REMOVAL ACTION REPORT
Volume II: Analytical Data

Avery Landing Site
Avery, Idaho
TDDs: 12-05-0006/7/8/9

Prepared for:

U.S. Environmental Protection Agency, Region 10
1910 Northwest Boulevard, Suite 208
Coeur d'Alene, Idaho 83814

Prepared by:

Ecology and Environment, Inc.
720 Third Avenue, Suite 1700
Seattle, Washington 98104

May 2013

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ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: June 30, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-01

REF:

TDDs:	12-05-0006	PANs: 002233.0790.01RA
	12-05-0007	PANs: 002233.0791.01RA
	12-05-0008	PANs: 002233.0792.01RA
	12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of 6 soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered:

12060001 12060002 12060003 12060004 12060005 12060006

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained at < 6°C. The samples were collected on June 4, 2012, extracted on June 15, 2012, and were analyzed by June 20, 2012, therefore meeting QC criteria of less than 7 days between collection and water sample extraction (14 days for soils) and less than 40 days between extraction and analysis.

2. Instrument Performance: Acceptable.

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. Initial and Continuing Calibration: Acceptable.

All initial calibration relative standard deviations (RSDs) were less than 15%. All continuing

calibration % differences (% D) were less than 15% and were within QC limits.

4. Error Determination: Not Provided.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Acceptable.

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

6. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. System Monitoring Compounds (SMCs): Acceptable.

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

8. Blank and Matrix Spikes: Acceptable.

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

9. Duplicates: Acceptable.

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

10. Compound Identification: Acceptable.

All results were dual-column confirmed with differences between the columns less than 25%.

11. Target Compound Quantitation and Quantitation Limits: Acceptable.

Sample results and quantitation limits were correctly calculated.

12. Laboratory Contact

No laboratory contact was required.

13. Overall Assessment

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 27, 2012

Client Sample ID:	12060001	Project:	ECOL00801
Sample ID:	305424001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	04-JUN-12 08:50		
Receive Date:	05-JUN-12		
Collector:	Client		
Moisture:	8.65%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	3.63	ug/kg	1	JXM	06/20/12	1005	1222536	1 SV2M
Aroclor-1221	U	ND	3.63	ug/kg	1					
Aroclor-1232	U	ND	3.63	ug/kg	1					
Aroclor-1242	U	ND	3.63	ug/kg	1					
Aroclor-1248	U	ND	3.63	ug/kg	1					
Aroclor-1254	U	ND	3.63	ug/kg	1					
Aroclor-1260	U	ND	3.63	ug/kg	1					
Aroclor-Total	U	ND	3.63	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	06/15/12	1815	1221816

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	VSG1	06/19/12	1200	1222535

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	3.87 ug/kg	7.27	53.3	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	5.12 ug/kg	7.27	70.5	(19%-130%)

MK 6-30-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 27, 2012

Client Sample ID:	12060002	Project:	ECOL00801
Sample ID:	305424002	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	04-JUN-12 09:15		
Receive Date:	05-JUN-12		
Collector:	Client		
Moisture:	11.1%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	3.73	ug/kg	1	JXM	06/20/12	1042	1222536	1 SV2M
Aroclor-1221	U	ND	3.73	ug/kg	1					
Aroclor-1232	U	ND	3.73	ug/kg	1					
Aroclor-1242	U	ND	3.73	ug/kg	1					
Aroclor-1248	U	ND	3.73	ug/kg	1					
Aroclor-1254	U	ND	3.73	ug/kg	1					
Aroclor-1260	U	ND	3.73	ug/kg	1					
Aroclor-Total	U	ND	3.73	ug/kg	1					SV4M

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	06/15/12	1815	1221816

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	VSG1	06/19/12	1200	1222535

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.10 ug/kg	7.47	54.9	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.81 ug/kg	7.47	64.4	(19%-130%)

JMW
6-30-12

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Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 27, 2012

Client Sample ID:	12060003	Project:	ECOL00801
Sample ID:	305424003	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	04-JUN-12 09:30		
Receive Date:	05-JUN-12		
Collector:	Client		
Moisture:	11%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	3.73	ug/kg	1	JXM	06/20/12	1054	1222536	1
Aroclor-1221	U	ND	3.73	ug/kg	1					
Aroclor-1232	U	ND	3.73	ug/kg	1					
Aroclor-1242	U	ND	3.73	ug/kg	1					
Aroclor-1248	U	ND	3.73	ug/kg	1					
Aroclor-1254	U	ND	3.73	ug/kg	1					
Aroclor-1260	U	ND	3.73	ug/kg	1					
Aroclor-Total	U	ND	3.73	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	06/15/12	1815	1221816

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	VSG1	06/19/12	1200	1222535

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.29 ug/kg	7.45	57.6	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	5.85 ug/kg	7.45	78.5	(19%-130%)

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 27, 2012

Client Sample ID:	12060004	Project:	ECOL00801
Sample ID:	305424004	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	04-JUN-12 10:20		
Receive Date:	05-JUN-12		
Collector:	Client		
Moisture:	14.3%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	3.87	ug/kg	1	JXM	06/20/12	1107	1222536	1 SV2M
Aroclor-1221	U	ND	3.87	ug/kg	1					
Aroclor-1232	U	ND	3.87	ug/kg	1					
Aroclor-1242	U	ND	3.87	ug/kg	1					
Aroclor-1248	U	ND	3.87	ug/kg	1					
Aroclor-1254	U	ND	3.87	ug/kg	1					SV4M
Aroclor-1260		4.37	3.87	ug/kg	1					
Aroclor-Total		4.37	3.87	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	06/15/12	1815	1221816

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	VSG1	06/19/12	1200	1222535

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	3.73 ug/kg	7.74	48.1	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.48 ug/kg	7.74	57.8	(19%-130%)

MW 6-30-12

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Certificate of Analysis

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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 27, 2012

Client Sample ID:	12060005	Project:	ECOL00801
Sample ID:	305424005	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	04-JUN-12 10:40		
Receive Date:	05-JUN-12		
Collector:	Client		
Moisture:	17.8%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	4.03	ug/kg	1	JXM	06/20/12	1119	1222536	1 SV24
Aroclor-1221	U	ND	4.03	ug/kg	1					
Aroclor-1232	U	ND	4.03	ug/kg	1					
Aroclor-1242	U	ND	4.03	ug/kg	1					
Aroclor-1248	U	ND	4.03	ug/kg	1					
Aroclor-1254	U	ND	4.03	ug/kg	1					SV4M
Aroclor-1260		6.55	4.03	ug/kg	1					
Aroclor-Total		6.55	4.03	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	06/15/12	1815	1221816

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	VSG1	06/19/12	1200	1222535

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.33 ug/kg	8.06	53.7	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	5.01 ug/kg	8.06	62.1	(19%-130%)

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Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 27, 2012

Client Sample ID:	12060006	Project:	ECOL00801
Sample ID:	305424006	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	04-JUN-12 10:55		
Receive Date:	05-JUN-12		
Collector:	Client		
Moisture:	24.2%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	21.8	ug/kg	5	JXM	06/20/12	1131	1222536	1 SV2M
Aroclor-1221	U	ND	21.8	ug/kg	5					
Aroclor-1232	U	ND	21.8	ug/kg	5					
Aroclor-1242	U	ND	21.8	ug/kg	5					
Aroclor-1248	U	ND	21.8	ug/kg	5					
Aroclor-1254	U	ND	21.8	ug/kg	5					
Aroclor-1260		38.3	21.8	ug/kg	5					SV4M
Aroclor-Total		38.3	21.8	ug/kg	5					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	06/15/12	1815	1221816

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	VSG1	06/19/12	1200	1222535

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.71 ug/kg	8.74	53.9	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.63 ug/kg	8.74	53.0	(19%-130%)

MN 6-30-12

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Global Environmental Specialists

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Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: June 30, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-01

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of six soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D and 8270D SIM PAH) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered:

12060001	12060002	12060003	12060004	12060005	12060006

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on June 4, 2012, were extracted on June 15, 2012, and were analyzed by June 18, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were greater than the QC limit of 0.050. All Relative Standard Deviations (RSDs) were less than the QC limit of 30%.

4. Continuing Calibration: Satisfactory.

All RRFs were greater than the QC limit of 0.050. All % differences were less than the QC limits except indeno(1,2,3-cd)pyrene, benzo(g,h,i)perylene, the surrogate 2,4,6-tribromophenol, and hexachlorobutadiene (all with increasing response factors; no qualifications based on the surrogate outlier and no qualifications were applied based on the other outliers as they were not detected in the associated samples) and hexachlorocyclopentadiene (with a decreasing response factor; qualified as estimated sample quantitation limits with a low bias in the associated samples) in the June 15, 2012 (2146 calibration), several high outliers (no actions were taken as they were not detected in the associated sample) and bis(2-chloroisoproply)ether with a decreasing response factor (qualified as estimated sample quantitation limits with a low bias in the associated samples [UJL]) in the June 16, 2012 (1638 calibration), and several high outliers (no actions were taken as they were not detected in the associated sample) and bis(2-chloroisoproply)ether and hexachlorocyclopentadiene with decreasing response factors (qualified as estimated sample quantitation limits with a low bias in the associated samples [UJL]) in the June 18, 2012 (0852 calibration).

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits except one high outlier in the matrix spike sample. No actions were taken based on this QC sample outlier.

7. Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Analysis: Satisfactory.

MS and MSD analyses were performed per SDG or per matrix per concentration level, whichever was more frequent. All recoveries were within QC limits except high 2,4-dinitrotoluene recoveries in the MS and MSD; no action was taken based on these outliers as they were not detected in any samples.

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Acceptable.

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 26, 2012

Client Sample ID:	12060001	Project:	ECOL00801
Sample ID:	305424001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	04-JUN-12 08:50		
Receive Date:	05-JUN-12		
Collector:	Client		
Moisture:	8.65%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	365	ug/kg	1	JLD1	06/16/12	0028	1221459	1 SKVM
1,2,4,5-Tetrachlorobenzene	U	ND	365	ug/kg	1					
1-Methylnaphthalene	U	ND	36.5	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	365	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	365	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	365	ug/kg	1					
2,4-Dichlorophenol	U	ND	365	ug/kg	1					
2,4-Dimethylphenol	U	ND	365	ug/kg	1					
2,4-Dinitrophenol	U	ND	729	ug/kg	1					
2,4-Dinitrotoluene	U	ND	365	ug/kg	1					
2,6-Dinitrotoluene	U	ND	365	ug/kg	1					
2-Chloronaphthalene	U	ND	36.5	ug/kg	1					
2-Chlorophenol	U	ND	365	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	365	ug/kg	1					
2-Methylnaphthalene	U	ND	36.5	ug/kg	1					
2-Nitrophenol	U	ND	365	ug/kg	1					
3,3'-Dichlorobenzidine	U	ND	365	ug/kg	1					
4-Bromophenylphenylether	U	ND	365	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	365	ug/kg	1					
4-Chloroaniline	U	ND	365	ug/kg	1					
4-Chlorophenylphenylether	U	ND	365	ug/kg	1					
4-Nitrophenol	U	ND	365	ug/kg	1					
Acenaphthene	U	ND	36.5	ug/kg	1					
Acenaphthylene	U	ND	36.5	ug/kg	1					
Acetophenone	U	ND	365	ug/kg	1					
Anthracene	U	ND	36.5	ug/kg	1					
Atrazine	U	ND	365	ug/kg	1					
Benzaldehyde	U	ND	365	ug/kg	1					
Benzo(a)anthracene	U	ND	36.5	ug/kg	1					
Benzo(a)pyrene	U	ND	36.5	ug/kg	1					
Benzo(b)fluoranthene	U	ND	36.5	ug/kg	1					
Benzo(ghi)perylene	U	ND	36.5	ug/kg	1					
Benzo(k)fluoranthene	U	ND	36.5	ug/kg	1					
Butylbenzylphthalate	U	ND	365	ug/kg	1					
Caprolactam	U	ND	365	ug/kg	1					
Carbazole	U	ND	36.5	ug/kg	1					
Chrysene	U	ND	36.5	ug/kg	1					

MW 6-30-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 26, 2012

Client Sample ID: 12060001
Sample ID: 305424001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	365	ug/kg	1					
Di-n-octylphthalate	U	ND	365	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	36.5	ug/kg	1					
Dibenzofuran	U	ND	365	ug/kg	1					
Diethylphthalate	U	ND	365	ug/kg	1					
Dimethylphthalate	U	ND	365	ug/kg	1					
Diphenylamine	U	ND	365	ug/kg	1					
Fluoranthene	U	ND	36.5	ug/kg	1					
Fluorene	U	ND	36.5	ug/kg	1					
Hexachlorobenzene	U	ND	365	ug/kg	1					
Hexachlorobutadiene	U	ND	365	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	365	ug/kg	1					
Hexachloroethane	U	ND	365	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	36.5	ug/kg	1					
Isophorone	U	ND	365	ug/kg	1					
N-Nitrosodipropylamine	U	ND	365	ug/kg	1					
Naphthalene	U	ND	36.5	ug/kg	1					
Nitrobenzene	U	ND	365	ug/kg	1					
Pentachlorophenol	U	ND	365	ug/kg	1					
Phenanthrene	U	ND	36.5	ug/kg	1					
Phenol	U	ND	365	ug/kg	1					
Pyrene	U	ND	36.5	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	365	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	365	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	365	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	365	ug/kg	1					
m,p-Cresols	U	ND	365	ug/kg	1					
m-Nitroaniline	U	ND	365	ug/kg	1					
o-Cresol	U	ND	365	ug/kg	1					
o-Nitroaniline	U	ND	365	ug/kg	1					
p-Nitroaniline	U	ND	365	ug/kg	1					

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The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	RXH3	06/15/12	1200	1221458

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

MN 6-30-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 26, 2012

Client Sample ID: 12060001
Sample ID: 305424001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1570 ug/kg	1820	86.0	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1790 ug/kg	1820	98.2	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1740 ug/kg	1820	95.2	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	4150 ug/kg	3650	114	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2880 ug/kg	3650	79.1	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2370 ug/kg	3650	65.1	(26%-112%)

MW 6-30-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 26, 2012

Client Sample ID:	12060002	Project:	ECOL00801
Sample ID:	305424002	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	04-JUN-12 09:15		
Receive Date:	05-JUN-12		
Collector:	Client		
Moisture:	11.1%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	374	ug/kg	1	BYT1	06/16/12	2002	1221459	1
1,2,4,5-Tetrachlorobenzene	U	ND	374	ug/kg	1					
1-Methylnaphthalene	U	ND	37.4	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	374	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	374	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	374	ug/kg	1					
2,4-Dichlorophenol	U	ND	374	ug/kg	1					
2,4-Dimethylphenol	U	ND	374	ug/kg	1					
2,4-Dinitrophenol	U	ND	747	ug/kg	1					
2,4-Dinitrotoluene	U	ND	374	ug/kg	1					
2,6-Dinitrotoluene	U	ND	374	ug/kg	1					
2-Chloronaphthalene	U	ND	37.4	ug/kg	1					
2-Chlorophenol	U	ND	374	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	374	ug/kg	1					
2-Methylnaphthalene	U	ND	37.4	ug/kg	1					
2-Nitrophenol	U	ND	374	ug/kg	1					
3,3'-Dichlorobenzidine	U	ND	374	ug/kg	1					
4-Bromophenylphenylether	U	ND	374	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	374	ug/kg	1					
4-Chloroaniline	U	ND	374	ug/kg	1					
4-Chlorophenylphenylether	U	ND	374	ug/kg	1					
4-Nitrophenol	U	ND	374	ug/kg	1					
Acenaphthene	U	ND	37.4	ug/kg	1					
Acenaphthylene	U	ND	37.4	ug/kg	1					
Acetophenone	U	ND	374	ug/kg	1					
Anthracene	U	ND	37.4	ug/kg	1					
Atrazine	U	ND	374	ug/kg	1					
Benzaldehyde	U	ND	374	ug/kg	1					
Benzo(a)anthracene	U	ND	37.4	ug/kg	1					
Benzo(a)pyrene	U	ND	37.4	ug/kg	1					
Benzo(b)fluoranthene	U	ND	37.4	ug/kg	1					
Benzo(ghi)perylene	U	ND	37.4	ug/kg	1					
Benzo(k)fluoranthene	U	ND	37.4	ug/kg	1					
Butylbenzylphthalate	U	ND	374	ug/kg	1					
Caprolactam	U	ND	374	ug/kg	1					
Carbazole	U	ND	37.4	ug/kg	1					
Chrysene	U	ND	37.4	ug/kg	1					

SZVM

MW 6/20/12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 26, 2012

Client Sample ID: 12060002
Sample ID: 305424002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										S2VM
Di-n-butylphthalate	U	ND	374	ug/kg	1					
Di-n-octylphthalate	U	ND	374	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	37.4	ug/kg	1					
Dibenzofuran	U	ND	374	ug/kg	1					
Diethylphthalate	U	ND	374	ug/kg	1					
Dimethylphthalate	U	ND	374	ug/kg	1					
Diphenylamine	U	ND	374	ug/kg	1					
Fluoranthene	U	ND	37.4	ug/kg	1					
Fluorene	U	ND	37.4	ug/kg	1					
Hexachlorobenzene	U	ND	374	ug/kg	1					
Hexachlorobutadiene	U	ND	374	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	374	ug/kg	1					
Hexachloroethane	U	ND	374	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	37.4	ug/kg	1					
Isophorone	U	ND	374	ug/kg	1					
N-Nitrosodipropylamine	U	ND	374	ug/kg	1					
Naphthalene	U	ND	37.4	ug/kg	1					
Nitrobenzene	U	ND	374	ug/kg	1					
Pentachlorophenol	U	ND	374	ug/kg	1					
Phenanthrene	U	ND	37.4	ug/kg	1					
Phenol	U	ND	374	ug/kg	1					
Pyrene	U	ND	37.4	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	374	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	374	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	374	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	374	ug/kg	1					
m,p-Cresols	U	ND	374	ug/kg	1					
m-Nitroaniline	U	ND	374	ug/kg	1					
o-Cresol	U	ND	374	ug/kg	1					
o-Nitroaniline	U	ND	374	ug/kg	1					
p-Nitroaniline	U	ND	374	ug/kg	1					

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The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	RXH3	06/15/12	1200	1221458

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

MW 6-30-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 26, 2012

Client Sample ID: 12060002
Sample ID: 305424002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1600 ug/kg	1870	85.9	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1790 ug/kg	1870	96.0	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2040 ug/kg	1870	109	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	4500 ug/kg	3740	120	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2730 ug/kg	3740	73.0	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2230 ug/kg	3740	59.8	(26%-112%)

MW
6302

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 26, 2012

Client Sample ID:	12060003	Project:	ECOL00801
Sample ID:	305424003	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	04-JUN-12 09:30		
Receive Date:	05-JUN-12		
Collector:	Client		
Moisture:	11%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	374	ug/kg	1	JLD1	06/18/12	1555	1221459	1 SZVM
1,2,4,5-Tetrachlorobenzene	U	ND	374	ug/kg	1					
1-Methylnaphthalene	U	ND	37.4	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	374	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	374	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	374	ug/kg	1					
2,4-Dichlorophenol	U	ND	374	ug/kg	1					
2,4-Dimethylphenol	U	ND	374	ug/kg	1					
2,4-Dinitrophenol	U	ND	749	ug/kg	1					
2,4-Dinitrotoluene	U	ND	374	ug/kg	1					
2,6-Dinitrotoluene	U	ND	374	ug/kg	1					
2-Chloronaphthalene	U	ND	37.4	ug/kg	1					
2-Chlorophenol	U	ND	374	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	374	ug/kg	1					
2-Methylnaphthalene	U	ND	37.4	ug/kg	1					
2-Nitrophenol	U	ND	374	ug/kg	1					
3,3'-Dichlorobenzidine	U	ND	374	ug/kg	1					
4-Bromophenylphenylether	U	ND	374	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	374	ug/kg	1					
4-Chloroaniline	U	ND	374	ug/kg	1					
4-Chlorophenylphenylether	U	ND	374	ug/kg	1					
4-Nitrophenol	U	ND	374	ug/kg	1					
Acenaphthene	U	ND	37.4	ug/kg	1					
Acenaphthylene	U	ND	37.4	ug/kg	1					
Acetophenone	U	ND	374	ug/kg	1					
Anthracene	U	ND	37.4	ug/kg	1					
Atrazine	U	ND	374	ug/kg	1					
Benzaldehyde	U	ND	374	ug/kg	1					
Benzo(a)anthracene	U	ND	37.4	ug/kg	1					
Benzo(a)pyrene	U	ND	37.4	ug/kg	1					
Benzo(b)fluoranthene	U	ND	37.4	ug/kg	1					
Benzo(ghi)perylene	U	ND	37.4	ug/kg	1					
Benzo(k)fluoranthene	U	ND	37.4	ug/kg	1					
Butylbenzylphthalate	U	ND	374	ug/kg	1					
Caprolactam	U	ND	374	ug/kg	1					
Carbazole	U	ND	37.4	ug/kg	1					
Chrysene	U	ND	37.4	ug/kg	1					

MW 6-30-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 26, 2012

Client Sample ID: 12060003
Sample ID: 305424003

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	374	ug/kg	1					
Di-n-octylphthalate	U	ND	374	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	37.4	ug/kg	1					
Dibenzofuran	U	ND	374	ug/kg	1					
Diethylphthalate	U	ND	374	ug/kg	1					
Dimethylphthalate	U	ND	374	ug/kg	1					
Diphenylamine	U	ND	374	ug/kg	1					
Fluoranthene	U	ND	37.4	ug/kg	1					
Fluorene	U	ND	37.4	ug/kg	1					
Hexachlorobenzene	U	ND	374	ug/kg	1					
Hexachlorobutadiene	U	ND	374	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	374	ug/kg	1					
Hexachloroethane	U	ND	374	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	37.4	ug/kg	1					
Isophorone	U	ND	374	ug/kg	1					
N-Nitrosodipropylamine	U	ND	374	ug/kg	1					
Naphthalene	U	ND	37.4	ug/kg	1					
Nitrobenzene	U	ND	374	ug/kg	1					
Pentachlorophenol	U	ND	374	ug/kg	1					
Phenanthrene	U	ND	37.4	ug/kg	1					
Phenol	U	ND	374	ug/kg	1					
Pyrene	U	ND	37.4	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	374	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	374	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	374	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	374	ug/kg	1					
m,p-Cresols	U	ND	374	ug/kg	1					
m-Nitroaniline	U	ND	374	ug/kg	1					
o-Cresol	U	ND	374	ug/kg	1					
o-Nitroaniline	U	ND	374	ug/kg	1					
p-Nitroaniline	U	ND	374	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	RXH3	06/15/12	1200	1221458

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 26, 2012

Client Sample ID: 12060003
Sample ID: 305424003

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1570 ug/kg	1870	83.7	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1750 ug/kg	1870	93.5	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1800 ug/kg	1870	96.3	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	4130 ug/kg	3740	110	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2850 ug/kg	3740	76.2	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2290 ug/kg	3740	61.1	(26%-112%)

MW
6-30-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 26, 2012

Client Sample ID:	12060004	Project:	ECOL00801
Sample ID:	305424004	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	04-JUN-12 10:20		
Receive Date:	05-JUN-12		
Collector:	Client		
Moisture:	14.3%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	3870	ug/kg	10	JLD1	06/16/12	0232	1221459	1
1,2,4,5-Tetrachlorobenzene	U	ND	3870	ug/kg	10					
1-Methylnaphthalene	U	ND	387	ug/kg	10					
2,3,4,6-Tetrachlorophenol	U	ND	3870	ug/kg	10					
2,4,5-Trichlorophenol	U	ND	3870	ug/kg	10					
2,4,6-Trichlorophenol	U	ND	3870	ug/kg	10					
2,4-Dichlorophenol	U	ND	3870	ug/kg	10					
2,4-Dimethylphenol	U	ND	3870	ug/kg	10					
2,4-Dinitrophenol	U	ND	7740	ug/kg	10					
2,4-Dinitrotoluene	U	ND	3870	ug/kg	10					
2,6-Dinitrotoluene	U	ND	3870	ug/kg	10					
2-Chloronaphthalene	U	ND	387	ug/kg	10					
2-Chlorophenol	U	ND	3870	ug/kg	10					
2-Methyl-4,6-dinitrophenol	U	ND	3870	ug/kg	10					
2-Methylnaphthalene	U	ND	387	ug/kg	10					
2-Nitrophenol	U	ND	3870	ug/kg	10					
3,3'-Dichlorobenzidine	U	ND	3870	ug/kg	10					
4-Bromophenylphenylether	U	ND	3870	ug/kg	10					
4-Chloro-3-methylphenol	U	ND	3870	ug/kg	10					
4-Chloroaniline	U	ND	3870	ug/kg	10					
4-Chlorophenylphenylether	U	ND	3870	ug/kg	10					
4-Nitrophenol	U	ND	3870	ug/kg	10					
Acenaphthene	U	ND	387	ug/kg	10					
Acenaphthylene	U	ND	387	ug/kg	10					
Acetophenone	U	ND	3870	ug/kg	10					
Anthracene	U	ND	387	ug/kg	10					
Atrazine	U	ND	3870	ug/kg	10					
Benzaldehyde	U	ND	3870	ug/kg	10					
Benzo(a)anthracene	U	ND	387	ug/kg	10					
Benzo(a)pyrene	U	ND	387	ug/kg	10					
Benzo(b)fluoranthene	U	ND	387	ug/kg	10					
Benzo(ghi)perylene	U	ND	387	ug/kg	10					
Benzo(k)fluoranthene	U	ND	387	ug/kg	10					
Butylbenzylphthalate	U	ND	3870	ug/kg	10					
Caprolactam	U	ND	3870	ug/kg	10					
Carbazole	U	ND	387	ug/kg	10					
Chrysene	U	ND	387	ug/kg	10					

U

S2VM

MW

MW 6-30-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 26, 2012

Client Sample ID: 12060004
Sample ID: 305424004

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										SZVM
Di-n-butylphthalate	U	ND	3870	ug/kg	10					
Di-n-octylphthalate	U	ND	3870	ug/kg	10					
Dibenzo(a,h)anthracene	U	ND	387	ug/kg	10					
Dibenzofuran	U	ND	3870	ug/kg	10					
Diethylphthalate	U	ND	3870	ug/kg	10					
Dimethylphthalate	U	ND	3870	ug/kg	10					
Diphenylamine	U	ND	3870	ug/kg	10					
Fluoranthene	U	ND	387	ug/kg	10					
Fluorene	U	ND	387	ug/kg	10					
Hexachlorobenzene	U	ND	3870	ug/kg	10					
Hexachlorobutadiene	U	ND	3870	ug/kg	10					
Hexachlorocyclopentadiene	U	ND	3870	ug/kg	10					
Hexachloroethane	U	ND	3870	ug/kg	10					
Indeno(1,2,3-cd)pyrene	U	ND	387	ug/kg	10					
Isophorone	U	ND	3870	ug/kg	10					
N-Nitrosodipropylamine	U	ND	3870	ug/kg	10					
Naphthalene	U	ND	387	ug/kg	10					
Nitrobenzene	U	ND	3870	ug/kg	10					
Pentachlorophenol	U	ND	3870	ug/kg	10					
Phenanthrene	U	ND	387	ug/kg	10					
Phenol	U	ND	3870	ug/kg	10					
Pyrene	U	ND	387	ug/kg	10					
bis(2-Chloroethoxy)methane	U	ND	3870	ug/kg	10					
bis(2-Chloroethyl) ether	U	ND	3870	ug/kg	10					
bis(2-Chloroisopropyl)ether	U	ND	3870	ug/kg	10					
bis(2-Ethylhexyl)phthalate	U	ND	3870	ug/kg	10					
m,p-Cresols	U	ND	3870	ug/kg	10					
m-Nitroaniline	U	ND	3870	ug/kg	10					
o-Cresol	U	ND	3870	ug/kg	10					
o-Nitroaniline	U	ND	3870	ug/kg	10					
p-Nitroaniline	U	ND	3870	ug/kg	10					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	RXH3	06/15/12	1200	1221458

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

MW 6-30-12

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Address : 720 Third Ave
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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 26, 2012

Client Sample ID: 12060004
Sample ID: 305424004

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1490 ug/kg	1940	77.2	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1600 ug/kg	1940	82.8	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1540 ug/kg	1940	79.6	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	3230 ug/kg	3870	83.5	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2570 ug/kg	3870	66.5	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2000 ug/kg	3870	51.7	(26%-112%)

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 26, 2012

Client Sample ID:	12060005	Project:	ECOL00801
Sample ID:	305424005	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	04-JUN-12 10:40		
Receive Date:	05-JUN-12		
Collector:	Client		
Moisture:	17.8%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	405	ug/kg	1	JLD1	06/18/12	1620	1221459	1 S2V/1
1,2,4,5-Tetrachlorobenzene	U	ND	405	ug/kg	1					
1-Methylnaphthalene	U	ND	40.5	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	405	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	405	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	405	ug/kg	1					
2,4-Dichlorophenol	U	ND	405	ug/kg	1					
2,4-Dimethylphenol	U	ND	405	ug/kg	1					
2,4-Dinitrophenol	U	ND	809	ug/kg	1					
2,4-Dinitrotoluene	U	ND	405	ug/kg	1					
2,6-Dinitrotoluene	U	ND	405	ug/kg	1					
2-Chloronaphthalene	U	ND	40.5	ug/kg	1					
2-Chlorophenol	U	ND	405	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	405	ug/kg	1					
2-Methylnaphthalene	U	ND	40.5	ug/kg	1					
2-Nitrophenol	U	ND	405	ug/kg	1					
3,3'-Dichlorobenzidine	U	ND	405	ug/kg	1					
4-Bromophenylphenylether	U	ND	405	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	405	ug/kg	1					
4-Chloroaniline	U	ND	405	ug/kg	1					
4-Chlorophenylphenylether	U	ND	405	ug/kg	1					
4-Nitrophenol	U	ND	405	ug/kg	1					
Acenaphthene	U	ND	40.5	ug/kg	1					
Acenaphthylene	U	ND	40.5	ug/kg	1					
Acetophenone	U	ND	405	ug/kg	1					
Anthracene	U	ND	40.5	ug/kg	1					
Atrazine	U	ND	405	ug/kg	1					
Benzaldehyde	U	ND	405	ug/kg	1					
Benzo(a)anthracene	U	ND	40.5	ug/kg	1					
Benzo(a)pyrene	U	ND	40.5	ug/kg	1					
Benzo(b)fluoranthene	U	ND	40.5	ug/kg	1					
Benzo(ghi)perylene	U	ND	40.5	ug/kg	1					
Benzo(k)fluoranthene	U	ND	40.5	ug/kg	1					
Butylbenzylphthalate	U	ND	405	ug/kg	1					
Caprolactam	U	ND	405	ug/kg	1					
Carbazole	U	ND	40.5	ug/kg	1					
Chrysene	U	ND	40.5	ug/kg	1					

MW 6-26-12

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 26, 2012

Client Sample ID: 12060005
Sample ID: 305424005

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										S2VM
Di-n-butylphthalate	U	ND	405	ug/kg	1					
Di-n-octylphthalate	U	ND	405	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	40.5	ug/kg	1					
Dibenzofuran	U	ND	405	ug/kg	1					
Diethylphthalate	U	ND	405	ug/kg	1					
Dimethylphthalate	U	ND	405	ug/kg	1					
Diphenylamine	U	ND	405	ug/kg	1					
Fluoranthene	U	ND	40.5	ug/kg	1					
Fluorene	U	ND	40.5	ug/kg	1					
Hexachlorobenzene	U	ND	405	ug/kg	1					
Hexachlorobutadiene	U	ND	405	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	405	ug/kg	1					
Hexachloroethane	U	ND	405	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	40.5	ug/kg	1					
Isophorone	U	ND	405	ug/kg	1					
N-Nitrosodipropylamine	U	ND	405	ug/kg	1					
Naphthalene	U	ND	40.5	ug/kg	1					
Nitrobenzene	U	ND	405	ug/kg	1					
Pentachlorophenol	U	ND	405	ug/kg	1					
Phenanthrene	U	ND	40.5	ug/kg	1					
Phenol	U	ND	405	ug/kg	1					
Pyrene	U	ND	40.5	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	405	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	405	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	405	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	405	ug/kg	1					
m,p-Cresols	U	ND	405	ug/kg	1					
m-Nitroaniline	U	ND	405	ug/kg	1					
o-Cresol	U	ND	405	ug/kg	1					
o-Nitroaniline	U	ND	405	ug/kg	1					
p-Nitroaniline	U	ND	405	ug/kg	1					

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The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	RXH3	06/15/12	1200	1221458

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

MW 6-30-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 26, 2012

Client Sample ID: 12060005
Sample ID: 305424005

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1590 ug/kg	2020	78.6	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1750 ug/kg	2020	86.3	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1900 ug/kg	2020	94.1	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	4850 ug/kg	4050	120	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	3050 ug/kg	4050	75.3	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2610 ug/kg	4050	64.4	(26%-112%)

JMW 6-30-12

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Company : Ecology and Environment, Inc.
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Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 26, 2012

Client Sample ID:	12060006	Project:	ECOL00801
Sample ID:	305424006	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	04-JUN-12 10:55		
Receive Date:	05-JUN-12		
Collector:	Client		
Moisture:	24.2%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	439	ug/kg	1	JLD1	06/16/12	0322	1221459	1 SVM
1,2,4,5-Tetrachlorobenzene	U	ND	439	ug/kg	1					
1-Methylnaphthalene	U	ND	43.9	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	439	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	439	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	439	ug/kg	1					
2,4-Dichlorophenol	U	ND	439	ug/kg	1					
2,4-Dimethylphenol	U	ND	439	ug/kg	1					
2,4-Dinitrophenol	U	ND	879	ug/kg	1					
2,4-Dinitrotoluene	U	ND	439	ug/kg	1					
2,6-Dinitrotoluene	U	ND	439	ug/kg	1					
2-Chloronaphthalene	U	ND	43.9	ug/kg	1					
2-Chlorophenol	U	ND	439	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	439	ug/kg	1					
2-Methylnaphthalene	U	ND	43.9	ug/kg	1					
2-Nitrophenol	U	ND	439	ug/kg	1					
3,3'-Dichlorobenzidine	U	ND	439	ug/kg	1					
4-Bromophenylphenylether	U	ND	439	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	439	ug/kg	1					
4-Chloroaniline	U	ND	439	ug/kg	1					
4-Chlorophenylphenylether	U	ND	439	ug/kg	1					
4-Nitrophenol	U	ND	439	ug/kg	1					
Acenaphthene	U	ND	43.9	ug/kg	1					
Acenaphthylene	U	ND	43.9	ug/kg	1					
Acetophenone	U	ND	439	ug/kg	1					
Anthracene	U	ND	43.9	ug/kg	1					
Atrazine	U	ND	439	ug/kg	1					
Benzaldehyde	U	ND	439	ug/kg	1					
Benzo(a)anthracene	U	ND	43.9	ug/kg	1					
Benzo(a)pyrene	U	ND	43.9	ug/kg	1					
Benzo(b)fluoranthene	U	ND	43.9	ug/kg	1					
Benzo(ghi)perylene	U	ND	43.9	ug/kg	1					
Benzo(k)fluoranthene	U	ND	43.9	ug/kg	1					
Butylbenzylphthalate	U	ND	439	ug/kg	1					
Caprolactam	U	ND	439	ug/kg	1					
Carbazole	U	ND	43.9	ug/kg	1					
Chrysene	U	ND	43.9	ug/kg	1					

MW 6-30-12

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 26, 2012

Client Sample ID: 12060006
Sample ID: 305424006

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	439	ug/kg	1					
Di-n-octylphthalate	U	ND	439	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	43.9	ug/kg	1					
Dibenzofuran	U	ND	439	ug/kg	1					
Diethylphthalate	U	ND	439	ug/kg	1					
Dimethylphthalate	U	ND	439	ug/kg	1					
Diphenylamine	U	ND	439	ug/kg	1					
Fluoranthene	U	ND	43.9	ug/kg	1					
Fluorene	U	ND	43.9	ug/kg	1					
Hexachlorobenzene	U	ND	439	ug/kg	1					
Hexachlorobutadiene	U	ND	439	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	439	ug/kg	1					
Hexachloroethane	U	ND	439	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	43.9	ug/kg	1					
Isophorone	U	ND	439	ug/kg	1					
N-Nitrosodipropylamine	U	ND	439	ug/kg	1					
Naphthalene	U	ND	43.9	ug/kg	1					
Nitrobenzene	U	ND	439	ug/kg	1					
Pentachlorophenol	U	ND	439	ug/kg	1					
Phenanthrene	U	ND	43.9	ug/kg	1					
Phenol	U	ND	439	ug/kg	1					
Pyrene	U	ND	43.9	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	439	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	439	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	439	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	439	ug/kg	1					
m,p-Cresols	U	ND	439	ug/kg	1					
m-Nitroaniline	U	ND	439	ug/kg	1					
o-Cresol	U	ND	439	ug/kg	1					
o-Nitroaniline	U	ND	439	ug/kg	1					
p-Nitroaniline	U	ND	439	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	RXH3	06/15/12	1200	1221458

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 26, 2012

Client Sample ID: 12060006
Sample ID: 305424006

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1910 ug/kg	2200	86.7	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2180 ug/kg	2200	99.4	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2310 ug/kg	2200	105	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	5360 ug/kg	4390	122	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	3440 ug/kg	4390	78.4	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2940 ug/kg	4390	66.9	(26%-112%)

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700, Seattle, WA 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: June 30, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-01

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of six soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Volatile organic compound (VOC) analysis (EPA Method 8260) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered:

12060007	12060008	12060009	12060010	12060011	12060012

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on June 4, 2012, and were analyzed by June 15, 2012, therefore meeting QC criteria of less than 14 days between collection and analysis for soil and preserved water samples.

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Satisfactory.

All average Relative Response Factors (RRFs) were greater than the QC limit of 0.050 except 2-butanone; associated 2-butanone sample quantitation limits were rejected (R). All Relative Standard Deviations (RSDs) were less than the QC limits of 30%.

4. Continuing Calibration: Satisfactory.

All RRFs were greater than the QC limit of 0.050 except 2-butanone; no additional actions were taken based on this outlier. All % differences were less than the QC limits except 2-butanone (no additional actions were taken) and acetone with an increasing response factor. Associated positive acetone results were qualified as estimated quantities with a high bias (JH).

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Satisfactory.

All SMC recoveries were within QC limits except 4-bromofluorobenzene with high recoveries in sample 12060010 and 12060012. Positive sample results associated with the high recovery outliers were qualified as estimated quantities with a high bias (JH).

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

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

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Acceptable.

All internal standards were within $\pm$ 30 seconds of the continuing calibration internal standard retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	305424	**Date Collected:**	06/04/2012 08:50	**Matrix:**	SOIL
Lab Sample ID:	305424007	**Date Received:**	06/05/2012 09:35	**%Moisture:**	8.6
Client Sample:	BL-01V	**Client:**	ECOL008	**Project:**	ECOL00801
Client ID:	12060007	**Method:**	SW846 8260B	**SOP Ref:**	GL-OA-E-038
Batch ID:	1221788	**Inst:**	VOA3.I	**Dilution:**	1
Run Date:	06/15/2012 13:38	**Analyst:**	CDS1	**Purge Vol:**	5 mL
Prep Date:	06/04/2012 08:50	**Aliquot:**	6.8 g	**Final Volume:**	5 mL
Data File:	061512V3\3P514.D	**Column:**	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-87-3	Chloromethane	U	0.805	ug/kg	0.241	0.805
75-01-4	Vinyl chloride	U	0.805	ug/kg	0.241	0.805
74-83-9	Bromomethane	U	0.805	ug/kg	0.241	0.805
75-00-3	Chloroethane	U	0.805	ug/kg	0.241	0.805
67-64-1	Acetone	U	4.02	ug/kg	1.21	4.02
75-35-4	1,1-Dichloroethylene	U	0.805	ug/kg	0.241	0.805
75-09-2	Methylene chloride	U	4.02	ug/kg	1.61	4.02
75-15-0	Carbon disulfide	U	4.02	ug/kg	1.21	4.02
1634-04-4	tert-Butyl methyl ether	U	0.805	ug/kg	0.241	0.805
156-60-5	trans-1,2-Dichloroethylene	U	0.805	ug/kg	0.241	0.805
108-05-4	Vinyl acetate	U	4.02	ug/kg	1.21	4.02
75-34-3	1,1-Dichloroethane	U	0.805	ug/kg	0.241	0.805
78-93-3	2-Butanone	~~U~~	~~4.02~~	~~ug/kg~~	~~1.21~~	~~4.02~~ MW R
156-59-2	cis-1,2-Dichloroethylene	U	0.805	ug/kg	0.241	0.805
67-66-3	Chloroform	U	0.805	ug/kg	0.241	0.805
71-55-6	1,1,1-Trichloroethane	U	0.805	ug/kg	0.241	0.805
56-23-5	Carbon tetrachloride	U	0.805	ug/kg	0.241	0.805
107-06-2	1,2-Dichloroethane	U	0.805	ug/kg	0.241	0.805
71-43-2	Benzene	U	0.805	ug/kg	0.241	0.805
79-01-6	Trichloroethylene	U	0.805	ug/kg	0.241	0.805
78-87-5	1,2-Dichloropropane	U	0.805	ug/kg	0.241	0.805
75-27-4	Bromodichloromethane	U	0.805	ug/kg	0.241	0.805
108-10-1	4-Methyl-2-pentanone	U	4.02	ug/kg	1.21	4.02
10061-01-5	cis-1,3-Dichloropropylene	U	0.805	ug/kg	0.241	0.805
108-88-3	Toluene	U	0.805	ug/kg	0.241	0.805
10061-02-6	trans-1,3-Dichloropropylene	U	0.805	ug/kg	0.241	0.805
79-00-5	1,1,2-Trichloroethane	U	0.805	ug/kg	0.241	0.805
591-78-6	2-Hexanone	U	4.02	ug/kg	1.21	4.02
127-18-4	Tetrachloroethylene	U	0.805	ug/kg	0.241	0.805
124-48-1	Dibromochloromethane	U	0.805	ug/kg	0.241	0.805
108-90-7	Chlorobenzene	U	0.805	ug/kg	0.241	0.805
100-41-4	Ethylbenzene	U	0.805	ug/kg	0.241	0.805
179601-23-1	m,p-Xylenes	U	1.61	ug/kg	0.241	1.61
95-47-6	o-Xylene	U	0.805	ug/kg	0.241	0.805
100-42-5	Styrene	U	0.805	ug/kg	0.241	0.805
75-25-2	Bromoform	U	0.805	ug/kg	0.241	0.805
79-34-5	1,1,2,2-Tetrachloroethane	U	0.805	ug/kg	0.241	0.805
540-59-0	1,2-Dichloroethylene (total)	U	1.61	ug/kg	0.241	1.61

MW

SV2M

SV4M

SV2M

MW 6-30-12

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	305424	Date Collected:	06/04/2012 08:50	Matrix:	SOIL
Lab Sample ID:	305424007	Date Received:	06/05/2012 09:35	%Moisture:	8.6
Client Sample:	BL-01V	Client:	ECOL008	Project:	ECOL00801
Client ID:	12060007	Method:	SW846 8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1221788	Inst:	VOA3.I	Dilution:	1
Run Date:	06/15/2012 13:38	Analyst:	CDS1	Purge Vol:	5 mL
Prep Date:	06/04/2012 08:50	Aliquot:	6.8 g	Final Volume:	5 mL
Data File:	061512V3\3P514.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	
1330-20-7	Xylenes (total)	U MW	2.41 U	ug/kg	0.241	2.41	SV2M

MW 6-30-12

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	305424	**Date Collected:**	06/04/2012 09:15	**Matrix:**	SOIL
Lab Sample ID:	305424008	**Date Received:**	06/05/2012 09:35	**%Moisture:**	11.1
Client Sample:	BL-02V	**Client:**	ECOL008	**Project:**	ECOL00801
Client ID:	12060008	**Method:**	SW846 8260B	**SOP Ref:**	GL-OA-E-038
Batch ID:	1221788	**Inst:**	VOA3.I	**Dilution:**	1
Run Date:	06/15/2012 13:09	**Analyst:**	CDS1	**Purge Vol:**	5 mL
Prep Date:	06/04/2012 09:15	**Aliquot:**	6.9 g	**Final Volume:**	5 mL
Data File:	061512V3\3P513.D	**Column:**	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-87-3	Chloromethane	U	0.815	ug/kg	0.245	0.815
75-01-4	Vinyl chloride	U	0.815	ug/kg	0.245	0.815
74-83-9	Bromomethane	U	0.815	ug/kg	0.245	0.815
75-00-3	Chloroethane	U	0.815	ug/kg	0.245	0.815
67-64-1	Acetone	U	4.08	ug/kg	1.22	4.08
75-35-4	1,1-Dichloroethylene	U	0.815	ug/kg	0.245	0.815
75-09-2	Methylene chloride	U	4.08	ug/kg	1.63	4.08
75-15-0	Carbon disulfide	U	4.08	ug/kg	1.22	4.08
1634-04-4	tert-Butyl methyl ether	U	0.815	ug/kg	0.245	0.815
156-60-5	trans-1,2-Dichloroethylene	U	0.815	ug/kg	0.245	0.815
108-05-4	Vinyl acetate	U	4.08	ug/kg	1.22	4.08
75-34-3	1,1-Dichloroethane	U	0.815	ug/kg	0.245	0.815
78-93-3	2-Butanone	~~U~~	~~4.08~~	~~ug/kg~~	~~1.22~~	~~4.08~~ R
156-59-2	cis-1,2-Dichloroethylene	U	0.815	ug/kg	0.245	0.815
67-66-3	Chloroform	U	0.815	ug/kg	0.245	0.815
71-55-6	1,1,1-Trichloroethane	U	0.815	ug/kg	0.245	0.815
56-23-5	Carbon tetrachloride	U	0.815	ug/kg	0.245	0.815
107-06-2	1,2-Dichloroethane	U	0.815	ug/kg	0.245	0.815
71-43-2	Benzene	U	0.815	ug/kg	0.245	0.815
79-01-6	Trichloroethylene	U	0.815	ug/kg	0.245	0.815
78-87-5	1,2-Dichloropropane	U	0.815	ug/kg	0.245	0.815
75-27-4	Bromodichloromethane	U	0.815	ug/kg	0.245	0.815
108-10-1	4-Methyl-2-pentanone	U	4.08	ug/kg	1.22	4.08
10061-01-5	cis-1,3-Dichloropropylene	U	0.815	ug/kg	0.245	0.815
108-88-3	Toluene	U	0.815	ug/kg	0.245	0.815
10061-02-6	trans-1,3-Dichloropropylene	U	0.815	ug/kg	0.245	0.815
79-00-5	1,1,2-Trichloroethane	U	0.815	ug/kg	0.245	0.815
591-78-6	2-Hexanone	U	4.08	ug/kg	1.22	4.08
127-18-4	Tetrachloroethylene	U	0.815	ug/kg	0.245	0.815
124-48-1	Dibromochloromethane	U	0.815	ug/kg	0.245	0.815
108-90-7	Chlorobenzene	U	0.815	ug/kg	0.245	0.815
100-41-4	Ethylbenzene	U	0.815	ug/kg	0.245	0.815
179601-23-1	m,p-Xylenes	U	1.63	ug/kg	0.245	1.63
95-47-6	o-Xylene	U	0.815	ug/kg	0.245	0.815
100-42-5	Styrene	U	0.815	ug/kg	0.245	0.815
75-25-2	Bromoform	U	0.815	ug/kg	0.245	0.815
79-34-5	1,1,2,2-Tetrachloroethane	U	0.815	ug/kg	0.245	0.815
540-59-0	1,2-Dichloroethylene (total)	U	1.63	ug/kg	0.245	1.63

SV2M

SV4M

SV2M

MW 6-30-12

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	305424	Date Collected:	06/04/2012 09:15	Matrix:	SOIL
Lab Sample ID:	305424008	Date Received:	06/05/2012 09:35	%Moisture:	11.1
Client Sample:	BL-02V	Client:	ECOL008	Project:	ECOL00801
Client ID:	12060008	Method:	SW846 8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1221788	Inst:	VOA3.I	Dilution:	1
Run Date:	06/15/2012 13:09	Analyst:	CDS1	Purge Vol:	5 mL
Prep Date:	06/04/2012 09:15	Aliquot:	6.9 g	Final Volume:	5 mL
Data File:	061512V3\3P513.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	
1330-20-7	Xylenes (total)	U	2.45 U	ug/kg	0.245	2.45	SV2M

MW 6-30-12

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	305424	**Date Collected:**	06/04/2012 09:30	**Matrix:**	SOIL
Lab Sample ID:	305424009	**Date Received:**	06/05/2012 09:35	**%Moisture:**	11
Client Sample:	BL-03V	**Client:**	ECOL008	**Project:**	ECOL00801
Client ID:	12060009	**Method:**	SW846 8260B	**SOP Ref:**	GL-OA-E-038
Batch ID:	1221788	**Inst:**	VOA3.I	**Dilution:**	1
Run Date:	06/15/2012 12:41	**Analyst:**	CDS1	**Purge Vol:**	5 mL
Prep Date:	06/04/2012 09:30	**Aliquot:**	6.2 g	**Final Volume:**	5 mL
Data File:	061512V3\3P512.D	**Column:**	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-87-3	Chloromethane	U	0.906	ug/kg	0.272	0.906
75-01-4	Vinyl chloride	U	0.906	ug/kg	0.272	0.906
74-83-9	Bromomethane	U	0.906	ug/kg	0.272	0.906
75-00-3	Chloroethane	U	0.906	ug/kg	0.272	0.906
67-64-1	Acetone	U	4.53	ug/kg	1.36	4.53
75-35-4	1,1-Dichloroethylene	U	0.906	ug/kg	0.272	0.906
75-09-2	Methylene chloride	U	4.53	ug/kg	1.81	4.53
75-15-0	Carbon disulfide	U	4.53	ug/kg	1.36	4.53
1634-04-4	tert-Butyl methyl ether	U	0.906	ug/kg	0.272	0.906
156-60-5	trans-1,2-Dichloroethylene	U	0.906	ug/kg	0.272	0.906
108-05-4	Vinyl acetate	U	4.53	ug/kg	1.36	4.53
75-34-3	1,1-Dichloroethane	U	0.906	ug/kg	0.272	0.906
78-93-3	2-Butanone	~~U~~	~~4.53~~	~~ug/kg~~	~~1.36~~	~~4.53~~ R
156-59-2	cis-1,2-Dichloroethylene	U	0.906	ug/kg	0.272	0.906
67-66-3	Chloroform	U	0.906	ug/kg	0.272	0.906
71-55-6	1,1,1-Trichloroethane	U	0.906	ug/kg	0.272	0.906
56-23-5	Carbon tetrachloride	U	0.906	ug/kg	0.272	0.906
107-06-2	1,2-Dichloroethane	U	0.906	ug/kg	0.272	0.906
71-43-2	Benzene	U	0.906	ug/kg	0.272	0.906
79-01-6	Trichloroethylene	U	0.906	ug/kg	0.272	0.906
78-87-5	1,2-Dichloropropane	U	0.906	ug/kg	0.272	0.906
75-27-4	Bromodichloromethane	U	0.906	ug/kg	0.272	0.906
108-10-1	4-Methyl-2-pentanone	U	4.53	ug/kg	1.36	4.53
10061-01-5	cis-1,3-Dichloropropylene	U	0.906	ug/kg	0.272	0.906
108-88-3	Toluene	U	0.906	ug/kg	0.272	0.906
10061-02-6	trans-1,3-Dichloropropylene	U	0.906	ug/kg	0.272	0.906
79-00-5	1,1,2-Trichloroethane	U	0.906	ug/kg	0.272	0.906
591-78-6	2-Hexanone	U	4.53	ug/kg	1.36	4.53
127-18-4	Tetrachloroethylene	U	0.906	ug/kg	0.272	0.906
124-48-1	Dibromochloromethane	U	0.906	ug/kg	0.272	0.906
108-90-7	Chlorobenzene	U	0.906	ug/kg	0.272	0.906
100-41-4	Ethylbenzene	U	0.906	ug/kg	0.272	0.906
179601-23-1	m,p-Xylenes	U	1.81	ug/kg	0.272	1.81
95-47-6	o-Xylene	U	0.906	ug/kg	0.272	0.906
100-42-5	Styrene	U	0.906	ug/kg	0.272	0.906
75-25-2	Bromoform	U	0.906	ug/kg	0.272	0.906
79-34-5	1,1,2,2-Tetrachloroethane	U	0.906	ug/kg	0.272	0.906
540-59-0	1,2-Dichloroethylene (total)	U	1.81	ug/kg	0.272	1.81

SV2M

SV4M

SV2M

MW 6-30-12

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	305424	Date Collected:	06/04/2012 09:30	Matrix:	SOIL
Lab Sample ID:	305424009	Date Received:	06/05/2012 09:35	%Moisture:	11
Client Sample:	BL-03V	Client:	ECOL008	Project:	ECOL00801
Client ID:	12060009	Method:	SW846 8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1221788	Inst:	VOA3.I	Dilution:	1
Run Date:	06/15/2012 12:41	Analyst:	CDS1	Purge Vol:	5 mL
Prep Date:	06/04/2012 09:30	Aliquot:	6.2 g	Final Volume:	5 mL
Data File:	061512V3\3P512.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	
1330-20-7	Xylenes (total)	U MW	2.72 U	ug/kg	0.272	2.72	SV2M

MW 6-20-12

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	305424	Date Collected:	06/04/2012 10:20	Matrix:	SOIL
Lab Sample ID:	305424010	Date Received:	06/05/2012 09:35	%Moisture:	14.3
Client Sample:	BL-04V	Client:	ECOL008	Project:	ECOL00801
Client ID:	12060010	Method:	SW846 8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1221788	Inst:	VOA3.I	Dilution:	1
Run Date:	06/15/2012 12:12	Analyst:	CDS1	Purge Vol:	5 mL
Prep Date:	06/04/2012 10:20	Aliquot:	6.8 g	Final Volume:	5 mL
Data File:	061512V3\3P511.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-87-3	Chloromethane	U	0.858	ug/kg	0.257	0.858
75-01-4	Vinyl chloride	U	0.858	ug/kg	0.257	0.858
74-83-9	Bromomethane	U	0.858	ug/kg	0.257	0.858
75-00-3	Chloroethane	U	0.858	ug/kg	0.257	0.858
67-64-1	Acetone		8.08 JH	ug/kg	1.29	4.29
75-35-4	1,1-Dichloroethylene	U	0.858	ug/kg	0.257	0.858
75-09-2	Methylene chloride	U	4.29	ug/kg	1.72	4.29
75-15-0	Carbon disulfide	U	4.29	ug/kg	1.29	4.29
1634-04-4	tert-Butyl methyl ether	U	0.858	ug/kg	0.257	0.858
156-60-5	trans-1,2-Dichloroethylene	U	0.858	ug/kg	0.257	0.858
108-05-4	Vinyl acetate	U	4.29	ug/kg	1.29	4.29
75-34-3	1,1-Dichloroethane	U	0.858	ug/kg	0.257	0.858
78-93-3	2-Butanone	JQ	2.34	ug/kg	1.29	4.29
156-59-2	cis-1,2-Dichloroethylene	U	0.858	ug/kg	0.257	0.858
67-66-3	Chloroform	U	0.858	ug/kg	0.257	0.858
71-55-6	1,1,1-Trichloroethane	U	0.858	ug/kg	0.257	0.858
56-23-5	Carbon tetrachloride	U	0.858	ug/kg	0.257	0.858
107-06-2	1,2-Dichloroethane	U	0.858	ug/kg	0.257	0.858
71-43-2	Benzene	U	0.858	ug/kg	0.257	0.858
79-01-6	Trichloroethylene	U	0.858	ug/kg	0.257	0.858
78-87-5	1,2-Dichloropropane	U	0.858	ug/kg	0.257	0.858
75-27-4	Bromodichloromethane	U	0.858	ug/kg	0.257	0.858
108-10-1	4-Methyl-2-pentanone	U	4.29	ug/kg	1.29	4.29
10061-01-5	cis-1,3-Dichloropropylene	U	0.858	ug/kg	0.257	0.858
108-88-3	Toluene	U	0.858	ug/kg	0.257	0.858
10061-02-6	trans-1,3-Dichloropropylene	U	0.858	ug/kg	0.257	0.858
79-00-5	1,1,2-Trichloroethane	U	0.858	ug/kg	0.257	0.858
591-78-6	2-Hexanone	U	4.29	ug/kg	1.29	4.29
127-18-4	Tetrachloroethylene	U	0.858	ug/kg	0.257	0.858
124-48-1	Dibromochloromethane	U	0.858	ug/kg	0.257	0.858
108-90-7	Chlorobenzene	U	0.858	ug/kg	0.257	0.858
100-41-4	Ethylbenzene	U	0.858	ug/kg	0.257	0.858
179601-23-1	m,p-Xylenes	U	1.72	ug/kg	0.257	1.72
95-47-6	o-Xylene	U	0.858	ug/kg	0.257	0.858
100-42-5	Styrene	J Q	0.326	ug/kg	0.257	0.858
75-25-2	Bromoform	U	0.858	ug/kg	0.257	0.858
79-34-5	1,1,2,2-Tetrachloroethane	U	0.858	ug/kg	0.257	0.858
540-59-0	1,2-Dichloroethylene (total)	U	1.72	ug/kg	0.257	1.72

SV2M

SV4M

SV2M

MW 6-30-12

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	305424	Date Collected:	06/04/2012 10:20	Matrix:	SOIL
Lab Sample ID:	305424010	Date Received:	06/05/2012 09:35	%Moisture:	14.3
Client Sample:	BL-04V	Client:	ECOL008	Project:	ECOL00801
Client ID:	12060010	Method:	SW846 8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1221788	Inst:	VOA3.I	Dilution:	1
Run Date:	06/15/2012 12:12	Analyst:	CDS1	Purge Vol:	5 mL
Prep Date:	06/04/2012 10:20	Aliquot:	6.8 g	Final Volume:	5 mL
Data File:	061512V3\3P511.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1330-20-7	Xylenes (total)	U MW	2.57 U	ug/kg	0.257	2.57

SV2M

MW 8-30-12

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	305424	Date Collected:	06/04/2012 10:40	Matrix:	SOIL
Lab Sample ID:	305424011	Date Received:	06/05/2012 09:35	%Moisture:	17.8
Client Sample:	BL-05V	Client:	ECOL008	Project:	ECOL00801
Client ID:	12060011	Method:	SW846 8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1221788	Inst:	VOA3.I	Dilution:	1
Run Date:	06/15/2012 11:43	Analyst:	CDS1	Purge Vol:	5 mL
Prep Date:	06/04/2012 10:40	Aliquot:	5.5 g	Final Volume:	5 mL
Data File:	061512V3\3P510.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-87-3	Chloromethane	U	1.11 U	ug/kg	0.332	1.11
75-01-4	Vinyl chloride	U	1.11	ug/kg	0.332	1.11
74-83-9	Bromomethane	U	1.11	ug/kg	0.332	1.11
75-00-3	Chloroethane	U MW	1.11	ug/kg	0.332	1.11
67-64-1	Acetone		14.0 JH	ug/kg	1.66	5.53
75-35-4	1,1-Dichloroethylene	U	1.11 U	ug/kg	0.332	1.11
75-09-2	Methylene chloride	U	5.53	ug/kg	2.21	5.53
75-15-0	Carbon disulfide	U	5.53	ug/kg	1.66	5.53
1634-04-4	tert-Butyl methyl ether	U	1.11	ug/kg	0.332	1.11
156-60-5	trans-1,2-Dichloroethylene	U	1.11	ug/kg	0.332	1.11
108-05-4	Vinyl acetate	U	5.53	ug/kg	1.66	5.53
75-34-3	1,1-Dichloroethane	U MW	1.11	ug/kg	0.332	1.11
78-93-3	2-Butanone	J Q	3.21	ug/kg	1.66	5.53
156-59-2	cis-1,2-Dichloroethylene	U	1.11 U	ug/kg	0.332	1.11
67-66-3	Chloroform	U	1.11	ug/kg	0.332	1.11
71-55-6	1,1,1-Trichloroethane	U	1.11	ug/kg	0.332	1.11
56-23-5	Carbon tetrachloride	U	1.11	ug/kg	0.332	1.11
107-06-2	1,2-Dichloroethane	U	1.11	ug/kg	0.332	1.11
71-43-2	Benzene	U	1.11	ug/kg	0.332	1.11
79-01-6	Trichloroethylene	U	1.11	ug/kg	0.332	1.11
78-87-5	1,2-Dichloropropane	U	1.11	ug/kg	0.332	1.11
75-27-4	Bromodichloromethane	U	1.11	ug/kg	0.332	1.11
108-10-1	4-Methyl-2-pentanone	U	5.53	ug/kg	1.66	5.53
10061-01-5	cis-1,3-Dichloropropylene	U	1.11	ug/kg	0.332	1.11
108-88-3	Toluene	U	1.11	ug/kg	0.332	1.11
10061-02-6	trans-1,3-Dichloropropylene	U	1.11	ug/kg	0.332	1.11
79-00-5	1,1,2-Trichloroethane	U	1.11	ug/kg	0.332	1.11
591-78-6	2-Hexanone	U	5.53	ug/kg	1.66	5.53
127-18-4	Tetrachloroethylene	U	1.11	ug/kg	0.332	1.11
124-48-1	Dibromochloromethane	U	1.11	ug/kg	0.332	1.11
108-90-7	Chlorobenzene	U	1.11	ug/kg	0.332	1.11
100-41-4	Ethylbenzene	U	1.11	ug/kg	0.332	1.11
179601-23-1	m,p-Xylenes	U	2.21	ug/kg	0.332	2.21
95-47-6	o-Xylene	U	1.11	ug/kg	0.332	1.11
100-42-5	Styrene	U	1.11	ug/kg	0.332	1.11
75-25-2	Bromoform	U	1.11	ug/kg	0.332	1.11
79-34-5	1,1,2,2-Tetrachloroethane	U	1.11	ug/kg	0.332	1.11
540-59-0	1,2-Dichloroethylene (total)	U	2.21	ug/kg	0.332	2.21

SV2M

SV4M

SV2M

MW 6-30-12

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	305424	Date Collected:	06/04/2012 10:40	Matrix:	SOIL
Lab Sample ID:	305424011	Date Received:	06/05/2012 09:35	%Moisture:	17.8
Client Sample:	BL-05V	Client:	ECOL008	Project:	ECOL00801
Client ID:	12060011	Method:	SW846 8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1221788	Inst:	VOA3.I	Dilution:	1
Run Date:	06/15/2012 11:43	Analyst:	CDS1	Purge Vol:	5 mL
Prep Date:	06/04/2012 10:40	Aliquot:	5.5 g	Final Volume:	5 mL
Data File:	061512V3\3P510.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1330-20-7	Xylenes (total)	U	3.32 U	ug/kg	0.332	3.32

SV2M

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	305424	**Date Collected:**	06/04/2012 10:55	**Matrix:**	SOIL
Lab Sample ID:	305424012	**Date Received:**	06/05/2012 09:35	**%Moisture:**	24.2
Client Sample:	BL-06V	**Client:**	ECOL008	**Project:**	ECOL00801
Client ID:	12060012	**Method:**	SW846 8260B	**SOP Ref:**	GL-OA-E-038
Batch ID:	1221788	**Inst:**	VOA3.I	**Dilution:**	1
Run Date:	06/15/2012 15:06	**Analyst:**	CDS1	**Purge Vol:**	5 mL
Prep Date:	06/04/2012 10:25	**Aliquot:**	5.3 g	**Final Volume:**	5 mL
Data File:	061512V3\3P517.D	**Column:**	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-87-3	Chloromethane	U	1.24	ug/kg	0.373	1.24
75-01-4	Vinyl chloride	U	1.24	ug/kg	0.373	1.24
74-83-9	Bromomethane	U	1.24	ug/kg	0.373	1.24
75-00-3	Chloroethane	U	1.24	ug/kg	0.373	1.24
67-64-1	Acetone	U	6.22	ug/kg	1.87	6.22
75-35-4	1,1-Dichloroethylene	U	1.24	ug/kg	0.373	1.24
75-09-2	Methylene chloride	U	6.22	ug/kg	2.49	6.22
75-15-0	Carbon disulfide	U	6.22	ug/kg	1.87	6.22
1634-04-4	tert-Butyl methyl ether	U	1.24	ug/kg	0.373	1.24
156-60-5	trans-1,2-Dichloroethylene	U	1.24	ug/kg	0.373	1.24
108-05-4	Vinyl acetate	U	6.22	ug/kg	1.87	6.22
75-34-3	1,1-Dichloroethane	U	1.24	ug/kg	0.373	1.24
78-93-3	2-Butanone	~~U~~	~~6.22~~	~~ug/kg~~	~~1.87~~	~~6.22~~ MW R
156-59-2	cis-1,2-Dichloroethylene	U	1.24	ug/kg	0.373	1.24
67-66-3	Chloroform	U	1.24	ug/kg	0.373	1.24
71-55-6	1,1,1-Trichloroethane	U	1.24	ug/kg	0.373	1.24
56-23-5	Carbon tetrachloride	U	1.24	ug/kg	0.373	1.24
107-06-2	1,2-Dichloroethane	U	1.24	ug/kg	0.373	1.24
71-43-2	Benzene	U	1.24	ug/kg	0.373	1.24
79-01-6	Trichloroethylene	U	1.24	ug/kg	0.373	1.24
78-87-5	1,2-Dichloropropane	U	1.24	ug/kg	0.373	1.24
75-27-4	Bromodichloromethane	U	1.24	ug/kg	0.373	1.24
108-10-1	4-Methyl-2-pentanone	U	6.22	ug/kg	1.87	6.22
10061-01-5	cis-1,3-Dichloropropylene	U	1.24	ug/kg	0.373	1.24
108-88-3	Toluene	U	1.24	ug/kg	0.373	1.24
10061-02-6	trans-1,3-Dichloropropylene	U	1.24	ug/kg	0.373	1.24
79-00-5	1,1,2-Trichloroethane	U	1.24	ug/kg	0.373	1.24
591-78-6	2-Hexanone	U	6.22	ug/kg	1.87	6.22
127-18-4	Tetrachloroethylene	U	1.24	ug/kg	0.373	1.24
124-48-1	Dibromochloromethane	U	1.24	ug/kg	0.373	1.24
108-90-7	Chlorobenzene	U	1.24	ug/kg	0.373	1.24
100-41-4	Ethylbenzene	U	1.24	ug/kg	0.373	1.24
179601-23-1	m,p-Xylenes	U	2.49	ug/kg	0.373	2.49
95-47-6	o-Xylene	U	1.24	ug/kg	0.373	1.24
100-42-5	Styrene	U	1.24	ug/kg	0.373	1.24
75-25-2	Bromoform	U	1.24	ug/kg	0.373	1.24
79-34-5	1,1,2,2-Tetrachloroethane	U	1.24	ug/kg	0.373	1.24
540-59-0	1,2-Dichloroethylene (total)	U MW	2.49	ug/kg	0.373	2.49

U

SV2M

SV4M

SV2M

MW 6-30-12

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	305424	Date Collected:	06/04/2012 10:55	Matrix:	SOIL
Lab Sample ID:	305424012	Date Received:	06/05/2012 09:35	%Moisture:	24.2
Client Sample:	BL-06V	Client:	ECOL008	Project:	ECOL00801
Client ID:	12060012	Method:	SW846 8260B	SOP Ref:	GL-OA-E-038
Batch ID:	1221788	Inst:	VOA3.I	Dilution:	1
Run Date:	06/15/2012 15:06	Analyst:	CDS1	Purge Vol:	5 mL
Prep Date:	06/04/2012 10:25	Aliquot:	5.3 g	Final Volume:	5 mL
Data File:	061512V3\3P517.D	Column:	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
1330-20-7	Xylenes (total)	U	3.73	ug/kg	0.373	3.73

SV2M

MW 6-30-12

ecology and environment, inc.
Global Environmental Specialists

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MEMORANDUM

DATE: June 30, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-01

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Volatile organic compound (VOC) analysis (EPA Method 8260) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12061901

Data Qualifications:

1. Sample Holding Times: Acceptable.

The sample was maintained and received within the QC limits of < 6°C. The sample was collected on June 4, 2012, and was analyzed by June 15, 2012, therefore meeting QC criteria of less than 14 days between collection and analysis for soil and preserved water samples.

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Satisfactory.

All average Relative Response Factors (RRFs) were greater than the QC limit of 0.050 except 2-butanone; associated 2-butanone sample quantitation limits were rejected (R). All Relative Standard Deviations (RSDs) were less than the QC limits of 30%.

4. Continuing Calibration: Satisfactory.

All RRFs were greater than the QC limit of 0.050 except 2-butanone; no additional actions were taken based on this outlier. All % differences were less than the QC limits except 2-butanone (no additional action taken) and acetone with an increasing response factor. No action was taken based on the acetone outlier as it was not detected in the sample.

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

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

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

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Acceptable.

All internal standards were within $\pm$ 30 seconds of the continuing calibration internal standard retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	305433	**Date Collected:**	06/04/2012 12:00	**Matrix:**	WATER
Lab Sample ID:	305433001	**Date Received:**	06/05/2012 09:35		
Client Sample:	TB-01	**Client:**	ECOL008	**Project:**	ECOL00801
Client ID:	12061901	**Method:**	SW846 8260B	**SOP Ref:**	GL-OA-E-038
Batch ID:	1221789	**Inst:**	VOA3.I	**Dilution:**	1
Run Date:	06/15/2012 16:03	**Analyst:**	CDS1	**Purge Vol:**	5 mL
Prep Date:	06/15/2012 16:03				
Data File:	061512V3\3P519.D	**Column:**	DB-624		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
74-87-3	Chloromethane	U	1.00	ug/L	0.300	1.00
75-01-4	Vinyl chloride	U	1.00	ug/L	0.300	1.00
74-83-9	Bromomethane	U	1.00	ug/L	0.300	1.00
75-00-3	Chloroethane	U	1.00	ug/L	0.300	1.00
67-64-1	Acetone	U	5.00	ug/L	2.50	5.00
75-35-4	1,1-Dichloroethylene	U	1.00	ug/L	0.300	1.00
75-09-2	Methylene chloride	U	5.00	ug/L	1.00	5.00
75-15-0	Carbon disulfide	U	5.00	ug/L	1.50	5.00
1634-04-4	tert-Butyl methyl ether	U	1.00	ug/L	0.300	1.00
156-60-5	trans-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
108-05-4	Vinyl acetate	U	5.00	ug/L	1.50	5.00
75-34-3	1,1-Dichloroethane	U	1.00	ug/L	0.300	1.00
78-93-3	2-Butanone	R U	~~5.00~~	~~ug/L~~	~~2.00~~	~~5.00~~ MW
156-59-2	cis-1,2-Dichloroethylene	U	1.00	ug/L	0.300	1.00
67-66-3	Chloroform	U	1.00	ug/L	0.300	1.00
71-55-6	1,1,1-Trichloroethane	U	1.00	ug/L	0.300	1.00
56-23-5	Carbon tetrachloride	U	1.00	ug/L	0.300	1.00
107-06-2	1,2-Dichloroethane	U	1.00	ug/L	0.300	1.00
71-43-2	Benzene	U	1.00	ug/L	0.300	1.00
79-01-6	Trichloroethylene	U	1.00	ug/L	0.300	1.00
78-87-5	1,2-Dichloropropane	U	1.00	ug/L	0.300	1.00
75-27-4	Bromodichloromethane	U	1.00	ug/L	0.300	1.00
108-10-1	4-Methyl-2-pentanone	U	5.00	ug/L	1.50	5.00
10061-01-5	cis-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
108-88-3	Toluene	U	1.00	ug/L	0.300	1.00
10061-02-6	trans-1,3-Dichloropropylene	U	1.00	ug/L	0.300	1.00
79-00-5	1,1,2-Trichloroethane	U	1.00	ug/L	0.300	1.00
591-78-6	2-Hexanone	U	5.00	ug/L	2.20	5.00
127-18-4	Tetrachloroethylene	U	1.00	ug/L	0.300	1.00
124-48-1	Dibromochloromethane	U	1.00	ug/L	0.300	1.00
108-90-7	Chlorobenzene	U	1.00	ug/L	0.300	1.00
100-41-4	Ethylbenzene	U	1.00	ug/L	0.300	1.00
100-42-5	Styrene	U	1.00	ug/L	0.300	1.00
75-25-2	Bromoform	U	1.00	ug/L	0.300	1.00
79-34-5	1,1,2,2-Tetrachloroethane	U	1.00	ug/L	0.300	1.00
1330-20-7	Xylenes (total)	U	3.00	ug/L	0.300	3.00

MW

S2VM

S4VM

S2VM

MW 6-30-12

ecology and environment, inc.
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MEMORANDUM

DATE: June 8, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of six soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Analysis for Extended Diesel Range Total Petroleum Hydrocarbons (Ecology Method NWTPH-Dx) was performed by TestAmerica Seattle, Tacoma, Washington. All sample analyses were evaluated following EPA's Stage 2 and 4 Data Validation Electronic/Manual Process (S4VEM).

The samples were numbered:

12060001	12060002	12060003	12060004	12060005	12060006

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The samples were maintained at < 6°C. The samples were collected on June 4, 2012, extracted on June 5, 2012, and analyzed on June 5, 2012, therefore meeting QC criteria of less than 14 days between collection and extraction for soil samples, and less than 40 days between extraction and analysis.

2. **Initial and Continuing Calibrations: Acceptable.**

Calculations were verified as correct. All initial calibration correlation coefficients were ≥ 0.990 and/or all relative percent differences (RPDs) were less than or equal to the laboratory control limits of 15%. All continuing calibration percent differences (%Ds) were ≤ the laboratory control limits of 15%.

3. **Error Determination: Not Performed.**

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

4. **Blanks: Satisfactory.**

A method blank was analyzed for each extraction batch for each matrix and analysis system. Diesel-range TPHs were not detected in any blank, but motor oil-range TPHs were detected at 9.91 milligrams per kilogram (mg/kg); associated positive sample results less than five times the method blank results were qualified as not detected (U).

5. **System Monitoring Compounds (SMC): Acceptable.**
All recoveries of the SMCs were greater than 10% and within QC criteria.

6. **Performance Evaluation Samples: Not Provided.**
Performance evaluation samples were not provided to the laboratory.

7. **Matrix and Blank Spikes: Acceptable.**
Matrix and blank spike results were within QC limits.

8. **Duplicates: Acceptable.**
Duplicate and spike duplicate results were within QC limits.

9. **Quantitation and Quantitation Limits: Acceptable.**
Sample concentrations were correctly calculated.

10. **Laboratory Contact: Not Required.**
No laboratory contact was required.

11. **Overall Assessment of Data for Use**
The diesel result in sample 12060006 was qualified as an estimated quantity with a high bias (JH) due to chromatographic overlap with the motor oil range.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the Method Detection Limit (MDL) and the Reporting Limit (RL).

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Client: Ecology and Environment, Inc.

Job Number: 580-33239-1

Client Sample ID: **12060001**

Lab Sample ID: 580-33239-1

Client Matrix: Solid

% Moisture: 9.8

Date Sampled: 06/04/2012 0000

Date Received: 06/05/2012 0955

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-112606	Instrument ID:	TAC017
Prep Method:	3550B	Prep Batch:	580-112671	Lab File ID:	ZZ19497.D
Dilution:	1.0			Initial Weight/Volume:	10.9131 g
Analysis Date:	06/05/2012 1932			Final Weight/Volume:	10 mL
Prep Date:	06/05/2012 1416			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		6.0	J Q	5.8	25
Motor Oil (>C24-C36)		~~22~~	~~J B~~	9.2	51 U

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	90		50 - 150

MW 6/8/12

Client: Ecology and Environment, Inc.

Job Number: 580-33239-1

Client Sample ID: **12060002**

Lab Sample ID: 580-33239-2

Client Matrix: Solid

% Moisture: 10.3

Date Sampled: 06/04/2012 0000

Date Received: 06/05/2012 0955

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-112606	Instrument ID:	TAC017
Prep Method:	3550B	Prep Batch:	580-112671	Lab File ID:	ZZ19503.D
Dilution:	1.0			Initial Weight/Volume:	10.8349 g
Analysis Date:	06/05/2012 2035			Final Weight/Volume:	10 mL
Prep Date:	06/05/2012 1416			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		~~ND~~		5.9	26 U
Motor Oil (>C24-C36)		~~29~~	~~LB~~	9.4	51 U

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	96		50 - 150

Client: Ecology and Environment, Inc.

Job Number: 580-33239-1

Client Sample ID: 12060003

Lab Sample ID: 580-33239-3

Client Matrix: Solid

% Moisture: 12.9

Date Sampled: 06/04/2012 0000

Date Received: 06/05/2012 0955

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-112606	Instrument ID:	TAC017
Prep Method:	3550B	Prep Batch:	580-112671	Lab File ID:	ZZ19505.D
Dilution:	1.0			Initial Weight/Volume:	10.7369 g
Analysis Date:	06/05/2012 2056			Final Weight/Volume:	10 mL
Prep Date:	06/05/2012 1416			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		7.9	J	6.1	27
Motor Oil (>C24-C36)		~~27~~	~~J~~	9.7	53 U

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	95		50 - 150

JMW 6/8/12

Client: Ecology and Environment, Inc.

Job Number: 580-33239-1

Client Sample ID: **12060004**

Lab Sample ID: 580-33239-4

Client Matrix: Solid

% Moisture: 14.7

Date Sampled: 06/04/2012 0000

Date Received: 06/05/2012 0955

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-112606	Instrument ID:	TAC017
Prep Method:	3550B	Prep Batch:	580-112671	Lab File ID:	ZZ19507.D
Dilution:	1.0			Initial Weight/Volume:	10.4487 g
Analysis Date:	06/05/2012 2117			Final Weight/Volume:	10 mL
Prep Date:	06/05/2012 1416			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		7.3	J Q	6.4	28
Motor Oil (>C24-C36)		~~37~~	~~J~~ ~~Q~~	10	56 U

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	96		50 - 150

MW 6-8-12

Client: Ecology and Environment, Inc.

Job Number: 580-33239-1

Client Sample ID: **12060005**

Lab Sample ID: 580-33239-5

Client Matrix: Solid

% Moisture: 18.8

Date Sampled: 06/04/2012 0000

Date Received: 06/05/2012 0955

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-112606	Instrument ID:	TAC017
Prep Method:	3550B	Prep Batch:	580-112671	Lab File ID:	ZZ19509.D
Dilution:	1.0			Initial Weight/Volume:	10.3338 g
Analysis Date:	06/05/2012 2138			Final Weight/Volume:	10 mL
Prep Date:	06/05/2012 1416			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		11	J Q	6.8	30
Motor Oil (>C24-C36)		~~47~~	~~J~~	11	60 U

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	98		50 - 150

MW 6-8-12

Client: Ecology and Environment, Inc.

Job Number: 580-33239-1

Client Sample ID: **12060006**

Lab Sample ID: 580-33239-6

Client Matrix: Solid

% Moisture: 27.1

Date Sampled: 06/04/2012 0000

Date Received: 06/05/2012 0955

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-112606	Instrument ID:	TAC017
Prep Method:	3550B	Prep Batch:	580-112671	Lab File ID:	ZZ19511.D
Dilution:	1.0			Initial Weight/Volume:	10.5875 g
Analysis Date:	06/05/2012 2159			Final Weight/Volume:	10 mL
Prep Date:	06/05/2012 1416			Injection Volume:	1 uL

Analyte DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)	160	~~Y~~ JH	7.4	32
Motor Oil (>C24-C36)	1000	~~B~~	12	65

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	96		50 - 150

MW 6-8-12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: July 10, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-03

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of five soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Analysis for Extended Diesel Range Total Petroleum Hydrocarbons (Ecology Method NWTPH-Dx) was performed by TestAmerica Seattle, Tacoma, Washington. All sample analyses were evaluated following EPA's Stage 2 (S2VM) and/or 4 Data Validation Manual Process (S4VM).

The samples were numbered:

12061001	12061002	12061003	12061004	12061005

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The samples were maintained at < 6°C. The samples were collected on June 7, 2012, extracted on June 11, 2012, and analyzed on June 12, 2012, therefore meeting QC criteria of less than 14 days between collection and extraction for soil samples, and less than 40 days between extraction and analysis.

2. **Initial and Continuing Calibrations: Acceptable.**

Calculations were verified as correct. All initial calibration correlation coefficients were ≥ 0.990 and/or all relative percent differences (RPDs) were less than or equal to the laboratory control limits of 15%. All continuing calibration percent differences (%Ds) were ≤ the laboratory control limits of 15%.

3. **Error Determination: Not Performed.**

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

4. **Blanks: Acceptable.**

A method blank was analyzed for each extraction batch for each matrix and analysis system. No TPHs were detected in any blank that affected sample results.

5. **System Monitoring Compounds (SMC): Satisfactory.**
All recoveries of the SMCs were greater than 10% and within QC criteria except a high recovery in sample 12061003; associated sample results were qualified as estimated quantities with a high bias (JH).

6. **Performance Evaluation Samples: Not Provided.**
Performance evaluation samples were not provided to the laboratory.

7. **Blank Spikes: Acceptable.**
Blank spike results were within QC limits.

8. **Duplicates: Acceptable.**
Duplicate results were within QC limits.

9. **Quantitation and Quantitation Limits: Acceptable.**
Sample concentrations were correctly calculated.

10. **Laboratory Contact: Not Required.**
No laboratory contact was required.

11. **Overall Assessment of Data for Use**

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the Method Detection Limit (MDL) and the Reporting Limit (RL).

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Client: Ecology and Environment, Inc.

Job Number: 580-33337-1

Client Sample ID: 12061001

Lab Sample ID: 580-33337-1

Client Matrix: Solid

% Moisture: 23.1

Date Sampled: 06/07/2012 1623

Date Received: 06/09/2012 0940

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-113047	Instrument ID:	TAC015
Prep Method:	3550B	Prep Batch:	580-113098	Lab File ID:	SP15284.d
Dilution:	5.0			Initial Weight/Volume:	10.1444 g
Analysis Date:	06/12/2012 0743	Run Type:	DL	Final Weight/Volume:	10 mL
Prep Date:	06/11/2012 1547			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		1400	~~Y~~ JMu	37	160
Motor Oil (>C24-C36)		6900		58	320

S2VM

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	74		50 - 150

JMu 7/0/12

Client: Ecology and Environment, Inc.

Job Number: 580-33337-1

Client Sample ID: **12061002**

Lab Sample ID: 580-33337-2

Client Matrix: Solid

% Moisture: 22.3

Date Sampled: 06/07/2012 1626

Date Received: 06/09/2012 0940

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-113047	Instrument ID:	TAC015
Prep Method:	3550B	Prep Batch:	580-113098	Lab File ID:	SP15288.d
Dilution:	1.0			Initial Weight/Volume:	10.8372 g
Analysis Date:	06/12/2012 0826			Final Weight/Volume:	10 mL
Prep Date:	06/11/2012 1547			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		1900	~~Y~~ MW	6.8	30
Motor Oil (>C24-C36)		6200		11	59

S2VM

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	72		50 - 150

MW 7-10-12

Client: Ecology and Environment, Inc.

Job Number: 580-33337-1

Client Sample ID: **12061003**

Lab Sample ID: 580-33337-3

Client Matrix: Solid

% Moisture: 22.7

Date Sampled: 06/07/2012 1630

Date Received: 06/09/2012 0940

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-113047	Instrument ID:	TAC015
Prep Method:	3550B	Prep Batch:	580-113098	Lab File ID:	SP15303.d
Dilution:	5.0			Initial Weight/Volume:	10.1200 g
Analysis Date:	06/12/2012 1326	Run Type:	RADL	Final Weight/Volume:	10 mL
Prep Date:	06/11/2012 1547			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)		Qualifier	MDL	RL
#2 Diesel (C10-C24)		14000	JH		36	160
Motor Oil (>C24-C36)		8400	JH	MV	58	320

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	194		50 - 150

Client: Ecology and Environment, Inc.

Job Number: 580-33337-1

Client Sample ID: **12061004**

Lab Sample ID: 580-33337-4

Client Matrix: Solid

% Moisture: 13.3

Date Sampled: 06/07/2012 1634

Date Received: 06/09/2012 0940

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-113047	Instrument ID:	TAC015
Prep Method:	3550B	Prep Batch:	580-113098	Lab File ID:	SP15292.d
Dilution:	5.0			Initial Weight/Volume:	10.7040 g
Analysis Date:	06/12/2012 0910	Run Type:	DL	Final Weight/Volume:	10 mL
Prep Date:	06/11/2012 1547			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		570	~~Y~~	31	130
Motor Oil (>C24-C36)		2400		49	270

SQVM

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	82		50 - 150

7-10-12

Client: Ecology and Environment, Inc.

Job Number: 580-33337-1

Client Sample ID: **12061005**

Lab Sample ID: 580-33337-5

Client Matrix: Solid

% Moisture: 13.9

Date Sampled: 06/07/2012 1637

Date Received: 06/09/2012 0940

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-113047	Instrument ID:	TAC015
Prep Method:	3550B	Prep Batch:	580-113098	Lab File ID:	SP15294.d
Dilution:	5.0			Initial Weight/Volume:	10.702 g
Analysis Date:	06/12/2012 0932	Run Type:	DL	Final Weight/Volume:	10 mL
Prep Date:	06/11/2012 1547			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		4100	~~J~~	31	140
Motor Oil (>C24-C36)		26000		49	270

S2VM

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	66		50 - 150

JMW 7/10/12

ecology and environment, inc.
Global Environmental Specialists
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MEMORANDUM

DATE: July 2, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-04

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of two water samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 and 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060501 12060502

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on June 14, 2012, were extracted on June 18, 2012, and were analyzed on June 19, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Acceptable.

