.0052 UF
Chlorobenzene	0.0049 UF	0.0051 UF	0.0047 UF	0.0052 UF
Ethylbenzene	0.0049 UF	0.0051 UF	0.0061 F	0.0052 UF
Bromoform	0.0049 UF	0.0051 UF	0.0047 UF	0.0052 UF
1,1,2,2-Tetrachloroethane	0.0049 UF	0.0051 UF	0.0047 UF	0.0052 UF

+( ) Sample was reanalyzed due to Internal Standard areas outside FASP QC limits during initial analysis. Reanalysis exceeded holding time by the number of days in parentheses, however, internal standard areas were within QC limits of 50 to 200 percent.

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

Table 5.1.1 (Cont.)

Compound	Sample Number D-4	D-5+(1)	D-6+(1)	D-7+
Trichlorofluoromethane	0.0047 UF	0.0053 UF	0.0050 UF	0.004
1,1-Dichloroethene	0.0047 UF	0.0053 UF	0.0050 UF	0.004
Methylene Chloride	0.062 UF	0.021 UF	0.024 UF	0.024
trans-1,2-Dichloroethene	0.0047 UF	0.0053 UF	0.0050 UF	0.004
1,1-Dichloroethane	0.0047 UF	0.0053 UF	0.0050 UF	0.004
Chloroform	0.019 UF	0.021 UF	0.020 UF	0.019
1,1,1-Trichloroethane	0.0047 UF	0.0053 UF	0.0050 UF	0.004
Carbon Tetrachloride	0.0047 UF	0.0053 UF	0.0050 UF	0.004
Benzene	0.0047 UF	0.0053 UF	0.0050 UF	0.004
1,2-Dichloroethane	0.0047 UF	0.0053 UF	0.0050 UF	0.004
Trichloroethene	0.015 F	0.0053 UF	0.0050 UF	0.004
1,2-Dichloropropane	0.0047 UF	0.0053 UF	0.0050 UF	0.004
Bromodichloromethane	0.0047 UF	0.0053 UF	0.0050 UF	0.004
cis-1,3-Dichloropropene	0.0047 UF	0.0053 UF	0.0050 UF	0.004
Toluene	0.021 F*	0.0083 F	0.0091 F	0.011
trans-1,3-Dichloropropene	0.0047 UF	0.0053 UF	0.0050 UF	0.004
1,1,2-Trichloroethane	0.0047 UF	0.0053 UF	0.0050 UF	0.004
Tetrachloroethene	3.2 F	0.0053 UF	0.0050 UF	0.004
Dibromochloromethane	0.0047 UF	0.0053 UF	0.0050 UF	0.004
Chlorobenzene	0.0047 UF	0.0053 UF	0.0050 UF	0.004
Ethylbenzene	0.044 F*	0.0053 UF	0.0050 UF	0.004
Bromoform	0.0047 UF	0.0053 UF	0.0050 UF	0.004
1,1,2,2-Tetrachloroethane	0.0047 UF	0.0053 UF	0.0050 UF	0.004

+( ) Sample was reanalyzed due to Internal Standard areas outside FA QC limits during initial analysis. Reanalysis exceeded holding time by the number of days in parentheses, however, internal standard areas were within QC limits of 50 to 200 percent.

* Internal Standard area did not meet QC criteria for this quantitat Internal Standard area did not meet criteria when sample was re-analyzed.

U - The material was analyzed for but was not detected. The associ numerical value is an instrumental detection limit, adjusted fc sample weight.

F - Data have been generated using FASP methodologies. Analytes a: tentatively identified and concentrations are quantitative estimates.

Table 5.1.1 (Cont.)

Compound	Sample Number E-1	E-2	E-3	E-3R
Trichlorofluoromethane	0.0048 UF	0.0048 UF	0.0048 UF	0.0050 UF
1,1-Dichloroethene	0.0048 UF	0.0048 UF	0.0048 UF	0.0050 UF
Methylene Chloride	0.015 UF	0.037 UF	0.016 UF	0.032 UF
trans-1,2-Dichloroethene	0.0048 UF	0.0048 UF	0.0048 UF	0.0050 UF
1,1-Dichloroethane	0.0048 UF	0.0048 UF	0.0048 UF	0.0050 UF
Chloroform	0.019 UF	0.019 UF	0.019 UF	0.020 UF
1,1,1-Trichloroethane	0.0048 UF	0.0048 UF	0.0048 UF	0.0050 UF
Carbon Tetrachloride	0.0048 UF	0.0048 UF	0.0048 UF	0.0050 UF
Benzene	0.0048 UF	0.0048 UF	0.0048 UF	0.0050 UF
1,2-Dichloroethane	0.0048 UF	0.0048 UF	0.0048 UF	0.0050 UF
Trichloroethene	0.0048 UF	0.0048 UF	0.0048 UF	0.0050 UF
1,2-Dichloropropane	0.0048 UF	0.0048 UF	0.0048 UF	0.0050 UF
Bromodichloromethane	0.0048 UF	0.0048 UF	0.0048 UF	0.0050 UF
cis-1,3-Dichloropropene	0.0048 UF	0.0048 UF	0.0048 UF	0.0050 UF
Toluene	0.0048 UF	0.0075 F*	0.0048 UF	0.011 F
trans-1,3-Dichloropropene	0.0048 UF	0.0048 UF	0.0048 UF	0.0050 UF
1,1,2-Trichloroethane	0.0048 UF	0.0048 UF	0.0048 UF	0.0050 UF
Tetrachloroethene	0.0048 UF	0.0048 UF	0.0051 F*	0.016 F
Dibromochloromethane	0.0048 UF	0.0048 UF	0.0048 UF	0.0050 UF
Chlorobenzene	0.0048 UF	0.0048 UF	0.0048 UF	0.0050 UF
Ethylbenzene	0.0048 UF	0.0048 UF	0.0048 UF	0.0050 UF
Bromoform	0.0048 UF	0.0048 UF	0.0048 UF	0.0050 UF
1,1,2,2-Tetrachloroethane	0.0048 UF	0.0048 UF	0.0048 UF	0.0050 UF

* Internal Standard area did not meet QC criteria for this quantitation. Internal Standard area did not meet criteria when sample was re-analyzed.

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

Table 5.1.1 (Cont.)

Compound	Sample Number E-4	E-4R	E-5+(1)	E-
Trichlorofluoromethane	0.0049 UF	0.0040 UF	0.0050 UF	0.0C
1,1-Dichloroethene	0.0049 UF	0.0040 UF	0.0050 UF	0.0C
Methylene Chloride	0.018 UF	0.011 UF	0.019 UF	0.03
trans-1,2-Dichloroethene	0.0049 UF	0.0040 UF	0.0050 UF	0.00
1,1-Dichloroethane	0.0049 UF	0.0040 UF	0.0050 UF	0.0C
Chloroform	0.020 UF	0.016 UF	0.020 UF	0.02
1,1,1-Trichloroethane	0.0049 UF	0.0040 UF	0.0050 UF	0.00
Carbon Tetrachloride	0.0049 UF	0.0040 UF	0.0050 UF	0.0C
Benzene	0.0049 UF	0.0040 UF	0.0050 UF	0.0C
1,2-Dichloroethane	0.0049 UF	0.0040 UF	0.0050 UF	0.00
Trichloroethene	0.0049 UF	0.0040 UF	0.0050 UF	0.0C
1,2-Dichloropropane	0.0049 UF	0.0040 UF	0.0050 UF	0.0C
Bromodichloromethane	0.0049 UF	0.0040 UF	0.0050 UF	0.00
cis-1,3-Dichloropropene	0.0049 UF	0.0040 UF	0.0050 UF	0.00
Toluene	0.0081 F	0.0057 F	0.0050 UF	0.02
trans-1,3-Dichloropropene	0.0049 UF	0.0040 UF	0.0050 UF	0.0C
1,1,2-Trichloroethane	0.0049 UF	0.0040 UF	0.0050 UF	0.0C
Tetrachloroethene	0.060 F	0.060 F	0.0050 UF	0C
Dibromochloromethane	0.0049 UF	0.0040 UF	0.0050 UF	0C
Chlorobenzene	0.0049 UF	0.0040 UF	0.0050 UF	0.0C
Ethylbenzene	0.0049 UF	0.0040 UF	0.0050 UF	0.0C
Bromoform	0.0049 UF	0.0040 UF	0.0050 UF	0.0C
1,1,2,2-Tetrachloroethane	0.0049 UF	0.0040 UF	0.0050 UF	0.0C

+( ) Sample was reanalyzed due to Internal Standard areas outside I QC limits during initial analysis. Reanalysis exceeded holdir time by the number of days in parentheses, however, internal standard areas were within QC limits of 50 to 200 percent.

* Internal Standard area did not meet QC criteria for this quantita Internal Standard area did not meet criteria when sample was re-analyzed.

U - The material was analyzed for but was not detected. The assoc numerical value is an instrumental detection limit, adjusted i sample weight.

F - Data have been generated using FASP methodologies. Analytes a tentatively identified and concentrations are quantitative estimates.

Table 5.1.1 (Cont.)

Compound	Sample Number F-1	F-2	F-3	F-4
Trichlorofluoromethane	0.0050 UF	0.0052 UF	0.0048 UF	0.0048 UF
1,1-Dichloroethene	0.0050 UF	0.0052 UF	0.0048 UF	0.0048 UF
Methylene Chloride	0.013 UF	0.043 UF	0.056 UF	0.033 UF
trans-1,2-Dichloroethene	0.0050 UF	0.0052 UF	0.0048 UF	0.0048 UF
1,1-Dichloroethane	0.0050 UF	0.0052 UF	0.0048 UF	0.0048 UF
Chloroform	0.020 UF	0.021 UF	0.019 UF	0.019 UF
1,1,1-Trichloroethane	0.0050 UF	0.0052 UF	0.0048 UF	0.0048 UF
Carbon Tetrachloride	0.0050 UF	0.0052 UF	0.0048 UF	0.0048 UF
Benzene	0.0050 UF	0.0052 F*	0.0051 F*	0.0048 UF
1,2-Dichloroethane	0.0050 UF	0.0052 UF	0.0048 UF	0.0048 UF
Trichloroethene	0.0050 UF	0.0082 F	0.0048 UF	0.0048 UF
1,2-Dichloropropane	0.0050 UF	0.0052 UF	0.0048 UF	0.0048 UF
Bromodichloromethane	0.0050 UF	0.0052 UF	0.0048 UF	0.0048 UF
cis-1,3-Dichloropropene	0.0050 UF	0.0052 UF	0.0048 UF	0.0048 UF
Toluene	0.0066 F*	0.024 F*	0.024 F*	0.016 F*
trans-1,3-Dichloropropene	0.0050 UF	0.0052 UF	0.0048 UF	0.0048 UF
1,1,2-Trichloroethane	0.0050 UF	0.0052 UF	0.0048 UF	0.0048 UF
Tetrachloroethene	0.0050 UF	0.053 F*	0.20 F*	0.0048 UF
Dibromochloromethane	0.0050 UF	0.0052 UF	0.0048 UF	0.0048 UF
Chlorobenzene	0.0050 UF	0.0052 UF	0.0048 UF	0.0048 UF
Ethylbenzene	0.0050 UF	0.0052 UF	0.0048 UF	0.0055 F*
Bromoform	0.0050 UF	0.0052 UF	0.0048 UF	0.0048 UF
1,1,2,2-Tetrachloroethane	0.0050 UF	0.0052 UF	0.0048 UF	0.0048 UF

* Internal Standard area did not meet QC criteria for this quantitation. Internal Standard area did not meet criteria when sample was re-analyzed.

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

Table 5.1.1 (Cont.)

Compound	Sample Number F-5		G-1		G-2		G-3	
Trichlorofluoromethane	0.0050	UF	0.0048	UF	0.0049	UF	0.005	
1,1-Dichloroethene	0.0050	UF	0.0048	UF	0.0049	UF	0.005	
Methylene Chloride	0.029	UF	0.038	UF	0.021	UF	0.027	
trans-1,2-Dichloroethene	0.0050	UF	0.0048	UF	0.0049	UF	0.005	
1,1-Dichloroethane	0.0050	UF	0.0048	UF	0.0049	UF	0.005	
Chloroform	0.020	UF	0.019	UF	0.020	UF	0.020	
1,1,1-Trichloroethane	0.0050	UF	0.0048	UF	0.0049	UF	0.005	
Carbon Tetrachloride	0.0050	UF	0.0048	UF	0.0049	UF	0.005	
Benzene	0.0050	UF	0.0048	UF	0.0049	UF	0.005	
1,2-Dichloroethane	0.0050	UF	0.0048	UF	0.0049	UF	0.005	
Trichloroethene	0.016	F	0.0048	UF	0.0049	UF	0.005	
1,2-Dichloropropane	0.0050	UF	0.0048	UF	0.0049	UF	0.005	
Bromodichloromethane	0.0050	UF	0.0048	UF	0.0049	UF	0.005	
cis-1,3-Dichloropropene	0.0050	UF	0.0048	UF	0.0049	UF	0.005	
Toluene	0.0070	F	0.0048	UF	0.0049	UF	0.005	
trans-1,3-Dichloropropene	0.0050	UF	0.0048	UF	0.0049	UF	0.005	
1,1,2-Trichloroethane	0.0050	UF	0.0048	UF	0.0049	UF	0.005	
Tetrachloroethene	0.0065	F	0.0048	UF	0.0073	F	0.005	
Dibromochloromethane	0.0050	UF	0.0048	UF	0.0049	UF	0.005	
Chlorobenzene	0.0050	UF	0.0048	UF	0.0049	UF	0.005	
Ethylbenzene	0.012	F	0.0048	UF	0.0049	UF	0.005	
Bromoform	0.0050	UF	0.0048	UF	0.0049	UF	0.005	
1,1,2,2-Tetrachloroethane	0.0050	UF	0.0048	UF	0.0049	UF	0.005	

U - The material was analyzed for but was not detected. The associa numerical value is an instrumental detection limit, adjusted for sample weight.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

Table 5.1.1 (Cont.)

Compound	Sample Number			
	G-4	001	002+(1)	003
Trichlorofluoromethane	0.0049 UF	0.0046 UF	0.0052 UF	0.0052 UF
1,1-Dichloroethene	0.0049 UF	0.0046 UF	0.0052 UF	0.0052 UF
Methylene Chloride	0.015 UF	0.048 UF	0.017 UF	0.021 UF
trans-1,2-Dichloroethene	0.0049 UF	0.0046 UF	0.0052 UF	0.0052 UF
1,1-Dichloroethane	0.0049 UF	0.0046 UF	0.0052 UF	0.0052 UF
Chloroform	0.020 UF	0.019 UF	0.021 UF	0.021 UF
1,1,1-Trichloroethane	0.0049 UF	0.0046 UF	0.0052 UF	0.0052 UF
Carbon Tetrachloride	0.0049 UF	0.0046 UF	0.0052 UF	0.0052 UF
Benzene	0.0049 UF	0.0046 UF	0.0052 UF	0.0052 UF
1,2-Dichloroethane	0.0049 UF	0.0046 UF	0.0052 UF	0.0052 UF
Trichloroethene	0.0049 UF	0.0046 UF	0.0052 UF	0.0052 UF
1,2-Dichloropropane	0.0049 UF	0.0046 UF	0.0052 UF	0.0052 UF
Bromodichloromethane	0.0049 UF	0.0046 UF	0.0052 UF	0.0052 UF
cis-1,3-Dichloropropene	0.0049 UF	0.0046 UF	0.0052 UF	0.0052 UF
Toluene	0.0049 UF	0.037 F	0.0080 F	0.0054 F
trans-1,3-Dichloropropene	0.0049 UF	0.0046 UF	0.0052 UF	0.0052 UF
1,1,2-Trichloroethane	0.0049 UF	0.0046 UF	0.0052 UF	0.0052 UF
Tetrachloroethene	0.0097 F	0.041 F	0.0052 UF	0.0052 UF
Dibromochloromethane	0.0049 UF	0.0046 UF	0.0052 UF	0.0052 UF
Chlorobenzene	0.0049 UF	0.0046 UF	0.0052 UF	0.0052 UF
Ethylbenzene	0.0049 UF	0.0046 UF	0.0052 UF	0.0052 UF
Bromoform	0.0049 UF	0.0046 UF	0.0052 UF	0.0052 UF
1,1,2,2-Tetrachloroethane	0.0049 UF	0.0046 UF	0.0052 UF	0.0052 UF

+( ) Sample was reanalyzed due to Internal Standard areas outside FASP QC limits during initial analysis. Reanalysis exceeded holding time by the number of days in parentheses, however, internal standard areas were within QC limits of 50 to 200 percent.

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

Table 5.1.1 (Cont.)

Compound	Sample Number 004	005	006+(1)	007+(1
Trichlorofluoromethane	0.0052 UF	0.0049 UF	0.0049 UF	0.0051
1,1-Dichloroethene	0.0052 UF	0.0049 UF	0.0049 UF	0.0051
Methylene Chloride	0.032 UF	0.025 UF	0.014 UF	0.024
trans-1,2-Dichloroethene	0.0052 UF	0.0049 UF	0.0049 UF	0.0051
1,1-Dichloroethane	0.0052 UF	0.0049 UF	0.0049 UF	0.0051
Chloroform	0.021 UF	0.020 UF	0.020 UF	0.020
1,1,1-Trichloroethane	0.0052 UF	0.0049 UF	0.0049 UF	0.0051
Carbon Tetrachloride	0.0052 UF	0.0049 UF	0.0049 UF	0.0051
Benzene	0.0052 UF	0.0049 UF	0.0049 UF	0.0051
1,2-Dichloroethane	0.0052 UF	0.0049 UF	0.0049 UF	0.0051
Trichloroethene	0.0052 UF	0.0049 UF	0.0049 UF	0.0051
1,2-Dichloropropane	0.0052 UF	0.0049 UF	0.0049 UF	0.0051
Bromodichloromethane	0.0052 UF	0.0049 UF	0.0049 UF	0.0051
cis-1,3-Dichloropropene	0.0052 UF	0.0049 UF	0.0049 UF	0.0051
Toluene	0.0052 UF	0.013 F	0.0049 UF	0.0051
trans-1,3-Dichloropropene	0.0052 UF	0.0049 UF	0.0049 UF	0.0051
1,1,2-Trichloroethane	0.0052 UF	0.0049 UF	0.0049 UF	0.0051
Tetrachloroethene	0.0052 UF	0.0049 UF	0.0049 UF	0.0[illegible]
Dibromochloromethane	0.0052 UF	0.0049 UF	0.0049 UF	0.0[illegible]
Chlorobenzene	0.0052 UF	0.0049 UF	0.0049 UF	0.0051
Ethylbenzene	0.0052 UF	0.0049 UF	0.0049 UF	0.0051
Bromoform	0.0052 UF	0.0049 UF	0.0049 UF	0.0051
1,1,2,2-Tetrachloroethane	0.0052 UF	0.0049 UF	0.0049 UF	0.0051

+( ) Sample was reanalyzed due to Internal Standard areas outside FASP QC limits during initial analysis. Reanalysis exceeded holding time by the number of days in parentheses, however, internal standard areas were within QC limits of 50 to 200 percent.

U - The material was analyzed for but was not detected. The associat numerical value is an instrumental detection limit, adjusted for sample weight.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

Table 5.1.1 (Cont.)

Compound	Sample Number 008	009	010	011
Trichlorofluoromethane	0.0052 UF	0.0047 UF	0.0048 UF	0.0049 UF
1,1-Dichloroethene	0.0052 UF	0.0047 UF	0.0048 UF	0.0049 UF
Methylene Chloride	0.029 UF	0.033 UF	0.033 UF	0.064 UF
trans-1,2-Dichloroethene	0.0052 UF	0.0047 UF	0.0048 UF	0.0049 UF
1,1-Dichloroethane	0.0052 UF	0.0047 UF	0.0048 UF	0.0049 UF
Chloroform	0.021 UF	0.019 UF	0.019 UF	0.020 UF
1,1,1-Trichloroethane	0.0052 UF	0.0047 UF	0.0048 UF	0.0049 UF
Carbon Tetrachloride	0.0052 UF	0.0047 UF	0.0048 UF	0.0049 UF
Benzene	0.0052 UF	0.0047 UF	0.0048 UF	0.0049 UF
1,2-Dichloroethane	0.0052 UF	0.0047 UF	0.0048 UF	0.0049 UF
Trichloroethene	0.0052 UF	0.0047 UF	0.0048 UF	0.0049 UF
1,2-Dichloropropane	0.0052 UF	0.0047 UF	0.0048 UF	0.0049 UF
Bromodichloromethane	0.0052 UF	0.0047 UF	0.0048 UF	0.0049 UF
cis-1,3-Dichloropropene	0.0052 UF	0.0047 UF	0.0048 UF	0.0049 UF
Toluene	0.0082 F	0.0047 UF	0.0099 F	0.0070 F
trans-1,3-Dichloropropene	0.0052 UF	0.0047 UF	0.0048 UF	0.0049 UF
1,1,2-Trichloroethane	0.0052 UF	0.0047 UF	0.0048 UF	0.0049 UF
Tetrachloroethene	0.0052 UF	0.0047 UF	0.0048 UF	0.0049 UF
Dibromochloromethane	0.0052 UF	0.0047 UF	0.0048 UF	0.0049 UF
Chlorobenzene	0.0052 UF	0.0047 UF	0.0048 UF	0.0049 UF
Ethylbenzene	0.0052 UF	0.0047 UF	0.0048 UF	0.0049 UF
Bromoform	0.0052 UF	0.0047 UF	0.0048 UF	0.0049 UF
1,1,2,2-Tetrachloroethane	0.0052 UF	0.0047 UF	0.0048 UF	0.0049 UF

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

Table 5.1.1 (Cont.)