All average Relative Response Factors (RRFs) were greater than the QC limit of 0.050. All Relative Standard Deviations (RSDs) were less than the QC limit of 30%.

4. Continuing Calibration: Acceptable.

All RRFs were greater than the QC limit of 0.050. All % differences were less than the QC limit of 25 %.

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

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

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

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Acceptable.

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 1, 2012

Client Sample ID:	12060501	Project:	ECOL00801
Sample ID:	306214001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	14-JUN-12 15:45		
Receive Date:	16-JUN-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D Semivolatile Analysis by Separatory Funnel "As Received"										
Benzo(a)anthracene	U	ND	0.952	ug/L	1	RMB	06/19/12	1232	1222294	1
Benzo(a)pyrene	U	ND	0.952	ug/L	1					
Benzo(b)fluoranthene	U	ND	0.952	ug/L	1					
Chrysene	U	ND	0.952	ug/L	1					
Diphenylamine	U	ND	9.52	ug/L	1					
bis(2-Ethylhexyl)phthalate	U	ND	9.52	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	SW846 3510C Prep Semivolatiles 8270D	TXA2	06/18/12	1600	1222293

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	8270D Semivolatile Analysis by Separatory Funnel "As Received"	14.6 ug/L	47.6	30.7	(29%-102%)
Nitrobenzene-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	20.2 ug/L	47.6	42.4	(36%-125%)
p-Terphenyl-d14	8270D Semivolatile Analysis by Separatory Funnel "As Received"	21.2 ug/L	47.6	44.6	(31%-133%)
2,4,6-Tribromophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	28.7 ug/L	95.2	30.1	(26%-131%)
2-Fluorophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	28.7 ug/L	95.2	30.2	(15%-78%)
Phenol-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	14.7 ug/L	95.2	15.5	(10%-72%)

The Following NCRs have been identified

NCR ID:1091055 Batch ID: 1222489 1. Failed yield for surrogates: 306214001.

MW
7-2-12

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 1, 2012

Client Sample ID:	12060502	Project:	ECOL00801
Sample ID:	306214002	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	14-JUN-12 16:00		
Receive Date:	16-JUN-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D Semivolatile Analysis by Separatory Funnel "As Received"										
Benzo(a)anthracene	U	ND	0.980	ug/L	1	RMB	06/19/12	1302	1222294	1
Benzo(a)pyrene	U	ND	0.980	ug/L	1					
Benzo(b)fluoranthene	U	ND	0.980	ug/L	1					
Chrysene	U	ND	0.980	ug/L	1					
Diphenylamine	U	ND	9.80	ug/L	1					
bis(2-Ethylhexyl)phthalate	U	ND	9.80	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	SW846 3510C Prep Semivolatiles 8270D	TXA2	06/18/12	1600	1222293

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	8270D Semivolatile Analysis by Separatory Funnel "As Received"	33.5 ug/L	49.0	68.4	(29%-102%)
Nitrobenzene-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	39.7 ug/L	49.0	81.1	(36%-125%)
p-Terphenyl-d14	8270D Semivolatile Analysis by Separatory Funnel "As Received"	52.2 ug/L	49.0	107	(31%-133%)
2,4,6-Tribromophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	61.8 ug/L	98.0	63.0	(26%-131%)
2-Fluorophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	42.7 ug/L	98.0	43.5	(15%-78%)
Phenol-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	22.0 ug/L	98.0	22.4	(10%-72%)

The Following NCRs have been identified

NCR ID:1091055 Batch ID: 1222489 1. Failed yield for surrogates: 306214001.

MW 7-2-12

ecology and environment, inc.
Global Environmental Specialists

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Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: June 29, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-04

REF:

TDDs:	12-05-0006	PANs: 002233.0790.01RA
	12-05-0007	PANs: 002233.0791.01RA
	12-05-0008	PANs: 002233.0792.01RA
	12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of 2 water samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Target Analyte List (TAL) metals analyses (EPA Method 6020) were performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 and 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060501 12060502

Data Qualifications:

1. Sample Holding Times: Acceptable.

All liquid samples were preserved to a pH < 2. The samples were maintained at < 6°C. The samples were collected on June 14, 2012, and were analyzed by June 18, 2012, therefore meeting QC criteria of less than 6 months between collection, extraction, and analysis (28 days for mercury).

2. Initial and Continuing Calibration: Acceptable.

A minimum of one calibration standard and a blank were analyzed at the beginning of the ICP analysis sequence and after every 10 samples. No results were greater than 110% of the highest calibration standard. All ICP recoveries were within the QC limits of 90% to 110%.

3. Blanks: Acceptable.

A preparation blank was analyzed for each 20 samples or per matrix per concentration level. Blanks were analyzed after each Initial or Continuing Calibration Verification. There were no detections in any blanks.

4. ICP Interference Check Sample: Acceptable.

An Interference Check Sample (ICS) was analyzed at the beginning and end of each sequence or at least twice every 8 hours, whichever was more frequent. All ICS (solution AB) results were within QC limits of 80% - 120% recovery.

5. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

6. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. ICP Serial Dilution: Satisfactory.

A serial dilution analysis was performed per matrix per concentration or per sample delivery group, whichever was more frequent. All serial dilution results were within QC limits except zinc. Associated sample results were qualified as estimated quantities with an unknown bias (JK).

8. Matrix Spike Analysis: Satisfactory.

A matrix spike analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. Spike and spike duplicate recoveries were within the QC limits except thallium (one low and one high recovery) and zinc (one high recovery). Sample results associated with the low/high recovery outlier were qualified as estimated quantities with an unknown bias (JK or UJK). Positive sample results associated with the high recovery outlier were qualified as estimated quantities with a high bias (JH).

9. Duplicate Analysis: Satisfactory.

A laboratory spike duplicate analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. All spike duplicate results were within QC limits except thallium and zinc; no additional actions were taken based on these outliers.

10. Laboratory Control Sample Analysis: Acceptable.

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

11. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 28, 2012

Client Sample ID:	12060501	Project:	ECOL00801
Sample ID:	306214001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	14-JUN-12 15:45		
Receive Date:	16-JUN-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS										
SW846 3005A/6020A Liquid "As Received"										
Arsenic		38.8	5.00	ug/L	1	PRB	06/18/12	1558	1222100	1
Cadmium	~~U~~	~~ND~~ MU	1.00 U	ug/L	1					
Lead		43.1	2.00	ug/L	1					
Thallium	~~U~~	~~ND~~ MU	2.00 UJK	ug/L	1					
Zinc		176 JK	10.0	ug/L	1					
Chromium	~~U~~	~~ND~~ MU	50.0 U	ug/L	5	PRB	06/18/12	1747	1222100	2
Copper		38.9	5.00	ug/L	5					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	LYH1	06/18/12	0930	1222099

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6020A	
2	SW846 3005A/6020A	

The Following NCRs have been identified

NCR ID:1091055 Batch ID: 1222489 1. Failed yield for surrogates: 306214001.

MW 6-29-12

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 28, 2012

Client Sample ID:	12060502	Project:	ECOL00801
Sample ID:	306214002	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	14-JUN-12 16:00		
Receive Date:	16-JUN-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS										
SW846 3005A/6020A Liquid "As Received"										
Arsenic		7.53	5.00	ug/L	1	PRB	06/18/12	1627	1222100	1
Cadmium	~~U~~	~~ND~~	1.00 U	ug/L	1					
Chromium	~~U~~	~~ND~~	10.0 U	ug/L	1					
Copper		1.82	1.00	ug/L	1					
Lead	~~U~~	~~ND~~	2.00 U	ug/L	1					
Thallium	~~U~~	~~ND~~	2.00 UJK	ug/L	1					
Zinc		51.7 JK	10.0	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	LYH1	06/18/12	0930	1222099

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6020A	

The Following NCRs have been identified

NCR ID:1091055 Batch ID: 1222489 1. Failed yield for surrogates: 306214001.

JMW 6-29-12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: June 29, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-04

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of 2 water samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 and 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060501 12060502

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained at < 6°C. The samples were collected on June 14, 2012, extracted on June 18, 2012, and were analyzed by June 19, 2012, therefore meeting QC criteria of less than 7 days between collection and water sample extraction (14 days for soils) and less than 40 days between extraction and analysis.

2. Instrument Performance: Acceptable.

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. Initial and Continuing Calibration: Acceptable.

All initial calibration relative standard deviations (RSDs) were less than 15%. All continuing calibration % differences (% D) were less than 15% and were within QC limits.

4. **Error Determination: Not Provided.**

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. **Blanks: Acceptable.**

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

6. **Performance Evaluation Samples: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

7. **System Monitoring Compounds (SMCs): Satisfactory.**

All recoveries of the SMCs were within the established control limits except one low SMC in sample 12060501; associated samples quantitation limits were qualified as estimated quantities with a low bias (UJL).

8. **Blank Spikes: Acceptable.**

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

9. **Duplicates: Acceptable.**

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

10. **Compound Identification: Acceptable.**

All results were dual-column confirmed with differences between the columns less than 25%.

11. **Target Compound Quantitation and Quantitation Limits: Acceptable.**

Sample results and quantitation limits were correctly calculated.

12. **Laboratory Contact**

No laboratory contact was required.

13. **Overall Assessment**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

. Report Date: June 25, 2012

Client Sample ID:	12060501	Project:	ECOL00801
Sample ID:	306214001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	14-JUN-12 15:45		
Receive Date:	16-JUN-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3535A/8082A PCB Liquids "As Received"										
Aroclor-1016	U	ND	0.0962	ug/L	1	JXM	06/19/12	0925	1222489	1
Aroclor-1221	U	ND	0.0962	ug/L	1					
Aroclor-1232	U	ND	0.0962	ug/L	1					
Aroclor-1242	U	ND	0.0962	ug/L	1					
Aroclor-1248	U	ND	0.0962	ug/L	1					
Aroclor-1254	U	ND	0.0962	ug/L	1					
Aroclor-1260	U	ND	0.0962	ug/L	1					
Aroclor-Total	U	ND	0.0962	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	SW3535A PCB SPE Extraction	SXS3	06/18/12	1715	1222488

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3535A/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3535A/8082A PCB Liquids "As Received"	0.0812 ug/L	0.192	42.2	(34%-120%)
Decachlorobiphenyl	SW846 3535A/8082A PCB Liquids "As Received"	0.0485 ug/L	0.192	25.2*	(33%-120%)

The Following NCRs have been identified

NCR ID:1091055 Batch ID: 1222489 1. Failed yield for surrogates: 306214001.

6-29-12

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 25, 2012

Client Sample ID:	12060502	Project:	ECOL00801
Sample ID:	306214002	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	14-JUN-12 16:00		
Receive Date:	16-JUN-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3535A/8082A PCB Liquids "As Received"										
Aroclor-1016	U	ND	0.0962	ug/L	1	JXM	06/19/12	0937	1222489	1
Aroclor-1221	U	ND	0.0962	ug/L	1					
Aroclor-1232	U	ND	0.0962	ug/L	1					
Aroclor-1242	U	ND	0.0962	ug/L	1					
Aroclor-1248	U	ND	0.0962	ug/L	1					
Aroclor-1254	U	ND	0.0962	ug/L	1					
Aroclor-1260	U	ND	0.0962	ug/L	1					
Aroclor-Total	U	ND	0.0962	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	SW3535A PCB SPE Extraction	SXS3	06/18/12	1715	1222488

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3535A/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3535A/8082A PCB Liquids "As Received"	0.108 ug/L	0.192	56.2	(34%-120%)
Decachlorobiphenyl	SW846 3535A/8082A PCB Liquids "As Received"	0.103 ug/L	0.192	53.3	(33%-120%)

The Following NCRs have been identified

NCR ID:1091055 Batch ID: 1222489 1. Failed yield for surrogates: 306214001.

MW
6-29-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700, Seattle, WA 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: July 2, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-05

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of two water samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Target Analyte List (TAL) metals analyses (EPA Method 6020) were performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 (S2VM) and/or 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060503 12060504

Data Qualifications:

1. Sample Holding Times: Acceptable.

All liquid samples were preserved to a pH < 2. The samples were maintained at < 6°C. The samples were collected on June 15, 2012, and were analyzed by June 20, 2012, therefore meeting QC criteria of less than 6 months between collection, extraction, and analysis.

2. Initial and Continuing Calibration: Acceptable.

A minimum of one calibration standard and a blank were analyzed at the beginning of the ICP analysis sequence and after every 10 samples. No results were greater than 110% of the highest calibration standard. All ICP recoveries were within the QC limits of 90% to 110%.

3. Blanks: Satisfactory.

A preparation blank was analyzed for each 20 samples or per matrix per concentration level. Blanks were analyzed after each Initial or Continuing Calibration Verification. There were no detections in any blanks except:

Blank	Element	Concentration (*ug*/L)
Preparation Blank	Chromium	-3.76

Associated sample results were qualified as estimated quantities with a low bias (JL or UJL) if the sample result was less than five times the absolute value of the negative blank concentration.

4. ICP Interference Check Sample: Acceptable.

An Interference Check Sample (ICS) was analyzed at the beginning and end of each sequence or at least twice every 8 hours, whichever was more frequent. All ICS (solution AB) results were within QC limits of 80% - 120% recovery.

5. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

6. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. ICP Serial Dilution: Acceptable.

A serial dilution analysis was performed per matrix per concentration or per sample delivery group, whichever was more frequent. All serial dilution results were within QC limits.

8. Matrix Spike Analysis: Acceptable.

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

9. Duplicate Analysis: Acceptable.

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

10. Laboratory Control Sample Analysis: Acceptable.

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

11. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 306261 **METHOD TYPE:** SW846

SAMPLE ID: 306261001 **CLIENT ID:** 12060503

CONTRACT: ECOL00801

MATRIX: Water **DATE RECEIVED** 19-JUN-12 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M*	MDL	DF	Inst ID	Analytical Run
7440-38-2	Arsenic	38	ug/L			MS	1.7	1	ICPMS5	120620-1
7440-43-9	Cadmium	0.738	ug/L	~~B~~		MS	0.11	1	ICPMS5	120620-1
7440-47-3	Chromium	6.33	ug/L	~~B~~ MWJL		MS	2	1	ICPMS5	120620-1
7440-50-8	Copper	39.2	ug/L			MS	0.35	1	ICPMS5	120620-1
7439-92-1	Lead	44	ug/L			MS	0.5	1	ICPMS5	120620-1
7440-28-0	Thallium	0.45	ug/L	U		MS	0.45	1	ICPMS5	120620-1
7440-66-6	Zinc	173	ug/L			MS	3.5	1	ICPMS5	120620-1

SHM

*Analytical Methods:

MS SW846 3005A/6020A

MW 7-2-12

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 306261 **METHOD TYPE:** SW846

SAMPLE ID: 306261002 **CLIENT ID:** 12060504

CONTRACT: ECOL00801

MATRIX: Water **DATE RECEIVED** 19-JUN-12 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M*	MDL	DF	Inst ID	Analytical Run
7440-38-2	Arsenic	4.64	ug/L	~~B~~ MW		MS	1.7	1	ICPMS5	120620-1
7440-43-9	Cadmium	0.11	ug/L	U		MS	0.11	1	ICPMS5	120620-1
7440-47-3	Chromium	2	ug/L	U JL		MS	2	1	ICPMS5	120620-1
7440-50-8	Copper	2.26	ug/L			MS	0.35	1	ICPMS5	120620-1
7439-92-1	Lead	1.88	ug/L	~~B~~ MW		MS	0.5	1	ICPMS5	120620-1
7440-28-0	Thallium	0.45	ug/L	U		MS	0.45	1	ICPMS5	120620-1
7440-66-6	Zinc	82.3	ug/L			MS	3.5	1	ICPMS5	120620-1

S2VM

***Analytical Methods:**
MS SW846 3005A/6020A

MW 7-2-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700, Seattle, WA 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: July 2, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-05

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of two water samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 (S2VM) and/or 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060503 12060504

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained at < 6°C. The samples were collected on June 15, 2012, extracted on June 20, 2012, and were analyzed by June 21, 2012, therefore meeting QC criteria of less than 7 days between collection and water sample extraction (14 days for soils) and less than 40 days between extraction and analysis.

2. Instrument Performance: Acceptable.

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. Initial and Continuing Calibration: Acceptable.

All initial calibration relative standard deviations (RSDs) were less than 15%. All continuing calibration % differences (% D) were less than 15% and were within QC limits.

4. Error Determination: Not Provided.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Satisfactory.

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and for each concentration level, or every 20 samples, whichever is greater, and for each analytical system. No target analytes were detected in any blanks except a low level Aroclor-1260 result; no action was taken based on this detection as it was not detected in any samples.

6. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. System Monitoring Compounds (SMCs): Acceptable.

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

8. Blank Spikes: Acceptable.

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

9. Duplicates: Acceptable.

Relative Percent Differences of all spiked duplicate analytes were within the required control limits.

10. Compound Identification: Acceptable.

All results were dual-column confirmed with differences between the columns less than 25%.

11. Target Compound Quantitation and Quantitation Limits: Acceptable.

Sample results and quantitation limits were correctly calculated.

12. Laboratory Contact

No laboratory contact was required.

13. Overall Assessment

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 28, 2012

Client Sample ID:	12060503	Project:	ECOL00801
Sample ID:	306261001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	15-JUN-12 15:00		
Receive Date:	19-JUN-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3535A/8082A PCB Liquids "As Received"										
Aroclor-1016	U	ND	0.100	ug/L	1	YS1	06/21/12	0727	1223259	1
Aroclor-1221	U	ND	0.100	ug/L	1					
Aroclor-1232	U	ND	0.100	ug/L	1					
Aroclor-1242	U	ND	0.100	ug/L	1					
Aroclor-1248	U	ND	0.100	ug/L	1					
Aroclor-1254	U	ND	0.100	ug/L	1					
Aroclor-1260	U	ND	0.100	ug/L	1					
Aroclor-Total	U	ND	0.100	ug/L	1					

SZVM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	SW3535A PCB SPE Extraction	RXC1	06/20/12	1010	1223258

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3535A/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3535A/8082A PCB Liquids "As Received"	0.0999 ug/L	0.200	49.9	(34%-120%)
Decachlorobiphenyl	SW846 3535A/8082A PCB Liquids "As Received"	0.0722 ug/L	0.200	36.1	(33%-120%)

7-2-12

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 28, 2012

Client Sample ID:	12060504	Project:	ECOL00801
Sample ID:	306261002	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	15-JUN-12 15:15		
Receive Date:	19-JUN-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3535A/8082A PCB Liquids "As Received"										
Aroclor-1016	U	ND	0.100	ug/L	1	YS1	06/21/12	0739	1223259	1
Aroclor-1221	U	ND	0.100	ug/L	1					
Aroclor-1232	U	ND	0.100	ug/L	1					
Aroclor-1242	U	ND	0.100	ug/L	1					
Aroclor-1248	U	ND	0.100	ug/L	1					
Aroclor-1254	U	ND	0.100	ug/L	1					
Aroclor-1260	U	ND	0.100	ug/L	1					
Aroclor-Total	U	ND	0.100	ug/L	1					

54VM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	SW3535A PCB SPE Extraction	RXC1	06/20/12	1010	1223258

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3535A/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3535A/8082A PCB Liquids "As Received"	0.141 ug/L	0.200	70.4	(34%-120%)
Decachlorobiphenyl	SW846 3535A/8082A PCB Liquids "As Received"	0.161 ug/L	0.200	80.4	(33%-120%)

7-2-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700, Seattle, WA 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: July 2, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-05

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of two water samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 (S2VM) and/or 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060503 12060504

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on June 15, 2012, were extracted on June 20, 2012, and were analyzed by June 21, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were greater than the QC limit of 0.050. All Relative Standard Deviations (RSDs) were less than the QC limit of 30%.

4. **Continuing Calibration: Acceptable.**

All RRFs were greater than the QC limit of 0.050. All % differences were less than the QC limit of 25 %.

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

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

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

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Acceptable.

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID:	12060503	Project:	ECOL00801
Sample ID:	306261001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	15-JUN-12 15:00		
Receive Date:	19-JUN-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D Semivolatile Analysis by Separatory Funnel "As Received"										
Benzo(a)anthracene	U	ND	1.00	ug/L	1	JMB3	06/20/12	2310	1223265	1
Benzo(a)pyrene	U	ND	1.00	ug/L	1					
Benzo(b)fluoranthene	U	ND	1.00	ug/L	1					
Chrysene	U	ND	1.00	ug/L	1					
Diphenylamine	U	ND	10.0	ug/L	1					
bis(2-Ethylhexyl)phthalate	U	ND	10.0	ug/L	1					

S2VM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	SW846 3510C Prep Semivolatiles 8270D	RXC1	06/20/12	1015	1223263

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2,4,6-Tribromophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	46.7 ug/L	100	46.7	(26%-131%)
2-Fluorophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	45.5 ug/L	100	45.5	(15%-78%)
Phenol-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	23.8 ug/L	100	23.8	(10%-72%)
2-Fluorobiphenyl	8270D Semivolatile Analysis by Separatory Funnel "As Received"	28.7 ug/L	50.0	57.4	(29%-102%)
Nitrobenzene-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	40.8 ug/L	50.0	81.7	(36%-125%)
p-Terphenyl-d14	8270D Semivolatile Analysis by Separatory Funnel "As Received"	48.5 ug/L	50.0	97.0	(31%-133%)

MW7272

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID:	12060504	Project:	ECOL00801
Sample ID:	306261002	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	15-JUN-12 15:15		
Receive Date:	19-JUN-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D Semivolatile Analysis by Separatory Funnel "As Received"										
Benzo(a)anthracene	~~U~~	ND	1.00 U	ug/L	1	JMB3	06/21/12	1228	1223265	1 SHVM
Benzo(a)pyrene	U	ND	1.00	ug/L	1					
Benzo(b)fluoranthene	U	ND	1.00	ug/L	1					
Chrysene	U	ND	1.00	ug/L	1					
Diphenylamine	U	~~ND~~	10.0	ug/L	1					
bis(2-Ethylhexyl)phthalate		15.4	10.0	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	SW846 3510C Prep Semivolatiles 8270D	RXC1	06/20/12	1015	1223263

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2,4,6-Tribromophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	66.0 ug/L	100	66.0	(26%-131%)
2-Fluorophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	41.9 ug/L	100	41.9	(15%-78%)
Phenol-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	20.9 ug/L	100	20.9	(10%-72%)
2-Fluorobiphenyl	8270D Semivolatile Analysis by Separatory Funnel "As Received"	32.1 ug/L	50.0	64.2	(29%-102%)
Nitrobenzene-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	39.2 ug/L	50.0	78.4	(36%-125%)
p-Terphenyl-d14	8270D Semivolatile Analysis by Separatory Funnel "As Received"	51.8 ug/L	50.0	104	(31%-133%)

MN 7-2-12

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Global Environmental Specialists

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

MEMORANDUM

DATE: July 2, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-06

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of two water samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Target Analyte List (TAL) metals analyses (EPA Method 6020) were performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 (S2VM) and/or 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060505 12060506

Data Qualifications:

1. Sample Holding Times: Acceptable.

All liquid samples were preserved to a pH < 2. The samples were maintained at < 6°C. The samples were collected on June 16, 2012, and were analyzed by June 20, 2012, therefore meeting QC criteria of less than 6 months between collection, extraction, and analysis.

2. Initial and Continuing Calibration: Acceptable.

A minimum of one calibration standard and a blank were analyzed at the beginning of the ICP analysis sequence and after every 10 samples. No results were greater than 110% of the highest calibration standard. All ICP recoveries were within the QC limits of 90% to 110%.

3. Blanks: Satisfactory.

A preparation blank was analyzed for each 20 samples or per matrix per concentration level. Blanks were analyzed after each Initial or Continuing Calibration Verification. There were no detections in any blanks except:

Blank	Element	Concentration (*ug*/L)
Preparation Blank	Chromium	-3.76

Associated sample results were qualified as estimated quantities with a low bias (JL or UJL) if the sample result was less than five times the absolute value of the negative blank concentration.

4. ICP Interference Check Sample: Acceptable.

An Interference Check Sample (ICS) was analyzed at the beginning and end of each sequence or at least twice every 8 hours, whichever was more frequent. All ICS (solution AB) results were within QC limits of 80% - 120% recovery.

5. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

6. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. ICP Serial Dilution: Acceptable.

A serial dilution analysis was performed per matrix per concentration or per sample delivery group, whichever was more frequent. All serial dilution results were within QC limits.

8. Matrix Spike Analysis: Acceptable.

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

9. Duplicate Analysis: Acceptable.

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

10. Laboratory Control Sample Analysis: Acceptable.

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

11. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

METALS
–1–
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 306258 **METHOD TYPE:** SW846

SAMPLE ID: 306258001 **CLIENT ID:** 12060505

CONTRACT: ECOL00801

MATRIX: Water **DATE RECEIVED** 19–JUN–12 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M*	MDL	DF	Inst ID	Analytical Run
7440–38–2	Arsenic	1.7	ug/L	U		MS	1.7	1	ICPMS5	120620–1 SZM
7440–43–9	Cadmium	0.11	ug/L	U		MS	0.11	1	ICPMS5	120620–1
7440–47–3	Chromium	2	ug/L	U	JL	MS	2	1	ICPMS5	120620–1
7440–50–8	Copper	0.35	ug/L	U		MS	0.35	1	ICPMS5	120620–1
7439–92–1	Lead	0.5	ug/L	U		MS	0.5	1	ICPMS5	120620–1
7440–28–0	Thallium	0.45	ug/L	U		MS	0.45	1	ICPMS5	120620–1
7440–66–6	Zinc	3.5	ug/L	U		MS	3.5	1	ICPMS5	120620–1

***Analytical Methods:**

MS **SW846 3005A/6020A**

MW 7-2-12

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 306258 **METHOD TYPE:** SW846

SAMPLE ID: 306258002 **CLIENT ID:** 12060506

CONTRACT: ECOL00801

MATRIX: Water **DATE RECEIVED** 19-JUN-12 **LEVEL:** Low **%SOLIDS:**

CAS No	Analyte	Result	Units	C	Qual	M*	MDL	DF	Inst ID	Analytical Run
7440-38-2	Arsenic	46.9	ug/L			MS	1.7	1	ICPMS5	120620-1 S4VM
7440-43-9	Cadmium	0.605	ug/L	~~B~~ MU		MS	0.11	1	ICPMS5	120620-1
7440-47-3	Chromium	10.2	ug/L	JL		MS	2	1	ICPMS5	120620-1
7440-50-8	Copper	33.6	ug/L			MS	0.35	1	ICPMS5	120620-1
7439-92-1	Lead	28.8	ug/L			MS	0.5	1	ICPMS5	120620-1
7440-28-0	Thallium	0.45	ug/L	U		MS	0.45	1	ICPMS5	120620-1
7440-66-6	Zinc	121	ug/L			MS	3.5	1	ICPMS5	120620-1

***Analytical Methods:**

MS SW846 3005A/6020A

MW 7-2-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700, Seattle, WA 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: July 2, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-06

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of two water samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 (S2VM) and/or 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060505 12060506

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The samples were maintained at < 6°C. The samples were collected on June 16, 2012, extracted on June 20, 2012, and were analyzed by June 21, 2012, therefore meeting QC criteria of less than 7 days between collection and water sample extraction (14 days for soils) and less than 40 days between extraction and analysis.

2. **Instrument Performance: Acceptable.**

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. **Initial and Continuing Calibration: Acceptable.**

All initial calibration relative standard deviations (RSDs) were less than 15%. All continuing calibration % differences (% D) were less than 15% and were within QC limits.

4. **Error Determination: Not Provided.**

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Satisfactory.

A method blank was prepared at the required frequency of every time samples were extracted for each matrix and for each concentration level, or every 20 samples, whichever is greater, and for each analytical system. No target analytes were detected in any blanks except Aroclor-1260 at a low concentration; no action was taken based on this detection as Aroclor-1260 was not found in any associated samples.

6. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. System Monitoring Compounds (SMCs): Acceptable.

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

8. Blank Spikes: Acceptable.

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

9. Duplicates: Acceptable.

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

10. Compound Identification: Acceptable.

All results were dual-column confirmed with differences between the columns less than 25%.

11. Target Compound Quantitation and Quantitation Limits: Acceptable.

Sample results and quantitation limits were correctly calculated.

12. Laboratory Contact

No laboratory contact was required.

13. Overall Assessment

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 22, 2012

Client Sample ID:	12060505	Project:	ECOL00801
Sample ID:	306258001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	16-JUN-12 08:45		
Receive Date:	19-JUN-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3535A/8082A PCB Liquids "As Received"										
Aroclor-1016	U	ND	0.100	ug/L	1	YS1	06/21/12	0702	1223259	1
Aroclor-1221	U	ND	0.100	ug/L	1					
Aroclor-1232	U	ND	0.100	ug/L	1					
Aroclor-1242	U	ND	0.100	ug/L	1					
Aroclor-1248	U	ND	0.100	ug/L	1					
Aroclor-1254	U	ND	0.100	ug/L	1					
Aroclor-1260	U	ND	0.100	ug/L	1					
Aroclor-Total	U	ND	0.100	ug/L	1					

U

S2VM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	SW3535A PCB SPE Extraction	RXC1	06/20/12	1010	1223258

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3535A/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3535A/8082A PCB Liquids "As Received"	0.126 ug/L	0.200	62.9	(34%-120%)
Decachlorobiphenyl	SW846 3535A/8082A PCB Liquids "As Received"	0.155 ug/L	0.200	77.6	(33%-120%)

MW 7-2-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 22, 2012

Client Sample ID:	12060506	Project:	ECOL00801
Sample ID:	306258002	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	16-JUN-12 08:55		
Receive Date:	19-JUN-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3535A/8082A PCB Liquids "As Received"										
Aroclor-1016	U	ND	0.100	ug/L	1	YS1	06/21/12	0714	1223259	1
Aroclor-1221	U	ND	0.100	ug/L	1					
Aroclor-1232	U	ND	0.100	ug/L	1					
Aroclor-1242	U	ND	0.100	ug/L	1					
Aroclor-1248	U	ND	0.100	ug/L	1					
Aroclor-1254	U	ND	0.100	ug/L	1					
Aroclor-1260	U	ND	0.100	ug/L	1					
Aroclor-Total	U	ND	0.100	ug/L	1					

SHVM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	SW3535A PCB SPE Extraction	RXC1	06/20/12	1010	1223258

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3535A/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3535A/8082A PCB Liquids "As Received"	0.0924 ug/L	0.200	46.2	(34%-120%)
Decachlorobiphenyl	SW846 3535A/8082A PCB Liquids "As Received"	0.0952 ug/L	0.200	47.6	(33%-120%)

MW 7-2-12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: July 2, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-06

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of two water samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 (S2VM) and/or 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060505 12060506

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on June 16, 2012, were extracted on June 20, 2012, and were analyzed by June 25, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were greater than the QC limit of 0.050. All Relative Standard Deviations (RSDs) were less than the QC limit of 30%.

4. **Continuing Calibration: Acceptable.**

All RRFs were greater than the QC limit of 0.050. All % differences were less than the QC limit of 25 %.

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

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

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

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Acceptable.

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 25, 2012

Client Sample ID:	12060505	Project:	ECOL00801
Sample ID:	306258001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	16-JUN-12 08:45		
Receive Date:	19-JUN-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D Semivolatile Analysis by Separatory Funnel "As Received"										
Benzo(a)anthracene	U	ND	1.00	ug/L	1	JMB3	06/25/12	1056	1223265	1
Benzo(a)pyrene	U	ND	1.00	ug/L	1					
Benzo(b)fluoranthene	U	ND	1.00	ug/L	1					
Chrysene	U	ND	1.00	ug/L	1					
Diphenylamine	U	ND	10.0	ug/L	1					
bis(2-Ethylhexyl)phthalate	U	ND	10.0	ug/L	1					

S2VM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	SW846 3510C Prep Semivolatiles 8270D	RXC1	06/20/12	1015	1223263

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2,4,6-Tribromophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	53.7 ug/L	100	53.7	(26%-131%)
2-Fluorophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	36.2 ug/L	100	36.2	(15%-78%)
Phenol-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	19.3 ug/L	100	19.3	(10%-72%)
2-Fluorobiphenyl	8270D Semivolatile Analysis by Separatory Funnel "As Received"	28.4 ug/L	50.0	56.8	(29%-102%)
Nitrobenzene-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	36.5 ug/L	50.0	72.9	(36%-125%)
p-Terphenyl-d14	8270D Semivolatile Analysis by Separatory Funnel "As Received"	39.6 ug/L	50.0	79.3	(31%-133%)

MW 7/2/12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 25, 2012

Client Sample ID:	12060506	Project:	ECOL00801
Sample ID:	306258002	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	16-JUN-12 08:55		
Receive Date:	19-JUN-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D Semivolatile Analysis by Separatory Funnel "As Received"										
Benzo(a)anthracene	U	ND	1.00	ug/L	1	JMB3	06/20/12	2244	1223265	1
Benzo(a)pyrene	U	ND	1.00	ug/L	1					
Benzo(b)fluoranthene	U	ND	1.00	ug/L	1					
Chrysene	U	ND	1.00	ug/L	1					
Diphenylamine	U	ND	10.0	ug/L	1					
bis(2-Ethylhexyl)phthalate	U	ND	10.0	ug/L	1					

SEVA

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	SW846 3510C Prep Semivolatiles 8270D	RXC1	06/20/12	1015	1223263

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2,4,6-Tribromophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	56.5 ug/L	100	56.5	(26%-131%)
2-Fluorophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	47.2 ug/L	100	47.2	(15%-78%)
Phenol-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	24.6 ug/L	100	24.6	(10%-72%)
2-Fluorobiphenyl	8270D Semivolatile Analysis by Separatory Funnel "As Received"	31.2 ug/L	50.0	62.4	(29%-102%)
Nitrobenzene-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	43.5 ug/L	50.0	87.0	(36%-125%)
p-Terphenyl-d14	8270D Semivolatile Analysis by Separatory Funnel "As Received"	46.9 ug/L	50.0	93.8	(31%-133%)

7-2-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700, Seattle, WA 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: July 6, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-08

REF:

TDDs:	12-05-0006	PANs: 002233.0790.01RA
	12-05-0007	PANs: 002233.0791.01RA
	12-05-0008	PANs: 002233.0792.01RA
	12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of ten soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Toxicity Characteristic Leaching Procedure (TCLP) metals analyses (EPA Methods 1311 and 6020) were performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 (S2VM) and/or 4 Data Validation Manual Process (S4VM).

The samples were numbered:

12060101	12060102	12060103	12060104	12060105
12060106	12060107	12060108	12060109	12060110

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained at < 6°C. The samples were collected on June 20, 2012, and were extracted and analyzed by June 22, 2012, therefore meeting QC criteria of less than 6 months between collection, extraction, and analysis (28 days for mercury).

2. Initial and Continuing Calibration: Acceptable.

A minimum of one calibration standard and a blank were analyzed at the beginning of the ICP analysis sequence and after every 10 samples. No results were greater than 110% of the highest calibration standard. All ICP recoveries were within the QC limits of 90% to 110%.

3. Blanks: Satisfactory.

A preparation blank was analyzed for each 20 samples or per matrix per concentration level. Blanks were analyzed after each Initial or Continuing Calibration Verification. The following elements

recycled paper

were detected in the applicable calibration and/or preparation blanks and affected sample results:

Blank	Element	Concentration (*ug*/L)
Continuing Calibration Blank (CCB) 1	Cadmium	-1.47
CCB 2	Selenium	-6.29
CCB 13	Mercury	-0.172
CCB 14	Mercury	-0.176
TB	Barium	13.1

Associated sample results were qualified as estimated quantities with a low bias (JL or UJL) if the sample result was less than five times the absolute value of the negative blank concentration.

4. ICP Interference Check Sample: Acceptable.

An Interference Check Sample (ICS) was analyzed at the beginning and end of each sequence or at least twice every 8 hours, whichever was more frequent. All ICS (solution AB) results were within QC limits of 80% - 120% recovery.

5. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

6. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. ICP Serial Dilution: Acceptable.

A serial dilution analysis was performed per matrix per concentration or per sample delivery group, whichever was more frequent. All serial dilution results were within QC limits.

8. Matrix Spike Analysis: Acceptable.

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

9. Duplicate Analysis: Acceptable.

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

10. Laboratory Control Sample Analysis: Acceptable.

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

11. Overall Assessment of Data for Use

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 30, 2012

Client Sample ID:	12060101/SP-01-SS-C1A	Project:	ECOL00801
Sample ID:	306423001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 09:45		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	25.7%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA										
TCLP Hg in Solid "As Received"										
Mercury	~~U~~	~~ND~~ MW	0.002 U	mg/L	1	BYV1	06/22/12	1255	1224050	1 SYOK
Metals Analysis-ICP										
TCLP ICP Metals - 1311/3010A/6010C "As Received"										
Arsenic	~~U~~	~~ND~~ MW	0.300 U	mg/L	1	HSC	06/22/12	1427	1224037	2
Barium		0.535	0.050	mg/L	1					
Cadmium	~~U~~	ND	0.050 U	mg/L	1					
Chromium	U	ND	0.050	mg/L	1					
Lead	U	ND	0.100	mg/L	1					
Selenium	U	ND	0.300	mg/L	1					
Silver	U	~~ND~~ MW	0.050	mg/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 1311	SW846 1311 TCLP Leaching	EXF1	06/21/12	1300	1223758

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3010A	ICP-TRACE TCLP by SW846 3010A	LYH1	06/22/12	0920	1224036

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 7470A Prep	EPA 7470A Mercury Prep TCLP Liquid	BCD1	06/22/12	0917	1224049

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7470A	
2	SW846 3010A/6010C	

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013 1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

MW 7-6-12

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 30, 2012

Client Sample ID:	12060102/SP-02-SS-C1B	Project:	ECOL00801
Sample ID:	306423002	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 10:00		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	18.6%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA										
TCLP Hg in Solid "As Received"										
Mercury	~~U~~	~~ND~~	0.002 U	mg/L	1	BYV1	06/22/12	1301	1224050	1
Metals Analysis-ICP										
TCLP ICP Metals - 1311/3010A/6010C "As Received"										
Arsenic	~~U~~	~~ND~~	0.300 U	mg/L	1	HSC	06/22/12	1439	1224037	2
Barium		0.477	0.050	mg/L	1					
Cadmium	U	ND	0.050	mg/L	1					
Chromium	U	ND	0.050	mg/L	1					
Lead	U	ND	0.100	mg/L	1					
Selenium	U	ND	0.300	mg/L	1					
Silver	U	ND	0.050	mg/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 1311	SW846 1311 TCLP Leaching	EXF1	06/21/12	1300	1223758

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3010A	ICP-TRACE TCLP by SW846 3010A	LYH1	06/22/12	0920	1224036

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 7470A Prep	EPA 7470A Mercury Prep TCLP Liquid	BCD1	06/22/12	0917	1224049

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7470A	
2	SW846 3010A/6010C	

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013 1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

MW 7-6-12

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 30, 2012

Client Sample ID:	12060103/SP-03-SS-C1C	Project:	ECOL00801
Sample ID:	306423003	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 10:05		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	18.9%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA										
TCLP Hg in Solid "As Received"										
Mercury	~~U~~	~~ND~~ MW	0.002 U	mg/L	1	BYV1	06/22/12	1303	1224050	1 S2VM
Metals Analysis-ICP										
TCLP ICP Metals - 1311/3010A/6010C "As Received"										
Arsenic	~~U~~	~~ND~~ MW	0.300 U	mg/L	1	HSC	06/22/12	1450	1224037	2
Barium		0.534	0.050	mg/L	1					
Cadmium	U	ND	0.050 U	mg/L	1					
Chromium	U	ND	0.050	mg/L	1					
Lead	U	ND	0.100	mg/L	1					
Selenium	U	ND	0.300	mg/L	1					
Silver	U	ND MW	0.050	mg/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 1311	SW846 1311 TCLP Leaching	EXF1	06/21/12	1300	1223758

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3010A	ICP-TRACE TCLP by SW846 3010A	LYH1	06/22/12	0920	1224036

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 7470A Prep	EPA 7470A Mercury Prep TCLP Liquid	BCD1	06/22/12	0917	1224049

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7470A	
2	SW846 3010A/6010C	

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013 1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

MW 7-6-12

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 30, 2012

Client Sample ID:	12060104/SP-04-SS-C1D	Project:	ECOL00801
Sample ID:	306423004	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 11:15		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	22.8%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA										
TCLP Hg in Solid "As Received"										
Mercury	~~U~~	~~ND~~	0.002 U	mg/L	1	BYV1	06/22/12	1304	1224050	1
Metals Analysis-ICP										
TCLP ICP Metals - 1311/3010A/6010C "As Received"										
Arsenic	~~U~~	~~ND~~	0.300 U	mg/L	1	HSC	06/22/12	1453	1224037	2
Barium		0.489	0.050	mg/L	1					
Cadmium	U	ND	0.050 U	mg/L	1					
Chromium	U	ND	0.050	mg/L	1					
Lead	U	ND	0.100	mg/L	1					
Selenium	U	ND	0.300	mg/L	1					
Silver	U	~~ND~~	0.050	mg/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 1311	SW846 1311 TCLP Leaching	EXF1	06/21/12	1300	1223758

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3010A	ICP-TRACE TCLP by SW846 3010A	LYH1	06/22/12	0920	1224036

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 7470A Prep	EPA 7470A Mercury Prep TCLP Liquid	BCD1	06/22/12	0917	1224049

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7470A	
2	SW846 3010A/6010C	

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013 1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

MW 7-6-12

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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 30, 2012

Client Sample ID:	12060105/SP-05-SS-C1E	Project:	ECOL00801
Sample ID:	306423005	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 11:18		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	18.8%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA										
TCLP Hg in Solid "As Received"										
Mercury	~~U~~	~~ND~~ MW	0.002 U	mg/L	1	BYV1	06/22/12	1310	1224050	1 SLVM
Metals Analysis-ICP										
TCLP ICP Metals - 1311/3010A/6010C "As Received"										
Arsenic	~~U~~	~~ND~~ MW	0.300 U	mg/L	1	HSC	06/22/12	1456	1224037	2
Barium		0.488	0.050	mg/L	1					
Cadmium	~~U~~	ND	0.050 U	mg/L	1					
Chromium	U	ND	0.050	mg/L	1					
Lead	U	ND	0.100	mg/L	1					
Selenium	U	~~ND~~	0.300	mg/L	1					
Silver	U	ND MW	0.050	mg/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 1311	SW846 1311 TCLP Leaching	EXF1	06/21/12	1300	1223758

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3010A	ICP-TRACE TCLP by SW846 3010A	LYH1	06/22/12	0920	1224036

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 7470A Prep	EPA 7470A Mercury Prep TCLP Liquid	BCD1	06/22/12	0917	1224049

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7470A	
2	SW846 3010A/6010C	

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013 1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

MW 7/12

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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 30, 2012

Client Sample ID:	12060106/SP-06-SS-C1F	Project:	ECOL00801
Sample ID:	306423006	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 10:00		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	30.9%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA										
TCLP Hg in Solid "As Received"										
Mercury	~~U~~	~~ND~~	0.002	mg/L	1	BYV1	06/22/12	1311	1224050	1
Metals Analysis-ICP										
TCLP ICP Metals - 1311/3010A/6010C "As Received"										
Arsenic	U	ND	0.300	mg/L	1	HSC	06/22/12	1459	1224037	2
Barium		0.477	0.050	mg/L	1					
Cadmium	U	ND	0.050	mg/L	1					
Chromium	U	ND	0.050	mg/L	1					
Lead	U	ND	0.100	mg/L	1					
Selenium	U	ND	0.300	mg/L	1					
Silver	U	~~ND~~	0.050	mg/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 1311	SW846 1311 TCLP Leaching	EXF1	06/21/12	1300	1223758

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3010A	ICP-TRACE TCLP by SW846 3010A	LYH1	06/22/12	0920	1224036

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 7470A Prep	EPA 7470A Mercury Prep TCLP Liquid	BCD1	06/22/12	0917	1224049

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7470A	
2	SW846 3010A/6010C	

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013 1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

7-6-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 30, 2012

Client Sample ID:	12060107/SP-07-SS-C1G	Project:	ECOL00801
Sample ID:	306423007	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 10:05		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	25.2%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA										
TCLP Hg in Solid "As Received"										
Mercury	~~U~~	~~ND~~	0.002 U	mg/L	1	BYV1	06/22/12	1313	1224050	1
Metals Analysis-ICP										
TCLP ICP Metals - 1311/3010A/6010C "As Received"										
Arsenic	~~U~~	~~ND~~	0.300 U	mg/L	1	HSC	06/22/12	1502	1224037	2
Barium		0.495	0.050	mg/L	1					
Cadmium	~~U~~	ND	0.050 U	mg/L	1					
Chromium	U	ND	0.050	mg/L	1					
Lead	U	ND	0.100	mg/L	1					
Selenium	U	ND	0.300	mg/L	1					
Silver	U	ND	0.050	mg/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 1311	SW846 1311 TCLP Leaching	EXF1	06/21/12	1300	1223758

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3010A	ICP-TRACE TCLP by SW846 3010A	LYH1	06/22/12	0920	1224036

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 7470A Prep	EPA 7470A Mercury Prep TCLP Liquid	BCD1	06/22/12	0917	1224049

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7470A	
2	SW846 3010A/6010C	

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013 1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

7-6-12

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 30, 2012

Client Sample ID:	12060108/SP-08-SS-C1H	Project:	ECOL00801
Sample ID:	306423008	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 10:10		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	26.3%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA										
TCLP Hg in Solid "As Received"										
Mercury	~~U~~	~~ND~~	0.002	mg/L	1	BYV1	06/22/12	1315	1224050	1
Metals Analysis-ICP										
TCLP ICP Metals - 1311/3010A/6010C "As Received"										
Arsenic	~~U~~	~~ND~~	0.300	mg/L	1	HSC	06/22/12	1505	1224037	2
Barium		0.421	0.050	mg/L	1					
Cadmium	U	ND	0.050	mg/L	1					
Chromium	U	ND	0.050	mg/L	1					
Lead	U	ND	0.100	mg/L	1					
Selenium	U	ND	0.300	mg/L	1					
Silver	U	ND	0.050	mg/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 1311	SW846 1311 TCLP Leaching	EXF1	06/21/12	1300	1223758

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3010A	ICP-TRACE TCLP by SW846 3010A	LYH1	06/22/12	0920	1224036

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 7470A Prep	EPA 7470A Mercury Prep TCLP Liquid	BCD1	06/22/12	0917	1224049

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7470A	
2	SW846 3010A/6010C	

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013 1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

MW 7-6-12

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 30, 2012

Client Sample ID:	12060109/SP-09-SS-C1I	Project:	ECOL00801
Sample ID:	306423009	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 10:55		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	21.6%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA										
TCLP Hg in Solid "As Received"										
Mercury	~~U~~	~~ND~~	0.002 U	mg/L	1	BYV1	06/22/12	1316	1224050	1
Metals Analysis-ICP										
TCLP ICP Metals - 1311/3010A/6010C "As Received"										
Arsenic	~~U~~	~~ND~~	0.300 U	mg/L	1	HSC	06/22/12	1508	1224037	2
Barium		0.483	0.050	mg/L	1					
Cadmium	U	ND	0.050 U	mg/L	1					
Chromium	U	ND	0.050	mg/L	1					
Lead	U	ND	0.100	mg/L	1					
Selenium	U	ND	0.300	mg/L	1					
Silver	U	ND	0.050	mg/L	1					

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The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 1311	SW846 1311 TCLP Leaching	EXF1	06/21/12	1300	1223758

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3010A	ICP-TRACE TCLP by SW846 3010A	LYH1	06/22/12	0920	1224036

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 7470A Prep	EPA 7470A Mercury Prep TCLP Liquid	BCD1	06/22/12	0917	1224049

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7470A	
2	SW846 3010A/6010C	

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013 1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

MW
7-6-12

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Certificate of Analysis

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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 30, 2012

Client Sample ID:	12060110/SP-10-SS-C1J	Project:	ECOL00801
Sample ID:	306423010	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 11:00		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	20.2%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Mercury Analysis-CVAA										
TCLP Hg in Solid "As Received"										
Mercury	~~U~~	~~ND~~	0.002	mg/L	1	BYV1	06/22/12	1318	1224050	1
Metals Analysis-ICP										
TCLP ICP Metals - 1311/3010A/6010C "As Received"										
Arsenic	~~U~~	~~ND~~	0.300	mg/L	1	HSC	06/22/12	1511	1224037	2
Barium		0.520	0.050	mg/L	1					
Cadmium	U	ND	0.050	mg/L	1					
Chromium	U	ND	0.050	mg/L	1					
Lead	U	ND	0.100	mg/L	1					
Selenium	U	ND	0.300	mg/L	1					
Silver	U	ND	0.050	mg/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 1311	SW846 1311 TCLP Leaching	EXF1	06/21/12	1300	1223758

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3010A	ICP-TRACE TCLP by SW846 3010A	LYH1	06/22/12	0920	1224036

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 7470A Prep	EPA 7470A Mercury Prep TCLP Liquid	BCD1	06/22/12	0917	1224049

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 7470A	
2	SW846 3010A/6010C	

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013 1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

MW
7-6-12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: July 6, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-08

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of 10 soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 (S2VM) and/or 4 Data Validation Manual Process (S4VM).

The samples were numbered:

12060101	12060102	12060103	12060104	12060105
12060106	12060107	12060108	12060109	12060110

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained at < 6°C. The samples were collected on June 20, 2012, extracted on June 22, 2012, and were analyzed by June 22, 2012, therefore meeting QC criteria of less than 7 days between collection and water sample extraction (14 days for soils) and less than 40 days between extraction and analysis.

2. Instrument Performance: Acceptable.

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. Initial and Continuing Calibration: Acceptable.

All average initial calibration relative standard deviations (RSDs) were less than 15% on at least one column. All average continuing calibration % differences (% D) were within QC limits except Aroclor-1260

with a decreasing response associated with samples 12060107 through 12060110; associated Aroclor-1260 sample quantitation limits were qualified as estimated quantities with a low bias (UJL).

4. Error Determination: Not Provided.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Acceptable.

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

6. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. System Monitoring Compounds (SMCs): Acceptable.

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

8. Blank and Matrix Spikes: Acceptable.

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

9. Duplicates: Acceptable.

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

10. Compound Identification: Satisfactory.

All results were dual-column confirmed with differences between the columns less than 25% except some spiked sample results; no actions were taken based on these QC sample outliers.

11. Target Compound Quantitation and Quantitation Limits: Acceptable.

Sample results and quantitation limits were correctly calculated.

12. Laboratory Contact

No laboratory contact was required.

13. Overall Assessment

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID:	SP-01-SS-C1A	Project:	ECOL00801
Sample ID:	306423001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 09:45		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	25.7%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	22.3	ug/kg	5	YS1	06/22/12	1741	1223935	1
Aroclor-1221	U	ND	22.3	ug/kg	5					
Aroclor-1232	U	ND	22.3	ug/kg	5					
Aroclor-1242	U	ND	22.3	ug/kg	5					
Aroclor-1248	U	ND	22.3	ug/kg	5					
Aroclor-1254	U	ND	22.3	ug/kg	5					
Aroclor-1260	U	ND	22.3	ug/kg	5					
Aroclor-Total	U	ND	22.3	ug/kg	5					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	JXC7	06/22/12	0815	1223934

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	3.71 ug/kg	8.93	41.5	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.77 ug/kg	8.93	53.4	(19%-130%)

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013

1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

in MSD:
Bromomethane recovered at 27%. The limits are limits 57%-129%.

MW 7-6-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID:	SP-01-SS-C1B	Project:	ECOL00801
Sample ID:	306423002	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 10:00		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	18.6%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	20.2	ug/kg	5	YS1	06/22/12	1819	1223935	1
Aroclor-1221	U	ND	20.2	ug/kg	5					
Aroclor-1232	U	ND	20.2	ug/kg	5					
Aroclor-1242	U	ND	20.2	ug/kg	5					
Aroclor-1248	U	ND	20.2	ug/kg	5					
Aroclor-1254	U	ND	20.2	ug/kg	5					
Aroclor-1260	U	ND	20.2	ug/kg	5					
Aroclor-Total	U	ND	20.2	ug/kg	5					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	JXC7	06/22/12	0815	1223934

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	2.65 ug/kg	8.10	32.8	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	3.31 ug/kg	8.10	40.9	(19%-130%)

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013

1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

in MSD:
Bromomethane recovered at 27%. The limits are limits 57%-129%.

MW 7-6-12

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID:	SP-01-SS-C1C	Project:	ECOL00801
Sample ID:	306423003	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 10:05		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	18.9%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	20.4	ug/kg	5	YS1	06/22/12	1832	1223935	1
Aroclor-1221	U	ND	20.4	ug/kg	5					
Aroclor-1232	U	ND	20.4	ug/kg	5					
Aroclor-1242	U	ND	20.4	ug/kg	5					
Aroclor-1248	U	ND	20.4	ug/kg	5					
Aroclor-1254	U	ND	20.4	ug/kg	5					
Aroclor-1260	U	ND	20.4	ug/kg	5					
Aroclor-Total	U	ND	20.4	ug/kg	5					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	JXC7	06/22/12	0815	1223934

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	2.21 ug/kg	8.17	27.0	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	2.69 ug/kg	8.17	32.9	(19%-130%)

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013

1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

in MSD:
Bromomethane recovered at 27%. The limits are limits 57%-129%.

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID:	SP-01-SS-C1D	Project:	ECOL00801
Sample ID:	306423004	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 11:15		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	22.8%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	21.5	ug/kg	5	YS1	06/22/12	1844	1223935	1
Aroclor-1221	U	ND	21.5	ug/kg	5					
Aroclor-1232	U	ND	21.5	ug/kg	5					
Aroclor-1242	U	ND	21.5	ug/kg	5					
Aroclor-1248	U	ND	21.5	ug/kg	5					
Aroclor-1254	U	ND	21.5	ug/kg	5					
Aroclor-1260	U	ND	21.5	ug/kg	5					
Aroclor-Total	U	ND	21.5	ug/kg	5					

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The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	JXC7	06/22/12	0815	1223934

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	2.32 ug/kg	8.59	27.0	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	2.81 ug/kg	8.59	32.8	(19%-130%)

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013

1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

in MSD:
Bromomethane recovered at 27%. The limits are limits 57%-129%.

MW 7-6-12

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID:	SP-01-SS-C1E	Project:	ECOL00801
Sample ID:	306423005	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 11:18		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	18.8%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	20.3	ug/kg	5	YS1	06/22/12	1857	1223935	1
Aroclor-1221	U	ND	20.3	ug/kg	5					
Aroclor-1232	U	ND	20.3	ug/kg	5					
Aroclor-1242	U	ND	20.3	ug/kg	5					
Aroclor-1248	U	ND	20.3	ug/kg	5					
Aroclor-1254	U	ND	20.3	ug/kg	5					
Aroclor-1260	U	ND	20.3	ug/kg	5					
Aroclor-Total	U	ND	20.3	ug/kg	5					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	JXC7	06/22/12	0815	1223934

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	2.17 ug/kg	8.12	26.7	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	2.53 ug/kg	8.12	31.2	(19%-130%)

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013

1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

in MSD:
Bromomethane recovered at 27%. The limits are limits 57%-129%.

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID:	SP-01-SS-C1F	Project:	ECOL00801
Sample ID:	306423006	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 10:00		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	30.9%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	23.9	ug/kg	5	YS1	06/22/12	1910	1223935	1
Aroclor-1221	U	ND	23.9	ug/kg	5					
Aroclor-1232	U	ND	23.9	ug/kg	5					
Aroclor-1242	U	ND	23.9	ug/kg	5					
Aroclor-1248	U	ND	23.9	ug/kg	5					
Aroclor-1254	U	ND	23.9	ug/kg	5					
Aroclor-1260	U	ND	23.9	ug/kg	5					
Aroclor-Total	U	ND	23.9	ug/kg	5					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	JXC7	06/22/12	0815	1223934

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	3.18 ug/kg	9.56	33.3	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	3.51 ug/kg	9.56	36.7	(19%-130%)

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013

1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

in MSD:
Bromomethane recovered at 27%. The limits are limits 57%-129%.

MW 7-6-12

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Company : Ecology and Environment, Inc.
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID:	SP-01-SS-C1G	Project:	ECOL00801
Sample ID:	306423007	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 10:05		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	25.2%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	22.2	ug/kg	5	YS1	06/22/12	1948	1223935	1 S2VM
Aroclor-1221	U	ND	22.2	ug/kg	5					
Aroclor-1232	U	ND	22.2	ug/kg	5					
Aroclor-1242	U	ND	22.2	ug/kg	5					
Aroclor-1248	U	ND	22.2	ug/kg	5					
Aroclor-1254	U	ND	22.2	ug/kg	5					
Aroclor-1260	U	ND	22.2	ug/kg	5					
Aroclor-Total	U	ND	22.2	ug/kg	5					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	JXC7	06/22/12	0815	1223934

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	3.20 ug/kg	8.87	36.0	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	3.96 ug/kg	8.87	44.7	(19%-130%)

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013

1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

in MSD:
Bromomethane recovered at 27%. The limits are limits 57%-129%.

MW 7-6-12

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID:	SP-01-SS-C1H	Project:	ECOL00801
Sample ID:	306423008	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 10:10		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	26.3%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	22.5	ug/kg	5	YS1	06/22/12	2001	1223935	1
Aroclor-1221	U	ND	22.5	ug/kg	5					
Aroclor-1232	U	ND	22.5	ug/kg	5					
Aroclor-1242	U	ND	22.5	ug/kg	5					
Aroclor-1248	U	ND	22.5	ug/kg	5					
Aroclor-1254	U	ND	22.5	ug/kg	5					
Aroclor-1260	U	ND	22.5	ug/kg	5					
Aroclor-Total	U	ND	22.5	ug/kg	5					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	JXC7	06/22/12	0815	1223934

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	3.35 ug/kg	9.00	37.2	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.03 ug/kg	9.00	44.9	(19%-130%)

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013

1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

in MSD:
Bromomethane recovered at 27%. The limits are limits 57%-129%.

MW 7/6/12

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID:	SP-01-SS-C1I	Project:	ECOL00801
Sample ID:	306423009	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 10:55		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	21.6%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	21.1	ug/kg	5	YS1	06/22/12	2013	1223935	1
Aroclor-1221	U	ND	21.1	ug/kg	5					
Aroclor-1232	U	ND	21.1	ug/kg	5					
Aroclor-1242	U	ND	21.1	ug/kg	5					
Aroclor-1248	U	ND	21.1	ug/kg	5					
Aroclor-1254	U	ND	21.1	ug/kg	5					
Aroclor-1260	U	ND	21.1	ug/kg	5					
Aroclor-Total	U	ND	21.1	ug/kg	5					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	JXC7	06/22/12	0815	1223934

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	2.64 ug/kg	8.46	31.2	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	2.93 ug/kg	8.46	34.6	(19%-130%)

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013

1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

in MSD:
Bromomethane recovered at 27%. The limits are limits 57%-129%.

MW 7-6-12

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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID:	SP-01-SS-C1J	Project:	ECOL00801
Sample ID:	306423010	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 11:00		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	20.2%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	20.6	ug/kg	5	YS1	06/22/12	2026	1223935	1
Aroclor-1221	U	ND	20.6	ug/kg	5					
Aroclor-1232	U	ND	20.6	ug/kg	5					
Aroclor-1242	U	ND	20.6	ug/kg	5					
Aroclor-1248	U	ND	20.6	ug/kg	5					
Aroclor-1254	U	ND	20.6	ug/kg	5					
Aroclor-1260	U	ND	20.6	ug/kg	5					
Aroclor-Total	U	ND	20.6	ug/kg	5					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	JXC7	06/22/12	0815	1223934

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	2.80 ug/kg	8.26	33.9	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	2.89 ug/kg	8.26	35.1	(19%-130%)

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013

1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

in MSD:
Bromomethane recovered at 27%. The limits are limits 57%-129%.

7-6-12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: July 6, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-08

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of ten soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D and 8270D SIM PAH) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 (S2VM) and/or 4 Data Validation Manual Process (S4VM).

The samples were numbered:

12060101	12060102	12060103	12060104	12060105
12060106	12060107	12060108	12060109	12060110

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on June 20, 2012, were extracted on June 21, 2012, and were analyzed on June 22, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Acceptable.

All average Relative Response Factors (RRFs) were greater than the QC limit of 0.050. All Relative Standard Deviations (RSDs) were less than the QC limit of 30%.

4. Continuing Calibration: Satisfactory.

All RRFs were greater than the QC limit of 0.050. All % differences were within the QC limits except bis(2-chloroethyl)ether with a decreasing response factor in the continuing calibration and the surrogate 2,4,6-tribromophenol, 2,3,4,6-tetrachlorophenol, 2-methyl-4,6-dinotrophenol, pentachlorophenol, and hexachlorobutadiene with increasing response factors in the continuing calibration. No action was taken based on the increasing response outliers as they were not detected in any sample. The bis(2-chloroethyl)ether sample quantitation limits were qualified as estimated quantities with a low bias (UJL).

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Satisfactory.

All SMC recoveries were within QC limits except Terphenyl-d14 in sample 12060107 with a high recovery. No action was taken based on one high recovery SMC outlier per sample per fraction.

7. Matrix and Blank Spike Analysis: Satisfactory.

All applicable spike analyses were performed per SDG or per matrix per concentration level, whichever was more frequent. All applicable recoveries were within the QC limits except high 4-nitrophenol and 4-chloro-3-methylphenol matrix spike recoveries; no actions were taken based on these outliers as they were not detected in any samples.

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Satisfactory.

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts except perylene-d12 with a low area count in samples 12060106 and 12060107. Sample results associated with the low area count outliers were qualified as estimated quantities with a high or unknown bias (JH or UJK).

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The overall usefulness of the data is based on the criteria outlined in the Site-Specific Sampling Plan and/or Sampling and Quality Assurance Plan, the OSWER Guidance Document "Quality

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID:	SP-01-SS-C1A	Project:	ECOL00801
Sample ID:	306423001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 09:45		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	25.7%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	447	ug/kg	1	JLD1	06/22/12	1142	1223942	1
1,2,4,5-Tetrachlorobenzene	U	ND	447	ug/kg	1					
1-Methylnaphthalene	U	ND	44.7	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	447	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	447	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	447	ug/kg	1					
2,4-Dichlorophenol	U	ND	447	ug/kg	1					
2,4-Dimethylphenol	U	ND	447	ug/kg	1					
2,4-Dinitrophenol	U	ND	894	ug/kg	1					
2,4-Dinitrotoluene	U	ND	447	ug/kg	1					
2,6-Dinitrotoluene	U	ND	447	ug/kg	1					
2-Chloronaphthalene	U	ND	44.7	ug/kg	1					
2-Chlorophenol	U	ND	447	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	447	ug/kg	1					
2-Methylnaphthalene	U	ND	44.7	ug/kg	1					
2-Nitrophenol	U	ND	447	ug/kg	1					
3,3'-Dichlorobenzidine	U	ND	447	ug/kg	1					
4-Bromophenylphenylether	U	ND	447	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	447	ug/kg	1					
4-Chloroaniline	U	ND	447	ug/kg	1					
4-Chlorophenylphenylether	U	ND	447	ug/kg	1					
4-Nitrophenol	U	ND	447	ug/kg	1					
Acenaphthene	U	ND	44.7	ug/kg	1					
Acenaphthylene	U	ND	44.7	ug/kg	1					
Acetophenone	U	ND	447	ug/kg	1					
Anthracene	U	ND	44.7	ug/kg	1					
Atrazine	U	ND	447	ug/kg	1					
Benzaldehyde	U	ND	447	ug/kg	1					
Benzo(a)anthracene	U	ND	44.7	ug/kg	1					
Benzo(a)pyrene	U	ND	44.7	ug/kg	1					
Benzo(b)fluoranthene	U	ND	44.7	ug/kg	1					
Benzo(ghi)perylene	U	ND	44.7	ug/kg	1					
Benzo(k)fluoranthene	U	ND	44.7	ug/kg	1					
Butylbenzylphthalate	U	ND	447	ug/kg	1					
Caprolactam	U	ND	447	ug/kg	1					
Carbazole	U	ND	44.7	ug/kg	1					
Chrysene	U	ND	44.7	ug/kg	1					

S2VM

MW 7-6-12

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Company : Ecology and Environment, Inc.
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID: SP-01-SS-C1A
Sample ID: 306423001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										S2VM
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	447	ug/kg	1					
Di-n-octylphthalate	U	ND	447	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	44.7	ug/kg	1					
Dibenzofuran	U	ND	447	ug/kg	1					
Diethylphthalate	U	ND	447	ug/kg	1					
Dimethylphthalate	U	ND	447	ug/kg	1					
Diphenylamine	U	ND	447	ug/kg	1					
Fluoranthene	U	ND	44.7	ug/kg	1					
Fluorene	U	ND	44.7	ug/kg	1					
Hexachlorobenzene	U	ND	447	ug/kg	1					
Hexachlorobutadiene	U	ND	447	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	447	ug/kg	1					
Hexachloroethane	U	ND	447	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	44.7	ug/kg	1					
Isophorone	U	ND	447	ug/kg	1					
N-Nitrosodipropylamine	U	ND	447	ug/kg	1					
Naphthalene	U	ND	44.7	ug/kg	1					
Nitrobenzene	U	ND	447	ug/kg	1					
Pentachlorophenol	U	ND	447	ug/kg	1					
Phenanthrene		443	44.7	ug/kg	1					
Phenol	U	ND	447	ug/kg	1					
Pyrene	U	ND	44.7	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	447	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	447	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	447	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	447	ug/kg	1					
m,p-Cresols	U	ND	447	ug/kg	1					
m-Nitroaniline	U	ND	447	ug/kg	1					
o-Cresol	U	ND	447	ug/kg	1					
o-Nitroaniline	U	ND	447	ug/kg	1					
p-Nitroaniline	U	ND	447	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	06/21/12	2030	1223941

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

MW 7-6-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID:	SP-01-SS-C1B	Project:	ECOL00801
Sample ID:	306423002	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 10:00		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	18.6%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	405	ug/kg	1	JLD1	06/22/12	1258	1223942	1
1,2,4,5-Tetrachlorobenzene	U	ND	405	ug/kg	1					
1-Methylnaphthalene		108	40.5	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	405	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	405	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	405	ug/kg	1					
2,4-Dichlorophenol	U	ND	405	ug/kg	1					
2,4-Dimethylphenol	U	ND	405	ug/kg	1					
2,4-Dinitrophenol	U	ND	810	ug/kg	1					
2,4-Dinitrotoluene	U	ND	405	ug/kg	1					
2,6-Dinitrotoluene	U	ND	405	ug/kg	1					
2-Chloronaphthalene	U	ND	40.5	ug/kg	1					
2-Chlorophenol	U	ND	405	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	405	ug/kg	1					
2-Methylnaphthalene		56.7	40.5	ug/kg	1					
2-Nitrophenol	U	ND	405	ug/kg	1					
3,3'-Dichlorobenzidine	U	ND	405	ug/kg	1					
4-Bromophenylphenylether	U	ND	405	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	405	ug/kg	1					
4-Chloroaniline	U	ND	405	ug/kg	1					
4-Chlorophenylphenylether	U	ND	405	ug/kg	1					
4-Nitrophenol	U	ND	405	ug/kg	1					
Acenaphthene	U	ND	40.5	ug/kg	1					
Acenaphthylene	U	ND	40.5	ug/kg	1					
Acetophenone	U	ND	405	ug/kg	1					
Anthracene	U	ND	40.5	ug/kg	1					
Atrazine	U	ND	405	ug/kg	1					
Benzaldehyde	U	ND	405	ug/kg	1					
Benzo(a)anthracene	U	ND	40.5	ug/kg	1					
Benzo(a)pyrene	U	ND	40.5	ug/kg	1					
Benzo(b)fluoranthene	U	ND	40.5	ug/kg	1					
Benzo(ghi)perylene	U	ND	40.5	ug/kg	1					
Benzo(k)fluoranthene	U	ND	40.5	ug/kg	1					
Butylbenzylphthalate	U	ND	405	ug/kg	1					
Caprolactam	U	ND	405	ug/kg	1					
Carbazole	U	ND	40.5	ug/kg	1					
Chrysene	U	ND	40.5	ug/kg	1					

SHVM

MW 7-6-12

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID: SP-01-SS-C1B
Sample ID: 306423002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	405	ug/kg	1					
Di-n-octylphthalate	U	ND	405	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	40.5	ug/kg	1					
Dibenzofuran	U	ND	405	ug/kg	1					
Diethylphthalate	U	ND	405	ug/kg	1					
Dimethylphthalate	U	ND	405	ug/kg	1					
Diphenylamine	U	ND	405	ug/kg	1					
Fluoranthene	U	ND	40.5	ug/kg	1					
Fluorene	U	ND	40.5	ug/kg	1					
Hexachlorobenzene	U	ND	405	ug/kg	1					
Hexachlorobutadiene	U	ND	405	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	405	ug/kg	1					
Hexachloroethane	U	ND	405	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	40.5	ug/kg	1					
Isophorone	U	ND	405	ug/kg	1					
N-Nitrosodipropylamine	U	ND	405	ug/kg	1					
Naphthalene	U	ND	40.5	ug/kg	1					
Nitrobenzene	U	ND	405	ug/kg	1					
Pentachlorophenol	U	ND	405	ug/kg	1					
Phenanthrene		156	40.5	ug/kg	1					
Phenol	U	ND	405	ug/kg	1					
Pyrene	U	ND	40.5	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	405	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	405	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	405	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	405	ug/kg	1					
m,p-Cresols	U	ND	405	ug/kg	1					
m-Nitroaniline	U	ND	405	ug/kg	1					
o-Cresol	U	ND	405	ug/kg	1					
o-Nitroaniline	U	ND	405	ug/kg	1					
p-Nitroaniline	U	ND	405	ug/kg	1					

54/M

JL

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	06/21/12	2030	1223941

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

MW 7-6-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID:	SP-01-SS-C1C	Project:	ECOL00801
Sample ID:	306423003	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 10:05		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	18.9%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	407 U	ug/kg	1	JLD1	06/22/12	1323	1223942	1 S2VM
1,2,4,5-Tetrachlorobenzene	U	ND MW	407 U	ug/kg	1					
1-Methylnaphthalene		958	40.7	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	407 U	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	407	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	407	ug/kg	1					
2,4-Dichlorophenol	U	ND	407	ug/kg	1					
2,4-Dimethylphenol	U	ND	407	ug/kg	1					
2,4-Dinitrophenol	U	ND	814	ug/kg	1					
2,4-Dinitrotoluene	U	ND	407	ug/kg	1					
2,6-Dinitrotoluene	U	ND	407	ug/kg	1					
2-Chloronaphthalene	U	ND	40.7	ug/kg	1					
2-Chlorophenol	U	ND	407	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND MW	407	ug/kg	1					
2-Methylnaphthalene		377	40.7	ug/kg	1					
2-Nitrophenol	U	ND	407 U	ug/kg	1					
3,3'-Dichlorobenzidine	U	ND	407	ug/kg	1					
4-Bromophenylphenylether	U	ND	407	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	407	ug/kg	1					
4-Chloroaniline	U	ND	407	ug/kg	1					
4-Chlorophenylphenylether	U	ND	407	ug/kg	1					
4-Nitrophenol	U	ND	407	ug/kg	1					
Acenaphthene	U	ND	40.7	ug/kg	1					
Acenaphthylene	U	ND	40.7	ug/kg	1					
Acetophenone	U	ND	407	ug/kg	1					
Anthracene	U	ND	40.7	ug/kg	1					
Atrazine	U	ND	407	ug/kg	1					
Benzaldehyde	U	ND	407	ug/kg	1					
Benzo(a)anthracene	U	ND	40.7	ug/kg	1					
Benzo(a)pyrene	U	ND	40.7	ug/kg	1					
Benzo(b)fluoranthene	U	ND	40.7	ug/kg	1					
Benzo(ghi)perylene	U	ND	40.7	ug/kg	1					
Benzo(k)fluoranthene	U	ND	40.7	ug/kg	1					
Butylbenzylphthalate	U	ND	407	ug/kg	1					
Caprolactam	U	ND	407	ug/kg	1					
Carbazole	U	ND	40.7	ug/kg	1					
Chrysene	U	ND MW	40.7	ug/kg	1					

MW 7-6-12

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID: SP-01-SS-C1C
Sample ID: 306423003

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										S2VM
Di-n-butylphthalate	U	ND	407	ug/kg	1					
Di-n-octylphthalate	U	ND	407	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	40.7	ug/kg	1					
Dibenzofuran	U	ND	407	ug/kg	1					
Diethylphthalate	U	ND	407	ug/kg	1					
Dimethylphthalate	U	ND	407	ug/kg	1					
Diphenylamine	U	ND	407	ug/kg	1					
Fluoranthene	U	ND	40.7	ug/kg	1					
Fluorene	U	ND	40.7	ug/kg	1					
Hexachlorobenzene	U	ND	407	ug/kg	1					
Hexachlorobutadiene	U	ND	407	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	407	ug/kg	1					
Hexachloroethane	U	ND	407	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	40.7	ug/kg	1					
Isophorone	U	ND	407	ug/kg	1					
N-Nitrosodipropylamine	U	ND	407	ug/kg	1					
Naphthalene	U	ND	40.7	ug/kg	1					
Nitrobenzene	U	ND	407	ug/kg	1					
Pentachlorophenol	U	ND MW	407	ug/kg	1					
Phenanthrene		702	40.7	ug/kg	1					
Phenol	U	ND	407	ug/kg	1					
Pyrene	U	ND	40.7	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	407	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	407	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	407	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	407	ug/kg	1					
m,p-Cresols	U	ND	407	ug/kg	1					
m-Nitroaniline	U	ND	407	ug/kg	1					
o-Cresol	U	ND	407	ug/kg	1					
o-Nitroaniline	U	ND	407	ug/kg	1					
p-Nitroaniline	U	ND MW	407	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	06/21/12	2030	1223941

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

MW 7-6-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID: SP-01-SS-C1D
Sample ID: 306423004
Matrix: Soil
Collect Date: 20-JUN-12 11:15
Receive Date: 21-JUN-12
Collector: Client
Moisture: 22.8%

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	424	ug/kg	1	JLD1	06/22/12	1348	1223942	1
1,2,4,5-Tetrachlorobenzene	U	ND	424	ug/kg	1					
1-Methylnaphthalene		944	42.4	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	424	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	424	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	424	ug/kg	1					
2,4-Dichlorophenol	U	ND	424	ug/kg	1					
2,4-Dimethylphenol	U	ND	424	ug/kg	1					
2,4-Dinitrophenol	U	ND	848	ug/kg	1					
2,4-Dinitrotoluene	U	ND	424	ug/kg	1					
2,6-Dinitrotoluene	U	ND	424	ug/kg	1					
2-Chloronaphthalene	U	ND	42.4	ug/kg	1					
2-Chlorophenol	U	ND	424	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	424	ug/kg	1					
2-Methylnaphthalene		341	42.4	ug/kg	1					
2-Nitrophenol	U	ND	424	ug/kg	1					
3,3'-Dichlorobenzidine	U	ND	424	ug/kg	1					
4-Bromophenylphenylether	U	ND	424	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	424	ug/kg	1					
4-Chloroaniline	U	ND	424	ug/kg	1					
4-Chlorophenylphenylether	U	ND	424	ug/kg	1					
4-Nitrophenol	U	ND	424	ug/kg	1					
Acenaphthene	U	ND	42.4	ug/kg	1					
Acenaphthylene	U	ND	42.4	ug/kg	1					
Acetophenone	U	ND	424	ug/kg	1					
Anthracene	U	ND	42.4	ug/kg	1					
Atrazine	U	ND	424	ug/kg	1					
Benzaldehyde	U	ND	424	ug/kg	1					
Benzo(a)anthracene	U	ND	42.4	ug/kg	1					
Benzo(a)pyrene	U	ND	42.4	ug/kg	1					
Benzo(b)fluoranthene	U	ND	42.4	ug/kg	1					
Benzo(ghi)perylene	U	ND	42.4	ug/kg	1					
Benzo(k)fluoranthene	U	ND	42.4	ug/kg	1					
Butylbenzylphthalate	U	ND	424	ug/kg	1					
Caprolactam	U	ND	424	ug/kg	1					
Carbazole	U	ND	42.4	ug/kg	1					
Chrysene	U	ND	42.4	ug/kg	1					

S2VM

MW 7-6-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID: SP-01-SS-C1D
Sample ID: 306423004

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	424	ug/kg	1					
Di-n-octylphthalate	U	ND	424	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	42.4	ug/kg	1					
Dibenzofuran	U	ND	424	ug/kg	1					
Diethylphthalate	U	ND	424	ug/kg	1					
Dimethylphthalate	U	ND	424	ug/kg	1					
Diphenylamine	U	ND	424	ug/kg	1					
Fluoranthene	U	ND	42.4	ug/kg	1					
Fluorene	U	ND	42.4	ug/kg	1					
Hexachlorobenzene	U	ND	424	ug/kg	1					
Hexachlorobutadiene	U	ND	424	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	424	ug/kg	1					
Hexachloroethane	U	ND	424	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	42.4	ug/kg	1					
Isophorone	U	ND	424	ug/kg	1					
N-Nitrosodipropylamine	U	ND	424	ug/kg	1					
Naphthalene	U	ND	42.4	ug/kg	1					
Nitrobenzene	U	ND	424	ug/kg	1					
Pentachlorophenol	U	ND	424	ug/kg	1					
Phenanthrene		587	42.4	ug/kg	1					
Phenol	U	ND	424	ug/kg	1					
Pyrene	U	ND	42.4	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	424	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	424	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	424	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	424	ug/kg	1					
m,p-Cresols	U	ND	424	ug/kg	1					
m-Nitroaniline	U	ND	424	ug/kg	1					
o-Cresol	U	ND	424	ug/kg	1					
o-Nitroaniline	U	ND	424	ug/kg	1					
p-Nitroaniline	U	ND	424	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	06/21/12	2030	1223941

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID:	SP-01-SS-C1E	Project:	ECOL00801
Sample ID:	306423005	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 11:18		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	18.8%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	409	ug/kg	1	JLD1	06/22/12	1413	1223942	1
1,2,4,5-Tetrachlorobenzene	U	ND	409	ug/kg	1					
1-Methylnaphthalene		324	40.9	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	409	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	409	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	409	ug/kg	1					
2,4-Dichlorophenol	U	ND	409	ug/kg	1					
2,4-Dimethylphenol	U	ND	409	ug/kg	1					
2,4-Dinitrophenol	U	ND	818	ug/kg	1					
2,4-Dinitrotoluene	U	ND	409	ug/kg	1					
2,6-Dinitrotoluene	U	ND	409	ug/kg	1					
2-Chloronaphthalene	U	ND	40.9	ug/kg	1					
2-Chlorophenol	U	ND	409	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	409	ug/kg	1					
2-Methylnaphthalene		143	40.9	ug/kg	1					
2-Nitrophenol	U	ND	409	ug/kg	1					
3,3'-Dichlorobenzidine	U	ND	409	ug/kg	1					
4-Bromophenylphenylether	U	ND	409	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	409	ug/kg	1					
4-Chloroaniline	U	ND	409	ug/kg	1					
4-Chlorophenylphenylether	U	ND	409	ug/kg	1					
4-Nitrophenol	U	ND	409	ug/kg	1					
Acenaphthene	U	ND	40.9	ug/kg	1					
Acenaphthylene	U	ND	40.9	ug/kg	1					
Acetophenone	U	ND	409	ug/kg	1					
Anthracene	U	ND	40.9	ug/kg	1					
Atrazine	U	ND	409	ug/kg	1					
Benzaldehyde	U	ND	409	ug/kg	1					
Benzo(a)anthracene	U	ND	40.9	ug/kg	1					
Benzo(a)pyrene	U	ND	40.9	ug/kg	1					
Benzo(b)fluoranthene	U	ND	40.9	ug/kg	1					
Benzo(ghi)perylene	U	ND	40.9	ug/kg	1					
Benzo(k)fluoranthene	U	ND	40.9	ug/kg	1					
Butylbenzylphthalate	U	ND	409	ug/kg	1					
Caprolactam	U	ND	409	ug/kg	1					
Carbazole	U	ND	40.9	ug/kg	1					
Chrysene	U	ND	40.9	ug/kg	1					

S2VM

MW 7-6-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID: SP-01-SS-C1E
Sample ID: 306423005

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	409	ug/kg	1					
Di-n-octylphthalate	U	ND	409	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	40.9	ug/kg	1					
Dibenzofuran	U	ND	409	ug/kg	1					
Diethylphthalate	U	ND	409	ug/kg	1					
Dimethylphthalate	U	ND	409	ug/kg	1					
Diphenylamine	U	ND	409	ug/kg	1					
Fluoranthene	U	ND	40.9	ug/kg	1					
Fluorene	U	ND	40.9	ug/kg	1					
Hexachlorobenzene	U	ND	409	ug/kg	1					
Hexachlorobutadiene	U	ND	409	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	409	ug/kg	1					
Hexachloroethane	U	ND	409	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	40.9	ug/kg	1					
Isophorone	U	ND	409	ug/kg	1					
N-Nitrosodipropylamine	U	ND	409	ug/kg	1					
Naphthalene	U	ND	40.9	ug/kg	1					
Nitrobenzene	U	ND	409	ug/kg	1					
Pentachlorophenol	U	ND	409	ug/kg	1					
Phenanthrene		252	40.9	ug/kg	1					
Phenol	U	ND	409	ug/kg	1					
Pyrene	U	ND	40.9	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	409	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	409	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	409	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	409	ug/kg	1					
m,p-Cresols	U	ND	409	ug/kg	1					
m-Nitroaniline	U	ND	409	ug/kg	1					
o-Cresol	U	ND	409	ug/kg	1					
o-Nitroaniline	U	ND	409	ug/kg	1					
p-Nitroaniline	U	ND	409	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	06/21/12	2030	1223941

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

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Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID:	SP-01-SS-C1F	Project:	ECOL00801
Sample ID:	306423006	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 10:00		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	30.9%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	477	ug/kg	1	JLD1	06/22/12	1618	1223942	S2VM
1,2,4,5-Tetrachlorobenzene	U	ND	477	ug/kg	1					
1-Methylnaphthalene	U	ND	47.7	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	477	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	477	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	477	ug/kg	1					
2,4-Dichlorophenol	U	ND	477	ug/kg	1					
2,4-Dimethylphenol	U	ND	477	ug/kg	1					
2,4-Dinitrophenol	U	ND	955	ug/kg	1					
2,4-Dinitrotoluene	U	ND	477	ug/kg	1					
2,6-Dinitrotoluene	U	ND	477	ug/kg	1					
2-Chloronaphthalene	U	ND	47.7	ug/kg	1					
2-Chlorophenol	U	ND	477	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	477	ug/kg	1					
2-Methylnaphthalene	U	ND	47.7	ug/kg	1					
2-Nitrophenol	U	ND	477	ug/kg	1					
3,3'-Dichlorobenzidine	U	ND	477	ug/kg	1					
4-Bromophenylphenylether	U	ND	477	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	477	ug/kg	1					
4-Chloroaniline	U	ND	477	ug/kg	1					
4-Chlorophenylphenylether	U	ND	477	ug/kg	1					
4-Nitrophenol	U	ND	477	ug/kg	1					
Acenaphthene	U	ND	47.7	ug/kg	1					
Acenaphthylene	U	ND	47.7	ug/kg	1					
Acetophenone	U	ND	477	ug/kg	1					
Anthracene	U	ND	47.7	ug/kg	1					
Atrazine	U	ND	477	ug/kg	1					
Benzaldehyde	U	ND	477	ug/kg	1					
Benzo(a)anthracene	U	ND	47.7	ug/kg	1					
Benzo(a)pyrene	U	ND	47.7	ug/kg	1					
Benzo(b)fluoranthene	U	ND	47.7	ug/kg	1					
Benzo(ghi)perylene	U	ND	47.7	ug/kg	1					
Benzo(k)fluoranthene	U	ND	47.7	ug/kg	1					
Butylbenzylphthalate	U	ND	477	ug/kg	1					
Caprolactam	U	ND	477	ug/kg	1					
Carbazole	U	ND	47.7	ug/kg	1					
Chrysene	U	ND	47.7	ug/kg	1					

MW 7-6-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID: SP-01-SS-C1F
Sample ID: 306423006

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										SZVM
Di-n-butylphthalate	U	ND	477 U	ug/kg	1					
Di-n-octylphthalate	U	ND	477	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	47.7 JK	ug/kg	1					
Dibenzofuran	U	ND	477	ug/kg	1					
Diethylphthalate	U	ND	477	ug/kg	1					
Dimethylphthalate	U	ND	477	ug/kg	1					
Diphenylamine	U	ND	477	ug/kg	1					
Fluoranthene	U	ND	47.7	ug/kg	1					
Fluorene	U	ND	47.7	ug/kg	1					
Hexachlorobenzene	U	ND	477	ug/kg	1					
Hexachlorobutadiene	U	ND	477	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	477	ug/kg	1					
Hexachloroethane	U	ND	477	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	47.7 JK	ug/kg	1					
Isophorone	U	ND	477	ug/kg	1					
N-Nitrosodipropylamine	U	ND	477	ug/kg	1					
Naphthalene	U	ND	47.7	ug/kg	1					
Nitrobenzene	U	ND	477	ug/kg	1					
Pentachlorophenol	U	ND	477	ug/kg	1					
Phenanthrene		447	47.7	ug/kg	1					
Phenol	U	ND	477 U	ug/kg	1					
Pyrene		189	47.7	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	477	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	477 JL	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	477	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	477	ug/kg	1					
m,p-Cresols	U	ND	477	ug/kg	1					
m-Nitroaniline	U	ND	477	ug/kg	1					
o-Cresol	U	ND	477	ug/kg	1					
o-Nitroaniline	U	ND	477	ug/kg	1					
p-Nitroaniline	U	ND	477	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	06/21/12	2030	1223941

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

MW 7/6/12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID:	SP-01-SS-C1G	Project:	ECOL00801
Sample ID:	306423007	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 10:05		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	25.2%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	441 U	ug/kg	1	JLD1	06/22/12	1733	1223942	1 SZVM
1,2,4,5-Tetrachlorobenzene	U	ND MW	441 U	ug/kg	1					
1-Methylnaphthalene		190	44.1	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	441 U	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	441	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	441	ug/kg	1					
2,4-Dichlorophenol	U	ND	441	ug/kg	1					
2,4-Dimethylphenol	U	ND	441	ug/kg	1					
2,4-Dinitrophenol	U	ND	882	ug/kg	1					
2,4-Dinitrotoluene	U	ND	441	ug/kg	1					
2,6-Dinitrotoluene	U	ND	441	ug/kg	1					
2-Chloronaphthalene	U	ND	44.1	ug/kg	1					
2-Chlorophenol	U	ND	441	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND MW	441	ug/kg	1					
2-Methylnaphthalene		73.2	44.1	ug/kg	1					
2-Nitrophenol	U	ND	441 U	ug/kg	1					
3,3'-Dichlorobenzidine	U	ND	441	ug/kg	1					
4-Bromophenylphenylether	U	ND	441	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	441	ug/kg	1					
4-Chloroaniline	U	ND	441	ug/kg	1					
4-Chlorophenylphenylether	U	ND	441	ug/kg	1					
4-Nitrophenol	U	ND	441	ug/kg	1					
Acenaphthene	U	ND	44.1	ug/kg	1					
Acenaphthylene	U	ND	44.1	ug/kg	1					
Acetophenone	U	ND	441	ug/kg	1					
Anthracene	U	ND	44.1	ug/kg	1					
Atrazine	U	ND	441	ug/kg	1					
Benzaldehyde	U	ND	441	ug/kg	1					
Benzo(a)anthracene	U	ND	44.1	ug/kg	1					
Benzo(a)pyrene	U	ND	44.1 JK	ug/kg	1					
Benzo(b)fluoranthene	U	ND	44.1 JK	ug/kg	1					
Benzo(ghi)perylene	U	ND	44.1 JK	ug/kg	1					
Benzo(k)fluoranthene	U	ND	44.1 JK	ug/kg	1					
Butylbenzylphthalate	U	ND	441	ug/kg	1					
Caprolactam	U	ND	441	ug/kg	1					
Carbazole	U	ND	44.1	ug/kg	1					
Chrysene	U	ND MW	44.1	ug/kg	1					

MW 7-6-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID: SP-01-SS-C1G
Sample ID: 306423007

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										S2VM
Di-n-butylphthalate	U	ND	441 U	ug/kg	1					
Di-n-octylphthalate	U	ND	441	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	44.1 JK	ug/kg	1					
Dibenzofuran	U	ND	441	ug/kg	1					
Diethylphthalate	U	ND	441	ug/kg	1					
Dimethylphthalate	U	ND	441	ug/kg	1					
Diphenylamine	U	ND	441	ug/kg	1					
Fluoranthene	U	ND	44.1	ug/kg	1					
Fluorene		234	44.1	ug/kg	1					
Hexachlorobenzene	U	ND	441 U	ug/kg	1					
Hexachlorobutadiene	U	ND	441	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	441	ug/kg	1					
Hexachloroethane	U	ND	441	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	44.1 JK	ug/kg	1					
Isophorone	U	ND	441	ug/kg	1					
N-Nitrosodipropylamine	U	ND	441	ug/kg	1					
Naphthalene	U	ND	44.1	ug/kg	1					
Nitrobenzene	U	ND	441	ug/kg	1					
Pentachlorophenol	U	ND	441	ug/kg	1					
Phenanthrene		299	44.1	ug/kg	1					
Phenol	U	ND	441 U	ug/kg	1					
Pyrene		169	44.1	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	441 U	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	441 JL	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	441	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	441	ug/kg	1					
m,p-Cresols	U	ND	441	ug/kg	1					
m-Nitroaniline	U	ND	441	ug/kg	1					
o-Cresol	U	ND	441	ug/kg	1					
o-Nitroaniline	U	ND	441	ug/kg	1					
p-Nitroaniline	U	ND	441	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	06/21/12	2030	1223941

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

7-6-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID:	SP-01-SS-C1H	Project:	ECOL00801
Sample ID:	306423008	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 10:10		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	26.3%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	449 U	ug/kg	1	JLD1	06/22/12	1503	1223942	1 SZM
1,2,4,5-Tetrachlorobenzene	U	ND MW	449 U	ug/kg	1					
1-Methylnaphthalene		297	44.9	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	449 U	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	449	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	449	ug/kg	1					
2,4-Dichlorophenol	U	ND	449	ug/kg	1					
2,4-Dimethylphenol	U	ND	449	ug/kg	1					
2,4-Dinitrophenol	U	ND	898	ug/kg	1					
2,4-Dinitrotoluene	U	ND	449	ug/kg	1					
2,6-Dinitrotoluene	U	ND	449	ug/kg	1					
2-Chloronaphthalene	U	ND	44.9	ug/kg	1					
2-Chlorophenol	U	ND	449	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND MW	449	ug/kg	1					
2-Methylnaphthalene		115	44.9	ug/kg	1					
2-Nitrophenol	U	ND	449 U	ug/kg	1					
3,3'-Dichlorobenzidine	U	ND	449	ug/kg	1					
4-Bromophenylphenylether	U	ND	449	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	449	ug/kg	1					
4-Chloroaniline	U	ND	449	ug/kg	1					
4-Chlorophenylphenylether	U	ND	449	ug/kg	1					
4-Nitrophenol	U	ND	449	ug/kg	1					
Acenaphthene	U	ND	44.9	ug/kg	1					
Acenaphthylene	U	ND	44.9	ug/kg	1					
Acetophenone	U	ND	449	ug/kg	1					
Anthracene	U	ND	44.9	ug/kg	1					
Atrazine	U	ND	449	ug/kg	1					
Benzaldehyde	U	ND	449	ug/kg	1					
Benzo(a)anthracene	U	ND	44.9	ug/kg	1					
Benzo(a)pyrene	U	ND	44.9	ug/kg	1					
Benzo(b)fluoranthene	U	ND	44.9	ug/kg	1					
Benzo(ghi)perylene	U	ND	44.9	ug/kg	1					
Benzo(k)fluoranthene	U	ND	44.9	ug/kg	1					
Butylbenzylphthalate	U	ND	449	ug/kg	1					
Caprolactam	U	ND	449	ug/kg	1					
Carbazole	U	ND	44.9	ug/kg	1					
Chrysene	U	ND MW	44.9	ug/kg	1					

MW 7-6-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID: SP-01-SS-C1H
Sample ID: 306423008

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	449	ug/kg	1					
Di-n-octylphthalate	U	ND	449	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	44.9	ug/kg	1					
Dibenzofuran	U	ND	449	ug/kg	1					
Diethylphthalate	U	ND	449	ug/kg	1					
Dimethylphthalate	U	ND	449	ug/kg	1					
Diphenylamine	U	ND	449	ug/kg	1					
Fluoranthene	U	ND	44.9	ug/kg	1					
Fluorene	U	ND	44.9	ug/kg	1					
Hexachlorobenzene	U	ND	449	ug/kg	1					
Hexachlorobutadiene	U	ND	449	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	449	ug/kg	1					
Hexachloroethane	U	ND	449	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	44.9	ug/kg	1					
Isophorone	U	ND	449	ug/kg	1					
N-Nitrosodipropylamine	U	ND	449	ug/kg	1					
Naphthalene	U	ND	44.9	ug/kg	1					
Nitrobenzene	U	ND	449	ug/kg	1					
Pentachlorophenol	U	ND	449	ug/kg	1					
Phenanthrene		338	44.9	ug/kg	1					
Phenol	U	ND	449	ug/kg	1					
Pyrene		150	44.9	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	449	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	449	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	449	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	449	ug/kg	1					
m,p-Cresols	U	ND	449	ug/kg	1					
m-Nitroaniline	U	ND	449	ug/kg	1					
o-Cresol	U	ND	449	ug/kg	1					
o-Nitroaniline	U	ND	449	ug/kg	1					
p-Nitroaniline	U	ND	449	ug/kg	1					

52VM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	06/21/12	2030	1223941

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

MW 7/6/12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID:	SP-01-SS-C1I	Project:	ECOL00801
Sample ID:	306423009	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 10:55		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	21.6%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	424 U	ug/kg	1	JLD1	06/22/12	1528	1223942	1 SZVM
1,2,4,5-Tetrachlorobenzene	U	ND MW	424 U	ug/kg	1					
1-Methylnaphthalene		331	42.4	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	424 U	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	424	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	424	ug/kg	1					
2,4-Dichlorophenol	U	ND	424	ug/kg	1					
2,4-Dimethylphenol	U	ND	424	ug/kg	1					
2,4-Dinitrophenol	U	ND	848	ug/kg	1					
2,4-Dinitrotoluene	U	ND	424	ug/kg	1					
2,6-Dinitrotoluene	U	ND	424	ug/kg	1					
2-Chloronaphthalene	U	ND	42.4	ug/kg	1					
2-Chlorophenol	U	ND	424	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND MW	424	ug/kg	1					
2-Methylnaphthalene		126	42.4	ug/kg	1					
2-Nitrophenol	U	ND	424 U	ug/kg	1					
3,3'-Dichlorobenzidine	U	ND	424	ug/kg	1					
4-Bromophenylphenylether	U	ND	424	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	424	ug/kg	1					
4-Chloroaniline	U	ND	424	ug/kg	1					
4-Chlorophenylphenylether	U	ND	424	ug/kg	1					
4-Nitrophenol	U	ND	424	ug/kg	1					
Acenaphthene	U	ND	42.4	ug/kg	1					
Acenaphthylene	U	ND	42.4	ug/kg	1					
Acetophenone	U	ND	424	ug/kg	1					
Anthracene	U	ND	42.4	ug/kg	1					
Atrazine	U	ND	424	ug/kg	1					
Benzaldehyde	U	ND	424	ug/kg	1					
Benzo(a)anthracene	U	ND	42.4	ug/kg	1					
Benzo(a)pyrene	U	ND	42.4	ug/kg	1					
Benzo(b)fluoranthene	U	ND	42.4	ug/kg	1					
Benzo(ghi)perylene	U	ND	42.4	ug/kg	1					
Benzo(k)fluoranthene	U	ND	42.4	ug/kg	1					
Butylbenzylphthalate	U	ND	424	ug/kg	1					
Caprolactam	U	ND	424	ug/kg	1					
Carbazole	U	ND	42.4	ug/kg	1					
Chrysene	U	ND MW	42.4	ug/kg	1					

MW 7-6-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID: SP-01-SS-C1I
Sample ID: 306423009

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	424	ug/kg	1					
Di-n-octylphthalate	U	ND	424	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	42.4	ug/kg	1					
Dibenzofuran	U	ND	424	ug/kg	1					
Diethylphthalate	U	ND	424	ug/kg	1					
Dimethylphthalate	U	ND	424	ug/kg	1					
Diphenylamine	U	ND	424	ug/kg	1					
Fluoranthene		46.6	42.4	ug/kg	1					
Fluorene	U	ND	42.4	ug/kg	1					
Hexachlorobenzene	U	ND	424	ug/kg	1					
Hexachlorobutadiene	U	ND	424	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	424	ug/kg	1					
Hexachloroethane	U	ND	424	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	42.4	ug/kg	1					
Isophorone	U	ND	424	ug/kg	1					
N-Nitrosodipropylamine	U	ND	424	ug/kg	1					
Naphthalene	U	ND	42.4	ug/kg	1					
Nitrobenzene	U	ND	424	ug/kg	1					
Pentachlorophenol	U	ND	424	ug/kg	1					
Phenanthrene		242	42.4	ug/kg	1					
Phenol	U	ND	424	ug/kg	1					
Pyrene		124	42.4	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	424	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	424	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	424	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	424	ug/kg	1					
m,p-Cresols	U	ND	424	ug/kg	1					
m-Nitroaniline	U	ND	424	ug/kg	1					
o-Cresol	U	ND	424	ug/kg	1					
o-Nitroaniline	U	ND	424	ug/kg	1					
p-Nitroaniline	U	ND	424	ug/kg	1					

S2VM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	06/21/12	2030	1223941

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

MW 7-6-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID:	SP-01-SS-C1J	Project:	ECOL00801
Sample ID:	306423010	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 11:00		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	20.2%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	412	ug/kg	1	JLD1	06/22/12	1553	1223942	1
1,2,4,5-Tetrachlorobenzene	U	ND	412	ug/kg	1					
1-Methylnaphthalene		496	41.2	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	412	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	412	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	412	ug/kg	1					
2,4-Dichlorophenol	U	ND	412	ug/kg	1					
2,4-Dimethylphenol	U	ND	412	ug/kg	1					
2,4-Dinitrophenol	U	ND	824	ug/kg	1					
2,4-Dinitrotoluene	U	ND	412	ug/kg	1					
2,6-Dinitrotoluene	U	ND	412	ug/kg	1					
2-Chloronaphthalene	U	ND	41.2	ug/kg	1					
2-Chlorophenol	U	ND	412	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	412	ug/kg	1					
2-Methylnaphthalene		176	41.2	ug/kg	1					
2-Nitrophenol	U	ND	412	ug/kg	1					
3,3'-Dichlorobenzidine	U	ND	412	ug/kg	1					
4-Bromophenylphenylether	U	ND	412	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	412	ug/kg	1					
4-Chloroaniline	U	ND	412	ug/kg	1					
4-Chlorophenylphenylether	U	ND	412	ug/kg	1					
4-Nitrophenol	U	ND	412	ug/kg	1					
Acenaphthene	U	ND	41.2	ug/kg	1					
Acenaphthylene	U	ND	41.2	ug/kg	1					
Acetophenone	U	ND	412	ug/kg	1					
Anthracene	U	ND	41.2	ug/kg	1					
Atrazine	U	ND	412	ug/kg	1					
Benzaldehyde	U	ND	412	ug/kg	1					
Benzo(a)anthracene	U	ND	41.2	ug/kg	1					
Benzo(a)pyrene	U	ND	41.2	ug/kg	1					
Benzo(b)fluoranthene	U	ND	41.2	ug/kg	1					
Benzo(ghi)perylene	U	ND	41.2	ug/kg	1					
Benzo(k)fluoranthene	U	ND	41.2	ug/kg	1					
Butylbenzylphthalate	U	ND	412	ug/kg	1					
Caprolactam	U	ND	412	ug/kg	1					
Carbazole	U	ND	41.2	ug/kg	1					
Chrysene	U	ND	41.2	ug/kg	1					

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 23, 2012

Client Sample ID: SP-01-SS-C1J
Sample ID: 306423010

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	412	ug/kg	1					
Di-n-octylphthalate	U	ND	412	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	41.2	ug/kg	1					
Dibenzofuran	U	ND	412	ug/kg	1					
Diethylphthalate	U	ND	412	ug/kg	1					
Dimethylphthalate	U	ND	412	ug/kg	1					
Diphenylamine	U	ND	412	ug/kg	1					
Fluoranthene	U	ND	41.2	ug/kg	1					
Fluorene	U	ND	41.2	ug/kg	1					
Hexachlorobenzene	U	ND	412	ug/kg	1					
Hexachlorobutadiene	U	ND	412	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	412	ug/kg	1					
Hexachloroethane	U	ND	412	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	41.2	ug/kg	1					
Isophorone	U	ND	412	ug/kg	1					
N-Nitrosodipropylamine	U	ND	412	ug/kg	1					
Naphthalene	U	ND	41.2	ug/kg	1					
Nitrobenzene	U	ND	412	ug/kg	1					
Pentachlorophenol	U	ND	412	ug/kg	1					
Phenanthrene		363	41.2	ug/kg	1					
Phenol	U	ND	412	ug/kg	1					
Pyrene	U	ND	41.2	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	412	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	412	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	412	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	412	ug/kg	1					
m,p-Cresols	U	ND	412	ug/kg	1					
m-Nitroaniline	U	ND	412	ug/kg	1					
o-Cresol	U	ND	412	ug/kg	1					
o-Nitroaniline	U	ND	412	ug/kg	1					
p-Nitroaniline	U	ND	412	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	06/21/12	2030	1223941

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: July 6, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-08

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of ten soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Volatile organic compound (VOC) analysis (EPA Method 8260) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 (S2VM) and/or 4 Data Validation Manual Process (S4VM).

The samples were numbered:

12060101	12060102	12060103	12060104	12060105
12060106	12060107	12060108	12060109	12060110

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on June 20, 2012, and were analyzed by June 22, 2012, therefore meeting QC criteria of less than 14 days between collection and analysis for soil and preserved water samples.

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Satisfactory.

All average Relative Response Factors (RRFs) were greater than the QC limit of 0.050 except 2-butanone in the June 15 initial calibration; associated sample quantitation limits (samples 12060106 through 12060110) were rejected (R). All Relative Standard Deviations (RSDs) were within the QC limits.

4. Continuing Calibration: Satisfactory.

All RRFs were greater than the QC limit of 0.050 except 2-butanone associated with the same samples listed in the initial calibration outliers; no additional actions were required based on this outlier. All % differences were less than the QC limit of 25% except 2-butanone, 4-methylphenol, 4-nitrophenol, and 4-chloro-3-methylphenol with increasing response factors in one or more continuing calibrations. No actions were taken based on these outliers as they were not detected in any sample.

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

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

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

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Acceptable.

All internal standards were within $\pm$ 30 seconds of the continuing calibration internal standard retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 22, 2012

Client Sample ID:	SP-01-SS-C1A	Project:	ECOL00801
Sample ID:	306423001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 09:45		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	25.7%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	U	ND	125	ug/kg	50	RXY1	06/22/12	0818	1224013	1 S2V/M
1,1,2,2-Tetrachloroethane	U	ND	125	ug/kg	50					
1,1,2-Trichloroethane	U	ND	125	ug/kg	50					
1,1-Dichloroethane	U	ND	125	ug/kg	50					
1,1-Dichloroethylene	U	ND	125	ug/kg	50					
1,2-Dichloroethane	U	ND	125	ug/kg	50					
1,2-Dichloroethylene (total)	U	ND	249	ug/kg	50					
1,2-Dichloropropane	U	ND	125	ug/kg	50					
2-Butanone	U	ND	623	ug/kg	50					
2-Hexanone	U	ND	623	ug/kg	50					
4-Methyl-2-pentanone	U	ND	623	ug/kg	50					
Acetone	U	ND	623	ug/kg	50					
Benzene	U	ND	125	ug/kg	50					
Bromodichloromethane	U	ND	125	ug/kg	50					
Bromoform	U	ND	125	ug/kg	50					
Bromomethane	U	ND	125	ug/kg	50					
Carbon disulfide	U	ND	623	ug/kg	50					
Carbon tetrachloride	U	ND	125	ug/kg	50					
Chlorobenzene	U	ND	125	ug/kg	50					
Chloroethane	U	ND	125	ug/kg	50					
Chloroform	U	ND	125	ug/kg	50					
Chloromethane	U	ND	125	ug/kg	50					
Dibromochloromethane	U	ND	125	ug/kg	50					
Ethylbenzene	U	ND	125	ug/kg	50					
Methylene chloride	U	ND	623	ug/kg	50					
Styrene	U	ND	125	ug/kg	50					
Tetrachloroethylene	U	ND	125	ug/kg	50					
Toluene	U	ND	125	ug/kg	50					
Trichloroethylene	U	ND	125	ug/kg	50					
Vinyl acetate	U	ND	623	ug/kg	50					
Vinyl chloride	U	ND	125	ug/kg	50					
Xylenes (total)	U	ND	374	ug/kg	50					
cis-1,2-Dichloroethylene	U	ND	125	ug/kg	50					
cis-1,3-Dichloropropylene	U	ND	125	ug/kg	50					
m,p-Xylenes	U	ND	249	ug/kg	50					
o-Xylene	U	ND	125	ug/kg	50					
tert-Butyl methyl ether	U	ND	125	ug/kg	50					

MW

MW 7-6-12

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 22, 2012

Client Sample ID: SP-01-SS-C1A
Sample ID: 306423001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
trans-1,2-Dichloroethylene	U	ND	125 U	ug/kg	50					
trans-1,3-Dichloropropylene	U	ND	125 U	ug/kg	50					

SZVM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	RXY1	06/20/12	0945	1224012

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	6670 ug/kg	50.0	107	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	7200 ug/kg	50.0	116	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	6230 ug/kg	50.0	100	(80%-120%)

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013

1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

in MSD:
Bromomethane recovered at 27%. The limits are limits 57%-129%.

2. The RPD recovery for Bromomethane between the matrix spike and duplicate were 20.8%.

The limits are 0%-20%.

MW 7-6-12

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 22, 2012

Client Sample ID:	SP-01-SS-C1B	Project:	ECOL00801
Sample ID:	306423002	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 10:00		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	18.6%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	U	ND	118 U	ug/kg	50	RXY1	06/22/12	0844	1224013	1 S4VM
1,1,2,2-Tetrachloroethane	U	ND	118	ug/kg	50					
1,1,2-Trichloroethane	U	ND	118	ug/kg	50					
1,1-Dichloroethane	U	ND	118	ug/kg	50					
1,1-Dichloroethylene	U	ND	118	ug/kg	50					
1,2-Dichloroethane	U	ND	118	ug/kg	50					
1,2-Dichloroethylene (total)	U	ND	236	ug/kg	50					
1,2-Dichloropropane	U	ND	118	ug/kg	50					
2-Butanone	U	ND	591	ug/kg	50					
2-Hexanone	U	ND	591	ug/kg	50					
4-Methyl-2-pentanone	U	ND	591	ug/kg	50					
Acetone	U	ND	591	ug/kg	50					
Benzene	U	ND	118	ug/kg	50					
Bromodichloromethane	U	ND	118	ug/kg	50					
Bromoform	U	ND	118	ug/kg	50					
Bromomethane	U	ND	118	ug/kg	50					
Carbon disulfide	U	ND	591	ug/kg	50					
Carbon tetrachloride	U	ND	118	ug/kg	50					
Chlorobenzene	U	ND	118	ug/kg	50					
Chloroethane	U	ND	118	ug/kg	50					
Chloroform	U	ND	118	ug/kg	50					
Chloromethane	U	ND	118	ug/kg	50					
Dibromochloromethane	U	ND	118	ug/kg	50					
Ethylbenzene	U	ND	118	ug/kg	50					
Methylene chloride	U	ND	591	ug/kg	50					
Styrene	U	ND	118	ug/kg	50					
Tetrachloroethylene	U	ND	118	ug/kg	50					
Toluene	U	ND	118	ug/kg	50					
Trichloroethylene	U	ND	118	ug/kg	50					
Vinyl acetate	U	ND	591	ug/kg	50					
Vinyl chloride	U	ND	118	ug/kg	50					
Xylenes (total)	U	ND	354	ug/kg	50					
cis-1,2-Dichloroethylene	U	ND	118	ug/kg	50					
cis-1,3-Dichloropropylene	U	ND	118	ug/kg	50					
m,p-Xylenes	U	ND	236	ug/kg	50					
o-Xylene	U	ND	118	ug/kg	50					
tert-Butyl methyl ether	U	ND MW	118	ug/kg	50					

MW 7-6-12

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Project: **Project No. 4500000347**

Report Date: June 22, 2012

Client Sample ID: SP-01-SS-C1B
Sample ID: 306423002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
trans-1,2-Dichloroethylene	U	ND	118	ug/kg	50					
trans-1,3-Dichloropropylene	U	ND	118	ug/kg	50					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	RXY1	06/20/12	1000	1224012

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	6310 ug/kg	50.0	107	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	6350 ug/kg	50.0	107	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	5750 ug/kg	50.0	97.3	(80%-120%)

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013

1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

in MSD:
Bromomethane recovered at 27%. The limits are limits 57%-129%.

2. The RPD recovery for Bromomethane between the matrix spike and duplicate were 20.8%.

The limits are 0%-20%.

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Project: **Project No. 4500000347**

Report Date: June 22, 2012

Client Sample ID:	SP-01-SS-C1C	Project:	ECOL00801
Sample ID:	306423003	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 10:05		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	18.9%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	U	ND	119	ug/kg	50	RXY1	06/22/12	0911	1224013	1
1,1,2,2-Tetrachloroethane	U	ND	119	ug/kg	50					
1,1,2-Trichloroethane	U	ND	119	ug/kg	50					
1,1-Dichloroethane	U	ND	119	ug/kg	50					
1,1-Dichloroethylene	U	ND	119	ug/kg	50					
1,2-Dichloroethane	U	ND	119	ug/kg	50					
1,2-Dichloroethylene (total)	U	ND	237	ug/kg	50					
1,2-Dichloropropane	U	ND	119	ug/kg	50					
2-Butanone	U	ND	593	ug/kg	50					
2-Hexanone	U	ND	593	ug/kg	50					
4-Methyl-2-pentanone	U	ND	593	ug/kg	50					
Acetone	U	ND	593	ug/kg	50					
Benzene	U	ND	119	ug/kg	50					
Bromodichloromethane	U	ND	119	ug/kg	50					
Bromoform	U	ND	119	ug/kg	50					
Bromomethane	U	ND	119	ug/kg	50					
Carbon disulfide	U	ND	593	ug/kg	50					
Carbon tetrachloride	U	ND	119	ug/kg	50					
Chlorobenzene	U	ND	119	ug/kg	50					
Chloroethane	U	ND	119	ug/kg	50					
Chloroform	U	ND	119	ug/kg	50					
Chloromethane	U	ND	119	ug/kg	50					
Dibromochloromethane	U	ND	119	ug/kg	50					
Ethylbenzene	U	ND	119	ug/kg	50					
Methylene chloride	U	ND	593	ug/kg	50					
Styrene	U	ND	119	ug/kg	50					
Tetrachloroethylene	U	ND	119	ug/kg	50					
Toluene	U	ND	119	ug/kg	50					
Trichloroethylene	U	ND	119	ug/kg	50					
Vinyl acetate	U	ND	593	ug/kg	50					
Vinyl chloride	U	ND	119	ug/kg	50					
Xylenes (total)	U	ND	356	ug/kg	50					
cis-1,2-Dichloroethylene	U	ND	119	ug/kg	50					
cis-1,3-Dichloropropylene	U	ND	119	ug/kg	50					
m,p-Xylenes	U	ND	237	ug/kg	50					
o-Xylene	U	ND	119	ug/kg	50					
tert-Butyl methyl ether	U	ND	119	ug/kg	50					

S2VM

MW 7-6-12

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 22, 2012

Client Sample ID: SP-01-SS-C1C
Sample ID: 306423003

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
trans-1,2-Dichloroethylene	U	ND	119	ug/kg	50					
trans-1,3-Dichloropropylene	U	ND	119	ug/kg	50					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	RXY1	06/20/12	1005	1224012

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	5840 ug/kg	50.0	98.6	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	6280 ug/kg	50.0	106	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	5620 ug/kg	50.0	94.8	(80%-120%)

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013

1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

in MSD:
Bromomethane recovered at 27%. The limits are limits 57%-129%.

2. The RPD recovery for Bromomethane between the matrix spike and duplicate were 20.8%.

The limits are 0%-20%.

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 22, 2012

Client Sample ID:	SP-01-SS-C1D	Project:	ECOL00801
Sample ID:	306423004	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 11:15		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	22.8%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	U	ND	122	ug/kg	50	RXY1	06/22/12	0937	1224013	1
1,1,2,2-Tetrachloroethane	U	ND	122	ug/kg	50					
1,1,2-Trichloroethane	U	ND	122	ug/kg	50					
1,1-Dichloroethane	U	ND	122	ug/kg	50					
1,1-Dichloroethylene	U	ND	122	ug/kg	50					
1,2-Dichloroethane	U	ND	122	ug/kg	50					
1,2-Dichloroethylene (total)	U	ND	244	ug/kg	50					
1,2-Dichloropropane	U	ND	122	ug/kg	50					
2-Butanone	U	ND	611	ug/kg	50					
2-Hexanone	U	ND	611	ug/kg	50					
4-Methyl-2-pentanone	U	ND	611	ug/kg	50					
Acetone	U	ND	611	ug/kg	50					
Benzene	U	ND	122	ug/kg	50					
Bromodichloromethane	U	ND	122	ug/kg	50					
Bromoform	U	ND	122	ug/kg	50					
Bromomethane	U	ND	122	ug/kg	50					
Carbon disulfide	U	ND	611	ug/kg	50					
Carbon tetrachloride	U	ND	122	ug/kg	50					
Chlorobenzene	U	ND	122	ug/kg	50					
Chloroethane	U	ND	122	ug/kg	50					
Chloroform	U	ND	122	ug/kg	50					
Chloromethane	U	ND	122	ug/kg	50					
Dibromochloromethane	U	ND	122	ug/kg	50					
Ethylbenzene	U	ND	122	ug/kg	50					
Methylene chloride	U	ND	611	ug/kg	50					
Styrene	U	ND	122	ug/kg	50					
Tetrachloroethylene	U	ND	122	ug/kg	50					
Toluene	U	ND	122	ug/kg	50					
Trichloroethylene	U	ND	122	ug/kg	50					
Vinyl acetate	U	ND	611	ug/kg	50					
Vinyl chloride	U	ND	122	ug/kg	50					
Xylenes (total)	U	ND	366	ug/kg	50					
cis-1,2-Dichloroethylene	U	ND	122	ug/kg	50					
cis-1,3-Dichloropropylene	U	ND	122	ug/kg	50					
m,p-Xylenes	U	ND	244	ug/kg	50					
o-Xylene	U	ND	122	ug/kg	50					
tert-Butyl methyl ether	U	ND	122	ug/kg	50					

54VM

MW 7-6-12

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 22, 2012

Client Sample ID: SP-01-SS-C1D
Sample ID: 306423004

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
trans-1,2-Dichloroethylene	~~U~~	ND	122 U	ug/kg	50					
trans-1,3-Dichloropropylene	U	~~ND~~	122 U	ug/kg	50					

SHM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	RXY1	06/20/12	1115	1224012

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	6190 ug/kg	50.0	101	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	6380 ug/kg	50.0	104	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	5740 ug/kg	50.0	94.0	(80%-120%)

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013

1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

in MSD:
Bromomethane recovered at 27%. The limits are limits 57%-129%.

2. The RPD recovery for Bromomethane between the matrix spike and duplicate were 20.8%.

The limits are 0%-20%.

MW 7-6-12

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 22, 2012

Client Sample ID:	SP-01-SS-C1E	Project:	ECOL00801
Sample ID:	306423005	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 11:18		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	18.8%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	U	ND	112	ug/kg	50	RXY1	06/22/12	1003	1224013	1
1,1,2,2-Tetrachloroethane	U	ND	112	ug/kg	50					
1,1,2-Trichloroethane	U	ND	112	ug/kg	50					
1,1-Dichloroethane	U	ND	112	ug/kg	50					
1,1-Dichloroethylene	U	ND	112	ug/kg	50					
1,2-Dichloroethane	U	ND	112	ug/kg	50					
1,2-Dichloroethylene (total)	U	ND	224	ug/kg	50					
1,2-Dichloropropane	U	ND	112	ug/kg	50					
2-Butanone	U	ND	560	ug/kg	50					
2-Hexanone	U	ND	560	ug/kg	50					
4-Methyl-2-pentanone	U	ND	560	ug/kg	50					
Acetone	U	ND	560	ug/kg	50					
Benzene	U	ND	112	ug/kg	50					
Bromodichloromethane	U	ND	112	ug/kg	50					
Bromoform	U	ND	112	ug/kg	50					
Bromomethane	U	ND	112	ug/kg	50					
Carbon disulfide	U	ND	560	ug/kg	50					
Carbon tetrachloride	U	ND	112	ug/kg	50					
Chlorobenzene	U	ND	112	ug/kg	50					
Chloroethane	U	ND	112	ug/kg	50					
Chloroform	U	ND	112	ug/kg	50					
Chloromethane	U	ND	112	ug/kg	50					
Dibromochloromethane	U	ND	112	ug/kg	50					
Ethylbenzene	U	ND	112	ug/kg	50					
Methylene chloride	U	ND	560	ug/kg	50					
Styrene	U	ND	112	ug/kg	50					
Tetrachloroethylene	U	ND	112	ug/kg	50					
Toluene	U	ND	112	ug/kg	50					
Trichloroethylene	U	ND	112	ug/kg	50					
Vinyl acetate	U	ND	560	ug/kg	50					
Vinyl chloride	U	ND	112	ug/kg	50					
Xylenes (total)	U	ND	336	ug/kg	50					
cis-1,2-Dichloroethylene	U	ND	112	ug/kg	50					
cis-1,3-Dichloropropylene	U	ND	112	ug/kg	50					
m,p-Xylenes	U	ND	224	ug/kg	50					
o-Xylene	U	ND	112	ug/kg	50					
tert-Butyl methyl ether	U	ND	112	ug/kg	50					

U

S2VM

MM

MM 7-6-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 22, 2012

Client Sample ID: SP-01-SS-C1E
Sample ID: 306423005

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
trans-1,2-Dichloroethylene	~~U~~	ND	112	ug/kg	50					
trans-1,3-Dichloropropylene	U	~~ND~~	112	ug/kg	50					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	RXY1	06/20/12	1118	1224012

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	5430 ug/kg	50.0	97.1	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	5660 ug/kg	50.0	101	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	5230 ug/kg	50.0	93.4	(80%-120%)

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013

1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

in MSD:
Bromomethane recovered at 27%. The limits are limits 57%-129%.

2. The RPD recovery for Bromomethane between the matrix spike and duplicate were 20.8%.

The limits are 0%-20%.

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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 22, 2012

Client Sample ID:	SP-01-SS-C1F	Project:	ECOL00801
Sample ID:	306423006	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 10:00		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	30.9%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	U	ND	129	ug/kg	50	CDS1	06/22/12	1001	1224013	1
1,1,2,2-Tetrachloroethane	U	ND	129	ug/kg	50					
1,1,2-Trichloroethane	U	ND	129	ug/kg	50					
1,1-Dichloroethane	U	ND	129	ug/kg	50					
1,1-Dichloroethylene	U	ND	129	ug/kg	50					
1,2-Dichloroethane	U	ND	129	ug/kg	50					
1,2-Dichloroethylene (total)	U	ND	258	ug/kg	50					
1,2-Dichloropropane	U	ND	129	ug/kg	50					
2-Butanone	~~U~~	~~ND~~	~~646~~	~~ug/kg~~	~~50~~					
2-Hexanone	U	ND	646	ug/kg	50					
4-Methyl-2-pentanone	U	ND	646	ug/kg	50					
Acetone	U	ND	646	ug/kg	50					
Benzene	U	ND	129	ug/kg	50					
Bromodichloromethane	U	ND	129	ug/kg	50					
Bromoform	U	ND	129	ug/kg	50					
Bromomethane	U	ND	129	ug/kg	50					
Carbon disulfide	U	ND	646	ug/kg	50					
Carbon tetrachloride	U	ND	129	ug/kg	50					
Chlorobenzene	U	ND	129	ug/kg	50					
Chloroethane	U	ND	129	ug/kg	50					
Chloroform	U	ND	129	ug/kg	50					
Chloromethane	U	ND	129	ug/kg	50					
Dibromochloromethane	U	ND	129	ug/kg	50					
Ethylbenzene	U	ND	129	ug/kg	50					
Methylene chloride	U	ND	646	ug/kg	50					
Styrene	U	ND	129	ug/kg	50					
Tetrachloroethylene	U	ND	129	ug/kg	50					
Toluene	U	ND	129	ug/kg	50					
Trichloroethylene	U	ND	129	ug/kg	50					
Vinyl acetate	U	ND	646	ug/kg	50					
Vinyl chloride	U	ND	129	ug/kg	50					
Xylenes (total)	U	ND	388	ug/kg	50					
cis-1,2-Dichloroethylene	U	ND	129	ug/kg	50					
cis-1,3-Dichloropropylene	U	ND	129	ug/kg	50					
m,p-Xylenes	U	ND	258	ug/kg	50					
o-Xylene	U	ND	129	ug/kg	50					
tert-Butyl methyl ether	U	ND	129	ug/kg	50					

S2VM

MW 7-6-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 22, 2012

Client Sample ID: SP-01-SS-C1F
Sample ID: 306423006

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
trans-1,2-Dichloroethylene	U	ND	129	ug/kg	50					
trans-1,3-Dichloropropylene	U	ND	129	ug/kg	50					

S2 YM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	RXY1	06/20/12	1000	1224012

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	6180 ug/kg	50.0	95.7	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	6490 ug/kg	50.0	100	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	6490 ug/kg	50.0	100	(80%-120%)

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013

1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

in MSD:
Bromomethane recovered at 27%. The limits are limits 57%-129%.

2. The RPD recovery for Bromomethane between the matrix spike and duplicate were 20.8%.

The limits are 0%-20%.

MW 7-6-12

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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 22, 2012

Client Sample ID:	SP-01-SS-C1G	Project:	ECOL00801
Sample ID:	306423007	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 10:05		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	25.2%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	U	ND	126	ug/kg	50	CDS1	06/22/12	1127	1224013	1
1,1,2,2-Tetrachloroethane	U	ND	126	ug/kg	50					
1,1,2-Trichloroethane	U	ND	126	ug/kg	50					
1,1-Dichloroethane	U	ND	126	ug/kg	50					
1,1-Dichloroethylene	U	ND	126	ug/kg	50					
1,2-Dichloroethane	U	ND	126	ug/kg	50					
1,2-Dichloroethylene (total)	U	ND	252	ug/kg	50					
1,2-Dichloropropane	U	ND	126	ug/kg	50					
2-Butanone	U	ND	631	ug/kg	50					
2-Hexanone	U	ND	631	ug/kg	50					
4-Methyl-2-pentanone	U	ND	631	ug/kg	50					
Acetone	U	ND	631	ug/kg	50					
Benzene	U	ND	126	ug/kg	50					
Bromodichloromethane	U	ND	126	ug/kg	50					
Bromoform	U	ND	126	ug/kg	50					
Bromomethane	U	ND	126	ug/kg	50					
Carbon disulfide	U	ND	631	ug/kg	50					
Carbon tetrachloride	U	ND	126	ug/kg	50					
Chlorobenzene	U	ND	126	ug/kg	50					
Chloroethane	U	ND	126	ug/kg	50					
Chloroform	U	ND	126	ug/kg	50					
Chloromethane	U	ND	126	ug/kg	50					
Dibromochloromethane	U	ND	126	ug/kg	50					
Ethylbenzene	U	ND	126	ug/kg	50					
Methylene chloride	U	ND	631	ug/kg	50					
Styrene	U	ND	126	ug/kg	50					
Tetrachloroethylene	U	ND	126	ug/kg	50					
Toluene	U	ND	126	ug/kg	50					
Trichloroethylene	U	ND	126	ug/kg	50					
Vinyl acetate	U	ND	631	ug/kg	50					
Vinyl chloride	U	ND	126	ug/kg	50					
Xylenes (total)	U	ND	379	ug/kg	50					
cis-1,2-Dichloroethylene	U	ND	126	ug/kg	50					
cis-1,3-Dichloropropylene	U	ND	126	ug/kg	50					
m,p-Xylenes	U	ND	252	ug/kg	50					
o-Xylene	U	ND	126	ug/kg	50					
tert-Butyl methyl ether	U	ND	126	ug/kg	50					

MW 7-6-12

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 22, 2012

Client Sample ID: SP-01-SS-C1G
Sample ID: 306423007

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
trans-1,2-Dichloroethylene	~~U~~	ND	126 U	ug/kg	50					
trans-1,3-Dichloropropylene	U	~~ND~~	126 U	ug/kg	50					

SZVM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	RXY1	06/20/12	1005	1224012

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	6080 ug/kg	50.0	96.4	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	6270 ug/kg	50.0	99.4	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	6240 ug/kg	50.0	98.9	(80%-120%)

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013

1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

in MSD:
Bromomethane recovered at 27%. The limits are limits 57%-129%.

2. The RPD recovery for Bromomethane between the matrix spike and duplicate were 20.8%.

The limits are 0%-20%.

MW 7-6-12

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Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 22, 2012

Client Sample ID:	SP-01-SS-C1H	Project:	ECOL00801
Sample ID:	306423008	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 10:10		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	26.3%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	U	ND	123	ug/kg	50	CDS1	06/22/12	1156	1224013	1
1,1,2,2-Tetrachloroethane	U	ND	123	ug/kg	50					
1,1,2-Trichloroethane	U	ND	123	ug/kg	50					
1,1-Dichloroethane	U	ND	123	ug/kg	50					
1,1-Dichloroethylene	U	ND	123	ug/kg	50					
1,2-Dichloroethane	U	ND	123	ug/kg	50					
1,2-Dichloroethylene (total)	U	ND	247	ug/kg	50					
1,2-Dichloropropane	U	ND	123	ug/kg	50					
2-Butanone	U	ND	617	ug/kg	50					
2-Hexanone	U	ND	617	ug/kg	50					
4-Methyl-2-pentanone	U	ND	617	ug/kg	50					
Acetone	U	ND	617	ug/kg	50					
Benzene	U	ND	123	ug/kg	50					
Bromodichloromethane	U	ND	123	ug/kg	50					
Bromoform	U	ND	123	ug/kg	50					
Bromomethane	U	ND	123	ug/kg	50					
Carbon disulfide	U	ND	617	ug/kg	50					
Carbon tetrachloride	U	ND	123	ug/kg	50					
Chlorobenzene	U	ND	123	ug/kg	50					
Chloroethane	U	ND	123	ug/kg	50					
Chloroform	U	ND	123	ug/kg	50					
Chloromethane	U	ND	123	ug/kg	50					
Dibromochloromethane	U	ND	123	ug/kg	50					
Ethylbenzene	U	ND	123	ug/kg	50					
Methylene chloride	U	ND	617	ug/kg	50					
Styrene	U	ND	123	ug/kg	50					
Tetrachloroethylene	U	ND	123	ug/kg	50					
Toluene	U	ND	123	ug/kg	50					
Trichloroethylene	U	ND	123	ug/kg	50					
Vinyl acetate	U	ND	617	ug/kg	50					
Vinyl chloride	U	ND	123	ug/kg	50					
Xylenes (total)	U	ND	370	ug/kg	50					
cis-1,2-Dichloroethylene	U	ND	123	ug/kg	50					
cis-1,3-Dichloropropylene	U	ND	123	ug/kg	50					
m,p-Xylenes	U	ND	247	ug/kg	50					
o-Xylene	U	ND	123	ug/kg	50					
tert-Butyl methyl ether	U	ND	123	ug/kg	50					

MW 7-6-12

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Certificate of Analysis

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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 22, 2012

Client Sample ID: SP-01-SS-C1H
Sample ID: 306423008

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
trans-1,2-Dichloroethylene	U	ND	123	ug/kg	50					
trans-1,3-Dichloropropylene	U	ND	123	ug/kg	50					

S2VM

MW

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	RXY1	06/20/12	1010	1224012

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	5920 ug/kg	50.0	96.0	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	6200 ug/kg	50.0	101	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	5940 ug/kg	50.0	96.3	(80%-120%)

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013

1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

in MSD:
Bromomethane recovered at 27%. The limits are limits 57%-129%.

2. The RPD recovery for Bromomethane between the matrix spike and duplicate were 20.8%.

The limits are 0%-20%.

MW 7-6-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
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Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 22, 2012

Client Sample ID:	SP-01-SS-C1I	Project:	ECOL00801
Sample ID:	306423009	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 10:55		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	21.6%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	U	ND	142	ug/kg	50	CDS1	06/22/12	1029	1224013	1
1,1,2,2-Tetrachloroethane	U	ND	142	ug/kg	50					
1,1,2-Trichloroethane	U	ND	142	ug/kg	50					
1,1-Dichloroethane	U	ND	142	ug/kg	50					
1,1-Dichloroethylene	U	ND	142	ug/kg	50					
1,2-Dichloroethane	U	ND	142	ug/kg	50					
1,2-Dichloroethylene (total)	U	ND	284	ug/kg	50					
1,2-Dichloropropane	U	ND	142	ug/kg	50					
2-Butanone	U	ND	709	ug/kg	50					
2-Hexanone	U	ND	709	ug/kg	50					
4-Methyl-2-pentanone	U	ND	709	ug/kg	50					
Acetone	U	ND	709	ug/kg	50					
Benzene	U	ND	142	ug/kg	50					
Bromodichloromethane	U	ND	142	ug/kg	50					
Bromoform	U	ND	142	ug/kg	50					
Bromomethane	U	ND	142	ug/kg	50					
Carbon disulfide	U	ND	709	ug/kg	50					
Carbon tetrachloride	U	ND	142	ug/kg	50					
Chlorobenzene	U	ND	142	ug/kg	50					
Chloroethane	U	ND	142	ug/kg	50					
Chloroform	U	ND	142	ug/kg	50					
Chloromethane	U	ND	142	ug/kg	50					
Dibromochloromethane	U	ND	142	ug/kg	50					
Ethylbenzene	U	ND	142	ug/kg	50					
Methylene chloride	U	ND	709	ug/kg	50					
Styrene	U	ND	142	ug/kg	50					
Tetrachloroethylene	U	ND	142	ug/kg	50					
Toluene	U	ND	142	ug/kg	50					
Trichloroethylene	U	ND	142	ug/kg	50					
Vinyl acetate	U	ND	709	ug/kg	50					
Vinyl chloride	U	ND	142	ug/kg	50					
Xylenes (total)	U	ND	425	ug/kg	50					
cis-1,2-Dichloroethylene	U	ND	142	ug/kg	50					
cis-1,3-Dichloropropylene	U	ND	142	ug/kg	50					
m,p-Xylenes	U	ND	284	ug/kg	50					
o-Xylene	U	ND	142	ug/kg	50					
tert-Butyl methyl ether	U	ND	142	ug/kg	50					

S2V/M

R

7-6-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 22, 2012

Client Sample ID: SP-01-SS-C1I
Sample ID: 306423009

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										S2VM
trans-1,2-Dichloroethylene	~~U~~	ND	142 U	ug/kg	50					
trans-1,3-Dichloropropylene	U	~~ND~~ MW	142 U	ug/kg	50					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	RXY1	06/20/12	1055	1224012

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	7010 ug/kg	50.0	98.8	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	7150 ug/kg	50.0	101	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	7010 ug/kg	50.0	98.9	(80%-120%)

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013

1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

in MSD:
Bromomethane recovered at 27%. The limits are limits 57%-129%.

2. The RPD recovery for Bromomethane between the matrix spike and duplicate were 20.8%.

The limits are 0%-20%.

MW 7-6-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 22, 2012

Client Sample ID:	SP-01-SS-C1J	Project:	ECOL00801
Sample ID:	306423010	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	20-JUN-12 11:00		
Receive Date:	21-JUN-12		
Collector:	Client		
Moisture:	20.2%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	U	ND	108	ug/kg	50	CDS1	06/22/12	1058	1224013	1 SZVM
1,1,2,2-Tetrachloroethane	U	ND	108	ug/kg	50					
1,1,2-Trichloroethane	U	ND	108	ug/kg	50					
1,1-Dichloroethane	U	ND	108	ug/kg	50					
1,1-Dichloroethylene	U	ND	108	ug/kg	50					
1,2-Dichloroethane	U	ND	108	ug/kg	50					
1,2-Dichloroethylene (total)	U	ND	216	ug/kg	50					
1,2-Dichloropropane	U	ND	108	ug/kg	50					
2-Butanone	U	ND	540	ug/kg	50					
2-Hexanone	U	ND	540	ug/kg	50					
4-Methyl-2-pentanone	U	ND	540	ug/kg	50					
Acetone	U	ND	540	ug/kg	50					
Benzene	U	ND	108	ug/kg	50					
Bromodichloromethane	U	ND	108	ug/kg	50					
Bromoform	U	ND	108	ug/kg	50					
Bromomethane	U	ND	108	ug/kg	50					
Carbon disulfide	U	ND	540	ug/kg	50					
Carbon tetrachloride	U	ND	108	ug/kg	50					
Chlorobenzene	U	ND	108	ug/kg	50					
Chloroethane	U	ND	108	ug/kg	50					
Chloroform	U	ND	108	ug/kg	50					
Chloromethane	U	ND	108	ug/kg	50					
Dibromochloromethane	U	ND	108	ug/kg	50					
Ethylbenzene	U	ND	108	ug/kg	50					
Methylene chloride	U	ND	540	ug/kg	50					
Styrene	U	ND	108	ug/kg	50					
Tetrachloroethylene	U	ND	108	ug/kg	50					
Toluene	U	ND	108	ug/kg	50					
Trichloroethylene	U	ND	108	ug/kg	50					
Vinyl acetate	U	ND	540	ug/kg	50					
Vinyl chloride	U	ND	108	ug/kg	50					
Xylenes (total)	U	ND	324	ug/kg	50					
cis-1,2-Dichloroethylene	U	ND	108	ug/kg	50					
cis-1,3-Dichloropropylene	U	ND	108	ug/kg	50					
m,p-Xylenes	U	ND	216	ug/kg	50					
o-Xylene	U	ND	108	ug/kg	50					
tert-Butyl methyl ether	U	ND	108	ug/kg	50					

MW 7-6-12

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 22, 2012

Client Sample ID: SP-01-SS-C1J
Sample ID: 306423010

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
trans-1,2-Dichloroethylene	U	ND	108 U	ug/kg	50					
trans-1,3-Dichloropropylene	U	~~ND~~ Non	108 U	ug/kg	50					

SQVM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	RXY1	06/20/12	1100	1224012

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	5230 ug/kg	50.0	97.0	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	5510 ug/kg	50.0	102	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	5310 ug/kg	50.0	98.4	(80%-120%)

The Following NCRs have been identified

NCR ID:1092447 Batch ID: 1224013

1. The recovery for Bromomethane was outside of acceptance limits in the MS and in the MSD performed on sample 306423001. The calculated RPD for this compound was outside of the acceptance limits as well.

in MS:
Bromomethane recovered at 33%. The limits are 57%-129%.

in MSD:
Bromomethane recovered at 27%. The limits are limits 57%-129%.

2. The RPD recovery for Bromomethane between the matrix spike and duplicate were 20.8%.

The limits are 0%-20%.

MBW 7-6-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700, Seattle, WA 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: July 6, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-09

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of 1 water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Target Analyte List (TAL) metals analyses (EPA Method 6020) were performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060507

Data Qualifications:

1. Sample Holding Times: Acceptable.

All liquid samples were preserved to a pH < 2. The samples were maintained at < 6°C. The sample was collected on June 20, 2012, and was analyzed by June 24, 2012, therefore meeting QC criteria of less than 6 months between collection, extraction, and analysis.

2. Initial and Continuing Calibration: Acceptable.

A minimum of one calibration standard and a blank were analyzed at the beginning of the ICP analysis sequence and after every 10 samples. No results were greater than 110% of the highest calibration standard. All ICP recoveries were within the QC limits of 90% to 110%.

3. Blanks: Satisfactory.

A preparation blank was analyzed for each 20 samples or per matrix per concentration level. Blanks were analyzed after each Initial or Continuing Calibration Verification. The following element was detected in the applicable blanks and affected sample results:

Blank	Element	Concentration (ug/L)
Method Blank	Copper	0.475

Associated sample results were qualified as not detected (U) if the sample result was less than five times the positive blank concentration.

4. ICP Interference Check Sample: Acceptable.

An Interference Check Sample (ICS) was analyzed at the beginning and end of each sequence or at least twice every 8 hours, whichever was more frequent. All ICS (solution AB) results were within QC limits of 80% - 120% recovery.

5. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

6. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. ICP Serial Dilution: Acceptable.

A serial dilution analysis was performed per matrix per concentration or per sample delivery group, whichever was more frequent. All serial dilution results were within QC limits.

8. Matrix Spike Analysis: Acceptable.

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

9. Duplicate Analysis: Acceptable.

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

10. Laboratory Control Sample Analysis: Acceptable.

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

11. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 2, 2012

Client Sample ID:	12060507	Project:	ECOL00801
Sample ID:	306499001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	20-JUN-12 13:00		
Receive Date:	22-JUN-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS										
SW846 3005A/6020A Liquid "As Received"										
Cadmium	~~U~~	~~ND~~	1.00	ug/L	1	PRB	06/24/12	1430	1224088	1
Chromium	~~U~~	~~ND~~	10.0	ug/L	1					
Copper		1.11	1.00	ug/L	1					
Lead	~~U~~	~~ND~~	2.00	ug/L	1					
Thallium	~~U~~	~~ND~~	2.00	ug/L	1					
Zinc		21.6	10.0	ug/L	1					
Arsenic		5.89	5.00	ug/L	1	PRB	06/25/12	1056	1224088	2

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	LYH1	06/22/12	0900	1224087

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6020A	
2	SW846 3005A/6020A	

MW 7-6-12

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

MEMORANDUM

DATE: July 6, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-09

REF:

TDDs:	12-05-0006	PANs: 002233.0790.01RA
	12-05-0007	PANs: 002233.0791.01RA
	12-05-0008	PANs: 002233.0792.01RA
	12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of 1 water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060507

Data Qualifications:

1. Sample Holding Times: Acceptable.

The sample was maintained at < 6°C. The sample was collected on June 20, 2012, extracted on June 22, 2012, and was analyzed by June 23, 2012, therefore meeting QC criteria of less than 7 days between collection and water sample extraction (14 days for soils) and less than 40 days between extraction and analysis.

2. Instrument Performance: Acceptable.

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. Initial and Continuing Calibration: Acceptable.

All initial calibration average relative standard deviations (RSDs) were less than 15% on at least one column. All continuing calibration average % differences (% D) were less than 15% on at least one column and were within QC limits.

4. **Error Determination: Not Provided.**

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. **Blanks: Acceptable.**

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

6. **Performance Evaluation Samples: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

7. **System Monitoring Compounds (SMCs): Acceptable.**

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

8. **Blank and Matrix Spikes: Acceptable.**

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

9. **Duplicates: Acceptable.**

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

10. **Compound Identification: Acceptable.**

All results were dual-column confirmed with differences between the columns less than 25%.

11. **Target Compound Quantitation and Quantitation Limits: Acceptable.**

Sample results and quantitation limits were correctly calculated.

12. **Laboratory Contact**

No laboratory contact was required.

13. **Overall Assessment**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 25, 2012

Client Sample ID:	12060507	Project:	ECOL00801
Sample ID:	306499001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	20-JUN-12 13:00		
Receive Date:	22-JUN-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3535A/8082A PCB Liquids "As Received"										
Aroclor-1016	U	ND	0.0971	ug/L	1	YS1	06/23/12	1252	1224169	1
Aroclor-1221	U	ND	0.0971	ug/L	1					
Aroclor-1232	U	ND	0.0971	ug/L	1					
Aroclor-1242	U	ND	0.0971	ug/L	1					
Aroclor-1248	U	ND	0.0971	ug/L	1					
Aroclor-1254	U	ND	0.0971	ug/L	1					
Aroclor-1260	U	ND	0.0971	ug/L	1					
Aroclor-Total	U	ND	0.0971	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	SW3535A PCB SPE Extraction	TXA2	06/22/12	1755	1224168

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3535A/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3535A/8082A PCB Liquids "As Received"	0.136 ug/L	0.194	69.8	(34%-120%)
Decachlorobiphenyl	SW846 3535A/8082A PCB Liquids "As Received"	0.181 ug/L	0.194	93.1	(33%-120%)

MW 7-6-12

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Global Environmental Specialists

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

MEMORANDUM

DATE: July 6, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-09

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060507

Data Qualifications:

1. Sample Holding Times: Acceptable.

The sample was maintained and received within the QC limits of < 6°C. The sample was collected on June 20, 2012, was extracted on June 22, 2012, and was analyzed on June 25, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Acceptable.

All average Relative Response Factors (RRFs) were greater than the QC limit of 0.050. All Relative Standard Deviations (RSDs) were less than the QC limit of 30%.

4. Continuing Calibration: Satisfactory.

All RRFs were greater than the QC limit of 0.050. All % differences were less than the QC limit of 25 % except one surrogate with a high outlier. No action was taken based on the surrogate calibration outlier.

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Satisfactory.

All SMC recoveries were within QC limits except two low recovery outliers in the matrix spike duplicate analysis. No action was taken based on these outliers as the associated matrix spike duplicate recoveries were within QC limits.

7. Matrix Spike (MS)/MS Duplicate (MSD)/Blank Spike (BS) Analysis: Acceptable.

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

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Acceptable.

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 25, 2012

Client Sample ID:	12060507	Project:	ECOL00801
Sample ID:	306499001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	20-JUN-12 13:00		
Receive Date:	22-JUN-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D Semivolatile Analysis by Separatory Funnel "As Received"										
Benzo(a)anthracene	U	ND	1.00	ug/L	1	JMB3	06/25/12	1227	1224161	1
Benzo(a)pyrene	U	ND	1.00	ug/L	1					
Benzo(b)fluoranthene	U	ND	1.00	ug/L	1					
Chrysene	U	ND	1.00	ug/L	1					
Diphenylamine	U	ND	10.0	ug/L	1					
bis(2-Ethylhexyl)phthalate	U	ND	10.0	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	SW846 3510C Prep Semivolatiles 8270D	SXS3	06/22/12	2001	1224160

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2,4,6-Tribromophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	102 ug/L	100	102	(26%-131%)
2-Fluorophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	38.6 ug/L	100	38.6	(15%-78%)
Phenol-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	19.6 ug/L	100	19.6	(10%-72%)
2-Fluorobiphenyl	8270D Semivolatile Analysis by Separatory Funnel "As Received"	30.1 ug/L	50.0	60.1	(29%-102%)
Nitrobenzene-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	38.9 ug/L	50.0	77.8	(36%-125%)
p-Terphenyl-d14	8270D Semivolatile Analysis by Separatory Funnel "As Received"	38.5 ug/L	50.0	77.0	(31%-133%)

MW
7-6-12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: July 18, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-10

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of two soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Volatile organic compound (VOC) analysis (EPA Method 8260) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060013 12060014

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on June 25, 2012, and were analyzed by July 5, 2012, therefore meeting QC criteria of less than 14 days between collection and analysis for soil and preserved water samples.

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were greater than the QC limit of 0.050. All water Relative Standard Deviations (RSDs) were less than the QC limits of 30%.

4. **Continuing Calibration: Acceptable.**

All RRFs were greater than the QC limit of 0.050. All % differences were less than the QC limit.

5. **Blanks: Acceptable.**

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

6. **System Monitoring Compounds (SMCs): Satisfactory.**

All SMC recoveries were within QC limits except bromofluorobenzene with high recoveries in samples 12060013 and the matrix spike and matrix spike duplicate. No actions were taken based on the spike SMC outliers. Positive sample results associated with the high recovery outlier were qualified as estimated quantities with a high bias (JH).

7. **Matrix Spike (MS)/MS Duplicate (MSD)/Blank Spike (BS) Analysis: Acceptable.**

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

8. **Duplicate Analysis: Acceptable.**

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

9. **Internal Standards: Satisfactory.**

All internal standards were within $\pm$ 30 seconds of the continuing calibration internal standard retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts except 1,4-dichlorobenzene with low area counts in samples 12060013 and the matrix spike and matrix spike duplicate. No actions were taken based on the spike SMC outliers. Positive sample results and sample quantitation limits associated with low area count outliers were qualified as estimated quantities with a high or low bias (JH or UJL).

10. **Precision and Bias Determination: Not Performed.**

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. **Performance Evaluation Sample Analysis: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

12. **Overall Assessment of Data for Use**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 10, 2012

Client Sample ID:	12060013	Project:	ECOL00801
Sample ID:	306682001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	25-JUN-12 15:00		
Receive Date:	27-JUN-12		
Collector:	Client		
Moisture:	7.18%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	U	ND	0.929	ug/kg	1	RXD1	07/05/12	1700	1227193	1
1,1,2,2-Tetrachloroethane	U	ND	0.929	ug/kg	1					
1,1,2-Trichloroethane	U	ND	0.929	ug/kg	1					
1,1-Dichloroethane	U	ND	0.929	ug/kg	1					
1,1-Dichloroethylene	U	ND	0.929	ug/kg	1					
1,2-Dichloroethane	U	ND	0.929	ug/kg	1					
1,2-Dichloroethylene (total)	U	ND	1.86	ug/kg	1					
1,2-Dichloropropane	U	ND	0.929	ug/kg	1					
2-Butanone	U	ND	4.64	ug/kg	1					
2-Hexanone	U	ND	4.64	ug/kg	1					
4-Methyl-2-pentanone	U	ND	4.64	ug/kg	1					
Acetone	U	ND	4.64	ug/kg	1					
Benzene	U	ND	0.929	ug/kg	1					
Bromodichloromethane	U	ND	0.929	ug/kg	1					
Bromoform	U	ND	0.929	ug/kg	1					
Bromomethane	U	ND	0.929	ug/kg	1					
Carbon disulfide	U	ND	4.64	ug/kg	1					
Carbon tetrachloride	U	ND	0.929	ug/kg	1					
Chlorobenzene	U	ND	0.929	ug/kg	1					
Chloroethane	U	ND	0.929	ug/kg	1					
Chloroform	U	ND	0.929	ug/kg	1					
Chloromethane	U	ND	0.929	ug/kg	1					
Dibromochloromethane	U	ND	0.929	ug/kg	1					
Ethylbenzene	U	ND	0.929	ug/kg	1					
Methylene chloride	U	ND	4.64	ug/kg	1					
Styrene	U	ND	0.929	ug/kg	1					
Tetrachloroethylene	U	ND	0.929	ug/kg	1					
Toluene	U	ND	0.929	ug/kg	1					
Trichloroethylene	U	ND	0.929	ug/kg	1					
Vinyl acetate	U	ND	4.64	ug/kg	1					
Vinyl chloride	U	ND	0.929	ug/kg	1					
Xylenes (total)	U	ND	2.79	ug/kg	1					
cis-1,2-Dichloroethylene	U	ND	0.929	ug/kg	1					
cis-1,3-Dichloropropylene	U	ND	0.929	ug/kg	1					
m,p-Xylenes	U	ND	1.86	ug/kg	1					
o-Xylene	U	ND	0.929	ug/kg	1					
tert-Butyl methyl ether	U	ND	0.929	ug/kg	1					

S4VM

JL

MW

MW 7/8/12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 10, 2012

Client Sample ID: 12060013
Sample ID: 306682001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
trans-1,2-Dichloroethylene	U	ND	0.929	ug/kg	1					
trans-1,3-Dichloropropylene	U	ND	0.929	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	RXD1	06/27/12	1408	1227192

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	45.5 ug/kg	50.0	98.0	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	69.2 ug/kg	50.0	149*	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	52.1 ug/kg	50.0	112	(80%-120%)

The Following NCRs have been identified

NCR ID:1098182 Batch ID: 1227193

1. The following compounds did not meet the acceptance limits for the MS/MSD recoveries. (1202692413MS, 1202692414MSD)

Styrene recovered at 61.1% in the MS and at 61% in the MSD. The limits are 65.00%-130.00%.
1,1,2,2-Tetrachloroethane recovered at 141% in the MS and at 148% in the MSD. The limits are 63.00%-128.00%.
Vinyl acetate recovered at 0% in the MS and in the MSD. The limits are 46.00%-162.00%.
Bromoform recovered at 127% in the MSD. The limits are 64.00%-126.00%.

2. The following compound did not meet the acceptance limits for the LCS recoveries. (1202694689LCS)

1,1,2,2-Tetrachloroethane recovered at 74.3% in the LCS. The limits are 75.00%-120.00%.

3. The following samples did not meet the acceptance limits for surrogate or internal standard recoveries.

(306682001, 1202692413MS, 1202692414MSD)

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Certificate of Analysis

Company : Ecology and Environment, Inc.
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 10, 2012

Client Sample ID:	12060014	Project:	ECOL00801
Sample ID:	306682002	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	25-JUN-12 15:45		
Receive Date:	27-JUN-12		
Collector:	Client		
Moisture:	9.53%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	U	ND	97.0	ug/kg	50	RXD1	07/05/12	1602	1227193	1 SOPVM
1,1,2,2-Tetrachloroethane	U	ND	97.0	ug/kg	50					
1,1,2-Trichloroethane	U	ND	97.0	ug/kg	50					
1,1-Dichloroethane	U	ND	97.0	ug/kg	50					
1,1-Dichloroethylene	U	ND	97.0	ug/kg	50					
1,2-Dichloroethane	U	ND	97.0	ug/kg	50					
1,2-Dichloroethylene (total)	U	ND	194	ug/kg	50					
1,2-Dichloropropane	U	ND	97.0	ug/kg	50					
2-Butanone	U	ND	485	ug/kg	50					
2-Hexanone	U	ND	485	ug/kg	50					
4-Methyl-2-pentanone	U	ND	485	ug/kg	50					
Acetone	U	ND	485	ug/kg	50					
Benzene	U	ND	97.0	ug/kg	50					
Bromodichloromethane	U	ND	97.0	ug/kg	50					
Bromoform	U	ND	97.0	ug/kg	50					
Bromomethane	U	ND	97.0	ug/kg	50					
Carbon disulfide	U	ND	485	ug/kg	50					
Carbon tetrachloride	U	ND	97.0	ug/kg	50					
Chlorobenzene	U	ND	97.0	ug/kg	50					
Chloroethane	U	ND	97.0	ug/kg	50					
Chloroform	U	ND	97.0	ug/kg	50					
Chloromethane	U	ND	97.0	ug/kg	50					
Dibromochloromethane	U	ND	97.0	ug/kg	50					
Ethylbenzene	U	ND	97.0	ug/kg	50					
Methylene chloride	U	ND	485	ug/kg	50					
Styrene	U	ND	97.0	ug/kg	50					
Tetrachloroethylene	U	ND	97.0	ug/kg	50					
Toluene	U	ND	97.0	ug/kg	50					
Trichloroethylene	U	ND	97.0	ug/kg	50					
Vinyl acetate	U	ND	485	ug/kg	50					
Vinyl chloride	U	ND	97.0	ug/kg	50					
Xylenes (total)	U	ND	291	ug/kg	50					
cis-1,2-Dichloroethylene	U	ND	97.0	ug/kg	50					
cis-1,3-Dichloropropylene	U	ND	97.0	ug/kg	50					
m,p-Xylenes	U	ND	194	ug/kg	50					
o-Xylene	U	ND	97.0	ug/kg	50					
tert-Butyl methyl ether	U	ND	97.0	ug/kg	50					

MW

MW 7/18/12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 10, 2012

Client Sample ID: 12060014
Sample ID: 306682002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
trans-1,2-Dichloroethylene	U	ND	97.0	ug/kg	50					
trans-1,3-Dichloropropylene	U	ND	97.0	ug/kg	50					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	RXD1	06/27/12	1433	1227192

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	4520 ug/kg	50.0	93.2	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	4830 ug/kg	50.0	99.6	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	4710 ug/kg	50.0	97.1	(80%-120%)

The Following NCRs have been identified

NCR ID:1098182 Batch ID: 1227193

1. The following compounds did not meet the acceptance limits for the MS/MSD recoveries. (1202692413MS, 1202692414MSD)

Styrene recovered at 61.1% in the MS and at 61% in the MSD. The limits are 65.00%-130.00%.
1,1,2,2-Tetrachloroethane recovered at 141% in the MS and at 148% in the MSD. The limits are 63.00%-128.00%.
Vinyl acetate recovered at 0% in the MS and in the MSD. The limits are 46.00%-162.00%.
Bromoform recovered at 127% in the MSD. The limits are 64.00%-126.00%.

2. The following compound did not meet the acceptance limits for the LCS recoveries. (1202694689LCS)

1,1,2,2-Tetrachloroethane recovered at 74.3% in the LCS. The limits are 75.00%-120.00%.

3. The following samples did not meet the acceptance limits for surrogate or internal standard recoveries.

(306682001, 1202692413MS, 1202692414MSD)

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700, Seattle, WA 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: July 18, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-10

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of 3 soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060013 12060014 12060111

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on June 25, 2012, were extracted on June 27, 2012, and were analyzed on June 28, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were greater than the QC limit of 0.050. All Relative Standard Deviations (RSDs) were less than the QC limits.

4. Continuing Calibration: Satisfactory.

All RRFs were greater than the QC limit of 0.050. All percent differences were less than the QC limits except hexachlorocyclopentadiene, 2-methyl-4,6-dinitrophenol, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene (all with low recoveries in the June 28 [0849] calibration) and 3,3'-dichlorobenzidine with a low recovery in the June 28 (0922) calibration. Associated sample results were qualified as estimated quantities with a low bias (JL or UJL).

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

7. Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Analysis: Acceptable.

All spike analyses were performed per SDG or per matrix per concentration level, whichever was more frequent. All recoveries were within the QC limits except when diluted out.

8. Duplicate Analysis: Acceptable.

Blank spike duplicate analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. Spike duplicate results were generally not calculated due to dilutions.

9. Internal Standards: Acceptable.

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 28, 2012

Client Sample ID:	12060013	Project:	ECOL00801
Sample ID:	306682001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	25-JUN-12 15:00		
Receive Date:	27-JUN-12		
Collector:	Client		
Moisture:	7.18%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	3580	ug/kg	10	RMB	06/28/12	1417	1225460	1
1,2,4,5-Tetrachlorobenzene	U	ND	3580	ug/kg	10					
1-Methylnaphthalene	U	ND	358	ug/kg	10					
2,3,4,6-Tetrachlorophenol	U	ND	3580	ug/kg	10					
2,4,5-Trichlorophenol	U	ND	3580	ug/kg	10					
2,4,6-Trichlorophenol	U	ND	3580	ug/kg	10					
2,4-Dichlorophenol	U	ND	3580	ug/kg	10					
2,4-Dimethylphenol	U	ND	3580	ug/kg	10					
2,4-Dinitrophenol	U	ND	7160	ug/kg	10					
2,4-Dinitrotoluene	U	ND	3580	ug/kg	10					
2,6-Dinitrotoluene	U	ND	3580	ug/kg	10					
2-Chloronaphthalene	U	ND	358	ug/kg	10					
2-Chlorophenol	U	ND	3580	ug/kg	10					
2-Methyl-4,6-dinitrophenol	U	ND	3580	ug/kg	10					
2-Methylnaphthalene	U	ND	358	ug/kg	10					
2-Nitrophenol	U	ND	3580	ug/kg	10					
3,3'-Dichlorobenzidine	U	ND	3580	ug/kg	10					
4-Bromophenylphenylether	U	ND	3580	ug/kg	10					
4-Chloro-3-methylphenol	U	ND	3580	ug/kg	10					
4-Chloroaniline	U	ND	3580	ug/kg	10					
4-Chlorophenylphenylether	U	ND	3580	ug/kg	10					
4-Nitrophenol	U	ND	3580	ug/kg	10					
Acenaphthene	U	ND	358	ug/kg	10					
Acenaphthylene	U	ND	358	ug/kg	10					
Acetophenone	U	ND	3580	ug/kg	10					
Anthracene	U	ND	358	ug/kg	10					
Atrazine	U	ND	3580	ug/kg	10					
Benzaldehyde	U	ND	3580	ug/kg	10					
Benzo(a)anthracene	U	ND	358	ug/kg	10					
Benzo(a)pyrene	U	ND	358	ug/kg	10					
Benzo(b)fluoranthene	U	ND	358	ug/kg	10					
Benzo(ghi)perylene	U	ND	358	ug/kg	10					
Benzo(k)fluoranthene	U	ND	358	ug/kg	10					
Butylbenzylphthalate	U	ND	3580	ug/kg	10					
Caprolactam	U	ND	3580	ug/kg	10					
Carbazole	U	ND	358	ug/kg	10					
Chrysene	U	ND	358	ug/kg	10					

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 28, 2012

Client Sample ID: 12060013
Sample ID: 306682001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	3580	ug/kg	10					
Di-n-octylphthalate	U	ND	3580	ug/kg	10					
Dibenzo(a,h)anthracene	U	ND	358	ug/kg	10					
Dibenzofuran	U	ND	3580	ug/kg	10					
Diethylphthalate	U	ND	3580	ug/kg	10					
Dimethylphthalate	U	ND	3580	ug/kg	10					
Diphenylamine	U	ND	3580	ug/kg	10					
Fluoranthene	U	ND	358	ug/kg	10					
Fluorene	U	ND	358	ug/kg	10					
Hexachlorobenzene	U	ND	3580	ug/kg	10					
Hexachlorobutadiene	U	ND	3580	ug/kg	10					
Hexachlorocyclopentadiene	U	ND	3580	ug/kg	10					
Hexachloroethane	U	ND	3580	ug/kg	10					
Indeno(1,2,3-cd)pyrene	U	ND	358	ug/kg	10					
Isophorone	U	ND	3580	ug/kg	10					
N-Nitrosodipropylamine	U	ND	3580	ug/kg	10					
Naphthalene	U	ND	358	ug/kg	10					
Nitrobenzene	U	ND	3580	ug/kg	10					
Pentachlorophenol	U	ND	3580	ug/kg	10					
Phenanthrene	U	ND	358	ug/kg	10					
Phenol	U	ND	3580	ug/kg	10					
Pyrene	U	ND	358	ug/kg	10					
bis(2-Chloroethoxy)methane	U	ND	3580	ug/kg	10					
bis(2-Chloroethyl) ether	U	ND	3580	ug/kg	10					
bis(2-Chloroisopropyl)ether	U	ND	3580	ug/kg	10					
bis(2-Ethylhexyl)phthalate	U	ND	3580	ug/kg	10					
m,p-Cresols	U	ND	3580	ug/kg	10					
m-Nitroaniline	U	ND	3580	ug/kg	10					
o-Cresol	U	ND	3580	ug/kg	10					
o-Nitroaniline	U	ND	3580	ug/kg	10					
p-Nitroaniline	U	ND	3580	ug/kg	10					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	06/27/12	2020	1225458

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 28, 2012

Client Sample ID:	12060014	Project:	ECOL00801
Sample ID:	306682002	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	25-JUN-12 15:45		
Receive Date:	27-JUN-12		
Collector:	Client		
Moisture:	9.53%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	3680	ug/kg	10	RMB	06/28/12	1540	1225460	1
1,2,4,5-Tetrachlorobenzene	U	ND	3680	ug/kg	10					
1-Methylnaphthalene	U	ND	368	ug/kg	10					
2,3,4,6-Tetrachlorophenol	U	ND	3680	ug/kg	10					
2,4,5-Trichlorophenol	U	ND	3680	ug/kg	10					
2,4,6-Trichlorophenol	U	ND	3680	ug/kg	10					
2,4-Dichlorophenol	U	ND	3680	ug/kg	10					
2,4-Dimethylphenol	U	ND	3680	ug/kg	10					
2,4-Dinitrophenol	U	ND	7360	ug/kg	10					
2,4-Dinitrotoluene	U	ND	3680	ug/kg	10					
2,6-Dinitrotoluene	U	ND	3680	ug/kg	10					
2-Chloronaphthalene	U	ND	368	ug/kg	10					
2-Chlorophenol	U	ND	3680	ug/kg	10					
2-Methyl-4,6-dinitrophenol	U	ND	3680	ug/kg	10					
2-Methylnaphthalene	U	ND	368	ug/kg	10					
2-Nitrophenol	U	ND	3680	ug/kg	10					
3,3'-Dichlorobenzidine	U	ND	3680	ug/kg	10					
4-Bromophenylphenylether	U	ND	3680	ug/kg	10					
4-Chloro-3-methylphenol	U	ND	3680	ug/kg	10					
4-Chloroaniline	U	ND	3680	ug/kg	10					
4-Chlorophenylphenylether	U	ND	3680	ug/kg	10					
4-Nitrophenol	U	ND	3680	ug/kg	10					
Acenaphthene	U	ND	368	ug/kg	10					
Acenaphthylene	U	ND	368	ug/kg	10					
Acetophenone	U	ND	3680	ug/kg	10					
Anthracene	U	ND	368	ug/kg	10					
Atrazine	U	ND	3680	ug/kg	10					
Benzaldehyde	U	ND	3680	ug/kg	10					
Benzo(a)anthracene	U	ND	368	ug/kg	10					
Benzo(a)pyrene	U	ND	368	ug/kg	10					
Benzo(b)fluoranthene	U	ND	368	ug/kg	10					
Benzo(ghi)perylene	U	ND	368	ug/kg	10					
Benzo(k)fluoranthene	U	ND	368	ug/kg	10					
Butylbenzylphthalate	U	ND	3680	ug/kg	10					
Caprolactam	U	ND	3680	ug/kg	10					
Carbazole	U	ND	368	ug/kg	10					
Chrysene	U	ND	368	ug/kg	10					

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 28, 2012

Client Sample ID: 12060014
Sample ID: 306682002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	3680	ug/kg	10					
Di-n-octylphthalate	U	ND	3680	ug/kg	10					
Dibenzo(a,h)anthracene	U	ND	368	ug/kg	10					
Dibenzofuran	U	ND	3680	ug/kg	10					
Diethylphthalate	U	ND	3680	ug/kg	10					
Dimethylphthalate	U	ND	3680	ug/kg	10					
Diphenylamine	U	ND	3680	ug/kg	10					
Fluoranthene	U	ND	368	ug/kg	10					
Fluorene	U	ND	368	ug/kg	10					
Hexachlorobenzene	U	ND	3680	ug/kg	10					
Hexachlorobutadiene	U	ND	3680	ug/kg	10					
Hexachlorocyclopentadiene	U	ND	3680	ug/kg	10					
Hexachloroethane	U	ND	3680	ug/kg	10					
Indeno(1,2,3-cd)pyrene	U	ND	368	ug/kg	10					
Isophorone	U	ND	3680	ug/kg	10					
N-Nitrosodipropylamine	U	ND	3680	ug/kg	10					
Naphthalene	U	ND	368	ug/kg	10					
Nitrobenzene	U	ND	3680	ug/kg	10					
Pentachlorophenol	U	ND	3680	ug/kg	10					
Phenanthrene	U	ND	368	ug/kg	10					
Phenol	U	ND	3680	ug/kg	10					
Pyrene	U	ND	368	ug/kg	10					
bis(2-Chloroethoxy)methane	U	ND	3680	ug/kg	10					
bis(2-Chloroethyl) ether	U	ND	3680	ug/kg	10					
bis(2-Chloroisopropyl)ether	U	ND	3680	ug/kg	10					
bis(2-Ethylhexyl)phthalate	U	ND	3680	ug/kg	10					
m,p-Cresols	U	ND	3680	ug/kg	10					
m-Nitroaniline	U	ND	3680	ug/kg	10					
o-Cresol	U	ND	3680	ug/kg	10					
o-Nitroaniline	U	ND	3680	ug/kg	10					
p-Nitroaniline	U	ND	3680	ug/kg	10					

SHM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	06/27/12	2020	1225458

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

MW 7-10-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 28, 2012

Client Sample ID:	12060111	Project:	ECOL00801
Sample ID:	306682003	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	25-JUN-12 15:00		
Receive Date:	27-JUN-12		
Collector:	Client		
Moisture:	22.5%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	4260	ug/kg	10	RMB	06/28/12	1349	1225460	1
1,2,4,5-Tetrachlorobenzene	U	ND	4260	ug/kg	10					
1-Methylnaphthalene		10100	426	ug/kg	10					
2,3,4,6-Tetrachlorophenol	U	ND	4260	ug/kg	10					
2,4,5-Trichlorophenol	U	ND	4260	ug/kg	10					
2,4,6-Trichlorophenol	U	ND	4260	ug/kg	10					
2,4-Dichlorophenol	U	ND	4260	ug/kg	10					
2,4-Dimethylphenol	U	ND	4260	ug/kg	10					
2,4-Dinitrophenol	U	ND	8510	ug/kg	10					
2,4-Dinitrotoluene	U	ND	4260	ug/kg	10					
2,6-Dinitrotoluene	U	ND	4260	ug/kg	10					
2-Chloronaphthalene	U	ND	426	ug/kg	10					
2-Chlorophenol	U	ND	4260	ug/kg	10					
2-Methyl-4,6-dinitrophenol	U	ND	4260	ug/kg	10					
2-Methylnaphthalene		12600	426	ug/kg	10					
2-Nitrophenol	U	ND	4260	ug/kg	10					
3,3'-Dichlorobenzidine	U	ND	4260	ug/kg	10					
4-Bromophenylphenylether	U	ND	4260	ug/kg	10					
4-Chloro-3-methylphenol	U	ND	4260	ug/kg	10					
4-Chloroaniline	U	ND	4260	ug/kg	10					
4-Chlorophenylphenylether	U	ND	4260	ug/kg	10					
4-Nitrophenol	U	ND	4260	ug/kg	10					
Acenaphthene	U	ND	426	ug/kg	10					
Acenaphthylene	U	ND	426	ug/kg	10					
Acetophenone	U	ND	4260	ug/kg	10					
Anthracene	U	ND	426	ug/kg	10					
Atrazine	U	ND	4260	ug/kg	10					
Benzaldehyde	U	ND	4260	ug/kg	10					
Benzo(a)anthracene	U	ND	426	ug/kg	10					
Benzo(a)pyrene	U	ND	426	ug/kg	10					
Benzo(b)fluoranthene	U	ND	426	ug/kg	10					
Benzo(ghi)perylene	U	ND	426	ug/kg	10					
Benzo(k)fluoranthene	U	ND	426	ug/kg	10					
Butylbenzylphthalate	U	ND	4260	ug/kg	10					
Caprolactam	U	ND	4260	ug/kg	10					
Carbazole	U	ND	426	ug/kg	10					
Chrysene	U	ND	426	ug/kg	10					

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 28, 2012

Client Sample ID: 12060111
Sample ID: 306682003

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	4260	ug/kg	10					
Di-n-octylphthalate	U	ND	4260	ug/kg	10					
Dibenzo(a,h)anthracene	U	ND	426	ug/kg	10					
Dibenzofuran	U	ND	4260	ug/kg	10					
Diethylphthalate	U	ND	4260	ug/kg	10					
Dimethylphthalate	U	ND	4260	ug/kg	10					
Diphenylamine	U	ND	4260	ug/kg	10					
Fluoranthene	U	ND	426	ug/kg	10					
Fluorene	U	ND	426	ug/kg	10					
Hexachlorobenzene	U	ND	4260	ug/kg	10					
Hexachlorobutadiene	U	ND	4260	ug/kg	10					
Hexachlorocyclopentadiene	U	ND	4260	ug/kg	10					
Hexachloroethane	U	ND	4260	ug/kg	10					
Indeno(1,2,3-cd)pyrene	U	ND	426	ug/kg	10					
Isophorone	U	ND	4260	ug/kg	10					
N-Nitrosodipropylamine	U	ND	4260	ug/kg	10					
Naphthalene		1710	426	ug/kg	10					
Nitrobenzene	U	ND	4260	ug/kg	10					
Pentachlorophenol	U	ND	4260	ug/kg	10					
Phenanthrene		4750	426	ug/kg	10					
Phenol	U	ND	4260	ug/kg	10					
Pyrene		992	426	ug/kg	10					
bis(2-Chloroethoxy)methane	U	ND	4260	ug/kg	10					
bis(2-Chloroethyl) ether	U	ND	4260	ug/kg	10					
bis(2-Chloroisopropyl)ether	U	ND	4260	ug/kg	10					
bis(2-Ethylhexyl)phthalate	U	ND	4260	ug/kg	10					
m,p-Cresols	U	ND	4260	ug/kg	10					
m-Nitroaniline	U	ND	4260	ug/kg	10					
o-Cresol	U	ND	4260	ug/kg	10					
o-Nitroaniline	U	ND	4260	ug/kg	10					
p-Nitroaniline	U	ND	4260	ug/kg	10					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	06/27/12	2020	1225458

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: July 18, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-10

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of 3 soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060013 12060014 12060111

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained at < 6°C. The samples were collected on June 25, 2012, extracted by July 6, 2012, and were analyzed by July 6, 2012, therefore meeting QC criteria of less than 7 days between collection and water sample extraction (14 days for soils) and less than 40 days between extraction and analysis.

2. Instrument Performance: Acceptable.

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was $\leq$ 0.3% for capillary column analyses.

3. Initial and Continuing Calibration: Acceptable.

All initial calibration relative standard deviations (RSDs) were less than 15%. All continuing calibration % differences (% D) were less than 15% and were within QC limits except two low surrogate recoveries in separate calibrations; no actions were taken based on these outliers as all surrogate results were within QC limits.

4. Error Determination: Not Provided.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Acceptable.

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

6. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. System Monitoring Compounds (SMCs): Acceptable.

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

8. Blank and Matrix Spikes: Acceptable.

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

9. Duplicates: Acceptable.

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

10. Compound Identification: Satisfactory.

All positive sample results were dual-column confirmed with differences between the columns less than 25% except Aroclor 1260 in sample 12060013. Positive sample results with percent differences between the columns greater than 25% were qualified as estimated quantities with an unknown bias (JK).

11. Target Compound Quantitation and Quantitation Limits: Acceptable.

Sample results and quantitation limits were correctly calculated.

12. Laboratory Contact

No laboratory contact was required.