Compound	Sample Number 012	013	014	015
Trichlorofluoromethane	0.0046 UF	0.0046 UF	0.0050 UF	0.0054
1,1-Dichloroethene	0.0046 UF	0.0046 UF	0.0050 UF	0.0054
Methylene Chloride	0.043 UF	0.030 UF	0.031 UF	0.029
trans-1,2-Dichloroethene	0.0046 UF	0.0046 UF	0.0050 UF	0.0054
1,1-Dichloroethane	0.0046 UF	0.0046 UF	0.0050 UF	0.0054
Chloroform	0.019 UF	0.019 UF	0.020 UF	0.022
1,1,1-Trichloroethane	0.0046 UF	0.0046 UF	0.0050 UF	0.0054
Carbon Tetrachloride	0.0046 UF	0.0046 UF	0.0050 UF	0.0054
Benzene	0.0046 UF	0.0046 UF	0.0050 UF	0.0054
1,2-Dichloroethane	0.0046 UF	0.0046 UF	0.0050 UF	0.0054
Trichloroethene	0.0046 UF	0.0046 UF	0.0050 UF	0.0054
1,2-Dichloropropane	0.0046 UF	0.0046 UF	0.0050 UF	0.0054
Bromodichloromethane	0.0046 UF	0.0046 UF	0.0050 UF	0.0054
cis-1,3-Dichloropropene	0.0046 UF	0.0046 UF	0.0050 UF	0.0054
Toluene	0.0078 F	0.0046 UF	0.0050 UF	0.0054
trans-1,3-Dichloropropene	0.0046 UF	0.0046 UF	0.0050 UF	0.0054
1,1,2-Trichloroethane	0.0046 UF	0.0046 UF	0.0050 UF	0.0054
Tetrachloroethene	0.0046 UF	0.0046 UF	0.0050 UF	0.0054
Dibromochloromethane	0.0046 UF	0.0046 UF	0.0050 UF	0.[illegible]4
Chlorobenzene	0.0046 UF	0.0046 UF	0.0050 UF	0.0054
Ethylbenzene	0.0046 UF	0.0046 UF	0.0050 UF	0.0054
Bromoform	0.0046 UF	0.0046 UF	0.0050 UF	0.0054
1,1,2,2-Tetrachloroethane	0.0046 UF	0.0046 UF	0.0050 UF	0.0054

U - The material was analyzed for but was not detected. The associat numerical value is an instrumental detection limit, adjusted for sample weight.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

Table 5.1.1 (Cont.)

Compound	Sample Number 016	Sample Number 017
Trichlorofluoromethane	0.0047 UF	0.0048 UF
1,1-Dichloroethene	0.0047 UF	0.0048 UF
Methylene Chloride	0.044 UF	0.052 UF
trans-1,2-Dichloroethene	0.0047 UF	0.0048 UF
1,1-Dichloroethane	0.0047 UF	0.0048 UF
Chloroform	0.019 UF	0.0019 UF
1,1,1-Trichloroethane	0.0047 UF	0.0048 UF
Carbon Tetrachloride	0.0047 UF	0.0048 UF
Benzene	0.0047 UF	0.0048 UF
1,2-Dichloroethane	0.0047 UF	0.0048 UF
Trichloroethene	0.0047 UF	0.0048 UF
1,2-Dichloropropane	0.0047 UF	0.0048 UF
Bromodichloromethane	0.0047 UF	0.0048 UF
cis-1,3-Dichloropropene	0.0047 UF	0.0048 UF
Toluene	0.0063 F	0.0053 F
trans-1,3-Dichloropropene	0.0047 UF	0.0048 UF
1,1,2-Trichloroethane	0.0047 UF	0.0048 UF
Tetrachloroethene	0.0047 UF	0.0048 UF
Dibromochloromethane	0.0047 UF	0.0048 UF
Chlorobenzene	0.0047 UF	0.0048 UF
Ethylbenzene	0.0047 UF	0.0048 UF
Bromoform	0.0047 UF	0.0048 UF
1,1,2,2-Tetrachloroethane	0.0047 UF	0.0048 UF

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

5.2 Polychlorinated Biphenyl Compound Results

Table 5.2.1

SOIL SAMPLE RESULTS
POLYCHLORINATED BIPHENYL FASP ANALYSIS
Northwest Pipe and Casing, Clackamas, Oregon
(mg/kg)

Sample Number	Compound A1254	Compound A1260
A-1	1.6 F	0.97 UF
A-2	0.78 UF	0.78 UF
A-3	3.4 F	0.75 UF
A-4	16 F	0.74 UF
B-1	2.5 F	0.75 UF
B-1R	2.1 F	0.79 UF
B-2	9.3 F	0.80 UF
B-3	0.86 UF	0.86 UF
B-4	7.9 F	0.73 UF
B-4R	8.8 F	0.67 UF
B-5	0.84 UF	0.84 UF
C-1	4.9 F	0.93 UF
C-2	3.0 F	0.72 UF
C-3	6.0 F	0.68 UF
C-4	3.8 F	0.68 UF
C-5	0.76 UF	0.76 UF
C-6	0.96 UF	0.96 UF
D-1	120 F	9.8 UF
D-2	65 F	7.9 UF
D-3	15 F	0.75 UF
D-4	1,000 F	81 UF
D-5	0.92 UF	0.92 UF
D-6	0.75 UF	0.75 UF
D-7	1.7 F	0.86 UF

U - The material was analyzed for but was not detected. The associate numerical value is an instrumental detection limit, adjusted for sample weight. extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

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Table 5.2.1 (Cont.)

Sample Number	Compound A1254		Compound A1260	
E-1	13	F	0.71	UF
E-2	68	F	7.3	UF
E-3	1.0	F	0.90	UF
E-3R	17	F	9.3	UF
E-4	157	F	7.9	UF
E-4R	277	F	9.2	UF
E-5	1.6	F	0.92	UF
E-6	4.4	F	0.67	UF
F-1	0.88	UF	0.88	UF
F-2	13	F	0.82	UF
F-3	0.81	UF	0.81	UF
F-4	0.84	UF	0.84	UF
F-5	0.87	UF	0.87	UF
G-1	1.6	F	0.73	UF
G-2	7.7	F	0.79	UF
G-3	2.8	F	0.80	UF
G-4	7.4	F	0.96	UF
001	57	F	6.9	UF
002	0.88	UF	0.88	UF
003	0.89	UF	0.89	UF
004	0.66	UF	0.66	UF
005	0.93	UF	0.93	UF
006	0.99	UF	0.99	UF
007	1.0	UF	1.0	UF
008	0.68	UF	0.68	UF
009	0.73	UF	0.73	UF
010	0.68	UF	0.68	UF
011	0.86	UF	0.86	UF
012	1.0	UF	1.0	UF
013	0.82	UF	0.82	UF
014	0.95	UF	0.95	UF
015	0.76	UF	0.76	UF
016	0.69	UF	0.69	UF
017	0.96	UF	0.96	UF

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

5.3 Polycyclic Aromatic Hydrocarbon Results

Table 5.3.1

SOIL SAMPLE RESULTS
POLYCYCLIC AROMATIC HYDROCARBON FASP ANALYSIS
Northwest Pipe and Casing, Clackamas, Oregon
(mg/kg)

Compound	Sample Number A-1		A-2		A-3		A-4
Naphthalene	3.4	UF	1.4	UF	4.3	UF	7.4
Acenaphthylene	3.4	UF	1.4	UF	4.3	UF	7.4
Acenaphthene	3.4	UF	1.4	UF	4.3	UF	7.4
Fluorene	3.4	UF	1.4	UF	4.3	UF	7.4
Phenanthrene	15	F*	1.4	UF	54	F*	9.8
Anthracene			1.4	UF			
Fluoranthene	55	F	2.5	F	100	F	43
Pyrene	56	F	2.3	F	110	F	69
Chrysene/Benzo(a)anthracene	64	F	2.9	F	74	F	95
Benzo(b)fluoranthene/ Benzo(k)fluoranthene	25	F	5.4	F	46	F	120
Benzo(a)pyrene	25	F	3.9	F	27	F	12[illegible]
Indeno(1,2,3-c,d)pyrene/ Dibenzo(a,h)anthracene	10	F	1.7	F	27	F	42
Benzo(g,h,i)perylene	6.1	F	1.5	F	14	F	29

* Phenanthrene and anthracene coeluted.

U - The material was analyzed for but was not detected. The associat numerical value is an instrumental detection limit, adjusted for sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

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Table 5.3.1 (Cont.)

Compound	Sample Number B-1	B-1R	B-2	B-3
Naphthalene	1.5 UF	1.5 UF	3.8 UF	1.5 UF
Acenaphthylene	1.5 UF	1.5 UF	3.8 UF	1.5 UF
Acenaphthene	1.5 UF	1.5 UF	3.8 UF	1.5 UF
Fluorene	1.5 UF	1.5 UF	3.8 UF	1.5 UF
Phenanthrene	4.2 F	1.5 UF	13 F*	5.0 F
Anthracene	1.5 UF	1.5 UF		1.5 UF
Fluoranthene	11 F	4.9 F	27 F	8.7 F
Pyrene	11 F	2.9 F	23 F	9.4 F
Chrysene/Benzo(a)anthracene	19 F	4.8 F	21 F	11 F
Benzo(b)fluoranthene/ Benzo(k)fluoranthene	14 F	7.6 F	17 F	7.2 F
Benzo(a)pyrene	1.8 F	5.8 F	25 F	5.0 F
Indeno(1,2,3-c,d)pyrene/ Dibenzo(a,h)anthracene	5.2 F	3.2 F	6.5 F	3.4 F
Benzo(g,h,i)perylene	3.5 F	2.2 F	3.8 UF	2.2 F

* Phenanthrene and anthracene coeluted.

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

Table 5.3.1 (Cont.)

Compound	Sample Number B-4	B-4R	B-5	C-1
Naphthalene	1.9 UF	2.0 UF	1.4 UF	9.6 U
Acenaphthylene	1.9 UF	2.0 UF	1.4 UF	9.6 U
Acenaphthene	1.9 UF	2.0 UF	1.4 UF	27 F
Fluorene	1.9 UF	2.0 UF	1.4 UF	29 F
Phenanthrene	1.9 UF	2.0 UF	2.4 F	320 F
Anthracene	1.9 UF	2.0 UF	1.4 UF	
Fluoranthene	7.5 F	9.2 F	6.7 F	480 F
Pyrene	6.7 F	7.5 F	5.6 F	440 F
Chrysene/Benzo(a)anthracene	6.3 F	9.5 F	11 F	320 F
Benzo(b)fluoranthene/ Benzo(k)fluoranthene	10 F	12 F	8.9 F	280 F
Benzo(a)pyrene	7.0 F	9.3 F	3.5 F	270 F
Indeno(1,2,3-c,d)pyrene/ Dibenzo(a,h)anthracene	2.9 F	3.8 F	1.4 UF	140 F
Benzo(g,h,i)perylene	2.1 F	2.9 F	1.4 UF	180 F

* Phenanthrene and anthracene coeluted.

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F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

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Table 5.3.1 (Cont.)

Compound	Sample Number C-2	C-3	C-4	C-5
Naphthalene	1.4 UF	4.2 UF	1.9 UF	1.5 UF
Acenaphthylene	1.4 UF	4.2 UF	1.9 UF	1.5 UF
Acenaphthene	1.4 UF	4.2 UF	1.9 UF	1.5 UF
Fluorene	1.4 UF	4.2 UF	1.9 UF	1.5 UF
Phenanthrene	2.8 F	14 F*	20 F*	1.5 UF
Anthracene	1.4 UF			1.5 UF
Fluoranthene	6.9 F	33 F	39 F	1.8 F
Pyrene	7.5 F	36 F	38 F	1.5 UF
Chrysene/Benzo(a)anthracene	8.8 F	39 F	29 F	1.5 UF
Benzo(b)fluoranthene/ Benzo(k)fluoranthene	6.4 F	32 F	18 F	1.5 UF
Benzo(a)pyrene	3.4 F	18 F	10 F	1.5 UF
Indeno(1,2,3-c,d)pyrene/ Dibenzo(a,h)anthracene	3.3 F	31 F	7.1 F	1.5 UF
Benzo(g,h,i)perylene	1.8 F	13 F	5.7 F	1.5 UF

* Phenanthrene and anthracene coeluted.

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

Table 5.3.1 (Cont.)

Compound	Sample Number C-6	D-1	D-2	D
Naphthalene	1.6 UF	6.6 UF	2.7 UF	8
Acenaphthylene	1.6 UF	6.6 UF	2.7 UF	8
Acenaphthene	1.6 UF	6.6 UF	2.7 UF	21
Fluorene	1.6 UF	6.6 UF	2.7 UF	16
Phenanthrene	1.6 UF	7.0 F*	3.9 F*	250
Anthracene	1.6 UF			
Fluoranthene	2.0 F	20 F	14 F	430
Pyrene	1.6 F	22 F	15 F	490
Chrysene/Benzo(a)anthracene	1.6 F	16 F	11 F	500
Benzo(b)fluoranthene/ Benzo(k)fluoranthene	1.9 F	17 F	13 F	410
Benzo(a)pyrene	2.4 F	9.3 F	12 F	200
Indeno(1,2,3-c,d)pyrene/ Dibenzo(a,h)anthracene	1.6 UF	9.4 F	4.8 F	180
Benzo(g,h,i)perylene	1.6 UF	6.6 UF	3.9 F	100

* Phenanthrene and anthracene coeluted.

U - The material was analyzed for but was not detected. The assoc numerical value is an instrumental detection limit, adjusted f sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes a tentatively identified and concentrations are quantitative estimates.

Table 5.3.1 (Cont.)

Compound	Sample Number D-4	D-5	D-6	D-7
Naphthalene	1.3 UF	1.4 UF	1.9 UF	3.2 UF
Acenaphthylene	1.3 UF	1.4 UF	1.9 UF	3.2 UF
Acenaphthene	1.3 UF	1.4 UF	1.9 UF	3.2 UF
Fluorene	2.1 F	1.4 UF	1.9 UF	3.2 UF
Phenanthrene	23 F*	1.4 UF	1.9 UF	3.9 F
Anthracene		1.4 UF	1.9 UF	3.0 UF
Fluoranthene	98 F	1.4 UF	1.9 UF	7.9 F
Pyrene	93 F	1.4 UF	1.9 UF	8.2 F
Chrysene/Benzo(a)anthracene	56 F	1.4 UF	1.9 UF	7.7 F
Benzo(b)fluoranthene/ Benzo(k)fluoranthene	22 F	1.4 UF	1.9 UF	5.8 F
Benzo(a)pyrene	1.8 F	1.4 UF	1.9 UF	3.2 UF
Indeno(1,2,3-c,d)pyrene/ Dibenzo(a,h)anthracene	4.4 F	1.4 UF	1.9 UF	3.5 F
Benzo(g,h,i)perylene	1.3 UF	1.4 UF	1.9 UF	3.2 UF

* Phenanthrene and anthracene coeluted.

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

Table 5.3.1 (Cont.)

Compound	Sample Number E-1	E-2	E-3	E-
Naphthalene	1.8 UF	8.8 F	19 UF	18
Acenaphthylene	1.8 UF	3.3 UF	19 UF	18
Acenaphthene	1.8 UF	22 F	19 UF	18
Fluorene	1.8 UF	21 F	19 UF	18
Phenanthrene	1.8 UF	120 F*	70 F*	57
Anthracene	1.8 UF			
Fluoranthene	6.9 F	110 F	150 F	290
Pyrene	7.3 F	120 F	310 F	330
Chrysene/Benzo(a)anthracene	3.6 F	140 F	200 F	270
Benzo(b)fluoranthene/ Benzo(k)fluoranthene	3.4 F	110 F	200 F	250
Benzo(a)pyrene	2.7 F	100 F	180 F	190
Indeno(1,2,3-c.d)pyrene/ Dibenzo(a,h)anthracene	1.8 UF	45 F	56 F	69
Benzo(g,h,i)perylene	1.8 UF	27 F	53 F	66

* Phenanthrene and anthracene coeluted.

U - The material was analyzed for but was not detected. The assoc: numerical value is an instrumental detection limit, adjusted f(sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes a tentatively identified and concentrations are quantitative estimates.

Table 5.3.1 (Cont.)

Compound	Sample Number			
	E-4	E-4R	E-5	E-6
Naphthalene	1.6 UF	1.7 UF	1.7 UF	1.7 UF
Acenaphthylene	1.6 UF	1.7 UF	1.1 UF	1.7 UF
Acenaphthene	1.6 UF	3.0 F	1.7 UF	1.7 UF
Fluorene	1.6 UF	1.7 UF	1.7 UF	1.7 UF
Phenanthrene	7.9 F*	18 F*	1.7 UF	1.7 UF
Anthracene			1.7 UF	1.7 UF
Fluoranthene	34 F	42 F	3.1 F	4.6 F
Pyrene	35 F	50 F	2.9 F	4.4 F
Chrysene/Benzo(a)anthracene	20 F	26 F	3.6 F	3.8 F
Benzo(b)fluoranthene/ Benzo(k)fluoranthene	22 F	21 F	3.3 F	4.3 F
Benzo(a)pyrene	22 F	14 F	2.0 F	2.9 F
Indeno(1,2,3-c,d)pyrene/ Dibenzo(a,h)anthracene	8.2 F	10 F	1.7 UF	1.7 UF
Benzo(g,h,i)perylene	6.6 F	7.6 F	1.7 UF	1.7 UF

* Phenanthrene and anthracene coeluted.

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

Table 5.3.1 (Cont.)

Compound	Sample Number F-1		F-2		F-3		F
Naphthalene	1.8	UF	9.1	UF	110	UF	17
Acenaphthylene	1.8	UF	9.1	UF	110	UF	5
Acenaphthene	1.8	UF	31	F	590	F	80
Fluorene	1.8	UF	29	F	570	F	67
Phenanthrene	1.8	UF	190	F	3,400	F*	450
Anthracene	1.8	UF	390	F			
Fluoranthene	1.8	UF	260	F	5,800	F	330
Pyrene	1.8	UF	350	F	5,300	F	420
Chrysene/Benzo(a)anthracene	1.8	UF	250	F	1,500	F	280
Benzo(b)fluoranthene/ Benzo(k)fluoranthene	1.8	UF	130	F	360	F	110
Benzo(a)pyrene	1.8	UF	58	F	130	F	54
Indeno(1,2,3-c,d)pyrene/ Dibenzo(a,h)anthracene	1.8	UF	61	F	110	UF	40
Benzo(g,h,i)perylene	1.8	UF	56	F	110	UF	20

* Phenanthrene and anthracene coeluted.

U - The material was analyzed for but was not detected. The associ numerical value is an instrumental detection limit, adjusted fo sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes ar tentatively identified and concentrations are quantitative estimates.

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Table 5.3.1 (Cont.)

Compound	Sample Number F-5	G-1	G-2	G-3
Naphthalene	1.4 UF	1.7 UF	3.0 UF	1.4 UF
Acenaphthylene	1.4 UF	1.7 UF	3.0 UF	1.4 UF
Acenaphthene	4.6 F	1.7 UF	3.0 UF	1.4 UF
Fluorene	2.8 F	1.7 UF	3.0 UF	1.4 UF
Phenanthrene	35 F*	19 F*	3.0 F	1.4 UF
Anthracene			3.0 UF	1.4 UF
Fluoranthene	46 F	32 F	12 F	1.4 UF
Pyrene	53 F	35 F	25 F	1.4 UF
Chrysene/Benzo(a)anthracene	36 F	42 F	6.9 F	1.4 UF
Benzo(b)fluoranthene/ Benzo(k)fluoranthene	19 F	19 F	3.9 F	2.0 F
Benzo(a)pyrene	9.8 F	24 F	3.0 UF	1.4 UF
Indeno(1,2,3-c,d)pyrene/ Dibenzo(a,h)anthracene	7.4 F	14 F	3.0 UF	1.4 UF
Benzo(g,h,i)perylene	4.8 F	11 F	3.0 UF	1.4 UF

* Phenanthrene and anthracene coeluted.

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

Table 5.3.1 (Cont.)

Compound	Sample Number G-4		001		002		0(
Naphthalene	19	UF	69	UF	1.8	UF	1.
Acenaphthylene	19	UF	69	UF	1.8	UF	1
Acenaphthene	55	F	69	UF	1.8	UF	1.
Fluorene	23	F	69	UF	1.8	UF	1.
Phenanthrene	210	F*	69	UF	1.8	UF	1.
Anthracene			69	UF	1.8	UF	1.
Fluoranthene	270	F	1,700	F	1.8	UF	1.
Pyrene	300	F	2,300	F	1.8	UF	1.
Chrysene/Benzo(a)anthracene	190	F	840	F	1.8	UF	1
Benzo(b)fluoranthene/ Benzo(k)fluoranthene	110	F	170	F	2.7	UF	2
Benzo(a)pyrene	84	F	96	F	1.8	UF	1
Indeno(1,2,3-c,d)pyrene/ Dibenzo(a,h)anthracene	36	F	69	UF	1.8	UF	2.
Benzo(g,h,i)perylene	27	F	69	UF	1.8	UF	1

* Phenanthrene and anthracene coeluted.

U - The material was analyzed for but was not detected. The assoc numerical value is an instrumental detection limit, adjusted f sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes a tentatively identified and concentrations are quantitative estimates.

Table 5.3.1 (Cont.)

Compound	Sample Number 004	005	006	007
Naphthalene	6.9 UF	2.0 UF	1.8 UF	1.7 UF
Acenaphthylene	6.9 UF	2.0 UF	1.8 UF	1.7 UF
Acenaphthene	6.9 UF	2.0 UF	1.8 UF	1.7 UF
Fluorene	6.9 UF	2.0 UF	1.8 UF	1.7 UF
Phenanthrene	6.9 UF	2.0 UF	1.8 UF	1.7 UF
Anthracene	6.9 UF	2.0 UF	1.8 UF	1.7 UF
Fluoranthene	6.9 UF	2.0 UF	1.8 UF	1.7 UF
Pyrene	6.9 UF	2.0 UF	1.8 UF	1.7 UF
Chrysene/Benzo(a)anthracene	6.9 UF	2.0 UF	1.8 UF	1.7 UF
Benzo(b)fluoranthene/ Benzo(k)fluoranthene	6.9 UF	2.0 UF	2.4 UF	2.0 UF
Benzo(a)pyrene	6.9 UF	2.0 UF	1.8 UF	1.7 UF
Indeno(1,2,3-c,d)pyrene/ Dibenzo(a,h)anthracene	6.9 UF	2.0 UF	1.8 UF	1.7 UF
Benzo(g,h,i)perylene	6.9 UF	2.0 UF	1.8 UF	1.7 UF

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

Table 5.3.1 (Cont.)

Compound	Sample Number 008	009	010	01
Naphthalene	1.4 UF	1.3 UF	1.9 UF	1.
Acenaphthylene	1.4 UF	1.3 UF	1.9 UF	1.
Acenaphthene	1.4 UF	1.3 UF	1.9 UF	1.
Fluorene	1.4 UF	1.3 UF	1.9 UF	1.
Phenanthrene	1.4 UF	1.3 UF	1.9 UF	1.
Anthracene	1.4 UF	1.3 UF	1.9 UF	1.
Fluoranthene	1.4 UF	1.3 UF	2.5 F	2.
Pyrene	1.4 UF	1.3 UF	3.1 F	1.
Chrysene/Benzo(a)anthracene	1.4 UF	1.3 UF	4.3 F	1.
Benzo(b)fluoranthene/ Benzo(k)fluoranthene	1.4 UF	1.3 UF	3.8 UF	1.
Benzo(a)pyrene	1.4 UF	1.3 UF	1.9 UF	1.
Indeno(1,2,3-c,d)pyrene/ Dibenzo(a,h)anthracene	1.4 UF	1.3 UF	1.9 UF	1.
Benzo(g,h,i)perylene	1.4 UF	1.3 UF	1.9 UF	1.

U - The material was analyzed for but was not detected. The as[illegible]ci numerical value is an instrumental detection limit, adjust[illegible] fc sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes ar tentatively identified and concentrations are quantitative estimates.

Table 5.3.1 (Cont.)

Compound	Sample Number 012	013	014	015
Naphthalene	1.8 UF	1.7 UF	1.6 UF	1.6 UF
Acenaphthylene	1.8 UF	1.7 UF	1.6 UF	1.6 UF
Acenaphthene	1.8 UF	1.7 UF	1.6 UF	1.6 UF
Fluorene	1.8 UF	1.7 UF	1.6 UF	1.6 UF
Phenanthrene	1.8 UF	1.7 UF	1.6 UF	1.6 UF
Anthracene	1.8 UF	1.7 UF	1.6 UF	1.6 UF
Fluoranthene	1.8 UF	3.0 F	1.6 UF	1.6 UF
Pyrene	2.0 F	2.7 F	2.0 F	1.6 UF
Chrysene/Benzo(a)anthracene	1.8 UF	2.7 F	3.5 F	1.9 F
Benzo(b)fluoranthene/ Benzo(k)fluoranthene	1.8 UF	1.7 UF	2.6 UF	1.6 UF
Benzo(a)pyrene	1.8 UF	1.7 UF	1.6 UF	1.6 UF
Indeno(1,2,3-c,d)pyrene/ Dibenzo(a,h)anthracene	1.8 UF	1.7 UF	1.6 UF	1.6 UF
Benzo(g,h,i)perylene	1.8 UF	1.7 UF	1.6 UF	1.6 UF

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

Table 5.3.1 (Cont.)

Compound	Sample Number 016	017
Naphthalene	1.5 UF	1.8 UF
Acenaphthylene	1.5 UF	1.8 UF
Acenaphthene	1.5 UF	1.8 UF
Fluorene	1.5 UF	1.8 UF
Phenanthrene	1.5 UF	1.8 UF
Anthracene	1.5 UF	1.8 UF
Fluoranthene	1.5 UF	1.8 UF
Pyrene	1.5 UF	1.8 UF
Chrysene/Benzo(a)anthracene	1.5 UF	1.8 UF
Benzo(b)fluoranthene/ Benzo(k)fluoranthene	1.5 UF	2.6 UF
Benzo(a)pyrene	1.5 UF	3.9 F
Indeno(1,2,3-c,d)pyrene/ Dibenzo(a,h)anthracene	1.5 UF	1.8 UF
Benzo(g,h,i)perylene	1.5 UF	1.8 UF

U - The material was analyzed for but was not detected. The a numerical value is an instrumental detection limit, adjuste f sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes a tentatively identified and concentrations are quantitative estimates.

6.0 QUALITY ASSURANCE/QUALITY CONTROL RESULTS

6.1 Volatile Organic Compound QA/QC

6.1.1 Method Blank Results

A method blank was performed daily after calibration. A minimum of one method blank per 20 samples was performed. Reported levels of a compound found in any method blank were flagged "UF" (adjusted quantitation limit) if the concentration found in the sample was below five times the concentration found in the associated method blank (ten times for common solvents).

Table 6.1.1.1

METHOD BLANK RESULTS
VOLATILE ORGANIC COMPOUND FASP ANALYSIS
Northwest Pipe and Casing, Clackamas, Oregon
(mg/kg)

Compound	Sample Number		
	MBLK12-12-1	MBLK12-12-2	MBLK12-13
Trichlorofluoromethane	0.0050 UF	0.0050 UF	0.0050 UF
1,1-Dichloroethene	0.0050 UF	0.0050 UF	0.0050 UF
Methylene Chloride	0.0050 UF	0.098 F	0.015 F
trans-1,2-Dichloroethene	0.0050 UF	0.0050 UF	0.0050 UF
1,1-Dichloroethane	0.0050 UF	0.0050 UF	0.0050 UF
Chloroform	0.020 UF	0.020 UF	0.020 UF
1,1,1-Trichloroethane	0.0050 UF	0.0050 UF	0.0050 UF
Carbon Tetrachloride	0.0050 UF	0.0050 UF	0.0050 UF
Benzene	0.0050 UF	0.0050 UF	0.0050 UF
1,2-Dichloroethane	0.0050 UF	0.0050 UF	0.0050 UF
Trichloroethene	0.0050 UF	0.0050 UF	0.0050 UF
1,2-Dichloropropane	0.0050 UF	0.0050 UF	0.0050 UF
Bromodichloromethane	0.0050 UF	0.0050 UF	0.0050 UF
cis-1,3-Dichloropropene	0.0050 UF	0.0050 UF	0.005[illegible] UF
Toluene	0.0050 UF	0.0050 UF	0.005[illegible] UF
trans-1,3-Dichloropropene	0.0050 UF	0.0050 UF	0.0050 UF
1,1,2-Trichloroethane	0.0050 UF	0.0050 UF	0.0050 UF
Tetrachloroethene	0.0050 UF	0.0050 UF	0.0050 UF
Dibromochloromethane	0.0050 UF	0.0050 UF	0.0050 UF
Chlorobenzene	0.0050 UF	0.0050 UF	0.0050 UF
Ethylbenzene	0.0050 UF	0.0050 UF	0.0050 UF
Bromoform	0.0050 UF	0.0050 UF	0.0050 UF
1,1,2,2-Tetrachloroethane	0.0050 UF	0.0050 UF	0.0050 UF

U - The material was analyzed for but was not detected. The associa numerical value is an instrumental detection limit, adjusted fo sample weight.

F - Data have been generated using FASP methodologies. Analytes ar tentatively identified and concentrations are quantitative estimates.

Table 6.1.1.1 (Cont.)

Compound	Sample Number MBLK12-18	MBLK12-19	MBLK12-20
Trichlorofluoromethane	0.0050 UF	0.0050 UF	0.0050 UF
1,1-Dichloroethene	0.0050 UF	0.0050 UF	0.0050 UF
Methylene Chloride	0.010 F	0.006 F	0.008 F
trans-1,2-Dichloroethene	0.0050 UF	0.0050 UF	0.0050 UF
1,1-Dichloroethane	0.0050 UF	0.0050 UF	0.0050 UF
Chloroform	0.020 UF	0.020 UF	0.020 UF
1,1,1-Trichloroethane	0.0050 UF	0.0050 UF	0.0050 UF
Carbon Tetrachloride	0.0050 UF	0.0050 UF	0.0050 UF
Benzene	0.0050 UF	0.0050 UF	0.0050 UF
1,2-Dichloroethane	0.0050 UF	0.0050 UF	0.0050 UF
Trichloroethene	0.0050 UF	0.0050 UF	0.0050 UF
1,2-Dichloropropane	0.0050 UF	0.0050 UF	0.0050 UF
Bromodichloromethane	0.0050 UF	0.0050 UF	0.0050 UF
cis-1,3-Dichloropropene	0.0050 UF	0.0050 UF	0.0050 UF
Toluene	0.0050 UF	0.0050 UF	0.0050 UF
trans-1,3-Dichloropropene	0.0050 UF	0.0050 UF	0.0050 UF
1,1,2-Trichloroethane	0.0050 UF	0.0050 UF	0.0050 UF
Tetrachloroethene	0.0050 UF	0.0050 UF	0.0050 UF
Dibromochloromethane	0.0050 UF	0.0050 UF	0.0050 UF
Chlorobenzene	0.0050 UF	0.0050 UF	0.0050 UF
Ethylbenzene	0.0050 UF	0.0050 UF	0.0050 UF
Bromoform	0.0050 UF	0.0050 UF	0.0050 UF
1,1,2,2-Tetrachloroethane	0.0050 UF	0.0050 UF	0.0050 UF

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

6.1.2 Matrix Spike Results

Matrix spikes were performed by adding a known quantity of targ analytes to samples specified for QC; a minimum of one matrix spike 20 samples was performed. Advisory recovery limits are 30 percent 200 percent for all spiked compounds.

Table 6.1.2.1

MATRIX SPIKE RESULTS
VOLATILE ORGANIC COMPOUND FASP ANALYSIS
Northwest Pipe and Casing, Clackamas, Oregon
(mg/kg)

	Sample Number B-2					
Compound	Spiked Sample		Sample Results		Amount Spiked	Per Rec
Trichlorofluoromethane	0.0361	F	0.0050	UF	0.0400	9(
1,1-Dichloroethene	0.0367	F	0.0050	UF	0.0400	91
Methylene Chloride	0.076	UF	0.056	UF	0.0400	(
trans-1,2-Dichloroethene	0.0391	F	0.0050	UF	0.0400	9
1,1-Dichloroethane	0.0384	F	0.0050	UF	0.0400	9
Chloroform	0.0350	F	0.020	UF	0.0400	8
1,1,1-Trichloroethane	0.0340	F	0.0050	UF	0.0400	8
Carbon Tetrachloride	0.0353	F	0.0050	UF	0.0400	8
Benzene	0.0349	F	0.0050	UF	0.0400	8
1,2-Dichloroethane	0.0384	F	0.0050	UF	0.0400	9
Trichloroethene	0.0356	F	0.0050	UF	0.0400	8
1,2-Dichloropropane	0.0352	F	0.0050	UF	0.0400	8
Bromodichloromethane	0.0421	F	0.0050	UF	0.0400	10
2-Chloroethylvinylether	0.0531	F	0.0050	UF	0.0400	13
cis-1,3-Dichloropropene	0.0305	F	0.0050	UF	0.0400	7
Toluene	0.0426	F	0.00628	F	0.0400	9
trans-1,3-Dichloropropene	0.0295	F	0.0050	UF	0.0400	7
1,1,2-Trichloroethane	0.0503	F	0.0050	UF	0.0400	12
Tetrachloroethene	0.0370	F	0.0050	UF	0.0400	9
Dibromochloromethane	0.0469	F	0.0050	UF	0.0400	11
Chlorobenzene	0.0422	F	0.0050	UF	0.0400	1(
Ethylbenzene	0.0390	F	0.0050	UF	0.0400	9
Bromoform	0.0400	F	0.0050	UF	0.0400	1(
1,1,2,2-Tetrachloroethane	0.0416	F	0.0050	UF	0.0400	1(

U - The material was analyzed for but was not detected. The asso numerical value is an instrumental detection limit, adjusted sample weight.

F - Data have been generated using FASP methodologies. Analytes tentatively identified and concentrations are quantitati estimates.

Table 6.1.2.1 (Cont.)

Compound	Sample Number E-3				
	Spiked Sample	Sample Results		Amount Spiked	Percent Recovery
Trichlorofluoromethane	0.0351	0.0048	UF	0.0400	87.8
1,1-Dichloroethene	0.0360	0.0048	UF	0.0400	90.0
Methylene Chloride	0.0554	0.016	UF	0.0400	139
trans-1,2-Dichloroethene	0.0372	0.0048	UF	0.0400	93.0
1,1-Dichloroethane	0.0395	0.0048	UF	0.0400	98.8
Chloroform	0.0353	0.020	UF	0.0400	88.3
1,1,1-Trichloroethane	0.0385	0.0048	UF	0.0400	96.3
Carbon Tetrachloride	0.0336	0.0048	UF	0.0400	84.0
Benzene	0.0847	0.0048	UF	0.0400	212
1,2-Dichloroethane	0.0374	0.0048	UF	0.0400	93.5
Trichloroethene	0.0275	0.0048	UF	0.0400	68.8
1,2-Dichloropropane	0.0343	0.0048	UF	0.0400	85.8
Bromodichloromethane	0.0364	0.0048	UF	0.0400	91.0
2-Chloroethylvinylether	0.0749	0.0048	UF	0.0400	187
cis-1,3-Dichloropropene	0.0827	0.0048	UF	0.0400	207
Toluene	0.0686	0.0048	UF	0.0400	172
trans-1,3-Dichloropropene	0.0473	0.0048	UF	0.0400	118
1,1,2-Trichloroethane	0.0617	0.0048	UF	0.0400	154
Tetrachloroethene	0.0705	0.00509	F	0.0400	163
Dibromochloromethane	0.0585	0.0048	UF	0.0400	146
Chlorobenzene	0.0509	0.0048	UF	0.0400	127
Ethylbenzene	0.0544	0.0048	UF	0.0400	136
Bromoform	0.0471	0.0048	UF	0.0400	118
1,1,2,2-Tetrachloroethane	0.0477	0.0048	UF	0.0400	119

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

Table 6.1.2.1 (Cont.)

Compound	Sample Number 010 Spiked Sample		Sample Results		Amount Spiked	Perc Rec
Trichlorofluoromethane	0.0220	F	0.0048	UF	0.0385	57.
1,1-Dichloroethene	0.0958	F	0.0048	UF	0.0385	249
Methylene Chloride	0.051	UF	0.033	UF	0.0385	132
trans-1,2-Dichloroethene	0.0453	F	0.0048	UF	0.0385	118
1,1-Dichloroethane	0.0318	F	0.0048	UF	0.0385	82
Chloroform	0.0309	F	0.019	UF	0.0385	80
1,1,1-Trichloroethane	0.0315	F	0.0048	UF	0.0385	81
Carbon Tetrachloride	0.0301	F	0.0048	UF	0.0385	78
Benzene	0.0438	F	0.0048	UF	0.0385	114
1,2-Dichloroethane	0.0302	F	0.0048	UF	0.0385	78
Trichloroethene	0.0427	F	0.0048	UF	0.0385	111
1,2-Dichloropropane	0.0266	F	0.0048	UF	0.0385	69
Bromodichloromethane	0.0267	F	0.0048	UF	0.0385	69
2-Chloroethylvinylether	0.0308	F	0.0048	UF	0.0385	80
cis-1,3-Dichloropropene	0.0210	F	0.0048	UF	0.0385	54
Toluene	0.0649	F	0.00992	F	0.0385	143
trans-1,3-Dichloropropene	0.0345	F	0.0048	UF	0.0395	89
1,1,2-Trichloroethane	0.0470	F	0.0048	UF	0.0385	122
Tetrachloroethene	0.0433	F	0.0048	UF	0.0385	2
Dibromochloromethane	0.0447	F	0.0048	UF	0.0385	116
Chlorobenzene	0.0439	F	0.0048	UF	0.0385	114
Ethylbenzene	0.0504	F	0.0048	UF	0.0385	131
Bromoform	0.0448	F	0.0048	UF	0.0385	116
1,1,2,2-Tetrachloroethane	0.0471	F	0.0048	UF	0.0385	122

U - The material was analyzed for but was not detected. The associ numerical value is an instrumental detection limit, adjusted fc sample weight.

F - Data have been generated using FASP methodologies. Analytes ar tentatively identified and concentrations are quantitative estimates.

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6.1.3 Duplicate Results

Duplicate analyses were performed at a minimum of one duplicate per 20 samples: advisory relative percent difference (RPD) limits are ±100 percent for all target analytes detected above five times the FASP quantitation limits.

Table 6.1.3.1

DUPLICATE RESULTS
VOLATILE ORGANIC COMPOUND FASP ANALYSIS
Northwest Pipe and Casing, Clackamas, Oregon
(mg/kg)

	Sample Number A-1		
Compound	Sample Results	Duplicate Results	Relative Percent Difference
Trichlorofluoromethane	0.0050 UF	0.0047 UF	0
1,1-Dichloroethene	0.0050 UF	0.0047 UF	0
Methylene Chloride	0.025 UF	0.028 UF	0
trans-1,2-Dichloroethene	0.0050 UF	0.0047 UF	0
1,1-Dichloroethane	0.0050 UF	0.0047 UF	0
Chloroform	0.020 UF	0.019 UF	0
1,1,1-Trichloroethane	0.0050 UF	0.0047 UF	0
Carbon Tetrachloride	0.0050 UF	0.0047 UF	0
Benzene	0.0050 UF	0.0047 UF	0
1,2-Dichloroethane	0.0050 UF	0.0047 UF	0
Trichloroethene	0.0050 UF	0.0047 UF	0
1,2-Dichloropropane	0.0050 UF	0.0047 UF	0
Bromodichloromethane	0.0050 UF	0.0047 UF	0
2-Chloroethylvinylether	0.0050 UF	0.0047 UF	0
cis-1,3-Dichloropropene	0.0050 UF	0.0047 UF	0
Toluene	0.0050 UF	0.00785 F	200*
trans-1,3-Dichloropropene	0.0050 UF	0.0047 UF	0
1,1,2-Trichloroethane	0.0050 UF	0.0047 UF	0
Tetrachloroethene	0.0050 UF	0.0047 UF	0
Dibromochloromethane	0.0050 UF	0.0047 UF	0
Chlorobenzene	0.0050 UF	0.0047 UF	0
Ethylbenzene	0.0050 UF	0.0047 UF	0
Bromoform	0.0050 UF	0.0047 UF	0
1,1,2,2-Tetrachloroethane	0.0050 UF	0.0047 UF	0

* Duplicate result was less than five times the FASP quantitation limit.

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

Table 6.1.3.1 (Cont.)

Compound	Sample Number E-4				
	Sample Results		Duplicate Results		Relati Percer Diffe
Trichlorofluoromethane	0.0049	UF	0.0045	UF	0 -
1,1-Dichloroethene	0.0049	UF	0.0045	UF	0
Methylene Chloride	0.0049	UF	0.016	UF	0
trans-1,2-Dichloroethene	0.0049	UF	0.0045	UF	0
1,1-Dichloroethane	0.0049	UF	0.0045	UF	0
Chloroform	0.020	UF	0.018	UF	0
1,1,1-Trichloroethane	0.0049	UF	0.0045	UF	0
Carbon Tetrachloride	0.0049	UF	0.0045	UF	0
Benzene	0.0049	UF	0.0045	UF	0
1,2-Dichloroethane	0.0049	UF	0.0045	UF	0
Trichloroethene	0.0049	UF	0.0045	UF	0
1,2-Dichloropropane	0.0049	UF	0.0045	UF	0
Bromodichloromethane	0.0049	UF	0.0045	UF	0
2-Chloroethylvinylether	0.0049	UF	0.0045	UF	0
cis-1,3-Dichloropropene	0.0049	UF	0.0045	UF	0
Toluene	0.00806	F	0.0045	UF	200*
trans-1,3-Dichloropropene	0.0049	UF	0.0045	UF	0
1,1,2-Trichloroethane	0.0049	UF	0.0045	UF	0
Tetrachloroethene	0.0601	F	0.110	F	58
Dibromochloromethane	0.0049	UF	0.0045	UF	0
Chlorobenzene	0.0049	UF	0.0045	UF	0
Ethylbenzene	0.0049	UF	0.0045	UF	0
Bromoform	0.0049	UF	0.0045	UF	0
1,1,2,2-Tetrachloroethane	0.0049	UF	0.0045	UF	0

* Sample results were less than five times the FASP quantitation l.