13. Overall Assessment

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 9, 2012

Client Sample ID:	12060013	Project:	ECOL00801
Sample ID:	306682001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	25-JUN-12 15:00		
Receive Date:	27-JUN-12		
Collector:	Client		
Moisture:	7.18%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	17.8	ug/kg	5	YS1	07/06/12	1825	1227429	1
Aroclor-1221	U	ND	17.8	ug/kg	5					
Aroclor-1232	U	ND	17.8	ug/kg	5					
Aroclor-1242	U	ND	17.8	ug/kg	5					
Aroclor-1248	U	ND	17.8	ug/kg	5					
Aroclor-1254	U	ND	17.8	ug/kg	5					
Aroclor-1260		22.0 JK	17.8	ug/kg	5					
Aroclor-Total		22.0 JK	17.8	ug/kg	5					

SHM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	JXC7	07/06/12	0730	1227428

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	3.05 ug/kg	7.11	42.9	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.72 ug/kg	7.11	66.4	(19%-130%)

MW 7/18/12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 9, 2012

Client Sample ID:	12060014	Project:	ECOL00801
Sample ID:	306682002	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	25-JUN-12 15:45		
Receive Date:	27-JUN-12		
Collector:	Client		
Moisture:	9.53%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	18.2	ug/kg	5	YS1	07/06/12	1903	1227429	1
Aroclor-1221	U	ND	18.2	ug/kg	5					
Aroclor-1232	U	ND	18.2	ug/kg	5					
Aroclor-1242	U	ND	18.2	ug/kg	5					
Aroclor-1248	U	ND	18.2	ug/kg	5					
Aroclor-1254	U	ND	18.2	ug/kg	5					
Aroclor-1260		142	18.2	ug/kg	5					
Aroclor-Total		142	18.2	ug/kg	5					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	JXC7	07/06/12	0730	1227428

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	3.80 ug/kg	7.29	52.1	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.40 ug/kg	7.29	60.4	(19%-130%)

MW 7/8/12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 9, 2012

Client Sample ID:	12060111	Project:	ECOL00801
Sample ID:	306682003	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	25-JUN-12 15:00		
Receive Date:	27-JUN-12		
Collector:	Client		
Moisture:	22.5%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	21.3	ug/kg	5	YS1	06/29/12	0839	1225795	1
Aroclor-1221	U	ND	21.3	ug/kg	5					
Aroclor-1232	U	ND	21.3	ug/kg	5					
Aroclor-1242	U	ND	21.3	ug/kg	5					
Aroclor-1248	U	ND	21.3	ug/kg	5					
Aroclor-1254	U	ND	21.3	ug/kg	5					
Aroclor-1260	U	ND	21.3	ug/kg	5					
Aroclor-Total	U	ND	21.3	ug/kg	5					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	06/28/12	2139	1225794

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	3.71 ug/kg	8.53	43.4	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	3.35 ug/kg	8.53	39.2	(19%-130%)

MW 7/8/12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700, Seattle, WA 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: July 18, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-10

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Volatile organic compound (VOC) analysis (EPA Method 8260) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 (S2VM) and Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12061902

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The sample was maintained and received within the QC limits of < 6°C. The sample was collected on June 25, 2012, and was analyzed by July 6, 2012, therefore meeting QC criteria of less than 14 days between collection and analysis for soil and preserved water samples.

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were greater than the QC limit of 0.050. All water Relative Standard Deviations (RSDs) were less than the QC limits of 30%.

4. **Continuing Calibration: Acceptable.**

All RRFs were greater than the QC limit of 0.050. All % differences were less than the QC limit of 25%.

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

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

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

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Acceptable.

All internal standards were within $\pm$ 30 seconds of the continuing calibration internal standard retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 9, 2012

Client Sample ID:	12061902	Project:	ECOL00801
Sample ID:	306734001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	25-JUN-12 15:00		
Receive Date:	27-JUN-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5030/8260A TCL in Liquid "As Received"										
1,1,1-Trichloroethane	U	ND	1.00	ug/L	1	RXY1	07/06/12	0713	1227356	1
1,1,2,2-Tetrachloroethane	U	ND	1.00	ug/L	1					
1,1,2-Trichloroethane	U	ND	1.00	ug/L	1					
1,1-Dichloroethane	U	ND	1.00	ug/L	1					
1,1-Dichloroethylene	U	ND	1.00	ug/L	1					
1,2-Dichloroethane	U	ND	1.00	ug/L	1					
1,2-Dichloropropane	U	ND	1.00	ug/L	1					
2-Butanone	U	ND	5.00	ug/L	1					
2-Hexanone	U	ND	5.00	ug/L	1					
4-Methyl-2-pentanone	U	ND	5.00	ug/L	1					
Acetone	U	ND	5.00	ug/L	1					
Benzene	U	ND	1.00	ug/L	1					
Bromodichloromethane	U	ND	1.00	ug/L	1					
Bromoform	U	ND	1.00	ug/L	1					
Bromomethane	U	ND	1.00	ug/L	1					
Carbon disulfide	U	ND	5.00	ug/L	1					
Carbon tetrachloride	U	ND	1.00	ug/L	1					
Chlorobenzene	U	ND	1.00	ug/L	1					
Chloroethane	U	ND	1.00	ug/L	1					
Chloroform	U	ND	1.00	ug/L	1					
Chloromethane	U	ND	1.00	ug/L	1					
Dibromochloromethane	U	ND	1.00	ug/L	1					
Ethylbenzene	U	ND	1.00	ug/L	1					
Methylene chloride	U	ND	5.00	ug/L	1					
Styrene	U	ND	1.00	ug/L	1					
Tetrachloroethylene	U	ND	1.00	ug/L	1					
Toluene	U	ND	1.00	ug/L	1					
Trichloroethylene	U	ND	1.00	ug/L	1					
Vinyl acetate	U	ND	5.00	ug/L	1					
Vinyl chloride	U	ND	1.00	ug/L	1					
Xylenes (total)	U	ND	3.00	ug/L	1					
cis-1,2-Dichloroethylene	U	ND	1.00	ug/L	1					
cis-1,3-Dichloropropylene	U	ND	1.00	ug/L	1					
tert-Butyl methyl ether	U	ND	1.00	ug/L	1					
trans-1,2-Dichloroethylene	U	ND	1.00	ug/L	1					
trans-1,3-Dichloropropylene	U	ND	1.00	ug/L	1					

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720 Third Avenue, Suite 1700
Seattle, Washington 98104
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MEMORANDUM

DATE: July 21, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-11

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of two soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Analysis for Extended Diesel Range Total Petroleum Hydrocarbons (Ecology Method NWTPH-Dx) was performed by TestAmerica Seattle, Tacoma, Washington. All sample analyses were evaluated following EPA's Stage 2 and 4 Data Validation Electronic/Manual Process (S4VEM).

The samples were numbered: 12060013 12060014

Data Qualifications:

1. Sample Holding Times: Satisfactory.

The samples were maintained at < 6°C. The samples were collected on June 25, 2012, extracted by June 12, 2012, and analyzed by June 13, 2012, therefore meeting QC criteria of less than 14 days between collection and extraction for soil samples, and less than 40 days between extraction and analysis, except for sample 12060013, which was re-extracted out of holding time due to low surrogate recoveries in the initial analysis; associated positive sample results were qualified as estimated quantities with a low bias (JL) in sample 12060013.

2. Initial and Continuing Calibrations: Acceptable.

Calculations were verified as correct. All initial calibration correlation coefficients were ≥ 0.990 and/or all relative percent differences (RPDs) were less than or equal to the laboratory control limits of 15%. All continuing calibration percent differences (%Ds) were ≤ the laboratory control limits of 15%.

3. Error Determination: Not Performed.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

4. **Blanks: Satisfactory.**

A method blank was analyzed for each extraction batch for each matrix and analysis system. Diesel-range and motor oil-range TPHs were detected in one method blank, but no actions were required as associated sample results were all greater than five times the blank result.

5. **System Monitoring Compounds (SMC): Acceptable.**

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

6. **Performance Evaluation Samples: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

7. **Matrix and Blank Spikes: Acceptable.**

Matrix and blank spike results were within QC limits.

8. **Duplicates: Acceptable.**

Duplicate and spike duplicate results were within QC limits.

9. **Quantitation and Quantitation Limits: Acceptable.**

Sample concentrations were correctly calculated.

10. **Laboratory Contact: Not Required.**

No laboratory contact was required.

11. **Overall Assessment of Data for Use**

The retention time for the SMC in the method blank was slightly outside of QC limits; no action was taken based on this slight outlier as there were no detections in this method blank that affected sample results.

In sample 12060013, the results in the Diesel and Motor Oil ranges were qualified as estimated quantities with a high bias (JH) due to likely overlap with heavily weathered/degraded diesel fuel, a mineral/transformer oil range product, and motor oil.

In sample 12060014, the results in the diesel range were qualified as estimated quantities with a high bias (JH) due to overlap with motor oil range TPHs.

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the Method Detection Limit (MDL) and the Reporting Limit (RL).

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Client: Ecology and Environment, Inc.

Job Number: 580-33645-1

Client Sample ID: **12060013**

Lab Sample ID: 580-33645-1

Client Matrix: Solid

% Moisture: 13.2

Date Sampled: 06/25/2012 1500

Date Received: 06/27/2012 0950

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-115240	Instrument ID:	SEA012
Prep Method:	3550B	Prep Batch:	580-115179	Lab File ID:	CF00425.D
Dilution:	1.0			Initial Weight/Volume:	10.6930 g
Analysis Date:	07/13/2012 1351	Run Type:	RERA	Final Weight/Volume:	10 mL
Prep Date:	07/12/2012 1320			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		720	~~H B Y~~ JK	6.1	27
Motor Oil (>C24-C36)		1400	~~H B~~ JK	9.8	54

SYVM

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	84		50 - 150

MW 7-21-12

Client: Ecology and Environment, Inc.

Job Number: 580-33645-1

Client Sample ID: **12060014**

Lab Sample ID: 580-33645-2

Client Matrix: Solid

% Moisture: 17.8

Date Sampled: 06/25/2012 1545

Date Received: 06/27/2012 0950

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-114777	Instrument ID:	SEA012
Prep Method:	3550B	Prep Batch:	580-114798	Lab File ID:	CF00324.D
Dilution:	1.0			Initial Weight/Volume:	10.4935 g
Analysis Date:	07/09/2012 1911			Final Weight/Volume:	10 mL
Prep Date:	07/09/2012 0925			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		320	~~Y~~ JH	6.6	29
Motor Oil (>C24-C36)		2000		11	58

54VA

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	85		50 - 150

MW 7-24-12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: July 3, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-12

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of 1 water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060508

Data Qualifications:

1. Sample Holding Times: Acceptable.

The sample was maintained at < 6°C. The sample was collected on June 26, 2012, extracted on June 28, 2012, and was analyzed by June 28, 2012, therefore meeting QC criteria of less than 7 days between collection and water sample extraction (14 days for soils) and less than 40 days between extraction and analysis.

2. Instrument Performance: Acceptable.

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. Initial and Continuing Calibration: Acceptable.

All initial calibration relative standard deviations (RSDs) were less than 15%. All continuing calibration % differences (% D) were less than 15% and were within QC limits.

4. Error Determination: Not Provided.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Acceptable.

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

6. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. System Monitoring Compounds (SMCs): Acceptable.

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

8. Blank and Matrix Spikes: Acceptable.

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

9. Duplicates: Acceptable.

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

10. Compound Identification: Acceptable.

All results were dual-column confirmed with differences between the columns less than 25%.

11. Target Compound Quantitation and Quantitation Limits: Acceptable.

Sample results and quantitation limits were correctly calculated.

12. Laboratory Contact

No laboratory contact was required.

13. Overall Assessment

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 29, 2012

Client Sample ID:	12060508	Project:	ECOL00801
Sample ID:	306681001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	26-JUN-12 10:45		
Receive Date:	27-JUN-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3535A/8082A PCB Liquids "As Received"										
Aroclor-1016	U	ND	0.100	ug/L	1	YS1	06/28/12	2123	1225502	1
Aroclor-1221	U	ND	0.100	ug/L	1					
Aroclor-1232	U	ND	0.100	ug/L	1					
Aroclor-1242	U	ND	0.100	ug/L	1					
Aroclor-1248	U	ND	0.100	ug/L	1					
Aroclor-1254	U	ND	0.100	ug/L	1					
Aroclor-1260	U	ND	0.100	ug/L	1					
Aroclor-Total	U	ND	0.100	ug/L	1					

U

SV4M

MW

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	SW3535A PCB SPE Extraction	RXC1	06/28/12	1040	1225501

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3535A/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3535A/8082A PCB Liquids "As Received"	0.147 ug/L	0.200	73.5	(34%-120%)
Decachlorobiphenyl	SW846 3535A/8082A PCB Liquids "As Received"	0.183 ug/L	0.200	91.7	(33%-120%)

MW 7-3-12

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

MEMORANDUM

DATE: July 3, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-12

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of 1 water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060508

Data Qualifications:

1. Sample Holding Times: Acceptable.

The sample was maintained and received within the QC limits of < 6°C. The sample was collected on June 26, 2012, was extracted on June 27, 2012, and was analyzed on June 28, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Acceptable.

All average Relative Response Factors (RRFs) were greater than the QC limit of 0.050. All Relative Standard Deviations (RSDs) were less than the QC limit of 30%.

4. Continuing Calibration: Acceptable.

All RRFs were greater than the QC limit of 0.050. All % differences were less than the QC limit of 25 %.

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

7. Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Analysis: Acceptable.

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

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Acceptable.

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 29, 2012

Client Sample ID:	12060508	Project:	ECOL00801
Sample ID:	306681001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	26-JUN-12 10:45		
Receive Date:	27-JUN-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D Semivolatile Analysis by Separatory Funnel "As Received"										
Benzo(a)anthracene	U	ND	1.00	ug/L	1	JMB3	06/28/12	1352	1225456	1
Benzo(a)pyrene	U	ND	1.00	ug/L	1					
Benzo(b)fluoranthene	U	ND	1.00	ug/L	1					
Chrysene	U	ND	1.00	ug/L	1					
Diphenylamine	U	ND	10.0	ug/L	1					
bis(2-Ethylhexyl)phthalate	U	ND	10.0	ug/L	1					

SV4M

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	SW846 3510C Prep Semivolatiles 8270D	SXS3	06/27/12	2000	1225454

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	8270D Semivolatile Analysis by Separatory Funnel "As Received"	72.9 ug/L	100	72.9	(29%-102%)
Nitrobenzene-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	101 ug/L	100	101	(36%-125%)
p-Terphenyl-d14	8270D Semivolatile Analysis by Separatory Funnel "As Received"	96.4 ug/L	100	96.4	(31%-133%)
2,4,6-Tribromophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	166 ug/L	200	82.9	(26%-131%)
2-Fluorophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	94.2 ug/L	200	47.1	(15%-78%)
Phenol-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	53.5 ug/L	200	26.8	(10%-72%)

MW
7-3-12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: July 3, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-12

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of 1 water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Target Analyte List (TAL) metals analyses (EPA Method 6020) were performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060508

Data Qualifications:

1. Sample Holding Times: Acceptable.

All liquid samples were preserved to a pH < 2. The sample was maintained at < 6°C. The sample was collected on June 26, 2012, and was analyzed by June 27, 2012, therefore meeting QC criteria of less than 6 months between collection, extraction, and analysis.

2. Initial and Continuing Calibration: Acceptable.

A minimum of one calibration standard and a blank were analyzed at the beginning of the ICP analysis sequence and after every 10 samples. No results were greater than 110% of the highest calibration standard. All ICP recoveries were within the QC limits of 90% to 110%.

3. Blanks: Satisfactory.

A preparation blank was analyzed for each 20 samples or per matrix per concentration level. Blanks were analyzed after each Initial or Continuing Calibration Verification. There were no detections in any blanks except:

Blank	Element	Concentration (ug/L)
Preparation Blank	Copper Zinc	0.532 5.19

Associated sample results were qualified as not detected (U) if the sample result was less than five times the positive blank concentration

4. ICP Interference Check Sample: Acceptable.

An Interference Check Sample (ICS) was analyzed at the beginning and end of each sequence or at least twice every 8 hours, whichever was more frequent. All ICS (solution AB) results were within QC limits of 80% - 120% recovery.

5. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

6. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. ICP Serial Dilution: Acceptable.

A serial dilution analysis was performed per matrix per concentration or per sample delivery group, whichever was more frequent. All serial dilution results were within QC limits.

8. Matrix Spike Analysis: Acceptable.

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

9. Duplicate Analysis: Acceptable.

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

10. Laboratory Control Sample Analysis: Acceptable.

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

11. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

The overall usefulness of the data is based on the criteria outlined in the Site-Specific Sampling Plan, the OSWER Guidance Document "Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan, and Data Validation Procedures" (EPA/540/G-90/004), the analytical methods, and, when applicable, the Office of Emergency and Remedial Response Publication "USEPA

Contract Laboratory Program National Functional Guidelines for Inorganic Data Review". Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: June 30, 2012

Client Sample ID:	12060508	Project:	ECOL00801
Sample ID:	306681001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	26-JUN-12 10:45		
Receive Date:	27-JUN-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS										
SW846 3005A/6020A Liquid "As Received"										
Arsenic	~~U~~	ND	5.00	ug/L	1	BAJ	06/27/12	1845	1225298	1
Cadmium	U	ND	1.00	ug/L	1					
Chromium	U	~~ND~~	10.0	ug/L	1					
Copper		1.31 U	1.00	ug/L	1					
Lead	~~U~~	ND	2.00	ug/L	1					
Thallium	U	ND	2.00	ug/L	1					
Zinc	U	~~ND~~	10.0	ug/L	1					

SV4M

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	LYH1	06/27/12	1030	1225297

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6020A	

MW 7-3-12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: July 16, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-13

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of six soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Volatile organic compound (VOC) analysis (EPA Method 8260) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered:

12060015	12060016	12060201	12060202	12060203	12060204

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on June 28 or 29, 2012, and were analyzed by July 9, 2012, therefore meeting QC criteria of less than 14 days between collection and analysis for soil and preserved water samples.

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Acceptable.

All average Relative Response Factors (RRFs) were greater than the QC limit of 0.050. All Relative Standard Deviations (RSDs) were less than the QC limits.

4. Continuing Calibration: Satisfactory.

All RRFs were greater than the QC limit of 0.050. All % differences were less than the QC limit except 1,1,2,2-tetrachloroethane with a decreasing response factor associated with samples 12060016 and 12060201. Associated sample quantitation limits were qualified as estimated quantities with a low bias (UJL).

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Satisfactory.

All SMC recoveries were within QC limits except 1 high recovery each in spike and spike duplicate analyses; no actions were taken based on these outliers as the spike results were acceptable.

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

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

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Satisfactory.

All internal standards were within $\pm$ 30 seconds of the continuing calibration internal standard retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts except one low outlier each in the spike and spike duplicate samples. No actions were taken based on these outliers as the spike results were acceptable.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 10, 2012

Client Sample ID:	12060015	Project:	ECOL00801
Sample ID:	306907001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	29-JUN-12 09:35		
Receive Date:	30-JUN-12		
Collector:	Client		
Moisture:	11.7%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	U	ND	1.11	ug/kg	1	RXD1	07/05/12	1729	1227193	1 S2VM
1,1,2,2-Tetrachloroethane	U	ND	1.11	ug/kg	1					
1,1,2-Trichloroethane	U	ND	1.11	ug/kg	1					
1,1-Dichloroethane	U	ND	1.11	ug/kg	1					
1,1-Dichloroethylene	U	ND	1.11	ug/kg	1					
1,2-Dichloroethane	U	ND	1.11	ug/kg	1					
1,2-Dichloroethylene (total)	U	ND	2.22	ug/kg	1					
1,2-Dichloropropane	U	ND	1.11	ug/kg	1					
2-Butanone	U	ND	5.55	ug/kg	1					
2-Hexanone	U	ND	5.55	ug/kg	1					
4-Methyl-2-pentanone	U	ND	5.55	ug/kg	1					
Acetone	U	ND	5.55	ug/kg	1					
Benzene	U	ND	1.11	ug/kg	1					
Bromodichloromethane	U	ND	1.11	ug/kg	1					
Bromoform	U	ND	1.11	ug/kg	1					
Bromomethane	U	ND	1.11	ug/kg	1					
Carbon disulfide	U	ND	5.55	ug/kg	1					
Carbon tetrachloride	U	ND	1.11	ug/kg	1					
Chlorobenzene	U	ND	1.11	ug/kg	1					
Chloroethane	U	ND	1.11	ug/kg	1					
Chloroform	U	ND	1.11	ug/kg	1					
Chloromethane	U	ND	1.11	ug/kg	1					
Dibromochloromethane	U	ND	1.11	ug/kg	1					
Ethylbenzene	U	ND	1.11	ug/kg	1					
Methylene chloride	U	ND	5.55	ug/kg	1					
Styrene	U	ND	1.11	ug/kg	1					
Tetrachloroethylene	U	ND	1.11	ug/kg	1					
Toluene	U	ND	1.11	ug/kg	1					
Trichloroethylene	U	ND	1.11	ug/kg	1					
Vinyl acetate	U	ND	5.55	ug/kg	1					
Vinyl chloride	U	ND	1.11	ug/kg	1					
Xylenes (total)	U	ND	3.33	ug/kg	1					
cis-1,2-Dichloroethylene	U	ND	1.11	ug/kg	1					
cis-1,3-Dichloropropylene	U	ND	1.11	ug/kg	1					
m,p-Xylenes	U	ND	2.22	ug/kg	1					
o-Xylene	U	ND	1.11	ug/kg	1					
tert-Butyl methyl ether	U	ND	1.11	ug/kg	1					

MW

MW 7-13-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 10, 2012

Client Sample ID: 12060015
Sample ID: 306907001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
trans-1,2-Dichloroethylene	~~U~~	ND	1.11 U	ug/kg	1					
trans-1,3-Dichloropropylene	U	~~ND~~ MW	1.11 U	ug/kg	1					

SZVM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	RXD1	06/30/12	1422	1227192

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	53.6 ug/kg	50.0	96.5	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	65.4 ug/kg	50.0	118	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	57.6 ug/kg	50.0	104	(80%-120%)

MW 7-13-12

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 10, 2012

Client Sample ID:	12060016	Project:	ECOL00801
Sample ID:	306907002	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	29-JUN-12 09:35		
Receive Date:	30-JUN-12		
Collector:	Client		
Moisture:	11.1%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	U	ND	0.954	ug/kg	1	CDS1	07/09/12	1215	1227193	1
1,1,2,2-Tetrachloroethane	U	ND	0.954	ug/kg	1					
1,1,2-Trichloroethane	U	ND	0.954	ug/kg	1					
1,1-Dichloroethane	U	ND	0.954	ug/kg	1					
1,1-Dichloroethylene	U	ND	0.954	ug/kg	1					
1,2-Dichloroethane	U	ND	0.954	ug/kg	1					
1,2-Dichloroethylene (total)	U	ND	1.91	ug/kg	1					
1,2-Dichloropropane	U	ND	0.954	ug/kg	1					
2-Butanone	U	ND	4.77	ug/kg	1					
2-Hexanone	U	ND	4.77	ug/kg	1					
4-Methyl-2-pentanone	U	ND	4.77	ug/kg	1					
Acetone	U	ND	4.77	ug/kg	1					
Benzene	U	ND	0.954	ug/kg	1					
Bromodichloromethane	U	ND	0.954	ug/kg	1					
Bromoform	U	ND	0.954	ug/kg	1					
Bromomethane	U	ND	0.954	ug/kg	1					
Carbon disulfide	U	ND	4.77	ug/kg	1					
Carbon tetrachloride	U	ND	0.954	ug/kg	1					
Chlorobenzene	U	ND	0.954	ug/kg	1					
Chloroethane	U	ND	0.954	ug/kg	1					
Chloroform	U	ND	0.954	ug/kg	1					
Chloromethane	U	ND	0.954	ug/kg	1					
Dibromochloromethane	U	ND	0.954	ug/kg	1					
Ethylbenzene	U	ND	0.954	ug/kg	1					
Methylene chloride	U	ND	4.77	ug/kg	1					
Styrene	U	ND	0.954	ug/kg	1					
Tetrachloroethylene	U	ND	0.954	ug/kg	1					
Toluene	U	ND	0.954	ug/kg	1					
Trichloroethylene	U	ND	0.954	ug/kg	1					
Vinyl acetate	U	ND	4.77	ug/kg	1					
Vinyl chloride	U	ND	0.954	ug/kg	1					
Xylenes (total)	U	ND	2.86	ug/kg	1					
cis-1,2-Dichloroethylene	U	ND	0.954	ug/kg	1					
cis-1,3-Dichloropropylene	U	ND	0.954	ug/kg	1					
m,p-Xylenes	U	ND	1.91	ug/kg	1					
o-Xylene	U	ND	0.954	ug/kg	1					
tert-Butyl methyl ether	U	ND	0.954	ug/kg	1					

U JL

S2VM

MW

MW 7-13-12

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 10, 2012

Client Sample ID: 12060016
Sample ID: 306907002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
trans-1,2-Dichloroethylene	U	ND	0.954	ug/kg	1					
trans-1,3-Dichloropropylene	U	ND	0.954	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	RXD1	06/30/12	1428	1227192

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	44.6 ug/kg	50.0	93.5	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	47.7 ug/kg	50.0	100	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	43.9 ug/kg	50.0	92.1	(80%-120%)

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 10, 2012

Client Sample ID:	12060201	Project:	ECOL00801
Sample ID:	306907003	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	28-JUN-12 15:10		
Receive Date:	30-JUN-12		
Collector:	Client		
Moisture:	10.9%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	U	ND	0.920	ug/kg	1	CDS1	07/09/12	1243	1227193	1
1,1,2,2-Tetrachloroethane	U	ND	0.920	ug/kg	1					
1,1,2-Trichloroethane	U	ND	0.920	ug/kg	1					
1,1-Dichloroethane	U	ND	0.920	ug/kg	1					
1,1-Dichloroethylene	U	ND	0.920	ug/kg	1					
1,2-Dichloroethane	U	ND	0.920	ug/kg	1					
1,2-Dichloroethylene (total)	U	ND	1.84	ug/kg	1					
1,2-Dichloropropane	U	ND	0.920	ug/kg	1					
2-Butanone	U	ND	4.60	ug/kg	1					
2-Hexanone	U	ND	4.60	ug/kg	1					
4-Methyl-2-pentanone	U	ND MW	4.60	ug/kg	1					
Acetone		9.18	4.60	ug/kg	1					
Benzene	U	ND	0.920	ug/kg	1					
Bromodichloromethane	U	ND	0.920	ug/kg	1					
Bromoform	U	ND	0.920	ug/kg	1					
Bromomethane	U	ND	0.920	ug/kg	1					
Carbon disulfide	U	ND	4.60	ug/kg	1					
Carbon tetrachloride	U	ND	0.920	ug/kg	1					
Chlorobenzene	U	ND	0.920	ug/kg	1					
Chloroethane	U	ND	0.920	ug/kg	1					
Chloroform	U	ND	0.920	ug/kg	1					
Chloromethane	U	ND	0.920	ug/kg	1					
Dibromochloromethane	U	ND	0.920	ug/kg	1					
Ethylbenzene	U	ND	0.920	ug/kg	1					
Methylene chloride	U	ND	4.60	ug/kg	1					
Styrene	U	ND	0.920	ug/kg	1					
Tetrachloroethylene	U	ND	0.920	ug/kg	1					
Toluene	U	ND	0.920	ug/kg	1					
Trichloroethylene	U	ND	0.920	ug/kg	1					
Vinyl acetate	U	ND	4.60	ug/kg	1					
Vinyl chloride	U	ND	0.920	ug/kg	1					
Xylenes (total)	U	ND	2.76	ug/kg	1					
cis-1,2-Dichloroethylene	U	ND	0.920	ug/kg	1					
cis-1,3-Dichloropropylene	U	ND	0.920	ug/kg	1					
m,p-Xylenes	U	ND	1.84	ug/kg	1					
o-Xylene	U	ND	0.920	ug/kg	1					
tert-Butyl methyl ether	U	ND MW	0.920	ug/kg	1					

SVM

MW 7-13-12

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 10, 2012

Client Sample ID: 12060201
Sample ID: 306907003

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
trans-1,2-Dichloroethylene	U	ND	0.920	ug/kg	1					52VM
trans-1,3-Dichloropropylene	U	ND	0.920	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	RXD1	06/30/12	1347	1227192

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	42.5 ug/kg	50.0	92.4	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	43.1 ug/kg	50.0	93.8	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	41.2 ug/kg	50.0	89.7	(80%-120%)

MW 7/3/12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 10, 2012

Client Sample ID:	12060202	Project:	ECOL00801
Sample ID:	306907004	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	28-JUN-12 15:20		
Receive Date:	30-JUN-12		
Collector:	Client		
Moisture:	15.8%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	U	ND	102	ug/kg	50	RXD1	07/05/12	1631	1227193	1
1,1,2,2-Tetrachloroethane	U	ND	102	ug/kg	50					
1,1,2-Trichloroethane	U	ND	102	ug/kg	50					
1,1-Dichloroethane	U	ND	102	ug/kg	50					
1,1-Dichloroethylene	U	ND	102	ug/kg	50					
1,2-Dichloroethane	U	ND	102	ug/kg	50					
1,2-Dichloroethylene (total)	U	ND	205	ug/kg	50					
1,2-Dichloropropane	U	ND	102	ug/kg	50					
2-Butanone	U	ND	512	ug/kg	50					
2-Hexanone	U	ND	512	ug/kg	50					
4-Methyl-2-pentanone	U	ND	512	ug/kg	50					
Acetone	U	ND	512	ug/kg	50					
Benzene	U	ND	102	ug/kg	50					
Bromodichloromethane	U	ND	102	ug/kg	50					
Bromoform	U	ND	102	ug/kg	50					
Bromomethane	U	ND	102	ug/kg	50					
Carbon disulfide	U	ND	512	ug/kg	50					
Carbon tetrachloride	U	ND	102	ug/kg	50					
Chlorobenzene	U	ND	102	ug/kg	50					
Chloroethane	U	ND	102	ug/kg	50					
Chloroform	U	ND	102	ug/kg	50					
Chloromethane	U	ND	102	ug/kg	50					
Dibromochloromethane	U	ND	102	ug/kg	50					
Ethylbenzene	U	ND	102	ug/kg	50					
Methylene chloride	U	ND	512	ug/kg	50					
Styrene	U	ND	102	ug/kg	50					
Tetrachloroethylene	U	ND	102	ug/kg	50					
Toluene	U	ND	102	ug/kg	50					
Trichloroethylene	U	ND	102	ug/kg	50					
Vinyl acetate	U	ND	512	ug/kg	50					
Vinyl chloride	U	ND	102	ug/kg	50					
Xylenes (total)	U	ND	307	ug/kg	50					
cis-1,2-Dichloroethylene	U	ND	102	ug/kg	50					
cis-1,3-Dichloropropylene	U	ND	102	ug/kg	50					
m,p-Xylenes	U	ND	205	ug/kg	50					
o-Xylene	U	ND	102	ug/kg	50					
tert-Butyl methyl ether	U	ND	102	ug/kg	50					

S2VM

MW

MW 7-13-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hail
Project: **Project No. 4500000347**

Report Date: July 10, 2012

Client Sample ID: 12060202
Sample ID: 306907004

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
trans-1,2-Dichloroethylene	~~U~~	ND	102	ug/kg	50					
trans-1,3-Dichloropropylene	U	ND	102	ug/kg	50					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	RXD1	06/30/12	1358	1227192

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	4830 ug/kg	50.0	94.4	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	5120 ug/kg	50.0	100	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	5000 ug/kg	50.0	97.6	(80%-120%)

MW 7/13/12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 10, 2012

Client Sample ID:	12060203	Project:	ECOL00801
Sample ID:	306907005	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	28-JUN-12 15:30		
Receive Date:	30-JUN-12		
Collector:	Client		
Moisture:	27.7%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	U	ND	1.23	ug/kg	1	RXD1	07/05/12	1857	1227193	1 S2VM
1,1,2,2-Tetrachloroethane	U	ND	1.23	ug/kg	1					
1,1,2-Trichloroethane	U	ND	1.23	ug/kg	1					
1,1-Dichloroethane	U	ND	1.23	ug/kg	1					
1,1-Dichloroethylene	U	ND	1.23	ug/kg	1					
1,2-Dichloroethane	U	ND	1.23	ug/kg	1					
1,2-Dichloroethylene (total)	U	ND	2.47	ug/kg	1					
1,2-Dichloropropane	U	ND	1.23	ug/kg	1					
2-Butanone	U	ND	6.17	ug/kg	1					
2-Hexanone	U	ND	6.17	ug/kg	1					
4-Methyl-2-pentanone	U	ND MW	6.17	ug/kg	1					
Acetone		12.6	6.17	ug/kg	1					
Benzene	U	ND	1.23	ug/kg	1					
Bromodichloromethane	U	ND	1.23	ug/kg	1					
Bromoform	U	ND	1.23	ug/kg	1					
Bromomethane	U	ND	1.23	ug/kg	1					
Carbon disulfide	U	ND	6.17	ug/kg	1					
Carbon tetrachloride	U	ND	1.23	ug/kg	1					
Chlorobenzene	U	ND	1.23	ug/kg	1					
Chloroethane	U	ND	1.23	ug/kg	1					
Chloroform	U	ND	1.23	ug/kg	1					
Chloromethane	U	ND	1.23	ug/kg	1					
Dibromochloromethane	U	ND	1.23	ug/kg	1					
Ethylbenzene	U	ND	1.23	ug/kg	1					
Methylene chloride	U	ND	6.17	ug/kg	1					
Styrene	U	ND	1.23	ug/kg	1					
Tetrachloroethylene	U	ND	1.23	ug/kg	1					
Toluene	U	ND	1.23	ug/kg	1					
Trichloroethylene	U	ND	1.23	ug/kg	1					
Vinyl acetate	U	ND	6.17	ug/kg	1					
Vinyl chloride	U	ND	1.23	ug/kg	1					
Xylenes (total)	U	ND	3.70	ug/kg	1					
cis-1,2-Dichloroethylene	U	ND	1.23	ug/kg	1					
cis-1,3-Dichloropropylene	U	ND	1.23	ug/kg	1					
m,p-Xylenes	U	ND	2.47	ug/kg	1					
o-Xylene	U	ND	1.23	ug/kg	1					
tert-Butyl methyl ether	U	ND MW	1.23	ug/kg	1					

MW 7-13-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 10, 2012

Client Sample ID: 12060203
Sample ID: 306907005

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
trans-1,2-Dichloroethylene	~~U~~	ND	1.23 U	ug/kg	1					
trans-1,3-Dichloropropylene	U	~~ND~~ MW	1.23 U	ug/kg	1					

S2VM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	RXD1	06/30/12	1406	1227192

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	57.6 ug/kg	50.0	93.4	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	60.9 ug/kg	50.0	98.7	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	59.2 ug/kg	50.0	95.9	(80%-120%)

MW 7-13-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 10, 2012

Client Sample ID:	12060204	Project:	ECOL00801
Sample ID:	306907006	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	28-JUN-12 15:50		
Receive Date:	30-JUN-12		
Collector:	Client		
Moisture:	14.5%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	U	ND	0.914	ug/kg	1	RXD1	07/05/12	1926	1227193	1
1,1,2,2-Tetrachloroethane	U	ND	0.914	ug/kg	1					
1,1,2-Trichloroethane	U	ND	0.914	ug/kg	1					
1,1-Dichloroethane	U	ND	0.914	ug/kg	1					
1,1-Dichloroethylene	U	ND	0.914	ug/kg	1					
1,2-Dichloroethane	U	ND	0.914	ug/kg	1					
1,2-Dichloroethylene (total)	U	ND	1.83	ug/kg	1					
1,2-Dichloropropane	U	ND	0.914	ug/kg	1					
2-Butanone	U	ND	4.57	ug/kg	1					
2-Hexanone	U	ND	4.57	ug/kg	1					
4-Methyl-2-pentanone	U	ND	4.57	ug/kg	1					
Acetone	U	ND	4.57	ug/kg	1					
Benzene	U	ND	0.914	ug/kg	1					
Bromodichloromethane	U	ND	0.914	ug/kg	1					
Bromoform	U	ND	0.914	ug/kg	1					
Bromomethane	U	ND	0.914	ug/kg	1					
Carbon disulfide	U	ND	4.57	ug/kg	1					
Carbon tetrachloride	U	ND	0.914	ug/kg	1					
Chlorobenzene	U	ND	0.914	ug/kg	1					
Chloroethane	U	ND	0.914	ug/kg	1					
Chloroform	U	ND	0.914	ug/kg	1					
Chloromethane	U	ND	0.914	ug/kg	1					
Dibromochloromethane	U	ND	0.914	ug/kg	1					
Ethylbenzene	U	ND	0.914	ug/kg	1					
Methylene chloride	U	ND	4.57	ug/kg	1					
Styrene	U	ND	0.914	ug/kg	1					
Tetrachloroethylene	U	ND	0.914	ug/kg	1					
Toluene	U	ND	0.914	ug/kg	1					
Trichloroethylene	U	ND	0.914	ug/kg	1					
Vinyl acetate	U	ND	4.57	ug/kg	1					
Vinyl chloride	U	ND	0.914	ug/kg	1					
Xylenes (total)	U	ND	2.74	ug/kg	1					
cis-1,2-Dichloroethylene	U	ND	0.914	ug/kg	1					
cis-1,3-Dichloropropylene	U	ND	0.914	ug/kg	1					
m,p-Xylenes	U	ND	1.83	ug/kg	1					
o-Xylene	U	ND	0.914	ug/kg	1					
tert-Butyl methyl ether	U	ND	0.914	ug/kg	1					

U SLVM

MW

MW 7-13-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 10, 2012

Client Sample ID: 12060204
Sample ID: 306907006

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
trans-1,2-Dichloroethylene	U	ND	0.914 U	ug/kg	1					
trans-1,3-Dichloropropylene	U	ND	0.914 U	ug/kg	1					

S2VM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	RXD1	06/30/12	1416	1227192

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	44.6 ug/kg	50.0	97.5	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	46.0 ug/kg	50.0	101	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	43.7 ug/kg	50.0	95.7	(80%-120%)

MW 7-13-12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: July 16, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-13

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of one water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Volatile organic compound (VOC) analysis (EPA Method 8260) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12061903

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The sample was maintained and received within the QC limits of < 6°C. The sample was collected on June 28, 2012, and was analyzed by July 6, 2012, therefore meeting QC criteria of less than 14 days between collection and analysis for soil and preserved water samples.

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were greater than the QC limit of 0.050. All Relative Standard Deviations (RSDs) were less than the QC limits.

4. **Continuing Calibration: Acceptable.**

All RRFs were greater than the QC limit of 0.050. All % differences were less than the QC limit.

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

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

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

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Acceptable.

All internal standards were within $\pm$ 30 seconds of the continuing calibration internal standard retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 9, 2012

Client Sample ID:	12061903	Project:	ECOL00801
Sample ID:	306908001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	28-JUN-12 17:30		
Receive Date:	30-JUN-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5030/8260A TCL in Liquid "As Received"										
1,1,1-Trichloroethane	U	ND	1.00	ug/L	1	RXY1	07/06/12	0552	1227356	1
1,1,2,2-Tetrachloroethane	U	ND	1.00	ug/L	1					
1,1,2-Trichloroethane	U	ND	1.00	ug/L	1					
1,1-Dichloroethane	U	ND	1.00	ug/L	1					
1,1-Dichloroethylene	U	ND	1.00	ug/L	1					
1,2-Dichloroethane	U	ND	1.00	ug/L	1					
1,2-Dichloropropane	U	ND	1.00	ug/L	1					
2-Butanone	U	ND	5.00	ug/L	1					
2-Hexanone	U	ND	5.00	ug/L	1					
4-Methyl-2-pentanone	U	ND	5.00	ug/L	1					
Acetone	U	ND	5.00	ug/L	1					
Benzene	U	ND	1.00	ug/L	1					
Bromodichloromethane	U	ND	1.00	ug/L	1					
Bromoform	U	ND	1.00	ug/L	1					
Bromomethane	U	ND	1.00	ug/L	1					
Carbon disulfide	U	ND	5.00	ug/L	1					
Carbon tetrachloride	U	ND	1.00	ug/L	1					
Chlorobenzene	U	ND	1.00	ug/L	1					
Chloroethane	U	ND	1.00	ug/L	1					
Chloroform	U	ND	1.00	ug/L	1					
Chloromethane	U	ND	1.00	ug/L	1					
Dibromochloromethane	U	ND	1.00	ug/L	1					
Ethylbenzene	U	ND	1.00	ug/L	1					
Methylene chloride	U	ND	5.00	ug/L	1					
Styrene	U	ND	1.00	ug/L	1					
Tetrachloroethylene	U	ND	1.00	ug/L	1					
Toluene	U	ND	1.00	ug/L	1					
Trichloroethylene	U	ND	1.00	ug/L	1					
Vinyl acetate	U	ND	5.00	ug/L	1					
Vinyl chloride	U	ND	1.00	ug/L	1					
Xylenes (total)	U	ND	3.00	ug/L	1					
cis-1,2-Dichloroethylene	U	ND	1.00	ug/L	1					
cis-1,3-Dichloropropylene	U	ND	1.00	ug/L	1					
tert-Butyl methyl ether	U	ND	1.00	ug/L	1					
trans-1,2-Dichloroethylene	U	ND	1.00	ug/L	1					
trans-1,3-Dichloropropylene	U	ND	1.00	ug/L	1					

MW 7-13-12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: July 16, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-13

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of six soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered:

12060015	12060016	12060201	12060202	12060203	12060204

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on June 28 or 29, 2012, were extracted on July 10, 2012, and were analyzed by July 11, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Acceptable.

All average Relative Response Factors (RRFs) were greater than the QC limit of 0.050. All Relative Standard Deviations (RSDs) were less than the QC limit of 30%.

4. Continuing Calibration: Satisfactory.

All RRFs were greater than the QC limit of 0.050. All % differences were less than the QC limits except hexachlorocyclopentadiene, p-nitroaniline, and pentachlorophenol, all with decreasing response factors; associated sample quantitation limits were qualified as estimated quantities with a low bias (UJL).

5. Blanks: Satisfactory.

A method blank was analyzed for each 20 sample batch per matrix. There were no detections in any method blank except benzo(b)fluoranthene (1.67 ug/kg), benzo(k)fluoranthene (2.00 ug/kg), benzo(a)pyrene (2.66 ug/kg), indeno(1,2,3-cd)pyrene (3.66 ug/kg), dibenzo(a,h)anthracene (4.00 ug/kg), and benzo(g,h,i)anthracene (3.33 ug/kg). Associated sample results less than 5 times the blank contamination (10 times for common laboratory contaminants) were qualified as not detected (U).

6. System Monitoring Compounds (SMCs): Satisfactory.

All SMC recoveries were within QC limits except 2-fluorobiphenyl, nitrobenzene, and terphenyl in sample 12060015 with high recoveries. Positive sample results associated with the high recovery outliers were qualified as estimated quantities with a high bias (JL).

7. Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Analysis: Satisfactory.

All spike analyses were performed per SDG or per matrix per concentration level, whichever was more frequent. All recoveries were within the QC limits except fluorene with a high recovery in the MS and 1-methylnaphthalene (high), 2-chloronaphthalene (low), and phenanthrene (high). Associated sample results in the native sample (12060201) were qualified as estimated quantities with a high bias (JH) for high-biased spike recoveries or estimated quantities with a low bias (JL or UJL) for low-biased spike recoveries.

8. Duplicate Analysis: Satisfactory.

Spike duplicate analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. All spike duplicate results were within QC limits except 1-methylnaphthalene, anthracene, fluorene, and phenanthrene. Associated results in the native sample (12060201) were qualified as estimated quantities with an unknown bias (JK or UJK).

9. Internal Standards: Satisfactory.

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts except 2 low recoveries in the MS, 1 low recovery in the MSD (no action were taken based on the spike IS outliers), and perylene with a low area count in sample 12060202. Sample results associated with the low area count outliers were qualified as estimated quantities with a high or low bias (JH or UJL).

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 12, 2012

Client Sample ID:	12060015	Project:	ECOL00801
Sample ID:	306907001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	29-JUN-12 09:35		
Receive Date:	30-JUN-12		
Collector:	Client		
Moisture:	11.7%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	377 U	ug/kg	1	RMB	07/11/12	1439	1228008	1 S4VM
1,2,4,5-Tetrachlorobenzene	U	ND	377	ug/kg	1					
1-Methylnaphthalene	U	ND	37.7	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	377	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	377	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	377	ug/kg	1					
2,4-Dichlorophenol	U	ND	377	ug/kg	1					
2,4-Dimethylphenol	U	ND	377	ug/kg	1					
2,4-Dinitrophenol	U	ND	754	ug/kg	1					
2,4-Dinitrotoluene	U	ND	377	ug/kg	1					
2,6-Dinitrotoluene	U	ND	377	ug/kg	1					
2-Chloronaphthalene	U	ND	37.7	ug/kg	1					
2-Chlorophenol	U	ND	377	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	377	ug/kg	1					
2-Methylnaphthalene	U	ND	37.7	ug/kg	1					
2-Nitrophenol	U	ND	377	ug/kg	1					
3,3'-Dichlorobenzidine	U	ND	377	ug/kg	1					
4-Bromophenylphenylether	U	ND	377	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	377	ug/kg	1					
4-Chloroaniline	U	ND	377	ug/kg	1					
4-Chlorophenylphenylether	U	ND	377	ug/kg	1					
4-Nitrophenol	U	ND	377	ug/kg	1					
Acenaphthene	U	ND	37.7	ug/kg	1					
Acenaphthylene	U	ND	37.7	ug/kg	1					
Acetophenone	U	ND	377	ug/kg	1					
Anthracene	U	ND	37.7	ug/kg	1					
Atrazine	U	ND	377	ug/kg	1					
Benzaldehyde	U	ND	377	ug/kg	1					
Benzo(a)anthracene	U	ND	37.7	ug/kg	1					
Benzo(a)pyrene	U	ND	37.7	ug/kg	1					
Benzo(b)fluoranthene	U	ND	37.7	ug/kg	1					
Benzo(ghi)perylene	U	ND	37.7	ug/kg	1					
Benzo(k)fluoranthene	U	ND	37.7	ug/kg	1					
Butylbenzylphthalate	U	ND	377	ug/kg	1					
Caprolactam	U	ND	377	ug/kg	1					
Carbazole	U	ND	37.7	ug/kg	1					
Chrysene	U	ND	37.7	ug/kg	1					

MW

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 12, 2012

Client Sample ID: 12060015
Sample ID: 306907001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	377 U	ug/kg	1					S4VM
Di-n-octylphthalate	U	ND	377	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	37.7	ug/kg	1					
Dibenzofuran	U	ND	377	ug/kg	1					
Diethylphthalate	U	ND	377	ug/kg	1					
Dimethylphthalate	U	ND	377	ug/kg	1					
Diphenylamine	U	ND	377	ug/kg	1					
Fluoranthene	U	ND	37.7	ug/kg	1					
Fluorene	U	ND	37.7	ug/kg	1					
Hexachlorobenzene	U	ND	377	ug/kg	1					
Hexachlorobutadiene	U	ND	377	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	377	JL ug/kg	1					
Hexachloroethane	U	ND	377	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	37.7	ug/kg	1					
Isophorone	U	ND	377	ug/kg	1					
N-Nitrosodipropylamine	U	ND	377	ug/kg	1					
Naphthalene	U	ND	37.7	ug/kg	1					
Nitrobenzene	U	ND	377	ug/kg	1					
Pentachlorophenol	U	ND	377	JL ug/kg	1					
Phenanthrene	U	ND	37.7	ug/kg	1					
Phenol	U	ND	377	ug/kg	1					
Pyrene	U	ND	37.7	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	377	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	377	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	377	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	377	ug/kg	1					
m,p-Cresols	U	ND	377	ug/kg	1					
m-Nitroaniline	U	ND	377	ug/kg	1					
o-Cresol	U	ND	377	ug/kg	1					
o-Nitroaniline	U	ND	377	ug/kg	1					
p-Nitroaniline	U	ND MW	377	JL ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	07/10/12	2040	1227986

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

MW 7-13-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 12, 2012

Client Sample ID:	12060016	Project:	ECOL00801
Sample ID:	306907002	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	29-JUN-12 09:35		
Receive Date:	30-JUN-12		
Collector:	Client		
Moisture:	11.1%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	374	ug/kg	1	RMB	07/11/12	1506	1228008	1
1,2,4,5-Tetrachlorobenzene	U	ND	374	ug/kg	1					
1-Methylnaphthalene	U	ND	37.4	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	374	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	374	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	374	ug/kg	1					
2,4-Dichlorophenol	U	ND	374	ug/kg	1					
2,4-Dimethylphenol	U	ND	374	ug/kg	1					
2,4-Dinitrophenol	U	ND	748	ug/kg	1					
2,4-Dinitrotoluene	U	ND	374	ug/kg	1					
2,6-Dinitrotoluene	U	ND	374	ug/kg	1					
2-Chloronaphthalene	U	ND	37.4	ug/kg	1					
2-Chlorophenol	U	ND	374	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	374	ug/kg	1					
2-Methylnaphthalene	U	ND	37.4	ug/kg	1					
2-Nitrophenol	U	ND	374	ug/kg	1					
3,3'-Dichlorobenzidine	U	ND	374	ug/kg	1					
4-Bromophenylphenylether	U	ND	374	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	374	ug/kg	1					
4-Chloroaniline	U	ND	374	ug/kg	1					
4-Chlorophenylphenylether	U	ND	374	ug/kg	1					
4-Nitrophenol	U	ND	374	ug/kg	1					
Acenaphthene	U	ND	37.4	ug/kg	1					
Acenaphthylene	U	ND	37.4	ug/kg	1					
Acetophenone	U	ND	374	ug/kg	1					
Anthracene	U	ND	37.4	ug/kg	1					
Atrazine	U	ND	374	ug/kg	1					
Benzaldehyde	U	ND	374	ug/kg	1					
Benzo(a)anthracene	U	ND	37.4	ug/kg	1					
Benzo(a)pyrene	U	ND	37.4	ug/kg	1					
Benzo(b)fluoranthene	U	ND	37.4	ug/kg	1					
Benzo(ghi)perylene	U	ND	37.4	ug/kg	1					
Benzo(k)fluoranthene	U	ND	37.4	ug/kg	1					
Butylbenzylphthalate	U	ND	374	ug/kg	1					
Caprolactam	U	ND	374	ug/kg	1					
Carbazole	U	ND	37.4	ug/kg	1					
Chrysene	U	ND	37.4	ug/kg	1					

S4VM

MW 7-13-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
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Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 12, 2012

Client Sample ID: 12060016
Sample ID: 306907002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	374	ug/kg	1					
Di-n-octylphthalate	U	ND	374	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	37.4	ug/kg	1					
Dibenzofuran	U	ND	374	ug/kg	1					
Diethylphthalate	U	ND	374	ug/kg	1					
Dimethylphthalate	U	ND	374	ug/kg	1					
Diphenylamine	U	ND	374	ug/kg	1					
Fluoranthene	U	ND	37.4	ug/kg	1					
Fluorene	U	ND	37.4	ug/kg	1					
Hexachlorobenzene	U	ND	374	ug/kg	1					
Hexachlorobutadiene	U	ND	374	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	374	ug/kg	1					
Hexachloroethane	U	ND	374	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	37.4	ug/kg	1					
Isophorone	U	ND	374	ug/kg	1					
N-Nitrosodipropylamine	U	ND	374	ug/kg	1					
Naphthalene	U	ND	37.4	ug/kg	1					
Nitrobenzene	U	ND	374	ug/kg	1					
Pentachlorophenol	U	ND	374	ug/kg	1					
Phenanthrene	U	ND	37.4	ug/kg	1					
Phenol	U	ND	374	ug/kg	1					
Pyrene	U	ND	37.4	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	374	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	374	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	374	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	374	ug/kg	1					
m,p-Cresols	U	ND	374	ug/kg	1					
m-Nitroaniline	U	ND	374	ug/kg	1					
o-Cresol	U	ND	374	ug/kg	1					
o-Nitroaniline	U	ND	374	ug/kg	1					
p-Nitroaniline	U	ND	374	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	07/10/12	2040	1227986

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 12, 2012

Client Sample ID:	12060201	Project:	ECOL00801
Sample ID:	306907003	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	28-JUN-12 15:10		
Receive Date:	30-JUN-12		
Collector:	Client		
Moisture:	10.9%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D SIM PAH Sonication "Dry Weight Corrected"										
~~1-Methylnaphthalene~~		~~380~~ JH JK	~~7.45~~	~~ug/kg~~ R	1	JLD1	07/11/12	1731	1228310	1
2-Chloronaphthalene		90.9 JL	7.45	ug/kg	1					
2-Methylnaphthalene		27.9	7.45	ug/kg	1					
Acenaphthene	U	ND	7.45 U	ug/kg	1					
Acenaphthylene	U	ND	7.45	ug/kg	1					
Anthracene	U	ND	7.45 JK	ug/kg	1					
Benzo(a)anthracene		35.8	7.45	ug/kg	1					
Benzo(a)pyrene	~~B~~	37.6	7.45	ug/kg	1					
Benzo(b)fluoranthene	~~U~~	~~ND~~	7.45 U	ug/kg	1					
Benzo(ghi)perylene	~~B~~	12.3	7.45	ug/kg	1					
Benzo(k)fluoranthene	~~U~~	~~ND~~	7.45 U	ug/kg	1					
Chrysene		72.3	7.45	ug/kg	1					
Dibenzo(a,h)anthracene	~~U~~	~~ND~~	7.45 U	ug/kg	1					
~~Fluoranthrene~~		~~38.7~~	~~7.45~~	~~ug/kg~~ R	1					
~~Fluorene~~		~~112~~ JK	~~7.45~~	~~ug/kg~~ R	1					
Indeno(1,2,3-cd)pyrene	~~U~~	ND	7.45 U	ug/kg	1					
Naphthalene	U	ND	7.45 U	ug/kg	1					
~~Phenanthrene~~		~~305~~ JH JK	~~7.45~~	~~ug/kg~~ R	1					
~~Pyrene~~		~~149~~	~~7.45~~	~~ug/kg~~ R	1					
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	~~U~~	ND	372 U	ug/kg	1	RMB	07/11/12	1534	1228008	2
1,2,4,5-Tetrachlorobenzene	U	ND	372 U	ug/kg	1					
1-Methylnaphthalene		480	37.2	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	372 U	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	372	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	372	ug/kg	1					
2,4-Dichlorophenol	U	ND	372	ug/kg	1					
2,4-Dimethylphenol	U	ND	372	ug/kg	1					
2,4-Dinitrophenol	U	ND	745	ug/kg	1					
2,4-Dinitrotoluene	U	ND	372	ug/kg	1					
2,6-Dinitrotoluene	U	ND	372	ug/kg	1					
~~2-Chloronaphthalene~~	~~U~~	~~ND~~	~~37.2~~	~~ug/kg~~ R	1					
2-Chlorophenol	U	ND	372	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	372	ug/kg	1					
~~2-Methylnaphthalene~~	~~U~~	~~ND~~	~~37.2~~	~~ug/kg~~ R	1					
2-Nitrophenol	U	ND	372	ug/kg	1					

SHM

MW 7-13-12

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 12, 2012

Client Sample ID: 12060201
Sample ID: 306907003

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
3,3'-Dichlorobenzidine	U	ND	372	ug/kg	1					
4-Bromophenylphenylether	U	ND	372	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	372	ug/kg	1					
4-Chloroaniline	U	ND	372	ug/kg	1					
4-Chlorophenylphenylether	U	ND	372	ug/kg	1					
4-Nitrophenol	U	ND	372	ug/kg	1					
~~Acenaphthene~~	~~U~~	~~ND~~	~~37.2~~	~~ug/kg~~	1					
~~Acenaphthylene~~	~~U~~	~~ND~~	~~37.2~~	~~ug/kg~~	1					
Acetophenone	U	ND	372	ug/kg	1					
~~Anthracene~~	~~U~~	~~ND~~	~~37.2~~	~~ug/kg~~	1					
Atrazine	U	ND	372	ug/kg	1					
Benzaldehyde	U	ND	372	ug/kg	1					
~~Benzo(a)anthracene~~	~~U~~	~~ND~~	~~37.2~~	~~ug/kg~~	1					
~~Benzo(a)pyrene~~	~~U~~	~~ND~~	~~37.2~~	~~ug/kg~~	1					
~~Benzo(b)fluoranthene~~	~~U~~	~~ND~~	~~37.2~~	~~ug/kg~~	1					
~~Benzo(ghi)perylene~~	~~U~~	~~ND~~	~~37.2~~	~~ug/kg~~	1					
~~Benzo(k)fluoranthene~~	~~U~~	~~ND~~	~~37.2~~	~~ug/kg~~	1					
Butylbenzylphthalate	U	ND	372	ug/kg	1					
Caprolactam	U	ND	372	ug/kg	1					
Carbazole	U	ND	37.2	ug/kg	1					
~~Chrysene~~		~~68.5~~	~~37.2~~	~~ug/kg~~	1					
Di-n-butylphthalate	U	ND	372	ug/kg	1					
Di-n-octylphthalate	U	ND	372	ug/kg	1					
~~Dibenzo(a,h)anthracene~~	~~U~~	~~ND~~	~~37.2~~	~~ug/kg~~	1					
Dibenzofuran	U	ND	372	ug/kg	1					
Diethylphthalate	U	ND	372	ug/kg	1					
Dimethylphthalate	U	ND	372	ug/kg	1					
Diphenylamine	U	ND	372	ug/kg	1					
Fluoranthene		136	37.2	ug/kg	1					
Fluorene		175	37.2	ug/kg	1					
Hexachlorobenzene	U	ND	372	ug/kg	1					
Hexachlorobutadiene	U	ND	372	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	372	ug/kg	1					
Hexachloroethane	U	ND	372	ug/kg	1					
~~Indeno(1,2,3-cd)pyrene~~	~~U~~	~~ND~~	~~37.2~~	~~ug/kg~~	1					
Isophorone	U	ND	372	ug/kg	1					
N-Nitrosodipropylamine	U	ND	372	ug/kg	1					
~~Naphthalene~~	~~U~~	~~ND~~	~~37.2~~	~~ug/kg~~	1					
Nitrobenzene	U	ND	372	ug/kg	1					
Pentachlorophenol	U	ND	372	ug/kg	1					
Phenanthrene		395	37.2	ug/kg	1					
Phenol	U	ND	372	ug/kg	1					

SHM

MW 7-13-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 12, 2012

Client Sample ID: 12060201
Sample ID: 306907003

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Pyrene		168	37.2	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	372	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	372	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	372	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	372	ug/kg	1					
m,p-Cresols	U	ND	372	ug/kg	1					
m-Nitroaniline	U	ND	372	ug/kg	1					
o-Cresol	U	ND	372	ug/kg	1					
o-Nitroaniline	U	ND	372	ug/kg	1					
p-Nitroaniline	U	ND	372	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	07/10/12	2040	1227986

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	Prep Method 3550C for Solid	MXS4	07/10/12	2040	1228309

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D SIM PAH	
2	SW846 3550C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
5-alpha-Androstane	SW846 3550C/8270D SIM PAH Sonication "Dry Weight Corrected"	109 ug/kg	186	58.4	(39%-114%)
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1040 ug/kg	1860	55.6	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1080 ug/kg	1860	58.2	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1510 ug/kg	1860	81.3	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2150 ug/kg	3720	57.6	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1850 ug/kg	3720	49.8	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry	1620 ug/kg	3720	43.5	(26%-112%)

MW 7-13-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 12, 2012

Client Sample ID:	12060202	Project:	ECOL00801
Sample ID:	306907004	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	28-JUN-12 15:20		
Receive Date:	30-JUN-12		
Collector:	Client		
Moisture:	15.8%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D SIM PAH Sonication "Dry Weight Corrected"										
1-Methylnaphthalene	~~U~~	~~ND~~	7.89 U	ug/kg	1	JLD1	07/11/12	1840	1228310	1 S4MM
2-Chloronaphthalene	U	ND	7.89	ug/kg	1					
2-Methylnaphthalene	U	ND	7.89	ug/kg	1					
Acenaphthene	U	ND	7.89	ug/kg	1					
Acenaphthylene	U	ND MW	7.89	ug/kg	1					
Anthracene		87.9	7.89	ug/kg	1					
Benzo(a)anthracene		17.3	7.89	ug/kg	1					
Benzo(a)pyrene	~~B~~ MW	28.8 JH	7.89	ug/kg	1					
Benzo(b)fluoranthene	~~U~~	~~ND~~ MW	7.89 UJL	ug/kg	1					
Benzo(ghi)perylene	~~B~~ MW	14.2 UJL	7.89	ug/kg	1					
Benzo(k)fluoranthene	~~U~~	~~ND~~ MW	7.89 UJL	ug/kg	1					
Chrysene		33.5	7.89	ug/kg	1					
Dibenzo(a,h)anthracene	~~U~~	~~ND~~ MW	7.89 UJL	ug/kg	1					
Fluoranthene		16.6	7.89	ug/kg	1					
Fluorene	~~U~~	~~ND~~ MW	7.89 U	ug/kg	1					
Indeno(1,2,3-cd)pyrene	~~B~~ MW	8.67 UJL	7.89	ug/kg	1					
Naphthalene	~~U~~	~~ND~~ MW	7.89 U	ug/kg	1					
Phenanthrene		87.5	7.89	ug/kg	1					
Pyrene		84.4	7.89	ug/kg	1					
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	394 U	ug/kg	1	RMB	07/11/12	1656	1228008	2
1,2,4,5-Tetrachlorobenzene	U	ND	394	ug/kg	1					
~~1-Methylnaphthalene~~	~~U~~	~~ND~~	~~39.4~~	~~ug/kg~~ MW R	1					
2,3,4,6-Tetrachlorophenol	U	ND	394	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	394	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	394	ug/kg	1					
2,4-Dichlorophenol	U	ND	394	ug/kg	1					
2,4-Dimethylphenol	U	ND	394	ug/kg	1					
2,4-Dinitrophenol	U	ND	789	ug/kg	1					
2,4-Dinitrotoluene	U	ND	394	ug/kg	1					
2,6-Dinitrotoluene	U	ND	394	ug/kg	1					
~~2-Chloronaphthalene~~	~~U~~	~~ND~~	~~39.4~~	~~ug/kg~~ MW R	1					
2-Chlorophenol	U	ND	394	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	394	ug/kg	1					
~~2-Methylnaphthalene~~	~~U~~	~~ND~~	~~39.4~~	~~ug/kg~~ MW R	1					
2-Nitrophenol	U	ND	394	ug/kg	1					

MW

MW 7-13-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 12, 2012

Client Sample ID: 12060202
Sample ID: 306907004

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
3,3'-Dichlorobenzidine	U	ND	394	ug/kg	1					
4-Bromophenylphenylether	U	ND	394	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	394	ug/kg	1					
4-Chloroaniline	U	ND	394	ug/kg	1					
4-Chlorophenylphenylether	U	ND	394	ug/kg	1					
4-Nitrophenol	U	ND	394	ug/kg	1					
~~Acenaphthene~~	U	ND	39.4	ug/kg	1					
~~Acenaphthylene~~	U	ND	39.4	ug/kg	1					
Acetophenone	U	ND	394	ug/kg	1					
~~Anthracene~~	U	ND	39.4	ug/kg	1					
Atrazine	U	ND	394	ug/kg	1					
Benzaldehyde	U	ND	394	ug/kg	1					
~~Benzo(a)anthracene~~	U	ND	39.4	ug/kg	1					
Benzo(a)pyrene	U	ND	39.4	ug/kg	1					
Benzo(b)fluoranthene	U	ND	39.4	ug/kg	1					
Benzo(ghi)perylene	U	ND	39.4	ug/kg	1					
Benzo(k)fluoranthene	U	ND	39.4	ug/kg	1					
Butylbenzylphthalate	U	ND	394	ug/kg	1					
Caprolactam	U	ND	394	ug/kg	1					
Carbazole	U	ND	39.4	ug/kg	1					
~~Chrysene~~	U	ND	39.4	ug/kg	1					
Di-n-butylphthalate	U	ND	394	ug/kg	1					
Di-n-octylphthalate	U	ND	394	ug/kg	1					
~~Dibenzo(a,h)anthracene~~	U	ND	39.4	ug/kg	1					
Dibenzofuran	U	ND	394	ug/kg	1					
Diethylphthalate	U	ND	394	ug/kg	1					
Dimethylphthalate	U	ND	394	ug/kg	1					
Diphenylamine	U	ND	394	ug/kg	1					
~~Fluoranthene~~	U	ND	39.4	ug/kg	1					
~~Fluorene~~	U	ND	39.4	ug/kg	1					
Hexachlorobenzene	U	ND	394	ug/kg	1					
Hexachlorobutadiene	U	ND	394	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	394	ug/kg	1					
Hexachloroethane	U	ND	394	ug/kg	1					
~~Indeno(1,2,3-cd)pyrene~~	U	ND	39.4	ug/kg	1					
Isophorone	U	ND	394	ug/kg	1					
N-Nitrosodipropylamine	U	ND	394	ug/kg	1					
~~Naphthalene~~	U	ND	39.4	ug/kg	1					
Nitrobenzene	U	ND	394	ug/kg	1					
Pentachlorophenol	U	ND	394	ug/kg	1					
~~Phenanthrene~~	U	ND	39.4	ug/kg	1					
Phenol	U	ND	394	ug/kg	1					

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Project: **Project No. 4500000347**

Report Date: July 12, 2012

Client Sample ID: 12060202
Sample ID: 306907004

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
~~Pyrene~~		~~72.2~~	~~39.4~~	~~ug/kg~~	~~1~~ R					54UM
bis(2-Chloroethoxy)methane	U	ND	394	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	394	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	394	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	394	ug/kg	1					
m,p-Cresols	U	ND	394	ug/kg	1					
m-Nitroaniline	U	ND	394	ug/kg	1					
o-Cresol	U	ND	394	ug/kg	1					
o-Nitroaniline	U	ND	394	ug/kg	1					
p-Nitroaniline	U	ND	394	ug/kg	1					

MW JL

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	07/10/12	2040	1227986

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	Prep Method 3550C for Solid	MXS4	07/10/12	2040	1228309

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D SIM PAH	
2	SW846 3550C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
5-alpha-Androstane	SW846 3550C/8270D SIM PAH Sonication "Dry Weight Corrected"	111 ug/kg	197	56.4	(39%-114%)
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1270 ug/kg	1970	64.3	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1330 ug/kg	1970	67.6	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1570 ug/kg	1970	79.7	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2640 ug/kg	3940	66.8	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2060 ug/kg	3940	52.1	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry	1830 ug/kg	3940	46.4	(26%-112%)

MW 7-13-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 12, 2012

Client Sample ID:	12060203	Project:	ECOL00801
Sample ID:	306907005	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	28-JUN-12 15:30		
Receive Date:	30-JUN-12		
Collector:	Client		
Moisture:	27.7%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D SIM PAH Sonication "Dry Weight Corrected"										
1-Methylnaphthalene	U	ND	9.19	ug/kg	1	JLD1	07/11/12	1903	1228310	1 SYVM
2-Chloronaphthalene	U	ND	9.19	ug/kg	1					
2-Methylnaphthalene	U	ND	9.19	ug/kg	1					
Acenaphthene	U	ND	9.19	ug/kg	1					
Acenaphthylene	U	ND	9.19	ug/kg	1					
Anthracene	U	ND	9.19	ug/kg	1					
Benzo(a)anthracene	U	ND	9.19	ug/kg	1					
Benzo(a)pyrene	U	ND	9.19	ug/kg	1					
Benzo(b)fluoranthene	U	ND	9.19	ug/kg	1					
Benzo(ghi)perylene	U	ND	9.19	ug/kg	1					
Benzo(k)fluoranthene	U	ND	9.19	ug/kg	1					
Chrysene	U	ND	9.19	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	9.19	ug/kg	1					
Fluoranthene	U	ND	9.19	ug/kg	1					
Fluorene	U	ND	9.19	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	9.19	ug/kg	1					
Naphthalene	U	ND	9.19	ug/kg	1					
Phenanthrene	U	ND MW	9.19	ug/kg	1					
Pyrene	U	ND	9.19	ug/kg	1					
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	460	ug/kg	1	RMB	07/11/12	1724	1228008	2
1,2,4,5-Tetrachlorobenzene	U	ND	460	ug/kg	1					
~~1-Methylnaphthalene~~	~~U~~	~~ND~~	~~46.0~~	~~ug/kg~~ MUR	1					
2,3,4,6-Tetrachlorophenol	U	ND	460	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	460	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	460	ug/kg	1					
2,4-Dichlorophenol	U	ND	460	ug/kg	1					
2,4-Dimethylphenol	U	ND	460	ug/kg	1					
2,4-Dinitrophenol	U	ND	919	ug/kg	1					
2,4-Dinitrotoluene	U	ND	460	ug/kg	1					
2,6-Dinitrotoluene	U	ND	460	ug/kg	1					
~~2-Chloronaphthalene~~	~~U~~	~~ND~~	~~46.0~~	~~ug/kg~~ MUR	1					
2-Chlorophenol	U	ND	460	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	460	ug/kg	1					
~~2-Methylnaphthalene~~	~~U~~	~~ND~~	~~46.0~~	~~ug/kg~~ MUR	1					
2-Nitrophenol	U	ND MW	460	ug/kg	1					

MW 7-13-12

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 12, 2012

Client Sample ID: 12060203
Sample ID: 306907005

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
3,3'-Dichlorobenzidine	U	ND	460	ug/kg	1					
4-Bromophenylphenylether	U	ND	460	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	460	ug/kg	1					
4-Chloroaniline	U	ND	460	ug/kg	1					
4-Chlorophenylphenylether	U	ND	460	ug/kg	1					
4-Nitrophenol	U	ND	460	ug/kg	1					
~~Acenaphthene~~	~~U~~	~~ND~~	~~46.0~~	~~ug/kg~~	1					
~~Acenaphthylene~~	~~U~~	~~ND~~	~~46.0~~	~~ug/kg~~	1					
Acetophenone	U	ND	460	ug/kg	1					
~~Anthracene~~	~~U~~	~~ND~~	~~46.0~~	~~ug/kg~~	1					
Atrazine	U	ND	460	ug/kg	1					
Benzaldehyde	U	ND	460	ug/kg	1					
~~Benzo(a)anthracene~~	U	ND	46.0	ug/kg	1					
Benzo(a)pyrene	U	ND	46.0	ug/kg	1					
Benzo(b)fluoranthene	U	ND	46.0	ug/kg	1					
Benzo(ghi)perylene	U	ND	46.0	ug/kg	1					
Benzo(k)fluoranthene	U	ND	46.0	ug/kg	1					
Butylbenzylphthalate	U	ND	460	ug/kg	1					
Caprolactam	U	ND	460	ug/kg	1					
Carbazole	U	ND	46.0	ug/kg	1					
~~Chrysene~~	~~U~~	~~ND~~	~~46.0~~	~~ug/kg~~	1					
Di-n-butylphthalate	U	ND	460	ug/kg	1					
Di-n-octylphthalate	U	ND	460	ug/kg	1					
~~Dibenzo(a,h)anthracene~~	~~U~~	~~ND~~	~~46.0~~	~~ug/kg~~	1					
Dibenzofuran	U	ND	460	ug/kg	1					
Diethylphthalate	U	ND	460	ug/kg	1					
Dimethylphthalate	U	ND	460	ug/kg	1					
Diphenylamine	U	ND	460	ug/kg	1					
~~Fluoranthene~~	~~U~~	~~ND~~	~~46.0~~	~~ug/kg~~	1					
~~Fluorene~~	~~U~~	~~ND~~	~~46.0~~	~~ug/kg~~	1					
Hexachlorobenzene	U	ND	460	ug/kg	1					
Hexachlorobutadiene	U	ND	460	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	460	ug/kg	1					
Hexachloroethane	U	ND	460	ug/kg	1					
~~Indeno(1,2,3-cd)pyrene~~	~~U~~	~~ND~~	~~46.0~~	~~ug/kg~~	1					
Isophorone	U	ND	460	ug/kg	1					
N-Nitrosodipropylamine	U	ND	460	ug/kg	1					
~~Naphthalene~~	~~U~~	~~ND~~	~~46.0~~	~~ug/kg~~	1					
Nitrobenzene	U	ND	460	ug/kg	1					
Pentachlorophenol	U	ND	460	ug/kg	1					
~~Phenanthrene~~	~~U~~	~~ND~~	~~46.0~~	~~ug/kg~~	1					
Phenol	U	ND	460	ug/kg	1					

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MW 7-13-12

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 12, 2012

Client Sample ID: 12060203
Sample ID: 306907005

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
~~Pyrene~~	~~U~~	~~ND~~	~~46.0~~	~~ug/kg~~	~~1~~					
bis(2-Chloroethoxy)methane	U	ND	460	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	460	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	460	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	460	ug/kg	1					
m,p-Cresols	U	ND	460	ug/kg	1					
m-Nitroaniline	U	ND	460	ug/kg	1					
o-Cresol	U	ND	460	ug/kg	1					
o-Nitroaniline	U	ND	460	ug/kg	1					
p-Nitroaniline	U	ND	460	ug/kg	1					

MR

SHM

MW

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	07/10/12	2040	1227986

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	Prep Method 3550C for Solid	MXS4	07/10/12	2040	1228309

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D SIM PAH	
2	SW846 3550C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
5-alpha-Androstane	SW846 3550C/8270D SIM PAH Sonication "Dry Weight Corrected"	146 ug/kg	230	63.6	(39%-114%)
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1190 ug/kg	2300	51.8	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1360 ug/kg	2300	59.1	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1960 ug/kg	2300	85.2	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2390 ug/kg	4600	52.0	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2230 ug/kg	4600	48.5	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry	1940 ug/kg	4600	42.3	(26%-112%)

MW 7-13-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 12, 2012

Client Sample ID:	12060204	Project:	ECOL00801
Sample ID:	306907006	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	28-JUN-12 15:50		
Receive Date:	30-JUN-12		
Collector:	Client		
Moisture:	14.5%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D SIM PAH Sonication "Dry Weight Corrected"										
1-Methylnaphthalene	U	ND	7.78	ug/kg	1	JLD1	07/11/12	1926	1228310	1
2-Chloronaphthalene	U	ND	7.78	ug/kg	1					
2-Methylnaphthalene	U	ND	7.78	ug/kg	1					
Acenaphthene	U	ND	7.78	ug/kg	1					
Acenaphthylene	U	ND	7.78	ug/kg	1					
Anthracene	U	ND	7.78	ug/kg	1					
Benzo(a)anthracene	U	ND	7.78	ug/kg	1					
Benzo(a)pyrene	U	ND	7.78	ug/kg	1					
Benzo(b)fluoranthene	U	ND	7.78	ug/kg	1					
Benzo(ghi)perylene	U	ND	7.78	ug/kg	1					
Benzo(k)fluoranthene	U	ND	7.78	ug/kg	1					
Chrysene	U	ND	7.78	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	7.78	ug/kg	1					
Fluoranthene	U	ND	7.78	ug/kg	1					
Fluorene	U	ND	7.78	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	7.78	ug/kg	1					
Naphthalene	U	ND	7.78	ug/kg	1					
Phenanthrene	U	ND	7.78	ug/kg	1					
Pyrene	U	ND	7.78	ug/kg	1					
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	389	ug/kg	1	RMB	07/11/12	1751	1228008	2
1,2,4,5-Tetrachlorobenzene	U	ND	389	ug/kg	1					
~~1-Methylnaphthalene~~	~~U~~	~~ND~~	~~38.9~~	~~ug/kg~~ R	1					
2,3,4,6-Tetrachlorophenol	U	ND	389	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	389	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	389	ug/kg	1					
2,4-Dichlorophenol	U	ND	389	ug/kg	1					
2,4-Dimethylphenol	U	ND	389	ug/kg	1					
2,4-Dinitrophenol	U	ND	778	ug/kg	1					
2,4-Dinitrotoluene	U	ND	389	ug/kg	1					
2,6-Dinitrotoluene	U	ND	389	ug/kg	1					
~~2-Chloronaphthalene~~	~~U~~	~~ND~~	~~38.9~~	~~ug/kg~~ R	1					
2-Chlorophenol	U	ND	389	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	389	ug/kg	1					
~~2-Methylnaphthalene~~	~~U~~	~~ND~~	~~38.9~~	~~ug/kg~~ R	1					
2-Nitrophenol	U	ND	389	ug/kg	1					

MW 7/13/12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 12, 2012

Client Sample ID: 12060204
Sample ID: 306907006

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
3,3'-Dichlorobenzidine	U	ND	389 U	ug/kg	1					
4-Bromophenylphenylether	U	ND	389	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	389	ug/kg	1					
4-Chloroaniline	U	ND	389	ug/kg	1					
4-Chlorophenylphenylether	U	ND	389	ug/kg	1					
4-Nitrophenol	U	ND	389	ug/kg	1					
~~Acenaphthene~~	~~U~~	~~ND~~	~~38.9~~	~~ug/kg~~ MR	1					
~~Acenaphthylene~~	~~U~~	~~ND~~	~~38.9~~	~~ug/kg~~ MR	1					
Acetophenone	U	ND	389	ug/kg	1					
~~Anthracene~~	~~U~~	~~ND~~	~~38.9~~	~~ug/kg~~ MR	1					
Atrazine	U	ND	389	ug/kg	1					
Benzaldehyde	U	ND	389	ug/kg	1					
Benzo(a)anthracene	U	ND	38.9	ug/kg R	1					
Benzo(a)pyrene	U	ND	38.9	ug/kg R	1					
Benzo(b)fluoranthene	U	ND	38.9	ug/kg R	1					
Benzo(ghi)perylene	U	ND	38.9	ug/kg R	1					
Benzo(k)fluoranthene	U	ND	38.9 MW	ug/kg R	1					
Butylbenzylphthalate	U	ND	389	ug/kg	1					
Caprolactam	U	ND	389	ug/kg	1					
Carbazole	U	ND	38.9	ug/kg	1					
~~Chrysene~~	~~U~~	~~ND~~	~~38.9~~	~~ug/kg~~ MR	1					
Di-n-butylphthalate	U	ND	389	ug/kg	1					
Di-n-octylphthalate	U	ND	389	ug/kg	1					
~~Dibenzo(a,h)anthracene~~	~~U~~	~~ND~~	~~38.9~~	~~ug/kg~~ MR	1					
Dibenzofuran	U	ND	389	ug/kg	1					
Diethylphthalate	U	ND	389	ug/kg	1					
Dimethylphthalate	U	ND	389	ug/kg	1					
Diphenylamine	U	ND	389	ug/kg	1					
~~Fluoranthene~~	~~U~~	~~ND~~	~~38.9~~	~~ug/kg~~ MR	1					
~~Fluorene~~	~~U~~	~~ND~~	~~38.9~~	~~ug/kg~~ MR	1					
Hexachlorobenzene	U	ND	389	ug/kg	1					
Hexachlorobutadiene	U	ND	389	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	389	JL ug/kg	1					
Hexachloroethane	U	ND	389	ug/kg	1					
~~Indeno(1,2,3-cd)pyrene~~	~~U~~	~~ND~~	~~38.9~~	~~ug/kg~~ MR	1					
Isophorone	U	ND	389	ug/kg	1					
N-Nitrosodipropylamine	U	ND	389	ug/kg	1					
~~Naphthalene~~	~~U~~	~~ND~~	~~38.9~~	~~ug/kg~~ MR	1					
Nitrobenzene	U	ND	389	ug/kg	1					
Pentachlorophenol	U	ND	389	JL ug/kg	1					
~~Phenanthrene~~	~~U~~	~~ND~~	~~38.9~~	~~ug/kg~~ MR	1					
Phenol	U	ND	389	ug/kg	1					

S4VM

MW

MW 7/3/12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 12, 2012

Client Sample ID: 12060204
Sample ID: 306907006

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
~~Pyrene~~	~~U~~	~~ND~~	~~38.9~~ U	~~ug/kg~~ UR	1					SYM
bis(2-Chloroethoxy)methane	U	ND	389	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	389	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	389	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	389	ug/kg	1					
m,p-Cresols	U	ND	389	ug/kg	1					
m-Nitroaniline	U	ND	389	ug/kg	1					
o-Cresol	U	ND	389	ug/kg	1					
o-Nitroaniline	U	ND	389	ug/kg	1					
p-Nitroaniline	U	ND	389	J ug/kg	1					

MV

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	07/10/12	2040	1227986

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	Prep Method 3550C for Solid	MXS4	07/10/12	2040	1228309

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D SIM PAH	
2	SW846 3550C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
5-alpha-Androstane	SW846 3550C/8270D SIM PAH Sonication "Dry Weight Corrected"	163 ug/kg	194	83.6	(39%-114%)
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1320 ug/kg	1940	67.6	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1500 ug/kg	1940	77.0	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1800 ug/kg	1940	92.5	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2360 ug/kg	3890	60.8	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2460 ug/kg	3890	63.2	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry	2130 ug/kg	3890	54.7	(26%-112%)

MW 7-13-12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: July 16, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-13

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of 6 soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered:

12060015	12060016	12060201	12060202	12060203	12060204

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained at < 6°C. The samples were collected on June 28 or 29, 2012, extracted on July 9, 2012, and were analyzed by July 10, 2012, therefore meeting QC criteria of less than 7 days between collection and water sample extraction (14 days for soils) and less than 40 days between extraction and analysis.

2. Instrument Performance: Acceptable.

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. Initial and Continuing Calibration: Acceptable.

All initial calibration relative standard deviations (RSDs) were less than 15%. All continuing

calibration % differences (% D) were less than 15% and were within QC limits.

4. Error Determination: Not Provided.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Acceptable.

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

6. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. System Monitoring Compounds (SMCs): Acceptable.

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

8. Blank and Matrix Spikes: Acceptable.

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

9. Duplicates: Acceptable.

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

10. Compound Identification: Acceptable.

All results were dual-column confirmed with differences between the columns less than 25%.

11. Target Compound Quantitation and Quantitation Limits: Acceptable.

Sample results and quantitation limits were correctly calculated.

12. Laboratory Contact

No laboratory contact was required.

13. Overall Assessment

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 10, 2012

Client Sample ID:	12060015	Project:	ECOL00801
Sample ID:	306907001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	29-JUN-12 09:35		
Receive Date:	30-JUN-12		
Collector:	Client		
Moisture:	11.7%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	18.8	ug/kg	5	YS1	07/09/12	1730	1227753	1
Aroclor-1221	U	ND	18.8	ug/kg	5					
Aroclor-1232	U	ND	18.8	ug/kg	5					
Aroclor-1242	U	ND	18.8	ug/kg	5					
Aroclor-1248	U	ND	18.8	ug/kg	5					
Aroclor-1254	U	ND	18.8	ug/kg	5					
Aroclor-1260	U	ND	18.8	ug/kg	5					
Aroclor-Total	U	ND	18.8	ug/kg	5					

SZVM

MW

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	JXC7	07/09/12	0730	1227752

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	6.17 ug/kg	7.51	82.2	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	7.15 ug/kg	7.51	95.3	(19%-130%)

MW 7-13-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 10, 2012

Client Sample ID:	12060016	Project:	ECOL00801
Sample ID:	306907002	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	29-JUN-12 09:35		
Receive Date:	30-JUN-12		
Collector:	Client		
Moisture:	11.1%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	18.7	ug/kg	5	YS1	07/09/12	1807	1227753	1
Aroclor-1221	U	ND	18.7	ug/kg	5					
Aroclor-1232	U	ND	18.7	ug/kg	5					
Aroclor-1242	U	ND	18.7	ug/kg	5					
Aroclor-1248	U	ND	18.7	ug/kg	5					
Aroclor-1254	U	ND	18.7	ug/kg	5					
Aroclor-1260	U	ND	18.7	ug/kg	5					
Aroclor-Total	U	ND	18.7	ug/kg	5					

U S2VM MW

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	JXC7	07/09/12	0730	1227752

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	6.03 ug/kg	7.47	80.7	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	6.08 ug/kg	7.47	81.4	(19%-130%)

MW 7-13-12

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 10, 2012

Client Sample ID:	12060201	Project:	ECOL00801
Sample ID:	306907003	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	28-JUN-12 15:10		
Receive Date:	30-JUN-12		
Collector:	Client		
Moisture:	10.9%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	18.6	ug/kg	5	YS1	07/09/12	1820	1227753	1
Aroclor-1221	U	ND	18.6	ug/kg	5					
Aroclor-1232	U	ND	18.6	ug/kg	5					
Aroclor-1242	U	ND	18.6	ug/kg	5					
Aroclor-1248	U	ND	18.6	ug/kg	5					
Aroclor-1254	U	ND	18.6	ug/kg	5					
Aroclor-1260	U	ND	18.6	ug/kg	5					
Aroclor-Total	U	ND	18.6	ug/kg	5					

U

SZVM

MW

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	JXC7	07/09/12	0730	1227752

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	5.95 ug/kg	7.43	80.1	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	5.92 ug/kg	7.43	79.7	(19%-130%)

MW 7/13/12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 10, 2012

Client Sample ID:	12060202	Project:	ECOL00801
Sample ID:	306907004	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	28-JUN-12 15:20		
Receive Date:	30-JUN-12		
Collector:	Client		
Moisture:	15.8%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	19.7	ug/kg	5	YS1	07/10/12	0031	1227753	1
Aroclor-1221	U	ND	19.7	ug/kg	5					
Aroclor-1232	U	ND	19.7	ug/kg	5					
Aroclor-1242	U	ND	19.7	ug/kg	5					
Aroclor-1248	U	ND	19.7	ug/kg	5					
Aroclor-1254	U	ND	19.7	ug/kg	5					
Aroclor-1260	U	ND	19.7	ug/kg	5					
Aroclor-Total	U	ND	19.7	ug/kg	5					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	JXC7	07/09/12	0730	1227752

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.83 ug/kg	7.90	61.2	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	5.27 ug/kg	7.90	66.8	(19%-130%)

MW 7-13-12

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 10, 2012

Client Sample ID:	12060203	Project:	ECOL00801
Sample ID:	306907005	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	28-JUN-12 15:30		
Receive Date:	30-JUN-12		
Collector:	Client		
Moisture:	27.7%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	4.59	ug/kg	1	YS1	07/09/12	1844	1227753	1 SZVM
Aroclor-1221	U	ND	4.59	ug/kg	1					
Aroclor-1232	U	ND	4.59	ug/kg	1					
Aroclor-1242	U	ND	4.59	ug/kg	1					
Aroclor-1248	U	ND	4.59	ug/kg	1					
Aroclor-1254	U	ND	4.59	ug/kg	1					
Aroclor-1260	U	ND	4.59	ug/kg	1					
Aroclor-Total	U	ND MW	4.59	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	JXC7	07/09/12	0730	1227752

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	7.47 ug/kg	9.18	81.3	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	7.86 ug/kg	9.18	85.6	(19%-130%)

MW 7/13/12

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 10, 2012

Client Sample ID:	12060204	Project:	ECOL00801
Sample ID:	306907006	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	28-JUN-12 15:50		
Receive Date:	30-JUN-12		
Collector:	Client		
Moisture:	14.5%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	3.89	ug/kg	1	YS1	07/09/12	1857	1227753	1 SQVM
Aroclor-1221	U	ND	3.89	ug/kg	1					
Aroclor-1232	U	ND	3.89	ug/kg	1					
Aroclor-1242	U	ND	3.89	ug/kg	1					
Aroclor-1248	U	ND	3.89	ug/kg	1					
Aroclor-1254	U	ND	3.89	ug/kg	1					
Aroclor-1260	U	ND	3.89	ug/kg	1					
Aroclor-Total	U	ND MW	3.89	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	JXC7	07/09/12	0730	1227752

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	5.08 ug/kg	7.77	65.3	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	7.03 ug/kg	7.77	90.5	(19%-130%)

MW 7/13/12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700
Seattle, Washington 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: July 21, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-14

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one waste and six soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Analysis for Extended Diesel Range Total Petroleum Hydrocarbons (Ecology Method NWTPH-Dx) and Hydrocarbon Identification (Ecology Method NWTPH-HCID) was performed by TestAmerica Seattle, Tacoma, Washington. All sample analyses were evaluated following EPA's Stage 2 and 4 Data Validation Electronic/Manual Process (S4VEM).

The samples were numbered:

12060015	12060016	12060201	12060202	12060203	12060204
12060401					

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained at < 6°C. The samples were collected on June 29, 2012, extracted by June 10, 2012, and analyzed by June 12, 2012, therefore meeting QC criteria of less than 14 days between collection and extraction for soil samples, and less than 40 days between extraction and analysis.

2. Initial and Continuing Calibrations: Acceptable.

Calculations were verified as correct. All initial calibration correlation coefficients were ≥ 0.990 and/or all relative percent differences (RPDs) were less than or equal to the laboratory control limits of 15%. All continuing calibration percent differences (%Ds) were ≤ the laboratory control limits of 15%.

3. Error Determination: Not Performed.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

4. **Blanks: Satisfactory.**

A method blank was analyzed for each extraction batch for each matrix and analysis system. Diesel-range TPHs were not detected in any blank, but motor oil-range TPHs were detected in one blank; no action was taken as applicable sample results were more than five times the blank results.

5. **System Monitoring Compounds (SMC): Acceptable.**

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

6. **Performance Evaluation Samples: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

7. **Matrix and Blank Spikes: Acceptable.**

Matrix and blank spike results were within QC limits.

8. **Duplicates: Acceptable.**

Duplicate and spike duplicate results were within QC limits.

9. **Quantitation and Quantitation Limits: Acceptable.**

Sample concentrations were correctly calculated.

10. **Laboratory Contact: Not Required.**

No laboratory contact was required.

11. **Overall Assessment of Data for Use**

In samples 12060201 and 12060202, the results in the Diesel and Motor Oil ranges are due to what most closely resembles a mixture of weathered/degraded diesel fuel and motor oil; associated sample results are qualified as estimated quantities with a high bias (JH).

In sample 12060401, the results in the Diesel and Motor Oil ranges are due to what most closely resembles a complex mixture of heavily weathered/degraded diesel fuel, a mineral/transformer oil range product, motor oil, and possible biogenic interference; associated sample results are qualified as estimated quantities with a high bias (JH).

In sample 12060401, the results in the #2 Diesel, Gasoline, and Motor Oil range(s) are due to what most closely resembles a complex mixture of heavily weathered/degraded diesel fuel, a mineral/ transformer oil range product, motor oil, and biogenic interference; associated sample results were qualified as estimated quantities with a high bias (JH).

Positive sample results less than the reporting limit were qualified as estimated quantities (JQ).

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the Method Detection Limit (MDL) and the Reporting Limit (RL).

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Client: Ecology and Environment, Inc.

Job Number: 580-33728-1

Client Sample ID: **12060015**

Lab Sample ID: 580-33728-1

Client Matrix: Solid

% Moisture: 15.6

Date Sampled: 06/29/2012 0935

Date Received: 06/30/2012 0835

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-114692	Instrument ID:	TAC017
Prep Method:	3550B	Prep Batch:	580-114708	Lab File ID:	ZZ20510.D
Dilution:	1.0			Initial Weight/Volume:	10.4291 g
Analysis Date:	07/06/2012 2053			Final Weight/Volume:	10 mL
Prep Date:	07/06/2012 1028			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		8.1	J Q	6.5	28
Motor Oil (>C24-C36)		43	J Q	10	57

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	95		50 - 150

MW 7-24-12

Client: Ecology and Environment, Inc.

Job Number: 580-33728-1

Client Sample ID: **12060016**

Lab Sample ID: 580-33728-2

Client Matrix: Solid

% Moisture: 16.5

Date Sampled: 06/29/2012 0935

Date Received: 06/30/2012 0835

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-114692	Instrument ID:	TAC017
Prep Method:	3550B	Prep Batch:	580-114708	Lab File ID:	ZZ20512.D
Dilution:	1.0			Initial Weight/Volume:	10.1200 g
Analysis Date:	07/06/2012 2115			Final Weight/Volume:	10 mL
Prep Date:	07/06/2012 1028			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		9.1	J Q	6.7	30
Motor Oil (>C24-C36)		39	J Q	11	59

SHM

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	94		50 - 150

MW 7-24-12

Client: Ecology and Environment, Inc.

Job Number: 580-33728-1

Client Sample ID: **12060201**

Lab Sample ID: 580-33728-3

Client Matrix: Solid

% Moisture: 14.6

Date Sampled: 06/28/2012 1510

Date Received: 06/30/2012 0835

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-114692	Instrument ID:	TAC017
Prep Method:	3550B	Prep Batch:	580-114708	Lab File ID:	ZZ20514.D
Dilution:	1.0			Initial Weight/Volume:	10.2361 g
Analysis Date:	07/06/2012 2136			Final Weight/Volume:	10 mL
Prep Date:	07/06/2012 1028			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		760	Y JH	6.5	29
Motor Oil (>C24-C36)		470	Y JH	10	57

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	106		50 - 150

MW 7-24-12

Analytical Data

Client: Ecology and Environment, Inc. Job Number: 580-33728-1

Client Sample ID: **12060202**

Lab Sample ID:	580-33728-4			Date Sampled:	06/28/2012 1520
Client Matrix:	Solid	% Moisture:	20.8	Date Received:	06/30/2012 0835

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-114692	Instrument ID:	TAC017
Prep Method:	3550B	Prep Batch:	580-114708	Lab File ID:	ZZ20516.D
Dilution:	1.0			Initial Weight/Volume:	10.2723 g
Analysis Date:	07/06/2012 2158			Final Weight/Volume:	10 mL
Prep Date:	07/06/2012 1028			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		2700	Y JH	7.0	31
Motor Oil (>C24-C36)		350	Y mw JH	11	61

SQUM

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	117		50 - 150

MW 7-21-12

Client: Ecology and Environment, Inc.

Job Number: 580-33728-1

Client Sample ID: **12060203**

Lab Sample ID: 580-33728-5

Client Matrix: Solid

% Moisture: 23.7

Date Sampled: 06/28/2012 1530

Date Received: 06/30/2012 0835

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-114692	Instrument ID:	TAC017
Prep Method:	3550B	Prep Batch:	580-114708	Lab File ID:	ZZ20518.D
Dilution:	1.0			Initial Weight/Volume:	10.6692 g
Analysis Date:	07/06/2012 2219			Final Weight/Volume:	10 mL
Prep Date:	07/06/2012 1028			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		ND		7.0	31 U
Motor Oil (>C24-C36)		ND		11	61 U

54 VM

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	103		50 - 150

MW 7-27-12

Client: Ecology and Environment, Inc.

Job Number: 580-33728-1

Client Sample ID: **12060204**

Lab Sample ID: 580-33728-6

Client Matrix: Solid

% Moisture: 16.9

Date Sampled: 06/28/2012 1550

Date Received: 06/30/2012 0835

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-114692	Instrument ID:	TAC017
Prep Method:	3550B	Prep Batch:	580-114708	Lab File ID:	ZZ20520.D
Dilution:	1.0			Initial Weight/Volume:	10.4190 g
Analysis Date:	07/06/2012 2240			Final Weight/Volume:	10 mL
Prep Date:	07/06/2012 1028			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		ND		6.6	29 U
Motor Oil (>C24-C36)		ND		11	58 U

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	98		50 - 150

MW 7-27-12

Client: Ecology and Environment, Inc.

Job Number: 580-33728-1

Client Sample ID: **12060401**

Lab Sample ID: 580-33728-7

Client Matrix: Waste

Date Sampled: 06/28/2012 1100

Date Received: 06/30/2012 0835

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-115021	Instrument ID:	SEA012
Prep Method:	3580A	Prep Batch:	580-114977	Lab File ID:	CF00403.D
Dilution:	1.0			Initial Weight/Volume:	0.1042 g
Analysis Date:	07/12/2012 0214			Final Weight/Volume:	10 mL
Prep Date:	07/10/2012 1425			Injection Volume:	1 uL

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		75000	JH ~~Y~~ MW	550	2400
Motor Oil (>C24-C36)		190000	JH ~~BY~~ MW	870	4800

SHUM

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	111		50 - 150

MW
7-24-12

Client: Ecology and Environment, Inc.

Job Number: 580-33728-1

Client Sample ID: **12060401**

Lab Sample ID: 580-33728-7

Client Matrix: Waste

Date Sampled: 06/28/2012 1100

Date Received: 06/30/2012 0835

NWTPH-HCID Northwest - Hydrocarbon Identification (GC)

Analysis Method:	NWTPH-HCID	Analysis Batch:	580-115091	Instrument ID:	SEA012
Prep Method:	3580A	Prep Batch:	580-114977	Lab File ID:	CF00403.D
Dilution:	1.0			Initial Weight/Volume:	0.1042 g
Analysis Date:	07/12/2012 0214			Final Weight/Volume:	10 mL
Prep Date:	07/10/2012 1425			Injection Volume:	1 uL

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	RL	RL
Motor Oil		170000	JH	9600	9600
Gasoline		4500		1900	1900
#2 Diesel (>C12-C24)		84000		4800	4800

SHM

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	113		50 - 150
4-Bromofluorobenzene (Surr)	95		50 - 150

MW 7-21-12

ecology and environment, inc.
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720 Third Avenue, Suite 1700
Seattle, Washington 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: July 20, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-15

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of 1 water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060509

Data Qualifications:

1. Sample Holding Times: Acceptable.

The sample was maintained at < 6°C. The sample was collected on July 5, 2012, extracted on July 11, 2012, and was analyzed by July 12, 2012, therefore meeting QC criteria of less than 7 days between collection and water sample extraction (14 days for soils) and less than 40 days between extraction and analysis.

2. Instrument Performance: Acceptable.

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. Initial and Continuing Calibration: Acceptable.

All initial calibration relative standard deviations (RSDs) were less than 15%. All continuing calibration % differences (% D) were less than 15% and were within QC limits.

4. Error Determination: Not Provided.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Acceptable.

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

6. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. System Monitoring Compounds (SMCs): Acceptable.

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

8. Blank Spikes: Acceptable.

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

9. Duplicates: Acceptable.

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

10. Compound Identification: Acceptable.

All positive results were dual-column confirmed with differences between the columns less than 25%.

11. Target Compound Quantitation and Quantitation Limits: Acceptable.

Sample results and quantitation limits were correctly calculated.

12. Laboratory Contact

No laboratory contact was required.

13. Overall Assessment

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 12, 2012

Client Sample ID:	12060509	Project:	ECOL00801
Sample ID:	307400001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	05-JUL-12 11:00		
Receive Date:	07-JUL-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3535A/8082A PCB Liquids "As Received"										
Aroclor-1016	U	ND	0.100	ug/L	1	JXM	07/12/12	0928	1228482	1
Aroclor-1221	U	ND	0.100	ug/L	1					
Aroclor-1232	U	ND	0.100	ug/L	1					
Aroclor-1242	U	ND	0.100	ug/L	1					
Aroclor-1248	U	ND	0.100	ug/L	1					
Aroclor-1254	U	ND	0.100	ug/L	1					
Aroclor-1260	U	ND	0.100	ug/L	1					
Aroclor-Total	U	ND	0.100	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	SW3535A PCB SPE Extraction	RXC1	07/11/12	1215	1228480

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3535A/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3535A/8082A PCB Liquids "As Received"	0.124 ug/L	0.200	62.0	(34%-120%)
Decachlorobiphenyl	SW846 3535A/8082A PCB Liquids "As Received"	0.162 ug/L	0.200	81.1	(33%-120%)

7-2012

ecology and environment, inc.
Global Environmental Specialists
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Seattle, Washington 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: July 20, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-15

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Target Analyte List (TAL) metals analyses (EPA Method 6020) were performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060509

Data Qualifications:

1. Sample Holding Times: Acceptable.

All liquid samples were preserved to a pH < 2. The sample was maintained at < 6°C. The sample was collected on July 5, 2012, and was analyzed by July 12, 2012, therefore meeting QC criteria of less than 6 months between collection, extraction, and analysis.

2. Initial and Continuing Calibration: Acceptable.

A minimum of one calibration standard and a blank were analyzed at the beginning of the ICP analysis sequence and after every 10 samples. No results were greater than 110% of the highest calibration standard. All ICP recoveries were within the QC limits of 90% to 110%.

3. Blanks: Satisfactory.

A preparation blank was analyzed for each 20 samples or per matrix per concentration level. Blanks were analyzed after each Initial or Continuing Calibration Verification. There were no detections in any blanks that affected sample results.

4. ICP Interference Check Sample: Acceptable.

An Interference Check Sample (ICS) was analyzed at the beginning and end of each sequence or at least twice every 8 hours, whichever was more frequent. All ICS (solution AB) results were within QC limits of 80% - 120% recovery.

5. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

6. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. ICP Serial Dilution: Acceptable.

A serial dilution analysis was performed per matrix per concentration or per sample delivery group, whichever was more frequent. All serial dilution results were within QC limits.

8. Matrix Spike Analysis: Acceptable.

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

9. Duplicate Analysis: Acceptable.

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

10. Laboratory Control Sample Analysis: Acceptable.

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

11. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 17, 2012

Client Sample ID:	12060509	Project:	ECOL00801
Sample ID:	307400001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	05-JUL-12 11:00		
Receive Date:	07-JUL-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS										
SW846 3005A/6020A Liquid "As Received"										
Arsenic		5.81	5.00	ug/L	1	SKJ	07/12/12	0338	1227836	1 54UA
Cadmium	U	ND	1.00	ug/L	1					
Chromium	U	ND	10.0	ug/L	1					
Lead	U	ND	2.00	ug/L	1					
Thallium	U	ND	2.00	ug/L	1					
Zinc	U	ND	10.0	ug/L	1					
Copper	U	ND	1.00	ug/L	1	SKJ	07/12/12	1637	1227836	2

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	BXA1	07/09/12	1935	1227835

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6020A	
2	SW846 3005A/6020A	

MN
7-20-12

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Global Environmental Specialists
720 Third Avenue, Suite 1700
Seattle, Washington 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: July 20, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-15

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060509

Data Qualifications:

1. Sample Holding Times: Acceptable.

The sample was maintained and received within the QC limits of < 6°C. The sample was collected on July 5, 2012, was extracted on July 10, 2012, and was analyzed on July 11, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Acceptable.

All average Relative Response Factors (RRFs) were greater than the QC limit of 0.050. All Relative Standard Deviations (RSDs) were less than the QC limits.

4. Continuing Calibration: Acceptable.

All RRFs were greater than the QC limit of 0.050. All % differences were less than the QC limits.

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

7. Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Analysis: Acceptable.

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

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Acceptable.

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC
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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 16, 2012

Client Sample ID:	12060509	Project:	ECOL00801
Sample ID:	307400001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	05-JUL-12 11:00		
Receive Date:	07-JUL-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D Semivolatile Analysis by Separatory Funnel "As Received"										
Benzo(a)anthracene	U	ND	1.00	ug/L	1	RMB	07/11/12	1828	1228420	1
Benzo(a)pyrene	U	ND	1.00	ug/L	1					
Benzo(b)fluoranthene	U	ND	1.00	ug/L	1					
Chrysene	U	ND	1.00	ug/L	1					
Diphenylamine	U	ND	10.0	ug/L	1					
bis(2-Ethylhexyl)phthalate	U	ND	10.0	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	SW846 3510C Prep Semivolatiles 8270D	SXS3	07/10/12	1740	1228419

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2,4,6-Tribromophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	59.2 ug/L	100	59.2	(26%-131%)
2-Fluorophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	36.3 ug/L	100	36.3	(15%-78%)
Phenol-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	17.5 ug/L	100	17.5	(10%-72%)
2-Fluorobiphenyl	8270D Semivolatile Analysis by Separatory Funnel "As Received"	28.9 ug/L	50.0	57.8	(29%-102%)
Nitrobenzene-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	31.4 ug/L	50.0	62.9	(36%-125%)
p-Terphenyl-d14	8270D Semivolatile Analysis by Separatory Funnel "As Received"	42.0 ug/L	50.0	84.0	(31%-133%)

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MEMORANDUM

DATE: July 29, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-16

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of two soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Analysis for Extended Diesel Range Total Petroleum Hydrocarbons (Ecology Method NWTPH-Dx) was performed by TestAmerica Seattle, Tacoma, Washington. All sample analyses were evaluated following EPA's Stage 2 (S2VM) and 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060060 12060061

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained at < 6°C. The samples were collected on July 11, 2012, extracted by July 12, 2012, and analyzed by July 12, 2012, therefore meeting QC criteria of less than 14 days between collection and extraction for soil samples, and less than 40 days between extraction and analysis.

2. Initial and Continuing Calibrations: Acceptable.

Calculations were verified as correct. All initial calibration correlation coefficients were ≥ 0.990 and/or all relative percent differences (RPDs) were less than or equal to the laboratory control limits of 15%. All continuing calibration percent differences (%Ds) were ≤ the laboratory control limits of 15%.

3. Error Determination: Not Performed.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

4. Blanks: Satisfactory.

A method blank was analyzed for each extraction batch for each matrix and analysis system.

Diesel-range TPHs were not detected in any blank, but motor oil-range TPHs were detected in one blank; no action was taken as motor oil TPHs were not detected in any samples.

5. **System Monitoring Compounds (SMC): Acceptable.**
All recoveries of the SMCs were greater than 10% and within QC criteria.

6. **Performance Evaluation Samples: Not Provided.**
Performance evaluation samples were not provided to the laboratory.

7. **Blank Spikes: Acceptable.**
Blank spike results were within QC limits.

8. **Duplicates: Acceptable.**
Duplicate results were within QC limits.

9. **Quantitation and Quantitation Limits: Acceptable.**
Sample concentrations were correctly calculated.

10. **Laboratory Contact: Not Required.**
No laboratory contact was required.

11. **Overall Assessment of Data for Use**

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the Method Detection Limit (MDL) and the Reporting Limit (RL).

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Client: Ecology and Environment, Inc.

Job Number: 580-33881-1

Client Sample ID: **12060060**

Lab Sample ID: 580-33881-1

Client Matrix: Solid

% Moisture: 12.1

Date Sampled: 07/11/2012 0930

Date Received: 07/12/2012 0935

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-115124	Instrument ID:	SEA012
Prep Method:	3550B	Prep Batch:	580-115188	Lab File ID:	CR00412.D
Dilution:	1.0			Initial Weight/Volume:	10.7503 g
Analysis Date:	07/12/2012 1836			Final Weight/Volume:	10 mL
Prep Date:	07/12/2012 1502			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		ND		6.0	26
Motor Oil (>C24-C36)		ND		9.6	53

S2VM

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	103		50 - 150

MW 7-29-12

Client: Ecology and Environment, Inc.

Job Number: 580-33881-1

Client Sample ID: **12060061**

Lab Sample ID: 580-33881-2

Client Matrix: Solid

% Moisture: 18.4

Date Sampled: 07/11/2012 0945

Date Received: 07/12/2012 0935

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-115124	Instrument ID:	SEA012
Prep Method:	3550B	Prep Batch:	580-115188	Lab File ID:	CR00410.D
Dilution:	1.0			Initial Weight/Volume:	10.7155 g
Analysis Date:	07/12/2012 1757			Final Weight/Volume:	10 mL
Prep Date:	07/12/2012 1502			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		ND		6.5	29
Motor Oil (>C24-C36)		ND		10	57

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	96		50 - 150

7-29-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700
Seattle, Washington 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: July 28, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-17

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of 2 soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060060 12060061

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained at < 6°C. The samples were collected on July 11, 2012, extracted on July 16, 2012, and were analyzed by July 17, 2012, therefore meeting QC criteria of less than 7 days between collection and water sample extraction (14 days for soils) and less than 40 days between extraction and analysis.

2. Instrument Performance: Acceptable.

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. Initial and Continuing Calibration: Satisfactory.

All initial calibration relative standard deviations (RSDs) were less than 15%. All continuing calibration % differences (% D) were within QC limits except several A1260 peaks with low recoveries; associated A1260 sample quantitation limits were qualified as estimated quantities with a low bias (UJL).

4. Error Determination: Not Provided.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Acceptable.

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

6. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. System Monitoring Compounds (SMCs): Acceptable.

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

8. Matrix Spikes: Acceptable.

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

9. Duplicates: Acceptable.

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

10. Compound Identification: Acceptable.

All results were dual-column confirmed with differences between the columns less than 25%.

11. Target Compound Quantitation and Quantitation Limits: Acceptable.

Sample results and quantitation limits were correctly calculated.

12. Laboratory Contact

No laboratory contact was required.

13. Overall Assessment

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 18, 2012

Client Sample ID:	12060060	Project:	ECOL00801
Sample ID:	307654001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	11-JUL-12 09:30		
Receive Date:	12-JUL-12		
Collector:	Client		
Moisture:	19.5%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	4.13	ug/kg	1	JXM	07/17/12	1309	1230013	1
Aroclor-1221	U	ND	4.13	ug/kg	1					
Aroclor-1232	U	ND	4.13	ug/kg	1					
Aroclor-1242	U	ND	4.13	ug/kg	1					
Aroclor-1248	U	ND	4.13	ug/kg	1					
Aroclor-1254	U	ND	4.13	ug/kg	1					
Aroclor-1260	U	ND	4.13	ug/kg	1					
Aroclor-Total	U	ND	4.13	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	07/16/12	1856	1230009

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.81 ug/kg	8.25	58.3	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	6.65 ug/kg	8.25	80.5	(19%-130%)

The Following NCRs have been identified

NCR ID:1101141 Batch ID: 1230306
1. Failed Recovery for MS/PS:
   QC 1202699843MS
2. Failed Yield for Surrogates:
   307654 002
3. Failed Recovery for MSD/PSD:
   QC 1202699844MSD

MW 7-28-12

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 18, 2012

Client Sample ID:	12060061	Project:	ECOL00801
Sample ID:	307654002	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	11-JUL-12 09:45		
Receive Date:	12-JUL-12		
Collector:	Client		
Moisture:	15.2%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	3.92	ug/kg	1	JXM	07/17/12	1401	1230013	1
Aroclor-1221	U	ND	3.92	ug/kg	1					
Aroclor-1232	U	ND	3.92	ug/kg	1					
Aroclor-1242	U	ND	3.92	ug/kg	1					
Aroclor-1248	U	ND	3.92	ug/kg	1					
Aroclor-1254	U	ND	3.92	ug/kg	1					
Aroclor-1260	U	ND	3.92	ug/kg	1					
Aroclor-Total	U	ND	3.92	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	07/16/12	1856	1230009

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	3.05 ug/kg	7.84	38.9	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	3.97 ug/kg	7.84	50.6	(19%-130%)

The Following NCRs have been identified

NCR ID:1101141 Batch ID: 1230306
1. Failed Recovery for MS/PS:
   QC 1202699843MS
2. Failed Yield for Surrogates:
   307654 002
3. Failed Recovery for MSD/PSD:
   QC 1202699844MSD

MN 7-28-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700
Seattle, Washington 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: July 28, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-17

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of 2 soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060060 12060061

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on July 11, 2012, were extracted on July 17, 2012, and were analyzed on July 20, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Acceptable.

All average Relative Response Factors (RRFs) were greater than the QC limit of 0.050. All Relative Standard Deviations (RSDs) were less than the QC limit.

4. Continuing Calibration: Satisfactory.

All RRFs were greater than the QC limit of 0.050. All % differences were less than the QC limit except hexachlorocyclopentadiene with a decreasing response factor in the July 18 calibration; associated hexachlorocyclopentadiene sample quantitation limits were qualified as estimated quantities with a low bias (UJL).

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

7. Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Analysis: Acceptable.

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

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Acceptable.

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 23, 2012

Client Sample ID:	12060060	Project:	ECOL00801
Sample ID:	307654001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	11-JUL-12 09:30		
Receive Date:	12-JUL-12		
Collector:	Client		
Moisture:	19.5%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D SIM PAH Sonication "Dry Weight Corrected"										
1-Methylnaphthalene	U	ND	8.26	ug/kg	1	JMB3	07/20/12	1321	1230308	1 5270-M
2-Chloronaphthalene	U	ND	8.26	ug/kg	1					
2-Methylnaphthalene	U	ND	8.26	ug/kg	1					
Acenaphthene	U	ND	8.26	ug/kg	1					
Acenaphthylene	U	ND	8.26	ug/kg	1					
Anthracene	U	ND	8.26	ug/kg	1					
Benzo(a)anthracene	U	ND	8.26	ug/kg	1					
Benzo(a)pyrene	U	ND	8.26	ug/kg	1					
Benzo(b)fluoranthene	U	ND	8.26	ug/kg	1					
Benzo(ghi)perylene	U	ND	8.26	ug/kg	1					
Benzo(k)fluoranthene	U	ND	8.26	ug/kg	1					
Chrysene	U	ND	8.26	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	8.26	ug/kg	1					
Fluoranthene	U	ND	8.26	ug/kg	1					
Fluorene	U	ND	8.26	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	8.26	ug/kg	1					
Naphthalene	U	ND	8.26	ug/kg	1					
Phenanthrene	U	ND	8.26	ug/kg	1					
Pyrene	U	ND MW	8.26	ug/kg	1					
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	413	ug/kg	1	JLD1	07/18/12	1311	1230306	2 5270-D
1,2,4,5-Tetrachlorobenzene	U	ND	413	ug/kg	1					
1-Methylnaphthalene	U	ND	41.3	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	413	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	413	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	413	ug/kg	1					
2,4-Dichlorophenol	U	ND	413	ug/kg	1					
2,4-Dimethylphenol	U	ND	413	ug/kg	1					
2,4-Dinitrophenol	U	ND	826	ug/kg	1					
2,4-Dinitrotoluene	U	ND	413	ug/kg	1					
2,6-Dinitrotoluene	U	ND	413	ug/kg	1					
2-Chloronaphthalene	U	ND	41.3	ug/kg	1					
2-Chlorophenol	U	ND	413	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	413	ug/kg	1					
2-Methylnaphthalene	U	ND	41.3	ug/kg	1					
2-Nitrophenol	U	ND MW	413	ug/kg	1					

MW 7-28-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 23, 2012

Client Sample ID: 12060060
Sample ID: 307654001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
3,3'-Dichlorobenzidine	U	ND	413	ug/kg	1					
4-Bromophenylphenylether	U	ND	413	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	413	ug/kg	1					
4-Chloroaniline	U	ND	413	ug/kg	1					
4-Chlorophenylphenylether	U	ND	413	ug/kg	1					
4-Nitrophenol	U	ND	413	ug/kg	1					
Acenaphthene	U	ND	41.3	ug/kg	1					
Acenaphthylene	U	ND	41.3	ug/kg	1					
Acetophenone	U	ND	413	ug/kg	1					
Anthracene	U	ND	41.3	ug/kg	1					
Atrazine	U	ND	413	ug/kg	1					
Benzaldehyde	U	ND	413	ug/kg	1					
Benzo(a)anthracene	U	ND	41.3	ug/kg	1					
Benzo(a)pyrene	U	ND	41.3	ug/kg	1					
Benzo(b)fluoranthene	U	ND	41.3	ug/kg	1					
Benzo(ghi)perylene	U	ND	41.3	ug/kg	1					
Benzo(k)fluoranthene	U	ND	41.3	ug/kg	1					
Butylbenzylphthalate	U	ND	413	ug/kg	1					
Caprolactam	U	ND	413	ug/kg	1					
Carbazole	U	ND	41.3	ug/kg	1					
Chrysene	U	ND	41.3	ug/kg	1					
Di-n-butylphthalate	U	ND	413	ug/kg	1					
Di-n-octylphthalate	U	ND	413	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	41.3	ug/kg	1					
Dibenzofuran	U	ND	413	ug/kg	1					
Diethylphthalate	U	ND	413	ug/kg	1					
Dimethylphthalate	U	ND	413	ug/kg	1					
Diphenylamine	U	ND	413	ug/kg	1					
Fluoranthene	U	ND	41.3	ug/kg	1					
Fluorene	U	ND	41.3	ug/kg	1					
Hexachlorobenzene	U	ND	413	ug/kg	1					
Hexachlorobutadiene	U	ND	413	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	413	ug/kg	1					
Hexachloroethane	U	ND	413	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	41.3	ug/kg	1					
Isophorone	U	ND	413	ug/kg	1					
N-Nitrosodipropylamine	U	ND	413	ug/kg	1					
Naphthalene	U	ND	41.3	ug/kg	1					
Nitrobenzene	U	ND	413	ug/kg	1					
Pentachlorophenol	U	ND	413	ug/kg	1					
Phenanthrene	U	ND	41.3	ug/kg	1					
Phenol	U	ND	413	ug/kg	1					

52VM

MW

MW 7-28-12

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Company : Ecology and Environment, Inc.
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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 23, 2012

Client Sample ID: 12060060
Sample ID: 307654001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Pyrene	U	ND	41.3	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	413	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	413	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	413	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	413	ug/kg	1					
m,p-Cresols	U	ND	413	ug/kg	1					
m-Nitroaniline	U	ND	413	ug/kg	1					
o-Cresol	U	ND	413	ug/kg	1					
o-Nitroaniline	U	ND	413	ug/kg	1					
p-Nitroaniline	U	ND	413	ug/kg	1					

S2VM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	07/17/12	1945	1230305

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	Prep Method 3550C for Solid	MXS4	07/17/12	1945	1230307

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D SIM PAH	
2	SW846 3550C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
5-alpha-Androstane	SW846 3550C/8270D SIM PAH Sonication "Dry Weight Corrected"	122 ug/kg	207	59.2	(39%-114%)
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	883 ug/kg	2070	42.7	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1180 ug/kg	2070	57.1	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1340 ug/kg	2070	64.8	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2120 ug/kg	4130	51.3	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2300 ug/kg	4130	55.6	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry	2060 ug/kg	4130	49.8	(26%-112%)

MW 7-28-12

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 23, 2012

Client Sample ID: 12060060
Sample ID: 307654001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
	Weight Corrected"									

MK
7-28-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 23, 2012

Client Sample ID:	12060061	Project:	ECOL00801
Sample ID:	307654002	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	11-JUL-12 09:45		
Receive Date:	12-JUL-12		
Collector:	Client		
Moisture:	15.2%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D SIM PAH Sonication "Dry Weight Corrected"										
1-Methylnaphthalene	U	ND	7.84	ug/kg	1	JMB3	07/20/12	1342	1230308	1
2-Chloronaphthalene	U	ND	7.84	ug/kg	1					
2-Methylnaphthalene	U	ND	7.84	ug/kg	1					
Acenaphthene	U	ND	7.84	ug/kg	1					
Acenaphthylene	U	ND	7.84	ug/kg	1					
Anthracene	U	ND	7.84	ug/kg	1					
Benzo(a)anthracene	U	ND	7.84	ug/kg	1					
Benzo(a)pyrene	U	ND	7.84	ug/kg	1					
Benzo(b)fluoranthene	U	ND	7.84	ug/kg	1					
Benzo(ghi)perylene	U	ND	7.84	ug/kg	1					
Benzo(k)fluoranthene	U	ND	7.84	ug/kg	1					
Chrysene	U	ND	7.84	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	7.84	ug/kg	1					
Fluoranthene	U	ND	7.84	ug/kg	1					
Fluorene	U	ND	7.84	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	7.84	ug/kg	1					
Naphthalene	U	ND	7.84	ug/kg	1					
Phenanthrene	U	ND	7.84	ug/kg	1					
Pyrene	U	ND	7.84	ug/kg	1					
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	392	ug/kg	1	JLD1	07/18/12	1812	1230306	2
1,2,4,5-Tetrachlorobenzene	U	ND	392	ug/kg	1					
1-Methylnaphthalene	U	ND	39.2	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	392	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	392	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	392	ug/kg	1					
2,4-Dichlorophenol	U	ND	392	ug/kg	1					
2,4-Dimethylphenol	U	ND	392	ug/kg	1					
2,4-Dinitrophenol	U	ND	784	ug/kg	1					
2,4-Dinitrotoluene	U	ND	392	ug/kg	1					
2,6-Dinitrotoluene	U	ND	392	ug/kg	1					
2-Chloronaphthalene	U	ND	39.2	ug/kg	1					
2-Chlorophenol	U	ND	392	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	392	ug/kg	1					
2-Methylnaphthalene	U	ND	39.2	ug/kg	1					
2-Nitrophenol	U	ND	392	ug/kg	1					

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 23, 2012

Client Sample ID: 12060061
Sample ID: 307654002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
3,3'-Dichlorobenzidine	U	ND	392 U	ug/kg	1					52LM
4-Bromophenylphenylether	U	ND	392	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	392	ug/kg	1					
4-Chloroaniline	U	ND	392	ug/kg	1					
4-Chlorophenylphenylether	U	ND	392	ug/kg	1					
4-Nitrophenol	U	ND	392	ug/kg	1					
Acenaphthene	U	ND	39.2	ug/kg	1					
Acenaphthylene	U	ND	39.2	ug/kg	1					
Acetophenone	U	ND	392	ug/kg	1					
Anthracene	U	ND	39.2	ug/kg	1					
Atrazine	U	ND	392	ug/kg	1					
Benzaldehyde	U	ND	392	ug/kg	1					
Benzo(a)anthracene	U	ND	39.2	ug/kg	1					
Benzo(a)pyrene	U	ND	39.2	ug/kg	1					
Benzo(b)fluoranthene	U	ND	39.2	ug/kg	1					
Benzo(ghi)perylene	U	ND	39.2	ug/kg	1					
Benzo(k)fluoranthene	U	ND	39.2	ug/kg	1					
Butylbenzylphthalate	U	ND	392	ug/kg	1					
Caprolactam	U	ND	392	ug/kg	1					
Carbazole	U	ND	39.2	ug/kg	1					
Chrysene	U	ND	39.2	ug/kg	1					
Di-n-butylphthalate	U	ND	392	ug/kg	1					
Di-n-octylphthalate	U	ND	392	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	39.2	ug/kg	1					
Dibenzofuran	U	ND	392	ug/kg	1					
Diethylphthalate	U	ND	392	ug/kg	1					
Dimethylphthalate	U	ND	392	ug/kg	1					
Diphenylamine	U	ND	392	ug/kg	1					
Fluoranthene	U	ND	39.2	ug/kg	1					
Fluorene	U	ND	39.2	ug/kg	1					
Hexachlorobenzene	U	ND	392	ug/kg	1					
Hexachlorobutadiene	U	ND	392	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	392	JL ug/kg	1					
Hexachloroethane	U	ND	392	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	39.2	ug/kg	1					
Isophorone	U	ND	392	ug/kg	1					
N-Nitrosodipropylamine	U	ND	392	ug/kg	1					
Naphthalene	U	ND	39.2	ug/kg	1					
Nitrobenzene	U	ND	392	ug/kg	1					
Pentachlorophenol	U	ND	392	ug/kg	1					
Phenanthrene	U	ND	39.2	ug/kg	1					
Phenol	U	ND	392	ug/kg	1					

MW

MW 7-28-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 23, 2012

Client Sample ID: 12060061
Sample ID: 307654002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Pyrene	U	ND	39.2 U	ug/kg	1					52KM
bis(2-Chloroethoxy)methane	U	ND	392	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	392	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	392	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	392	ug/kg	1					
m,p-Cresols	U	ND	392	ug/kg	1					
m-Nitroaniline	U	ND	392	ug/kg	1					
o-Cresol	U	ND	392	ug/kg	1					
o-Nitroaniline	U	ND	392	ug/kg	1					
p-Nitroaniline	U	ND	392	ug/kg	1					

MW

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	07/17/12	1945	1230305

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	Prep Method 3550C for Solid	MXS4	07/17/12	1945	1230307

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D SIM PAH	
2	SW846 3550C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
5-alpha-Androstane	SW846 3550C/8270D SIM PAH Sonication "Dry Weight Corrected"	136 ug/kg	196	69.6	(39%-114%)
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	828 ug/kg	1960	42.3	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	722 ug/kg	1960	36.9	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1760 ug/kg	1960	89.7	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2400 ug/kg	3920	61.2	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2340 ug/kg	3920	59.6	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry	1160 ug/kg	3920	29.6	(26%-112%)

MW 7-28-12

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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 23, 2012

Client Sample ID: 12060061
Sample ID: 307654002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Weight Corrected"										

MW 7-28-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700
Seattle, Washington 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: July 28, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-17

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of 2 soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Volatile organic compound (VOC) analysis (EPA Method 8260) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060060 12060061

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on July 11, 2012, and were analyzed by July 20, 2012, therefore meeting QC criteria of less than 14 days between collection and analysis for soil and preserved water samples.

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Acceptable.

All average Relative Response Factors (RRFs) were greater than the QC limit of 0.050. All Relative Standard Deviations (RSDs) were less than the QC limits.

4. Continuing Calibration: Acceptable.

All RRFs were greater than the QC limit of 0.050. All % differences were less than the QC limit of 25%.

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

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

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

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Acceptable.

All internal standards were within $\pm$ 30 seconds of the continuing calibration internal standard retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 24, 2012

Client Sample ID:	12060060	Project:	ECOL00801
Sample ID:	307654001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	11-JUL-12 09:30		
Receive Date:	12-JUL-12		
Collector:	Client		
Moisture:	19.5%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	U	ND	1.27	ug/kg	1	RXD1	07/20/12	1814	1231325	1
1,1,2,2-Tetrachloroethane	U	ND	1.27	ug/kg	1					
1,1,2-Trichloroethane	U	ND	1.27	ug/kg	1					
1,1-Dichloroethane	U	ND	1.27	ug/kg	1					
1,1-Dichloroethylene	U	ND	1.27	ug/kg	1					
1,2-Dichloroethane	U	ND	1.27	ug/kg	1					
1,2-Dichloroethylene (total)	U	ND	2.53	ug/kg	1					
1,2-Dichloropropane	U	ND	1.27	ug/kg	1					
2-Butanone	U	ND	6.34	ug/kg	1					
2-Hexanone	U	ND	6.34	ug/kg	1					
4-Methyl-2-pentanone	U	ND	6.34	ug/kg	1					
Acetone	U	ND	6.34	ug/kg	1					
Benzene	U	ND	1.27	ug/kg	1					
Bromodichloromethane	U	ND	1.27	ug/kg	1					
Bromoform	U	ND	1.27	ug/kg	1					
Bromomethane	U	ND	1.27	ug/kg	1					
Carbon disulfide	U	ND	6.34	ug/kg	1					
Carbon tetrachloride	U	ND	1.27	ug/kg	1					
Chlorobenzene	U	ND	1.27	ug/kg	1					
Chloroethane	U	ND	1.27	ug/kg	1					
Chloroform	U	ND	1.27	ug/kg	1					
Chloromethane	U	ND	1.27	ug/kg	1					
Dibromochloromethane	U	ND	1.27	ug/kg	1					
Ethylbenzene	U	ND	1.27	ug/kg	1					
Methylene chloride	U	ND	6.34	ug/kg	1					
Styrene	U	ND	1.27	ug/kg	1					
Tetrachloroethylene	U	ND	1.27	ug/kg	1					
Toluene	U	ND	1.27	ug/kg	1					
Trichloroethylene	U	ND	1.27	ug/kg	1					
Vinyl acetate	U	ND	6.34	ug/kg	1					
Vinyl chloride	U	ND	1.27	ug/kg	1					
Xylenes (total)	U	ND	3.80	ug/kg	1					
cis-1,2-Dichloroethylene	U	ND	1.27	ug/kg	1					
cis-1,3-Dichloropropylene	U	ND	1.27	ug/kg	1					
m,p-Xylenes	U	ND	2.53	ug/kg	1					
o-Xylene	U	ND	1.27	ug/kg	1					
tert-Butyl methyl ether	U	ND	1.27	ug/kg	1					

MW 7-28-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 24, 2012

Client Sample ID: 12060060
Sample ID: 307654001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
trans-1,2-Dichloroethylene	U	ND	1.27	ug/kg	1				52VM	
trans-1,3-Dichloropropylene	U	ND	1.27	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	ACJ	07/12/12	1639	1231322

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	61.8 ug/kg	50.0	97.5	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	63.4 ug/kg	50.0	100	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	60.5 ug/kg	50.0	95.5	(80%-120%)

MW 7-28-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 24, 2012

Client Sample ID:	12060061	Project:	ECOL00801
Sample ID:	307654002	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	11-JUL-12 09:45		
Receive Date:	12-JUL-12		
Collector:	Client		
Moisture:	15.2%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	U	ND	1.09	ug/kg	1	RXD1	07/20/12	1844	1231325	1
1,1,2,2-Tetrachloroethane	U	ND	1.09	ug/kg	1					
1,1,2-Trichloroethane	U	ND	1.09	ug/kg	1					
1,1-Dichloroethane	U	ND	1.09	ug/kg	1					
1,1-Dichloroethylene	U	ND	1.09	ug/kg	1					
1,2-Dichloroethane	U	ND	1.09	ug/kg	1					
1,2-Dichloroethylene (total)	U	ND	2.18	ug/kg	1					
1,2-Dichloropropane	U	ND	1.09	ug/kg	1					
2-Butanone	U	ND	5.46	ug/kg	1					
2-Hexanone	U	ND	5.46	ug/kg	1					
4-Methyl-2-pentanone	U	ND	5.46	ug/kg	1					
Acetone	U	ND	5.46	ug/kg	1					
Benzene	U	ND	1.09	ug/kg	1					
Bromodichloromethane	U	ND	1.09	ug/kg	1					
Bromoform	U	ND	1.09	ug/kg	1					
Bromomethane	U	ND	1.09	ug/kg	1					
Carbon disulfide	U	ND	5.46	ug/kg	1					
Carbon tetrachloride	U	ND	1.09	ug/kg	1					
Chlorobenzene	U	ND	1.09	ug/kg	1					
Chloroethane	U	ND	1.09	ug/kg	1					
Chloroform	U	ND	1.09	ug/kg	1					
Chloromethane	U	ND	1.09	ug/kg	1					
Dibromochloromethane	U	ND	1.09	ug/kg	1					
Ethylbenzene	U	ND	1.09	ug/kg	1					
Methylene chloride	U	ND	5.46	ug/kg	1					
Styrene	U	ND	1.09	ug/kg	1					
Tetrachloroethylene	U	ND	1.09	ug/kg	1					
Toluene	U	ND	1.09	ug/kg	1					
Trichloroethylene	U	ND	1.09	ug/kg	1					
Vinyl acetate	U	ND	5.46	ug/kg	1					
Vinyl chloride	U	ND	1.09	ug/kg	1					
Xylenes (total)	U	ND	3.27	ug/kg	1					
cis-1,2-Dichloroethylene	U	ND	1.09	ug/kg	1					
cis-1,3-Dichloropropylene	U	ND	1.09	ug/kg	1					
m,p-Xylenes	U	ND	2.18	ug/kg	1					
o-Xylene	U	ND	1.09	ug/kg	1					
tert-Butyl methyl ether	U	ND	1.09	ug/kg	1					

MW 7-28-12

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 24, 2012

Client Sample ID: 12060061
Sample ID: 307654002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
trans-1,2-Dichloroethylene	~~U~~	ND	1.09	U ug/kg	1					
trans-1,3-Dichloropropylene	U	ND	1.09	U ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	ACJ	07/12/12	1642	1231322

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	53.1 ug/kg	50.0	97.4	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	54.4 ug/kg	50.0	99.6	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	52.2 ug/kg	50.0	95.7	(80%-120%)

MW 7-28-12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: July 30, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-18

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Target Analyte List (TAL) metals analyses (EPA Method 6020) were performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060514

Data Qualifications:

1. Sample Holding Times: Acceptable.

The liquid sample was preserved to a pH < 2. The sample was maintained at < 6°C. The sample was collected on July 11, 2012, and was analyzed by July 23, 2012, therefore meeting QC criteria of less than 6 months between collection, extraction, and analysis.

2. Initial and Continuing Calibration: Acceptable.

A minimum of one calibration standard and a blank were analyzed at the beginning of the ICP analysis sequence and after every 10 samples. No results were greater than 110% of the highest calibration standard. All ICP recoveries were within the QC limits of 90% to 110%.

3. Blanks: Satisfactory.

A preparation blank was analyzed for each 20 samples or per matrix per concentration level. Blanks were analyzed after each Initial or Continuing Calibration Verification. There were no detections in any blanks except copper (0.396 ug/L); no actions were taken based on this outlier as it was not detected in any samples.

recycled paper

4. ICP Interference Check Sample: Acceptable.

An Interference Check Sample (ICS) was analyzed at the beginning and end of each sequence or at least twice every 8 hours, whichever was more frequent. All ICS (solution AB) results were within QC limits of 80% - 120% recovery.

5. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

6. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. ICP Serial Dilution: Acceptable.

A serial dilution analysis was performed per matrix per concentration or per sample delivery group, whichever was more frequent. All serial dilution results were within QC limits.

8. Matrix Spike Analysis: Acceptable.

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

9. Duplicate Analysis: Acceptable.

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

10. Laboratory Control Sample Analysis: Acceptable.

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

11. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 26, 2012

Client Sample ID:	12060514	Project:	ECOL00801
Sample ID:	307816001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	11-JUL-12 17:20		
Receive Date:	13-JUL-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS										
SW846 3005A/6020A Liquid "As Received"										
Cadmium	U	ND	1.00 U	ug/L	1	BAJ	07/21/12	0651	1229847	1 S4VM
Chromium	U	ND	10.0	ug/L	1					
Copper	U	ND	1.00	ug/L	1					
Lead	U	ND	2.00	ug/L	1					
Thallium	U	ND	2.00	ug/L	1					
Zinc		12.8	10.0	ug/L	1					
Arsenic	U	ND	5.00 U	ug/L	1	BAJ	07/23/12	1319	1229847	2

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	LYH1	07/20/12	0800	1229846

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6020A	
2	SW846 3005A/6020A	

MW 7-30-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700, Seattle, WA 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: July 30, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-18

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060514

Data Qualifications:

1. Sample Holding Times: Acceptable.

The sample was maintained and received within the QC limits of < 6°C. The sample was collected on July 11, 2012, was extracted on July 18, 2012, and was analyzed on July 19, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Acceptable.

All average Relative Response Factors (RRFs) were greater than the QC limit of 0.050. All Relative Standard Deviations (RSDs) were less than the QC limits.

4. **Continuing Calibration: Acceptable.**

All RRFs were greater than the QC limit of 0.050. All % differences were less than the QC limits.

5. **Blanks: Acceptable.**

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

6. **System Monitoring Compounds (SMCs): Acceptable.**

All SMC recoveries were within QC limits.

7. **Matrix Spike (MS)/Matrix Spike Duplicate (MSD) Analysis: Acceptable.**

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

8. **Duplicate Analysis: Acceptable.**

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

9. **Internal Standards: Acceptable.**

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. **Precision and Bias Determination: Not Performed.**

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. **Performance Evaluation Sample Analysis: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

12. **Overall Assessment of Data for Use**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 26, 2012

Client Sample ID:	12060514	Project:	ECOL00801
Sample ID:	307816001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	11-JUL-12 17:20		
Receive Date:	13-JUL-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D Semivolatile Analysis by Separatory Funnel "As Received"										
Benzo(a)anthracene	~~U~~	ND	1.00	ug/L	1	JLD1	07/19/12	1233	1230740	1
Benzo(a)pyrene	U	ND	1.00	ug/L	1					
Benzo(b)fluoranthene	U	ND	1.00	ug/L	1					
Chrysene	U	ND	1.00	ug/L	1					
Diphenylamine	U	ND	10.0	ug/L	1					
bis(2-Ethylhexyl)phthalate	U	ND	10.0	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	SW846 3510C Prep Semivolatiles 8270D	TXA2	07/18/12	1650	1230739

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2,4,6-Tribromophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	61.9 ug/L	100	61.9	(26%-131%)
2-Fluorophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	43.3 ug/L	100	43.3	(15%-78%)
Phenol-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	23.6 ug/L	100	23.6	(10%-72%)
2-Fluorobiphenyl	8270D Semivolatile Analysis by Separatory Funnel "As Received"	31.9 ug/L	50.0	63.8	(29%-102%)
Nitrobenzene-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	42.3 ug/L	50.0	84.6	(36%-125%)
p-Terphenyl-d14	8270D Semivolatile Analysis by Separatory Funnel "As Received"	41.2 ug/L	50.0	82.3	(31%-133%)

7-30-12

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Global Environmental Specialists

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

MEMORANDUM

DATE: July 30, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-18

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of one water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060514

Data Qualifications:

1. Sample Holding Times: Acceptable.

The sample was maintained at < 6°C. The sample was collected on July 11, 2012, extracted on July 17, 2012, and was analyzed by July 18, 2012, therefore meeting QC criteria of less than 7 days between collection and water sample extraction (14 days for soils) and less than 40 days between extraction and analysis.

2. Instrument Performance: Acceptable.

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. Initial and Continuing Calibration: Acceptable.

All initial calibration relative standard deviations (RSDs) were less than 15%. All continuing calibration % differences (% D) were less than 15% and were within QC limits.

4. Error Determination: Not Provided.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Acceptable.

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

6. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. System Monitoring Compounds (SMCs): Acceptable.

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

8. Blank Spikes: Acceptable.

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

9. Duplicates: Acceptable.

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

10. Compound Identification: Acceptable.

All positive results were dual-column confirmed with differences between the columns less than 25%.

11. Target Compound Quantitation and Quantitation Limits: Acceptable.

Sample results and quantitation limits were correctly calculated.

12. Laboratory Contact

No laboratory contact was required.

13. Overall Assessment

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 19, 2012

Client Sample ID:	12060514	Project:	ECOL00801
Sample ID:	307816001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	11-JUL-12 17:20		
Receive Date:	13-JUL-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3535A/8082A PCB Liquids "As Received"										
Aroclor-1016	U	ND	0.0962	ug/L	1	YS1	07/18/12	1530	1230354	1
Aroclor-1221	U	ND	0.0962	ug/L	1					
Aroclor-1232	U	ND	0.0962	ug/L	1					
Aroclor-1242	U	ND	0.0962	ug/L	1					
Aroclor-1248	U	ND	0.0962	ug/L	1					
Aroclor-1254	U	ND	0.0962	ug/L	1					
Aroclor-1260	U	ND	0.0962	ug/L	1					
Aroclor-Total	U	ND	0.0962	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	SW3535A PCB SPE Extraction	SXS3	07/17/12	1815	1230352

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3535A/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3535A/8082A PCB Liquids "As Received"	0.121 ug/L	0.192	63.1	(34%-120%)
Decachlorobiphenyl	SW846 3535A/8082A PCB Liquids "As Received"	0.139 ug/L	0.192	72.4	(33%-120%)

MW 7-30-12

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

MEMORANDUM

DATE: August 1, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-19

REF:

TDDs:	12-05-0006	PANs: 002233.0790.01RA
	12-05-0007	PANs: 002233.0791.01RA
	12-05-0008	PANs: 002233.0792.01RA
	12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of 1 soil sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060113

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The sample was maintained at < 6°C. The sample was collected on July 17, 2012, extracted on July 24, 2012, and were analyzed by July 26, 2012, therefore meeting QC criteria of less than 7 days between collection and water sample extraction (14 days for soils) and less than 40 days between extraction and analysis.

2. **Instrument Performance: Acceptable.**

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. **Initial and Continuing Calibration: Acceptable.**

All initial calibration relative standard deviations (RSDs) were less than 15%. All continuing calibration % differences (% D) were within QC limits.

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4. **Error Determination: Not Provided.**

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. **Blanks: Acceptable.**

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

6. **Performance Evaluation Samples: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

7. **System Monitoring Compounds (SMCs): Acceptable.**

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

8. **Blank and Matrix Spikes: Acceptable.**

Recoveries of all spiked analytes were within the appropriate control limits except when outside QC limits due to dilutions.

9. **Duplicates: Acceptable.**

Relative Percent Differences (RPDs) of all spiked analytes were within the required control limits except when outside QC limits due to dilutions.

10. **Compound Identification: Acceptable.**

All results were dual-column confirmed with differences between the columns less than 25%.

11. **Target Compound Quantitation and Quantitation Limits: Acceptable.**

Sample results and quantitation limits were correctly calculated.

12. **Laboratory Contact**

No laboratory contact was required.

13. **Overall Assessment**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 27, 2012

Client Sample ID:	12060113	Project:	ECOL00801
Sample ID:	307996001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	17-JUL-12 09:30		
Receive Date:	18-JUL-12		
Collector:	Client		
Moisture:	18.4%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	20.4	ug/kg	5	JXM	07/26/12	0910	1232183	1
Aroclor-1221	U	ND	20.4	ug/kg	5					
Aroclor-1232	U	ND	20.4	ug/kg	5					
Aroclor-1242	U	ND	20.4	ug/kg	5					
Aroclor-1248	U	ND	20.4	ug/kg	5					
Aroclor-1254		45.4	20.4	ug/kg	5					
Aroclor-1260		62.8	20.4	ug/kg	5					
Aroclor-Total		108	20.4	ug/kg	5					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	07/24/12	1814	1232182

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	3.86 ug/kg	8.16	47.3	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.47 ug/kg	8.16	54.9	(19%-130%)

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: August 1, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-19

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one soil sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060113

Data Qualifications:

1. Sample Holding Times: Acceptable.

The sample was maintained and received within the QC limits of < 6°C. The sample was collected on July 17, 2012, was extracted on July 19, 2012, and was analyzed on July 20, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Acceptable.

All average Relative Response Factors (RRFs) were within the QC limits. All Relative Standard Deviations (RSDs) were less than the QC limits.

4. Continuing Calibration: Acceptable.

All RRFs were greater than the QC limits. All % differences were less than the QC limits except 2,4-dinitrophenol with an increasing response factor in one of the continuing calibrations. No action was taken based on the 2,4-dinitrophenol outlier as it was not detected in any sample.

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits except when outside QC limits due to dilutions.

7. Matrix Spike (MS)/MS Duplicate (MSD)/Blank Spike (BS) Analysis: Acceptable.

All spike analyses were performed per SDG or per matrix per concentration level, whichever was more frequent. All recoveries were within the QC limits except when outside QC limits due to dilutions.

8. Duplicate Analysis: Acceptable.

Matrix spike duplicate analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. All spike duplicate results were within QC limits except when outside limts due to dilutions.

9. Internal Standards: Acceptable.

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias..

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 20, 2012

Client Sample ID:	12060113	Project:	ECOL00801
Sample ID:	307996001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	17-JUL-12 09:30		
Receive Date:	18-JUL-12		
Collector:	Client		
Moisture:	18.4%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	2040 U	ug/kg	5	JLD1	07/20/12	1212	1230970	1
1,2,4,5-Tetrachlorobenzene	U	ND	2040 U	ug/kg	5					
1-Methylnaphthalene		2580	204	ug/kg	5					
2,3,4,6-Tetrachlorophenol	U	ND	2040 U	ug/kg	5					
2,4,5-Trichlorophenol	U	ND	2040	ug/kg	5					
2,4,6-Trichlorophenol	U	ND	2040	ug/kg	5					
2,4-Dichlorophenol	U	ND	2040	ug/kg	5					
2,4-Dimethylphenol	U	ND	2040	ug/kg	5					
2,4-Dinitrophenol	U	ND	4070	ug/kg	5					
2,4-Dinitrotoluene	U	ND	2040	ug/kg	5					
2,6-Dinitrotoluene	U	ND	2040	ug/kg	5					
2-Chloronaphthalene	U	ND	204	ug/kg	5					
2-Chlorophenol	U	ND	2040	ug/kg	5					
2-Methyl-4,6-dinitrophenol	U	ND	2040	ug/kg	5					
2-Methylnaphthalene		2080	204	ug/kg	5					
2-Nitrophenol	U	ND	2040 U	ug/kg	5					
3,3'-Dichlorobenzidine	U	ND	2040	ug/kg	5					
4-Bromophenylphenylether	U	ND	2040	ug/kg	5					
4-Chloro-3-methylphenol	U	ND	2040	ug/kg	5					
4-Chloroaniline	U	ND	2040	ug/kg	5					
4-Chlorophenylphenylether	U	ND	2040	ug/kg	5					
4-Nitrophenol	U	ND	2040	ug/kg	5					
Acenaphthene	U	ND	204	ug/kg	5					
Acenaphthylene	U	ND	204	ug/kg	5					
Acetophenone	U	ND	2040	ug/kg	5					
Anthracene	U	ND	204	ug/kg	5					
Atrazine	U	ND	2040	ug/kg	5					
Benzaldehyde	U	ND	2040	ug/kg	5					
Benzo(a)anthracene	U	ND	204	ug/kg	5					
Benzo(a)pyrene	U	ND	204	ug/kg	5					
Benzo(b)fluoranthene	U	ND	204	ug/kg	5					
Benzo(ghi)perylene	U	ND	204	ug/kg	5					
Benzo(k)fluoranthene	U	ND	204	ug/kg	5					
Butylbenzylphthalate	U	ND	2040	ug/kg	5					
Caprolactam		8670	2040	ug/kg	5					
Carbazole	U	ND	204 U	ug/kg	5					
Chrysene	U	ND	204 U	ug/kg	5					

S4VM

MW 8-1-12

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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 20, 2012

Client Sample ID: 12060113
Sample ID: 307996001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	2040	ug/kg	5					
Di-n-octylphthalate	U	ND	2040	ug/kg	5					
Dibenzo(a,h)anthracene	U	ND	204	ug/kg	5					
Dibenzofuran	U	ND	2040	ug/kg	5					
Diethylphthalate	U	ND	2040	ug/kg	5					
Dimethylphthalate	U	ND	2040	ug/kg	5					
Diphenylamine	U	ND	2040	ug/kg	5					
Fluoranthene		285	204	ug/kg	5					
Fluorene		1030	204	ug/kg	5					
Hexachlorobenzene	U	ND	2040	ug/kg	5					
Hexachlorobutadiene	U	ND	2040	ug/kg	5					
Hexachlorocyclopentadiene	U	ND	2040	ug/kg	5					
Hexachloroethane	U	ND	2040	ug/kg	5					
Indeno(1,2,3-cd)pyrene	U	ND	204	ug/kg	5					
Isophorone	U	ND	2040	ug/kg	5					
N-Nitrosodipropylamine	U	ND	2040	ug/kg	5					
Naphthalene		381	204	ug/kg	5					
Nitrobenzene	U	ND	2040	ug/kg	5					
Pentachlorophenol	U	ND	2040	ug/kg	5					
Phenanthrene		1540	204	ug/kg	5					
Phenol	U	ND	2040	ug/kg	5					
Pyrene		440	204	ug/kg	5					
bis(2-Chloroethoxy)methane	U	ND	2040	ug/kg	5					
bis(2-Chloroethyl) ether	U	ND	2040	ug/kg	5					
bis(2-Chloroisopropyl)ether	U	ND	2040	ug/kg	5					
bis(2-Ethylhexyl)phthalate	U	ND	2040	ug/kg	5					
m,p-Cresols	U	ND	2040	ug/kg	5					
m-Nitroaniline	U	ND	2040	ug/kg	5					
o-Cresol	U	ND	2040	ug/kg	5					
o-Nitroaniline	U	ND	2040	ug/kg	5					
p-Nitroaniline	U	ND	2040	ug/kg	5					

S4VM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	07/19/12	1842	1230969

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

MW 8/1/12

GEL LABORATORIES LLC
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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 20, 2012

Client Sample ID: 12060113
Sample ID: 307996001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1280 ug/kg	2040	62.8	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1620 ug/kg	2040	79.5	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1570 ug/kg	2040	77.0	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2420 ug/kg	4070	59.4	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2740 ug/kg	4070	67.3	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2480 ug/kg	4070	61.0	(26%-112%)

MW 8-12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: August 3, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-21

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of one water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM). The sample was numbered: 12060515

Data Qualifications:

1. Sample Holding Times: Acceptable.

The sample was maintained at < 6°C. The sample was collected on July 18, 2012, extracted on July 24, 2012, and were analyzed by July 25, 2012, therefore meeting QC criteria of less than 7 days between collection and water sample extraction (14 days for soils) and less than 40 days between extraction and analysis.

2. Instrument Performance: Acceptable.

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. Initial and Continuing Calibration: Satisfactory.

All initial calibration relative standard deviations (RSDs) were within QC limits. All continuing calibration % differences (% D) were within QC limits except two high Aroclor 1260 results for single peaks in separate calibrations; no actions were taken based on these outliers as Aroclor 1260 was not detected in the sample.

4. **Error Determination: Not Provided.**

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. **Blanks: Acceptable.**

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

6. **Performance Evaluation Samples: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

7. **System Monitoring Compounds (SMCs): Acceptable.**

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

8. **Blank Spikes: Acceptable.**

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

9. **Duplicates: Acceptable.**

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

10. **Compound Identification: Acceptable.**

All positive results were dual-column confirmed with differences between the columns less than 25%.

11. **Target Compound Quantitation and Quantitation Limits: Acceptable.**

Sample results and quantitation limits were correctly calculated.

12. **Laboratory Contact**

No laboratory contact was required.

13. **Overall Assessment**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 26, 2012

Client Sample ID:	12060515	Project:	ECOL00801
Sample ID:	308126001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	18-JUL-12 08:25		
Receive Date:	19-JUL-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3535A/8082A PCB Liquids "As Received"										
Aroclor-1016	U	ND	0.100	ug/L	1	YS1	07/26/12	1034	1232316	1
Aroclor-1221	U	ND	0.100	ug/L	1					
Aroclor-1232	U	ND	0.100	ug/L	1					
Aroclor-1242	U	ND	0.100	ug/L	1					
Aroclor-1248	U	ND	0.100	ug/L	1					
Aroclor-1254	U	ND	0.100	ug/L	1					
Aroclor-1260	U	ND	0.100	ug/L	1					
Aroclor-Total	U	ND	0.100	ug/L	1					

52VM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	SW3535A PCB SPE Extraction	RXC1	07/25/12	1025	1232314

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3535A/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3535A/8082A PCB Liquids "As Received"	0.148 ug/L	0.200	74.0	(34%-120%)
Decachlorobiphenyl	SW846 3535A/8082A PCB Liquids "As Received"	0.183 ug/L	0.200	91.5	(33%-120%)

MW 8/8/12

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

MEMORANDUM

DATE: August 3, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Inorganic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-21

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Target Analyte List (TAL) metals analyses (EPA Method 6020) were performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060515

Data Qualifications:

1. Sample Holding Times: Acceptable.

All liquid samples were preserved to a pH < 2. The sample was maintained at < 6°C. The sample was collected on July 18, 2012, and was analyzed by July 27, 2012, therefore meeting QC criteria of less than 6 months between collection, extraction, and analysis.

2. Initial and Continuing Calibration: Acceptable.

A minimum of one calibration standard and a blank were analyzed at the beginning of the ICP analysis sequence and after every 10 samples. No results were greater than 110% of the highest calibration standard. All ICP recoveries were within the QC limits of 90% to 110%.

3. Blanks: Acceptable.

A preparation blank was analyzed for each 20 samples or per matrix per concentration level. Blanks were analyzed after each Initial or Continuing Calibration Verification. There were no detections in any blanks that affected sample results.

4. ICP Interference Check Sample: Acceptable.

An Interference Check Sample (ICS) was analyzed at the beginning of each sequence. All ICS (solution AB) results were within QC limits of 80% - 120% recovery.

5. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

6. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. ICP Serial Dilution: Acceptable.

A serial dilution analysis was performed per matrix per concentration or per sample delivery group, whichever was more frequent. All serial dilution results were within QC limits.

8. Matrix Spike Analysis: Acceptable.

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

9. Duplicate Analysis: Acceptable.

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

10. Laboratory Control Sample Analysis: Acceptable.

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

11. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 1, 2012

Client Sample ID:	12060515	Project:	ECOL00801
Sample ID:	308126001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	18-JUL-12 08:25		
Receive Date:	19-JUL-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS										
SW846 3005A/6020A Liquid "As Received"										
Arsenic	U	ND	5.00	ug/L	1	BAJ	07/27/12	0735	1231645	1
Cadmium	U	ND	1.00	ug/L	1					
Chromium	U	ND	10.0	ug/L	1					
Copper	U	ND	1.00	ug/L	1					
Lead	U	ND	2.00	ug/L	1					
Thallium	U	ND	2.00	ug/L	1					
Zinc		10.6	10.0	ug/L	1					

52VM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	BXA1	07/25/12	2004	1231644

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6020A	

MW 8-3-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700, Seattle, WA 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: August 3, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-21

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060515

Data Qualifications:

1. Sample Holding Times: Acceptable.

The sample was maintained and received within the QC limits of < 6°C. The sample was collected on July 18, 2012, was extracted on July 25, 2012, and were analyzed on July 26, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Acceptable.

All average Relative Response Factors (RRFs) were within QC limits. All Relative Standard Deviations (RSDs) were within the QC limits.

4. **Continuing Calibration: Acceptable.**

All RRFs were within the QC limits. All % differences were within the QC limits.

5. **Blanks: Acceptable.**

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

6. **System Monitoring Compounds (SMCs): Acceptable.**

All SMC recoveries were within QC limits.

7. **Matrix Spike (MS)/MS Duplicate (MSD)/Blank Spike (BS) Analysis: Acceptable.**

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

8. **Duplicate Analysis: Acceptable.**

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

9. **Internal Standards: Acceptable.**

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. **Precision and Bias Determination: Not Performed.**

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. **Performance Evaluation Sample Analysis: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

12. **Overall Assessment of Data for Use**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

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JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 30, 2012

Client Sample ID:	12060515	Project:	ECOL00801
Sample ID:	308126001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	18-JUL-12 08:25		
Receive Date:	19-JUL-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D Semivolatile Analysis by Separatory Funnel "As Received"										
Benzo(a)anthracene	U	ND	1.00	ug/L	1	JLD1	07/25/12	1326	1232263	1
Benzo(a)pyrene	U	ND	1.00	ug/L	1					
Benzo(b)fluoranthene	U	ND	1.00	ug/L	1					
Chrysene	U	ND	1.00	ug/L	1					
Diphenylamine	U	ND	10.0	ug/L	1					
bis(2-Ethylhexyl)phthalate	U	ND	10.0	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	SW846 3510C Prep Semivolatiles 8270D	SXS3	07/24/12	1740	1232262

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2,4,6-Tribromophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	33.5 ug/L	100	33.5	(26%-131%)
2-Fluorophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	25.9 ug/L	100	25.9	(15%-78%)
Phenol-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	14.5 ug/L	100	14.5	(10%-72%)
2-Fluorobiphenyl	8270D Semivolatile Analysis by Separatory Funnel "As Received"	17.8 ug/L	50.0	35.6	(29%-102%)
Nitrobenzene-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	23.9 ug/L	50.0	47.9	(36%-125%)
p-Terphenyl-d14	8270D Semivolatile Analysis by Separatory Funnel "As Received"	29.8 ug/L	50.0	59.6	(31%-133%)

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700
Seattle, Washington 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: August 6, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-22

REF:

TDDs:	12-05-0006	PANs: 002233.0790.01RA
	12-05-0007	PANs: 002233.0791.01RA
	12-05-0008	PANs: 002233.0792.01RA
	12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of two soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Volatile organic compound (VOC) analysis (EPA Method 8260) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060078 12060079

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on July 23, 2012, and were analyzed by July 26, 2012, therefore meeting QC criteria of less than 14 days between collection and analysis for soil and preserved water samples.

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Acceptable.

All average Relative Response Factors (RRFs) were within the QC limits. All Relative Standard Deviations (RSDs) were within QC limits.

4. Continuing Calibration: Satisfactory.

All RRFs were within the QC limits. All % differences were within the QC limits except carbon tetrachloride with an increasing response factor in the 7-25 continuing calibration; no action was taken based on this outlier as it was not detected in any sample.

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Satisfactory.

All SMC recoveries were within QC limits except bromofluorobenzene in sample 12060078 with a high recovery; no action was taken as there were no associated positive results in sample 12060078.

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

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

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Satisfactory.

All internal standards were within $\pm$ 30 seconds of the continuing calibration internal standard retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts except chlorobenzene in sample 12060078 and chlorobenzene and 1,4-dichlorobenzene in sample 12060079, all with low area counts; associated sample results were qualified as estimated quantities with a low bias (JL or UJL).

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 27, 2012

Client Sample ID:	12060078	Project:	ECOL00801
Sample ID:	308397003	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	23-JUL-12 08:30		
Receive Date:	24-JUL-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "As Received"										
1,1,1-Trichloroethane	U	ND	0.847 U	ug/kg	1	JEB	07/25/12	2247	1232783	1 S4VM
1,1,2,2-Tetrachloroethane	U	ND	0.847	ug/kg	1					
1,1,2-Trichloroethane	U	ND	0.847 JL	ug/kg	1					
1,1-Dichloroethane	U	ND	0.847	ug/kg	1					
1,1-Dichloroethylene	U	ND	0.847	ug/kg	1					
1,2-Dichloroethane	U	ND	0.847	ug/kg	1					
1,2-Dichloroethylene (total)	U	ND	1.69	ug/kg	1					
1,2-Dichloropropane	U	ND	0.847	ug/kg	1					
2-Butanone	U	ND	4.24	ug/kg	1					
2-Hexanone	U	ND	4.24 JL	ug/kg	1					
4-Methyl-2-pentanone	U	ND mw	4.24 JL	ug/kg	1					
Acetone		15.7	4.24	ug/kg	1					
Benzene	U	ND	0.847 U	ug/kg	1					
Bromodichloromethane	U	ND	0.847	ug/kg	1					
Bromoform	U	ND	0.847	ug/kg	1					
Bromomethane	U	ND	0.847	ug/kg	1					
Carbon disulfide	U	ND	4.24	ug/kg	1					
Carbon tetrachloride	U	ND	0.847	ug/kg	1					
Chlorobenzene	U	ND	0.847 JL	ug/kg	1					
Chloroethane	U	ND	0.847	ug/kg	1					
Chloroform	U	ND	0.847	ug/kg	1					
Chloromethane	U	ND	0.847	ug/kg	1					
Dibromochloromethane	U	ND	0.847 JL	ug/kg	1					
Ethylbenzene	U	ND	0.847 JL	ug/kg	1					
Methylene chloride	U	ND	4.24	ug/kg	1					
Styrene	U	ND	0.847 JL	ug/kg	1					
Tetrachloroethylene	U	ND	0.847 JL	ug/kg	1					
Toluene	U	ND	0.847 JL	ug/kg	1					
Trichloroethylene	U	ND	0.847	ug/kg	1					
Vinyl acetate	U	ND	4.24	ug/kg	1					
Vinyl chloride	U	ND	0.847	ug/kg	1					
Xylenes (total)	U	ND	2.54	ug/kg	1					
cis-1,2-Dichloroethylene	U	ND	0.847	ug/kg	1					
cis-1,3-Dichloropropylene	U	ND	0.847	ug/kg	1					
m,p-Xylenes	U	ND	1.69 JL	ug/kg	1					
o-Xylene	U	ND	0.847 JL	ug/kg	1					
tert-Butyl methyl ether	U	ND	0.847	ug/kg	1					
trans-1,2-Dichloroethylene	U	ND mw	0.847	ug/kg	1					

mw 8612

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 27, 2012

Client Sample ID: 12060078
Sample ID: 308397003

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "As Received"										
trans-1,3-Dichloropropylene	~~U~~	~~ND~~	0.847	ug/kg	1					S4VM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	JEB	07/24/12	1425	1232782

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "As Received"	46.7 ug/kg	50.0	110	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "As Received"	90.7 ug/kg	50.0	214*	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "As Received"	50.8 ug/kg	50.0	120	(80%-120%)

The Following NCRs have been identified

NCR ID:1104042 Batch ID: 1232783 1. Samples 308397003 and 308397004 did not pass surrogate recoveries.

2. Samples 308397003 and 308397004 did not have acceptable internal standard responses.

MW 8-6-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 27, 2012

Client Sample ID:	12060079	Project:	ECOL00801
Sample ID:	308397004	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	23-JUL-12 08:45		
Receive Date:	24-JUL-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "As Received"										
1,1,1-Trichloroethane	U	ND	0.893	ug/kg	1	JEB	07/26/12	2233	1232783	1 SHVM
1,1,2,2-Tetrachloroethane	U	ND	0.893	ug/kg	1					
1,1,2-Trichloroethane	U	ND	0.893	ug/kg	1					
1,1-Dichloroethane	U	ND	0.893	ug/kg	1					
1,1-Dichloroethylene	U	ND	0.893	ug/kg	1					
1,2-Dichloroethane	U	ND	0.893	ug/kg	1					
1,2-Dichloroethylene (total)	U	ND	1.79	ug/kg	1					
1,2-Dichloropropane	U	ND	0.893	ug/kg	1					
2-Butanone	U	ND	4.46	ug/kg	1					
2-Hexanone	U	ND	4.46	ug/kg	1					
4-Methyl-2-pentanone	U	ND	4.46	ug/kg	1					
Acetone		10.7	4.46	ug/kg	1					
Benzene	U	ND	0.893	ug/kg	1					
Bromodichloromethane	U	ND	0.893	ug/kg	1					
Bromoform	U	ND	0.893	ug/kg	1					
Bromomethane	U	ND	0.893	ug/kg	1					
Carbon disulfide	U	ND	4.46	ug/kg	1					
Carbon tetrachloride	U	ND	0.893	ug/kg	1					
Chlorobenzene	U	ND	0.893	ug/kg	1					
Chloroethane	U	ND	0.893	ug/kg	1					
Chloroform	U	ND	0.893	ug/kg	1					
Chloromethane	U	ND	0.893	ug/kg	1					
Dibromochloromethane	U	ND	0.893	ug/kg	1					
Ethylbenzene	U	ND	0.893	ug/kg	1					
Methylene chloride	U	ND	4.46	ug/kg	1					
Styrene	U	ND	0.893	ug/kg	1					
Tetrachloroethylene	U	ND	0.893	ug/kg	1					
Toluene	U	ND	0.893	ug/kg	1					
Trichloroethylene	U	ND	0.893	ug/kg	1					
Vinyl acetate	U	ND	4.46	ug/kg	1					
Vinyl chloride	U	ND	0.893	ug/kg	1					
Xylenes (total)	U	ND	2.68	ug/kg	1					
cis-1,2-Dichloroethylene	U	ND	0.893	ug/kg	1					
cis-1,3-Dichloropropylene	U	ND	0.893	ug/kg	1					
m,p-Xylenes	U	ND	1.79	ug/kg	1					
o-Xylene	U	ND	0.893	ug/kg	1					
tert-Butyl methyl ether	U	ND	0.893	ug/kg	1					
trans-1,2-Dichloroethylene	U	ND	0.893	ug/kg	1					

MW 8-6-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 27, 2012

Client Sample ID: 12060079
Sample ID: 308397004

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "As Received"										
trans-1,3-Dichloropropylene	~~U~~	ND	0.893 U	ug/kg	1					SHVM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	JEB	07/24/12	1431	1232782

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "As Received"	43.3 ug/kg	50.0	97.0	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "As Received"	53.7 ug/kg	50.0	120	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "As Received"	48.9 ug/kg	50.0	110	(80%-120%)

The Following NCRs have been identified

NCR ID:1104042 Batch ID: 1232783 1. Samples 308397003 and 308397004 did not pass surrogate recoveries.

2. Samples 308397003 and 308397004 did not have acceptable internal standard responses.

MW 8-6-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700
Seattle, Washington 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: August 6, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-22

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of 2 soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060076 12060077

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained at < 6°C. The samples were collected on July 21, 2012, extracted on July 24, 2012, and were analyzed by July 26, 2012, therefore meeting QC criteria of less than 7 days between collection and water sample extraction (14 days for soils) and less than 40 days between extraction and analysis.

2. Instrument Performance: Acceptable.

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. Initial and Continuing Calibration: Acceptable.

All initial calibration relative standard deviations (RSDs) were within QC limits. All continuing calibration % differences (% D) were within QC limits.

4. Error Determination: Not Provided.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Acceptable.

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

6. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. System Monitoring Compounds (SMCs): Acceptable.

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

8. Blank Spike: Acceptable.

Recoveries of all spiked analytes were within the appropriate control limits except when outside limits due to dilution and matrix interference.

9. Duplicates: Acceptable.

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

10. Compound Identification: Acceptable.

All results were dual-column confirmed with differences between the columns less than 25%.

11. Target Compound Quantitation and Quantitation Limits: Acceptable.

Sample results and quantitation limits were correctly calculated.

12. Laboratory Contact

No laboratory contact was required.

13. Overall Assessment

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 27, 2012

Client Sample ID:	12060076	Project:	ECOL00801
Sample ID:	308397001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	21-JUL-12 09:00		
Receive Date:	24-JUL-12		
Collector:	Client		
Moisture:	23.2%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	21.6	ug/kg	5	JXM	07/26/12	1007	1232183	1
Aroclor-1221	U	ND	21.6	ug/kg	5					
Aroclor-1232	U	ND	21.6	ug/kg	5					
Aroclor-1242	U	ND	21.6	ug/kg	5					
Aroclor-1248	U	ND	21.6	ug/kg	5					
Aroclor-1254	U	ND	21.6	ug/kg	5					
Aroclor-1260	U	ND	21.6	ug/kg	5					
Aroclor-Total	U	ND	21.6	ug/kg	5					

SGW

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	07/24/12	1814	1232182

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	5.01 ug/kg	8.65	57.9	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	5.73 ug/kg	8.65	66.2	(19%-130%)

8-3-12

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 27, 2012

Client Sample ID:	12060077	Project:	ECOL00801
Sample ID:	308397002	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	21-JUL-12 09:15		
Receive Date:	24-JUL-12		
Collector:	Client		
Moisture:	23.9%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	21.8	ug/kg	5	JXM	07/26/12	1022	1232183	1
Aroclor-1221	U	ND	21.8	ug/kg	5					
Aroclor-1232	U	ND	21.8	ug/kg	5					
Aroclor-1242	U	ND	21.8	ug/kg	5					
Aroclor-1248	U	ND	21.8	ug/kg	5					
Aroclor-1254	U	ND	21.8	ug/kg	5					
Aroclor-1260	U	ND	21.8	ug/kg	5					
Aroclor-Total	U	ND	21.8	ug/kg	5					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	07/24/12	1814	1232182

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.53 ug/kg	8.74	51.9	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.97 ug/kg	8.74	56.9	(19%-130%)

8-3-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700
Seattle, Washington 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: August 6, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-22

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of two soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060076 12060077

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on July 21, 2012, were extracted on July 24, 2012, and were analyzed on July 25, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Acceptable.

All average Relative Response Factors (RRFs) were within the QC limits. All Relative Standard Deviations (RSDs) were within the QC limits.

4. Continuing Calibration: Satisfactory.

All RRFs were within the QC limits. All % differences were within the QC limits except indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i) perylene with high recoveries in the 7-25 calibration and hexachlorocyclopentadiene and pentachlorophenol with low recoveries in the 7-26 calibration. Positive sample results associated with the high recovery outliers were qualified as estimated quantities with a high bias (JH). Positive results and sample quantitation limits associated with the low recovery outliers were qualified as estimated quantities with a low bias (JL and UJL, respectively).

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

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

All spike analyses were performed per SDG or per matrix per concentration level, whichever was more frequent. All recoveries were within the QC limits except pentachlorophenol with a low recovery in the BS (associated positive results and sample quantitation limits were qualified as estimated quantities with a low bias [JL and UJL, respectively]).

8. Duplicate Analysis: Satisfactory.

Spike duplicate analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. All spike duplicate results were within QC limits except pyrene. No action was taken based on this outlier as the associated spike results were within QC limits.