U - The material was analyzed for but was not detected. The assoc numerical value is an instrumental detection limit, adjusted f sample weight.

F - Data have been generated using FASP methodologies. Analytes a tentatively identified and concentrations are quantitative estimates.

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Table 6.1.3.1 (Cont.)

Compound	Sample Number F-5				
	Sample Results		Duplicate Results		Relative Percent Difference
Trichlorofluoromethane	0.0050	UF	0.0049	UF	0
1,1-Dichloroethene	0.0050	UF	0.0049	UF	0
Methylene Chloride	0.028	UF	0.027	UF	0
trans-1,2-Dichloroethene	0.0050	UF	0.0049	UF	0
1,1-Dichloroethane	0.0050	UF	0.0049	UF	0
Chloroform	0.020	UF	0.020	UF	0
1,1,1-Trichloroethane	0.0050	UF	0.0049	UF	0
Carbon Tetrachloride	0.0050	UF	0.0049	UF	0
Benzene	0.0050	UF	0.0049	UF	0
1,2-Dichloroethane	0.0050	UF	0.0049	UF	0
Trichloroethene	0.0163	F	0.0139	F	15.9
1,2-Dichloropropane	0.0050	UF	0.0049	UF	0
Bromodichloromethane	0.0050	UF	0.0049	UF	0
2-Chloroethylvinylether	0.0050	UF	0.0049	UF	0
cis-1,3-Dichloropropene	0.0050	UF	0.0049	UF	0
Toluene	0.00699	F	0.0647	F	7.73
trans-1,3-Dichloropropene	0.0050	UF	0.0049	UF	0
1,1,2-Trichloroethane	0.0050	UF	0.0049	UF	0
Tetrachloroethene	0.00652	F	0.0567	F	13.9
Dibromochloromethane	0.0050	UF	0.0049	UF	0
Chlorobenzene	0.0050	UF	0.0049	UF	0
Ethylbenzene	0.0122	F	0.0145	F	17.2
Bromoform	0.0050	UF	0.0049	UF	0
1,1,2,2-Tetrachloroethane	0.0050	UF	0.0049	UF	0

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

Table 6.1.3.1 (Cont.)

Compound	Sample Number G-4				
	Sample Results		Duplicate Results		Relat: Percer Differ
Trichlorofluoromethane	0.0049	UF	0.0049	UF	0 -
1,1-Dichloroethene	0.0049	UF	0.0049	UF	0
Methylene Chloride	0.015	UF	0.021	UF	0
trans-1,2-Dichloroethene	0.0049	UF	0.0049	UF	0
1,1-Dichloroethane	0.0049	UF	0.0049	UF	0
Chloroform	0.020	UF	0.020	UF	0
1,1,1-Trichloroethane	0.0049	UF	0.0049	UF	0
Carbon Tetrachloride	0.0049	UF	0.0049	UF	0
Benzene	0.0049	UF	0.0049	UF	0
1,2-Dichloroethane	0.0049	UF	0.0049	UF	0
Trichloroethene	0.0049	UF	0.0049	UF	0
1,2-Dichloropropane	0.0049	UF	0.0049	UF	0
Bromodichloromethane	0.0049	UF	0.0049	UF	0
2-Chloroethylvinylether	0.0049	UF	0.0049	UF	0
cis-1,3-Dichloropropene	0.0049	UF	0.0049	UF	0
Toluene	0.0049	UF	0.0049	UF	0
trans-1,3-Dichloropropene	0.0049	UF	0.0049	UF	0
1,1,2-Trichloroethane	0.0049	UF	0.0049	UF	0
Tetrachloroethene	0.00974	F	0.0107	F	9
Dibromochloromethane	0.0049	UF	0.0049	UF	C
Chlorobenzene	0.0049	UF	0.0049	UF	C
Ethylbenzene	0.0049	UF	0.0049	UF	C
Bromoform	0.0049	UF	0.0049	UF	C
1,1,2,2-Tetrachloroethane	0.0049	UF	0.0049	UF	C

U - The material was analyzed for but was not detected. The assoc numerical value is an instrumental detection limit, adjusted f sample weight.

F - Data have been generated using FASP methodologies. Analytes a tentatively identified and concentrations are quantitative estimates.

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6.2 Polychlorinated Biphenyl Compound QA/QC

6.2.1 Method Blank Results

A method blank was performed with every set of samples extracted; a minimum of one method blank per 20 samples was performed.

Table 6.2.1.1

METHOD BLANK RESULTS
POLYCHLORINATED BIPHENYL FASP ANALYSIS
Northwest Pipe and Casing, Clackamas, Oregon
(mg/kg)

	Compound	
Sample Number	A1254	A1260
MBLK 12-13 PCB	1.0 UF	1.0 UF
MBLK 12-14-1 PCB	1.0 UF	1.0 UF
MBLK 12-14-2 PCB	1.0 UF	1.0 UF
MBLK 12-22 PCB	1.0 UF	1.0 UF

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

6.2.2 Matrix Spike Results

Matrix spikes were performed by adding a known quantity of Arc 1254 to samples specified for QC; a minimum of one matrix spike pe samples was performed. Advisory recovery limits are 30 percent tc percent for all spiked compounds.

Table 6.2.2.1

MATRIX SPIKE RECOVERY RESULTS
POLYCHLORINATED BIPHENYL FASP ANALYSIS
Northwest Pipe and Casing, Clackamas, Oregon
(mg/kg A1254)

Sample Number	Spiked Sample	Sample Results	Spike Amount Added	Percent Recover
B-2	13.5	9.34	4.88	85.2
E-3	5.85 F	1.02 F	4.85	99.6
F-5	1.66 F	0.87 UF	4.42	37.6
G-3	3.79 F	2.79 F	4.10	24.4
G-4	8.19 F	7.40 F	4.35	18.2

U - The material was analyzed for but was not detected. The assoc numerical value is an instrumental detection limit, adjusted f sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes a tentatively identified and concentrations are quantitative estimates.

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6.2.3 Duplicate Results

Duplicate analyses were performed at a minimum of one duplicate per 20 samples; advisory RPD limits are ±100 percent for all target analytes detected above five times the FASP quantitation limits.

Table 6.2.3.1

DUPLICATE RESULTS
POLYCHLORINATED BIPHENYL FASP ANALYSIS
Northwest Pipe and Casing, Clackamas, Oregon
(mg/kg A1254)

Sample Number	Sample Results	Duplicate Results	Relative Percent Difference
B-1	2.49 F	1.49 F	50.3*
E-2	68.5 F	59.4 F	14.2
F-1	0.88 UF	0.86 UF	0
003	0.89 UF	0.89 UF	0

* Sample results were less than five times the FASP quantitation limit.

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

6.3 Polycyclic Aromatic Hydrocarbon QA/QC

6.3.1 Method Blank Results

A method blank was performed with every set of samples extracte minimum of one method blank per 20 samples was performed. Reported levels of a compound found in any method blank were flagged "UF" (adjusted quantitation limit) if the concentration found in the samp was below five times the concentration found in the associated methc blank (ten times for common solvents).

Table 6.3.1.1

METHOD BLANK RESULTS
POLYCYCLIC AROMATIC HYDROCARBON FASP ANALYSIS
Northwest Pipe and Casing, Clackamas, Oregon
(mg/kg)

	Sample Number			
Compound	MBLK12-12	MBLK12-13-1	MBLK12-13-2	M:
Naphthalene	2.0 UF	2.0 UF	2.0 UF	
Acenaphthylene	2.0 UF	2.0 UF	2.0 UF	
Acenaphthene	2.0 UF	2.0 UF	2.0 UF	
Fluorene	2.0 UF	2.0 UF	2.0 UF	
Phenanthrene	2.0 UF	2.0 UF	2.0 UF	
Anthracene	2.0 UF	2.0 UF	2.0 UF	
Fluoranthene	2.0 UF	2.0 UF	2.0 UF	
Pyrene	2.0 UF	2.0 UF	2.0 UF	
Chrysene/Benzo(a)Anthracene	2.0 UF	2.0 UF	2.0 UF	
Benzo(b)fluoranthene/ Benzo(k)fluoranthene	2.0 UF	2.0 UF	2.0 UF	
Benzo(a)pyrene	2.0 UF	2.0 UF	2.0 UF	
Indeno(1,2,3-c,d)pyrene/ Dibenzo(a,h)anthracene	2.0 UF	2.0 UF	2.6 F	
Benzo(g,h,i)perylene	2.0 UF	2.0 UF	2.0 UF	

U - The material was analyzed for but was not detected. The associ numerical value is an instrumental detection limit, adjusted fc sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes a: tentatively identified and concentrations are quantitative estimates.

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6.3.2 Matrix Spike Results

Matrix spikes were performed by adding a known quantity of target analytes to samples specified for QC; a minimum of one matrix spike per 20 samples was performed. Advisory recovery limits are 30 percent to 200 percent for all spiked compounds.

Table 6.3.2.1

MATRIX SPIKE RESULTS
POLYCYCLIC AROMATIC HYDROCARBON FASP ANALYSIS
Northwest Pipe and Casing, Clackamas, Oregon
(mg/kg)

Compound	B-2 Spiked Sample	B-2 Sample Results	Spike Amount Added	Percent Recovery
Naphthalene	104 F	3.77 UF	97.6	107
Acenaphthylene	106 F	3.77 UF	97.6	109
Acenaphthene	101 F	3.77 UF	97.6	103
Fluorene	110 F	3.77 UF	97.6	113
Phenanthrene Anthracene	210 F*	12.6 F*	195*	101*
Fluoranthene	121 F	27.2 F	97.6	96.1
Pyrene	118 F	22.5 F	97.6	97.8
Chrysene/Benzo(a)anthracene	276 F	21.4 F	195	131
Benzo(b)fluoranthene/ Benzo(k)fluoranthene	242 F	16.6 F	195	116
Benzo(a)pyrene	133 F	25.2 F	97.6	110
Indeno(1,2,3-c,d)pyrene/ Dibenzo(a,h)anthracene	259 F	6.47 F	195	130
Benzo(g,h,i)perylene	136 F	3.77 UF	97.6	139

* Phenanthrene and anthracene coeluted.

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

Table 6.3.2.1 (Cont.)

Compound	E-3 Spiked Sample		E-3 Sample Results		Spike Amount Added	Pe Re
Naphthalene	27.2	F	18.8	UF	40.0	
Acenaphthylene	32.9	F	18.8	UF	40.0	
Acenaphthene	40.9	F	18.8	UF	40.0	
Fluorene	37.6	F	18.8	UF	40.0	
Phenanthrene Anthracene	138	F*	70.1	F*	80.0*	
Fluoranthene	366	F	155	F	40.0	
Pyrene	493	F	307	F	40.0	
Chrysene/Benzo(a)anthracene	550	F	201	F	80.0	
Benzo(b)fluoranthene/ Benzo(k)fluoranthene	288	F	202	F	80.0	
Benzo(a)pyrene	128	F	185	F	40.0	
Indeno(1,2,3-c,d)pyrene/ Dibenzo(a,h)anthracene	105	F	56.2	F	80.0	
Benzo(g,h,i)perylene	79.6	F	52.8	F	40.0	

* Phenanthrene and anthracene coeluted.

U - The material was analyzed for but was not detected. The asso numerical value is an instrumental detection limit, adjusted sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes tentatively identified and concentrations are quantitative estimates.

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Table 6.3.2.1 (Cont.)

Compound	F-5 Spiked Sample	F-5 Sample Results	Spike Amount Added	Percent Recovery
Naphthalene	35.4 F	1.41 UF	41.7	84.9
Acenaphthylene	37.2 F	1.41 UF	41.7	89.2
Acenaphthene	56.6 F	4.63 F	41.7	125
Fluorene	51.6 F	2.84 F	41.7	117
Phenanthrene Anthracene	165 F*	34.9 F*	83.3*	156*
Fluoranthene	111 F	45.8 F	41.7	156
Pyrene	112 F	53.4 F	41.7	141
Chrysene/Benzo(a)anthracene	152 F	35.7 F	83.3	140
Benzo(b)fluoranthene/ Benzo(k)fluoranthene	97.7 F	19.3 F	83.3	94.0
Benzo(a)pyrene	56.9 F	9.82 F	41.7	113
Indeno(1,2,3-c,d)pyrene/ Dibenzo(a,h)anthracene	74.5 F	7.43 F	83.3	80.4
Benzo(g,h,i)perylene	45.1 F	4.80 F	41.7	96.6

* Phenanthrene and anthracene coeluted.

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

Table 6.3.2.1 (Cont.)

Compound	G-3 Spiked Sample	G-3 Sample Results	Spike Amount Added	Perc Recc
Naphthalene	27.5 F	1.41 UF	33.9	8
Acenaphthylene	27.0 F	1.41 UF	33.9	7
Acenaphthene	26.6 F	1.41 UF	33.9	7
Fluorene	26.8 F	1.41 UF	33.9	7
Phenanthrene	51.0 F*	1.41 UF	67.8*	7
Anthracene		1.41 UF		
Fluoranthene	28.4 F	1.41 UF	33.9	8
Pyrene	29.5 F	1.41 UF	33.9	8
Chrysene/Benzo(a)anthracene	56.2 F	1.41 UF	67.8	8
Benzo(b)fluoranthene/ Benzo(k)fluoranthene	54.5 F	2.00 F	67.8	7
Benzo(a)pyrene	29.3 F	1.41 UF	33.9	8
Indeno(1,2,3-c,d)pyrene/ Dibenzo(a,h)anthracene	48.5 F	1.41 UF	67.8	7
Benzo(g,h,i)perylene	27.0 F	1.41 UF	33.9	7

* Phenanthrene and anthracene coeluted.

U - The material was analyzed for but was not detected. The associ numerical value is an instrumental detection limit, adjusted fc sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes a: tentatively identified and concentrations are quantitative estimates.

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Table 6.3.2.1 (Cont.)

Compound	G-4 Spiked Sample	G-4 Sample Results	Spike Amount Added	Percent Recovery
Naphthalene	16.7 UF	18.8 UF	41.8	0
Acenaphthylene	22.3 F	18.8 UF	41.8	53.3
Acenaphthene	20.9 F	55 F	41.8	0
Fluorene	26.8 F	23 F	41.8	9.1
Phenanthrene Anthracene	58.2 F*	210 F*	83.7*	0*
Fluoranthene	71.0 F	270 F	41.8	0
Pyrene	67.9 F	300 F	41.8	0
Chrysene/Benzo(a)anthracene	110 F	190 F	83.7	0
Benzo(b)fluoranthene/ Benzo(k)fluoranthene	114 F	110 F	83.7	4.8
Benzo(a)pyrene	55.3 F	84 F	41.8	0
Indeno(1,2,3-c,d)pyrene/ Dibenzo(a,h)anthracene	69.5 F	36 F	83.7	40.0
Benzo(g,h,i)perylene	42.0 F	27 F	41.8	35.9

* Phenanthrene and anthracene coeluted.

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

6.3.3 Duplicate Results

Duplicate analyses were performed at a minimum of one duplicate 20 samples; advisory RPD limits are ±100 percent for all target analy detected above the five times FASP quantitation limits.

Table 6.3.3.1

DUPLICATE RESULTS
POLYCYCLIC AROMATIC HYDROCARBON FASP ANALYSIS
Northwest Pipe and Casing, Clackamas, Oregon
(mg/kg)

Compound	B-1 Sample Results	B-1 Duplicate Results	Relati Percen Differe
Naphthalene	1.50 UF	3.27 UF	0
Acenaphthylene	1.50 UF	3.27 UF	0
Acenaphthene	1.50 UF	3.27 UF	0
Fluorene	1.50 UF	3.27 UF	0
Phenanthrene	4.16 F*	3.27 UF	200**
Anthracene		3.27 UF	
Fluoranthene	10.8 F	4.25 F	87.
Pyrene	11.4 F	4.58 F	
Chrysene/Benzo(a)anthracene	18.9 F	6.82 F	93.
Benzo(b)fluoranthene/ Benzo(k)fluoranthene	14.4 F	9.81 F	37.
Benzo(a)pyrene	1.81 F	5.33 F	98.
Indeno(1,2,3-c,d)pyrene/ Dibenzo(a,h)anthracene	5.16 F	3.59 F	35.
Benzo(g,h,i)perylene	3.51 F	3.33 F	5.

* Phenanthrene and anthracene coeluted.
** Sample results were less than five times the FASP quantitation li

U - The material was analyzed for but was not detected. The associ numerical value is an instrumental detection limit, adjusted fo sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes ar tentatively identified and concentrations are quantitative estimates.

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Table 6.3.3.1 (Cont.)

Compound	E-2 Sample Results		E-2 Duplicate Results		Relative Percent Difference
Naphthalene	8.83	F	3.76	UF	200**
Acenaphthylene	3.32	UF	3.76	UF	0
Acenaphthene	22.0	F	10.0	F	75.0
Fluorene	20.6	F	9.84	F	70.7
Phenanthrene Anthracene	118	F*	105	F*	11.7*
Fluoranthene	106	F	123	F	15.8
Pyrene	116	F	127	F	9.05
Chrysene/Benzo(a)anthracene	137	F	143	F	4.29
Benzo(b)fluoranthene/ Benzo(k)fluoranthene	108	F	136	F	23.0
Benzo(a)pyrene	101	F	61.0	F	49.4
Indeno(1,2,3-c,d)pyrene/ Dibenzo(a,h)anthracene	44.7	F	62.7	F	33.5
Benzo(g,h,i)perylene	27.1	F	45.0	F	49.7

* Phenanthrene and anthracene coeluted.
** Sample results were less than five times the FASP quantitation limit.

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

Table 6.3.3.1 (Cont.)

Compound	F-1 Sample Results	F-1 Duplicate Results	Relat Perce: Diff
Naphthalene	1.8 UF	1.61 UF	C
Acenaphthylene	1.8 UF	1.61 UF	C
Acenaphthene	1.8 UF	1.61 UF	0
Fluorene	1.8 UF	1.61 UF	0
Phenanthrene	1.8 UF	1.61 UF	(
Anthracene	1.8 UF	1.61 UF	(
Fluoranthene	1.8 UF	1.61 UF	0
Pyrene	1.8 UF	1.61 UF	(
Chrysene/Benzo(a)anthracene	1.8 UF	1.61 UF	(
Benzo(b)fluoranthene/ Benzo(k)fluoranthene	1.8 UF	1.61 UF	C
Benzo(a)pyrene	1.8 UF	1.61 UF	(
Indeno(1,2,3-c,d)pyrene/ Dibenzo(a,h)anthracene	1.8 UF	1.61 UF	C
Benzo(g,h,i)perylene	1.8 UF	1.61 UF	(

U - The material was analyzed for but was not detected. The numerical value is an instrumental detection limit, adjus sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes tentatively identified and concentrations are quantitative estimates.

Table 6.3.3.1 (Cont.)

Compound	003 Sample Results	003 Duplicate Results	Relative Percent Difference
Naphthalene	1.89 UF	1.76 UF	0
Acenaphthylene	1.89 UF	1.76 UF	0
Acenaphthene	1.89 UF	1.76 UF	0
Fluorene	1.89 UF	1.76 UF	0
Phenanthrene	1.89 UF	1.76 UF	0
Anthracene	1.89 UF	1.76 UF	0
Fluoranthene	1.89 UF	1.76 UF	0
Pyrene	1.89 UF	1.76 UF	0
Chrysene/Benzo(a)anthracene	1.89 UF	1.76 UF	0
Benzo(b)fluoranthene/ Benzo(k)fluoranthene	2.26 F	1.76 UF	200**
Benzo(a)pyrene	1.89 UF	1.76 UF	0
Indeno(1,2,3-c,d)pyrene/ Dibenzo(a,h)anthracene	2.55 F	1.76 UF	200**
Benzo(g,h,i)perylene	1.89 UF	1.76 UF	0

** Sample results were less than five times the FASP quantitation limit.

U - The material was analyzed for but was not detected. The associated numerical value is an instrumental detection limit, adjusted for sample weight, extraction volume, and sample dilution.

F - Data have been generated using FASP methodologies. Analytes are tentatively identified and concentrations are quantitative estimates.

Appendix E

BORING LOGS/WELL COMPLETION DIAGRAMS/WELL REPORTS

MW1
WELL REPORT
Ecology and Environment, Inc.

Project: Northwest Pipe and Casing, Clackamas, Oregon
Well Location: Southeast Corner of site
Elevation: 112.49 TOC
Date Completed: 2/1/90
Driller: Otto Keller/Keller Drilling Company
Geologist: Bob Sullivan/Ecology & Environment, Inc.
Depth of Borehole (feet): 18.0
Depth of Well (feet): 18.0
Static Water Level (feet): 1.7
Screened Interval (feet): 13.0 to 18.0
Hole Diameter (inches): 7-1/8 (drive casing O.D. preceded by 6: cable tool)
Well Diameter (inches): 2.0
Slot Size (inches): 0.010
Sand Pack
- Calculated Amount (gallons)[1]: 13.4
- Actual Amount (gallons): 16.0
- Description: #16 mesh, clean, graded silica sand
- Depth to Top (feet): 22.0

Bentonite Seal
- Calculated Amount (gallons)[1]: 7.6
- Actual Amount (gallons): 4.0
- Description: Sodium bentonite pellets/chips, hydrated downhole
- Depth to Top (feet): 7.0

Cement-Bentonite Grout
- Calculated Amount (gallons)[1]: 13.4
- Actual Amount (gallons): 15.0
- Description: 96% neat cement/47% bentonite, mud weight = 14.1 pounds per gallon, tremied downhole.
- Water Developed (gallons): 80.0

Construction Diagram/Lithologic Description: Attached

1. Decimal Book Calculation - Volume and Fill between Pipe and Hole: One string of 2.0-inch O.D. tubing. Hole diameter of 7-1/8 inch. Gallons per linear foot = 1.9080.