9. Internal Standards: Acceptable.

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

The overall usefulness of the data is based on the criteria outlined in the Site-Specific Sampling Plan, the OSWER Guidance Document "Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan, and Data Validation Procedures" (EPA/540/G-90/004), the analytical

method, and, when applicable, the Office of Emergency and Remedial Response Publication "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review". Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 27, 2012

Client Sample ID:	12060076	Project:	ECOL00801
Sample ID:	308397001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	21-JUL-12 09:00		
Receive Date:	24-JUL-12		
Collector:	Client		
Moisture:	23.2%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	433	ug/kg	1	JLD1	07/25/12	1712	1232292	1
1,2,4,5-Tetrachlorobenzene	U	ND	433	ug/kg	1					
1-Methylnaphthalene	U	ND	43.3	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	433	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	433	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	433	ug/kg	1					
2,4-Dichlorophenol	U	ND	433	ug/kg	1					
2,4-Dimethylphenol	U	ND	433	ug/kg	1					
2,4-Dinitrophenol	U	ND	866	ug/kg	1					
2,4-Dinitrotoluene	U	ND	433	ug/kg	1					
2,6-Dinitrotoluene	U	ND	433	ug/kg	1					
2-Chloronaphthalene	U	ND	43.3	ug/kg	1					
2-Chlorophenol	U	ND	433	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	433	ug/kg	1					
2-Methylnaphthalene	U	ND	43.3	ug/kg	1					
2-Nitrophenol	U	ND	433	ug/kg	1					
3,3'-Dichlorobenzidine	U	ND	433	ug/kg	1					
4-Bromophenylphenylether	U	ND	433	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	433	ug/kg	1					
4-Chloroaniline	U	ND	433	ug/kg	1					
4-Chlorophenylphenylether	U	ND	433	ug/kg	1					
4-Nitrophenol	U	ND	433	ug/kg	1					
Acenaphthene	U	ND	43.3	ug/kg	1					
Acenaphthylene	U	ND	43.3	ug/kg	1					
Acetophenone	U	ND	433	ug/kg	1					
Anthracene	U	ND	43.3	ug/kg	1					
Atrazine	U	ND	433	ug/kg	1					
Benzaldehyde	U	ND MU	433	ug/kg	1					
Benzo(a)anthracene		402	43.3	ug/kg	1					
Benzo(a)pyrene	U	ND	43.3 U	ug/kg	1					
Benzo(b)fluoranthene	U	ND MU JH	43.3 U	ug/kg	1					
Benzo(ghi)perylene		126	43.3	ug/kg	1					
Benzo(k)fluoranthene	U	ND	43.3 U	ug/kg	1					
Butylbenzylphthalate	U	ND	433	ug/kg	1					
Caprolactam	U	ND	433	ug/kg	1					
Carbazole	U	ND MU	43.3	ug/kg	1					
Chrysene		629	43.3	ug/kg	1					

S4VM

MW 8/6/12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 27, 2012

Client Sample ID: 12060076
Sample ID: 308397001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	433	ug/kg	1					
Di-n-octylphthalate	U	ND	433	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	43.3	ug/kg	1					
Dibenzofuran	U	ND	433	ug/kg	1					
Diethylphthalate	U	ND	433	ug/kg	1					
Dimethylphthalate	U	ND	433	ug/kg	1					
Diphenylamine	U	ND	433	ug/kg	1					
Fluoranthene	U	ND	43.3	ug/kg	1					
Fluorene	U	ND	43.3	ug/kg	1					
Hexachlorobenzene	U	ND	433	ug/kg	1					
Hexachlorobutadiene	U	ND	433	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	433	ug/kg	1					
Hexachloroethane	U	ND	433	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	43.3	ug/kg	1					
Isophorone	U	ND	433	ug/kg	1					
N-Nitrosodipropylamine	U	ND	433	ug/kg	1					
Naphthalene	U	ND	43.3	ug/kg	1					
Nitrobenzene	U	ND	433	ug/kg	1					
Pentachlorophenol	U	ND	433	ug/kg	1					
Phenanthrene		2940	43.3	ug/kg	1					
Phenol	U	ND	433	ug/kg	1					
Pyrene		2660	43.3	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	433	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	433	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	433	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	433	ug/kg	1					
m,p-Cresols	U	ND	433	ug/kg	1					
m-Nitroaniline	U	ND	433	ug/kg	1					
o-Cresol	U	ND	433	ug/kg	1					
o-Nitroaniline	U	ND	433	ug/kg	1					
p-Nitroaniline	U	ND	433	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	07/24/12	1915	1232290

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

8312

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 27, 2012

Client Sample ID: 12060076
Sample ID: 308397001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1010 ug/kg	2160	46.9	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1120 ug/kg	2160	51.9	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1880 ug/kg	2160	86.9	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2160 ug/kg	4330	49.8	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1890 ug/kg	4330	43.7	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1720 ug/kg	4330	39.8	(26%-112%)

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 27, 2012

Client Sample ID:	12060077	Project:	ECOL00801
Sample ID:	308397002	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	21-JUL-12 09:15		
Receive Date:	24-JUL-12		
Collector:	Client		
Moisture:	23.9%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	438	ug/kg	1	JLD1	07/25/12	1737	1232292	1 SHM
1,2,4,5-Tetrachlorobenzene	U	ND	438	ug/kg	1					
1-Methylnaphthalene	U	ND	43.8	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	438	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	438	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	438	ug/kg	1					
2,4-Dichlorophenol	U	ND	438	ug/kg	1					
2,4-Dimethylphenol	U	ND	438	ug/kg	1					
2,4-Dinitrophenol	U	ND	875	ug/kg	1					
2,4-Dinitrotoluene	U	ND	438	ug/kg	1					
2,6-Dinitrotoluene	U	ND	438	ug/kg	1					
2-Chloronaphthalene	U	ND	43.8	ug/kg	1					
2-Chlorophenol	U	ND	438	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	438	ug/kg	1					
2-Methylnaphthalene	U	ND	43.8	ug/kg	1					
2-Nitrophenol	U	ND	438	ug/kg	1					
3,3'-Dichlorobenzidine	U	ND	438	ug/kg	1					
4-Bromophenylphenylether	U	ND	438	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	438	ug/kg	1					
4-Chloroaniline	U	ND	438	ug/kg	1					
4-Chlorophenylphenylether	U	ND	438	ug/kg	1					
4-Nitrophenol	U	ND	438	ug/kg	1					
Acenaphthene	U	ND	43.8	ug/kg	1					
Acenaphthylene	U	ND	43.8	ug/kg	1					
Acetophenone	U	ND	438	ug/kg	1					
Anthracene	U	ND	43.8	ug/kg	1					
Atrazine	U	ND	438	ug/kg	1					
Benzaldehyde	U	ND MW	438	ug/kg	1					
Benzo(a)anthracene		251	43.8	ug/kg	1					
Benzo(a)pyrene	U	ND	43.8	ug/kg	1					
Benzo(b)fluoranthene	U	ND	43.8	ug/kg	1					
Benzo(ghi)perylene	U	ND	43.8	ug/kg	1					
Benzo(k)fluoranthene	U	ND	43.8	ug/kg	1					
Butylbenzylphthalate	U	ND	438	ug/kg	1					
Caprolactam	U	ND	438	ug/kg	1					
Carbazole	U	ND MW	43.8	ug/kg	1					
Chrysene		384	43.8	ug/kg	1					

MW 8-6-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 27, 2012

Client Sample ID: 12060077
Sample ID: 308397002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										SHM
Di-n-butylphthalate	U	ND	438	ug/kg	1					
Di-n-octylphthalate	U	ND	438	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	43.8	ug/kg	1					
Dibenzofuran	U	ND	438	ug/kg	1					
Diethylphthalate	U	ND	438	ug/kg	1					
Dimethylphthalate	U	ND	438	ug/kg	1					
Diphenylamine	U	ND	438	ug/kg	1					
Fluoranthene	U	ND	43.8	ug/kg	1					
Fluorene	U	ND	43.8	ug/kg	1					
Hexachlorobenzene	U	ND	438	ug/kg	1					
Hexachlorobutadiene	U	ND	438	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	438	ug/kg	1					
Hexachloroethane	U	ND	438	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	43.8	ug/kg	1					
Isophorone	U	ND	438	ug/kg	1					
N-Nitrosodipropylamine	U	ND	438	ug/kg	1					
Naphthalene	U	ND	43.8	ug/kg	1					
Nitrobenzene	U	ND	438	ug/kg	1					
Pentachlorophenol	U	ND MW	438 JL	ug/kg	1					
Phenanthrene		1880	43.8	ug/kg	1					
Phenol	U	~~ND~~ MW	438 U	ug/kg	1					
Pyrene		1110	43.8	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	438	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	438	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	438	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	438	ug/kg	1					
m,p-Cresols	U	ND	438	ug/kg	1					
m-Nitroaniline	U	ND	438	ug/kg	1					
o-Cresol	U	ND	438	ug/kg	1					
o-Nitroaniline	U	ND	438	ug/kg	1					
p-Nitroaniline	U	ND MW	438	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	07/24/12	1915	1232290

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

MW 8-6-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 27, 2012

Client Sample ID: 12060077
Sample ID: 308397002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	916 ug/kg	2190	41.9	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	950 ug/kg	2190	43.4	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1360 ug/kg	2190	62.2	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1790 ug/kg	4380	40.9	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1490 ug/kg	4380	34.1	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1380 ug/kg	4380	31.6	(26%-112%)

MW
7-6-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700, Seattle, WA 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: July 31, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-23

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of two soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Analysis for Extended Diesel Range Total Petroleum Hydrocarbons (Ecology Method NWTPH-Dx) was performed by TestAmerica Seattle, Tacoma, Washington. All sample analyses were evaluated following EPA's Stage 2 and 4 Data Validation Electronic/Manual Process (S4VEM). The samples were numbered: 12060078 12060079

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The samples were maintained at < 6°C. The samples were collected on July 23, 2012, extracted by July 25, 2012, and analyzed by July 26, 2012, therefore meeting QC criteria of less than 14 days between collection and extraction for soil samples, and less than 40 days between extraction and analysis.

2. **Initial and Continuing Calibrations: Acceptable.**

Calculations were verified as correct. All initial calibration correlation coefficients were ≥ 0.990 and/or all relative percent differences (RPDs) were less than or equal to the laboratory control limits of 15%. All continuing calibration percent differences (%Ds) were ≤ the laboratory control limits of 15%.

3. **Error Determination: Not Performed.**

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

4. **Blanks: Satisfactory.**

A method blank was analyzed for each extraction batch for each matrix and analysis system. Diesel-range TPHs (7.80 mg/kg) and motor oil-range TPHs (17.1 mg/kg) were detected in the method blank; no action was taken as applicable sample results were more than five times the blank results.

5. **System Monitoring Compounds (SMC): Acceptable.**

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

6. **Performance Evaluation Samples: Not Provided.**
Performance evaluation samples were not provided to the laboratory.

7. **Blank Spikes: Acceptable.**
Blank spike results were within QC limits.

8. **Duplicates: Acceptable.**
Duplicate results were within QC limits.

9. **Quantitation and Quantitation Limits: Acceptable.**
Sample concentrations were correctly calculated.

10. **Laboratory Contact: Not Required.**
No laboratory contact was required.

11. **Overall Assessment of Data for Use**

In samples 12060078 and 12060079, the results in the #2 Diesel and Motor Oil ranges are due to what most closely resembles a complex mixture of heavily weathered/degraded diesel fuel, a mineral/ transformer oil range product, and motor oil. The affected analytes are qualified as estimated quantities with a high bias (JH).

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the Method Detection Limit (MDL) and the Reporting Limit (RL).

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Client: Ecology and Environment, Inc.

Job Number: 580-34089-1

Client Sample ID: **12060078**

Lab Sample ID: 580-34089-1

Client Matrix: Solid

% Moisture: 22.4

Date Sampled: 07/23/2012 0830

Date Received: 07/24/2012 0950

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-116162	Instrument ID:	SEA012
Prep Method:	3550B	Prep Batch:	580-116125	Lab File ID:	CF00722.D
Dilution:	1.0			Initial Weight/Volume:	10.1228 g
Analysis Date:	07/26/2012 0844			Final Weight/Volume:	10 mL
Prep Date:	07/25/2012 1245			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		1700	JH ~~B~~ Y	7.3	32
Motor Oil (>C24-C36)		1700	JH B ~~Y~~ MW	12	64

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	115		50 - 150

SY MW

MW 7-31-12

Client: Ecology and Environment, Inc.

Job Number: 580-34089-1

Client Sample ID: **12060079**

Lab Sample ID: 580-34089-2

Client Matrix: Solid

% Moisture: 22.7

Date Sampled: 07/23/2012 0845

Date Received: 07/24/2012 0950

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-116162	Instrument ID:	SEA012
Prep Method:	3550B	Prep Batch:	580-116125	Lab File ID:	CF00724.D
Dilution:	1.0			Initial Weight/Volume:	10.2840 g
Analysis Date:	07/26/2012 0924			Final Weight/Volume:	10 mL
Prep Date:	07/25/2012 1245			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		590	~~Y B~~	7.2	31
Motor Oil (>C24-C36)		640	Y B	11	63

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	101		50 - 150

MW 7-31-12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: August 9, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-24

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one water and two soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060206 12060207 12060516

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The samples were maintained at < 6°C. The samples were collected on July 24, 2012, extracted by August 2, 2012, and were analyzed by August 3, 2012.

2. **Instrument Performance: Acceptable.**

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. **Initial and Continuing Calibration: Acceptable.**

All initial calibration relative standard deviations (RSDs) were less than 15%. All continuing calibration % differences (% D) were within QC limits.

4. **Error Determination: Not Provided.**

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. **Blanks: Acceptable.**

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

6. **Performance Evaluation Samples: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

7. **System Monitoring Compounds (SMCs): Acceptable.**

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

8. **Blank and Matrix Spikes: Acceptable.**

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

9. **Duplicates: Satisfactory.**

Relative Percent Differences (RPDs) of all spiked analytes were within the required control limits except Aroclor 1016 in the MS/MSD pair; no action was taken based on this outlier as the associated MS and MSD recoveries were within QC limits.

10. **Compound Identification: Satisfactory.**

All results were dual-column confirmed with differences between the columns less than 25% except two MS/MSD results (no actions were taken for spike outliers) and Aroclor 1260 in sample 12060207; the associated sample quantitation limits in sample 12060207 were qualified as estimated quantities with an unknown bias (UJK).

11. **Target Compound Quantitation and Quantitation Limits: Acceptable.**

Sample results and quantitation limits were correctly calculated.

12. **Laboratory Contact**

No laboratory contact was required.

13. **Overall Assessment**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 31, 2012

Client Sample ID:	12060206	Project:	ECOL00801
Sample ID:	308496001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	24-JUL-12 08:35		
Receive Date:	25-JUL-12		
Collector:	Client		
Moisture:	12.3%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	18.8	ug/kg	5	YS1	07/31/12	1122	1233458	1
Aroclor-1221	U	ND	18.8	ug/kg	5					
Aroclor-1232	U	ND	18.8	ug/kg	5					
Aroclor-1242	U	ND	18.8	ug/kg	5					
Aroclor-1248	U	ND	18.8	ug/kg	5					
Aroclor-1254	U	ND	18.8	ug/kg	5					
Aroclor-1260	U	ND	18.8	ug/kg	5					
Aroclor-Total	U	ND	18.8	ug/kg	5					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	LOG1	07/30/12	0903	1233457

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	3.58 ug/kg	7.52	47.7	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.78 ug/kg	7.52	63.5	(19%-130%)

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 31, 2012

Client Sample ID:	12060207	Project:	ECOL00801
Sample ID:	308496002	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	24-JUL-12 08:45		
Receive Date:	25-JUL-12		
Collector:	Client		
Moisture:	14.6%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	19.3	ug/kg	5	YS1	07/31/12	1203	1233458	1
Aroclor-1221	U	ND	19.3	ug/kg	5					
Aroclor-1232	U	ND	19.3	ug/kg	5					
Aroclor-1242	U	ND	19.3	ug/kg	5					
Aroclor-1248	U	ND	19.3	ug/kg	5					
Aroclor-1254	U	ND	19.3	ug/kg	5					
Aroclor-1260	UP	ND	19.3	ug/kg	5					
Aroclor-Total	UP	ND	19.3	ug/kg	5					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	LOG1	07/30/12	0903	1233457

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	2.79 ug/kg	7.73	36.1	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	3.25 ug/kg	7.73	42.0	(19%-130%)

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 6, 2012

Client Sample ID:	12060516	Project:	ECOL00801
Sample ID:	308527001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	24-JUL-12 08:25		
Receive Date:	25-JUL-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3535A/8082A PCB Liquids "As Received"										
Aroclor-1016	U	ND	0.100	ug/L	1	YS1	08/03/12	0917	1234626	1
Aroclor-1221	U	ND	0.100	ug/L	1					
Aroclor-1232	U	ND	0.100	ug/L	1					
Aroclor-1242	U	ND	0.100	ug/L	1					
Aroclor-1248	U	ND	0.100	ug/L	1					
Aroclor-1254	U	ND	0.100	ug/L	1					
Aroclor-1260	U	ND	0.100	ug/L	1					
Aroclor-Total	U	ND	0.100	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	SW3535A PCB SPE Extraction	RXC1	08/02/12	1205	1234625

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3535A/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3535A/8082A PCB Liquids "As Received"	0.139 ug/L	0.200	69.3	(34%-120%)
Decachlorobiphenyl	SW846 3535A/8082A PCB Liquids "As Received"	0.163 ug/L	0.200	81.6	(33%-120%)

MW 8-9-12

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Global Environmental Specialists

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

MEMORANDUM

DATE: August 9, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Inorganic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-24

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Target Analyte List (TAL) metals analyses (EPA Method 6020) were performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060516

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

All liquid samples were preserved to a pH < 2. The sample was maintained at < 6°C. The sample was collected on July 24, 2012, and was analyzed by July 30, 2012, therefore meeting QC criteria of less than 6 months between collection, extraction, and analysis.

2. **Initial and Continuing Calibration: Acceptable.**

A minimum of one calibration standard and a blank were analyzed at the beginning of the ICP analysis sequence and after every 10 samples. No results were greater than 110% of the highest calibration standard. All ICP recoveries were within the QC limits of 90% to 110%.

3. **Blanks: Satisfactory.**

A preparation blank was analyzed for each 20 samples or per matrix per concentration level. Blanks were analyzed after each Initial or Continuing Calibration Verification. There were no detections in any blanks except copper (0.608 ug/L) in the method blank; associated sample results were qualified as not detected (U) if the sample result was less than five times the positive blank concentration.

4. ICP Interference Check Sample: Acceptable.

An Interference Check Sample (ICS) was analyzed at the beginning of each sequence. All ICS (solution AB) results were within QC limits of 80% - 120% recovery.

5. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

6. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. ICP Serial Dilution: Acceptable.

A serial dilution analysis was performed per matrix per concentration or per sample delivery group, whichever was more frequent. All serial dilution results were within QC limits.

8. Matrix Spike Analysis: Acceptable.

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

9. Duplicate Analysis: Acceptable.

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

10. Laboratory Control Sample Analysis: Acceptable.

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

11. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 2, 2012

Client Sample ID:	12060516	Project:	ECOL00801
Sample ID:	308527001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	24-JUL-12 08:25		
Receive Date:	25-JUL-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS										
SW846 3005A/6020A Liquid "As Received"										
Arsenic	U	ND	5.00	ug/L	1	BAJ	07/27/12	2254	1232889	1
Cadmium	U	ND	1.00	ug/L	1					
Chromium	U	ND	10.0	ug/L	1					
Copper		1.34	1.00	ug/L	1					
Lead	U	ND	2.00	ug/L	1					
Thallium	U	ND	2.00	ug/L	1					
Zinc		222	50.0	ug/L	5	BAJ	07/30/12	1532	1232889	2

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	AXG2	07/27/12	0800	1232887

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6020A	
2	SW846 3005A/6020A	

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: August 9, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-24

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of two soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Volatile organic compound (VOC) analysis (EPA Method 8260) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060206 12060207

Data Qualifications:

1. **Sample Holding Times: Satisfactory.**

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on July 24, 2012, were prepared on August 1, 2012, and were analyzed on August 3, 2012, therefore exceeding the preparation QC time limits for Method 5035 samplers of less than 48 hours between collection and preparation but meeting QC criteria of less than 14 days between collection and analysis for soil and preserved water samples. Associated sample results were qualified as estimated quantities with a low bias (JL or UJL).

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were greater than the QC limit of 0.050. All water Relative Standard Deviations (RSDs) were within QC limits.

4. Continuing Calibration: Acceptable.

All RRFs were within QC limits. All % differences were within QC limits.

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

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

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

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Acceptable.

All internal standards were within $\pm$ 30 seconds of the continuing calibration internal standard retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 7, 2012

Client Sample ID:	12060206	Project:	ECOL00801
Sample ID:	308496001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	24-JUL-12 08:35		
Receive Date:	25-JUL-12		
Collector:	Client		
Moisture:	12.3%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	Uh	ND	0.983	UJ ug/kg	1	CDS1	08/03/12	1133	1235429	1 SZVM
1,1,2,2-Tetrachloroethane	Uh	ND	0.983	ug/kg	1					
1,1,2-Trichloroethane	Uh	ND	0.983	ug/kg	1					
1,1-Dichloroethane	Uh	ND	0.983	ug/kg	1					
1,1-Dichloroethylene	Uh	ND	0.983	ug/kg	1					
1,2-Dichloroethane	Uh	ND	0.983	ug/kg	1					
1,2-Dichloroethylene (total)	Uh	ND	1.97	ug/kg	1					
1,2-Dichloropropane	Uh	ND	0.983	ug/kg	1					
2-Butanone	Uh	ND	4.91	ug/kg	1					
2-Hexanone	Uh	ND	4.91	ug/kg	1					
4-Methyl-2-pentanone	Uh	ND NU	4.91	ug/kg	1					
Acetone	~~Uh~~ UV	28.7 JL	4.91	ug/kg	1					
Benzene	Uh	ND	0.983	UJ ug/kg	1					
Bromodichloromethane	Uh	ND	0.983	ug/kg	1					
Bromoform	Uh	ND	0.983	ug/kg	1					
~~Bromomethane~~	~~Uh~~	~~ND~~	~~0.983~~	~~ug/kg~~	~~1~~					
Carbon disulfide	Uh	ND	4.91	ug/kg	1					
Carbon tetrachloride	Uh	ND	0.983	ug/kg	1					
Chlorobenzene	Uh	ND	0.983	ug/kg	1					
Chloroethane	Uh	ND	0.983	ug/kg	1					
Chloroform	Uh	ND	0.983	ug/kg	1					
Chloromethane	Uh	ND	0.983	ug/kg	1					
Dibromochloromethane	Uh	ND	0.983	ug/kg	1					
Ethylbenzene	Uh	ND	0.983	ug/kg	1					
Methylene chloride	Uh	ND	4.91	ug/kg	1					
Styrene	Uh	ND	0.983	ug/kg	1					
Tetrachloroethylene	Uh	ND	0.983	ug/kg	1					
Toluene	Uh	ND	0.983	ug/kg	1					
Trichloroethylene	Uh	ND	0.983	ug/kg	1					
Vinyl acetate	Uh	ND	4.91	ug/kg	1					
Vinyl chloride	Uh	ND	0.983	ug/kg	1					
Xylenes (total)	Uh	ND	2.95	ug/kg	1					
cis-1,2-Dichloroethylene	Uh	ND	0.983	ug/kg	1					
cis-1,3-Dichloropropylene	Uh	ND	0.983	ug/kg	1					
m,p-Xylenes	Uh	ND	1.97	ug/kg	1					
o-Xylene	Uh	ND	0.983	ug/kg	1					
tert-Butyl methyl ether	Uh	ND	0.983	ug/kg	1					

MW
8-9-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 7, 2012

Client Sample ID: 12060206
Sample ID: 308496001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
trans-1,2-Dichloroethylene	~~Uh~~ UJL	ND	0.983	ug/kg	1					
trans-1,3-Dichloropropylene	Uh	~~ND~~	0.983 UJL	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	CDS1	08/01/12	1427	1235428

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	45.2 ug/kg	50.0	92.1	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	52.4 ug/kg	50.0	107	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	49.9 ug/kg	50.0	102	(80%-120%)

The Following NCRs have been identified

NCR ID:1107501 Batch ID: 1235429 1. Samples 308496001 and 308496002 were Encore kits preserved outside of the 48 hour holding time.

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 7, 2012

Client Sample ID:	12060207	Project:	ECOL00801
Sample ID:	308496002	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	24-JUL-12 08:45		
Receive Date:	25-JUL-12		
Collector:	Client		
Moisture:	14.6%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	Uh	ND	1.13 UJL	ug/kg	1	CDS1	08/03/12	1157	1235429	1 S2VM
1,1,2,2-Tetrachloroethane	Uh	ND	1.13	ug/kg	1					
1,1,2-Trichloroethane	Uh	ND	1.13	ug/kg	1					
1,1-Dichloroethane	Uh	ND	1.13	ug/kg	1					
1,1-Dichloroethylene	Uh	ND	1.13	ug/kg	1					
1,2-Dichloroethane	Uh	ND	1.13	ug/kg	1					
1,2-Dichloroethylene (total)	Uh	ND	2.25	ug/kg	1					
1,2-Dichloropropane	Uh	ND	1.13	ug/kg	1					
2-Butanone	Uh	ND	5.63	ug/kg	1					
2-Hexanone	Uh	ND	5.63	ug/kg	1					
4-Methyl-2-pentanone	Uh	ND MW	5.63	ug/kg	1					
Acetone	Th MW	47.7 JL	5.63	ug/kg	1					
Benzene	Uh	ND	1.13 UJL	ug/kg	1					
Bromodichloromethane	Uh	ND	1.13	ug/kg	1					
Bromoform	Uh	ND	1.13	ug/kg	1					
Bromomethane	Uh	ND	1.13	ug/kg	1					
Carbon disulfide	Uh	ND	5.63	ug/kg	1					
Carbon tetrachloride	Uh	ND	1.13	ug/kg	1					
Chlorobenzene	Uh	ND	1.13	ug/kg	1					
Chloroethane	Uh	ND	1.13	ug/kg	1					
Chloroform	Uh	ND	1.13	ug/kg	1					
Chloromethane	Uh	ND	1.13	ug/kg	1					
Dibromochloromethane	Uh	ND	1.13	ug/kg	1					
Ethylbenzene	Uh	ND	1.13	ug/kg	1					
Methylene chloride	Uh	ND	5.63	ug/kg	1					
Styrene	Uh	ND	1.13	ug/kg	1					
Tetrachloroethylene	Uh	ND	1.13	ug/kg	1					
Toluene	Uh	ND	1.13	ug/kg	1					
Trichloroethylene	Uh	ND	1.13	ug/kg	1					
Vinyl acetate	Uh	ND	5.63	ug/kg	1					
Vinyl chloride	Uh	ND	1.13	ug/kg	1					
Xylenes (total)	Uh	ND	3.38	ug/kg	1					
cis-1,2-Dichloroethylene	Uh	ND	1.13	ug/kg	1					
cis-1,3-Dichloropropylene	Uh	ND	1.13	ug/kg	1					
m,p-Xylenes	Uh	ND	2.25	ug/kg	1					
o-Xylene	Uh	ND	1.13	ug/kg	1					
tert-Butyl methyl ether	Uh	ND MW	1.13	ug/kg	1					

MW 8-9-12

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Project: **Project No. 4500000347**

Report Date: August 7, 2012

Client Sample ID: 12060207
Sample ID: 308496002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
trans-1,2-Dichloroethylene	Uh	ND	1.13	ug/kg	1					
trans-1,3-Dichloropropylene	Uh	ND	1.13	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	CDS1	08/01/12	1430	1235428

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	52.3 ug/kg	50.0	93.0	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	66.0 ug/kg	50.0	117	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	57.7 ug/kg	50.0	102	(80%-120%)

The Following NCRs have been identified

NCR ID:1107501 Batch ID: 1235429 1. Samples 308496001 and 308496002 were Encore kits preserved outside of the 48 hour holding time.

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700, Seattle, WA 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: August 9, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-24

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of one water and two soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Semivolatile Organic Compound (SVOC) analysis (EPA Methods 8270D and 8270D SIM) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060206 12060207 12060516

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on July 24, 2012, were extracted by July 31, 2012, and were analyzed by August 1, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were within QC limits. All Relative Standard Deviations (RSDs) were within QC limits.

4. **Continuing Calibration: Satisfactory.**

All RRFs were within QC limits. All % differences were within QC limits except hexachlorocyclopentadiene and pentachlorophenol (each with low recoveries) and indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene (each with high recoveries) in the July 27, 2012

calibration. No actions were taken based on the high outliers as they were not detected in the associated samples. The associated hexachlorocyclopentadiene and pentachlorophenol sample quantitation limits were qualified as estimated quantities with a low bias (UJL).

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Satisfactory.

All SMC recoveries were within QC limits except one high outlier in a matrix spike sample; no action was taken based on this outlier as all spike results in that sample were within QC limits.

7. Matrix Spike (MS)/MS Duplicate (MSD)/Blank Spike (BS) Analysis: Acceptable.

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

8. Duplicate Analysis: Satisfactory.

Spike duplicate analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. All spike duplicate results were within QC limits except several outliers associated with samples 12060206 and 12060207; no actions were taken based on these outliers as all associated spike results were within QC limits.

9. Internal Standards: Acceptable.

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 31, 2012

Client Sample ID:	12060206	Project:	ECOL00801
Sample ID:	308496001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	24-JUL-12 08:35		
Receive Date:	25-JUL-12		
Collector:	Client		
Moisture:	12.3%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D SIM PAH Sonication "Dry Weight Corrected"										
1-Methylnaphthalene		21.9	7.56	ug/kg	1	JMB3	07/30/12	1358	1233007	1
2-Chloronaphthalene	U	ND	7.56	ug/kg	1					
2-Methylnaphthalene	U	ND	7.56	ug/kg	1					
Acenaphthene	U	ND	7.56	ug/kg	1					
Acenaphthylene	U	ND	7.56	ug/kg	1					
Anthracene	U	ND	7.56	ug/kg	1					
Benzo(a)anthracene		24.6	7.56	ug/kg	1					
Benzo(a)pyrene		15.9	7.56	ug/kg	1					
Benzo(b)fluoranthene		15.9	7.56	ug/kg	1					
Benzo(ghi)perylene	U	ND	7.56	ug/kg	1					
Benzo(k)fluoranthene	U	ND	7.56	ug/kg	1					
Chrysene		45.0	7.56	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	7.56	ug/kg	1					
~~Fluoranthene~~		~~83.6~~	~~7.56~~	~~ug/kg~~	1					
Fluorene		48.0	7.56	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	7.56	ug/kg	1					
Naphthalene	U	ND	7.56	ug/kg	1					
~~Phenanthrene~~		~~104~~	~~7.56~~	~~ug/kg~~	1					
~~Pyrene~~		~~126~~	~~7.56~~	~~ug/kg~~	1					
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	378	ug/kg	1	JLD1	07/27/12	1931	1233000	2
1,2,4,5-Tetrachlorobenzene	U	ND	378	ug/kg	1					
~~1-Methylnaphthalene~~	~~U~~	~~ND~~	~~37.8~~	~~ug/kg~~	1					
2,3,4,6-Tetrachlorophenol	U	ND	378	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	378	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	378	ug/kg	1					
2,4-Dichlorophenol	U	ND	378	ug/kg	1					
2,4-Dimethylphenol	U	ND	378	ug/kg	1					
2,4-Dinitrophenol	U	ND	756	ug/kg	1					
2,4-Dinitrotoluene	U	ND	378	ug/kg	1					
2,6-Dinitrotoluene	U	ND	378	ug/kg	1					
~~2-Chloronaphthalene~~	~~U~~	~~ND~~	~~37.8~~	~~ug/kg~~	1					
2-Chlorophenol	U	ND	378	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	378	ug/kg	1					
~~2-Methylnaphthalene~~	~~U~~	~~ND~~	~~37.8~~	~~ug/kg~~	1					
2-Nitrophenol	U	ND	378	ug/kg	1					

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Report Date: July 31, 2012

Client Sample ID: 12060206
Sample ID: 308496001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
3,3'-Dichlorobenzidine	U	ND	378	ug/kg	1					
4-Bromophenylphenylether	U	ND	378	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	378	ug/kg	1					
4-Chloroaniline	U	ND	378	ug/kg	1					
4-Chlorophenylphenylether	U	ND	378	ug/kg	1					
4-Nitrophenol	U	ND	378	ug/kg	1					
~~Acenaphthene~~	~~U~~	~~ND~~	~~37.8~~	~~ug/kg~~	1					
~~Acenaphthylene~~	~~U~~	~~ND~~	~~37.8~~	~~ug/kg~~	1					
Acetophenone	U	ND	378	ug/kg	1					
~~Anthracene~~	~~U~~	~~ND~~	~~37.8~~	~~ug/kg~~	1					
Atrazine	U	ND	378	ug/kg	1					
Benzaldehyde	U	ND	378	ug/kg	1					
~~Benzo(a)anthracene~~	~~U~~	~~ND~~	~~37.8~~	~~ug/kg~~	1					
~~Benzo(a)pyrene~~	~~U~~	~~ND~~	~~37.8~~	~~ug/kg~~	1					
~~Benzo(b)fluoranthene~~	U	ND	37.8	ug/kg	1					
Benzo(ghi)perylene	U	ND	37.8	ug/kg	1					
Benzo(k)fluoranthene	U	ND	37.8	ug/kg	1					
Butylbenzylphthalate	U	ND	378	ug/kg	1					
Caprolactam	U	ND	378	ug/kg	1					
Carbazole	U	ND	37.8	ug/kg	1					
~~Chrysene~~	~~U~~	~~ND~~	~~37.8~~	~~ug/kg~~	1					
Di-n-butylphthalate	U	ND	378	ug/kg	1					
Di-n-octylphthalate	U	ND	378	ug/kg	1					
~~Dibenzo(a,h)anthracene~~	~~U~~	~~ND~~	~~37.8~~	~~ug/kg~~	1					
Dibenzofuran	U	ND	378	ug/kg	1					
Diethylphthalate	U	ND	378	ug/kg	1					
Dimethylphthalate	U	ND	378	ug/kg	1					
Diphenylamine	U	ND	378	ug/kg	1					
Fluoranthene		76.4	37.8	ug/kg	1					
~~Fluorene~~	~~U~~	~~ND~~	~~37.8~~	~~ug/kg~~	1					
Hexachlorobenzene	U	ND	378	ug/kg	1					
Hexachlorobutadiene	U	ND	378	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	378	ug/kg	1					
Hexachloroethane	U	ND	378	ug/kg	1					
~~Indeno(1,2,3-cd)pyrene~~	~~U~~	~~ND~~	~~37.8~~	~~ug/kg~~	1					
Isophorone	U	ND	378	ug/kg	1					
N-Nitrosodipropylamine	U	ND	378	ug/kg	1					
~~Naphthalene~~	~~U~~	~~ND~~	~~37.8~~	~~ug/kg~~	1					
Nitrobenzene	U	ND	378	ug/kg	1					
Pentachlorophenol	U	ND	378	ug/kg	1					
Phenanthrene		106	37.8	ug/kg	1					
Phenol	U	ND	378	ug/kg	1					

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Report Date: July 31, 2012

Client Sample ID: 12060206
Sample ID: 308496001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Pyrene		120	37.8	ug/kg	1				52VM	
bis(2-Chloroethoxy)methane	U	ND	378	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	378	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	378	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	378	ug/kg	1					
m,p-Cresols	U	ND	378	ug/kg	1					
m-Nitroaniline	U	ND	378	ug/kg	1					
o-Cresol	U	ND	378	ug/kg	1					
o-Nitroaniline	U	ND	378	ug/kg	1					
p-Nitroaniline	U	ND	378	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	AXV1	07/26/12	1855	1232999

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	Prep Method 3550C for Solid	AXV1	07/26/12	1855	1233006

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D SIM PAH	
2	SW846 3550C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
5-alpha-Androstane	SW846 3550C/8270D SIM PAH Sonication "Dry Weight Corrected"	153 ug/kg	189	81.0	(39%-114%)
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1220 ug/kg	1890	64.8	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1360 ug/kg	1890	72.0	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1680 ug/kg	1890	88.6	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	3540 ug/kg	3780	93.5	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2770 ug/kg	3780	73.3	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry	2480 ug/kg	3780	65.5	(26%-112%)

MW 8-9-12

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Report Date: July 31, 2012

Client Sample ID: 12060206
Sample ID: 308496001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Weight Corrected"										

MW
7-31-12

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 31, 2012

Client Sample ID:	12060207	Project:	ECOL00801
Sample ID:	308496002	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	24-JUL-12 08:45		
Receive Date:	25-JUL-12		
Collector:	Client		
Moisture:	14.6%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D SIM PAH Sonication "Dry Weight Corrected"										
1-Methylnaphthalene		20.6	7.79	ug/kg	1	JMB3	07/30/12	1420	1233007	1
2-Chloronaphthalene	~~U~~	~~ND~~	7.79	ug/kg	1					
2-Methylnaphthalene		18.3	7.79	ug/kg	1					
Acenaphthene	~~U~~	ND	7.79	ug/kg	1					
Acenaphthylene	U	ND	7.79	ug/kg	1					
Anthracene	U	~~ND~~	7.79	ug/kg	1					
Benzo(a)anthracene		24.9	7.79	ug/kg	1					
Benzo(a)pyrene		19.9	7.79	ug/kg	1					
Benzo(b)fluoranthene		29.6	7.79	ug/kg	1					
Benzo(ghi)perylene		16.4	7.79	ug/kg	1					
Benzo(k)fluoranthene	~~U~~	~~ND~~	7.79	ug/kg	1					
Chrysene		56.9	7.79	ug/kg	1					
Dibenzo(a,h)anthracene	U	~~ND~~	7.79	ug/kg	1					
~~Fluoranthene~~		~~65.8~~	~~7.79~~	~~ug/kg~~	1					
Fluorene		42.5	7.79	ug/kg	1					
~~Indeno(1,2,3-cd)pyrene~~		~~9.35~~	~~7.79~~	~~ug/kg~~	1					
Naphthalene		16.4	7.79	ug/kg	1					
~~Phenanthrene~~		~~148~~	~~7.79~~	~~ug/kg~~	1					
~~Pyrene~~		~~122~~	~~7.79~~	~~ug/kg~~	1					
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	390	ug/kg	1	JLD1	07/27/12	1956	1233000	2
1,2,4,5-Tetrachlorobenzene	U	ND	390	ug/kg	1					
~~1-Methylnaphthalene~~	~~U~~	~~ND~~	~~39.0~~	~~ug/kg~~	1					
2,3,4,6-Tetrachlorophenol	U	ND	390	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	390	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	390	ug/kg	1					
2,4-Dichlorophenol	U	ND	390	ug/kg	1					
2,4-Dimethylphenol	U	ND	390	ug/kg	1					
2,4-Dinitrophenol	U	ND	779	ug/kg	1					
2,4-Dinitrotoluene	U	ND	390	ug/kg	1					
2,6-Dinitrotoluene	U	ND	390	ug/kg	1					
~~2-Chloronaphthalene~~	~~U~~	~~ND~~	~~39.0~~	~~ug/kg~~	1					
2-Chlorophenol	U	ND	390	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	390	ug/kg	1					
~~2-Methylnaphthalene~~	~~U~~	~~ND~~	~~39.0~~	~~ug/kg~~	1					
2-Nitrophenol	U	ND	390	ug/kg	1					

MW 8-9-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 31, 2012

Client Sample ID: 12060207
Sample ID: 308496002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
3,3'-Dichlorobenzidine	U	ND	390	ug/kg	1					
4-Bromophenylphenylether	U	ND	390	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	390	ug/kg	1					
4-Chloroaniline	U	ND	390	ug/kg	1					
4-Chlorophenylphenylether	U	ND	390	ug/kg	1					
4-Nitrophenol	U	ND	390	ug/kg	1					
~~Acenaphthene~~	~~U~~	~~ND~~	~~39.0~~	~~ug/kg~~	1					
~~Acenaphthylene~~	~~U~~	~~ND~~	~~39.0~~	~~ug/kg~~	1					
Acetophenone	U	ND	390	ug/kg	1					
~~Anthracene~~	~~U~~	~~ND~~	~~39.0~~	~~ug/kg~~	1					
Atrazine	U	ND	390	ug/kg	1					
Benzaldehyde	U	ND	390	ug/kg	1					
~~Benzo(a)anthracene~~	~~U~~	~~ND~~	~~39.0~~	~~ug/kg~~	1					
Benzo(a)pyrene	U	ND	39.0	ug/kg	1					
Benzo(b)fluoranthene	U	ND	39.0	ug/kg	1					
Benzo(ghi)perylene	U	ND	39.0	ug/kg	1					
Benzo(k)fluoranthene	U	ND	39.0	ug/kg	1					
Butylbenzylphthalate	U	ND	390	ug/kg	1					
Caprolactam	U	ND	390	ug/kg	1					
Carbazole	U	ND	39.0	ug/kg	1					
~~Chrysene~~	~~U~~	~~ND~~	~~39.0~~	~~ug/kg~~	1					
Di-n-butylphthalate	U	ND	390	ug/kg	1					
Di-n-octylphthalate	U	ND	390	ug/kg	1					
~~Dibenzo(a,h)anthracene~~	~~U~~	~~ND~~	~~39.0~~	~~ug/kg~~	1					
Dibenzofuran	U	ND	390	ug/kg	1					
Diethylphthalate	U	ND	390	ug/kg	1					
Dimethylphthalate	U	ND	390	ug/kg	1					
Diphenylamine	U	ND	390	ug/kg	1					
Fluoranthene		70.5	39.0	ug/kg	1					
~~Fluorene~~	~~U~~	~~ND~~	~~39.0~~	~~ug/kg~~	1					
Hexachlorobenzene	U	ND	390	ug/kg	1					
Hexachlorobutadiene	U	ND	390	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	390	ug/kg	1					
Hexachloroethane	U	ND	390	ug/kg	1					
~~Indeno(1,2,3-cd)pyrene~~	~~U~~	~~ND~~	~~39.0~~	~~ug/kg~~	1					
Isophorone	U	ND	390	ug/kg	1					
N-Nitrosodipropylamine	U	ND	390	ug/kg	1					
~~Naphthalene~~	~~U~~	~~ND~~	~~39.0~~	~~ug/kg~~	1					
Nitrobenzene	U	ND	390	ug/kg	1					
Pentachlorophenol	U	ND	390	ug/kg	1					
Phenanthrene		102	39.0	ug/kg	1					
Phenol	U	ND	390	ug/kg	1					

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Certificate of Analysis

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 31, 2012

Client Sample ID: 12060207
Sample ID: 308496002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Pyrene		123	39.0	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	390	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	390	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	390	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	390	ug/kg	1					
m,p-Cresols	U	ND	390	ug/kg	1					
m-Nitroaniline	U	ND	390	ug/kg	1					
o-Cresol	U	ND	390	ug/kg	1					
o-Nitroaniline	U	ND	390	ug/kg	1					
p-Nitroaniline	U	ND	390	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	AXV1	07/26/12	1855	1232999

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	Prep Method 3550C for Solid	AXV1	07/26/12	1855	1233006

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D SIM PAH	
2	SW846 3550C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
5-alpha-Androstane	SW846 3550C/8270D SIM PAH Sonication "Dry Weight Corrected"	127 ug/kg	195	65.4	(39%-114%)
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	994 ug/kg	1950	51.0	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1020 ug/kg	1950	52.5	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1470 ug/kg	1950	75.5	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2790 ug/kg	3900	71.5	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2030 ug/kg	3900	52.0	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry	1290 ug/kg	3900	33.2	(26%-112%)

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: July 31, 2012

Client Sample ID: 12060207
Sample ID: 308496002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
	Weight Corrected"									

mw 8/9/12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 7, 2012

Client Sample ID:	12060516	Project:	ECOL00801
Sample ID:	308527001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	24-JUL-12 08:25		
Receive Date:	25-JUL-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D Semivolatile Analysis by Separatory Funnel "As Received"										
Benzo(a)anthracene	~~U~~	ND	1.00	ug/L	1	JMB3	08/01/12	1641	1233617	1
Benzo(a)pyrene	U	ND	1.00	ug/L	1					
Benzo(b)fluoranthene	U	ND	1.00	ug/L	1					
Chrysene	U	ND	1.00	ug/L	1					
Diphenylamine	U	ND	10.0	ug/L	1					
bis(2-Ethylhexyl)phthalate	U	ND	10.0	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	SW846 3510C Prep Semivolatiles 8270D	AXW1	07/31/12	1855	1233616

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2,4,6-Tribromophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	82.5 ug/L	100	82.5	(26%-131%)
2-Fluorophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	36.9 ug/L	100	36.9	(15%-78%)
Phenol-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	18.5 ug/L	100	18.5	(10%-72%)
2-Fluorobiphenyl	8270D Semivolatile Analysis by Separatory Funnel "As Received"	34.2 ug/L	50.0	68.3	(29%-102%)
Nitrobenzene-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	40.6 ug/L	50.0	81.2	(36%-125%)
p-Terphenyl-d14	8270D Semivolatile Analysis by Separatory Funnel "As Received"	51.3 ug/L	50.0	103	(31%-133%)

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700
Seattle, Washington 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: August 14, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-25

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of two soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Analysis for Extended Diesel Range Total Petroleum Hydrocarbons (Ecology Method NWTPH-Dx) was performed by TestAmerica Seattle, Tacoma, Washington. All sample analyses were evaluated following EPA's Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060206 12060207

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained at < 6°C. The samples were collected on July 24, 2012, extracted by July 30, 2012, and analyzed by August 1, 2012, therefore meeting QC criteria of less than 14 days between collection and extraction for soil samples, and less than 40 days between extraction and analysis.

2. Initial and Continuing Calibrations: Acceptable.

Calculations were verified as correct. All initial calibration correlation coefficients were ≥ 0.990 and/or all relative percent differences (RPDs) were within the laboratory control limits. All continuing calibration percent differences (%Ds) were within the laboratory control limits.

3. Error Determination: Not Performed.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

4. Blanks: Satisfactory.

A method blank was analyzed for each extraction batch for each matrix and analysis system. Diesel-range and motor oil-range TPHs were each detected in one method blank; however, no action was required since all sample concentrations were more than five times the method blank concentrations.

5. **System Monitoring Compounds (SMC): Acceptable.**
All recoveries of the SMCs were greater than 10% and within QC criteria.

6. **Performance Evaluation Samples: Not Provided.**
Performance evaluation samples were not provided to the laboratory.

7. **Blank Spikes: Acceptable.**
Blank spike results were within QC limits.

8. **Duplicates: Acceptable.**
Spike duplicate results were within QC limits.

9. **Quantitation and Quantitation Limits: Acceptable.**
Sample concentrations were correctly calculated.

10. **Laboratory Contact: Not Required.**
No laboratory contact was required.

11. **Overall Assessment of Data for Use**

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the Method Detection Limit (MDL) and the Reporting Limit (RL).

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Client: Ecology and Environment, Inc.

Job Number: 580-34113-1

Client Sample ID: **12060206**

Lab Sample ID: 580-34113-1

Client Matrix: Solid

% Moisture: 9.4

Date Sampled: 07/24/2012 0835

Date Received: 07/25/2012 0950

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-116544	Instrument ID:	SEA012
Prep Method:	3550B	Prep Batch:	580-116505	Lab File ID:	CF00848.D
Dilution:	1.0			Initial Weight/Volume:	10.5319 g
Analysis Date:	08/01/2012 0611			Final Weight/Volume:	10 mL
Prep Date:	07/30/2012 1806			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		200	~~B~~ Y	6.0	26
Motor Oil (>C24-C36)		150	B Y MW	9.5	52

54VM

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	105		50 - 150

MW 8-14-12

Client: Ecology and Environment, Inc.

Job Number: 580-34113-1

Client Sample ID: **12060207**

Lab Sample ID: 580-34113-2

Client Matrix: Solid

% Moisture: 14.1

Date Sampled: 07/24/2012 0845

Date Received: 07/25/2012 0950

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-116544	Instrument ID:	SEA012
Prep Method:	3550B	Prep Batch:	580-116505	Lab File ID:	CF00849.D
Dilution:	1.0			Initial Weight/Volume:	10.7138 g
Analysis Date:	08/01/2012 0630			Final Weight/Volume:	10 mL
Prep Date:	07/30/2012 1806			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		1600	~~B~~ Y	6.2	27
Motor Oil (>C24-C36)		1300	B Y MW	9.9	54

54 VM

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	116		50 - 150

MR 8/14/12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700, Seattle, WA 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: August 16, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-26

REF:

TDDs:	12-05-0006	PANs: 002233.0790.01RA
	12-05-0007	PANs: 002233.0791.01RA
	12-05-0008	PANs: 002233.0792.01RA
	12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of two water samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060517 12060518

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on July 31, 2012, were extracted on August 2, 2012, and were analyzed on August 3, 2012, therefore meeting QC holding time criteria.

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were within the QC limits. All Relative Standard Deviations and/or correlation coefficients were within QC limits.

4. **Continuing Calibration: Acceptable.**

All RRFs were greater than the lower QC limit of 0.050. All % differences were within QC limits.

5. **Blanks: Acceptable.**

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

6. **System Monitoring Compounds (SMCs): Acceptable.**

All SMC recoveries were within QC limits.

7. **Matrix Spike (MS)/MS Duplicate (MSD)/Blank Spike (BS) Analysis: Acceptable.**

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

8. **Duplicate Analysis: Acceptable.**

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

9. **Internal Standards: Acceptable.**

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. **Precision and Bias Determination: Not Performed.**

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. **Performance Evaluation Sample Analysis: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

12. **Overall Assessment of Data for Use**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 13, 2012

Client Sample ID:	12060517	Project:	ECOL00801
Sample ID:	308860001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	31-JUL-12 09:05		
Receive Date:	01-AUG-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D Semivolatile Analysis by Separatory Funnel "As Received"										
Benzo(a)anthracene	U	ND	1.00	ug/L	1	RMB	08/03/12	1749	1235075	1
Benzo(a)pyrene	U	ND	1.00	ug/L	1					
Benzo(b)fluoranthene	U	ND	1.00	ug/L	1					
Chrysene	U	ND	1.00	ug/L	1					
Diphenylamine	U	ND	10.0	ug/L	1					
bis(2-Ethylhexyl)phthalate	U	ND	10.0	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	SW846 3510C Prep Semivolatiles 8270D	AXW1	08/02/12	1800	1235072

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2,4,6-Tribromophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	88.7 ug/L	100	88.7	(26%-131%)
2-Fluorophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	40.7 ug/L	100	40.7	(15%-78%)
Phenol-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	22.6 ug/L	100	22.6	(10%-72%)
2-Fluorobiphenyl	8270D Semivolatile Analysis by Separatory Funnel "As Received"	29.9 ug/L	50.0	59.8	(29%-102%)
Nitrobenzene-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	38.3 ug/L	50.0	76.6	(36%-125%)
p-Terphenyl-d14	8270D Semivolatile Analysis by Separatory Funnel "As Received"	35.3 ug/L	50.0	70.5	(31%-133%)

The Following NCRs have been identified

NCR ID:1108139 Batch ID: 1235876 1.Samples 308253002 and 308860002 did not meet the surrogate recovery acceptance criteria.

8-16-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 13, 2012

Client Sample ID:	12060518	Project:	ECOL00801
Sample ID:	308860002	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	31-JUL-12 08:55		
Receive Date:	01-AUG-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D Semivolatile Analysis by Separatory Funnel "As Received"										
Benzo(a)anthracene	U	ND	1.00	ug/L	1	RMB	08/03/12	1913	1235075	1
Benzo(a)pyrene	U	ND	1.00	ug/L	1					
Benzo(b)fluoranthene	U	ND	1.00	ug/L	1					
Chrysene	U	ND	1.00	ug/L	1					
Diphenylamine	U	ND	10.0	ug/L	1					
bis(2-Ethylhexyl)phthalate	U	ND	10.0	ug/L	1					

SHVM

MW

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	SW846 3510C Prep Semivolatiles 8270D	AXW1	08/02/12	1800	1235072

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2,4,6-Tribromophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	94.5 ug/L	100	94.5	(26%-131%)
2-Fluorophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	33.2 ug/L	100	33.2	(15%-78%)
Phenol-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	18.3 ug/L	100	18.3	(10%-72%)
2-Fluorobiphenyl	8270D Semivolatile Analysis by Separatory Funnel "As Received"	35.8 ug/L	50.0	71.6	(29%-102%)
Nitrobenzene-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	38.6 ug/L	50.0	77.2	(36%-125%)
p-Terphenyl-d14	8270D Semivolatile Analysis by Separatory Funnel "As Received"	32.3 ug/L	50.0	64.7	(31%-133%)

The Following NCRs have been identified

NCR ID:1108139 Batch ID: 1235876 1.Samples 308253002 and 308860002 did not meet the surrogate recovery acceptance criteria.

NCR ID:1108623 Batch ID: 1236680 1. Failed Yield for Surrogates:
308253 002

MW 8/6/12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700, Seattle, WA 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: August 16, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Inorganic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-26

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of two water samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Target Analyte List (TAL) metals analyses (EPA Method 6020) were performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060517 12060518

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained at < 6°C. The samples were collected on July 31, 2012, and were analyzed by August 14, 2012, therefore meeting QC criteria of less than 6 months between collection, extraction, and analysis.

2. Initial and Continuing Calibration: Acceptable.

A minimum of one calibration standard and a blank were analyzed at the beginning of the ICP analysis sequence and after every 10 samples. No results were greater than 110% of the highest calibration standard. All ICP recoveries were within the QC limits of 90% to 110% (+/- 1%).

3. Blanks: Acceptable.

A preparation blank was analyzed for each 20 samples or per matrix per concentration level. Blanks were analyzed after each Initial or Continuing Calibration Verification. There were no detections in any blanks.

4. ICP Interference Check Sample: Acceptable.

An Interference Check Sample (ICS) was analyzed at the beginning and end of each sequence or at least twice every 8 hours, whichever was more frequent. All ICS (solution AB) results were within QC limits of 80% - 120% recovery.

5. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

6. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. ICP Serial Dilution: Acceptable.

A serial dilution analysis was performed per matrix per concentration or per sample delivery group, whichever was more frequent. All serial dilution results were within QC limits.

8. Matrix Spike Analysis: Acceptable.

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

9. Duplicate Analysis: Acceptable.

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

10. Laboratory Control Sample Analysis: Acceptable.

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

11. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 14, 2012

Client Sample ID:	12060517	Project:	ECOL00801
Sample ID:	308860001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	31-JUL-12 09:05		
Receive Date:	01-AUG-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS										
SW846 3005A/6020A Liquid "As Received"										
Arsenic	~~U~~	ND	5.00 U	ug/L	1	BAJ	08/13/12	2308	1234919	1
Cadmium	U	ND	1.00	ug/L	1					
Chromium	U	~~ND~~	10.0	ug/L	1					
Copper		1.05	1.00	ug/L	1					
Lead	~~U~~	ND	2.00 U	ug/L	1					
Thallium	U	ND	2.00 U	ug/L	1					
Zinc		11.7	10.0	ug/L	1	PRB	08/14/12	1332	1234919	2

SYM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	AXG2	08/07/12	0750	1234918

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6020A	
2	SW846 3005A/6020A	

The Following NCRs have been identified

NCR ID:1108139 Batch ID: 1235876 1.Samples 308253002 and 308860002 did not meet the surrogate recovery acceptance criteria.

8/16/12

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 14, 2012

Client Sample ID:	12060518	Project:	ECOL00801
Sample ID:	308860002	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	31-JUL-12 08:55		
Receive Date:	01-AUG-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS										
SW846 3005A/6020A Liquid "As Received"										
Arsenic		31.4	5.00	ug/L	1	BAJ	08/13/12	2340	1234919	1
Cadmium	~~U~~	ND	1.00 U	ug/L	1					
Chromium	U	~~ND~~	10.0 U	ug/L	1					
Copper		79.0	1.00	ug/L	1					
Lead		75.4	2.00	ug/L	1					
Thallium	~~U~~	~~ND~~	2.00 U	ug/L	1					
Zinc		275	50.0	ug/L	5	PRB	08/14/12	1350	1234919	2

SHW

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	AXG2	08/07/12	0750	1234918

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6020A	
2	SW846 3005A/6020A	

The Following NCRs have been identified

NCR ID:1108139 Batch ID: 1235876 1.Samples 308253002 and 308860002 did not meet the surrogate recovery acceptance criteria.

NCR ID:1108623 Batch ID: 1236680 1. Failed Yield for Surrogates:
308253 002
308860 002

MW
8-16-12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: August 16, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-26

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of 2 water samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060517 12060518

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The samples were maintained at < 6°C. The samples were collected on July 31, 2012, extracted by August 8, 2012, and were analyzed by August 8, 2012, therefore meeting QC holding time limits.

2. **Instrument Performance: Acceptable.**

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. **Initial and Continuing Calibration: Acceptable.**

All initial calibration relative standard deviations (RSDs) were less than 15%. All continuing calibration % differences (% D) were within QC limits.

4. **Error Determination: Not Provided.**

Samples necessary for bias and precision determination were not provided to the laboratory. All

samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Acceptable.

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

6. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. System Monitoring Compounds (SMCs): Satisfactory.

All recoveries of the SMCs were within the established control limits except the two low SMC recoveries in sample 12060518; associated sample quantitation limits were qualified as estimated with a low bias (UJL).

8. Blank and Matrix Spikes: Acceptable.

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

9. Duplicates: Acceptable.

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

10. Compound Identification: Acceptable.

All results were dual-column confirmed with differences between the columns less than 25%.

11. Target Compound Quantitation and Quantitation Limits: Acceptable.

Sample results and quantitation limits were correctly calculated.

12. Laboratory Contact

No laboratory contact was required.

13. Overall Assessment

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 9, 2012

Client Sample ID:	12060517	Project:	ECOL00801
Sample ID:	308860001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	31-JUL-12 09:05		
Receive Date:	01-AUG-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3535A/8082A PCB Liquids "As Received"										
Aroclor-1016	U	ND	0.100	ug/L	1	YS1	08/08/12	0940	1235876	1
Aroclor-1221	U	ND	0.100	ug/L	1					
Aroclor-1232	U	ND	0.100	ug/L	1					
Aroclor-1242	U	ND	0.100	ug/L	1					
Aroclor-1248	U	ND	0.100	ug/L	1					
Aroclor-1254	U	ND	0.100	ug/L	1					
Aroclor-1260	U	ND	0.100	ug/L	1					
Aroclor-Total	U	ND	0.100	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	SW3535A PCB SPE Extraction	TXA2	08/07/12	1650	1235873

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3535A/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3535A/8082A PCB Liquids "As Received"	0.124 ug/L	0.200	62.2	(34%-120%)
Decachlorobiphenyl	SW846 3535A/8082A PCB Liquids "As Received"	0.112 ug/L	0.200	55.9	(33%-120%)

The Following NCRs have been identified

NCR ID:1108139 Batch ID: 1235876 1.Samples 308253002 and 308860002 did not meet the surrogate recovery acceptance criteria.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 9, 2012

Client Sample ID:	12060518	Project:	ECOL00801
Sample ID:	308860002	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	31-JUL-12 08:55		
Receive Date:	01-AUG-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3535A/8082A PCB Liquids "As Received"										
Aroclor-1016	U	ND	0.100	ug/L	1	YS1	08/08/12	1017	1235876	1
Aroclor-1221	U	ND	0.100	ug/L	1					
Aroclor-1232	U	ND	0.100	ug/L	1					
Aroclor-1242	U	ND	0.100	ug/L	1					
Aroclor-1248	U	ND	0.100	ug/L	1					
Aroclor-1254	U	ND	0.100	ug/L	1					
Aroclor-1260	U	ND	0.100	ug/L	1					
Aroclor-Total	U	ND	0.100	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	SW3535A PCB SPE Extraction	SXS3	08/08/12	1849	1236679

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	SW3535A PCB SPE Extraction	TXA2	08/07/12	1650	1235873

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3535A/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3535A/8082A PCB Liquids "As Received"	0.0366 ug/L	0.200	18.3*	(34%-120%)
Decachlorobiphenyl	SW846 3535A/8082A PCB Liquids "As Received"	0.044 ug/L	0.200	22.0*	(33%-120%)

The Following NCRs have been identified

NCR ID:1108139 Batch ID: 1235876 1.Samples 308253002 and 308860002 did not meet the surrogate recovery acceptance criteria.

NCR ID:1108623 Batch ID: 1236680 1. Failed Yield for Surrogates:
308253 002
308860 002

MW 8-16-12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: August 16, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-26

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one soil sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060114

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The sample was maintained and received within the QC limits of < 6°C. The sample was collected on July 30, 2012, was extracted on August 1, 2012, and was analyzed on August 2, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were within the QC limits. All Relative Standard Deviations and/or correlation coefficients were within QC limits.

4. **Continuing Calibration: Satisfactory.**

All RRFs were greater than the lower QC limit of 0.050. All % differences were within QC limits except some analytes with high recoveries (no actions were taken as these analytes were not detected in the samples) and indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene with low recoveries; associated sample quantitation limits were qualified as estimated with a low bias (UJL).

5. **Blanks: Acceptable.**

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

6. **System Monitoring Compounds (SMCs): Acceptable.**

All SMC recoveries were within QC limits.

7. **Matrix Spike (MS)/MS Duplicate (MSD)/Blank Spike (BS) Analysis: Acceptable.**

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

8. **Duplicate Analysis: Acceptable.**

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

9. **Internal Standards: Satisfactory.**

All internal standards (IS) were within $\pm$30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts except chrysene and perylene with low area counts in sample 12060114 and the MS and MSD analyses. No actions were taken based on the MS and MSD internal standard outliers. Sample 12060114 results associated with the low area count outliers were qualified as estimated quantities with a high bias for positive result (JL) and a low bias for sample quantitation limits (UJL).

10. **Precision and Bias Determination: Not Performed.**

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. **Performance Evaluation Sample Analysis: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

12. **Overall Assessment of Data for Use**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

The overall usefulness of the data is based on the criteria outlined in the Site-Specific Sampling Plan, the OSWER Guidance Document "Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan, and Data Validation Procedures" (EPA/540/G-90/004), the analytical method, and, when applicable, the Office of Emergency and Remedial Response Publication "USEPA

Contract Laboratory Program National Functional Guidelines for Organic Data Review". Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 13, 2012

Client Sample ID:	12060114	Project:	ECOL00801
Sample ID:	308843001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	30-JUL-12 12:10		
Receive Date:	01-AUG-12		
Collector:	Client		
Moisture:	16.4%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	3980 U	ug/kg	10	RMB	08/02/12	1352	1234543	1 54VM
1,2,4,5-Tetrachlorobenzene	U	ND	3980 U	ug/kg	10					
1-Methylnaphthalene		6750	398	ug/kg	10					
2,3,4,6-Tetrachlorophenol	U	ND	3980 U	ug/kg	10					
2,4,5-Trichlorophenol	U	ND	3980	ug/kg	10					
2,4,6-Trichlorophenol	U	ND	3980	ug/kg	10					
2,4-Dichlorophenol	U	ND	3980	ug/kg	10					
2,4-Dimethylphenol	U	ND	3980	ug/kg	10					
2,4-Dinitrophenol	U	ND	7960	ug/kg	10					
2,4-Dinitrotoluene	U	ND	3980	ug/kg	10					
2,6-Dinitrotoluene	U	ND	3980	ug/kg	10					
2-Chloronaphthalene	U	ND	398	ug/kg	10					
2-Chlorophenol	U	ND	3980	ug/kg	10					
2-Methyl-4,6-dinitrophenol	U	ND	3980	ug/kg	10					
2-Methylnaphthalene		3430	398	ug/kg	10					
2-Nitrophenol	U	ND	3980 U	ug/kg	10					
3,3'-Dichlorobenzidine	U	ND	3980	ug/kg	10					
4-Bromophenylphenylether	U	ND	3980	ug/kg	10					
4-Chloro-3-methylphenol	U	ND	3980	ug/kg	10					
4-Chloroaniline	U	ND	3980	ug/kg	10					
4-Chlorophenylphenylether	U	ND	3980	ug/kg	10					
4-Nitrophenol	U	ND	3980	ug/kg	10					
Acenaphthene	U	ND	398	ug/kg	10					
Acenaphthylene	U	ND	398	ug/kg	10					
Acetophenone	U	ND	3980	ug/kg	10					
Anthracene	U	ND	398	ug/kg	10					
Atrazine	U	ND	3980	ug/kg	10					
Benzaldehyde	U	ND	3980	ug/kg	10					
Benzo(a)anthracene	U	ND	398	JL ug/kg	10					
Benzo(a)pyrene	U	ND	398	JL ug/kg	10					
Benzo(b)fluoranthene	U	ND	398	JL ug/kg	10					
Benzo(ghi)perylene	U	ND	398	JL ug/kg	10					
Benzo(k)fluoranthene	U	ND	398	JL ug/kg	10					
Butylbenzylphthalate	U	ND	3980	JL ug/kg	10					
Caprolactam	U	ND	3980	ug/kg	10					
Carbazole	U	ND	398	ug/kg	10					
Chrysene	U	ND	398	JL ug/kg	10					

VM 8-16-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 13, 2012

Client Sample ID: 12060114
Sample ID: 308843001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	3980	ug/kg	10					
Di-n-octylphthalate	U	ND	3980	ug/kg	10					
Dibenzo(a,h)anthracene	U	ND	398	ug/kg	10					
Dibenzofuran	U	ND	3980	ug/kg	10					
Diethylphthalate	U	ND	3980	ug/kg	10					
Dimethylphthalate	U	ND	3980	ug/kg	10					
Diphenylamine	U	ND	3980	ug/kg	10					
Fluoranthene	U	ND	398	ug/kg	10					
Fluorene	U	ND	398	ug/kg	10					
Hexachlorobenzene	U	ND	3980	ug/kg	10					
Hexachlorobutadiene	U	ND	3980	ug/kg	10					
Hexachlorocyclopentadiene	U	ND	3980	ug/kg	10					
Hexachloroethane	U	ND	3980	ug/kg	10					
Indeno(1,2,3-cd)pyrene	U	ND	398	ug/kg	10					
Isophorone	U	ND	3980	ug/kg	10					
N-Nitrosodipropylamine	U	ND	3980	ug/kg	10					
Naphthalene	U	ND	398	ug/kg	10					
Nitrobenzene	U	ND	3980	ug/kg	10					
Pentachlorophenol	U	ND	3980	ug/kg	10					
Phenanthrene		4740	398	ug/kg	10					
Phenol	~~U~~	~~ND~~	3980	ug/kg	10					
Pyrene		2490	398	ug/kg	10					
bis(2-Chloroethoxy)methane	U	ND	3980	ug/kg	10					
bis(2-Chloroethyl) ether	U	ND	3980	ug/kg	10					
bis(2-Chloroisopropyl)ether	U	ND	3980	ug/kg	10					
bis(2-Ethylhexyl)phthalate	U	ND	3980	ug/kg	10					
m,p-Cresols	U	ND	3980	ug/kg	10					
m-Nitroaniline	U	ND	3980	ug/kg	10					
o-Cresol	U	ND	3980	ug/kg	10					
o-Nitroaniline	U	ND	3980	ug/kg	10					
p-Nitroaniline	U	ND	3980	ug/kg	10					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	08/01/12	2002	1234542

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 13, 2012

Client Sample ID: 12060114
Sample ID: 308843001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1170 ug/kg	1990	59.0	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1020 ug/kg	1990	51.2	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2300 ug/kg	1990	116	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2140 ug/kg	3980	53.7	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1520 ug/kg	3980	38.2	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1190 ug/kg	3980	29.8	(26%-112%)

MW 8-16-12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: August 16, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-26

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of 1 soil sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060114

Data Qualifications:

1. Sample Holding Times: Acceptable.

The sample was maintained at < 6°C. The sample was collected on July 30, 2012, extracted on August 1, 2012, and was analyzed by August 2, 2012, therefore meeting QC criteria of less than 7 days between collection and water sample extraction (14 days for soils) and less than 40 days between extraction and analysis.

2. Instrument Performance: Acceptable.

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. Initial and Continuing Calibration: Acceptable.

All initial calibration relative standard deviations (RSDs) were less than 15%. All continuing calibration % differences (% D) were within QC limits except a few outliers with high results; no actions were required as there were no PCB detections in the sample.

4. **Error Determination: Not Provided.**

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. **Blanks: Acceptable.**

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

6. **Performance Evaluation Samples: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

7. **System Monitoring Compounds (SMCs): Acceptable.**

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

8. **Blank and Matrix Spikes: Acceptable.**

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

9. **Duplicates: Acceptable.**

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

10. **Compound Identification: Acceptable.**

All results were dual-column confirmed with differences between the columns less than 25%.

11. **Target Compound Quantitation and Quantitation Limits: Acceptable.**

Sample results and quantitation limits were correctly calculated.

12. **Laboratory Contact**

No laboratory contact was required.

13. **Overall Assessment**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 6, 2012

Client Sample ID:	12060114	Project:	ECOL00801
Sample ID:	308843001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	30-JUL-12 12:10		
Receive Date:	01-AUG-12		
Collector:	Client		
Moisture:	16.4%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	79.2	ug/kg	20	YS1	08/03/12	2028	1234717	1
Aroclor-1221	U	ND	79.2	ug/kg	20					
Aroclor-1232	U	ND	79.2	ug/kg	20					
Aroclor-1242	U	ND	79.2	ug/kg	20					
Aroclor-1248	U	ND	79.2	ug/kg	20					
Aroclor-1254	U	ND	79.2	ug/kg	20					
Aroclor-1260	U	ND	79.2	ug/kg	20					
Aroclor-Total	U	ND	79.2	ug/kg	20					

U

SHM

MW

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	LOG1	08/02/12	0930	1234716

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	2.37 ug/kg	7.92	29.9	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	3.59 ug/kg	7.92	45.3	(19%-130%)

MW 8-16-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700
Seattle, Washington 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: August 17, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-27

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of one soil sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060210

Data Qualifications:

1. Sample Holding Times: Acceptable.

The sample was maintained and received within the QC limits of < 6°C. The sample was collected on August 2, 2012, was extracted on August 9, 2012, and was analyzed on August 10, 2012, therefore meeting holding time criteria of less than 14 days between collection and extraction and less than 40 days between extraction and analysis.

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Acceptable.

All average Relative Response Factors (RRFs) were greater than the lower QC limit of 0.050. All Relative Standard Deviations (RSDs) were within QC limits.

4. Continuing Calibration: Satisfactory.

All RRFs were greater than the lower QC limit of 0.050. All % differences were within QC limits except benzaldehyde and bis(2-chloroisopropyl)ether with decreasing response factors; associated sample quantitation limits were qualified as estimated quantities with a low bias (UJL).

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

7. Matrix Spike (MS)/MS Duplicate (MSD)/Blank Spike (BS) Analysis: Acceptable.

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

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Acceptable.

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

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J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

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NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 14, 2012

Client Sample ID:	12060210	Project:	ECOL00801
Sample ID:	309126001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	02-AUG-12 13:05		
Receive Date:	04-AUG-12		
Collector:	Client		
Moisture:	9.9%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D SIM PAH Sonication "Dry Weight Corrected"										
1-Methylnaphthalene	U	ND	7.36 U	ug/kg	1	AGS1	08/10/12	2335	1236940	1 SZKM
2-Chloronaphthalene	U	ND	7.36	ug/kg	1					
2-Methylnaphthalene	U	ND	7.36	ug/kg	1					
Acenaphthene	U	ND	7.36	ug/kg	1					
Acenaphthylene	U	ND	7.36	ug/kg	1					
Anthracene	U	ND	7.36	ug/kg	1					
Benzo(a)anthracene	U	ND	7.36	ug/kg	1					
Benzo(a)pyrene	U	ND	7.36	ug/kg	1					
Benzo(b)fluoranthene	U	ND	7.36	ug/kg	1					
Benzo(ghi)perylene	U	ND	7.36	ug/kg	1					
Benzo(k)fluoranthene	U	ND	7.36	ug/kg	1					
Chrysene	U	ND	7.36	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	7.36	ug/kg	1					
Fluoranthene	U	ND	7.36	ug/kg	1					
Fluorene	U	ND	7.36	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	7.36	ug/kg	1					
Naphthalene	U	ND	7.36	ug/kg	1					
Phenanthrene		10.7	7.36	ug/kg	1					
Pyrene	~~U~~	~~ND~~	7.36 U	ug/kg	1					
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	368 U	ug/kg	1	RMB	08/10/12	1403	1236849	2
1,2,4,5-Tetrachlorobenzene	U	ND	368	ug/kg	1					
1-Methylnaphthalene	U	ND	36.8	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	368	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	368	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	368	ug/kg	1					
2,4-Dichlorophenol	U	ND	368	ug/kg	1					
2,4-Dimethylphenol	U	ND	368	ug/kg	1					
2,4-Dinitrophenol	U	ND	736	ug/kg	1					
2,4-Dinitrotoluene	U	ND	368	ug/kg	1					
2,6-Dinitrotoluene	U	ND	368	ug/kg	1					
2-Chloronaphthalene	U	ND	36.8	ug/kg	1					
2-Chlorophenol	U	ND	368	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	368	ug/kg	1					
2-Methylnaphthalene	U	ND	36.8	ug/kg	1					
2-Nitrophenol	U	ND	368	ug/kg	1					

MW 8-17-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 14, 2012

Client Sample ID: 12060210
Sample ID: 309126001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										SHM
3,3'-Dichlorobenzidine	U	ND	368	ug/kg	1					
4-Bromophenylphenylether	U	ND	368	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	368	ug/kg	1					
4-Chloroaniline	U	ND	368	ug/kg	1					
4-Chlorophenylphenylether	U	ND	368	ug/kg	1					
4-Nitrophenol	U	ND	368	ug/kg	1					
Acenaphthene	U	ND	36.8	ug/kg	1					
Acenaphthylene	U	ND	36.8	ug/kg	1					
Acetophenone	U	ND	368	ug/kg	1					
Anthracene	U	ND	36.8	ug/kg	1					
Atrazine	U	ND	368	ug/kg	1					
Benzaldehyde	U	ND	368	JL ug/kg	1					
Benzo(a)anthracene	U	ND	36.8	ug/kg	1					
Benzo(a)pyrene	U	ND	36.8	ug/kg	1					
Benzo(b)fluoranthene	U	ND	36.8	ug/kg	1					
Benzo(ghi)perylene	U	ND	36.8	ug/kg	1					
Benzo(k)fluoranthene	U	ND	36.8	ug/kg	1					
Butylbenzylphthalate	U	ND	368	ug/kg	1					
Caprolactam	U	ND	368	ug/kg	1					
Carbazole	U	ND	36.8	ug/kg	1					
Chrysene	U	ND	36.8	ug/kg	1					
Di-n-butylphthalate	U	ND	368	ug/kg	1					
Di-n-octylphthalate	U	ND	368	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	36.8	ug/kg	1					
Dibenzofuran	U	ND	368	ug/kg	1					
Diethylphthalate	U	ND	368	ug/kg	1					
Dimethylphthalate	U	ND	368	ug/kg	1					
Diphenylamine	U	ND	368	ug/kg	1					
Fluoranthene	U	ND	36.8	ug/kg	1					
Fluorene	U	ND	36.8	ug/kg	1					
Hexachlorobenzene	U	ND	368	ug/kg	1					
Hexachlorobutadiene	U	ND	368	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	368	ug/kg	1					
Hexachloroethane	U	ND	368	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	36.8	ug/kg	1					
Isophorone	U	ND	368	ug/kg	1					
N-Nitrosodipropylamine	U	ND	368	ug/kg	1					
Naphthalene	U	ND	36.8	ug/kg	1					
Nitrobenzene	U	ND	368	ug/kg	1					
Pentachlorophenol	U	ND	368	ug/kg	1					
Phenanthrene	U	ND	36.8	ug/kg	1					
Phenol	U	ND	368	ug/kg	1					

MW 8-17-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 14, 2012

Client Sample ID: 12060210
Sample ID: 309126001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Pyrene	U	ND	36.8	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	368	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	368	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	368	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	368	ug/kg	1					
m,p-Cresols	U	ND	368	ug/kg	1					
m-Nitroaniline	U	ND	368	ug/kg	1					
o-Cresol	U	ND	368	ug/kg	1					
o-Nitroaniline	U	ND	368	ug/kg	1					
p-Nitroaniline	U	ND	368	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	AXV1	08/09/12	1845	1236841

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	Prep Method 3550C for Solid	AXV1	08/09/12	1845	1236939

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D SIM PAH	
2	SW846 3550C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
5-alpha-Androstane	SW846 3550C/8270D SIM PAH Sonication "Dry Weight Corrected"	163 ug/kg	184	88.8	(39%-114%)
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1080 ug/kg	1840	58.5	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	978 ug/kg	1840	53.2	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1210 ug/kg	1840	65.7	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2340 ug/kg	3680	63.5	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2030 ug/kg	3680	55.2	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry	1580 ug/kg	3680	42.8	(26%-112%)

MW 8-17-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700
Seattle, Washington 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: August 17, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-27

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of one water sample and one soil sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Volatile organic compound (VOC) analysis (EPA Method 8260) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060210 12061904

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on August 2, 2012, and were analyzed by August 10, 2012, therefore meeting QC criteria of less than 14 days between collection and analysis for soil and preserved water samples.

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Acceptable.

All average Relative Response Factors (RRFs) were greater than the lower QC limit of 0.050. All Relative Standard Deviations (RSDs) and/or correlation coefficients were within QC limits.

4. Continuing Calibration: Acceptable.

All RRFs were greater than the lower QC limit of 0.050. All % differences were within QC limits.

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

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

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

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Acceptable.

All internal standards were within $\pm$ 30 seconds of the continuing calibration internal standard retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 10, 2012

Client Sample ID:	12060210	Project:	ECOL00801
Sample ID:	309126001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	02-AUG-12 13:05		
Receive Date:	04-AUG-12		
Collector:	Client		
Moisture:	9.9%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	U	ND	0.925 U	ug/kg	1	JEB	08/09/12	0001	1236715	1 SHM
1,1,2,2-Tetrachloroethane	U	ND	0.925	ug/kg	1					
1,1,2-Trichloroethane	U	ND	0.925	ug/kg	1					
1,1-Dichloroethane	U	ND	0.925	ug/kg	1					
1,1-Dichloroethylene	U	ND	0.925	ug/kg	1					
1,2-Dichloroethane	U	ND	0.925	ug/kg	1					
1,2-Dichloroethylene (total)	U	ND	1.85	ug/kg	1					
1,2-Dichloropropane	U	ND	0.925	ug/kg	1					
2-Butanone	U	ND	4.62	ug/kg	1					
2-Hexanone	U	ND	4.62	ug/kg	1					
4-Methyl-2-pentanone	U	ND MW	4.62	ug/kg	1					
Acetone		5.24	4.62	ug/kg	1					
Benzene	U	ND	0.925 U	ug/kg	1					
Bromodichloromethane	U	ND	0.925	ug/kg	1					
Bromoform	U	ND	0.925	ug/kg	1					
Bromomethane	U	ND	0.925	ug/kg	1					
Carbon disulfide	U	ND	4.62	ug/kg	1					
Carbon tetrachloride	U	ND	0.925	ug/kg	1					
Chlorobenzene	U	ND	0.925	ug/kg	1					
Chloroethane	U	ND	0.925	ug/kg	1					
Chloroform	U	ND	0.925	ug/kg	1					
Chloromethane	U	ND	0.925	ug/kg	1					
Dibromochloromethane	U	ND	0.925	ug/kg	1					
Ethylbenzene	U	ND	0.925	ug/kg	1					
Methylene chloride	U	ND	4.62	ug/kg	1					
Styrene	U	ND	0.925	ug/kg	1					
Tetrachloroethylene	U	ND	0.925	ug/kg	1					
Toluene	U	ND	0.925	ug/kg	1					
Trichloroethylene	U	ND	0.925	ug/kg	1					
Vinyl acetate	U	ND	4.62	ug/kg	1					
Vinyl chloride	U	ND	0.925	ug/kg	1					
Xylenes (total)	U	ND	2.77	ug/kg	1					
cis-1,2-Dichloroethylene	U	ND	0.925	ug/kg	1					
cis-1,3-Dichloropropylene	U	ND	0.925	ug/kg	1					
m,p-Xylenes	U	ND	1.85	ug/kg	1					
o-Xylene	U	ND	0.925	ug/kg	1					
tert-Butyl methyl ether	U	ND MW	0.925	ug/kg	1					

MW 8-17-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 10, 2012

Client Sample ID: 12060210
Sample ID: 309126001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
trans-1,2-Dichloroethylene	U	ND	0.925 U	ug/kg	1					
trans-1,3-Dichloropropylene	U	ND	0.925 U	ug/kg	1					

54VM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	JEB	08/04/12	1129	1236713

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	49.5 ug/kg	50.0	107	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	48.6 ug/kg	50.0	105	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	49.4 ug/kg	50.0	107	(80%-120%)

MW 8-17-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 13, 2012

Client Sample ID:	12061904	Project:	ECOL00801
Sample ID:	309131001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	02-AUG-12 13:10		
Receive Date:	04-AUG-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5030/8260A TCL in Liquid "As Received"										
1,1,1-Trichloroethane	U	ND	1.00	ug/L	1	JEB	08/10/12	2203	1237108	1 SYVM
1,1,2,2-Tetrachloroethane	U	ND	1.00	ug/L	1					
1,1,2-Trichloroethane	U	ND	1.00	ug/L	1					
1,1-Dichloroethane	U	ND	1.00	ug/L	1					
1,1-Dichloroethylene	U	ND	1.00	ug/L	1					
1,2-Dichloroethane	U	ND	1.00	ug/L	1					
1,2-Dichloropropane	U	ND	1.00	ug/L	1					
2-Butanone	U	ND	5.00	ug/L	1					
2-Hexanone	U	ND	5.00	ug/L	1					
4-Methyl-2-pentanone	U	ND	5.00	ug/L	1					
Acetone	U	ND	5.00	ug/L	1					
Benzene	U	ND	1.00	ug/L	1					
Bromodichloromethane	U	ND	1.00	ug/L	1					
Bromoform	U	ND	1.00	ug/L	1					
Bromomethane	U	ND	1.00	ug/L	1					
Carbon disulfide	U	ND	5.00	ug/L	1					
Carbon tetrachloride	U	ND	1.00	ug/L	1					
Chlorobenzene	U	ND	1.00	ug/L	1					
Chloroethane	U	ND	1.00	ug/L	1					
Chloroform	U	ND	1.00	ug/L	1					
Chloromethane	U	ND	1.00	ug/L	1					
Dibromochloromethane	U	ND	1.00	ug/L	1					
Ethylbenzene	U	ND	1.00	ug/L	1					
Methylene chloride	U	ND	5.00	ug/L	1					
Styrene	U	ND	1.00	ug/L	1					
Tetrachloroethylene	U	ND	1.00	ug/L	1					
Toluene	U	ND	1.00	ug/L	1					
Trichloroethylene	U	ND	1.00	ug/L	1					
Vinyl acetate	U	ND	5.00	ug/L	1					
Vinyl chloride	U	ND	1.00	ug/L	1					
Xylenes (total)	U	ND	3.00	ug/L	1					
cis-1,2-Dichloroethylene	U	ND	1.00	ug/L	1					
cis-1,3-Dichloropropylene	U	ND	1.00	ug/L	1					
tert-Butyl methyl ether	U	ND	1.00	ug/L	1					
trans-1,2-Dichloroethylene	U	ND	1.00	ug/L	1					
trans-1,3-Dichloropropylene	U	ND	1.00	ug/L	1					

MW 8-17-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 13, 2012

Client Sample ID: 12061904
Sample ID: 309131001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5030/8260A TCL in Liquid "As Received"	57.1 ug/L	50.0	114	(80%-123%)
Bromofluorobenzene	5030/8260A TCL in Liquid "As Received"	51.0 ug/L	50.0	102	(80%-120%)
Toluene-d8	5030/8260A TCL in Liquid "As Received"	50.2 ug/L	50.0	100	(80%-120%)

MW 8-17-12

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Seattle, Washington 98104
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MEMORANDUM

DATE: August 17, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-27

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one soil sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060210

Data Qualifications:

1. Sample Holding Times: Acceptable.

The sample was maintained at < 6°C. The sample was collected on August 2, 2012, extracted on August 9, 2012, and was analyzed by August 10, 2012, therefore meeting QC criteria.

2. Instrument Performance: Acceptable.

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. Initial and Continuing Calibration: Acceptable.

All initial calibration relative standard deviations (RSDs) were within QC limits. All continuing calibration % differences (% D) were within QC limits.

4. Error Determination: Not Provided.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Acceptable.

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

6. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. System Monitoring Compounds (SMCs): Acceptable.

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

8. Blank and Matrix Spikes: Acceptable.

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

9. Duplicates: Acceptable.

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

10. Compound Identification: Acceptable.

All results were dual-column confirmed with differences between the columns less than 25%.

11. Target Compound Quantitation and Quantitation Limits: Acceptable.

Sample results and quantitation limits were correctly calculated.

12. Laboratory Contact

No laboratory contact was required.

13. Overall Assessment

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 14, 2012

Client Sample ID:	12060210	Project:	ECOL00801
Sample ID:	309126001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	02-AUG-12 13:05		
Receive Date:	04-AUG-12		
Collector:	Client		
Moisture:	9.9%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	3.67	ug/kg	1	YS1	08/10/12	0841	1237018	1 SYVM
Aroclor-1221	U	ND	3.67	ug/kg	1					
Aroclor-1232	U	ND	3.67	ug/kg	1					
Aroclor-1242	U	ND	3.67	ug/kg	1					
Aroclor-1248	U	ND	3.67	ug/kg	1					
Aroclor-1254	U	ND	3.67	ug/kg	1					
Aroclor-1260	U	ND	3.67	ug/kg	1					
Aroclor-Total	U	ND	3.67	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	08/09/12	1805	1237016

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	3.84 ug/kg	7.34	52.3	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.73 ug/kg	7.34	64.4	(19%-130%)

MM 8-17-12

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Global Environmental Specialists
720 Third Avenue, Suite 1700
Seattle, Washington 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: August 19, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-28

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one soil sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Analysis for Extended Diesel Range Total Petroleum Hydrocarbons (Ecology Method NWTPH-Dx) was performed by TestAmerica Seattle, Tacoma, Washington. All sample analyses were evaluated following EPA's Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060210

Data Qualifications:

1. Sample Holding Times: Acceptable.

The sample was maintained at < 6°C. The sample was collected on August 2, 2012, extracted by August 14, 2012, and analyzed by August 15, 2012, therefore meeting QC criteria of less than 14 days between collection and extraction for soil samples, and less than 40 days between extraction and analysis.

2. Initial and Continuing Calibrations: Acceptable.

Calculations were verified as correct. All initial calibration correlation coefficients were ≥ 0.990 and/or all relative percent differences (RPDs) were less than or equal to the laboratory control limits of 15%. All continuing calibration percent differences (%Ds) were ≤ the laboratory control limits of 15%.

3. Error Determination: Not Performed.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

4. Blanks: Satisfactory.

A method blank was analyzed for each extraction batch for each matrix and analysis system.

Diesel-range and motor oil-range TPHs were detected in the method blank; associated sample results less than five times the blank results were qualified as not detected (U).

5. **System Monitoring Compounds (SMC): Acceptable.**
All recoveries of the SMCs were greater than 10% and within QC criteria.

6. **Performance Evaluation Samples: Not Provided.**
Performance evaluation samples were not provided to the laboratory.

7. **Blank Spikes: Acceptable.**
Blank spike results were within QC limits.

8. **Duplicates: Acceptable.**
Duplicate results were within QC limits.

9. **Quantitation and Quantitation Limits: Acceptable.**
Sample concentrations were correctly calculated.

10. **Laboratory Contact: Not Required.**
No laboratory contact was required.

11. **Overall Assessment of Data for Use**

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the Method Detection Limit (MDL) and the Reporting Limit (RL).

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Client: Ecology and Environment, Inc.

Job Number: 580-34310-1

Client Sample ID: **12060210**

Lab Sample ID: 580-34310-1

Client Matrix: Solid

% Moisture: 16.2

Date Sampled: 08/02/2012 1305

Date Received: 08/04/2012 0855

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-117703	Instrument ID:	TAC015
Prep Method:	3550B	Prep Batch:	580-117639	Lab File ID:	SP16587.d
Dilution:	1.0			Initial Weight/Volume:	10.2264 g
Analysis Date:	08/15/2012 1752			Final Weight/Volume:	10 mL
Prep Date:	08/14/2012 1324			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		~~12~~	~~J B~~	6.7	29 U
Motor Oil (>C24-C36)		~~38~~	~~J B~~	11	58 U

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	88		50 - 150

MW 8/9-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700
Seattle, Washington 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: August 26, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-29

REF:

TDDs:	12-05-0006	PANs: 002233.0790.01RA
	12-05-0007	PANs: 002233.0791.01RA
	12-05-0008	PANs: 002233.0792.01RA
	12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one soil and two oil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060017 12060402 12060403

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on August 7 and 8, 2012, were extracted on August 15, 2012, and were analyzed on August 17, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Acceptable.

All average Relative Response Factors (RRFs) were within the QC limits. All Relative Standard Deviations (RSDs) were within the QC limits.

4. Continuing Calibration: Satisfactory.

All RRFs were within the QC limits. All % differences were within the QC limits except (1) 3,3'-dichlorobenzidine with a low recovery in one continuing calibration associated with sample 12060017; associated sample quantitation limits were qualified as estimated quantities with a low bias (UJL); and (2) naphthalene and hexachlorocyclopentadiene with low recoveries associated with samples 12060402 and 12060403; associated sample quantitation limits were qualified as estimated quantities with a low bias (UJL).

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits except when diluted out due to high sample concentrations.

7. Matrix Spike (MS)/MS Duplicate (MSD)/Blank Spike (BS) Analysis: Acceptable.

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

8. Duplicate Analysis: Acceptable.

Blank spike duplicate analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. All spike duplicate results were within QC limits except a few outliers; no actions were taken as the MS and MSD recoveries were within QC limits.