MW2
WELL REPORT
Ecology and Environment, Inc.

Project: Northwest Pipe and Casing, Clackamas, Oregon
Well Location: Southwest Corner of site
Elevation: 111.25 TOC
Date Completed: 2/5/90
Driller: Otto Keller/Keller Drilling Company
Geologist: Bob Sullivan/Ecology & Environment, Inc.
Depth of Borehole (feet): 16.8
Depth of Well (feet): 15.8
Static Water Level (feet): 2.1
Screened Interval (feet): 10.8 to 15.8
Hole Diameter (inches): 7-1/8 (drive casing O.D. preceded by 6: cable tool)
Well Diameter (inches): 2.0
Slot Size (inches): 0.010
Sand Pack
- Calculated Amount (gallons)[1]: 14.5
- Actual Amount (gallons): 17.0
- Description: #16 mesh, clean, graded silica sand
- Depth to Top (feet): 8.2

Bentonite Seal
- Calculated Amount (gallons)[1]: 5.7
- Actual Amount (gallons): 4.0
- Description: Sodium bentonite pellets/chips, hydrated downhole
- Depth to Top (feet): 5.2

Cement-Bentonite Grout
- Calculated Amount (gallons)[1]: 9.9
- Actual Amount (gallons): 12.0
- Description: 96% neat cement/47% bentonite, mud weight = 14.1 pounds per gallon, tremied downhole.
- Water Developed (gallons): 30.0

Construction Diagram/Lithologic Description: Attached

1. Decimal Book Calculation - Volume and Fill between Pipe and Hole: One string of 2.0-inch O.D. tubing. Hole diameter of 7-1/8 inch. Gallons per linear foot = 1.9080.

MW3
WELL REPORT
Ecology and Environment, Inc.

Project: Northwest Pipe and Casing, Clackamas, Oregon
Well Location: Northwest Corner of site
Elevation: 109.76 TOC
Date Completed: 2/7/90
Driller: Otto Keller/Keller Drilling Company
Geologist: Bob Sullivan/Ecology & Environment, Inc.
Depth of Borehole (feet): 16.2
Depth of Well (feet): 16.2
Static Water Level (feet): 1.8
Screened Interval (feet): 11.2 to 16.2
Hole Diameter (inches): 7-1/8 (drive casing O.D. preceded by 6: cable tool)
Well Diameter (inches): 2.0
Slot Size (inches): 0.010
Sand Pack
- Calculated Amount (gallons)[1]: 9.5
- Actual Amount (gallons): 12.0
- Description: #16 mesh, clean, graded silica sand
- Depth to Top (feet): 11.2

Bentonite Seal
- Calculated Amount (gallons)[1]: 5.7
- Actual Amount (gallons): 3.5
- Description: Sodium bentonite pellets/chips, hydrated downhole
- Depth to Top (feet): 8.2

Cement-Bentonite Grout
- Calculated Amount (gallons)[1]: 15.6
- Actual Amount (gallons): 18.0
- Description: 96% neat cement/47% bentonite, mud weight = 14.1 pounds per gallon, tremied downhole.
- Water Developed (gallons): 75.0

Construction Diagram/Lithologic Description: Attached

1. Decimal Book Calculation - Volume and Fill between Pipe and Hole: One string of 2.0-inch O.D. tubing. Hole diameter of 7-1/8 inch. Gallons per linear foot = 1.9080.

MW4
WELL REPORT
Ecology and Environment, Inc.

Project: Northwest Pipe and Casing, Clackamas, Oregon
Well Location: Central area of site
Elevation: 111.72 TOC
Date Completed: 2/8/90
Driller: Otto Keller/Keller Drilling Company
Geologist: Bob Sullivan/Ecology & Environment, Inc.
Depth of Borehole (feet): 13.1
Depth of Well (feet): 13.1
Static Water Level (feet): 1.8
Screened Interval (feet): 8.1 to 13.1
Hole Diameter (inches): 7-1/8 (drive casing O.D. preceded by 6: cable tool)
Well Diameter (inches): 2.0
Slot Size (inches): 0.010
Sand Pack
- Calculated Amount (gallons)[1]: 11.6
- Actual Amount (gallons): 16.0
- Description: #16 mesh, clean, graded silica sand
- Depth to Top (feet): 7.0

Bentonite Seal
- Calculated Amount (gallons)[1]: 5.7
- Actual Amount (gallons): 4.5
- Description: Sodium bentonite pellets/chips, hydrated downhole
- Depth to Top (feet): 4.0

Cement-Bentonite Grout
- Calculated Amount (gallons)[1]: 7.6
- Actual Amount (gallons): 10.0
- Description: 96% neat cement/47% bentonite, mud weight = 14.1 pounds per gallon, tremied downhole.
- Water Developed (gallons): 55.0

Construction Diagram/Lithologic Description: Attached

1. Decimal Book Calculation - Volume and Fill between Pipe and Hole: One string of 2.0-inch O.D. tubing. Hole diameter of 7-1/8 inch. Gallons per linear foot = 1.9080.

MW5
WELL REPORT
Ecology and Environment, Inc.

Project: Northwest Pipe and Casing, Clackamas, Oregon
Well Location: Northeast Corner of site
Elevation: 111.41 TOC
Date Completed: 2/9/90
Driller: Otto Keller/Keller Drilling Company
Geologist: Bob Sullivan/Ecology & Environment, Inc.
Depth of Borehole (feet): 13.2
Depth of Well (feet): 13.2
Static Water Level (feet): 3.7
Screened Interval (feet): 8.2 to 13.2
Hole Diameter (inches): 7-1/8 (drive casing O.D. preceded by 6: cable tool)
Well Diameter (inches): 2.0
Slot Size (inches): 0.010
Sand Pack
- Calculated Amount (gallons)[1]: 11.4
- Actual Amount (gallons): 12.0
- Description: #16 mesh, clean, graded silica sand
- Depth to Top (feet): 7.2

Bentonite Seal
- Calculated Amount (gallons)[1]: 5.7
- Actual Amount (gallons): 4.0
- Description: Sodium bentonite pellets/chips, hydrated downhole
- Depth to Top (feet): 4.2

Cement-Bentonite Grout
- Calculated Amount (gallons)[1]: 8.0
- Actual Amount (gallons): 10.0
- Description: 96% neat cement/47% bentonite, mud weight = 14.1 pounds per gallon, tremied downhole.
- Water Developed (gallons): 4.0

Construction Diagram/Lithologic Description: Attached

1. Decimal Book Calculation - Volume and Fill between Pipe and Hole: One string of 2.0-inch O.D. tubing. Hole diameter of 7-1/8 inch. Gallons per linear foot = 1.9080.

MW6
WELL REPORT
Ecology and Environment, Inc.

Project: Northwest Pipe and Casing, Clackamas, Oregon
Well Location: North-central area of site
Elevation: 110.58 TOC
Date Completed: 2/10/90
Driller: Otto Keller/Keller Drilling Company
Geologist: Bob Sullivan/Ecology & Environment, Inc.
Depth of Borehole (feet): 13.5
Depth of Well (feet): 13.0
Static Water Level (feet): 1.6
Screened Interval (feet): 8.0 to 13.0
Hole Diameter (inches): 7-1/8 (drive casing O.D. preceded by 6: cable tool)
Well Diameter (inches): 2.0
Slot Size (inches): 0.010
Sand Pack
- Calculated Amount (gallons)[1]: 13.4
- Actual Amount (gallons): 13.0
- Description: #16 mesh, clean, graded silica sand
- Depth to Top (feet): 6.0

Bentonite Seal
- Calculated Amount (gallons)[1]: 5.7
- Actual Amount (gallons): 4.5
- Description: Sodium bentonite pellets/chips, hydrated downhole
- Depth to Top (feet): 3.0

Cement-Bentonite Grout
- Calculated Amount (gallons)[1]: 5.7
- Actual Amount (gallons): 8.0
- Description: 96% neat cement/47% bentonite, mud weight = 14.1 pounds per gallon, tremied downhole.
- Water Developed (gallons): 40.0

Construction Diagram/Lithologic Description: Attached

1. Decimal Book Calculation - Volume and Fill between Pipe and Hole: One string of 2.0-inch O.D. tubing. Hole diameter of 7-1/8 inch. Gallons per linear foot = 1.9080.

MW7
WELL REPORT
Ecology and Environment, Inc.

Project: Northwest Pipe and Casing, Clackamas, Oregon
Well Location: North boundary of site
Elevation: 109.10
Date Completed: 2/13/90
Driller: Otto Keller/Keller Drilling Company
Geologist: Bob Sullivan/Ecology & Environment, Inc.
Depth of Borehole (feet): 13.6
Depth of Well (feet): 13.6
Static Water Level (feet): 2.1
Screened Interval (feet): 8.6 to 13.6
Hole Diameter (inches): 7-1/8 (drive casing O.D. preceded by 6: cable tool)
Well Diameter (inches): 2.0
Slot Size (inches): 0.010
Sand Pack
- Calculated Amount (gallons)[1]: 13.4
- Actual Amount (gallons): 13.0
- Description: #16 mesh, clean, graded silica sand
- Depth to Top (feet): 6.6

Bentonite Seal
- Calculated Amount (gallons)[1]: 5.7
- Actual Amount (gallons): 4.5
- Description: Sodium bentonite pellets/chips, hydrated downhole
- Depth to Top (feet): 3.6

Cement-Bentonite Grout
- Calculated Amount (gallons)[1]: 6.9
- Actual Amount (gallons): 10.0
- Description: 96% neat cement/47% bentonite, mud weight = 14.1 pounds per gallon, tremied downhole.
- Water Developed (gallons): 35.0

Construction Diagram/Lithologic Description: Attached

1. Decimal Book Calculation - Volume and Fill between Pipe and Hole: One string of 2.0-inch O.D. tubing. Hole diameter of 7-1/8 inch. Gallons per linear foot = 1.9080.

DRILLING AND SAMPLE LOG

Sheet 1 of 1

Project: Northwest Pipe and Casing | Job No: FOR0210XC | Boring No: MW1

Boring Contractor: Staco/Keller Drilling | Location: SE Corner of Site

Boring Method: 6" Cable Tool | Surface Elevation: 110.4 ft. | Datum: Top of Casing

Logged by: Bob Sullivan (E&E) | Casing Elevation: 112.49 ft. | Datum: Top of Casing

Date Completed: 2/1/90 | Total Depth: 18.0 Feet GL | Datum: Below Ground Surface

Groundwater: 4.1 ft. Below Top of Casing (Static)

WELL DETAILS	DEPTH (FEET)	SYMBOL	LITHOLOGICAL DESCRIPTION	SAMPLE No.	SAMPLE Type	REMARKS
Cement-Bentonite Grout; 2" Dia. Type 304 Schedule 10 Stainless Steel Casing	0	ML	**CLAYEY SILT** -Fill; Silt, 50%, fine granular, dark brown, intervening matrix; Clay, 30%, platy, semi-dry; Sand, 20%, fine grained.			▼ Water Level at 1.7 feet
	5			1	Split Spoon	Zone of Contamination Clasts of Suspected Coal Tar (0-6 ft.)
Bentonite Seal		SP	**GRAVELLY SAND** -Sand, 60%, medium grained, brown, intervening matrix; Gravel, 20%, pebble to cobble size inclusions; Silt, 10%; Clay 10%.	2	Split Spoon	Zone of Saturation
	10	GC	**CLAYEY GRAVEL** -Gravel, 70%, gray, subrounded, moderately sorted, pebble to cobble size; Clay, 20%; Silt, 10%.			
#16 Mesh Sand Pack; 0.010" Slot Stainless Steel Screen	15	GP	**SANDY GRAVEL** Gravel, 80%, gray or tan, rounded, poorly sorted, pebble to boulder size; Sand, 10%, coarse grained; Silt, 10%.	3	Split Spoon	
Sump	20					

DRILLING AND SAMPLE LOG

Sheet 1 of 1

Project: Northwest Pipe and Casing
Job No: FOR0210XC
Boring No: MW2

Boring Contractor: Staco/Keller Drilling
Location: SW Corner of Site

Boring Method: 6" Cable Tool
Surface Elevation: 109.15 ft.
Datum: Top of Casing

Logged by: Bob Sullivan (E&E)
Casing Elevation: 111.25 ft.
Datum: Top of Casing

Date Completed: 2/5/90
Total Depth: 15.8 Feet GL
Datum: Below Ground Surface

Groundwater: 4.5 ft. Below Top of Casing (Static)

WELL DETAILS	DEPTH (FEET)	SYMBOL	LITHOLOGICAL DESCRIPTION	SAMPLE No.	SAMPLE Type	REMARKS
Cement-Bentonite Grout; 2" Dia. Type 304 Schedule 10 Stainless Steel Casing	0	ML	CLAYEY SILT -Fill; Silt, 50%, fine granular, dark brown, intervening matrix; Clay, 20%, Gravel, 20%, pebble size inclusions; Sand, 10%.			Water Level at 2.1 feet
				1	Split Spoon	Zone of Contamination Suspected Creosote Timbers
Bentonite Seal	5	GM	SILTY GRAVEL -Gravel, 60%, gray or tan, subrounded, poorly sorted, pebble to cobble size; silt, 40%, intervening matrix.			Zone of Saturation
#16 Mesh Sand Pack				2	Split Spoon	
0.010" Slot Stainless Steel Screen	10	GP	SANDY GRAVEL -Gravel, 80%, gray, subangular to subrounded, poorly to moderately sorted, pebble to cobble size; Sand, 20%, medium grained, intervening matrix, no fines.			
Sump	15			3	Split Spoon	
	20					

DRILLING AND SAMPLE LOG

Sheet 1 of 1

Project: Northwest Pipe and Casing | Job No: FOR0210XC | Boring No: MW7

Boring Contractor: Staco/Keller Drilling | Location: North Boundary of Site

Boring Method: 6" Cable Tool | Surface Elevation: 107.00 ft. | Datum: Top of Casing

Logged by: Bob Sullivan (E&E) | Casing Elevation: 119.10 ft. | Datum: Top of Casing

Date Completed: 2/13/90 | Total Depth: 13.6 Feet GL | Datum: Below Ground Surface

Groundwater: 4.2 ft. Below Top of Casing (Static)

WELL DETAILS	DEPTH (FEET)	SYMBOL	LITHOLOGICAL DESCRIPTION	SAMPLE No.	SAMPLE Type	REMARKS
Cement-Bentonite Grout; Bentonite Seal; 2" Dia. Type 304 Schedule 10 Stainless Steel Casing; #16 Mesh Sand Pack; 0.010" Slot Stainless Steel Screen	0		FILL -Suspected road base, black, subrounded, moderately sorted, pea to pebble size, dense gravel, intervening silt matrix.			Water Level at 2.1 feet
	5			1	Split Spoon	
		GP	SANDY GRAVEL -Gravel, 70%, gray or tan, subangular to subrounded, moderately sorted, pea to pebble size; Sand, 30%, coarse grained, intervening matrix.			Zone of Contamination Gas Generation (7.0-9.0 ft.)
	10			2	Split Spoon	
		SW	GRAVELLY SAND -Sand, 90%, coarse grained, brown, bedded matrix; Gravel, 10%, pea clasts.			
		GP	SANDY GRAVEL -Gravel, 70%, gray or tan, subrounded, moderately sorted, pebble to cobble size; Sand, 30%, coarse grained, intervening matrix.			Zone of Saturation
	15					
	20					

DRILLING AND SAMPLE LOG

Sheet 1 of 1

Project: Northwest Pipe and Casing
Job No: FOR0210XC
Boring No: MW3

Boring Contractor: Staco/Keller Drilling
Location: NW Corner of Site

Boring Method: 6" Cable Tool
Surface Elevation: 107.36 ft.
Datum: Top of Casing

Logged by: Bob Sullivan (E&E)
Casing Elevation: 109.76 ft.
Datum: Top of Casing

Date Completed: 2/7/90
Total Depth 16.2 Feet GL
Datum: Below Ground Surface

Groundwater: 4.2 ft. Below Top of Casing (Static)

WELL DETAILS	DEPTH (FEET)	SYMBOL	LITHOLOGICAL DESCRIPTION	SAMPLE No.	SAMPLE Type	REMARKS
Cement-Bentonite Grout; 2" Dia. Type 304 Schedule 10 Stainless Steel Casing	0	SM	**SILTY SAND** -Fill; Sand, 60%, medium grained, brown, intervening matrix; Silt, 30%; Gravel, 10%, pebble size inclusions.			Water Level at 1.8 feet
	5	CL	**GRAVELLY CLAY** -Fill; Clay, 60%, blocky, saturated, intervening matrix; Gravel, 30%, gray, subangular to subrounded, poorly to moderately sorted, pebble size; Silt, 10%, granular.	1	Split Spoon	Zone of Contamination Wood, Plastic, Rubber Clasts of Suspected Coal Tar (0-9 ft.)
Bentonite Seal	10	GP	**SANDY GRAVEL** -Gravel, 60%, varied color and mineralogy, subrounded, poorly to well sorted, pebble to cobble size; Sand, 40%, coarse grained, intervening matrix, no fines.	2	Split Spoon	
#16 Mesh Sand Pack; 0.010" Slot Stainless Steel Screen; Sump	15					Zone of Saturation
	20					

DRILLING AND SAMPLE LOG

Sheet 1 of 1

Project: Northwest Pipe and Casing
Job No: FOR0210XC
Boring No: MW5

Boring Contractor: Staco/Keller Drilling
Location: Northeast Corner of Site

Boring Method: 6" Cable Tool
Surface Elevation: 108.91 ft.
Datum: Top of Casing

Logged by: Bob Sullivan (E&E)
Casing Elevation: 111.41 ft.
Datum: Top of Casing

Date Completed: 2/9/90
Total Depth: 13.2 Feet GL
Datum: Below Ground Surface

Groundwater: 5.2 ft. Below Top of Casing (Static)

WELL DETAILS	DEPTH (FEET)	SYMBOL	LITHOLOGICAL DESCRIPTION	SAMPLE No.	SAMPLE Type	REMARKS
Cement-Bentonite Grout; 2" Dia. Type 304 Schedule 10 Stainless Steel Casing	0	SC	CLAYEY SAND-Sand, 60%, fine grained, brown, intervening matrix; Clay, 20%, platy, semi-dry; Silt, 10%, Gravel, 10%, pebble size inclusions.			▼ Water Level at 3.7 feet
Bentonite Seal	5	CL	SANDY CLAY -Clay, 60%, blocky, dry, intervening matrix; Sand, 30%, medium grained; Gravel, 10%, pebble size inclusions.	1	Split Spoon	
#16 Mesh Sand Pack; 0.010" Slot Stainless Steel Screen			FILL -Suspected coal tar.			Zone of Contamination Massive Suspected Coal Tar (7.0-10.0 ft.)
Sump	10	GM	SILTY GRAVEL -Gravel, 70%, gray or tan, subangular to subrounded, poorly to moderately sorted, pea to pebble size; Silt, 30%, fine, intervening matrix.	2	Split Spoon	
	15					
	20					

DRILLING AND SAMPLE LOG

Sheet 1 of 1

Project: Northwest Pipe and Casing
Job No: FOR0210XC
Boring No: MW6

Boring Contractor: Staco/Keller Drilling
Location: North-Central Area of Site

Boring Method: 6" Cable Tool
Surface Elevation: 108.48 ft.
Datum: Top of Casing

Logged by: Bob Sullivan (E&E)
Casing Elevation: 110.58 ft.
Datum: Top of Casing

Date Completed: 2/10/90
Total Depth: 13.0 Feet GL
Datum: Below Ground Surface

Groundwater: 3.7 ft. Below Top of Casing (Static)

WELL DETAILS	DEPTH (FEET)	SYMBOL	LITHOLOGICAL DESCRIPTION	SAMPLE No.	SAMPLE Type	REMARKS
Cement-Bentonite Grout; Bentonite Seal; 2" Dia. Type 304 Schedule 10 Stainless Steel Casing; #16 Mesh Sand Pack; 0.010" Slot Stainless Steel Screen; Sump	0	GM	**SILTY GRAVEL** -Gravel, 60%, gray, subrounded, poorly sorted, pebble to cobble size; Silt, 30%, intervening matrix; Clay, 10%.			Water Level at 1.6 feet
		GC	**CLAYEY GRAVEL** -Gravel, 60%, gray, subanguair to subrounded, moderatlely sorted, pebble size; Clay, 30%, intervening matrix; Silt, 10%.	1	Split Spoon	
	5	GP	**SANDY GRAVEL** -Gravel, 70%, varied color and mineralogy, subrounded, moderately sorted, pea to pebble to cobble size, dense; Sand, 30%, coarse grained, intervening matrix.			Zone of Saturation; Zone of Contamination Metal Shavings (7.0-9.0ft.)
	10	SW	**GRAVELLY SAND** -Sand, 80%, medium grained, brown, bedded matrix; Gravel, 20%, pebble clasts.	2	Split Spoon	
		GP	**SANDY GRAVEL** -Gravel, 70%, gray or tan, subangular, poorly to moderately sorted, pebble to cobble size; Sand, 30%, medium grained, intervening matrix.			
	15					
	20					

DRILLING AND SAMPLE LOG

Sheet 1 of 1

Project: Northwest Pipe and Casing | Job No: FOR0210XC | Boring No: MW4

Boring Contractor: Staco/Keller Drilling | Location: SW Corner of Site

Boring Method: 6" Cable Tool | Surface Elevation: 109.42 ft. | Datum: Top of Casing

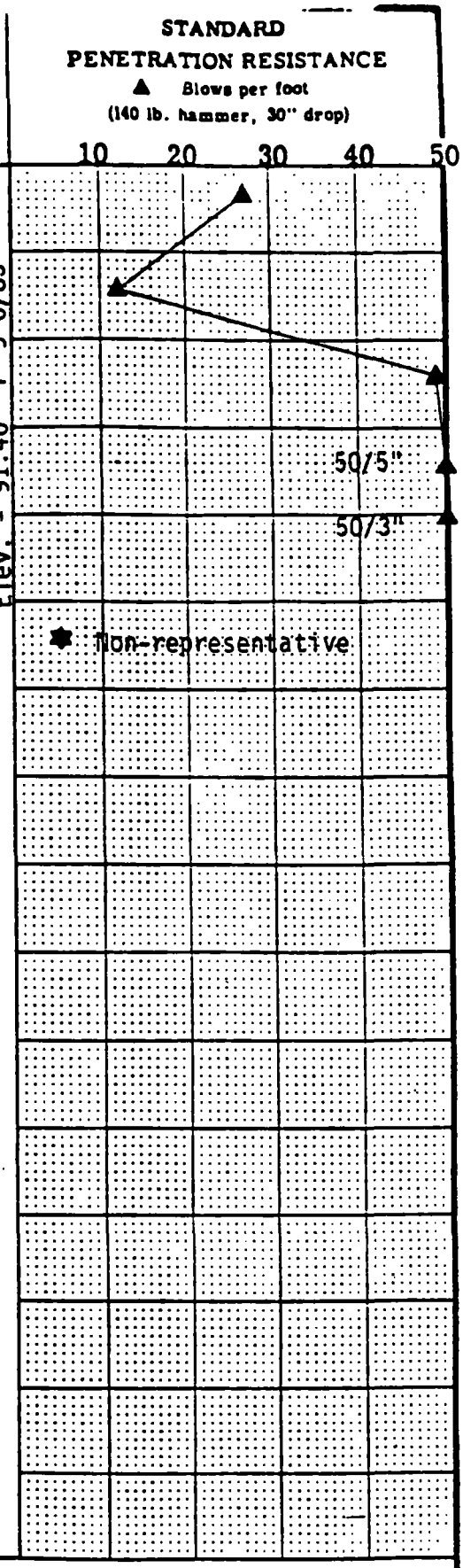
Logged by: Bob Sullivan (E&E) | Casing Elevation: 111.72 ft. | Datum: Top of Casing

Date Completed: 2/8/90 | Total Depth: 13.1 Feet GL | Datum: Below Ground Surface

Groundwater: 4.1 ft. Below Top of Casing (Static)

WELL DETAILS	DEPTH (FEET)	SYMBOL	LITHOLOGICAL DESCRIPTION	SAMPLE No.	SAMPLE Type	REMARKS
Cement-Bentonite Grout; 2" Dia. Type 304 Schedule 10 Stainless Steel Casing	0	SM	SILTY SAND -Sand, 60%, medium grained, brown, intervening matrix; Silt, 30%; Gravel, 10%, pebble size inclusions.			▼ Water Level at 1.8 feet; Zone of Contamination Contamination Waxy Oils (0-3.0 ft.)
Bentonite Seal	5	CL	SANDY CLAY -Clay, 60%, blocky; moist, intervening matrix; Sand, 40%, medium grained.	1	Split Spoon	
#16 Mesh Sand Pack; 0.010" Slot Stainless Steel Screen; Sump	10	GP	SANDY GRAVEL -Gravel, 70%, gray or tan, subrounded, poorly to moderately sorted, pebble to cobble size; Sand, 30%, coarse grained, intervening matrix.	2	Split Spoon	Zone of Saturation
	15					
	20					

DEPTH, FEET	SOIL DESCRIPTION	SAMPLES	GROUNDWATER
	Surface Elevation: 97.66		
	Medium dense, moist, brown, silty, clayey, fine SAND with some gravel. Traces of white powdery residue on ground surface.	S-1, S-2	
5	Dense to very dense, moist to saturated, brown, sandy, silty GRAVEL with interbedded gravelly, silty, fine to coarse SAND	S-3, S-4, S-5, S-6	Elev. = 91.40 ▽ 9-6/85
10			
15	Boring terminated at 14 feet 29 August 1985		
20	Notes: 1) All elevations referenced to top of MW-1 casing. 2) Top of MW-2 casing =Elevation 98.81		
25			
30	**Well Backfill** Concrete 0' - 1' Bentonite 1' - 3' Monterey sand 3' - 12'		
35			
40			



LEGEND

- I 2.0" O.D. split spoon sampler
- II 3.0" O.D. undisturbed sampler
- P Sampler pushed
- • Sample not recovered
- Piezometer tip
- ▽ Water level
- Atterberg limits: ⊢●⊣ ← Liquid limit; Natural water content; Plastic Limit
- ● % Water Content

LOG OF BORING NO. MW-2
W-4979
RITTENHOUSE-ZEMAN & ASSOC.
SOIL ENGINEERING AND GEOLOGY

DEPTH, FEET	SOIL DESCRIPTION	SAMPLES	GROUNDWATER	STANDARD PENETRATION RESISTANCE (▲ Blows per foot, 140 lb. hammer, 30" drop)
	Surface Elevation: 96.18			10 20 30 40 50
	Hard, slightly moist, brown, sandy, clayey SILT	S-1		
	Very dense, slightly moist to saturated, brown, sandy, silty GRAVEL with interbedded silty, fine to coarse SAND	S-2		69/12"
5		S-3	9/6/85	50/0"
		S-4	Elev. = 91.03	50/4"
10	Auger refused at 11 feet	S-5		50/4"
	Boring terminated at 11 feet 29 August 1985			
15				
20				
	Notes: 1) All elevations referenced to top of MW-1 casing. 2) Top of MW-3 casing =Elevation 97.65			
25				
30	**Well Backfill**			
	Concrete 0' - 1' Bentonite 1' - 3' Monterey sand 3' - 12'			
35				
40				

LEGEND

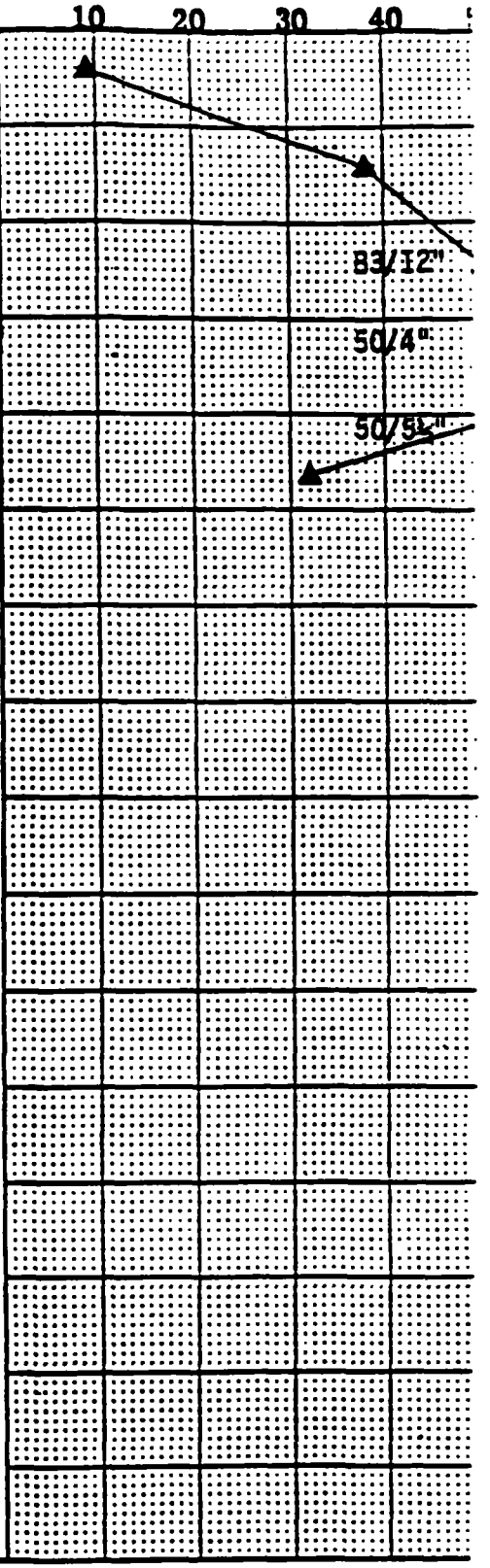
- I 2.0" O.D. split spoon sampler
- II 3.0" O.D. undisturbed sampler
- P Sampler pushed
- Sample not recovered
- Piezometer tip
- Water level
- Atterberg limits: Liquid limit; Natural water content; Plastic limit
- ● % Water Content

LOG OF BORING NO. MW-3

W-4979

RITTENHOUSE-ZEMAN & ASSOC.

DEPTH, FEET	SOIL DESCRIPTION Surface Elevation: 97.14	SAMPLES	GROUNDWA	STANDARD PENETRATION RESISTANCE ▲ Blows per foot (140 lb. hammer, 30" drop)
	Stiff, moist, brown, sandy, clayey SILT with (some gravel). Traces of white powdery residue on ground surface.	S-1 S-2	9-6-85	
5	Very dense to dense, moist to saturated, brown, silty, sandy GRAVEL with interbedded gravelly, silty, fine to coarse SAND	S-3 S-4	Elev = 91.35	83/12" 50/4"
10		S-5 S-6		50/5½"
	Boring terminated at 12 feet 29 August 1985			
15				
20	Notes: 1) All elevations referenced to top of MW-1 casing. 2) Top of MW-1 casing =Elevation 100.00			
25				
30	**Well Backfill** Concrete 0' - 1' Bentonite 1' - 3' Monterey sand 3' - 12'			
35				
40				



LEGEND

- I 2.0" O.D. split spoon sampler
- II 3.0" O.D. undisturbed sampler
- P Sampler pushed
- • Sample not recovered
- Piezometer tip
- ▽ Water level
- Atterberg limits: Liquid limit; Natural water content; Plastic Limit
- ● % Water Content

LOG OF BORING NO. MW-1
W-4979

RITTENHOUSE-ZEMAN & ASSOC
SOILS ENGINEERING AND GEOLOGY

DEPTH, FEET	SOIL DESCRIPTION Surface Elevation: 97.89	SAMPLES	GROUNDWA	STANDARD PENETRATION RESISTANCE ▲ Blows per foot (140 lb. hammer, 30" drop) 10 20 30 40
	Dense to loose, slightly moist to wet, brown to mottled brown, silty, fine SAND with some gravel	S-1 S-2 S-3		
5				
	Very dense, wet to saturated, brown, sandy, silty GRAVEL	S-4 S-5	Elev. = 90.52 ▽ 9-6-85	77/12"
10				
	Very dense, saturated gray, silty, fine SAND with gravel lenses	S-6		67/12"
15	Boring terminated at 14 feet 30 August 1985			
20				
	Notes: 1) All elevations referenced to top of MW-1 casing. 2) Top of MW-4 casing =Elevation 100.28			
25				
30	Wall Backfill Concrete 0' - 1' Bentonite 1' - 3' Monterey sand 3' - 12'			
35				
40				

LEGEND

- I 2.0" O.D. split spoon sampler
- II 3.0" O.D. undisturbed sampler
- P Sampler pushed
- • Sample not recovered
- Piezometer tip
- ▽ Water level
- Atterberg limits: Liquid limit; Natural water content; Plastic Limit
- ● % Water Content

LOG OF BORING NO. MW-4
W-4979
RITTENHOUSE-ZEMAN & ASSOC.
SOILS ENGINEERING AND GEOLOGY

RECEIVED

STATE OF OREGON

WATER WELL REPORT

(as required by ORS 537.765)

FEB 1 1987

DRILLED BY: SKYLES DRILLING, INC.

25/2E-9cb

(1) OWNER:

WATER RESOURCES DEPT. SALEM, OREGON

Well Number 01

Name: Charles F. & Myra Grow

Address: 15526 S.E. Rainier Ave.

City: Clackamas State: Oregon Zip: 97015

(2) TYPE OF WORK:

☒ New Well ☐ Deepen ☐ Recondition ☐ Abandon

(3) DRILL METHOD

☒ Rotary Air ☐ Rotary Mud ☐ Cable

☐ Other

(4) PROPOSED USE:

☒ Domestic ☐ Community ☐ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☐ Other

(5) BORE HOLE CONSTRUCTION:

Special Construction approval Yes ☐ No ☒ Depth of Completed Well 78 ft.

Explosives used Yes ☐ No ☒ Type Amount

HOLE Diameter	From	To	SEAL Material	From	To	Amount sacks or pounds
10	0	18	Gr.Bentonite	0	18	12 sacks
6	18	78				

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E

☒ Other Granular bentonite placed dry

Backfill placed from ft. to ft. Material

Gravel placed from ft. to ft. Size of gravel

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	6	+1	78	.250	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐
					☐	☐	☐	☐

Location of shoe(s)

(7) PERFORATIONS/SCREENS:

☐ Perforations Method

☐ Screens Type Material

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
40		76	1 hr.
30		70	½ hr.
25		65	½ hr.

Temperature of water 54° Depth Artesian Flow Found

Was a water analysis done? ☒ Yes By whom Driller

(9) LOCATION OF WELL by legal description:

County Clackamas Latitude Longitude

Township 2 South N or S. Range 2 East E or W. WM.

Section 9 N.W. ¼ S.W. ¼

Tax Lot Lot Block Subdivision

Street Address of Well (or nearest address) 15526 S.E. Rainier Ave Clackamas, OR 97015

(10) STATIC WATER LEVEL:

56 ft. below land surface. Date 1-21-87

Artesian pressure lb. per square inch. Date

(11) WATER BEARING ZONES:

Depth at which water was first found 58'

From	To	Estimated Flow Rate	SWL
58'	78'	40 gpm	56

(12) WELL LOG:

Ground elevation

Material	From	To	SWL
Soil	0	3	
Gravel medium to large	3	58	
Gravel medium	58	64	
Gravel medium, dirty	64	68	
Gravel medium	68	78	56'

Date started 1-20-87 Completed 1-21-87

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.

WWC Number

Signed Date

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. all work performed during this time is in compliance with Oregon well

STATE OF OREGON
WATER WELL REPORT
(as required by ORS 537.765)

RECEIVED
OCT 17 1985
WATER RESOURCES DEPT
SALEM, OREGON

25/2E-6aa

PLEASE TYPE or PRINT IN INK

(for official use only)

(1) OWNER:

Name: CITY OF MILWAUKIE
Address: 10722 SE MAIN ST.
City: MILWAUKIE State: ORE 97222

(2) TYPE OF WORK (check): WELL NO 8

New Well [X] Deepening [ ] Reconditioning [ ] Abandon [ ]

If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:

Rotary Air [ ] Driven [ ]
Rotary Mud [ ] Dug [ ]
[X] Bored [ ]

(4) PROPOSED USE (check):

Domestic [ ] Industrial [ ] Municipal [X]
Irrigation [ ] Thermal: Withdrawal [ ] Reinjection [ ]
Other: Piezometric [ ] Grounding [ ] Test [ ]

(5) CASING INSTALLED: Steel [X] Threaded [ ] Plastic [ ] Welded [X]

16" Diam. from +2 ft. to 350 ft. Gauge .375
10" Diam. from 322 ft. to 350 ft. Gauge .365

~~LINER INSTALLED:~~ Steel [ ] Threaded [ ] Plastic [ ] Welded [ ]

10" 390 FT TO 430 .365
10" Diam. from 470 ft. to 460 ft. Gauge .365

(6) PERFORATIONS: Perforated? [ ] Yes [X] No

Size of perforations in. by in.

perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS: Well screen installed? [X] Yes [ ] No

Manufacturer's Name: UOP JOHNSON
Type: STAINLESS STEEL Model No.
Diam. 10 Slot Size 40 Set from 350 ft. to 390 ft.
Diam. 10 Slot Size 40 Set from 430 ft. to 470 ft.

(8) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? [X] Yes [ ] No If yes, by whom? STRASSER
Yield: 725 gal./min. with 165 ft. drawdown after 24 hrs.
Air test gal./min. with drill stem at ft. hrs.
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water 54.5 Depth artesian flow encountered ft.

(9) CONSTRUCTION: Special standards: Yes [ ] No [X]

Well seal—Material used: CEMENT GROUT
Well sealed from land surface to 21' AND 73-85 ft.
Diameter of well bore to bottom of seal 24 AND 20 in.
Diameter of well bore below seal 16 in.
Amount of sealing material 90 sacks [X] pounds [ ]
How was cement grout placed? GROUT WAS PUMPED IN FROM THE BOTTOM UP AS THE TEMPORARY CASING WAS REMOVED
Was pump installed? Type HP Depth ft.
Was a drive shoe used? [X] Yes [ ] No Plugs Size: location ft.
Did any strata contain unusable water? [ ] Yes [X] No
Type of Water? depth of strata
Method of sealing strata off
Was a gravel packed? [X] Yes No Size of gravel: #8 SAND
Gravel placed from 325 ft. to 480 ft.

(10) LOCATION OF WELL by legal description:

County CLACKAMAS NE ¼ NE ¼ of Section 6 of
Township T2S (Township is North or South) Range 2E (Range is East or West) WM.
Tax Lot Lot Block Subdivision
MAILING ADDRESS OF WELL (or nearest address)

(11) WATER LEVEL of COMPLETED WELL:

Depth at which water was first found 208 ft.
Static level 49 ft. below land surface. Date 9/26/85
Artesian pressure lbs. per square inch. Date

(12) WELL LOG: Diameter of well below casing —

Depth drilled 482 ft. Depth of completed well 480 ft.

Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
SEE ATTACHED SHEET			

Date work started JULY 18 1985 completed OCT 8, 1985
Date well drilling machine moved off of well OCT. 9, 1985

(unbonded) Water Well Constructor Certification (if applicable):

This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.

[Signed] Date , 19

(bonded) Water Well Constructor Certification:

Bond 637396 (number) Issued by: FIREMANS FUND INS. CO (Surety Company Name)
On behalf of ROBERT L. STRASSER (type or print name of Water Well Constructor)

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief:

(Signed) Robert L. Strasser (Water Well Constructor)
(Dated) OCT. 15, 1985

NOTICE TO WATER WELL CONSTRUCTOR
The original and first copy of this report

WATER RESOURCES DEPARTMENT,
SALEM, OREGON 97310

SP*46886-690

STATE OF OREGON

RECEIVED

OCT 17 1985

WATER RESOURCES DEPT
SALEM, OREGON

WATER WELL REPORT
(as required by ORS 537.765)

PLEASE TYPE or PRINT IN INK

2S/2E-6aa

(for official use only)

(1) OWNER:
Name: CITY OF MILWAUKIE
Address: 10722 SE MAIN ST.
City: MILWAUKIE State: ORE. 97222

(2) TYPE OF WORK (check): WELL NO 8
New Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

(3) TYPE OF WELL:
Rotary Air ☐ Driven ☐
Rotary Mud ☐ Dug ☐
☒ Bored ☐

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☐ Municipal ☒
Irrigation ☐ Thermal: Withdrawal ☐ Reinjection ☐
Other: Piezometric ☐ Grounding ☐ Test ☐

(5) CASING INSTALLED: Steel Threaded ☒ Welded ☐ Plastic Threaded ☐ Welded ☒
16" Diam. from +2 ft. to 350 ft. Gauge .375
10" Diam. from 322 ft. to 350 ft. Gauge .365
~~LINER INSTALLED:~~ Steel ☐ Threaded ☐ Plastic ☐ Welded ☐
10" Diam. from 390 ft. to 430 ft. Gauge .365
10" Diam. from 470 ft. to 490 ft. Gauge .365

(6) PERFORATIONS: Perforated? ☐ Yes ☒ No
Size of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS: Well screen installed? ☒ Yes ☐ No
Manufacturer's Name: UOP JOHNSON
Type: STAINLESS STEEL Model No.
Diam. 10 Slot Size 40 Set from 350 ft. to 390 ft.
Diam. 10 Slot Size 40 Set from 430 ft. to 470 ft.

(8) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☒ Yes ☐ No If yes, by whom? STRASSER
Yield: 125 gal./min. with 165 ft. drawdown after 24 hrs.
Air test gal./min. with drill stem at ft. hrs.
Bailer test gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m.
Temperature of water 54.5 Depth artesian flow encountered ft.