9. Internal Standards: Acceptable.

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area count.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

The overall usefulness of the data is based on the criteria outlined in the Site-Specific Sampling Plan, the OSWER Guidance Document "Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan, and Data Validation Procedures" (EPA/540/G-90/004), the analytical

method, and, when applicable, the Office of Emergency and Remedial Response Publication "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review". Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 17, 2012

Client Sample ID:	12060017	Project:	ECOL00801
Sample ID:	309391001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	08-AUG-12 09:30		
Receive Date:	09-AUG-12		
Collector:	Client		
Moisture:	7.14%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	3590	ug/kg	10	JMB3	08/16/12	1355	1238488	1
1,2,4,5-Tetrachlorobenzene	U	ND	3590	ug/kg	10					
1-Methylnaphthalene	U	ND	359	ug/kg	10					
2,3,4,6-Tetrachlorophenol	U	ND	3590	ug/kg	10					
2,4,5-Trichlorophenol	U	ND	3590	ug/kg	10					
2,4,6-Trichlorophenol	U	ND	3590	ug/kg	10					
2,4-Dichlorophenol	U	ND	3590	ug/kg	10					
2,4-Dimethylphenol	U	ND	3590	ug/kg	10					
2,4-Dinitrophenol	U	ND	7170	ug/kg	10					
2,4-Dinitrotoluene	U	ND	3590	ug/kg	10					
2,6-Dinitrotoluene	U	ND	3590	ug/kg	10					
2-Chloronaphthalene	U	ND	359	ug/kg	10					
2-Chlorophenol	U	ND	3590	ug/kg	10					
2-Methyl-4,6-dinitrophenol	U	ND	3590	ug/kg	10					
2-Methylnaphthalene	U	ND	359	ug/kg	10					
2-Nitrophenol	U	ND	3590	ug/kg	10					
3,3'-Dichlorobenzidine	U	ND	3590	ug/kg	10					
4-Bromophenylphenylether	U	ND	3590	ug/kg	10					
4-Chloro-3-methylphenol	U	ND	3590	ug/kg	10					
4-Chloroaniline	U	ND	3590	ug/kg	10					
4-Chlorophenylphenylether	U	ND	3590	ug/kg	10					
4-Nitrophenol	U	ND	3590	ug/kg	10					
Acenaphthene	U	ND	359	ug/kg	10					
Acenaphthylene	U	ND	359	ug/kg	10					
Acetophenone	U	ND	3590	ug/kg	10					
Anthracene	U	ND	359	ug/kg	10					
Atrazine	U	ND	3590	ug/kg	10					
Benzaldehyde	U	ND	3590	ug/kg	10					
Benzo(a)anthracene	U	ND	359	ug/kg	10					
Benzo(a)pyrene	U	ND	359	ug/kg	10					
Benzo(b)fluoranthene	U	ND	359	ug/kg	10					
Benzo(ghi)perylene	U	ND	359	ug/kg	10					
Benzo(k)fluoranthene	U	ND	359	ug/kg	10					
Butylbenzylphthalate	U	ND	3590	ug/kg	10					
Caprolactam	U	ND	3590	ug/kg	10					
Carbazole	U	ND	359	ug/kg	10					
Chrysene	U	ND	359	ug/kg	10					

MW 8-24-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 17, 2012

Client Sample ID: 12060017
Sample ID: 309391001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	3590	ug/kg	10					
Di-n-octylphthalate	U	ND	3590	ug/kg	10					
Dibenzo(a,h)anthracene	U	ND	359	ug/kg	10					
Dibenzofuran	U	ND	3590	ug/kg	10					
Diethylphthalate	U	ND	3590	ug/kg	10					
Dimethylphthalate	U	ND	3590	ug/kg	10					
Diphenylamine	U	ND	3590	ug/kg	10					
Fluoranthene	U	ND	359	ug/kg	10					
Fluorene	U	ND	359	ug/kg	10					
Hexachlorobenzene	U	ND	3590	ug/kg	10					
Hexachlorobutadiene	U	ND	3590	ug/kg	10					
Hexachlorocyclopentadiene	U	ND	3590	ug/kg	10					
Hexachloroethane	U	ND	3590	ug/kg	10					
Indeno(1,2,3-cd)pyrene	U	ND	359	ug/kg	10					
Isophorone	U	ND	3590	ug/kg	10					
N-Nitrosodipropylamine	U	ND	3590	ug/kg	10					
Naphthalene	U	ND	359	ug/kg	10					
Nitrobenzene	U	ND	3590	ug/kg	10					
Pentachlorophenol	U	ND	3590	ug/kg	10					
Phenanthrene	U	ND	359	ug/kg	10					
Phenol	U	ND	3590	ug/kg	10					
Pyrene	U	ND	359	ug/kg	10					
bis(2-Chloroethoxy)methane	U	ND	3590	ug/kg	10					
bis(2-Chloroethyl) ether	U	ND	3590	ug/kg	10					
bis(2-Chloroisopropyl)ether	U	ND	3590	ug/kg	10					
bis(2-Ethylhexyl)phthalate	U	ND	3590	ug/kg	10					
m,p-Cresols	U	ND	3590	ug/kg	10					
m-Nitroaniline	U	ND	3590	ug/kg	10					
o-Cresol	U	ND	3590	ug/kg	10					
o-Nitroaniline	U	ND	3590	ug/kg	10					
p-Nitroaniline	U	ND	3590	ug/kg	10					

SHM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	08/15/12	1950	1238484

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

MW 8-24-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 17, 2012

Client Sample ID: 12060017
Sample ID: 309391001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1340 ug/kg	1790	74.8	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1160 ug/kg	1790	64.4	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1930 ug/kg	1790	108	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1690 ug/kg	3590	47.1	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1860 ug/kg	3590	51.8	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1700 ug/kg	3590	47.3	(26%-112%)

MW
8-24-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 17, 2012

Client Sample ID:	12060402	Project:	ECOL00801
Sample ID:	309391002	Client ID:	ECOL008
Matrix:	Oil		
Collect Date:	07-AUG-12 10:00		
Receive Date:	09-AUG-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3580A/8270D Semivolatiles Waste Dilution "As Received"										
1,1'-Biphenyl	U	ND	100000	ug/kg	1	JMB3	08/17/12	1132	1238497	1 SHW
1,2,4,5-Tetrachlorobenzene	U	ND	100000	ug/kg	1					
1-Methylnaphthalene	U	ND	10000	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	100000	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	100000	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	100000	ug/kg	1					
2,4-Dichlorophenol	U	ND	100000	ug/kg	1					
2,4-Dimethylphenol	U	ND	100000	ug/kg	1					
2,4-Dinitrophenol	U	ND	200000	ug/kg	1					
2,4-Dinitrotoluene	U	ND	100000	ug/kg	1					
2,6-Dinitrotoluene	U	ND	100000	ug/kg	1					
2-Chloronaphthalene	U	ND	10000	ug/kg	1					
2-Chlorophenol	U	ND	100000	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	100000	ug/kg	1					
2-Methylnaphthalene	U	ND	10000	ug/kg	1					
2-Nitrophenol	U	ND	100000	ug/kg	1					
3,3'-Dichlorobenzidine	U	ND	100000	ug/kg	1					
4-Bromophenylphenylether	U	ND	100000	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	100000	ug/kg	1					
4-Chloroaniline	U	ND	100000	ug/kg	1					
4-Chlorophenylphenylether	U	ND	100000	ug/kg	1					
4-Nitrophenol	U	ND	100000	ug/kg	1					
Acenaphthene	U	ND	10000	ug/kg	1					
Acenaphthylene	U	ND	10000	ug/kg	1					
Acetophenone	U	ND	100000	ug/kg	1					
Anthracene	U	ND	10000	ug/kg	1					
Atrazine	U	ND	100000	ug/kg	1					
Benzaldehyde	U	ND	100000	ug/kg	1					
Benzo(a)anthracene	U	ND	10000	ug/kg	1					
Benzo(a)pyrene	U	ND	10000	ug/kg	1					
Benzo(b)fluoranthene	U	ND	10000	ug/kg	1					
Benzo(ghi)perylene	U	ND	10000	ug/kg	1					
Benzo(k)fluoranthene	U	ND	10000	ug/kg	1					
Butylbenzylphthalate	U	ND	100000	ug/kg	1					
Caprolactam	U	ND	100000	ug/kg	1					
Carbazole	U	ND	10000	ug/kg	1					
Chrysene	U	ND	10000	ug/kg	1					
Di-n-butylphthalate	U	ND	100000	ug/kg	1					

MW 8-24-12

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Certificate of Analysis

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 17, 2012

Client Sample ID: 12060402
Sample ID: 309391002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3580A/8270D Semivolatiles Waste Dilution "As Received"										
Di-n-octylphthalate	U	ND	100000	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	10000	ug/kg	1					
Dibenzofuran	U	ND	100000	ug/kg	1					
Diethylphthalate	U	ND	100000	ug/kg	1					
Dimethylphthalate	U	ND	100000	ug/kg	1					
Diphenylamine	U	ND	100000	ug/kg	1					
Fluoranthene	U	ND	10000	ug/kg	1					
Fluorene	U	ND	10000	ug/kg	1					
Hexachlorobenzene	U	ND	100000	ug/kg	1					
Hexachlorobutadiene	U	ND	100000	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	100000	ug/kg	1					
Hexachloroethane	U	ND	100000	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	10000	ug/kg	1					
Isophorone	U	ND	100000	ug/kg	1					
N-Nitrosodipropylamine	U	ND	100000	ug/kg	1					
Naphthalene	U	ND	10000	ug/kg	1					
Nitrobenzene	U	ND	100000	ug/kg	1					
Pentachlorophenol	U	ND	100000	ug/kg	1					
Phenanthrene	U	ND	10000	ug/kg	1					
Phenol	U	ND	100000	ug/kg	1					
Pyrene	U	ND	10000	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	100000	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	100000	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	100000	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	100000	ug/kg	1					
m,p-Cresols	U	ND	100000	ug/kg	1					
m-Nitroaniline	U	ND	100000	ug/kg	1					
o-Cresol	U	ND	100000	ug/kg	1					
o-Nitroaniline	U	ND	100000	ug/kg	1					
p-Nitroaniline	U	ND	100000	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3580A	3580A BNA Prep for Oil	TXA2	08/15/12	2315	1238496

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3580A/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 17, 2012

Client Sample ID: 12060402
Sample ID: 309391002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2,4,6-Tribromophenol	SW846 3580A/8270D Semivolatiles Waste Dilution "As Received"	816000 ug/kg	1000000	81.6	(50%-150%)
2-Fluorophenol	SW846 3580A/8270D Semivolatiles Waste Dilution "As Received"	909000 ug/kg	1000000	90.9	(50%-150%)
Phenol-d5	SW846 3580A/8270D Semivolatiles Waste Dilution "As Received"	750000 ug/kg	1000000	75.0	(50%-150%)
2-Fluorobiphenyl	SW846 3580A/8270D Semivolatiles Waste Dilution "As Received"	498000 ug/kg	500000	99.6	(50%-150%)
Nitrobenzene-d5	SW846 3580A/8270D Semivolatiles Waste Dilution "As Received"	651000 ug/kg	500000	130	(50%-150%)
p-Terphenyl-d14	SW846 3580A/8270D Semivolatiles Waste Dilution "As Received"	648000 ug/kg	500000	130	(50%-150%)

MW 8/24/12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 17, 2012

Client Sample ID:	12060403	Project:	ECOL00801
Sample ID:	309391003	Client ID:	ECOL008
Matrix:	Oil		
Collect Date:	07-AUG-12 10:00		
Receive Date:	09-AUG-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3580A/8270D Semivolatiles Waste Dilution "As Received"										
1,1'-Biphenyl	U	ND	93500	ug/kg	1	JMB3	08/17/12	1201	1238497	1
1,2,4,5-Tetrachlorobenzene	U	ND	93500	ug/kg	1					
1-Methylnaphthalene	U	ND	9350	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	93500	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	93500	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	93500	ug/kg	1					
2,4-Dichlorophenol	U	ND	93500	ug/kg	1					
2,4-Dimethylphenol	U	ND	93500	ug/kg	1					
2,4-Dinitrophenol	U	ND	187000	ug/kg	1					
2,4-Dinitrotoluene	U	ND	93500	ug/kg	1					
2,6-Dinitrotoluene	U	ND	93500	ug/kg	1					
2-Chloronaphthalene	U	ND	9350	ug/kg	1					
2-Chlorophenol	U	ND	93500	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	93500	ug/kg	1					
2-Methylnaphthalene	U	ND	9350	ug/kg	1					
2-Nitrophenol	U	ND	93500	ug/kg	1					
3,3'-Dichlorobenzidine	U	ND	93500	ug/kg	1					
4-Bromophenylphenylether	U	ND	93500	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	93500	ug/kg	1					
4-Chloroaniline	U	ND	93500	ug/kg	1					
4-Chlorophenylphenylether	U	ND	93500	ug/kg	1					
4-Nitrophenol	U	ND	93500	ug/kg	1					
Acenaphthene	U	ND	9350	ug/kg	1					
Acenaphthylene	U	ND	9350	ug/kg	1					
Acetophenone	U	ND	93500	ug/kg	1					
Anthracene	U	ND	9350	ug/kg	1					
Atrazine	U	ND	93500	ug/kg	1					
Benzaldehyde	U	ND	93500	ug/kg	1					
Benzo(a)anthracene	U	ND	9350	ug/kg	1					
Benzo(a)pyrene	U	ND	9350	ug/kg	1					
Benzo(b)fluoranthene	U	ND	9350	ug/kg	1					
Benzo(ghi)perylene	U	ND	9350	ug/kg	1					
Benzo(k)fluoranthene	U	ND	9350	ug/kg	1					
Butylbenzylphthalate	U	ND	93500	ug/kg	1					
Caprolactam	U	ND	93500	ug/kg	1					
Carbazole	U	ND	9350	ug/kg	1					
Chrysene	U	ND	9350	ug/kg	1					
Di-n-butylphthalate	U	ND	93500	ug/kg	1					

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 17, 2012

Client Sample ID: 12060403
Sample ID: 309391003

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3580A/8270D Semivolatiles Waste Dilution "As Received"										
Di-n-octylphthalate	U	ND	93500	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	9350	ug/kg	1					
Dibenzofuran	U	ND	93500	ug/kg	1					
Diethylphthalate	U	ND	93500	ug/kg	1					
Dimethylphthalate	U	ND	93500	ug/kg	1					
Diphenylamine	U	ND	93500	ug/kg	1					
Fluoranthene	U	ND	9350	ug/kg	1					
Fluorene	U	ND	9350	ug/kg	1					
Hexachlorobenzene	U	ND	93500	ug/kg	1					
Hexachlorobutadiene	U	ND	93500	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	93500	JL ug/kg	1					
Hexachloroethane	U	ND	93500	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	9350	ug/kg	1					
Isophorone	U	ND	93500	ug/kg	1					
N-Nitrosodipropylamine	U	ND	93500	ug/kg	1					
Naphthalene	U	ND	9350	JL ug/kg	1					
Nitrobenzene	U	ND	93500	ug/kg	1					
Pentachlorophenol	U	ND	93500	ug/kg	1					
Phenanthrene	U	ND	9350	ug/kg	1					
Phenol	U	ND	93500	ug/kg	1					
Pyrene	U	ND	9350	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	93500	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	93500	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	93500	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	93500	ug/kg	1					
m,p-Cresols	U	ND	93500	ug/kg	1					
m-Nitroaniline	U	ND	93500	ug/kg	1					
o-Cresol	U	ND	93500	ug/kg	1					
o-Nitroaniline	U	ND	93500	ug/kg	1					
p-Nitroaniline	U	ND	93500	ug/kg	1					

SHM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3580A	3580A BNA Prep for Oil	TXA2	08/15/12	2315	1238496

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3580A/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits

MN 8-24-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 17, 2012

Client Sample ID: 12060403
Sample ID: 309391003

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	SW846 3580A/8270D Semivolatiles Waste Dilution "As Received"	450000 ug/kg	467000	96.3	(50%-150%)
Nitrobenzene-d5	SW846 3580A/8270D Semivolatiles Waste Dilution "As Received"	587000 ug/kg	467000	126	(50%-150%)
p-Terphenyl-d14	SW846 3580A/8270D Semivolatiles Waste Dilution "As Received"	598000 ug/kg	467000	128	(50%-150%)
2,4,6-Tribromophenol	SW846 3580A/8270D Semivolatiles Waste Dilution "As Received"	727000 ug/kg	935000	77.8	(50%-150%)
2-Fluorophenol	SW846 3580A/8270D Semivolatiles Waste Dilution "As Received"	792000 ug/kg	935000	84.7	(50%-150%)
Phenol-d5	SW846 3580A/8270D Semivolatiles Waste Dilution "As Received"	650000 ug/kg	935000	69.5	(50%-150%)

MW 8242

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Seattle, Washington 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: August 26, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-29

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one soil sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060017

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The sample was maintained at < 6°C. The sample was collected on August 8, 2012, extracted on August 9, 2012, and was analyzed by August 10, 2012, therefore meeting QC criteria.

2. **Instrument Performance: Acceptable.**

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. **Initial and Continuing Calibration: Acceptable.**

All initial calibration relative standard deviations (RSDs) were within QC limits. All continuing calibration % differences (% D) were within QC limits.

4. **Error Determination: Not Provided.**

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Acceptable.

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

6. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. System Monitoring Compounds (SMCs): Acceptable.

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

8. Blank Spikes: Acceptable.

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

9. Duplicates: Acceptable.

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

10. Compound Identification: Satisfactory.

All results were dual-column confirmed with differences between the columns within QC limits except Aroclor 1254 in sample 12060017. This sample quantitation limit was qualified as an estimated quantity with an unknown bias (UJK).

11. Target Compound Quantitation and Quantitation Limits: Acceptable.

Sample results and quantitation limits were correctly calculated.

12. Laboratory Contact

No laboratory contact was required.

13. Overall Assessment

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 14, 2012

Client Sample ID:	12060017	Project:	ECOL00801
Sample ID:	309391001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	08-AUG-12 09:30		
Receive Date:	09-AUG-12		
Collector:	Client		
Moisture:	7.14%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	17.9	ug/kg	5	YS1	08/10/12	0955	1237018	1
Aroclor-1221	U	ND	17.9	ug/kg	5					
Aroclor-1232	U	ND	17.9	ug/kg	5					
Aroclor-1242	U	ND	17.9	ug/kg	5					
Aroclor-1248	U	ND	17.9	ug/kg	5					
Aroclor-1254	U	ND	17.9	ug/kg	5					
Aroclor-1260		29.6	17.9	ug/kg	5					
Aroclor-Total		38.1	17.9	ug/kg	5					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	08/09/12	1805	1237016

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	3.26 ug/kg	7.16	45.5	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.00 ug/kg	7.16	55.9	(19%-130%)

MW 8-24-12

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720 Third Avenue, Suite 1700
Seattle, Washington 98104
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MEMORANDUM

DATE: August 26, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-29

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one soil sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Volatile organic compound (VOC) analysis (EPA Method 8260) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM). The sample was numbered: 12060017

Data Qualifications:

1. Sample Holding Times: Acceptable.

The sample was maintained and received within the QC limits of < 6°C. The sample was collected on August 8, 2012, and was analyzed by August 16, 2012, therefore meeting QC criteria of less than 14 days between collection and analysis for soil and preserved water samples.

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Acceptable.

All average Relative Response Factors (RRFs) were within the QC limits. All Relative Standard Deviations (RSDs) were within the QC limits.

4. Continuing Calibration: Acceptable.

All RRFs were within the QC limits. All % differences were within the QC limits.

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

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

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

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Acceptable.

All internal standards were within $\pm$ 30 seconds of the continuing calibration internal standard retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

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JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

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NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 20, 2012

Client Sample ID:	12060017	Project:	ECOL00801
Sample ID:	309391001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	08-AUG-12 09:30		
Receive Date:	09-AUG-12		
Collector:	Client		
Moisture:	7.14%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	U	ND	0.945	ug/kg	1	CDS1	08/16/12	1500	1238810	1 54UM
1,1,2,2-Tetrachloroethane	U	ND	0.945	ug/kg	1					
1,1,2-Trichloroethane	U	ND	0.945	ug/kg	1					
1,1-Dichloroethane	U	ND	0.945	ug/kg	1					
1,1-Dichloroethylene	U	ND	0.945	ug/kg	1					
1,2-Dichloroethane	U	ND	0.945	ug/kg	1					
1,2-Dichloroethylene (total)	U	ND	1.89	ug/kg	1					
1,2-Dichloropropane	U	ND	0.945	ug/kg	1					
2-Butanone	U	ND	4.72	ug/kg	1					
2-Hexanone	U	ND	4.72	ug/kg	1					
4-Methyl-2-pentanone	U	ND	4.72	ug/kg	1					
Acetone	U	ND	4.72	ug/kg	1					
Benzene	U	ND	0.945	ug/kg	1					
Bromodichloromethane	U	ND	0.945	ug/kg	1					
Bromoform	U	ND	0.945	ug/kg	1					
Bromomethane	U	ND	0.945	ug/kg	1					
Carbon disulfide	U	ND	4.72	ug/kg	1					
Carbon tetrachloride	U	ND	0.945	ug/kg	1					
Chlorobenzene	U	ND	0.945	ug/kg	1					
Chloroethane	U	ND	0.945	ug/kg	1					
Chloroform	U	ND	0.945	ug/kg	1					
Chloromethane	U	ND	0.945	ug/kg	1					
Dibromochloromethane	U	ND	0.945	ug/kg	1					
Ethylbenzene	U	ND	0.945	ug/kg	1					
Methylene chloride	U	ND	4.72	ug/kg	1					
Styrene	U	ND	0.945	ug/kg	1					
Tetrachloroethylene	U	ND	0.945	ug/kg	1					
Toluene	U	ND	0.945	ug/kg	1					
Trichloroethylene	U	ND	0.945	ug/kg	1					
Vinyl acetate	U	ND	4.72	ug/kg	1					
Vinyl chloride	U	ND	0.945	ug/kg	1					
Xylenes (total)	U	ND	2.83	ug/kg	1					
cis-1,2-Dichloroethylene	U	ND	0.945	ug/kg	1					
cis-1,3-Dichloropropylene	U	ND	0.945	ug/kg	1					
m,p-Xylenes	U	ND	1.89	ug/kg	1					
o-Xylene	U	ND	0.945	ug/kg	1					
tert-Butyl methyl ether	U	ND	0.945	ug/kg	1					

MW 8-24-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 20, 2012

Client Sample ID: 12060017
Sample ID: 309391001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
trans-1,2-Dichloroethylene	U	ND	0.945	ug/kg	1					
trans-1,3-Dichloropropylene	U	ND	0.945	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	CDS1	08/09/12	1426	1238808

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	51.2 ug/kg	50.0	108	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	51.7 ug/kg	50.0	109	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	48.1 ug/kg	50.0	102	(80%-120%)

8-24-12

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MEMORANDUM

DATE: August 26, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-29

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Volatile organic compound (VOC) analysis (EPA Method 8260) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM). The sample was numbered: 12061905

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The sample was maintained and received within the QC limits of < 6°C. The sample was collected on August 8, 2012, and was analyzed by August 17, 2012, therefore meeting QC criteria of less than 14 days between collection and analysis for soil and preserved water samples.

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were within the QC limits. All Relative Standard Deviations (RSDs) were within the QC limits.

4. **Continuing Calibration: Acceptable.**

All RRFs were within the QC limits. All % differences were within the QC limits.

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

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

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

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Acceptable.

All internal standards were within $\pm$ 30 seconds of the continuing calibration internal standard retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 21, 2012

Client Sample ID:	12061905	Project:	ECOL00801
Sample ID:	309394002	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	08-AUG-12 10:00		
Receive Date:	09-AUG-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5030/8260A TCL in Liquid "As Received"										
1,1,1-Trichloroethane	U	ND	1.00	ug/L	1	CDS1	08/17/12	1348	1238868	1 54WM
1,1,2,2-Tetrachloroethane	U	ND	1.00	ug/L	1					
1,1,2-Trichloroethane	U	ND	1.00	ug/L	1					
1,1-Dichloroethane	U	ND	1.00	ug/L	1					
1,1-Dichloroethylene	U	ND	1.00	ug/L	1					
1,2-Dichloroethane	U	ND	1.00	ug/L	1					
1,2-Dichloropropane	U	ND	1.00	ug/L	1					
2-Butanone	U	ND	5.00	ug/L	1					
2-Hexanone	U	ND	5.00	ug/L	1					
4-Methyl-2-pentanone	U	ND	5.00	ug/L	1					
Acetone	U	ND	5.00	ug/L	1					
Benzene	U	ND	1.00	ug/L	1					
Bromodichloromethane	U	ND	1.00	ug/L	1					
Bromoform	U	ND	1.00	ug/L	1					
Bromomethane	U	ND	1.00	ug/L	1					
Carbon disulfide	U	ND	5.00	ug/L	1					
Carbon tetrachloride	U	ND	1.00	ug/L	1					
Chlorobenzene	U	ND	1.00	ug/L	1					
Chloroethane	U	ND	1.00	ug/L	1					
Chloroform	U	ND	1.00	ug/L	1					
Chloromethane	U	ND	1.00	ug/L	1					
Dibromochloromethane	U	ND	1.00	ug/L	1					
Ethylbenzene	U	ND	1.00	ug/L	1					
Methylene chloride	U	ND	5.00	ug/L	1					
Styrene	U	ND	1.00	ug/L	1					
Tetrachloroethylene	U	ND	1.00	ug/L	1					
Toluene	U	ND	1.00	ug/L	1					
Trichloroethylene	U	ND	1.00	ug/L	1					
Vinyl acetate	U	ND	5.00	ug/L	1					
Vinyl chloride	U	ND	1.00	ug/L	1					
Xylenes (total)	U	ND	3.00	ug/L	1					
cis-1,2-Dichloroethylene	U	ND	1.00	ug/L	1					
cis-1,3-Dichloropropylene	U	ND	1.00	ug/L	1					
tert-Butyl methyl ether	U	ND	1.00	ug/L	1					
trans-1,2-Dichloroethylene	U	ND	1.00	ug/L	1					
trans-1,3-Dichloropropylene	U	ND	1.00	ug/L	1					

MW 8-24-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 21, 2012

Client Sample ID: 12061905
Sample ID: 309394002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5030/8260A TCL in Liquid "As Received"	52.9 ug/L	50.0	106	(80%-123%)
Bromofluorobenzene	5030/8260A TCL in Liquid "As Received"	49.1 ug/L	50.0	98.2	(80%-120%)
Toluene-d8	5030/8260A TCL in Liquid "As Received"	51.9 ug/L	50.0	104	(80%-120%)

MW 8-24-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700
Seattle, Washington 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: August 26, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Inorganic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-29

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Target Analyte List (TAL) metals analyses (EPA Method 6020) were performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060519

Data Qualifications:

1. Sample Holding Times: Acceptable.

All liquid samples were preserved to a pH < 2. The sample was maintained at < 6°C. The sample was collected on August 7, 2012, and was analyzed by August 20, 2012, therefore meeting QC criteria of less than 6 months between collection, extraction, and analysis.

2. Initial and Continuing Calibration: Acceptable.

A minimum of one calibration standard and a blank were analyzed at the beginning of the ICP analysis sequence and after every 10 samples. No results were greater than 110% of the highest calibration standard. All ICP recoveries were within the QC limits of 90% to 110%.

3. Blanks: Satisfactory.

A preparation blank was analyzed for each 20 samples or per matrix per concentration level. Blanks were analyzed after each Initial or Continuing Calibration Verification. There were no detections in any blanks that affected sample results except copper (0.825 ug/L) in the method blank. Associated

sample results were qualified as not detected (U) if the sample result was less than five times the positive blank concentration.

4. ICP Interference Check Sample: Acceptable.

An Interference Check Sample (ICS) was analyzed at the beginning of each sequence. All ICS (solution AB) results were within QC limits of 80% - 120% recovery.

5. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

6. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. ICP Serial Dilution: Acceptable.

A serial dilution analysis was performed per matrix per concentration or per sample delivery group, whichever was more frequent. All serial dilution results were within QC limits.

8. Matrix Spike Analysis: Acceptable.

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

9. Duplicate Analysis: Acceptable.

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

10. Laboratory Control Sample Analysis: Acceptable.

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

11. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

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UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 21, 2012

Client Sample ID:	12060519	Project:	ECOL00801
Sample ID:	309394001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	07-AUG-12 14:45		
Receive Date:	09-AUG-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS										
SW846 3005A/6020A Liquid "As Received"										
Arsenic	U	ND	5.00	ug/L	1	BAJ	08/20/12	0605	1237033	1
Cadmium	U	ND	1.00	ug/L	1					
Chromium	U	ND	10.0	ug/L	1					
Copper		4.08	1.00	ug/L	1					
Lead	U	ND	2.00	ug/L	1					
Thallium	U	ND	2.00	ug/L	1					
Zinc	U	ND	10.0	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	BXA1	08/13/12	1916	1237032

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6020A	

The Following NCRs have been identified

NCR ID:1111347 Batch ID: 1237752 Sample 309394001 failed recovery for one acid surrogate.

8-24-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700
Seattle, Washington 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: August 26, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-29

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060519

Data Qualifications:

1. Sample Holding Times: Acceptable.

The sample was maintained and received within the QC limits of < 6°C. The sample was collected on August 7, 2012, was extracted on August 14, 2012, and was analyzed on August 15, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Acceptable.

All average Relative Response Factors (RRFs) were within the QC limits. All Relative Standard Deviations (RSDs) were within the QC limits.

4. Continuing Calibration: Satisfactory.

All RRFs were within the QC limits. All % differences were within the QC limits except one acid fraction surrogate outlier; no actions were taken as all reported analytes were in the base/neutral fraction.

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Satisfactory.

All SMC recoveries were within QC limits except phenol-d5 in sample 12060519. No actions were taken based on this outlier as it is an acid-fraction SMC and all reported analytes for this sample are in the base/neutral fraction.

7. Matrix Spike (MS)/MS Duplicate (MSD) Analysis: Acceptable.

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

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Acceptable.

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 17, 2012

Client Sample ID:	12060519	Project:	ECOL00801
Sample ID:	309394001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	07-AUG-12 14:45		
Receive Date:	09-AUG-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D Semivolatile Analysis by Separatory Funnel "As Received"										
Benzo(a)anthracene	U	ND	1.00	ug/L	1	RMB	08/15/12	1352	1237752	1
Benzo(a)pyrene	U	ND	1.00	ug/L	1					
Benzo(b)fluoranthene	U	ND	1.00	ug/L	1					
Chrysene	U	ND	1.00	ug/L	1					
Diphenylamine	U	ND	10.0	ug/L	1					
bis(2-Ethylhexyl)phthalate	U	ND	10.0	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	SW846 3510C Prep Semivolatiles 8270D	SXC2	08/14/12	0920	1237748

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2,4,6-Tribromophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	54.7 ug/L	100	54.7	(26%-131%)
2-Fluorophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	18.1 ug/L	100	18.1	(15%-78%)
Phenol-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	8.75 ug/L	100	8.75*	(10%-72%)
2-Fluorobiphenyl	8270D Semivolatile Analysis by Separatory Funnel "As Received"	27.8 ug/L	50.0	55.7	(29%-102%)
Nitrobenzene-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	31.8 ug/L	50.0	63.6	(36%-125%)
p-Terphenyl-d14	8270D Semivolatile Analysis by Separatory Funnel "As Received"	34.0 ug/L	50.0	68.0	(31%-133%)

The Following NCRs have been identified

NCR ID:1111347 Batch ID: 1237752 Sample 309394001 failed recovery for one acid surrogate.

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700
Seattle, Washington 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: August 26, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-29

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060519

Data Qualifications:

1. Sample Holding Times: Acceptable.

The sample was maintained at < 6°C. The sample was collected on August 7, 2012, extracted on August 17, 2012, and was analyzed by August 17, 2012, therefore meeting QC criteria.

2. Instrument Performance: Acceptable.

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. Initial and Continuing Calibration: Satisfactory.

All initial calibration relative standard deviations (RSDs) were within QC limits. All continuing calibration % differences (% D) were within QC limits except one Aroclor-1016 peak with a high recovery in one continuing calibration on one column; no action was taken based on this outlier as Aroclor-1016 was not detected in the sample.

4. Error Determination: Not Provided.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Acceptable.

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

6. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. System Monitoring Compounds (SMCs): Acceptable.

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

8. Blank Spikes: Acceptable.

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

9. Duplicates: Acceptable.

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

10. Compound Identification: Acceptable.

All results were dual-column confirmed with differences between the columns less than 25%.

11. Target Compound Quantitation and Quantitation Limits: Acceptable.

Sample results and quantitation limits were correctly calculated.

12. Laboratory Contact

No laboratory contact was required.

13. Overall Assessment

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

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JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

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JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 20, 2012

Client Sample ID:	12060519	Project:	ECOL00801
Sample ID:	309394001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	07-AUG-12 14:45		
Receive Date:	09-AUG-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3535A/8082A PCB Liquids "As Received"										
Aroclor-1016	U	ND	0.100	ug/L	1	YS1	08/17/12	1617	1239026	1
Aroclor-1221	U	ND	0.100	ug/L	1					
Aroclor-1232	U	ND	0.100	ug/L	1					
Aroclor-1242	U	ND	0.100	ug/L	1					
Aroclor-1248	U	ND	0.100	ug/L	1					
Aroclor-1254	U	ND	0.100	ug/L	1					
Aroclor-1260	U	ND	0.100	ug/L	1					
Aroclor-Total	U	ND	0.100	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	SW3535A PCB SPE Extraction	SXC2	08/17/12	0830	1239025

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3535A/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3535A/8082A PCB Liquids "As Received"	0.107 ug/L	0.200	53.3	(34%-120%)
Decachlorobiphenyl	SW846 3535A/8082A PCB Liquids "As Received"	0.101 ug/L	0.200	50.6	(33%-120%)

The Following NCRs have been identified

NCR ID:1111347 Batch ID: 1237752 Sample 309394001 failed recovery for one acid surrogate.

MW
8-24-12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: October 23, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-30

REF:

TDDs:	12-05-0006	PANs: 002233.0790.01RA
	12-05-0007	PANs: 002233.0791.01RA
	12-05-0008	PANs: 002233.0792.01RA
	12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of two waste samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Analysis for Bottom Sediment and Water (BS&W; ASTM Method D-1796) was performed by TestAmerica, Inc., Corpus Christi, Texas. All sample analyses were evaluated following EPA's Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060402 12060403

Data Qualifications:

The samples were received at 9.5°C. The samples were collected on August 7, 2012, and were analyzed by October 22, 2012. No QC issues were noted.

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

Client: Ecology and Environment, Inc.

Job Number: 580-34375-2

General Chemistry

Client Sample ID: 12060402

Lab Sample ID: 580-34375-2
Client Matrix: Waste

Date Sampled: 08/07/2012 1000
Date Received: 08/09/2012 0940

Analyte	Result	Qual	Units	Dil	Method
Percent Oil	0.00		%	1.0	D1796
	Analysis Batch: 560-79695		Analysis Date: 10/22/2012 0805		DryWt Corrected: N
Percent Solids	2.0		%	1.0	D1796
	Analysis Batch: 560-79695		Analysis Date: 10/22/2012 0805		DryWt Corrected: N
Percent Water	98		%	1.0	D1796
	Analysis Batch: 560-79695		Analysis Date: 10/22/2012 0805		DryWt Corrected: N

SHM

MW 10-23-12

Client: Ecology and Environment, Inc.

Job Number: 580-34375-2

General Chemistry

Client Sample ID: 12060403

Lab Sample ID: 580-34375-3

Client Matrix: Waste

Date Sampled: 08/07/2012 1000

Date Received: 08/09/2012 0940

Analyte	Result	Qual	Units	Dil	Method
Percent Oil	0.00		%	1.0	D1796
	Analysis Batch: 560-79695		Analysis Date: 10/22/2012 0805		DryWt Corrected: N
Percent Solids	1.0		%	1.0	D1796
	Analysis Batch: 560-79695		Analysis Date: 10/22/2012 0805		DryWt Corrected: N
Percent Water	99		%	1.0	D1796
	Analysis Batch: 560-79695		Analysis Date: 10/22/2012 0805		DryWt Corrected: N

SHM

MW 10-23-12

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Global Environmental Specialists
720 Third Avenue, Suite 1700
Seattle, Washington 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: August 31, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-30

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of two product samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by TestAmerica Seattle, Tacoma, Washington. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060402 12060403

Data Qualifications:

1. Sample Holding Times: Satisfactory.

The samples were received at 9.5°C, above the QC limits of < 6°C; associated sample results were qualified as estimated quantities with a low bias (JL or UJL). The samples were collected on August 7 and 8, 2012, extracted on August 21, 2012, and were analyzed by August 21, 2012, therefore meeting QC criteria.

2. Instrument Performance: Acceptable.

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. Initial and Continuing Calibration: Satisfactory.

All initial calibration relative standard deviations (RSDs) were within QC limits. All continuing calibration % differences (% D) were within QC limits except the surrogate decachlorobiphenyl in several continuing calibrations (no actions were taken based on the surrogate outliers), several Aroclor peaks with high

recoveries (no actions were taken based on the high outliers as no Aroclors were detected in the samples), and two Aroclor 1260 peaks with low recoveries (the associated Aroclor 1260 sample quantitation limits were qualified as estimated quantities with a low bias [UJL]) .

4. Error Determination: Not Provided.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Acceptable.

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

6. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. System Monitoring Compounds (SMCs): Acceptable.

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

8. Blank Spikes: Acceptable.

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

9. Duplicates: Acceptable.

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

10. Compound Identification: Acceptable.

All results were dual-column confirmed with differences between the columns within QC limits.

11. Target Compound Quantitation and Quantitation Limits: Acceptable.

Sample results and quantitation limits were correctly calculated.

12. Laboratory Contact

No laboratory contact was required.

13. Overall Assessment

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

The overall usefulness of the data is based on the criteria outlined in the Site-Specific Sampling Plan, the OSWER Guidance Document "Quality Assurance/Quality Control Guidance for Removal Activities, Sampling QA/QC Plan, and Data Validation Procedures" (EPA/540/G-90/004), the analytical method, and, when applicable, the Office of Emergency and Remedial Response Publication "USEPA

Contract Laboratory Program National Functional Guidelines for Organic Data Review". Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-34375-1

Client Sample ID: **12060402**

Lab Sample ID: 580-34375-2
Client Matrix: Waste

Date Sampled: 08/07/2012 1000
Date Received: 08/09/2012 0940

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	580-118095	Instrument ID:	TAC042
Prep Method:	3580A	Prep Batch:	580-118098	Initial Weight/Volume:	0.2017 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	08/21/2012 0921			Injection Volume:	1 uL
Prep Date:	08/21/2012 0647			Result Type:	PRIMARY

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
PCB-1016		ND		0.16	0.50
PCB-1221		ND		0.40	0.55
PCB-1232		ND		0.35	0.55
PCB-1242		ND		0.10	0.50
PCB-1248		ND		0.15	0.50
PCB-1254		ND		0.10	0.50
PCB-1260		ND		0.15	0.50

UJL 52VM

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	87		45 - 135
DCB Decachlorobiphenyl	102		50 - 140

MW 8-31-12

Client: Ecology and Environment, Inc.

Job Number: 580-34375-1

Client Sample ID: 12060403

Lab Sample ID: 580-34375-3
Client Matrix: Waste

Date Sampled: 08/07/2012 1000
Date Received: 08/09/2012 0940

8082 Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analysis Method:	8082	Analysis Batch:	580-118095	Instrument ID:	TAC042
Prep Method:	3580A	Prep Batch:	580-118098	Initial Weight/Volume:	0.2010 g
Dilution:	1.0			Final Weight/Volume:	10 mL
Analysis Date:	08/21/2012 0933			Injection Volume:	1 uL
Prep Date:	08/21/2012 0647			Result Type:	PRIMARY

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
PCB-1016		ND		0.16	0.50
PCB-1221		ND		0.40	0.55
PCB-1232		ND		0.35	0.55
PCB-1242		ND		0.10	0.50
PCB-1248		ND		0.15	0.50
PCB-1254		ND		0.10	0.50
PCB-1260		ND		0.15	0.50

U052KM

Surrogate	%Rec	Qualifier	Acceptance Limits
Tetrachloro-m-xylene	89		45 - 135
DCB Decachlorobiphenyl	98		50 - 140

MW 8-31-12

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Global Environmental Specialists
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MEMORANDUM

DATE: August 31, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-30

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one soil sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Analysis for Extended Diesel Range Total Petroleum Hydrocarbons (Ecology Method NWTPH-Dx) was performed by TestAmerica Seattle, Tacoma, Washington. All sample analyses were evaluated following EPA's Stage 2 and/or Stage 4 Data Validation Electronic/Manual Process (S2VEM and/or S4VEM).

The sample was numbered: 12060017

Data Qualifications:

1. Sample Holding Times: Satisfactory.

The sample was received at 9.5°C, above the QC limits of < 6°C; associated sample results were qualified as estimated quantities with a low bias (JL or UJL). The sample was collected on August 8, 2012, extracted by August 21, 2012, and analyzed by August 22, 2012, therefore meeting QC criteria of less than 14 days between collection and extraction for soil samples, and less than 40 days between extraction and analysis.

2. Initial and Continuing Calibrations: Acceptable.

Calculations were verified as correct. All initial calibration correlation coefficients were ≥ 0.990 and/or all relative percent differences (RPDs) were within the laboratory control limits. All continuing calibration percent differences (%Ds) were within the laboratory control limits.

3. Error Determination: Not Performed.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

4. **Blanks: Acceptable.**
A method blank was analyzed for each extraction batch for each matrix and analysis system. Diesel and Motor Oil range TPHs were not detected in any blank.

5. **System Monitoring Compounds (SMC): Acceptable.**
All recoveries of the SMCs were greater than 10% and within QC criteria.

6. **Performance Evaluation Samples: Not Provided.**
Performance evaluation samples were not provided to the laboratory.

7. **Matrix and Blank Spikes: Acceptable.**
Matrix and blank spike results were within QC limits.

8. **Duplicates: Acceptable.**
Duplicate and spike duplicate results were within QC limits.

9. **Quantitation and Quantitation Limits: Acceptable.**
Sample concentrations were correctly calculated.

10. **Laboratory Contact: Not Required.**
No laboratory contact was required.

11. **Overall Assessment of Data for Use**

In sample 12060017, the results in the C10-C24 and Motor Oil range(s) are due to what most closely resembles a complex mixture of heavily weathered/degraded diesel fuel and/or a mineral/ transformer oil range product, and motor oil. The affected analyte range(s) have been qualified as estimated quantities with a high bias (JH).

Positive sample results less than the reporting limit were qualified as estimated quantities (JQ).

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the Method Detection Limit (MDL) and the Reporting Limit (RL).

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Client: Ecology and Environment, Inc.

Job Number: 580-34375-1

Client Sample ID: 12060017

Lab Sample ID: 580-34375-1

Client Matrix: Solid

% Moisture: 9.6

Date Sampled: 08/08/2012 0930

Date Received: 08/09/2012 0940

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-118201	Instrument ID:	SEA011
Prep Method:	3550B	Prep Batch:	580-118177	Lab File ID:	DT10606.D
Dilution:	1.0			Initial Weight/Volume:	10.6780 g
Analysis Date:	08/22/2012 1228			Final Weight/Volume:	10 mL
Prep Date:	08/21/2012 1505			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		220 JK	Y	5.9	26
Motor Oil (>C24-C36)		670 JK	Y	9.4	52

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	124		50 - 150

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MEMORANDUM

DATE: August 31, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-30

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of two product samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Volatile organic compound (VOC) analysis (EPA Method 8260) was performed by TestAmerica Seattle, Tacoma, Washington. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060402 12060403

Data Qualifications:

1. **Sample Holding Times: Satisfactory.**

The samples were received at 9.5°C, above the QC limits of < 6°C; associated sample results were qualified as estimated quantities with a low bias (JL or UJL). The samples were collected on August 7 and 8, 2012, and were analyzed by August 15, 2012, therefore meeting QC criteria of less than 14 days between collection and analysis for soil and preserved water samples.

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were within the QC limits. All Relative Standard Deviations (RSDs) were within the QC limits.

4. Continuing Calibration: Acceptable.

All RRFs were within the QC limits. All % differences were within the QC limits.

5. Blanks: Satisfactory.

A method blank was analyzed for each 20 sample batch per matrix. There were no detections in any method blank that affected sample results except methylene chloride (10.3 ug/kg) in the method blank. Associated sample results less than 5 times the blank contamination (10 times for common laboratory contaminants) were qualified as not detected (U).

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

7. Blank Spike (BS) Analysis: Satisfactory.

BS analyses were performed per SDG or per matrix per concentration level, whichever was more frequent. All recoveries were within QC limits except 1,2-dichloropropane with high recoveries; no actions were taken as 1,2-dichloropropane was not detected in any samples.

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Acceptable.

All internal standards were within $\pm$ 30 seconds of the continuing calibration internal standard retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Analytical Data

Client: Ecology and Environment, Inc.

Job Number: 580-34375-1

Client Sample ID: **12060402**

Lab Sample ID: 580-34375-2
Client Matrix: Waste

Date Sampled: 08/07/2012 1000
Date Received: 08/09/2012 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	580-117715	Instrument ID:	TAC048
Prep Method:	5035	Prep Batch:	580-117685	Lab File ID:	H1512021.D
Dilution:	1.0			Initial Weight/Volume:	1.607 g
Analysis Date:	08/15/2012 1829			Final Weight/Volume:	400 mL
Prep Date:	08/15/2012 0840				

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Dichlorodifluoromethane		ND		62	250
Chloromethane		ND		620	2500
Vinyl chloride		ND		12	50
Bromomethane		ND		220	870
Chloroethane		ND		620	2500
Trichlorofluoromethane		ND		62	250
1,1-Dichloroethene		ND		31	120
Methylene Chloride		74	J B	62	250
trans-1,2-Dichloroethene		ND		62	250
1,1-Dichloroethane		ND		62	250
2,2-Dichloropropane		ND		62	250
cis-1,2-Dichloroethene		ND		62	250
Chlorobromomethane		ND		75	250
Chloroform		ND		62	250
1,1,1-Trichloroethane		ND		62	250
Carbon tetrachloride		ND		31	120
1,1-Dichloropropene		ND		62	250
Benzene		ND		25	100
1,2-Dichloroethane		ND		62	250
Trichloroethene		ND		25	100
1,2-Dichloropropane		ND		24	75
Dibromomethane		ND		62	250
Dichlorobromomethane		ND		62	250
cis-1,3-Dichloropropene		ND		25	100
Toluene		ND		62	250
trans-1,3-Dichloropropene		ND		25	100
1,1,2-Trichloroethane		ND		19	75
Tetrachloroethene		ND		31	120
1,3-Dichloropropane		ND		62	250
Chlorodibromomethane		ND		62	250
Ethylene Dibromide		ND		62	250
Chlorobenzene		ND		62	250
Ethylbenzene		ND		62	250
1,1,1,2-Tetrachloroethane		ND		62	250
1,1,2,2-Tetrachloroethane		ND		21	62
m-Xylene & p-Xylene		ND		62	250
o-Xylene		ND		62	250
Styrene		ND		62	250
Bromoform		ND		68	250
Isopropylbenzene		ND		62	250
Bromobenzene		ND		62	250
N-Propylbenzene		ND		62	250
1,2,3-Trichloropropane		ND		72	250
2-Chlorotoluene		ND		62	250
1,3,5-Trimethylbenzene		ND		62	250
4-Chlorotoluene		ND		81	250

UJL 82VM

JL

MW 8-31-12

Client: Ecology and Environment, Inc.

Job Number: 580-34375-1

Client Sample ID: 12060402

Lab Sample ID: 580-34375-2
Client Matrix: Waste

Date Sampled: 08/07/2012 1000
Date Received: 08/09/2012 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	580-117715	Instrument ID:	TAC048
Prep Method:	5035	Prep Batch:	580-117685	Lab File ID:	H1512021.D
Dilution:	1.0			Initial Weight/Volume:	1.607 g
Analysis Date:	08/15/2012 1829			Final Weight/Volume:	400 mL
Prep Date:	08/15/2012 0840				

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
tert-Butylbenzene		~~ND~~		62	250 UJL 52 UM
1,2,4-Trimethylbenzene		150	J K	62	250
sec-Butylbenzene		140	J K	62	250
1,3-Dichlorobenzene		ND		62	250 UJL
4-Isopropyltoluene		ND		62	250
1,4-Dichlorobenzene		ND		62	250
n-Butylbenzene		ND		62	250
1,2-Dichlorobenzene		ND		62	250
1,2-Dibromo-3-Chloropropane		ND		410	1200
1,2,4-Trichlorobenzene		ND		62	250
1,2,3-Trichlorobenzene		ND		62	250
Hexachlorobutadiene		ND		62	250
Naphthalene		1400	JL ~~B~~	62	250
Methyl tert-butyl ether		~~ND~~		62	250 UJL

Surrogate	%Rec	Qualifier	Acceptance Limits
Fluorobenzene (Surr)	104		80 - 120
Toluene-d8 (Surr)	93		80 - 120
Ethylbenzene-d10	98		70 - 120
4-Bromofluorobenzene (Surr)	106		70 - 120
Trifluorotoluene (Surr)	91		65 - 140

8-31-12

Client: Ecology and Environment, Inc. Job Number: 580-34375-1

Client Sample ID: 12060403

Lab Sample ID: 580-34375-3 Date Sampled: 08/07/2012 1000
Client Matrix: Waste Date Received: 08/09/2012 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	580-117715	Instrument ID:	TAC048
Prep Method:	5035	Prep Batch:	580-117685	Lab File ID:	H1512022.D
Dilution:	1.0			Initial Weight/Volume:	1.019 g
Analysis Date:	08/15/2012 1851			Final Weight/Volume:	400 mL
Prep Date:	08/15/2012 0840				

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
Dichlorodifluoromethane		ND		98	390
Chloromethane		ND		980	3900
Vinyl chloride		ND		20	79
Bromomethane		ND		340	1400
Chloroethane		ND		980	3900
Trichlorofluoromethane		ND		98	390
1,1-Dichloroethene		ND		49	200
Methylene Chloride		ND		98	390
trans-1,2-Dichloroethene		ND		98	390
1,1-Dichloroethane		ND		98	390
2,2-Dichloropropane		ND		98	390
cis-1,2-Dichloroethene		ND		98	390
Chlorobromomethane		ND		120	390
Chloroform		ND		98	390
1,1,1-Trichloroethane		180	J K	98	390
Carbon tetrachloride		ND		49	200
1,1-Dichloropropene		ND		98	390
Benzene		ND		39	160
1,2-Dichloroethane		ND		98	390
Trichloroethene		ND		39	160
1,2-Dichloropropane		ND		38	120
Dibromomethane		ND		98	390
Dichlorobromomethane		ND		98	390
cis-1,3-Dichloropropene		ND		39	160
Toluene		ND		98	390
trans-1,3-Dichloropropene		ND		39	160
1,1,2-Trichloroethane		ND		29	120
Tetrachloroethene		ND		49	200
1,3-Dichloropropane		ND		98	390
Chlorodibromomethane		ND		98	390
Ethylene Dibromide		ND		98	390
Chlorobenzene		ND		98	390
Ethylbenzene		ND		98	390
1,1,1,2-Tetrachloroethane		ND		98	390
1,1,2,2-Tetrachloroethane		ND		32	98
m-Xylene & p-Xylene		ND		98	390
o-Xylene		ND		98	390
Styrene		ND		98	390
Bromoform		ND		110	390
Isopropylbenzene		ND		98	390
Bromobenzene		ND		98	390
N-Propylbenzene		ND		98	390
1,2,3-Trichloropropane		ND		110	390
2-Chlorotoluene		ND		98	390
1,3,5-Trimethylbenzene		ND		98	390
4-Chlorotoluene		ND		130	390

UJL 52VM

UJL

8-31-12

Client: Ecology and Environment, Inc.

Job Number: 580-34375-1

Client Sample ID: 12060403

Lab Sample ID: 580-34375-3
Client Matrix: Waste

Date Sampled: 08/07/2012 1000
Date Received: 08/09/2012 0940

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	580-117715	Instrument ID:	TAC048
Prep Method:	5035	Prep Batch:	580-117685	Lab File ID:	H1512022.D
Dilution:	1.0			Initial Weight/Volume:	1.019 g
Analysis Date:	08/15/2012 1851			Final Weight/Volume:	400 mL
Prep Date:	08/15/2012 0840				

Analyte	DryWt Corrected: N	Result (ug/Kg)	Qualifier	MDL	RL
tert-Butylbenzene		ND		98	390 UJL
1,2,4-Trimethylbenzene		ND		98	390
sec-Butylbenzene		ND		98	390
1,3-Dichlorobenzene		ND		98	390
4-Isopropyltoluene		ND		98	390
1,4-Dichlorobenzene		ND		98	390
n-Butylbenzene		ND		98	390
1,2-Dichlorobenzene		ND		98	390
1,2-Dibromo-3-Chloropropane		ND		650	2000
1,2,4-Trichlorobenzene		ND		98	390
1,2,3-Trichlorobenzene		ND		98	390
Hexachlorobutadiene		ND MW		98	390
Naphthalene		640	JL ~~EMU~~	98	390
Methyl tert-butyl ether		~~ND~~ MW		98	390 UJL

52 UM

Surrogate	%Rec	Qualifier	Acceptance Limits
Fluorobenzene (Surr)	101		80 - 120
Toluene-d8 (Surr)	93		80 - 120
Ethylbenzene-d10	98		70 - 120
4-Bromofluorobenzene (Surr)	98		70 - 120
Trifluorotoluene (Surr)	96		65 - 140

MW 8-31-12

ecology and environment, inc.
Global Environmental Specialists

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Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: August 31, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Inorganic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-30

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of two product samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Target Analyte List (TAL) metals analyses (EPA Method 6020) were performed by TestAmerica Seattle, Tacoma, Washington. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060402 12060403

~~Data Qualifications:~~

1. Sample Holding Times: Acceptable.

The samples were received at 9.5°C, within the QC limits for metals. The samples were collected on August 7 and 8, 2012, and were analyzed by August 27, 2012, therefore meeting QC criteria of less than 6 months between collection, extraction, and analysis (28 days for mercury).

2. Initial and Continuing Calibration: Acceptable.

A minimum of one calibration standard and a blank were analyzed at the beginning of the ICP analysis sequence and after every 10 samples. No results were greater than 110% of the highest calibration standard. All ICP recoveries were within the QC limits of 90% to 110%.

3. Blanks: Satisfactory.

A preparation blank was analyzed for each 20 samples or per matrix per concentration level. Blanks were analyzed after each Initial or Continuing Calibration Verification. There were no detections in any blanks that affected sample results except antimony (0.0000849 mg/L); associated sample results were qualified as not detected (U) if the sample result was less than five times the positive blank concentration.

recycled paper

4. ICP Interference Check Sample: Acceptable.

An Interference Check Sample (ICS) was analyzed at the beginning of each sequence. All ICS (solution AB) results were within QC limits of 80% - 120% recovery.

5. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

6. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. ICP Serial Dilution: Acceptable.

A serial dilution analysis was performed per matrix per concentration or per sample delivery group, whichever was more frequent. All serial dilution results were within QC limits.

8. Matrix Spike Analysis: Acceptable.

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

9. Duplicate Analysis: Satisfactory.

A laboratory duplicate analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. All duplicate results were within QC limits except copper. Associated sample results were qualified as estimated quantities with an unknown bias (JK or UJK).

10. Laboratory Control Sample Analysis: Acceptable.

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

11. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Client: Ecology and Environment, Inc.

Job Number: 580-34375-1

Client Sample ID: 12060402

Lab Sample ID: 580-34375-2
Client Matrix: Waste

Date Sampled: 08/07/2012 1000
Date Received: 08/09/2012 0940

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	580-118676	Instrument ID:	TAC047
Prep Method:	3050B	Prep Batch:	580-118617	Lab File ID:	118617.asc
Dilution:	1.0			Initial Weight/Volume:	1.0837 g
Analysis Date:	08/27/2012 2015			Final Weight/Volume:	50 mL
Prep Date:	08/27/2012 1230				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Beryllium		~~ND~~		0.066	0.23 U
Chromium		~~ND~~ MW		0.36	1.2 U
Copper		6.4	JK	0.66	0.92
Nickel		0.54	JQ	0.12	0.92
Silver		~~ND~~ MW		0.52	0.92 U
Zinc		1.7	JQ	0.49	1.8

S2VM

6020 Metals (ICP/MS)

Analysis Method:	6020	Analysis Batch:	580-118672	Instrument ID:	SEA044
Prep Method:	3050B	Prep Batch:	580-118617	Lab File ID:	052
Dilution:	10			Initial Weight/Volume:	1.0837 g
Analysis Date:	08/27/2012 1922			Final Weight/Volume:	50 mL
Prep Date:	08/27/2012 1230				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Arsenic		0.37	JQ	0.17	0.46
Antimony		0.38		0.039	0.18
Cadmium		~~ND~~ MW		0.0074	0.18 U
Lead		7.6		0.012	0.18
Selenium		~~ND~~		0.19	0.65 U
Thallium		~~ND~~ MW		0.12	0.46 U

S2VM

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	580-118626	Instrument ID:	TAC103
Prep Method:	7471A	Prep Batch:	580-118610	Lab File ID:	082712-TAC103-FCW
Dilution:	1.0			Initial Weight/Volume:	0.6063 g
Analysis Date:	08/27/2012 1246			Final Weight/Volume:	50 mL
Prep Date:	08/27/2012 1105				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		~~ND~~ MW		0.0052	0.016 U

S2VM

MW 8-31-12

Client: Ecology and Environment, Inc.

Job Number: 580-34375-1

Client Sample ID: 12060403

Lab Sample ID: 580-34375-3
Client Matrix: Waste

Date Sampled: 08/07/2012 1000
Date Received: 08/09/2012 0940

6010B Metals (ICP)

Analysis Method:	6010B	Analysis Batch:	580-118676	Instrument ID:	TAC047
Prep Method:	3050B	Prep Batch:	580-118617	Lab File ID:	118617.asc
Dilution:	1.0			Initial Weight/Volume:	1.1308 g
Analysis Date:	08/27/2012 1933			Final Weight/Volume:	50 mL
Prep Date:	08/27/2012 1230				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Beryllium		~~ND~~		0.063	0.22 U
Chromium		~~ND~~		0.34	1.1 U
Copper		2.8 JK		0.64	0.88
Nickel		0.14	J Q	0.11	0.88
Silver		~~ND~~		0.50	0.88 U
Zinc		0.55	J Q	0.47	1.8

S2VM

6020 Metals (ICP/MS)

Analysis Method:	6020	Analysis Batch:	580-118672	Instrument ID:	SEA044
Prep Method:	3050B	Prep Batch:	580-118617	Lab File ID:	057
Dilution:	10			Initial Weight/Volume:	1.1308 g
Analysis Date:	08/27/2012 1940			Final Weight/Volume:	50 mL
Prep Date:	08/27/2012 1230				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Arsenic		~~ND~~		0.16	0.44 U
Antimony		~~0.13~~		0.037	0.18 U
Cadmium		~~ND~~		0.0071	0.18 U
Lead		2.1		0.011	0.18
Selenium		~~ND~~		0.18	0.62 U
Thallium		~~ND~~		0.11	0.44 U

S2VM

7471A Mercury (CVAA)

Analysis Method:	7471A	Analysis Batch:	580-118626	Instrument ID:	TAC103
Prep Method:	7471A	Prep Batch:	580-118610	Lab File ID:	082712-TAC103-FCW
Dilution:	1.0			Initial Weight/Volume:	0.6198 g
Analysis Date:	08/27/2012 1255			Final Weight/Volume:	50 mL
Prep Date:	08/27/2012 1105				

Analyte	DryWt Corrected: N	Result (mg/Kg)	Qualifier	MDL	RL
Mercury		~~ND~~		0.0051	0.016 U

S2VM

MN 8-31-12

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MEMORANDUM

DATE: August 31, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-30

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of two product samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Extractable organic halogens (EPA Method 9023), flashpoint (EPA Method 1020A), and gross calorific value (ASTM Method D240-02) analyses were performed by TestAmerica Seattle, Tacoma, Washington. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060402 12060403

Data Qualifications:

1. **Sample Holding Times: Satisfactory.**

The samples were received at 9.5°C, above the QC limits of < 6°C; associated sample results were qualified as estimated quantities with a low bias (JL or UJL). The samples were collected on August 7, 2012, and were analyzed by August 29, 2012, therefore meeting holding time criteria.

2. **Calibration: Acceptable.**

All initial and continuing calibration results were within QC limits.

3. **Blanks: Acceptable.**

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

4. **Blank Spike (BS) Analysis: Acceptable.**

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

5. **Duplicate Analysis: Acceptable.**

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

6. **Precision and Bias Determination: Not Performed.**

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

7. **Performance Evaluation Sample Analysis: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

8. **Overall Assessment of Data for Use**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Client: Ecology and Environment, Inc.

Job Number: 580-34375-1

General Chemistry

Client Sample ID: 12060402

Lab Sample ID: 580-34375-2

Client Matrix: Waste

Date Sampled: 08/07/2012 1000

Date Received: 08/09/2012 0940

Analyte	Result	Qual	Units	MDL	RL		Dil	Method
Halogens, Extractable Organic	~~ND~~		mg/Kg	51	200	UJL	1.0	9023

Analysis Batch: 240-56167 Analysis Date: 08/29/2012 1016 DryWt Corrected: N

Prep Batch: 240-56137 Prep Date: 08/29/2012 0821

SZM

Analyte	Result	Qual	Units	Dil	Method
Flashpoint	>212	JL	Degrees F	1.0	1020A

Analysis Batch: 580-117538 Analysis Date: 08/13/2012 1437 DryWt Corrected: N

Analyte	Result	Qual	Units	RL	RL		Dil	Method
Gross Calorific Value	~~ND~~		BTU/lb	200	200	UJL	1.0	D240-02

Analysis Batch: 580-118455 Analysis Date: 08/23/2012 1034 DryWt Corrected: N

WW 8/31/12

Client: Ecology and Environment, Inc. Job Number: 580-34375-1

General Chemistry

Client Sample ID: 12060403

Lab Sample ID: 580-34375-3 Date Sampled: 08/07/2012 1000
Client Matrix: Waste Date Received: 08/09/2012 0940

Analyte	Result	Qual	Units	MDL	RL	Dil	Method
Halogens, Extractable Organic	~~ND~~		mg/Kg	52	200 UJL	1.0	9023
Analysis Batch: 240-56167	Analysis Date: 08/29/2012 1028						DryWt Corrected: N
Prep Batch: 240-56137	Prep Date: 08/29/2012 0824						

52 VM

Analyte	Result	Qual	Units			Dil	Method
Flashpoint	>212 JL		Degrees F			1.0	1020A
Analysis Batch: 580-117538	Analysis Date: 08/13/2012 1437						DryWt Corrected: N

Analyte	Result	Qual	Units	RL	RL	Dil	Method
Gross Calorific Value	~~ND~~		BTU/lb	200	200 UJL	1.0	D240-02
Analysis Batch: 580-118455	Analysis Date: 08/23/2012 1034						DryWt Corrected: N

MW 8-31-12

ecology and environment, inc.
Global Environmental Specialists

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MEMORANDUM

DATE: August 22, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-31

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one carbon sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Toxicity characteristic leaching procedure (TCLP) volatile organic compound (VOC) analysis (EPA Methods 1311 and 8260) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: `12062001

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The sample was maintained and received within the QC limits of < 6°C. The sample was collected on August 7, 2012, was extracted on August 9, 2012, and was analyzed by August 16, 2012, therefore meeting QC criteria of less than 14 days between collection and TCLP extraction and less than 14 days between TCLP extraction and analysis for soil samples; soil criteria were used in the absence of carbon criteria.

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were within the QC limits. All Relative Standard Deviations (RSDs) were within the QC limits.

4. **Continuing Calibration: Acceptable.**

All RRFs were within the QC limits. All % differences were within the QC limits.

5. **Blanks: Acceptable.**

Method and TCLP blanks were analyzed for each 20 sample batch per matrix. There were no detections in any blank.

6. **System Monitoring Compounds (SMCs): Acceptable.**

All SMC recoveries were within QC limits.

7. **Matrix Spike (MS)/MS Duplicate (MSD)/Blank Spike (BS) Analysis: Acceptable.**

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

8. **Duplicate Analysis: Acceptable.**

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

9. **Internal Standards: Acceptable.**

All internal standards were within $\pm$ 30 seconds of the continuing calibration internal standard retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. **Precision and Bias Determination: Not Performed.**

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. **Performance Evaluation Sample Analysis: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

12. **Overall Assessment of Data for Use**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 20, 2012

Client Sample ID:	12062001	Project:	ECOL00801
Sample ID:	309397001	Client ID:	ECOL008
Matrix:	Solid		
Collect Date:	07-AUG-12 10:50		
Receive Date:	09-AUG-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
TCLP Volatiles in Solid "As Received"										
1,1-Dichloroethylene	U	ND	0.010	mg/L	10	JEB	08/16/12	1506	1238882	1
1,2-Dichloroethane	U	ND	0.010	mg/L	10					
2-Butanone	U	ND	0.050	mg/L	10					
Benzene	U	ND	0.010	mg/L	10					
Carbon tetrachloride	U	ND	0.010	mg/L	10					
Chlorobenzene	U	ND	0.010	mg/L	10					
Chloroform	U	ND	0.010	mg/L	10					
Tetrachloroethylene	U	ND	0.010	mg/L	10					
Trichloroethylene	U	ND	0.010	mg/L	10					
Vinyl chloride	U	ND	0.010	mg/L	10					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 1311	SW846 1311 TCLP Volatiles Prep	EXF1	08/09/12	1600	1237092

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	TCLP Volatiles in Solid "As Received"	0.454 mg/L	0.050	90.8	(80%-123%)
Bromofluorobenzene	TCLP Volatiles in Solid "As Received"	0.464 mg/L	0.050	92.9	(80%-120%)
Toluene-d8	TCLP Volatiles in Solid "As Received"	0.469 mg/L	0.050	93.7	(80%-120%)

MN 8-22-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700, Seattle, WA 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: August 24, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-32

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Volatile organic compound (VOC) analysis (EPA Method 8260) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12061906

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The sample was maintained and received within the QC limits of < 6°C. The sample was collected on August 9, 2012, and was analyzed by August 17, 2012, therefore meeting QC criteria of less than 14 days between collection and analysis for soil and preserved water samples.

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were within the QC limits. All Relative Standard Deviations (RSDs) were within the QC limits.

4. **Continuing Calibration: Acceptable.**

All RRFs were within the QC limits.

5. **Blanks: Acceptable.**

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

6. **System Monitoring Compounds (SMCs): Acceptable.**

All SMC recoveries were within QC limits.

7. **Matrix Spike (MS)/MS Duplicate (MSD)/Blank Spike (BS) Analysis: Acceptable.**

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

8. **Duplicate Analysis: Acceptable.**

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

9. **Internal Standards: Acceptable.**

All internal standards were within $\pm$ 30 seconds of the continuing calibration internal standard retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. **Precision and Bias Determination: Not Performed.**

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. **Performance Evaluation Sample Analysis: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

12. **Overall Assessment of Data for Use**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 21, 2012

Client Sample ID:	12061906	Project:	ECOL00801
Sample ID:	309528001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	09-AUG-12 13:35		
Receive Date:	11-AUG-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5030/8260A TCL in Liquid "As Received"										
1,1,1-Trichloroethane	U	ND	1.00	ug/L	1	CDS1	08/17/12	1417	1238868	1
1,1,2,2-Tetrachloroethane	U	ND	1.00	ug/L	1					
1,1,2-Trichloroethane	U	ND	1.00	ug/L	1					
1,1-Dichloroethane	U	ND	1.00	ug/L	1					
1,1-Dichloroethylene	U	ND	1.00	ug/L	1					
1,2-Dichloroethane	U	ND	1.00	ug/L	1					
1,2-Dichloropropane	U	ND	1.00	ug/L	1					
2-Butanone	U	ND	5.00	ug/L	1					
2-Hexanone	U	ND	5.00	ug/L	1					
4-Methyl-2-pentanone	U	ND	5.00	ug/L	1					
Acetone	U	ND	5.00	ug/L	1					
Benzene	U	ND	1.00	ug/L	1					
Bromodichloromethane	U	ND	1.00	ug/L	1					
Bromoform	U	ND	1.00	ug/L	1					
Bromomethane	U	ND	1.00	ug/L	1					
Carbon disulfide	U	ND	5.00	ug/L	1					
Carbon tetrachloride	U	ND	1.00	ug/L	1					
Chlorobenzene	U	ND	1.00	ug/L	1					
Chloroethane	U	ND	1.00	ug/L	1					
Chloroform	U	ND	1.00	ug/L	1					
Chloromethane	U	ND	1.00	ug/L	1					
Dibromochloromethane	U	ND	1.00	ug/L	1					
Ethylbenzene	U	ND	1.00	ug/L	1					
Methylene chloride	U	ND	5.00	ug/L	1					
Styrene	U	ND	1.00	ug/L	1					
Tetrachloroethylene	U	ND	1.00	ug/L	1					
Toluene	U	ND	1.00	ug/L	1					
Trichloroethylene	U	ND	1.00	ug/L	1					
Vinyl acetate	U	ND	5.00	ug/L	1					
Vinyl chloride	U	ND	1.00	ug/L	1					
Xylenes (total)	U	ND	3.00	ug/L	1					
cis-1,2-Dichloroethylene	U	ND	1.00	ug/L	1					
cis-1,3-Dichloropropylene	U	ND	1.00	ug/L	1					
tert-Butyl methyl ether	U	ND	1.00	ug/L	1					
trans-1,2-Dichloroethylene	U	ND	1.00	ug/L	1					
trans-1,3-Dichloropropylene	U	ND	1.00	ug/L	1					

8-24-12

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 21, 2012

Client Sample ID: 12061906
Sample ID: 309528001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5030/8260A TCL in Liquid "As Received"	53.2 ug/L	50.0	106	(80%-123%)
Bromofluorobenzene	5030/8260A TCL in Liquid "As Received"	49.0 ug/L	50.0	97.9	(80%-120%)
Toluene-d8	5030/8260A TCL in Liquid "As Received"	50.7 ug/L	50.0	101	(80%-120%)

JMW 8/24/12

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

MEMORANDUM

DATE: August 24, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-32

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of one soil sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060211

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The sample was maintained and received within the QC limits of < 6°C. The sample was collected on August 9, 2012, was extracted on August 15, 2012, and was analyzed on August 16, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were within the QC limits.

4. **Continuing Calibration: Acceptable.**

All RRFs were within the QC limits. All % differences were within the QC limits.

5. **Blanks: Acceptable.**

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

6. **System Monitoring Compounds (SMCs): Acceptable.**

All SMC recoveries were within QC limits.

7. **Matrix Spike (MS)/MS Duplicate (MSD)/Blank Spike (BS) Analysis: Acceptable.**

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

8. **Duplicate Analysis: Satisfactory.**

Spike duplicate analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. All spike duplicate results were within QC limits except 2-chlorophenol, diphenyl amine, and phenol; associated sample results were qualified as estimated quantity with an unknown bias (JK or UJK).

9. **Internal Standards: Acceptable.**

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. **Precision and Bias Determination: Not Performed.**

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. **Performance Evaluation Sample Analysis: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

12. **Overall Assessment of Data for Use**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

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J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 22, 2012

Client Sample ID:	12060211	Project:	ECOL00801
Sample ID:	309527001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	09-AUG-12 13:15		
Receive Date:	11-AUG-12		
Collector:	Client		
Moisture:	16%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	396	ug/kg	1	JMB3	08/16/12	1424	1238488	1
1,2,4,5-Tetrachlorobenzene	U	ND	396	ug/kg	1					
1-Methylnaphthalene	U	ND	39.6	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	396	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	396	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	396	ug/kg	1					
2,4-Dichlorophenol	U	ND	396	ug/kg	1					
2,4-Dimethylphenol	U	ND	396	ug/kg	1					
2,4-Dinitrophenol	U	ND	791	ug/kg	1					
2,4-Dinitrotoluene	U	ND	396	ug/kg	1					
2,6-Dinitrotoluene	U	ND	396	ug/kg	1					
2-Chloronaphthalene	U	ND	39.6	ug/kg	1					
2-Chlorophenol	U	ND	396	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	396	ug/kg	1					
2-Methylnaphthalene	U	ND	39.6	ug/kg	1					
2-Nitrophenol	U	ND	396	ug/kg	1					
3,3'-Dichlorobenzidine	U	ND	396	ug/kg	1					
4-Bromophenylphenylether	U	ND	396	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	396	ug/kg	1					
4-Chloroaniline	U	ND	396	ug/kg	1					
4-Chlorophenylphenylether	U	ND	396	ug/kg	1					
4-Nitrophenol	U	ND	396	ug/kg	1					
Acenaphthene	U	ND	39.6	ug/kg	1					
Acenaphthylene	U	ND	39.6	ug/kg	1					
Acetophenone	U	ND	396	ug/kg	1					
Anthracene	U	ND	39.6	ug/kg	1					
Atrazine	U	ND	396	ug/kg	1					
Benzaldehyde	U	ND	396	ug/kg	1					
Benzo(a)anthracene	U	ND	39.6	ug/kg	1					
Benzo(a)pyrene	U	ND	39.6	ug/kg	1					
Benzo(b)fluoranthene	U	ND	39.6	ug/kg	1					
Benzo(ghi)perylene	U	ND	39.6	ug/kg	1					
Benzo(k)fluoranthene	U	ND	39.6	ug/kg	1					
Butylbenzylphthalate	U	ND	396	ug/kg	1					
Caprolactam	U	ND	396	ug/kg	1					
Carbazole	U	ND	39.6	ug/kg	1					
Chrysene	U	ND	39.6	ug/kg	1					

U JK SHM

MW 8-24-12

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 22, 2012

Client Sample ID: 12060211
Sample ID: 309527001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	396	ug/kg	1					
Di-n-octylphthalate	U	ND	396	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	39.6	ug/kg	1					
Dibenzofuran	U	ND	396	ug/kg	1					
Diethylphthalate	U	ND	396	ug/kg	1					
Dimethylphthalate	U	ND	396	ug/kg	1					
Diphenylamine	U	ND	396	ug/kg	1					
Fluoranthene	U	ND	39.6	ug/kg	1					
Fluorene	U	ND	39.6	ug/kg	1					
Hexachlorobenzene	U	ND	396	ug/kg	1					
Hexachlorobutadiene	U	ND	396	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	396	ug/kg	1					
Hexachloroethane	U	ND	396	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	39.6	ug/kg	1					
Isophorone	U	ND	396	ug/kg	1					
N-Nitrosodipropylamine	U	ND	396	ug/kg	1					
Naphthalene	U	ND	39.6	ug/kg	1					
Nitrobenzene	U	ND	396	ug/kg	1					
Pentachlorophenol	U	ND	396	ug/kg	1					
Phenanthrene	U	ND	39.6	ug/kg	1					
Phenol	U	ND	396	ug/kg	1					
Pyrene	U	ND	39.6	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	396	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	396	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	396	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	396	ug/kg	1					
m,p-Cresols	U	ND	396	ug/kg	1					
m-Nitroaniline	U	ND	396	ug/kg	1					
o-Cresol	U	ND	396	ug/kg	1					
o-Nitroaniline	U	ND	396	ug/kg	1					
p-Nitroaniline	U	ND	396	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	08/15/12	1950	1238484

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	Prep Method 3550C for Solid	MXS4	08/15/12	1950	1238500

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 22, 2012

Client Sample ID: 12060211
Sample ID: 309527001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1040 ug/kg	1980	52.5	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1060 ug/kg	1980	53.6	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1810 ug/kg	1980	91.3	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2210 ug/kg	3960	55.9	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1780 ug/kg	3960	45.0	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1620 ug/kg	3960	40.8	(26%-112%)

The Following NCRs have been identified

NCR ID:1111386 Batch ID: 1238810 1. Sample 309527001 was prepared past the 48hr preservation holding time for Encore soils. The sample was collected on 08/09/12, received on 08/11/12 and logged on 08/13/12. The sample was prepared on 08/13/12.

MW 8-24-12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: August 24, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-32

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one soil sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060211

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The sample was maintained at < 6°C. The sample was collected on August 9, 2012, extracted on August 16, 2012, and was analyzed by August 17, 2012, therefore meeting QC criteria of less than 7 days. between collection and water sample extraction (14 days for soils) and less than 40 days between extraction and analysis.

2. **Instrument Performance: Acceptable.**

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. **Initial and Continuing Calibration: Satisfactory.**

All initial calibration relative standard deviations (RSDs) were within QC limits. All continuing calibration % differences (% D) were within QC limits except one high Aroclor-1016 peak; no action was taken based on this outlier as Aroclor-1016 was not detected in the sample.

4. Error Determination: Not Provided.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Acceptable.

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

6. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. System Monitoring Compounds (SMCs): Acceptable.

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

8. Blank and Matrix Spikes: Acceptable.

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

9. Duplicates: Acceptable.

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

10. Compound Identification: Satisfactory.

All results were dual-column confirmed with differences between the columns less than 25% except Aroclor 1106 in the matrix spike duplicate sample; no action was taken based on the spike outlier.

11. Target Compound Quantitation and Quantitation Limits: Acceptable.

Sample results and quantitation limits were correctly calculated.

12. Laboratory Contact

No laboratory contact was required.

13. Overall Assessment

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 20, 2012

Client Sample ID:	12060211	Project:	ECOL00801
Sample ID:	309527001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	09-AUG-12 13:15		
Receive Date:	11-AUG-12		
Collector:	Client		
Moisture:	16%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	3.96	ug/kg	1	YS1	08/17/12	1238	1238846	1 SHVM
Aroclor-1221	U	ND	3.96	ug/kg	1					
Aroclor-1232	U	ND	3.96	ug/kg	1					
Aroclor-1242	U	ND	3.96	ug/kg	1					
Aroclor-1248	U	ND	3.96	ug/kg	1					
Aroclor-1254	U	ND	3.96	ug/kg	1					
Aroclor-1260	U	ND	3.96	ug/kg	1					
Aroclor-Total	U	ND	3.96	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	08/16/12	1823	1238844

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	3.81 ug/kg	7.92	48.1	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.69 ug/kg	7.92	59.2	(19%-130%)

The Following NCRs have been identified

NCR ID:1111386 Batch ID: 1238810 1. Sample 309527001 was prepared past the 48hr preservation holding time for Encore soils. The sample was collected on 08/09/12, received on 08/11/12 and logged on 08/13/12. The sample was prepared on 08/13/12.

MW 8/24/12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: August 24, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-32

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of one soil sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Volatile organic compound (VOC) analysis (EPA Method 8260) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060211

Data Qualifications:

1. **Sample Holding Times: Satisfactory.**

The sample was maintained and received within the QC limits of < 6°C but was not preserved at the laboratory within 48 hours of collection due to a laboratory error; sample results were qualified as estimated quantities with a low bias (JL or UJL). The sample was collected on August 9, 2012, and was analyzed by August 16, 2012, therefore meeting QC criteria of less than 14 days between collection and analysis for soil and preserved water samples.

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were within the QC limits. All Relative Standard Deviations (RSDs) were within the QC limits.

4. **Continuing Calibration: Acceptable.**

All RRFs were within the QC limits.

5. **Blanks: Acceptable.**

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

6. **System Monitoring Compounds (SMCs): Acceptable.**

All SMC recoveries were within QC limits.

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

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

8. **Duplicate Analysis: Acceptable.**

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

9. **Internal Standards: Acceptable.**

All internal standards were within $\pm$ 30 seconds of the continuing calibration internal standard retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. **Precision and Bias Determination: Not Performed.**

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. **Performance Evaluation Sample Analysis: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

12. **Overall Assessment of Data for Use**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 20, 2012

Client Sample ID:	12060211	Project:	ECOL00801
Sample ID:	309527001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	09-AUG-12 13:15		
Receive Date:	11-AUG-12		
Collector:	Client		
Moisture:	16%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	Uh	ND	0.930	ug/kg	1	CDS1	08/16/12	1334	1238810	1
1,1,2,2-Tetrachloroethane	Uh	ND	0.930	ug/kg	1					
1,1,2-Trichloroethane	Uh	ND	0.930	ug/kg	1					
1,1-Dichloroethane	Uh	ND	0.930	ug/kg	1					
1,1-Dichloroethylene	Uh	ND	0.930	ug/kg	1					
1,2-Dichloroethane	Uh	ND	0.930	ug/kg	1					
1,2-Dichloroethylene (total)	Uh	ND	1.86	ug/kg	1					
1,2-Dichloropropane	Uh	ND	0.930	ug/kg	1					
2-Butanone	Uh	ND	4.65	ug/kg	1					
2-Hexanone	Uh	ND	4.65	ug/kg	1					
4-Methyl-2-pentanone	Uh	ND	4.65	ug/kg	1					
Acetone		24.4	4.65	ug/kg	1					
Benzene	Uh	ND	0.930	ug/kg	1					
Bromodichloromethane	Uh	ND	0.930	ug/kg	1					
Bromoform	Uh	ND	0.930	ug/kg	1					
Bromomethane	Uh	ND	0.930	ug/kg	1					
Carbon disulfide	Uh	ND	4.65	ug/kg	1					
Carbon tetrachloride	Uh	ND	0.930	ug/kg	1					
Chlorobenzene	Uh	ND	0.930	ug/kg	1					
Chloroethane	Uh	ND	0.930	ug/kg	1					
Chloroform	Uh	ND	0.930	ug/kg	1					
Chloromethane	Uh	ND	0.930	ug/kg	1					
Dibromochloromethane	Uh	ND	0.930	ug/kg	1					
Ethylbenzene	Uh	ND	0.930	ug/kg	1					
Methylene chloride	Uh	ND	4.65	ug/kg	1					
Styrene	Uh	ND	0.930	ug/kg	1					
Tetrachloroethylene	Uh	ND	0.930	ug/kg	1					
Toluene	Uh	ND	0.930	ug/kg	1					
Trichloroethylene	Uh	ND	0.930	ug/kg	1					
Vinyl acetate	Uh	ND	4.65	ug/kg	1					
Vinyl chloride	Uh	ND	0.930	ug/kg	1					
Xylenes (total)	Uh	ND	2.79	ug/kg	1					
cis-1,2-Dichloroethylene	Uh	ND	0.930	ug/kg	1					
cis-1,3-Dichloropropylene	Uh	ND	0.930	ug/kg	1					
m,p-Xylenes	Uh	ND	1.86	ug/kg	1					
o-Xylene	Uh	ND	0.930	ug/kg	1					
tert-Butyl methyl ether	Uh	ND	0.930	ug/kg	1					

MW 8-24-12

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 20, 2012

Client Sample ID: 12060211
Sample ID: 309527001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
trans-1,2-Dichloroethylene	Uh	ND	0.930	ug/kg	1					
trans-1,3-Dichloropropylene	Uh	ND	0.930	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	CDS1	08/13/12	1605	1238808

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	47.8 ug/kg	50.0	103	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	45.3 ug/kg	50.0	97.5	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	46.5 ug/kg	50.0	99.9	(80%-120%)

The Following NCRs have been identified

NCR ID:1111386 Batch ID: 1238810 1. Sample 309527001 was prepared past the 48hr preservation holding time for Encore soils. The sample was collected on 08/09/12, received on 08/11/12 and logged on 08/13/12. The sample was prepared on 08/13/12.

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: August 29, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-33

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of one soil sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Analysis for Extended Diesel Range Total Petroleum Hydrocarbons (Ecology Method NWTPH-Dx) was performed by TestAmerica Seattle, Tacoma, Washington. All sample analyses were evaluated following EPA's Stage 4 Data Validation Manual Process (S4VM). The sample was numbered: 12060211

Data Qualifications:

1. **Sample Holding Times: Acceptable.**
The sample was maintained at < 6°C. The sample was collected on August 9, 2012, extracted by August 21, 2012, and analyzed by August 22, 2012, therefore meeting QC criteria of less than 14 days between collection and extraction for soil samples, and less than 40 days between extraction and analysis.

2. **Initial and Continuing Calibrations: Acceptable.**
Calculations were verified as correct. All initial calibration correlation coefficients were ≥ 0.990 and/or all relative percent differences (RPDs) were within the laboratory control limits. All continuing calibration percent differences (%Ds) were within the laboratory control limits.

3. **Error Determination: Not Performed.**
Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

4. **Blanks: Acceptable.**
A method blank was analyzed for each extraction batch for each matrix and analysis system. Diesel-range and motor-oil range TPHs were not detected in any blank.

5. **System Monitoring Compounds (SMC): Acceptable.**
All recoveries of the SMCs were greater than 10% and within QC criteria.

6. **Performance Evaluation Samples: Not Provided.**
Performance evaluation samples were not provided to the laboratory.

7. **Blank Spikes: Acceptable.**
Blank spike results were within QC limits.

8. **Duplicates: Acceptable.**
Spike duplicate results were within QC limits.

9. **Quantitation and Quantitation Limits: Acceptable.**
Sample concentrations were correctly calculated.

10. **Laboratory Contact: Not Required.**
No laboratory contact was required.

11. **Overall Assessment of Data for Use**
Positive sample results less than the reporting limit were qualified as estimated quantities (JQ).

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the Method Detection Limit (MDL) and the Reporting Limit (RL).

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Client: Ecology and Environment, Inc.