(9) CONSTRUCTION: Special standards Yes ☐ No ☒
Well seal—Material used: CEMENT GROUT
Well sealed from land surface to 21' AND 73-85 ft.
Diameter of well bore to bottom of seal 24 AND 20 in.
Number of well bore below seal 16 in.
Amount of sealing material 90 sacks ☒ pounds ☐
How was cement grout placed? GROUT WAS PUMPED (4) FROM THE BOTTOM UP AS THE TEMPORARY CASING WAS REMOVED
Was pump installed? Type HP Depth ft.
Was drive shoe used? ☒ Yes ☐ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of Water? depth of strata
Method of sealing strata off
Was gravel packed? ☒ Yes No Size of gravel: NO 8 SAND
Gravel placed from 325 ft. to 480 ft.

(10) LOCATION OF WELL by legal description:
County CLACKAMAS NE¼ NE¼ of Section 6 of
Township T2S (Township is North or South) Range 2E (Range is East or West) WM.
Tax Lot Lot Block Subdivision
MAILING ADDRESS OF WELL (or nearest address)

(11) WATER LEVEL of COMPLETED WELL:
Depth at which water was first found 208 ft.
Static level 49 ft. below land surface. Date 9/26/85
Artesian pressure lbs. per square inch. Date

(12) WELL LOG: Diameter of well below casing —
Depth drilled 482 ft. Depth of completed well 480 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. Report each change in position of Static Water Level and indicate principal water-bearing strata.

MATERIAL	From	To	SWL
SEE ATTACHED SHEET			

Date work started JULY 18 1985 Completed OCT 8, 1985
Date well drilling machine moved off of well OCT 9, 1985

(unbonded) Water Well Constructor Certification (if applicable):
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief.
[Signed] Date , 19

(bonded) Water Well Constructor Certification:
Bond 637396 (number) Issued by: FIREMAN'S FUND INS. CO (Surety Company Name)
On behalf of ROBERT L. STRASSER (type or print name of Water Well Constructor)

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief:
(Signed) Robert L. Strasser (Water Well Constructor)
(Dated) OCT. 15, 1985

NOTICE TO WATER WELL CONSTRUCTOR

WATER RESOURCES DEPARTMENT, SALEM, OREGON 97310

SP*46886-690

Phone: 771-2355

R. J. Strasser Drilling Co.

8110 S.E. Lindy Ave.
Portland, Oregon 97206

RECEIV
OCT 17 1985
WATER RESOURCES DEPT
SALEM, OREGON

October 12, 1985

Log of City of Milwaukie well #8

brown silty clay	0 - 47
gravel, silt and brown clay	47 - 63
brown silt	63 - 66
brown silt and pea gravel	66 - 74
gravel, sand and grey silt	74 - 81
gravel, sand and brown clay	81 - 94
brown silt and gravel	94 - 132
silt, sand and gravel	132 - 141
brown sandy silt	141 - 156
grey and blue clay	156 - 186
clay and gravel	186 - 210
clay, blue, grey and brown	210 - 243
gravel, sand and clay	243 - 264
black silty gravel	264 - 270
clay and gravel	270 - 275
silty sand and gravel	275 - 282
sand, silt, and gravel	282 - 305
sand and large gravel	305 - 320
sand, silt and gravel	320 - 403
grey black silty sand	403 - 419
grey green silty sand	419 - 423
sand, silt and gravel	423 - 428
sand and gravel	428 - 455
loose sand and gravel	455 - 464
gravel, sand and silt	464 - 479
black rock	479 - 482

ECOLOGY AND ENVIRONMENT, INC.
WELL SAMPLING DATA SHEET

Date: 05/19/90
Recorder: Mark Ader

Site Name: NWPC
Well #: MW1
Location: South east corner of site

GENERAL

TYPE OF WELL: Monitoring X Domestic __ Commercial/Industrial __ Irrigation __
Other (specify) _____

Casing Material: Stainless steel
Constructed Depth: 18.0 feet bgs

Casing Diameter: 2"
Screened Interval: 13' - 18' bgs

Elevation: 110.4
Measured from: Top of Well Casing __

Top of Surface Casing __ Ground Surface X Other (specify) __ _____

Security Cap: Locked X Unlocked __ None Present __

Other Seal or Pump in Place: Yes __ No X

Physical Condition of Well (i.e., damaged, etc.): Good

FIELD MEASUREMENTS

DEPTH TO STATIC WATER: 17' bgs
Measured from: Top of Well Casing __
Other (specify) X Ground surface

Measuring Device: Electric Tape X Wetted Tape __ Other (specify) __ _____

Depth to Bottom: 18' bgs
Obstructions: None

PURGING INFORMATION:

Pump (type, model): _____
Purge Rate of Pumping Method: _____

Bailer (type, size): Teflon
Checked by (bucket, timed flow, etc.): bucket

Approximate Total Volume Purged: 9 gallons

	Time	Volume Purged	Temp. (°C)	pH	Conduct. (umhos)	Other	Other	Other	Other
	1500	6	9.9	7.17	366				
Final									

SAMPLING INFORMATION

ANALYSES TO BE PERFORMED:

Metals X
Base/Neutrals X
Acids X
Pesticides/PCBs X
Volatiles X
Total Cyanide __

Herbicides __
Dioxins __
Other (specify) __ _____

Cyanide Prescreen: Yes __ No __
Sulfide: Yes __ No __
Oxidizing Agents: Yes __ No __

SAMPLE COLLECTION DEVICE:

SS. Bailer __ Teflon Bailer X PVC Bailer __
Pump (specify tubing type) __ _____
Faucet __

Duplicates Collected: Yes __ No X
Splits Provided: Yes __ No X

Sample #s: Burley
Ikeda

NOTES:

SDS/8906002

ECOLOGY AND ENVIRONMENT, INC.
WELL SAMPLING DATA SHEET

Date: 05/18/90
Recorder: Mark Ader

Site Name: NWPC
Well #: MW2
Location: South west corner of site

GENERAL

TYPE OF WELL: Monitoring X Domestic __ Commercial/Industrial __ Irrigation __
Other (specify) _____

Casing Material: Stainless steel Constructed Depth: 15.8

Casing Diameter: 2" Screened Interval: _____

Elevation: 109.15 bgs Measured from: Top of Well Casing __

Top of Surface Casing __ Ground Surface X Other (specify) __ _____

Security Cap: Locked X Unlocked __ None Present __

Other Seal or Pump in Place: Yes __ No X

Physical Condition of Well (i.e., damaged, etc.): Good

FIELD MEASUREMENTS

DEPTH TO STATIC WATER: 2.1 bgs Measured from: Top of Well Casing __
Other (specify) X Ground surface

Measuring Device: Electric Tape X Wetted Tape __ Other (specify) __ _____

Depth to Bottom: 15.8' Obstructions: _____

PURGING INFORMATION:

Pump (type, model): _____ Purge Rate of Pumping Method: _____

Bailer (type, size): Teflon Checked by (bucket, timed flow, etc.): bucket

Approximate Total Volume Purged: 8 gallons

	Time	Volume Purged	Temp. (°C)	pH	Conduct. (umhos)	Other	Other	Other	Other
	1500	8 gal.	10.3	7.48	473				
Final									

SAMPLING INFORMATION

ANALYSES TO BE PERFORMED:

Metals X
Base/Neutrals X
Acids X
Pesticides/PCBs X
Volatiles X
Total Cyanide __

Herbicides __
Dioxins __
Other (specify) __
_____
_____

Cyanide Prescreen: Yes __ No __
Sulfide: Yes __ No __
Oxidizing Agents: Yes __ No __

SAMPLE COLLECTION DEVICE:

SS. Bailer __ Teflon Bailer X PVC Bailer __
Pump (specify tubing type) __ _____
Faucet __

Duplicates Collected: Yes __ No X
Splits Provided: Yes __ No X

Sample #s: Burley
Ikeda

NOTES:

SDS/8906002

ECOLOGY AND ENVIRONMENT, INC.
WELL SAMPLING DATA SHEET

Date: 05/11/90
Recorder: _____

Site Name: NWPC
Well #: GW2
Location: Oregon National Guard

GENERAL

TYPE OF WELL: Monitoring X Domestic __ Commercial/Industrial __ Irrigation __
Other (specify) _____

Casing Material: PVC Constructed Depth: ~14'

Casing Diameter: 2" Screened Interval: _____

Elevation: _____ Measured from: Top of Well Casing __

Top of Surface Casing __. Ground Surface __ Other (specify) __ _____

Security Cap: Locked X Unlocked __ None Present __

Other Seal or Pump in Place: Yes __ No __

Physical Condition of Well (i.e., damaged, etc.): Good

FIELD MEASUREMENTS

DEPTH TO STATIC WATER: 12" Measured from: Top of Well Casing X Visual
Other (specify) X observation

Measuring Device: Electric Tape __ Wetted Tape __ Other (specify) __ _____

Depth to Bottom: ~14' Obstructions: None

PURGING INFORMATION:

Pump (type, model): _____ Purge Rate of Pumping Method: _____

Bailer (type, size): Teflon Checked by (bucket, timed flow, etc.): bucket

Approximate Total Volume Purged: 6.0 gal.

	Time	Volume Purged	Temp. (°C)	pH	Conduct. (umhos)	Other	Other	Other	Other
	1130	6.0	9.5	6.95	250				
Final									

SAMPLING INFORMATION

ANALYSES TO BE PERFORMED:

Metals X
Base/Neutrals X
Acids X
Pesticides/PCBs X
Volatiles X
Total Cyanide __

Herbicides __
Dioxins __
Other (specify) __ _____

Cyanide Prescreen: Yes __ No X
Sulfide: Yes __ No X
Oxidizing Agents: Yes __ No X

SAMPLE COLLECTION DEVICE:

SS. Bailer __ Teflon Bailer X PVC Bailer __
Pump (specify tubing type) __ _____
Faucet __

Duplicates Collected: Yes __ No __
Splits Provided: Yes __ No __

Sample #s: Burley
Ikeda

NOTES:

SDS/8906002

ECOLOGY AND ENVIRONMENT, INC.
WELL SAMPLING DATA SHEET

Date: 05/18/90
Recorder: Mark Ader

Site Name: NMPC
Well #: City of Milwaukie #6
Location: Lake and Hwy 224

GENERAL

TYPE OF WELL: Monitoring __ Domestic __ Commercial/Industrial __ Irrigation __
Other (specify) X Municipal

Casing Material: Stainless steel
Constructed Depth: 336' bgs

Casing Diameter: 16"
Screened Interval: 270 - 320 bgs

Elevation: ~90'
Measured from: Top of Well Casing __ Topo map

Top of Surface Casing __ Ground Surface __ Other (specify) __

Security Cap: Locked __ Unlocked __ None Present __

Other Seal or Pump in Place: Yes X No __

Physical Condition of Well (i.e., damaged, etc.): good

FIELD MEASUREMENTS

DEPTH TO STATIC WATER: unknown
Measured from: Top of Well Casing __
Other (specify) __

Measuring Device: Electric Tape __ Wetted Tape __ Other (specify) __

Depth to Bottom: _____
Obstructions: none

PURGING INFORMATION: Well was not purged because it continously runs.

Pump (type, model): _____
Purge Rate of Pumping Method: _____

Bailer (type, size): _____
Checked by (bucket, timed flow, etc.): _____

Approximate Total Volume Purged: _____

2/12/90 Time	Volume Purged	Temp. (°C)	pH	Conduct. (umhos)	Other	Other	Other	Other
1430	--	10.8	7.94	209				
Final								

SAMPLING INFORMATION

ANALYSES TO BE PERFORMED:

Metals X
Base/Neutrals X
Acids X
Pesticides/PCBs X
Volatiles X
Total Cyanide __

Herbicides __
Dioxins __
Other (specify) __

Cyanide Prescreen: Yes __ No __
Sulfide: Yes __ No __
Oxidizing Agents: Yes __ No __

SAMPLE COLLECTION DEVICE:

SS. Bailer __ Teflon Bailer __ PVC Bailer __
Pump (specify tubing type) __
Faucet X

Duplicates Collected: Yes __ No X
Splits Provided: Yes __ No X

Sample #s: Burley
Ikeda

NOTES:

SDS/8906002

ECOLOGY AND ENVIRONMENT, INC.
WELL SAMPLING DATA SHEET

Date: 05/18/90
Recorder: Mark Ader

Site Name: NWPC
Well #: GW5
Location: 8100 SE Lake Road, Clackamas, OR

GENERAL

TYPE OF WELL: Monitoring __ Domestic X Commercial/Industrial __ Irrigation __
Other (specify) _____

Casing Material: Unknown
Constructed Depth: ~60

Casing Diameter: Unknown
Screened Interval: Unknown

Elevation: 120'
Measured from: Top of Well Casing __

Top of Surface Casing __ Ground Surface __ Other (specify) X Topo map

Security Cap: Locked __ Unlocked __ None Present __

Other Seal or Pump in Place: Yes X No __

Physical Condition of Well (i.e., damaged, etc.): _____

FIELD MEASUREMENTS

DEPTH TO STATIC WATER: Unknown
Measured from: Top of Well Casing __
Other (specify) __ _____

Measuring Device: Electric Tape __ Wetted Tape __ Other (specify) __ _____

Depth to Bottom: _____
Obstructions: _____

PURGING INFORMATION:

Pump (type, model): _____
Purge Rate of Pumping Method: ~10 gpm

Bailer (type, size): _____
Checked by (bucket, timed flow, etc.): _____

Approximate Total Volume Purged: _____

2/13/90 Time	Volume Purged	Temp. (°C)	pH	Conduct. (umhos)	Other	Other	Other	Other
1100		12.7	6.72	158				
Final								

SAMPLING INFORMATION

ANALYSES TO BE PERFORMED:

Metals X
Base/Neutrals X
Acids X
Pesticides/PCBs X
Volatiles X
Total Cyanide __

Herbicides __
Dioxins __
Other (specify) __ _____

Cyanide Prescreen: Yes __ No __
Sulfide: Yes __ No __
Oxidizing Agents: Yes __ No __

SAMPLE COLLECTION DEVICE:

SS. Bailer __ Teflon Bailer __ PVC Bailer __
Pump (specify tubing type) __ _____
Faucet X

Duplicates Collected: Yes __ No X
Splits Provided: Yes __ No X

Sample #s: Burley
Ikeda

NOTES:

SDS/8906002

ECOLOGY AND ENVIRONMENT, INC.
WELL SAMPLING DATA SHEET

Date: 05/18/90
Recorder: Mark Ader

Site Name: NWPC
Well #: GW3
Location: McFarlane Bark

GENERAL

TYPE OF WELL: Monitoring __ Domestic __ Commercial/Industrial __ Irrigation __
Other (specify) X Fire Protection

Casing Material: Unknown
Constructed Depth: Unknown

Casing Diameter: Unknown
Screened Interval: Unknown

Elevation: ~80
Measured from: Top of Well Casing __

Top of Surface Casing __ Ground Surface __ Other (specify) X Topo map

Security Cap: Locked __ Unlocked __ None Present __

Other Seal or Pump in Place: Yes X No __

Physical Condition of Well (i.e., damaged, etc.): Good

FIELD MEASUREMENTS

DEPTH TO STATIC WATER: Unknown
Measured from: Top of Well Casing __
Other (specify) __

Measuring Device: Electric Tape __ Wetted Tape __ Other (specify) __

Depth to Bottom: ____
Obstructions: ____

PURGING INFORMATION:

Pump (type, model): Unknown
Purge Rate of Pumping Method: Unknown

Bailer (type, size): ____
Checked by (bucket, timed flow, etc.): ____

Approximate Total Volume Purged: ____

2/13/90 Time	Volume Purged	Temp. (°C)	pH	Conduct. (umhos)	Other	Other	Other	Other
0900	--	11.8	7.02	358				
0905	--	13.4	7.10	366				
0910	--	12.9	7.10	374				
0915	--	12.8	7.12	341				
Final								

SAMPLING INFORMATION

ANALYSES TO BE PERFORMED:

Metals X
Base/Neutrals X
Acids X
Pesticides/PCBs X
Volatiles X
Total Cyanide __

Herbicides __
Dioxins __
Other (specify) __

Cyanide Prescreen: Yes __ No __
Sulfide: Yes __ No __
Oxidizing Agents: Yes __ No __

SAMPLE COLLECTION DEVICE:

SS. Bailer __ Teflon Bailer __ PVC Bailer __
Pump (specify tubing type) __
Faucet X

Duplicates Collected: Yes __ No X
Splits Provided: Yes __ No X

Sample #s: Burley
Ikeda

NOTES:

SDS/8906002

ECOLOGY AND ENVIRONMENT, INC.
WELL SAMPLING DATA SHEET

Date: 05/18/90
Recorder: Mark Ader

Site Name: NWPC
Well #: GW7
Location: ODOT irrigation well

GENERAL

TYPE OF WELL: Monitoring __ Domestic __ Commercial/Industrial __ Irrigation X
Other (specify) _____

Casing Material: Steel
Constructed Depth: 120' bgs

Casing Diameter: 10" - 98' 7" - 120'
Screened Interval: 100' - 115' bgs

Elevation: ~100
Measured from: Top of Well Casing __

Top of Surface Casing __ Ground Surface __ Other (specify) X Topo map

Security Cap: Locked X Unlocked __ None Present __

Other Seal or Pump in Place: Yes X No __

Physical Condition of Well (i.e., damaged, etc.): Good

FIELD MEASUREMENTS

DEPTH TO STATIC WATER: Unknown
0.5 feet based on well log
Measured from: Top of Well Casing X
Other (specify) __

Measuring Device: Electric Tape __ Wetted Tape __ Other (specify) __

Depth to Bottom: 120'
Obstructions: None

PURGING INFORMATION:

Pump (type, model): Pump
Purge Rate of Pumping Method: 250 gallon/minute

Bailer (type, size): _____
Checked by (bucket, timed flow, etc.): _____

Approximate Total Volume Purged: 10,000 gals.

	Time	Volume Purged	Temp. (°C)	pH	Conduct. (umhos)	Other	Other	Other	Other
	--	10,000	--	--	--				
Final									

SAMPLING INFORMATION

ANALYSES TO BE PERFORMED:

Metals X
Base/Neutrals X
Acids X
Pesticides/PCBs X
Volatiles X
Total Cyanide __

Herbicides __
Dioxins __
Other (specify) __

Cyanide Prescreen: Yes __ No __
Sulfide: Yes __ No __
Oxidizing Agents: Yes __ No __

SAMPLE COLLECTION DEVICE:

SS. Bailer __ Teflon Bailer __ PVC Bailer __
Pump (specify tubing type) __
Faucet X

Duplicates Collected: Yes __ No __
Splits Provided: Yes __ No __

Sample #s: Ader

NOTES: pH, temp., and cond. were not taken because of equipment failure.

SDS/8906002

ECOLOGY AND ENVIRONMENT, INC.
WELL SAMPLING DATA SHEET

Date: 05/18/90
Recorder: Mark Ader

Site Name: NWPC
Well #: GW6
Location: 15526 SE Rainier Avenue
Clackamas, OR

GENERAL

TYPE OF WELL: Monitoring __ Domestic __ Commercial/Industrial __ Irrigation X
Other (specify) _____

Casing Material: Steel
Constructed Depth: 78'

Casing Diameter: 6"
Screened Interval: Unknown

Elevation: 160'
Measured from: Top of Well Casing __

Top of Surface Casing __ Ground Surface __ Other (specify) X Topo map

Security Cap: Locked __ Unlocked __ None Present __

Other Seal or Pump in Place: Yes X No __

Physical Condition of Well (i.e., damaged, etc.): Good

FIELD MEASUREMENTS

DEPTH TO STATIC WATER: 56' bgs based on well log
Measured from: Top of Well Casing __ Other (specify) X Ground surface

Measuring Device: Electric Tape __ Wetted Tape __ Other (specify) __

Depth to Bottom: 78' bgs
Obstructions: None

PURGING INFORMATION:

Pump (type, model): pump
Purge Rate of Pumping Method: ~10 gpm

Bailer (type, size): _____
Checked by (bucket, timed flow, etc.): _____

Approximate Total Volume Purged: _____

2/13/90 Time	Volume Purged	Temp. (°C)	pH	Conduct. (umhos)	Other	Other	Other	Other
1215	--	11.2	6.51	197				
Final								

SAMPLING INFORMATION

ANALYSES TO BE PERFORMED:

Metals X
Base/Neutrals X
Acids X
Pesticides/PCBs X
Volatiles X
Total Cyanide __

Herbicides __
Dioxins __
Other (specify) __

Cyanide Prescreen: Yes __ No __
Sulfide: Yes __ No __
Oxidizing Agents: Yes __ No __

SAMPLE COLLECTION DEVICE:

SS. Bailer __ Teflon Bailer __ PVC Bailer __
Pump (specify tubing type) __
Faucet X

Duplicates Collected: Yes __ No X
Splits Provided: Yes __ No X

Sample #s: Burley
Ikeda

NOTES:

SDS/8906002

ECOLOGY AND ENVIRONMENT, INC.
WELL SAMPLING DATA SHEET

Date: 05/18/90
Recorder: Mark Ader

Site Name: NWPC
Well #: City of Milwaukie #8
Location: Stanley Avenue north of the railroad tracks

GENERAL

TYPE OF WELL: Monitoring __ Domestic __ Commercial/Industrial __ Irrigation __
Other (specify) X Municipal

Casing Material: Stainless steel
Constructed Depth: 482' bgs

Casing Diameter: 10"
Screened Interval: _____

Elevation: ~120'
Measured from: Top of Well Casing __ Topo map

Top of Surface Casing __ Ground Surface __ Other (specify) __ _____

Security Cap: Locked __ Unlocked __ None Present __

Other Seal or Pump in Place: Yes X No __

Physical Condition of Well (i.e., damaged, etc.): Good

FIELD MEASUREMENTS

DEPTH TO STATIC WATER: Unknown
Measured from: Top of Well Casing __
Other (specify) __ _____

Measuring Device: Electric Tape __ Wetted Tape __ Other (specify) __ _____

Depth to Bottom: _____
Obstructions: _____

PURGING INFORMATION: Well not purged because it continously runs.

Pump (type, model): _____
Purge Rate of Pumping Method: _____

Bailer (type, size): _____
Checked by (bucket, timed flow, etc.): _____

Approximate Total Volume Purged: _____

2/12/90 Time	Volume Purged	Temp. (°C)	pH	Conduct. (umhos)	Other	Other	Other	Other
1400	--	3.2	7.93	218				
Final								

SAMPLING INFORMATION

ANALYSES TO BE PERFORMED:

Metals X
Base/Neutrals X
Acids X
Pesticides/PCBs X
Volatiles X
Total Cyanide __

Herbicides __
Dioxins __
Other (specify) __ _____

Cyanide Prescreen: Yes __ No __
Sulfide: Yes __ No __
Oxidizing Agents: Yes __ No __

SAMPLE COLLECTION DEVICE:

SS. Bailer __ Teflon Bailer __ PVC Bailer __
Pump (specify tubing type) __ _____
Faucet X

Duplicates Collected: Yes __ No X
Splits Provided: Yes __ No X

Sample #s: Burley
Ikeda

NOTES:

SDS/8906002

ECOLOGY AND ENVIRONMENT, INC.
WELL SAMPLING DATA SHEET

Date: 05/18/90
Recorder: Mark Ader

Site Name: NWPC
Well #: GW
Location: McFarlane Bark

GENERAL

TYPE OF WELL: Monitoring __ Domestic __ Commercial/Industrial __ Irrigation __
Other (specify) X Fire Protection

Casing Material: Unknown
Constructed Depth: Unknown

Casing Diameter: Unknown
Screened Interval: Unknown

Elevation: ~80
Measured from: Top of Well Casing __

Top of Surface Casing __ Ground Surface __ Other (specify) X Topo map

Security Cap: Locked __ Unlocked __ None Present X

Other Seal or Pump in Place: Yes X No __

Physical Condition of Well (i.e., damaged, etc.): Good

FIELD MEASUREMENTS

DEPTH TO STATIC WATER: Unknown
Measured from: Top of Well Casing __
Other (specify) __

Measuring Device: Electric Tape __ Wetted Tape __ Other (specify) __

Depth to Bottom: _____
Obstructions: _____

PURGING INFORMATION:

Pump (type, model): Unknown
Purge Rate of Pumping Method: Unknown

Bailer (type, size): _____
Checked by (bucket, timed flow, etc.): _____

Approximate Total Volume Purged: _____

2/13/90 Time	Volume Purged	Temp. (°C)	pH	Conduct. (umhos)	Other	Other	Other	Other
0855	Unknown	14.4	7.13	408				
0902	Unknown	15.0	7.15	416				
0907	Unknown	15.2	7.21	419				
0912	Unknown	14.6	7.24	449				
Final 0920	Unknown	14.9	7.22	378				

SAMPLING INFORMATION

ANALYSES TO BE PERFORMED:

Metals X
Base/Neutrals X
Acids X
Pesticides/PCBs X
Volatiles X
Total Cyanide __

Herbicides __
Dioxins __
Other (specify) __

Cyanide Prescreen: Yes __ No __
Sulfide: Yes __ No __
Oxidizing Agents: Yes __ No __

SAMPLE COLLECTION DEVICE:

SS. Bailer __ Teflon Bailer __ PVC Bailer __
Pump (specify tubing type) __
Faucet X

Duplicates Collected: Yes __ No X
Splits Provided: Yes __ No X

Sample #s: Burley
Ikeda

NOTES:

SDS/8906002

NOTICE TO WATER WELL CONTRACTOR
The original and first copy of this report are to be filed with the
ATE ENGINEER, SALEM, OREGON 97310
within 30 days from the date of well completion.

WATER WELL REPORT
STATE OF OREGON
(Please type or print)
(Do not write above this line)

State Well No. 2S/2E-4
State Permit No.

(1) OWNER:
me Northwest Pipe & Casing Co.
dress 9200 S.E. Lawnfield Road
Clackamas Oregon 97015

( ) TYPE OF WORK (check):
w Well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 12.

( ) TYPE OF WELL:
ary ☐ Driven ☐
le ☒ Jetted ☐
d ☐ Bored ☐

(4) PROPOSED USE (check):
Domestic ☐ Industrial ☒ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

( ) CASING INSTALLED: Threaded ☐ Welded ☒
10" Diam. from 0 ft. to 98 ft. Gage .312.5
* 8" Diam. from 90 ft. to 120 ft. Gage .312.5
" Diam. from ft. to ft. Gage

(6) PERFORATIONS: *(8" only) Perforated? ☒ Yes ☐ No.
e of perforator used Torch
e of perforations 1/4 in. by 6 in.
* 87 perforations from 100 ft. to 115 ft.
perforations from ft. to ft.
perforations from ft. to ft.

(7) SCREENS: Well screen installed? ☐ Yes ☒ No
nufacturer's Name
e Model No.
Diam. Slot size Set from ft. to ft.
m. Slot size Set from ft. to ft.

(8) WELL TESTS: Drawdown is amount water level is lowered below static level
a pump test made? ☒ Yes ☐ No If yes, by whom? Bottner Drilling
Yield: 257 gal./min. with 65 ft. drawdown after 8 hrs.
" " " "
" " "
er test gal./min. with ft. drawdown after hrs.
rtesian flow g.p.m.
Temperature of water 54 Depth artesian flow encountered ft.

(9) CONSTRUCTION:
Well seal—Material used Cement Grout
Well sealed from land surface to 25 ft.
Diameter of well bore to bottom of seal 16 in.
Diameter of well bore below seal 10 in.
Number of sacks of cement used in well seal 26 sacks
Number of sacks of bentonite used in well seal 0 sacks
d name of bentonite
Number of pounds of bentonite per 100 gallons of water lbs./100 gals.
Was a drive shoe used? ☒ Yes ☐ No Plugs Size: location ft.
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? depth of strata
Method of sealing strata off

(10) LOCATION OF WELL:
County Clackamas Driller's well number
¼ ¼ Section 4 T. 2S R. R2E W.M.
Bearing and distance from section or subdivision corner

(11) WATER LEVEL: Completed well.
Depth at which water was first found 106 ft.
Static level 1/2 ft. below land surface. Date 1-11-78
Artesian pressure lbs. per square inch. Date

(12) WELL LOG: Diameter of well below casing 10
Depth drilled 120 ft. Depth of completed well 120 ft.
Formation: Describe color, texture, grain size and structure of materials; and show thickness and nature of each stratum and aquifer penetrated, with at least one entry for each change of formation. *Report each change in position of Static Water Level and indicate principal water-bearing strata.*

MATERIAL	From	To	SWL
Top soil	0	2	
Gravel & Sand	2	50	
Gravel, cemented	50	89	6"
Clay, blue	89	106	
Gravel & Sand, W.Brng.	106	115	
Clay, blue -	115	120	

Work started Dec. 7 19 77 Completed Jan. 23 19 78
Date well drilling machine moved off of well Jan. 31 1978

Drilling Machine Operator's Certification:
This well was constructed under my direct supervision. Materials used and information reported above are true to my best knowledge and belief. Feb. 5 1978
[Signed] Earl V. Baker (Drilling Machine Operator) Date Jan. 31, 1978
Drilling Machine Operator's License No. 190

Water Well Contractor's Certification:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Name HAAKON BOTTNER DRILLING CO. (Person, firm or corporation) (Type or print)
Address 3424 S.E.174-PORTLAND, OR. 97236
[Signed] Haakon Bottner

ECOLOGY AND ENVIRONMENT, INC.
WELL SAMPLING DATA SHEET

Date: 05/11/90
Recorder: Mark Ader

Site Name: Northwest Pipe and Casing
Well #: GW1
Location: Oregon National Guard

GENERAL

TYPE OF WELL: Monitoring X Domestic __ Commercial/Industrial __ Irrigation __
Other (specify) _____

Casing Material: PVC Constructed Depth: _____

Casing Diameter: _____ Screened Interval: _____

Elevation: _____ Measured from: Top of Well Casing __

Top of Surface Casing __ Ground Surface __ Other (specify) __ _____

Security Cap: Locked X Unlocked __ None Present __

Other Seal or Pump in Place: Yes __ No __

Physical Condition of Well (i.e., damaged, etc.): Good

FIELD MEASUREMENTS

DEPTH TO STATIC WATER: 6" Measured from: Top of Well Casing X
Other (specify) __ _____

Measuring Device: Electric Tape __ Wetted Tape __ Other (specify) X Observation

Depth to Bottom: ~14' Obstructions: None

PURGING INFORMATION:

Pump (type, model): Bailer Purge Rate of Pumping Method: _____

Bailer (type, size): Teflon Checked by (bucket, timed flow, etc.): bucket

Approximate Total Volume Purged: _____

	Time	Volume Purged	Temp. (°C)	pH	Conduct. (umhos)	Other	Other	Other	Other
	1030	6 gal	7.8	6.53	183				
Final									

SAMPLING INFORMATION

ANALYSES TO BE PERFORMED:

Metals X
Base/Neutrals X
Acids X
Pesticides/PCBs X
Volatiles X
Total Cyanide __

Herbicides __
Dioxins __
Other (specify) __ _____

Cyanide Prescreen: Yes __ No __
Sulfide: Yes __ No __
Oxidizing Agents: Yes __ No __

SAMPLE COLLECTION DEVICE:

SS. Bailer __ Teflon Bailer X PVC Bailer __
Pump (specify tubing type) __ _____
Faucet __

Duplicates Collected: Yes __ No __
Splits Provided: Yes __ No __

Sample #s: Burley
Ikeda

NOTES:

SDS/8906002

ECOLOGY AND ENVIRONMENT, INC.
WELL SAMPLING DATA SHEET

Date: 05/19/90
Recorder: Mark Ader

Site Name: NWPC
Well #: MW3
Location: Northwest site boundary

GENERAL

TYPE OF WELL: Monitoring X Domestic __ Commercial/Industrial __ Irrigation __
Other (specify) _____

Casing Material: Stainless steel
Constructed Depth: 16.2 bgs

Casing Diameter: 2"
Screened Interval: 11' - 16' bgs

Elevation: 107.36
Measured from: Top of Well Casing __

Top of Surface Casing __ Ground Surface X Other (specify) __ _____

Security Cap: Locked X Unlocked __ None Present __

Other Seal or Pump in Place: Yes __ No X

Physical Condition of Well (i.e., damaged, etc.): Good

FIELD MEASUREMENTS

DEPTH TO STATIC WATER: 1.8'
Measured from: Top of Well Casing __
Other (specify) X Ground surface

Measuring Device: Electric Tape X Wetted Tape __ Other (specify) __ _____

Depth to Bottom: 16.2'
Obstructions: None

PURGING INFORMATION:

Pump (type, model): _____
Purge Rate of Pumping Method: _____

Bailer (type, size): Teflon
Checked by (bucket, timed flow, etc.): bucket

Approximate Total Volume Purged: 7.5 gallons

2/14/90 Time	Volume Purged	Temp. (°C)	pH	Conduct. (umhos)	Other	Other	Other	Other
1220	7.5 gal.	--	--	--				
Final								

SAMPLING INFORMATION

ANALYSES TO BE PERFORMED:

Metals X
Base/Neutrals X
Acids X
Pesticides/PCBs X
Volatiles X
Total Cyanide __

Herbicides __
Dioxins __
Other (specify) __ _____

Cyanide Prescreen: Yes __ No __
Sulfide: Yes __ No __
Oxidizing Agents: Yes __ No __

SAMPLE COLLECTION DEVICE:

SS. Bailer __ Teflon Bailer X PVC Bailer __
Pump (specify tubing type) __ _____
Faucet __

Duplicates Collected: Yes __ No X
Splits Provided: Yes __ No X

Sample #s: Burley
Ikeda

NOTES: pH, temp., and cond. were not taken due to instrument failure.

SDS/8906002

ECOLOGY AND ENVIRONMENT, INC.
WELL SAMPLING DATA SHEET

Date: 05/18/90
Recorder: Mark Ader

Site Name: NWPC
Well #: MW4
Location: Center of site

GENERAL

TYPE OF WELL: Monitoring X Domestic __ Commercial/Industrial __ Irrigation __
Other (specify) _____

Casing Material: Stainless steel
Constructed Depth: 13.1 bgs

Casing Diameter: 2"
Screened Interval: 8' - 13.0 bgs

Elevation: 109.42
Measured from: Top of Well Casing __

Top of Surface Casing __ Ground Surface X Other (specify) __ _____

Security Cap: Locked X Unlocked __ None Present __

Other Seal or Pump in Place: Yes __ No X

Physical Condition of Well (i.e., damaged, etc.): Good

FIELD MEASUREMENTS

DEPTH TO STATIC WATER: 1.6' bgs
Measured from: Top of Well Casing __
Other (specify) X Ground surface

Measuring Device: Electric Tape X Wetted Tape __ Other (specify) __ _____

Depth to Bottom: 13.1' bgs
Obstructions: None

PURGING INFORMATION:

Pump (type, model): _____
Purge Rate of Pumping Method: _____

Bailer (type, size): Teflon
Checked by (bucket, timed flow, etc.): bucket

Approximate Total Volume Purged: 6.5 gallons

2/14/90 Time	Volume Purged	Temp. (°C)	pH	Conduct. (umhos)	Other	Other	Other	Other
1030	6.5	--	--	--				
Final								

SAMPLING INFORMATION

ANALYSES TO BE PERFORMED:

Metals X
Base/Neutrals X
Acids X
Pesticides/PCBs X
Volatiles X
Total Cyanide __

Herbicides __
Dioxins __
Other (specify) __ _____

Cyanide Prescreen: Yes __ No __
Sulfide: Yes __ No __
Oxidizing Agents: Yes __ No __

SAMPLE COLLECTION DEVICE:

SS. Bailer __ Teflon Bailer X PVC Bailer __
Pump (specify tubing type) __ _____
Faucet __

Duplicates Collected: Yes __ No X
Splits Provided: Yes __ No X

Sample #s: Burley
Ikeda

NOTES: pH, temp., and cond. were not taken due to instrument failure.

SDS/8906002

ECOLOGY AND ENVIRONMENT, INC.
WELL SAMPLING DATA SHEET

Date: 05/19/90
Recorder: Mark Ader

Site Name: NWPC
Well #: MW5
Location: North property boundary

GENERAL

TYPE OF WELL: Monitoring X Domestic __ Commercial/Industrial __ Irrigation __
Other (specify) _____

Casing Material: Stainless steel
Constructed Depth: 13.2' bgs

Casing Diameter: 2"
Screened Interval: 8.2' - 13.2' bgs

Elevation: 108.91
Measured from: Top of Well Casing __

Top of Surface Casing __ Ground Surface X Other (specify) __ _____

Security Cap: Locked X Unlocked __ None Present __

Other Seal or Pump in Place: Yes __ No X

Physical Condition of Well (i.e., damaged, etc.): Good

FIELD MEASUREMENTS

DEPTH TO STATIC WATER: 3.7' bgs
Measured from: Top of Well Casing __
Other (specify) X Ground surface

Measuring Device: Electric Tape X Wetted Tape __ Other (specify) __ _____

Depth to Bottom: 13.2' bgs
Obstructions: None

PURGING INFORMATION:

Pump (type, model): _____
Purge Rate of Pumping Method: _____

Bailer (type, size): Teflon
Checked by (bucket, timed flow, etc.): bucket

Approximate Total Volume Purged: 6.5 gallons

2/14/90 Time	Volume Purged	Temp. (°C)	pH	Conduct. (umhos)	Other	Other	Other	Other
1215	6.5	--	--	--				
Final								

SAMPLING INFORMATION

ANALYSES TO BE PERFORMED:

Metals X
Base/Neutrals X
Acids X
Pesticides/PCBs X
Volatiles X
Total Cyanide __

Herbicides __
Dioxins __
Other (specify) __ _____

Cyanide Prescreen: Yes __ No __
Sulfide: Yes __ No __
Oxidizing Agents: Yes __ No __

SAMPLE COLLECTION DEVICE:

SS. Bailer __ Teflon Bailer X PVC Bailer __
Pump (specify tubing type) __ _____
Faucet __

Duplicates Collected: Yes __ No X
Splits Provided: Yes __ No X

Sample #s: Burley
Ikeda

NOTES: pH, temp., and cond. were not taken due to instrument failure.

SDS/8906002

ECOLOGY AND ENVIRONMENT, INC.
WELL SAMPLING DATA SHEET

Date: 05/19/90
Recorder: Mark Ader

Site Name: NWPC
Well #: MW6
Location: Center of site

GENERAL

TYPE OF WELL: Monitoring X Domestic __ Commercial/Industrial __ Irrigation __
Other (specify) _____

Casing Material: Stainless steel Constructed Depth: 13.0 bgs

Casing Diameter: 2" Screened Interval: 8' - 13.0 bgs

Elevation: 108.48 Measured from: Top of Well Casing __

Top of Surface Casing __ Ground Surface X Other (specify) __

Security Cap: Locked X Unlocked __ None Present __

Other Seal or Pump in Place: Yes __ No X

Physical Condition of Well (i.e., damaged, etc.): Good

FIELD MEASUREMENTS

DEPTH TO STATIC WATER: 1.6' bgs Measured from: Top of Well Casing __
Other (specify) X Ground surface

Measuring Device: Electric Tape X Wetted Tape __ Other (specify) __

Depth to Bottom: 13.0' bgs Obstructions: None

PURGING INFORMATION:

Pump (type, model): _____ Purge Rate of Pumping Method: _____

Bailer (type, size): Teflon Checked by (bucket, timed flow, etc.): bucket

Approximate Total Volume Purged: 6.5 gallons

2/14/90 Time	Volume Purged	Temp. (°C)	pH	Conduct. (umhos)	Other	Other	Other	Other
1100	6.5	--	--	--				
Final								

SAMPLING INFORMATION

ANALYSES TO BE PERFORMED:

Metals X
Base/Neutrals X
Acids X
Pesticides/PCBs X
Volatiles X
Total Cyanide __

Herbicides __
Dioxins __
Other (specify) __

Cyanide Prescreen: Yes __ No __
Sulfide: Yes __ No __
Oxidizing Agents: Yes __ No __

SAMPLE COLLECTION DEVICE:

SS. Bailer __ Teflon Bailer X PVC Bailer __
Pump (specify tubing type) __
Faucet __

Duplicates Collected: Yes __ No X
Splits Provided: Yes __ No X

Sample #s: Burley
Ikeda

NOTES: pH, temp., and cond. were not taken due to instrument failure.

SDS/8906002

ECOLOGY AND ENVIRONMENT, INC.
WELL SAMPLING DATA SHEET

TDD#: F10-8906-002
Date: 05/11/90
Recorder: Mark Ader

Site Name: Northwest Pipe and Casing
Well #: MW7
Location: Northwest boundary

GENERAL

TYPE OF WELL: Monitoring X Domestic __ Commercial/Industrial __ Irrigation __
Other (specify) _____

Casing Material: SS
Constructed Depth: _____

Casing Diameter: 2"
Screened Interval: _____

Elevation: 109.10
Measured from: Top of Well Casing X

Top of Surface Casing __ Ground Surface __ Other (specify) __ _____

Security Cap: Locked X Unlocked __ None Present __

Other Seal or Pump in Place: Yes __ No X

Physical Condition of Well (i.e., damaged, etc.): Good

FIELD MEASUREMENTS

DEPTH TO STATIC WATER: 4.2
Measured from: Top of Well Casing X
Other (specify) __ _____

Measuring Device: Electric Tape X Wetted Tape __ Other (specify) __ _____

Depth to Bottom: 13.6'
Obstructions: None

PURGING INFORMATION:

Pump (type, model): bailer
Purge Rate of Pumping Method: _____

Bailer (type, size): Teflon
Checked by (bucket, timed flow, etc.): bucket

Approximate Total Volume Purged: 6.5 gallons

	Time	Volume Purged	Temp. (°C)	pH	Conduct. (umhos)	Other	Other	Other	Other
	0945	6.5	--	--	--				
Final									

SAMPLING INFORMATION

ANALYSES TO BE PERFORMED:

Metals X
Base/Neutrals __
Acids X
Pesticides/PCBs X
Volatiles __
Total Cyanide __

Herbicides __
Dioxins __
Other (specify) __ _____

Cyanide Prescreen: Yes __ No X
Sulfide: Yes __ No X
Oxidizing Agents: Yes __ No X

SAMPLE COLLECTION DEVICE:

SS. Bailer __ Teflon Bailer X PVC Bailer __
Pump (specify tubing type) __ _____
Faucet __

Duplicates Collected: Yes __ No X
Splits Provided: Yes __ No X

Sample #s: _____

NOTES: pH, conductivity and temperature were not recorded due to instrument failure.

SDS/8906002