Job Number: 580-34423-1

Client Sample ID: **12060211**

Lab Sample ID: 580-34423-1

Client Matrix: Solid

% Moisture: 10.3

Date Sampled: 08/09/2012 1315

Date Received: 08/11/2012 1103

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-118201	Instrument ID:	SEA011
Prep Method:	3550B	Prep Batch:	580-118177	Lab File ID:	DT10608.D
Dilution:	1.0			Initial Weight/Volume:	10.3742 g
Analysis Date:	08/22/2012 1253			Final Weight/Volume:	10 mL
Prep Date:	08/21/2012 1505			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL	
#2 Diesel (C10-C24)		16	J Q	6.1	27	SHVM
Motor Oil (>C24-C36)		19	J Q	9.8	54	SHVM

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	101		50 - 150

MW
8-29-12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: August 30, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-34

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one water and two soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060115 12060116 12060520

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The samples were maintained at < 6°C. The samples were collected on August 15, 2012, extracted on August 17, 2012, and were analyzed by August 21, 2012, therefore meeting QC criteria.

2. **Instrument Performance: Acceptable.**

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. **Initial and Continuing Calibration: Acceptable.**

All initial calibration relative standard deviations (RSDs) were within QC limits. All continuing calibration % differences (% D) were within QC limits.

4. **Error Determination: Not Provided.**

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Acceptable.

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

6. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. System Monitoring Compounds (SMCs): Acceptable.

All recoveries of the SMCs were within the established control limits except when outside limits due to sample dilutions.

8. Matrix and Blank Spikes: Acceptable.

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

9. Duplicates: Satisfactory.

Relative Percent Differences (RPDs) of all spiked analytes were within the required control limits except the Aroclor-1260 RPD; no action was taken as the spike results were diluted and the associated recoveries were within QC limits.

10. Compound Identification: Acceptable.

All results were dual-column confirmed with differences between the columns within QC limits except Aroclor 1016 in the matrix spike sample; no action was taken as the percent recovery was within QC limits.

11. Target Compound Quantitation and Quantitation Limits: Acceptable.

Sample results and quantitation limits were correctly calculated.

12. Laboratory Contact

No laboratory contact was required.

13. Overall Assessment

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 21, 2012

Client Sample ID:	12060115	Project:	ECOL00801
Sample ID:	309719001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	15-AUG-12 08:15		
Receive Date:	16-AUG-12		
Collector:	Client		
Moisture:	12.1%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	37.9	ug/kg	10	JXM	08/21/12	1206	1239194	1
Aroclor-1221	U	ND	37.9	ug/kg	10					
Aroclor-1232	U	ND	37.9	ug/kg	10					
Aroclor-1242	U	ND	37.9	ug/kg	10					
Aroclor-1248	U	ND	37.9	ug/kg	10					
Aroclor-1254	U	ND	37.9	ug/kg	10					
Aroclor-1260	U	ND	37.9	ug/kg	10					
Aroclor-Total	U	ND	37.9	ug/kg	10					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	LOG1	08/17/12	0915	1239193

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	1.82 ug/kg	7.57	24.0*	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	2.95 ug/kg	7.57	38.9	(19%-130%)

The Following NCRs have been identified

NCR ID:1112623 Batch ID: 1239194 1. The RPD between the MS and MSD did not meet the acceptance criteria.

2. Samples 309719001, 309719002, 1202721870(MS) and 1202721871(MSD) did not meet surrogate recovery acceptance criteria.

JAW 8-30-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 21, 2012

Client Sample ID:	12060116	Project:	ECOL00801
Sample ID:	309719002	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	15-AUG-12 09:25		
Receive Date:	16-AUG-12		
Collector:	Client		
Moisture:	13.1%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	38.3	ug/kg	10	JXM	08/21/12	1249	1239194	1
Aroclor-1221	U	ND	38.3	ug/kg	10					
Aroclor-1232	U	ND	38.3	ug/kg	10					
Aroclor-1242	U	ND	38.3	ug/kg	10					
Aroclor-1248	U	ND	38.3	ug/kg	10					
Aroclor-1254	U	ND	38.3	ug/kg	10					
Aroclor-1260	U	ND	38.3	ug/kg	10					
Aroclor-Total	U	ND	38.3	ug/kg	10					

S2VM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	LOG1	08/17/12	0915	1239193

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	2.17 ug/kg	7.66	28.3	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.71 ug/kg	7.66	61.6	(19%-130%)

The Following NCRs have been identified

NCR ID:1112623 Batch ID: 1239194 1. The RPD between the MS and MSD did not meet the acceptance criteria.

2. Samples 309719001, 309719002, 1202721870(MS) and 1202721871(MSD) did not meet surrogate recovery acceptance criteria.

MW 8-30-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 20, 2012

Client Sample ID:	12060520	Project:	ECOL00801
Sample ID:	309720001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	15-AUG-12 09:00		
Receive Date:	16-AUG-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3535A/8082A PCB Liquids "As Received"										
Aroclor-1016	U	ND	0.100	ug/L	1	YS1	08/17/12	1631	1239026	1
Aroclor-1221	U	ND	0.100	ug/L	1					
Aroclor-1232	U	ND	0.100	ug/L	1					
Aroclor-1242	U	ND	0.100	ug/L	1					
Aroclor-1248	U	ND	0.100	ug/L	1					
Aroclor-1254	U	ND	0.100	ug/L	1					
Aroclor-1260	U	ND	0.100	ug/L	1					
Aroclor-Total	U	ND	0.100	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	SW3535A PCB SPE Extraction	SXC2	08/17/12	0830	1239025

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3535A/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3535A/8082A PCB Liquids "As Received"	0.078 ug/L	0.200	39.0	(34%-120%)
Decachlorobiphenyl	SW846 3535A/8082A PCB Liquids "As Received"	0.0834 ug/L	0.200	41.7	(33%-120%)

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

MEMORANDUM

DATE: August 30, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington

SUBJ: **Inorganic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-34

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Target Analyte List (TAL) metals analyses (EPA Method 6020) were performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060520

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

All liquid samples were preserved to a pH < 2. The sample was maintained at < 6°C. The sample was collected on August 15, 2012, and was analyzed by August 23, 2012, therefore meeting QC criteria of less than 6 months between collection, extraction, and analysis.

2. **Initial and Continuing Calibration: Acceptable.**

A minimum of one calibration standard and a blank were analyzed at the beginning of the ICP analysis sequence and after every 10 samples. No results were greater than 110% of the highest calibration standard. All ICP recoveries were within the QC limits of 90% to 110%.

3. **Blanks: Acceptable, Satisfactory.**

A preparation blank was analyzed for each 20 samples or per matrix per concentration level. Blanks were analyzed after each Initial or Continuing Calibration Verification. There were no detections in any blanks except zinc (4.35 ug/L) in the method blank; no action was taken as zinc was not detected in the sample.

4. ICP Interference Check Sample: Acceptable.

An Interference Check Sample (ICS) was analyzed at the beginning of each sequence. All ICS (solution AB) results were within QC limits of 80% - 120% recovery.

5. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

6. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. ICP Serial Dilution: Acceptable.

A serial dilution analysis was performed per matrix per concentration or per sample delivery group, whichever was more frequent. All serial dilution results were within QC limits.

8. Matrix Spike Analysis: Acceptable.

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

9. Duplicate Analysis: Acceptable.

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

10. Laboratory Control Sample Analysis: Acceptable.

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

11. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 27, 2012

Client Sample ID:	12060520	Project:	ECOL00801
Sample ID:	309720001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	15-AUG-12 09:00		
Receive Date:	16-AUG-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS										
SW846 3005A/6020A Liquid "As Received"										
Arsenic	U	ND	5.00	ug/L	1	RMJ	08/23/12	1550	1238912	1
Cadmium	U	ND	1.00	ug/L	1					
Chromium	U	ND	10.0	ug/L	1					
Copper	U	ND	1.00	ug/L	1					
Lead	U	ND	2.00	ug/L	1					
Thallium	U	ND	2.00	ug/L	1					
Zinc	U	ND	10.0	ug/L	1					

MU

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	BXA1	08/17/12	1750	1238911

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6020A	

8-30-12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: August 30, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-34

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one water and two soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060115 12060116 12060520

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on August 15, 2012, were extracted on August xx, 2012, and were analyzed on August xx, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were within the QC limits. All Relative Standard Deviations (RSDs) were within the QC limits.

4. **Continuing Calibration: Satisfactory.**

All RRFs were within the QC limits. All % differences were within the QC limits except bis(2-chloroisopropyl)ether with a decreasing response factor in the 8-22-12 (14:08) continuing calibration; associated sample quantitation limits were qualified as estimated quantities with a low bias (UJL).

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits except when diluted due to high analyte concentrations.

7. Matrix Spike (MS)/MS Duplicate (MSD)/Blank Spike (BS) Analysis: Acceptable.

All spike analyses were performed per SDG or per matrix per concentration level, whichever was more frequent. All recoveries were within the QC limits except when diluted due to high analyte concentrations in the original sample.

8. Duplicate Analysis: Acceptable.

Spike duplicate analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. All spike duplicate results were within QC limits except when not applicable due to dilutions.

9. Internal Standards: Acceptable.

All internal standards (IS) were within ± 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 27, 2012

Client Sample ID:	12060115	Project:	ECOL00801
Sample ID:	309719001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	15-AUG-12 08:15		
Receive Date:	16-AUG-12		
Collector:	Client		
Moisture:	12.1%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	37800	ug/kg	100	JMB3	08/22/12	1805	1240070	1
1,2,4,5-Tetrachlorobenzene	U	ND	37800	ug/kg	100					
1-Methylnaphthalene		17300	3780	ug/kg	100					
2,3,4,6-Tetrachlorophenol	U	ND	37800	ug/kg	100					
2,4,5-Trichlorophenol	U	ND	37800	ug/kg	100					
2,4,6-Trichlorophenol	U	ND	37800	ug/kg	100					
2,4-Dichlorophenol	U	ND	37800	ug/kg	100					
2,4-Dimethylphenol	U	ND	37800	ug/kg	100					
2,4-Dinitrophenol	U	ND	75600	ug/kg	100					
2,4-Dinitrotoluene	U	ND	37800	ug/kg	100					
2,6-Dinitrotoluene	U	ND	37800	ug/kg	100					
2-Chloronaphthalene	U	ND	3780	ug/kg	100					
2-Chlorophenol	U	ND	37800	ug/kg	100					
2-Methyl-4,6-dinitrophenol	U	ND	37800	ug/kg	100					
2-Methylnaphthalene		11100	3780	ug/kg	100					
2-Nitrophenol	U	ND	37800	ug/kg	100					
3,3'-Dichlorobenzidine	U	ND	37800	ug/kg	100					
4-Bromophenylphenylether	U	ND	37800	ug/kg	100					
4-Chloro-3-methylphenol	U	ND	37800	ug/kg	100					
4-Chloroaniline	U	ND	37800	ug/kg	100					
4-Chlorophenylphenylether	U	ND	37800	ug/kg	100					
4-Nitrophenol	U	ND	37800	ug/kg	100					
Acenaphthene	U	ND	3780	ug/kg	100					
Acenaphthylene	U	ND	3780	ug/kg	100					
Acetophenone	U	ND	37800	ug/kg	100					
Anthracene	U	ND	3780	ug/kg	100					
Atrazine	U	ND	37800	ug/kg	100					
Benzaldehyde	U	ND	37800	ug/kg	100					
Benzo(a)anthracene	U	ND	3780	ug/kg	100					
Benzo(a)pyrene	U	ND	3780	ug/kg	100					
Benzo(b)fluoranthene	U	ND	3780	ug/kg	100					
Benzo(ghi)perylene	U	ND	3780	ug/kg	100					
Benzo(k)fluoranthene	U	ND	3780	ug/kg	100					
Butylbenzylphthalate	U	ND	37800	ug/kg	100					
Caprolactam	U	ND	37800	ug/kg	100					
Carbazole	U	ND	3780	ug/kg	100					
Chrysene	U	ND	3780	ug/kg	100					

S2VM

JMW 8-30-12

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 27, 2012

Client Sample ID: 12060115
Sample ID: 309719001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	37800 U	ug/kg	100					
Di-n-octylphthalate	U	ND	37800	ug/kg	100					
Dibenzo(a,h)anthracene	U	ND	3780	ug/kg	100					
Dibenzofuran	U	ND	37800	ug/kg	100					
Diethylphthalate	U	ND	37800	ug/kg	100					
Dimethylphthalate	U	ND	37800	ug/kg	100					
Diphenylamine	U	ND	37800	ug/kg	100					
Fluoranthene	U	ND	3780	ug/kg	100					
Fluorene		4160	3780	ug/kg	100					
Hexachlorobenzene	U	ND	37800 U	ug/kg	100					
Hexachlorobutadiene	U	ND	37800	ug/kg	100					
Hexachlorocyclopentadiene	U	ND	37800	ug/kg	100					
Hexachloroethane	U	ND	37800	ug/kg	100					
Indeno(1,2,3-cd)pyrene	U	ND	3780	ug/kg	100					
Isophorone	U	ND	37800	ug/kg	100					
N-Nitrosodipropylamine	U	ND	37800	ug/kg	100					
Naphthalene	U	ND	3780	ug/kg	100					
Nitrobenzene	U	ND	37800	ug/kg	100					
Pentachlorophenol	U	ND	37800	ug/kg	100					
Phenanthrene		10100	3780	ug/kg	100					
Phenol	U	ND	37800 U	ug/kg	100					
Pyrene		4040	3780	ug/kg	100					
bis(2-Chloroethoxy)methane	U	ND	37800 U	ug/kg	100					
bis(2-Chloroethyl) ether	U	ND	37800	ug/kg	100					
bis(2-Chloroisopropyl)ether	U	ND	37800 JL	ug/kg	100					
bis(2-Ethylhexyl)phthalate	U	ND	37800	ug/kg	100					
m,p-Cresols	U	ND	37800	ug/kg	100					
m-Nitroaniline	U	ND	37800	ug/kg	100					
o-Cresol	U	ND	37800	ug/kg	100					
o-Nitroaniline	U	ND	37800	ug/kg	100					
p-Nitroaniline	U	ND	37800	ug/kg	100					

S2VM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	LOGI	08/22/12	0930	1240069

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

MW 8-30-12

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 27, 2012

Client Sample ID: 12060115
Sample ID: 309719001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1210 ug/kg	1890	64.0	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	832 ug/kg	1890	44.0	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1590 ug/kg	1890	84.0	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1290 ug/kg	3780	34.0	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	945 ug/kg	3780	25.0*	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	907 ug/kg	3780	24.0*	(26%-112%)

The Following NCRs have been identified

NCR ID:1112623 Batch ID: 1239194

1. The RPD between the MS and MSD did not meet the acceptance criteria.

2. Samples 309719001, 309719002, 1202721870(MS) and 1202721871(MSD) did not meet surrogate recovery acceptance criteria.

NCR ID:1114035 Batch ID: 1240070

1. 309719001(ECOL), 309937001(ECOL) and 1202724112(MS) failed surrogate recovery limits. Please see the QC Summary/Spike recovery Report for specific failures.

2. 1202724111(LCS) failed spike recovery limits for 2,4-Dinitrophenol at 33.6% (SPC limits: 34.00%-125.00%).

3. 1202724112(MS) and 1202724113(MSD) failed spike recovery limits. Please see the QC Summary/Spike recovery Report for specific failures.

4. Carbazole and Benzo(ghi)perylene failed RPD acceptance criteria.

MW 8-30-12

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 27, 2012

Client Sample ID:	12060116	Project:	ECOL00801
Sample ID:	309719002	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	15-AUG-12 09:25		
Receive Date:	16-AUG-12		
Collector:	Client		
Moisture:	13.1%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	38100	ug/kg	100	JMB3	08/22/12	1831	1240070	1
1,2,4,5-Tetrachlorobenzene	U	ND	38100	ug/kg	100					
1-Methylnaphthalene		13200	3810	ug/kg	100					
2,3,4,6-Tetrachlorophenol	U	ND	38100	ug/kg	100					
2,4,5-Trichlorophenol	U	ND	38100	ug/kg	100					
2,4,6-Trichlorophenol	U	ND	38100	ug/kg	100					
2,4-Dichlorophenol	U	ND	38100	ug/kg	100					
2,4-Dimethylphenol	U	ND	38100	ug/kg	100					
2,4-Dinitrophenol	U	ND	76300	ug/kg	100					
2,4-Dinitrotoluene	U	ND	38100	ug/kg	100					
2,6-Dinitrotoluene	U	ND	38100	ug/kg	100					
2-Chloronaphthalene	U	ND	3810	ug/kg	100					
2-Chlorophenol	U	ND	38100	ug/kg	100					
2-Methyl-4,6-dinitrophenol	U	ND	38100	ug/kg	100					
2-Methylnaphthalene	U	ND	3810	ug/kg	100					
2-Nitrophenol	U	ND	38100	ug/kg	100					
3,3'-Dichlorobenzidine	U	ND	38100	ug/kg	100					
4-Bromophenylphenylether	U	ND	38100	ug/kg	100					
4-Chloro-3-methylphenol	U	ND	38100	ug/kg	100					
4-Chloroaniline	U	ND	38100	ug/kg	100					
4-Chlorophenylphenylether	U	ND	38100	ug/kg	100					
4-Nitrophenol	U	ND	38100	ug/kg	100					
Acenaphthene	U	ND	3810	ug/kg	100					
Acenaphthylene	U	ND	3810	ug/kg	100					
Acetophenone	U	ND	38100	ug/kg	100					
Anthracene	U	ND	3810	ug/kg	100					
Atrazine	U	ND	38100	ug/kg	100					
Benzaldehyde	U	ND	38100	ug/kg	100					
Benzo(a)anthracene	U	ND	3810	ug/kg	100					
Benzo(a)pyrene	U	ND	3810	ug/kg	100					
Benzo(b)fluoranthene	U	ND	3810	ug/kg	100					
Benzo(ghi)perylene	U	ND	3810	ug/kg	100					
Benzo(k)fluoranthene	U	ND	3810	ug/kg	100					
Butylbenzylphthalate	U	ND	38100	ug/kg	100					
Caprolactam	U	ND	38100	ug/kg	100					
Carbazole	U	ND	3810	ug/kg	100					
Chrysene	U	ND	3810	ug/kg	100					

S2 VM

JMW 8-30-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 27, 2012

Client Sample ID: 12060116
Sample ID: 309719002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	38100	ug/kg	100					
Di-n-octylphthalate	U	ND	38100	ug/kg	100					
Dibenzo(a,h)anthracene	U	ND	3810	ug/kg	100					
Dibenzofuran	U	ND	38100	ug/kg	100					
Diethylphthalate	U	ND	38100	ug/kg	100					
Dimethylphthalate	U	ND	38100	ug/kg	100					
Diphenylamine	U	ND	38100	ug/kg	100					
Fluoranthene	U	ND	3810	ug/kg	100					
Fluorene		4500	3810	ug/kg	100					
Hexachlorobenzene	U	ND	38100	ug/kg	100					
Hexachlorobutadiene	U	ND	38100	ug/kg	100					
Hexachlorocyclopentadiene	U	ND	38100	ug/kg	100					
Hexachloroethane	U	ND	38100	ug/kg	100					
Indeno(1,2,3-cd)pyrene	U	ND	3810	ug/kg	100					
Isophorone	U	ND	38100	ug/kg	100					
N-Nitrosodipropylamine	U	ND	38100	ug/kg	100					
Naphthalene	U	ND	3810	ug/kg	100					
Nitrobenzene	U	ND	38100	ug/kg	100					
Pentachlorophenol	U	ND	38100	ug/kg	100					
Phenanthrene		9490	3810	ug/kg	100					
Phenol	U	ND	38100	ug/kg	100					
Pyrene	U	ND	3810	ug/kg	100					
bis(2-Chloroethoxy)methane	U	ND	38100	ug/kg	100					
bis(2-Chloroethyl) ether	U	ND	38100	ug/kg	100					
bis(2-Chloroisopropyl)ether	U	ND	38100	ug/kg	100					
bis(2-Ethylhexyl)phthalate	U	ND	38100	ug/kg	100					
m,p-Cresols	U	ND	38100	ug/kg	100					
m-Nitroaniline	U	ND	38100	ug/kg	100					
o-Cresol	U	ND	38100	ug/kg	100					
o-Nitroaniline	U	ND	38100	ug/kg	100					
p-Nitroaniline	U	ND	38100	ug/kg	100					

JL

S2VM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	LOG1	08/22/12	0930	1240069

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

MW 8-30-12

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 27, 2012

Client Sample ID: 12060116
Sample ID: 309719002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1720 ug/kg	1910	90.0	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	877 ug/kg	1910	46.0	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1910 ug/kg	1910	100	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1370 ug/kg	3810	36.0	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1330 ug/kg	3810	35.0	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1410 ug/kg	3810	37.0	(26%-112%)

The Following NCRs have been identified

NCR ID:1112623 Batch ID: 1239194

1. The RPD between the MS and MSD did not meet the acceptance criteria.

2. Samples 309719001, 309719002, 1202721870(MS) and 1202721871(MSD) did not meet surrogate recovery acceptance criteria.

NCR ID:1114035 Batch ID: 1240070

1. 309719001(ECOL), 309937001(ECOL) and 1202724112(MS) failed surrogate recovery limits. Please see the QC Summary/Spike recovery Report for specific failures.

2. 1202724111(LCS) failed spike recovery limits for 2,4-Dinitrophenol at 33.6% (SPC limits: 34.00%-125.00%).

3. 1202724112(MS) and 1202724113(MSD) failed spike recovery limits. Please see the QC Summary/Spike recovery Report for specific failures.

4. Carbazole and Benzo(ghi)perylene failed RPD acceptance criteria.

MW
8-30-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 28, 2012

Client Sample ID:	12060520	Project:	ECOL00801
Sample ID:	309720001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	15-AUG-12 09:00		
Receive Date:	16-AUG-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D Semivolatile Analysis by Separatory Funnel "As Received"										
Benzo(a)anthracene	U	ND	1.00	ug/L	1	JLD1	08/23/12	1442	1240291	1
Benzo(a)pyrene	U	ND	1.00	ug/L	1					
Benzo(b)fluoranthene	U	ND	1.00	ug/L	1					
Chrysene	U	ND	1.00	ug/L	1					
Diphenylamine	U	ND	10.0	ug/L	1					
bis(2-Ethylhexyl)phthalate	U	ND	10.0	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	SW846 3510C Prep Semivolatiles 8270D	TXA2	08/22/12	1602	1240290

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2,4,6-Tribromophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	44.9 ug/L	100	44.9	(26%-131%)
2-Fluorophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	48.0 ug/L	100	48.0	(15%-78%)
Phenol-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	25.4 ug/L	100	25.4	(10%-72%)
2-Fluorobiphenyl	8270D Semivolatile Analysis by Separatory Funnel "As Received"	31.6 ug/L	50.0	63.1	(29%-102%)
Nitrobenzene-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	38.9 ug/L	50.0	77.8	(36%-125%)
p-Terphenyl-d14	8270D Semivolatile Analysis by Separatory Funnel "As Received"	47.2 ug/L	50.0	94.3	(31%-133%)

MW 8-30-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700, Seattle, WA 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: August 31, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-35

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of one soil sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060117

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The sample was maintained and received within the QC limits of < 6°C. The sample was collected on August 18, 2012, was extracted on August 22, 2012, and was analyzed on August 22, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were within the QC limits. All Relative Standard Deviations (RSDs) were within the QC limits.

4. **Continuing Calibration: Satisfactory.**

All RRFs were within the QC limits. All % differences were within the QC limits except bis(2-chloroisopropyl)ether with a decreasing response factor in the August 22 (1408), 2012 continuing calibration; the associated sample quantitation limit was qualified as estimated quantity with a low bias (UJL).

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits except when diluted due to high analyte concentrations; no actions were taken based on these outliers.

7. Matrix Spike (MS)/MS Duplicate (MSD)/Blank Spike (BS) Analysis: Acceptable.

All spike analyses were performed per SDG or per matrix per concentration level, whichever was more frequent. All recoveries were within the QC limits except when diluted due to high sample concentrations; no actions were taken based on these outliers.

8. Duplicate Analysis: Acceptable.

Spike duplicate analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. All spike duplicate results were within QC limits except when diluted due to high analyte concentrations; no actions were taken based on these outliers.

9. Internal Standards: Acceptable.

All internal standards (IS) were within ± 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 27, 2012

Client Sample ID:	12060117	Project:	ECOL00801
Sample ID:	309937001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	18-AUG-12 17:20		
Receive Date:	21-AUG-12		
Collector:	Client		
Moisture:	11.9%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	37800 U	ug/kg	100	JMB3	08/22/12	1948	1240070	1 SAVM
1,2,4,5-Tetrachlorobenzene	U	ND	37800 U	ug/kg	100					
1-Methylnaphthalene		11300	3780	ug/kg	100					
2,3,4,6-Tetrachlorophenol	U	ND	37800 U	ug/kg	100					
2,4,5-Trichlorophenol	U	ND	37800	ug/kg	100					
2,4,6-Trichlorophenol	U	ND	37800	ug/kg	100					
2,4-Dichlorophenol	U	ND	37800	ug/kg	100					
2,4-Dimethylphenol	U	ND	37800	ug/kg	100					
2,4-Dinitrophenol	U	ND	75500	ug/kg	100					
2,4-Dinitrotoluene	U	ND	37800	ug/kg	100					
2,6-Dinitrotoluene	U	ND	37800	ug/kg	100					
2-Chloronaphthalene	U	ND	3780	ug/kg	100					
2-Chlorophenol	U	ND	37800	ug/kg	100					
2-Methyl-4,6-dinitrophenol	U	ND	37800	ug/kg	100					
2-Methylnaphthalene		11600	3780	ug/kg	100					
2-Nitrophenol	U	ND	37800 U	ug/kg	100					
3,3'-Dichlorobenzidine	U	ND	37800	ug/kg	100					
4-Bromophenylphenylether	U	ND	37800	ug/kg	100					
4-Chloro-3-methylphenol	U	ND	37800	ug/kg	100					
4-Chloroaniline	U	ND	37800	ug/kg	100					
4-Chlorophenylphenylether	U	ND	37800	ug/kg	100					
4-Nitrophenol	U	ND	37800	ug/kg	100					
Acenaphthene	U	ND	3780	ug/kg	100					
Acenaphthylene	U	ND	3780	ug/kg	100					
Acetophenone	U	ND	37800	ug/kg	100					
Anthracene	U	ND	3780	ug/kg	100					
Atrazine	U	ND	37800	ug/kg	100					
Benzaldehyde	U	ND	37800	ug/kg	100					
Benzo(a)anthracene	U	ND	3780	ug/kg	100					
Benzo(a)pyrene	U	ND	3780	ug/kg	100					
Benzo(b)fluoranthene	U	ND	3780	ug/kg	100					
Benzo(ghi)perylene	U	ND	3780	ug/kg	100					
Benzo(k)fluoranthene	U	ND	3780	ug/kg	100					
Butylbenzylphthalate	U	ND	37800	ug/kg	100					
Caprolactam	U	ND	37800	ug/kg	100					
Carbazole	U	ND	3780	ug/kg	100					
Chrysene	U	ND	3780	ug/kg	100					

8-31-12

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Certificate of Analysis

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Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 27, 2012

Client Sample ID: 12060117
Sample ID: 309937001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	37800	ug/kg	100					
Di-n-octylphthalate	U	ND	37800	ug/kg	100					
Dibenzo(a,h)anthracene	U	ND	3780	ug/kg	100					
Dibenzofuran	U	ND	37800	ug/kg	100					
Diethylphthalate	U	ND	37800	ug/kg	100					
Dimethylphthalate	U	ND	37800	ug/kg	100					
Diphenylamine	U	ND	37800	ug/kg	100					
Fluoranthene	U	ND	3780	ug/kg	100					
Fluorene	U	ND	3780	ug/kg	100					
Hexachlorobenzene	U	ND	37800	ug/kg	100					
Hexachlorobutadiene	U	ND	37800	ug/kg	100					
Hexachlorocyclopentadiene	U	ND	37800	ug/kg	100					
Hexachloroethane	U	ND	37800	ug/kg	100					
Indeno(1,2,3-cd)pyrene	U	ND	3780	ug/kg	100					
Isophorone	U	ND	37800	ug/kg	100					
N-Nitrosodipropylamine	U	ND	37800	ug/kg	100					
Naphthalene	U	ND	3780	ug/kg	100					
Nitrobenzene	U	ND	37800	ug/kg	100					
Pentachlorophenol	U	ND MW	37800	ug/kg	100					
Phenanthrene		6120	3780	ug/kg	100					
Phenol	U	ND	37800	ug/kg	100					
Pyrene	U	ND	3780	ug/kg	100					
bis(2-Chloroethoxy)methane	U	ND	37800	ug/kg	100					
bis(2-Chloroethyl) ether	U	ND	37800	ug/kg	100					
bis(2-Chloroisopropyl)ether	U	ND	37800	ug/kg	100					
bis(2-Ethylhexyl)phthalate	U	ND	37800	ug/kg	100					
m,p-Cresols	U	ND	37800	ug/kg	100					
m-Nitroaniline	U	ND	37800	ug/kg	100					
o-Cresol	U	ND	37800	ug/kg	100					
o-Nitroaniline	U	ND	37800	ug/kg	100					
p-Nitroaniline	U	ND MW	37800	ug/kg	100					

U U JL 54VM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	LOG1	08/22/12	0930	1240069

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

MW 8-31-12

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 27, 2012

Client Sample ID: 12060117
Sample ID: 309937001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1320 ug/kg	1890	70.0	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	793 ug/kg	1890	42.0	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1470 ug/kg	1890	78.0	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	831 ug/kg	3780	22.0*	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1470 ug/kg	3780	39.0	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1360 ug/kg	3780	36.0	(26%-112%)

The Following NCRs have been identified

NCR ID:1114035 Batch ID: 1240070

1. 309719001(ECOL), 309937001(ECOL) and 1202724112(MS) failed surrogate recovery limits. Please see the QC Summary/Spike recovery Report for specific failures.

2. 1202724111(LCS) failed spike recovery limits for 2,4-Dinitrophenol at 33.6% (SPC limits: 34.00%-125.00%).

3. 1202724112(MS) and 1202724113(MSD) failed spike recovery limits. Please see the QC Summary/Spike recovery Report for specific failures.

4. Carbazole and Benzo(ghi)perylene failed RPD acceptance criteria.

MW
8/27/12

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

MEMORANDUM

DATE: August 31, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-35

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of one soil sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060117

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The sample was maintained at < 6°C. The sample was collected on August 18, 2012, extracted on August 29, 2012, and was analyzed by August 30, 2012, therefore meeting QC criteria of less than 7 days between collection and water sample extraction (14 days for soils) and less than 40 days between extraction and analysis.

2. **Instrument Performance: Acceptable.**

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. **Initial and Continuing Calibration: Satisfactory.**

All initial calibration relative standard deviations (RSDs) were within QC limits. All continuing calibration % differences (% D) were within QC limits except the surrogate decachlorobiphenyl (no action was taken based on this outlier) and two Aroclor 1260 peaks with low recoveries; the associated Aroclor 1260

sample quantitation limit was qualified as an estimated quantity with a low bias (UJL).

4. Error Determination: Not Provided.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Acceptable.

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

6. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. System Monitoring Compounds (SMCs): Acceptable.

All recoveries of the SMCs were within the established control limits except when diluted due to matrix interference; no actions were taken based on these outliers.

8. Blank and Matrix Spikes: Acceptable.

Recoveries of all spiked analytes were within the appropriate control limits except when diluted due to matrix interference; no actions were taken based on these outliers.

9. Duplicates: Acceptable.

Relative Percent Differences (RPDs) of all spiked analytes were within the required control limits except when diluted due to matrix interference; no actions were taken based on these outliers.

10. Compound Identification: Acceptable.

All results were dual-column confirmed with differences between the columns within QC limits except the Aroclor 1260 matrix spike and matrix spike duplicate results; no actions were taken based on these outliers as the spike results were affected by dilutions due to matrix interferences.

11. Target Compound Quantitation and Quantitation Limits: Acceptable.

Sample results and quantitation limits were correctly calculated.

12. Laboratory Contact

No laboratory contact was required.

13. Overall Assessment

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 31, 2012

Client Sample ID:	12060117	Project:	ECOL00801
Sample ID:	309937001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	18-AUG-12 17:20		
Receive Date:	21-AUG-12		
Collector:	Client		
Moisture:	11.9%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	48.6 U	ug/kg	10	YS1	08/30/12	0843	1241522	1
Aroclor-1221	U	ND	48.6	ug/kg	10					
Aroclor-1232	U	ND	48.6	ug/kg	10					
Aroclor-1242	U	ND	48.6	ug/kg	10					
Aroclor-1248	U	ND	48.6	ug/kg	10					
Aroclor-1254	U	ND	48.6	ug/kg	10					
Aroclor-1260	U	ND	48.6 JL	ug/kg	10					
Aroclor-Total	U	ND MW	48.6	ug/kg	10					

54VM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXS3	08/29/12	1000	1241521

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	8.58 ug/kg	7.47	115*	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	6.88 ug/kg	7.47	92.1	(19%-130%)

The Following NCRs have been identified

NCR ID:1114035 Batch ID: 1240070 1. Sample 309719001, 309937001 and the MS(1202724112) recovered surrogates outside of the acceptance limits. Please see the QC Summary Report for specific failures.

2. The MS(1202724112) and MSD(1202724113) recovered spike analytes outside of the acceptance limits. Please see the QC Summary Report for specific failures.

NCR ID:1115730 Batch ID: 1241522 1. 1202728635MS and 1202728636MSD did not meet the spike recovery acceptance criteria.

MW
8-3-12

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MEMORANDUM

DATE: September 6, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Inorganic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-36

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Target Analyte List (TAL) metals analyses (EPA Method 6020) were performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060521

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

All liquid samples were preserved to a pH < 2. The sample was maintained at < 6°C. The sample was collected on August 22, 2012, and was analyzed by September 5, 2012, therefore meeting QC criteria of less than 6 months between collection, extraction, and analysis.

2. **Initial and Continuing Calibration: Acceptable.**

A minimum of one calibration standard and a blank were analyzed at the beginning of the ICP analysis sequence and after every 10 samples. No results were greater than 110% of the highest calibration standard. All ICP recoveries were within the QC limits of 90% to 110%.

3. **Blanks: Acceptable.**

A preparation blank was analyzed for each 20 samples or per matrix per concentration level. Blanks were analyzed after each Initial or Continuing Calibration Verification. There were no detections in any blanks except copper (0.405 ug/L) in the method blank. No actions were required as copper was not detected in the sample.

recycled paper

4. **ICP Interference Check Sample: Acceptable.**

An Interference Check Sample (ICS) was analyzed at the beginning of each sequence. All ICS (solution AB) results were within QC limits of 80% - 120% recovery.

5. **Precision and Bias Determination: Not Performed.**

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

6. **Performance Evaluation Sample Analysis: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

7. **ICP Serial Dilution: Acceptable.**

A serial dilution analysis was performed per matrix per concentration or per sample delivery group, whichever was more frequent. All serial dilution results were within QC limits.

8. **Matrix Spike Analysis: Acceptable.**

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

9. **Duplicate Analysis: Acceptable.**

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

10. **Laboratory Control Sample Analysis: Acceptable.**

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

11. **Overall Assessment of Data for Use**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 5, 2012

Client Sample ID:	12060521	Project:	ECOL00801
Sample ID:	310111001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	22-AUG-12 09:50		
Receive Date:	23-AUG-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS										
SW846 3005A/6020A Liquid "As Received"										
Arsenic	U	ND	5.00	ug/L	1	BAJ	09/05/12	0637	1240743	1
Cadmium	U	ND	1.00	ug/L	1					
Chromium	U	ND	10.0	ug/L	1					
Copper	U	ND	1.00	ug/L	1					
Lead	U	ND	2.00	ug/L	1					
Thallium	U	ND	2.00	ug/L	1					
Zinc		12.4	10.0	ug/L	1					

SHVM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	LYH1	08/24/12	1000	1240742

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6020A	

MW 9-6-12

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Global Environmental Specialists

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

MEMORANDUM

DATE: September 6, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-36

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one soil and one water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060212 12060521

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The samples were maintained at < 6°C. The samples were collected on August 22, 2012, extracted on August 29 or 30, 2012, and were analyzed by August 31, 2012.

2. **Instrument Performance: Acceptable.**

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. **Initial and Continuing Calibration: Satisfactory.**

All initial calibration relative standard deviations (RSDs) were within QC limits. All continuing calibration % differences (% D) were within QC limits except some low surrogate recoveries (no actions were taken based on surrogate calibration outliers) and two Aroclor 1260 peaks with low recoveries in the August 30, 2012 (1016) calibration (associated sample quantitation limits were qualified as estimated quantities with a low bias (UJL).

4. **Error Determination: Not Provided.**

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. **Blanks: Acceptable.**

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

6. **Performance Evaluation Samples: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

7. **System Monitoring Compounds (SMCs): Acceptable.**

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

8. **Blank and Matrix Spikes: Acceptable.**

Recoveries of all spiked analytes were within the appropriate control limits except when outside QC limits due to dilutions.

9. **Duplicates: Acceptable.**

Relative Percent Differences (RPDs) of all spiked analytes were within the required control limits except when outside QC limits due to dilutions.

10. **Compound Identification: Acceptable.**

All results were dual-column confirmed with differences between the columns less than 25%.

11. **Target Compound Quantitation and Quantitation Limits: Acceptable.**

Sample results and quantitation limits were correctly calculated.

12. **Laboratory Contact**

No laboratory contact was required.

13. **Overall Assessment**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 31, 2012

Client Sample ID:	12060212	Project:	ECOL00801
Sample ID:	310105001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	22-AUG-12 09:30		
Receive Date:	23-AUG-12		
Collector:	Client		
Moisture:	16.9%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	3.94	ug/kg	1	YS1	08/30/12	0923	1241522	1
Aroclor-1221	U	ND	3.94	ug/kg	1					
Aroclor-1232	U	ND	3.94	ug/kg	1					
Aroclor-1242	U	ND	3.94	ug/kg	1					
Aroclor-1248	U	ND	3.94	ug/kg	1					
Aroclor-1254	U	ND	3.94	ug/kg	1					
Aroclor-1260	U	ND	3.94	ug/kg	1					
Aroclor-Total	U	ND	3.94	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXS3	08/29/12	1000	1241521

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.13 ug/kg	7.89	52.4	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	5.13 ug/kg	7.89	65.0	(19%-130%)

MW 9-6-12

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 5, 2012

Client Sample ID: 12060521
Sample ID: 310111001
Matrix: Water
Collect Date: 22-AUG-12 09:50
Receive Date: 23-AUG-12
Collector: Client

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3535A/8082A PCB Liquids "As Received"										
Aroclor-1016	U	ND	0.100	ug/L	1	JXM	08/31/12	1212	1242184	1
Aroclor-1221	U	ND	0.100	ug/L	1					
Aroclor-1232	U	ND	0.100	ug/L	1					
Aroclor-1242	U	ND	0.100	ug/L	1					
Aroclor-1248	U	ND	0.100	ug/L	1					
Aroclor-1254	U	ND	0.100	ug/L	1					
Aroclor-1260	U	ND	0.100	ug/L	1					
Aroclor-Total	U	ND	0.100	ug/L	1					

SFVM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	SW3535A PCB SPE Extraction	SXC2	08/30/12	0705	1242183

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3535A/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3535A/8082A PCB Liquids "As Received"	0.149 ug/L	0.200	74.4	(34%-120%)
Decachlorobiphenyl	SW846 3535A/8082A PCB Liquids "As Received"	0.176 ug/L	0.200	87.8	(33%-120%)

MW 9-6-12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: September 6, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-36

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one soil and one water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Volatile organic compound (VOC) analysis (EPA Method 8260) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060212 12061907

Note: sample 12061907 was inadvertently listed on the chain of custody form as 12060907 and was reported by the laboratory as 12060907. The data validator changed 12060907 to 12061907 when applicable on the attached pages.

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on August 22, 2012, and were analyzed by August 31, 2012, therefore meeting QC criteria of less than 14 days between collection and analysis for soil and preserved water samples.

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were within the QC limits. All Relative Standard Deviations (RSDs) were within the QC limits.

4. **Continuing Calibration: Acceptable.**

All RRFs were within the QC limits. All % differences were within the QC limits.

5. **Blanks: Acceptable.**

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

6. **System Monitoring Compounds (SMCs): Acceptable.**

All SMC recoveries were within QC limits.

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

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

8. **Duplicate Analysis: Acceptable.**

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

9. **Internal Standards: Acceptable.**

All internal standards were within $\pm$ 30 seconds of the continuing calibration internal standard retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. **Precision and Bias Determination: Not Performed.**

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. **Performance Evaluation Sample Analysis: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

12. **Overall Assessment of Data for Use**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 4, 2012

Client Sample ID:	12060212	Project:	ECOL00801
Sample ID:	310105001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	22-AUG-12 09:30		
Receive Date:	23-AUG-12		
Collector:	Client		
Moisture:	16.9%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	U	ND	0.860	ug/kg	1	ACJ	08/31/12	1538	1242810	1
1,1,2,2-Tetrachloroethane	U	ND	0.860	ug/kg	1					
1,1,2-Trichloroethane	U	ND	0.860	ug/kg	1					
1,1-Dichloroethane	U	ND	0.860	ug/kg	1					
1,1-Dichloroethylene	U	ND	0.860	ug/kg	1					
1,2-Dichloroethane	U	ND	0.860	ug/kg	1					
1,2-Dichloroethylene (total)	U	ND	1.72	ug/kg	1					
1,2-Dichloropropane	U	ND	0.860	ug/kg	1					
2-Butanone	U	ND	4.30	ug/kg	1					
2-Hexanone	U	ND	4.30	ug/kg	1					
4-Methyl-2-pentanone	U	ND	4.30	ug/kg	1					
Acetone	U	ND	4.30	ug/kg	1					
Benzene	U	ND	0.860	ug/kg	1					
Bromodichloromethane	U	ND	0.860	ug/kg	1					
Bromoform	U	ND	0.860	ug/kg	1					
Bromomethane	U	ND	0.860	ug/kg	1					
Carbon disulfide	U	ND	4.30	ug/kg	1					
Carbon tetrachloride	U	ND	0.860	ug/kg	1					
Chlorobenzene	U	ND	0.860	ug/kg	1					
Chloroethane	U	ND	0.860	ug/kg	1					
Chloroform	U	ND	0.860	ug/kg	1					
Chloromethane	U	ND	0.860	ug/kg	1					
Dibromochloromethane	U	ND	0.860	ug/kg	1					
Ethylbenzene	U	ND	0.860	ug/kg	1					
Methylene chloride	U	ND	4.30	ug/kg	1					
Styrene		1.23	0.860	ug/kg	1					
Tetrachloroethylene	U	ND	0.860	ug/kg	1					
Toluene	U	ND	0.860	ug/kg	1					
Trichloroethylene	U	ND	0.860	ug/kg	1					
Vinyl acetate	U	ND	4.30	ug/kg	1					
Vinyl chloride	U	ND	0.860	ug/kg	1					
Xylenes (total)	U	ND	2.58	ug/kg	1					
cis-1,2-Dichloroethylene	U	ND	0.860	ug/kg	1					
cis-1,3-Dichloropropylene	U	ND	0.860	ug/kg	1					
m,p-Xylenes	U	ND	1.72	ug/kg	1					
o-Xylene	U	ND	0.860	ug/kg	1					
tert-Butyl methyl ether	U	ND	0.860	ug/kg	1					

54 CM

MW 9-6-12

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Certificate of Analysis

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 4, 2012

Client Sample ID: 12060212
Sample ID: 310105001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
trans-1,2-Dichloroethylene	~~U~~	ND	0.860 U	ug/kg	1					
trans-1,3-Dichloropropylene	U	~~ND~~	0.860 U	ug/kg	1					

SYM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	ACJ	08/23/12	1608	1242809

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	44.5 ug/kg	50.0	104	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	43.4 ug/kg	50.0	101	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	42.7 ug/kg	50.0	99.4	(80%-120%)

MW 9-6-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 5, 2012

Client Sample ID:	12061907	Project:	ECOL00801
Sample ID:	310111002	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	22-AUG-12 13:35		
Receive Date:	23-AUG-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5030/8260A TCL in Liquid "As Received"										
1,1,1-Trichloroethane	U	ND	1.00	ug/L	1	RXD1	08/31/12	1518	1242818	1
1,1,2,2-Tetrachloroethane	U	ND	1.00	ug/L	1					
1,1,2-Trichloroethane	U	ND	1.00	ug/L	1					
1,1-Dichloroethane	U	ND	1.00	ug/L	1					
1,1-Dichloroethylene	U	ND	1.00	ug/L	1					
1,2-Dichloroethane	U	ND	1.00	ug/L	1					
1,2-Dichloropropane	U	ND	1.00	ug/L	1					
2-Butanone	U	ND	5.00	ug/L	1					
2-Hexanone	U	ND	5.00	ug/L	1					
4-Methyl-2-pentanone	U	ND	5.00	ug/L	1					
Acetone	U	ND	5.00	ug/L	1					
Benzene	U	ND	1.00	ug/L	1					
Bromodichloromethane	U	ND	1.00	ug/L	1					
Bromoform	U	ND	1.00	ug/L	1					
Bromomethane	U	ND	1.00	ug/L	1					
Carbon disulfide	U	ND	5.00	ug/L	1					
Carbon tetrachloride	U	ND	1.00	ug/L	1					
Chlorobenzene	U	ND	1.00	ug/L	1					
Chloroethane	U	ND	1.00	ug/L	1					
Chloroform	U	ND	1.00	ug/L	1					
Chloromethane	U	ND	1.00	ug/L	1					
Dibromochloromethane	U	ND	1.00	ug/L	1					
Ethylbenzene	U	ND	1.00	ug/L	1					
Methylene chloride	U	ND	5.00	ug/L	1					
Styrene	U	ND	1.00	ug/L	1					
Tetrachloroethylene	U	ND	1.00	ug/L	1					
Toluene	U	ND	1.00	ug/L	1					
Trichloroethylene	U	ND	1.00	ug/L	1					
Vinyl acetate	U	ND	5.00	ug/L	1					
Vinyl chloride	U	ND	1.00	ug/L	1					
Xylenes (total)	U	ND	3.00	ug/L	1					
cis-1,2-Dichloroethylene	U	ND	1.00	ug/L	1					
cis-1,3-Dichloropropylene	U	ND	1.00	ug/L	1					
tert-Butyl methyl ether	U	ND	1.00	ug/L	1					
trans-1,2-Dichloroethylene	U	ND	1.00	ug/L	1					
trans-1,3-Dichloropropylene	U	ND	1.00	ug/L	1					

SYM

MW 9-6-12

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Certificate of Analysis

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Project: **Project No. 4500000347**

Report Date: September 5, 2012

Client Sample ID: 12061907
Sample ID: 310111002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5030/8260A TCL in Liquid "As Received"	51.2 ug/L	50.0	102	(80%-123%)
Bromofluorobenzene	5030/8260A TCL in Liquid "As Received"	50.5 ug/L	50.0	101	(80%-120%)
Toluene-d8	5030/8260A TCL in Liquid "As Received"	49.6 ug/L	50.0	99.2	(80%-120%)

MW 9-6-12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: September 6, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-36

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of one soil and one water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060212 12060521

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on August 22, 2012, were extracted on August 29, 2012, and were analyzed by August 31, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were within the QC limits. All Relative Standard Deviations (RSDs) were within the QC limits.

4. **Continuing Calibration: Satisfactory.**

All RRFs were within the QC limits. All % differences were within the QC limits except high recoveries for bis(2-ethylhexyl)phthalate and di-n-octyl phthalate; no actions were taken as these analytes were not detected in the associated samples.

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

7. Matrix Spike (MS)/MS Duplicate (MSD)/Blank Spike (BS) Analysis: Acceptable.

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

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Acceptable.

All internal standards (IS) were within ± 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 31, 2012

Client Sample ID:	12060212	Project:	ECOL00801
Sample ID:	310105001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	22-AUG-12 09:30		
Receive Date:	23-AUG-12		
Collector:	Client		
Moisture:	16.9%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	398	ug/kg	1	JLD1	08/30/12	1554	1241847	1
1,2,4,5-Tetrachlorobenzene	U	ND	398	ug/kg	1					
1-Methylnaphthalene	U	ND	39.8	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	398	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	398	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	398	ug/kg	1					
2,4-Dichlorophenol	U	ND	398	ug/kg	1					
2,4-Dimethylphenol	U	ND	398	ug/kg	1					
2,4-Dinitrophenol	U	ND	795	ug/kg	1					
2,4-Dinitrotoluene	U	ND	398	ug/kg	1					
2,6-Dinitrotoluene	U	ND	398	ug/kg	1					
2-Chloronaphthalene	U	ND	39.8	ug/kg	1					
2-Chlorophenol	U	ND	398	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	398	ug/kg	1					
2-Methylnaphthalene	U	ND	39.8	ug/kg	1					
~~2-Nitrophenol~~	~~U~~	~~ND~~	~~398~~	~~ug/kg~~	~~1~~					
3,3'-Dichlorobenzidine	U	ND	398	ug/kg	1					
4-Bromophenylphenylether	U	ND	398	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	398	ug/kg	1					
4-Chloroaniline	U	ND	398	ug/kg	1					
4-Chlorophenylphenylether	U	ND	398	ug/kg	1					
4-Nitrophenol	U	ND	398	ug/kg	1					
Acenaphthene	U	ND	39.8	ug/kg	1					
Acenaphthylene	U	ND	39.8	ug/kg	1					
Acetophenone	U	ND	398	ug/kg	1					
Anthracene	U	ND	39.8	ug/kg	1					
Atrazine	U	ND	398	ug/kg	1					
Benzaldehyde	U	ND	398	ug/kg	1					
Benzo(a)anthracene	U	ND	39.8	ug/kg	1					
Benzo(a)pyrene	U	ND	39.8	ug/kg	1					
Benzo(b)fluoranthene	U	ND	39.8	ug/kg	1					
Benzo(ghi)perylene	U	ND	39.8	ug/kg	1					
Benzo(k)fluoranthene	U	ND	39.8	ug/kg	1					
Butylbenzylphthalate	U	ND	398	ug/kg	1					
Caprolactam	U	ND	398	ug/kg	1					
Carbazole	U	ND	39.8	ug/kg	1					
Chrysene	U	ND	39.8	ug/kg	1					

54/M

MW 9-6-12

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 31, 2012

Client Sample ID: 12060212
Sample ID: 310105001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	398	ug/kg	1					
Di-n-octylphthalate	U	ND	398	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	39.8	ug/kg	1					
Dibenzofuran	U	ND	398	ug/kg	1					
Diethylphthalate	U	ND	398	ug/kg	1					
Dimethylphthalate	U	ND	398	ug/kg	1					
Diphenylamine	U	ND	398	ug/kg	1					
Fluoranthene	U	ND	39.8	ug/kg	1					
Fluorene	U	ND	39.8	ug/kg	1					
Hexachlorobenzene	U	ND	398	ug/kg	1					
Hexachlorobutadiene	U	ND	398	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	398	ug/kg	1					
Hexachloroethane	U	ND	398	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	39.8	ug/kg	1					
Isophorone	U	ND	398	ug/kg	1					
N-Nitrosodipropylamine	U	ND	398	ug/kg	1					
Naphthalene	U	ND	39.8	ug/kg	1					
Nitrobenzene	U	ND	398	ug/kg	1					
Pentachlorophenol	U	ND	398	ug/kg	1					
Phenanthrene	U	ND	39.8	ug/kg	1					
Phenol	U	ND	398	ug/kg	1					
Pyrene	U	ND	39.8	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	398	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	398	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	398	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	398	ug/kg	1					
m,p-Cresols	U	ND	398	ug/kg	1					
m-Nitroaniline	U	ND	398	ug/kg	1					
o-Cresol	U	ND	398	ug/kg	1					
o-Nitroaniline	U	ND	398	ug/kg	1					
p-Nitroaniline	U	ND	398	ug/kg	1					

SHM

MW

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	LOG1	08/29/12	0820	1241846

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

MW 9-6-12

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Certificate of Analysis

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 31, 2012

Client Sample ID: 12060212
Sample ID: 310105001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1430 ug/kg	1990	71.9	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1630 ug/kg	1990	81.7	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1550 ug/kg	1990	78.0	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	3350 ug/kg	3980	84.2	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2840 ug/kg	3980	71.4	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2560 ug/kg	3980	64.5	(26%-112%)

MW 9/8/12

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 4, 2012

Client Sample ID:	12060521	Project:	ECOL00801
Sample ID:	310111001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	22-AUG-12 09:50		
Receive Date:	23-AUG-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D Semivolatile Analysis by Separatory Funnel "As Received"										
Benzo(a)anthracene	U	ND	1.00	ug/L	1	JMB3	08/31/12	1630	1241962	1
Benzo(a)pyrene	U	ND	1.00	ug/L	1					
Benzo(b)fluoranthene	U	ND	1.00	ug/L	1					
Chrysene	U	ND	1.00	ug/L	1					
Diphenylamine	U	ND	10.0	ug/L	1					
bis(2-Ethylhexyl)phthalate	U	ND	10.0	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	SW846 3510C Prep Semivolatiles 8270D	SXS3	08/29/12	1818	1241954

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2,4,6-Tribromophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	71.1 ug/L	100	71.1	(26%-131%)
2-Fluorophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	41.8 ug/L	100	41.8	(15%-78%)
Phenol-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	24.0 ug/L	100	24.0	(10%-72%)
2-Fluorobiphenyl	8270D Semivolatile Analysis by Separatory Funnel "As Received"	31.4 ug/L	50.0	62.8	(29%-102%)
Nitrobenzene-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	41.6 ug/L	50.0	83.2	(36%-125%)
p-Terphenyl-d14	8270D Semivolatile Analysis by Separatory Funnel "As Received"	29.2 ug/L	50.0	58.4	(31%-133%)

MW 9-6-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700
Seattle, Washington 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: September 1, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-37

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one soil sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Analysis for Extended Diesel Range Total Petroleum Hydrocarbons (Ecology Method NWTPH-Dx) was performed by TestAmerica Seattle, Tacoma, Washington. All sample analyses were evaluated following EPA's Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060212

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The sample was maintained at < 6°C. The sample was collected on August 22, 2012, extracted by August 24, 2012, and analyzed by August 24, 2012, therefore meeting QC criteria of less than 14 days between collection and extraction for soil samples, and less than 40 days between extraction and analysis.

2. **Initial and Continuing Calibrations: Acceptable.**

Calculations were verified as correct. All initial calibration correlation coefficients were ≥ 0.990 and/or all relative percent differences (RPDs) were within the laboratory control limits. All continuing calibration percent differences (%Ds) were within the laboratory control limits.

3. **Error Determination: Not Performed.**

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

4. **Blanks: Acceptable.**

A method blank was analyzed for each extraction batch for each matrix and analysis system.

Diesel-range and motor oil-range TPHs were not detected in any blank.

5. **System Monitoring Compounds (SMC): Acceptable.**
All recoveries of the SMCs were greater than 10% and within QC criteria.

6. **Performance Evaluation Samples: Not Provided.**
Performance evaluation samples were not provided to the laboratory.

7. **Matrix and Blank Spikes: Acceptable.**
Matrix and blank spike results were within QC limits.

8. **Duplicates: Acceptable.**
Duplicate and spike duplicate results were within QC limits.

9. **Quantitation and Quantitation Limits: Acceptable.**
Sample concentrations were correctly calculated.

10. **Laboratory Contact: Not Required.**
No laboratory contact was required.

11. **Overall Assessment of Data for Use**

According to the laboratory, in sample 12060212, the results in the C10-C24 and Motor Oil range(s) are due to what most closely resembles a complex mixture of heavily weathered/degraded diesel fuel and/or a mineral/ transformer oil range product, and motor oil. The associated sample results were qualified as estimated quantities with a high bias (JH).

Positive sample results less than the reporting limit were qualified as estimated quantities (JQ).

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the Method Detection Limit (MDL) and the Reporting Limit (RL).

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Client: Ecology and Environment, Inc.

Job Number: 580-34599-1

Client Sample ID: **12060212**

Lab Sample ID: 580-34599-1

Client Matrix: Solid

% Moisture: 16.8

Date Sampled: 08/22/2012 0930

Date Received: 08/23/2012 0950

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-118411	Instrument ID:	TAC017
Prep Method:	3550B	Prep Batch:	580-118416	Lab File ID:	ZZ22474.D
Dilution:	1.0			Initial Weight/Volume:	10.5101 g
Analysis Date:	08/24/2012 1911			Final Weight/Volume:	10 mL
Prep Date:	08/24/2012 0612			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		83	JH Y	6.5	29
Motor Oil (>C24-C36)		80	JH Y MW	10	57

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	96		50 - 150

MW 9-1-12

ecology and environment, inc.
Global Environmental Specialists

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Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: September 10, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-38

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of three soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060118 12060119 12060120

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on August 27, 2012, were extracted on August 29, 2012, and were analyzed on August 30, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were within the QC limits. All Relative Standard Deviations (RSDs) were within the QC limits.

4. Continuing Calibration: Satisfactory.

All RRFs were within the QC limits. All applicable % differences were within the QC limits except bis(2-ethylhexyl)phthalate and di-n-octyl phthalate with increasing response factors; no actions were taken based on these outlier as they were not detected in any sample.

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

7. Matrix Spike (MS)/MS Duplicate (MSD)/Blank Spike (BS) Analysis: Acceptable.

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

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Acceptable.

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 31, 2012

Client Sample ID:	12060118	Project:	ECOL00801
Sample ID:	310299001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	27-AUG-12 07:35		
Receive Date:	28-AUG-12		
Collector:	Client		
Moisture:	14.8%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	9680	ug/kg	25	JLD1	08/30/12	1717	1241847	1
1,2,4,5-Tetrachlorobenzene	U	ND	9680	ug/kg	25					
1-Methylnaphthalene		2500	968	ug/kg	25					
2,3,4,6-Tetrachlorophenol	U	ND	9680	ug/kg	25					
2,4,5-Trichlorophenol	U	ND	9680	ug/kg	25					
2,4,6-Trichlorophenol	U	ND	9680	ug/kg	25					
2,4-Dichlorophenol	U	ND	9680	ug/kg	25					
2,4-Dimethylphenol	U	ND	9680	ug/kg	25					
2,4-Dinitrophenol	U	ND	19400	ug/kg	25					
2,4-Dinitrotoluene	U	ND	9680	ug/kg	25					
2,6-Dinitrotoluene	U	ND	9680	ug/kg	25					
2-Chloronaphthalene	U	ND	968	ug/kg	25					
2-Chlorophenol	U	ND	9680	ug/kg	25					
2-Methyl-4,6-dinitrophenol	U	ND	9680	ug/kg	25					
2-Methylnaphthalene		1010	968	ug/kg	25					
2-Nitrophenol	U	ND	9680	ug/kg	25					
3,3'-Dichlorobenzidine	U	ND	9680	ug/kg	25					
4-Bromophenylphenylether	U	ND	9680	ug/kg	25					
4-Chloro-3-methylphenol	U	ND	9680	ug/kg	25					
4-Chloroaniline	U	ND	9680	ug/kg	25					
4-Chlorophenylphenylether	U	ND	9680	ug/kg	25					
4-Nitrophenol	U	ND	9680	ug/kg	25					
Acenaphthene	U	ND	968	ug/kg	25					
Acenaphthylene	U	ND	968	ug/kg	25					
Acetophenone	U	ND	9680	ug/kg	25					
Anthracene	U	ND	968	ug/kg	25					
Atrazine	U	ND	9680	ug/kg	25					
Benzaldehyde	U	ND	9680	ug/kg	25					
Benzo(a)anthracene	U	ND	968	ug/kg	25					
Benzo(a)pyrene	U	ND	968	ug/kg	25					
Benzo(b)fluoranthene	U	ND	968	ug/kg	25					
Benzo(ghi)perylene	U	ND	968	ug/kg	25					
Benzo(k)fluoranthene	U	ND	968	ug/kg	25					
Butylbenzylphthalate	U	ND	9680	ug/kg	25					
Caprolactam	U	ND	9680	ug/kg	25					
Carbazole	U	ND	968	ug/kg	25					
Chrysene	U	ND	968	ug/kg	25					

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 31, 2012

Client Sample ID: 12060118
Sample ID: 310299001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	9680	ug/kg	25					
Di-n-octylphthalate	U	ND	9680	ug/kg	25					
Dibenzo(a,h)anthracene	U	ND	968	ug/kg	25					
Dibenzofuran	U	ND	9680	ug/kg	25					
Diethylphthalate	U	ND	9680	ug/kg	25					
Dimethylphthalate	U	ND	9680	ug/kg	25					
Diphenylamine	U	ND	9680	ug/kg	25					
Fluoranthene	U	ND	968	ug/kg	25					
Fluorene		1010	968	ug/kg	25					
Hexachlorobenzene	U	ND	9680	ug/kg	25					
Hexachlorobutadiene	U	ND	9680	ug/kg	25					
Hexachlorocyclopentadiene	U	ND	9680	ug/kg	25					
Hexachloroethane	U	ND	9680	ug/kg	25					
Indeno(1,2,3-cd)pyrene	U	ND	968	ug/kg	25					
Isophorone	U	ND	9680	ug/kg	25					
N-Nitrosodipropylamine	U	ND	9680	ug/kg	25					
Naphthalene	U	ND	968	ug/kg	25					
Nitrobenzene	U	ND	9680	ug/kg	25					
Pentachlorophenol	U	ND	9680	ug/kg	25					
Phenanthrene		3350	968	ug/kg	25					
Phenol	U	ND	9680	ug/kg	25					
Pyrene		1660	968	ug/kg	25					
bis(2-Chloroethoxy)methane	U	ND	9680	ug/kg	25					
bis(2-Chloroethyl) ether	U	ND	9680	ug/kg	25					
bis(2-Chloroisopropyl)ether	U	ND	9680	ug/kg	25					
bis(2-Ethylhexyl)phthalate	U	ND	9680	ug/kg	25					
m,p-Cresols	U	ND	9680	ug/kg	25					
m-Nitroaniline	U	ND	9680	ug/kg	25					
o-Cresol	U	ND	9680	ug/kg	25					
o-Nitroaniline	U	ND	9680	ug/kg	25					
p-Nitroaniline	U	ND	9680	ug/kg	25					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	LOG1	08/29/12	0820	1241846

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 31, 2012

Client Sample ID: 12060118
Sample ID: 310299001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1360 ug/kg	1940	70.0	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1150 ug/kg	1940	59.5	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1500 ug/kg	1940	77.5	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1640 ug/kg	3870	42.3	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1380 ug/kg	3870	35.8	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1350 ug/kg	3870	34.8	(26%-112%)

MW 9/4/12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 31, 2012

Client Sample ID:	12060119	Project:	ECOL00801
Sample ID:	310299002	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	27-AUG-12 07:45		
Receive Date:	28-AUG-12		
Collector:	Client		
Moisture:	13%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	9520	ug/kg	25	JLD1	08/30/12	1745	1241847	1
1,2,4,5-Tetrachlorobenzene	U	ND	9520	ug/kg	25					
1-Methylnaphthalene		1510	952	ug/kg	25					
2,3,4,6-Tetrachlorophenol	U	ND	9520	ug/kg	25					
2,4,5-Trichlorophenol	U	ND	9520	ug/kg	25					
2,4,6-Trichlorophenol	U	ND	9520	ug/kg	25					
2,4-Dichlorophenol	U	ND	9520	ug/kg	25					
2,4-Dimethylphenol	U	ND	9520	ug/kg	25					
2,4-Dinitrophenol	U	ND	19000	ug/kg	25					
2,4-Dinitrotoluene	U	ND	9520	ug/kg	25					
2,6-Dinitrotoluene	U	ND	9520	ug/kg	25					
2-Chloronaphthalene	U	ND	952	ug/kg	25					
2-Chlorophenol	U	ND	9520	ug/kg	25					
2-Methyl-4,6-dinitrophenol	U	ND	9520	ug/kg	25					
2-Methylnaphthalene		1500	952	ug/kg	25					
2-Nitrophenol	U	ND	9520	ug/kg	25					
3,3'-Dichlorobenzidine	U	ND	9520	ug/kg	25					
4-Bromophenylphenylether	U	ND	9520	ug/kg	25					
4-Chloro-3-methylphenol	U	ND	9520	ug/kg	25					
4-Chloroaniline	U	ND	9520	ug/kg	25					
4-Chlorophenylphenylether	U	ND	9520	ug/kg	25					
4-Nitrophenol	U	ND	9520	ug/kg	25					
Acenaphthene	U	ND	952	ug/kg	25					
Acenaphthylene	U	ND	952	ug/kg	25					
Acetophenone	U	ND	9520	ug/kg	25					
Anthracene	U	ND	952	ug/kg	25					
Atrazine	U	ND	9520	ug/kg	25					
Benzaldehyde	U	ND	9520	ug/kg	25					
Benzo(a)anthracene	U	ND	952	ug/kg	25					
Benzo(a)pyrene	U	ND	952	ug/kg	25					
Benzo(b)fluoranthene	U	ND	952	ug/kg	25					
Benzo(ghi)perylene	U	ND	952	ug/kg	25					
Benzo(k)fluoranthene	U	ND	952	ug/kg	25					
Butylbenzylphthalate	U	ND	9520	ug/kg	25					
Caprolactam	U	ND	9520	ug/kg	25					
Carbazole	U	ND	952	ug/kg	25					
Chrysene	U	ND	952	ug/kg	25					

SHM

MW 9-10-12

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 31, 2012

Client Sample ID: 12060119
Sample ID: 310299002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	9520	ug/kg	25					
Di-n-octylphthalate	U	ND	9520	ug/kg	25					
Dibenzo(a,h)anthracene	U	ND	952	ug/kg	25					
Dibenzofuran	U	ND	9520	ug/kg	25					
Diethylphthalate	U	ND	9520	ug/kg	25					
Dimethylphthalate	U	ND	9520	ug/kg	25					
Diphenylamine	U	ND	9520	ug/kg	25					
Fluoranthene	U	ND	952	ug/kg	25					
Fluorene	U	ND	952	ug/kg	25					
Hexachlorobenzene	U	ND	9520	ug/kg	25					
Hexachlorobutadiene	U	ND	9520	ug/kg	25					
Hexachlorocyclopentadiene	U	ND	9520	ug/kg	25					
Hexachloroethane	U	ND	9520	ug/kg	25					
Indeno(1,2,3-cd)pyrene	U	ND	952	ug/kg	25					
Isophorone	U	ND	9520	ug/kg	25					
N-Nitrosodipropylamine	U	ND	9520	ug/kg	25					
Naphthalene	U	ND	952	ug/kg	25					
Nitrobenzene	U	ND	9520	ug/kg	25					
Pentachlorophenol	U	ND	9520	ug/kg	25					
Phenanthrene		3080	952	ug/kg	25					
~~Phenol~~	~~U~~	~~ND~~	~~9520~~	~~ug/kg~~	~~25~~					
Pyrene		3160	952	ug/kg	25					
bis(2-Chloroethoxy)methane	U	ND	9520	ug/kg	25					
bis(2-Chloroethyl) ether	U	ND	9520	ug/kg	25					
bis(2-Chloroisopropyl)ether	U	ND	9520	ug/kg	25					
bis(2-Ethylhexyl)phthalate	U	ND	9520	ug/kg	25					
m,p-Cresols	U	ND	9520	ug/kg	25					
m-Nitroaniline	U	ND	9520	ug/kg	25					
o-Cresol	U	ND	9520	ug/kg	25					
o-Nitroaniline	U	ND	9520	ug/kg	25					
p-Nitroaniline	U	ND	9520	ug/kg	25					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	LOG1	08/29/12	0820	1241846

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

MW 9/10/12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 31, 2012

Client Sample ID: 12060119
Sample ID: 310299002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1210 ug/kg	1900	63.5	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1140 ug/kg	1900	60.0	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1480 ug/kg	1900	77.5	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2220 ug/kg	3810	58.2	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1680 ug/kg	3810	44.0	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1400 ug/kg	3810	36.8	(26%-112%)

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 31, 2012

Client Sample ID:	12060120	Project:	ECOL00801
Sample ID:	310299003	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	27-AUG-12 07:55		
Receive Date:	28-AUG-12		
Collector:	Client		
Moisture:	12.6%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	9460	ug/kg	25	JLD1	08/30/12	1813	1241847	1
1,2,4,5-Tetrachlorobenzene	U	ND	9460	ug/kg	25					
1-Methylnaphthalene	U	ND	946	ug/kg	25					
2,3,4,6-Tetrachlorophenol	U	ND	9460	ug/kg	25					
2,4,5-Trichlorophenol	U	ND	9460	ug/kg	25					
2,4,6-Trichlorophenol	U	ND	9460	ug/kg	25					
2,4-Dichlorophenol	U	ND	9460	ug/kg	25					
2,4-Dimethylphenol	U	ND	9460	ug/kg	25					
2,4-Dinitrophenol	U	ND	18900	ug/kg	25					
2,4-Dinitrotoluene	U	ND	9460	ug/kg	25					
2,6-Dinitrotoluene	U	ND	9460	ug/kg	25					
2-Chloronaphthalene	U	ND	946	ug/kg	25					
2-Chlorophenol	U	ND	9460	ug/kg	25					
2-Methyl-4,6-dinitrophenol	U	ND	9460	ug/kg	25					
2-Methylnaphthalene	U	ND	946	ug/kg	25					
2-Nitrophenol	U	ND	9460	ug/kg	25					
3,3'-Dichlorobenzidine	U	ND	9460	ug/kg	25					
4-Bromophenylphenylether	U	ND	9460	ug/kg	25					
4-Chloro-3-methylphenol	U	ND	9460	ug/kg	25					
4-Chloroaniline	U	ND	9460	ug/kg	25					
4-Chlorophenylphenylether	U	ND	9460	ug/kg	25					
4-Nitrophenol	U	ND	9460	ug/kg	25					
Acenaphthene	U	ND	946	ug/kg	25					
Acenaphthylene	U	ND	946	ug/kg	25					
Acetophenone	U	ND	9460	ug/kg	25					
Anthracene	U	ND	946	ug/kg	25					
Atrazine	U	ND	9460	ug/kg	25					
Benzaldehyde	U	ND	9460	ug/kg	25					
Benzo(a)anthracene	U	ND	946	ug/kg	25					
Benzo(a)pyrene	U	ND	946	ug/kg	25					
Benzo(b)fluoranthene	U	ND	946	ug/kg	25					
Benzo(ghi)perylene	U	ND	946	ug/kg	25					
Benzo(k)fluoranthene	U	ND	946	ug/kg	25					
Butylbenzylphthalate	U	ND	9460	ug/kg	25					
Caprolactam	U	ND	9460	ug/kg	25					
Carbazole	U	ND	946	ug/kg	25					
Chrysene	U	ND	946	ug/kg	25					

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 31, 2012

Client Sample ID: 12060120
Sample ID: 310299003

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	9460	ug/kg	25					
Di-n-octylphthalate	U	ND	9460	ug/kg	25					
Dibenzo(a,h)anthracene	U	ND	946	ug/kg	25					
Dibenzofuran	U	ND	9460	ug/kg	25					
Diethylphthalate	U	ND	9460	ug/kg	25					
Dimethylphthalate	U	ND	9460	ug/kg	25					
Diphenylamine	U	ND	9460	ug/kg	25					
Fluoranthene	U	ND	946	ug/kg	25					
Fluorene	U	ND	946	ug/kg	25					
Hexachlorobenzene	U	ND	9460	ug/kg	25					
Hexachlorobutadiene	U	ND	9460	ug/kg	25					
Hexachlorocyclopentadiene	U	ND	9460	ug/kg	25					
Hexachloroethane	U	ND	9460	ug/kg	25					
Indeno(1,2,3-cd)pyrene	U	ND	946	ug/kg	25					
Isophorone	U	ND	9460	ug/kg	25					
N-Nitrosodipropylamine	U	ND	9460	ug/kg	25					
Naphthalene	U	ND	946	ug/kg	25					
Nitrobenzene	U	ND	9460	ug/kg	25					
Pentachlorophenol	U	ND	9460	ug/kg	25					
Phenanthrene	U	ND	946	ug/kg	25					
Phenol	U	ND	9460	ug/kg	25					
Pyrene		1430	946	ug/kg	25					
bis(2-Chloroethoxy)methane	U	ND	9460	ug/kg	25					
bis(2-Chloroethyl) ether	U	ND	9460	ug/kg	25					
bis(2-Chloroisopropyl)ether	U	ND	9460	ug/kg	25					
bis(2-Ethylhexyl)phthalate	U	ND	9460	ug/kg	25					
m,p-Cresols	U	ND	9460	ug/kg	25					
m-Nitroaniline	U	ND	9460	ug/kg	25					
o-Cresol	U	ND	9460	ug/kg	25					
o-Nitroaniline	U	ND	9460	ug/kg	25					
p-Nitroaniline	U	ND	9460	ug/kg	25					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	LOG1	08/29/12	0820	1241846

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 31, 2012

Client Sample ID: 12060120
Sample ID: 310299003

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1430 ug/kg	1890	75.5	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1260 ug/kg	1890	66.5	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1830 ug/kg	1890	96.5	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2000 ug/kg	3780	52.8	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1520 ug/kg	3780	40.3	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1360 ug/kg	3780	36.0	(26%-112%)

9-10-12

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Global Environmental Specialists
720 Third Avenue, Suite 1700
Seattle, Washington 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: September 10, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-38

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of three soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060118 12060119 12060120

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained at < 6°C. The samples were collected on August 27, 2012, extracted on August 30, 2012, and were analyzed by August 31, 2012, therefore meeting QC criteria of less than 7 days between collection and water sample extraction (14 days for soils) and less than 40 days between extraction and analysis.

2. Instrument Performance: Acceptable.

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses except for one continuing calibration outlier; no action was taken based on this outlier.

3. Initial and Continuing Calibration: Satisfactory.

All initial calibration relative standard deviations (RSDs) were within QC limits. All continuing calibration % differences (% D) were within QC limits except some surrogate outliers (no actions were taken based on these surrogate outliers) and some low Aroclor 1260 results associated with all samples; all Aroclor 1260 results were qualified as estimated quantities with a low bias (UJL).

4. Error Determination: Not Provided.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Acceptable.

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

6. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. System Monitoring Compounds (SMCs): Acceptable.

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

8. Blank and Matrix Spikes: Acceptable.

Recoveries of all spiked analytes were within the appropriate control limits except when diluted due to matrix interferences.

9. Duplicates: Acceptable.

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

10. Compound Identification: Acceptable.

All results were dual-column confirmed with differences between the columns less than 25%.

11. Target Compound Quantitation and Quantitation Limits: Acceptable.

Sample results and quantitation limits were correctly calculated.

12. Laboratory Contact

No laboratory contact was required.

13. Overall Assessment

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 31, 2012

Client Sample ID:	12060118	Project:	ECOL00801
Sample ID:	310299001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	27-AUG-12 07:35		
Receive Date:	28-AUG-12		
Collector:	Client		
Moisture:	14.8%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	78.2	ug/kg	20	YS1	08/31/12	1005	1242205	1
Aroclor-1221	U	ND	78.2	ug/kg	20					
Aroclor-1232	U	ND	78.2	ug/kg	20					
Aroclor-1242	U	ND	78.2	ug/kg	20					
Aroclor-1248	U	ND	78.2	ug/kg	20					
Aroclor-1254	U	ND	78.2	ug/kg	20					
Aroclor-1260	U	ND	78.2	ug/kg	20					
Aroclor-Total	U	ND	78.2	ug/kg	20					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXS3	08/30/12	0947	1242203

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	6.58 ug/kg	7.82	84.2	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	7.71 ug/kg	7.82	98.7	(19%-130%)

JMW
9-10-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 31, 2012

Client Sample ID:	12060119	Project:	ECOL00801
Sample ID:	310299002	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	27-AUG-12 07:45		
Receive Date:	28-AUG-12		
Collector:	Client		
Moisture:	13%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	75.8	ug/kg	20	YS1	08/31/12	1045	1242205	1
Aroclor-1221	U	ND	75.8	ug/kg	20					
Aroclor-1232	U	ND	75.8	ug/kg	20					
Aroclor-1242	U	ND	75.8	ug/kg	20					
Aroclor-1248	U	ND	75.8	ug/kg	20					
Aroclor-1254	U	ND	75.8	ug/kg	20					
Aroclor-1260	U	ND	75.8	ug/kg	20					
Aroclor-Total	U	ND	75.8	ug/kg	20					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXS3	08/30/12	0947	1242203

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	6.81 ug/kg	7.58	89.8	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	6.92 ug/kg	7.58	91.3	(19%-130%)

MW 9-10-12

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: August 31, 2012

Client Sample ID:	12060120	Project:	ECOL00801
Sample ID:	310299003	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	27-AUG-12 07:55		
Receive Date:	28-AUG-12		
Collector:	Client		
Moisture:	12.6%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	76.2	ug/kg	20	YS1	08/31/12	1058	1242205	1
Aroclor-1221	U	ND	76.2	ug/kg	20					
Aroclor-1232	U	ND	76.2	ug/kg	20					
Aroclor-1242	U	ND	76.2	ug/kg	20					
Aroclor-1248	U	ND	76.2	ug/kg	20					
Aroclor-1254	U	ND	76.2	ug/kg	20					
Aroclor-1260	U	ND	76.2	ug/kg	20					
Aroclor-Total	U	ND	76.2	ug/kg	20					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXS3	08/30/12	0947	1242203

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.50 ug/kg	7.62	59.1	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.61 ug/kg	7.62	60.5	(19%-130%)

MW 9/10/12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700, Seattle, WA 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: September 13, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Inorganic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-39

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of two water samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Target Analyte List (TAL) metals analyses (EPA Method 6020) were performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060522 12060523

Data Qualifications:

1. Sample Holding Times: Acceptable.

All liquid samples were preserved to a pH < 2. The samples were maintained at < 6°C. The samples were collected on August 29, 2012, and were analyzed by September 8, 2012, therefore meeting QC criteria of less than 6 months between collection, extraction, and analysis.

2. Initial and Continuing Calibration: Acceptable.

A minimum of one calibration standard and a blank were analyzed at the beginning of the ICP analysis sequence and after every 10 samples. No results were greater than 110% of the highest calibration standard. All ICP recoveries were within the QC limits of 90% to 110% (± 1%).

3. Blanks: Satisfactory.

A preparation blank was analyzed for each 20 samples or per matrix per concentration level. Blanks were analyzed after each Initial or Continuing Calibration Verification. There were no detections in any blanks that affected sample results except the arsenic detection in the method blank (2.28 ug/L); associated arsenic results less than five times the method blank concentration were qualified as not detected (U).

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4. **ICP Interference Check Sample: Acceptable.**

An Interference Check Sample (ICS) was analyzed at the beginning of each sequence. All ICS (solution AB) results were within QC limits of 80% - 120% recovery.

5. **Precision and Bias Determination: Not Performed.**

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

6. **Performance Evaluation Sample Analysis: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

7. **ICP Serial Dilution: Acceptable.**

A serial dilution analysis was performed per matrix per concentration or per sample delivery group, whichever was more frequent. All serial dilution results were within QC limits.

8. **Matrix Spike Analysis: Acceptable.**

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

9. **Duplicate Analysis: Acceptable.**

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

10. **Laboratory Control Sample Analysis: Acceptable.**

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

11. **Overall Assessment of Data for Use**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 11, 2012

Client Sample ID:	12060522	Project:	ECOL00801
Sample ID:	310427001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	29-AUG-12 09:00		
Receive Date:	30-AUG-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS										
SW846 3005A/6020A Liquid "As Received"										
Arsenic		7.15 U	5.00	ug/L	1	SKJ	09/08/12	0524	1242450	1 SZVA
Cadmium	U	ND	1.00 U	ug/L	1					
Chromium	U	ND	10.0	ug/L	1					
Copper	U	ND	1.00	ug/L	1					
Lead	U	ND	2.00	ug/L	1					
Thallium	U	ND	2.00	ug/L	1					
Zinc	U	ND	10.0	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	LYH1	08/31/12	0800	1242448

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6020A	

9-13-12

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 11, 2012

Client Sample ID:	12060523	Project:	ECOL00801
Sample ID:	310427002	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	29-AUG-12 09:15		
Receive Date:	30-AUG-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS										
SW846 3005A/6020A Liquid "As Received"										
Arsenic		20.2	5.00	ug/L	1	SKJ	09/08/12	0554	1242450	1
Cadmium	U	~~ND~~	1.00 U	ug/L	1					
Chromium	U	~~ND~~	10.0 U	ug/L	1					
Copper		5.04	1.00	ug/L	1					
Lead		2.91	2.00	ug/L	1					
Thallium	U	~~ND~~	2.00 U	ug/L	1					
Zinc		11.6	10.0	ug/L	1					

S2VM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	LYH1	08/31/12	0800	1242448

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6020A	

MW 9/13-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700, Seattle, WA 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: September 13, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-39

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of two water samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060522 12060523

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on August 29, 2012, were extracted on September 4, 2012, and were analyzed on September 4, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Acceptable.

All average Relative Response Factors (RRFs) were within the QC limits. All relative Standard Deviations (RSDs) were within the QC limits.

4. **Continuing Calibration: Acceptable.**

All RRFs were within the QC limits. All % differences were within the QC limits.

5. **Blanks: Acceptable.**

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

6. **System Monitoring Compounds (SMCs): Acceptable.**

All SMC recoveries were within QC limits.

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

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

8. **Duplicate Analysis: Acceptable.**

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

9. **Internal Standards: Acceptable.**

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. **Precision and Bias Determination: Not Performed.**

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. **Performance Evaluation Sample Analysis: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

12. **Overall Assessment of Data for Use**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 5, 2012

Client Sample ID:	12060522	Project:	ECOL00801
Sample ID:	310427001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	29-AUG-12 09:00		
Receive Date:	30-AUG-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D Semivolatile Analysis by Separatory Funnel "As Received"										
Benzo(a)anthracene	U	ND	1.00	ug/L	1	JMB3	09/04/12	2236	1242823	1
Benzo(a)pyrene	U	ND	1.00	ug/L	1					
Benzo(b)fluoranthene	U	ND	1.00	ug/L	1					
Chrysene	U	ND	1.00	ug/L	1					
Diphenylamine	U	ND	10.0	ug/L	1					
bis(2-Ethylhexyl)phthalate	U	ND	10.0	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	SW846 3510C Prep Semivolatiles 8270D	RXC1	09/04/12	1035	1242822

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2,4,6-Tribromophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	59.9 ug/L	100	59.9	(26%-131%)
2-Fluorophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	43.1 ug/L	100	43.1	(15%-78%)
Phenol-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	24.7 ug/L	100	24.7	(10%-72%)
2-Fluorobiphenyl	8270D Semivolatile Analysis by Separatory Funnel "As Received"	26.0 ug/L	50.0	52.1	(29%-102%)
Nitrobenzene-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	35.9 ug/L	50.0	71.7	(36%-125%)
p-Terphenyl-d14	8270D Semivolatile Analysis by Separatory Funnel "As Received"	24.6 ug/L	50.0	49.1	(31%-133%)

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 5, 2012

Client Sample ID:	12060523	Project:	ECOL00801
Sample ID:	310427002	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	29-AUG-12 09:15		
Receive Date:	30-AUG-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D Semivolatile Analysis by Separatory Funnel "As Received"										
Benzo(a)anthracene	U	ND	1.03	ug/L	1	JMB3	09/04/12	2302	1242823	1
Benzo(a)pyrene	U	ND	1.03	ug/L	1					
Benzo(b)fluoranthene	U	ND	1.03	ug/L	1					
Chrysene	U	ND	1.03	ug/L	1					
Diphenylamine	U	ND	10.3	ug/L	1					
bis(2-Ethylhexyl)phthalate		13.4	10.3	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	SW846 3510C Prep Semivolatiles 8270D	RXC1	09/04/12	1035	1242822

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2,4,6-Tribromophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	48.0 ug/L	103	46.5	(26%-131%)
2-Fluorophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	37.4 ug/L	103	36.2	(15%-78%)
Phenol-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	22.2 ug/L	103	21.5	(10%-72%)
2-Fluorobiphenyl	8270D Semivolatile Analysis by Separatory Funnel "As Received"	26.7 ug/L	51.5	51.8	(29%-102%)
Nitrobenzene-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	35.9 ug/L	51.5	69.7	(36%-125%)
p-Terphenyl-d14	8270D Semivolatile Analysis by Separatory Funnel "As Received"	27.1 ug/L	51.5	52.6	(31%-133%)

9-13-12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: September 13, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-39

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of two water samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060522 12060523

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained at < 6°C. The samples were collected on August 29, 2012, extracted on September 5, 2012, and were analyzed by September 6, 2012, therefore meeting QC criteria of less than 7 days between collection and water sample extraction (14 days for soils) and less than 40 days between extraction and analysis.

2. Instrument Performance: Acceptable.

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. Initial and Continuing Calibration: Acceptable.

All initial calibration relative standard deviations (RSDs) were within QC limits. All continuing calibration % differences (% D) were within QC limits.

4. **Error Determination: Not Provided.**

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. **Blanks: Acceptable.**

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

6. **Performance Evaluation Samples: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

7. **System Monitoring Compounds (SMCs): Acceptable.**

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

8. **Matrix Spikes: Acceptable.**

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

9. **Duplicates: Acceptable.**

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

10. **Compound Identification: Acceptable.**

All results were dual-column confirmed with differences between the columns less than 25%.

11. **Target Compound Quantitation and Quantitation Limits: Acceptable.**

Sample results and quantitation limits were correctly calculated.

12. **Laboratory Contact**

No laboratory contact was required.

13. **Overall Assessment**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 7, 2012

Client Sample ID:	12060522	Project:	ECOL00801
Sample ID:	310427001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	29-AUG-12 09:00		
Receive Date:	30-AUG-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3535A/8082A PCB Liquids "As Received"										
Aroclor-1016	U	ND	0.098	ug/L	1	JXM	09/06/12	1536	1242850	1
Aroclor-1221	U	ND	0.098	ug/L	1					
Aroclor-1232	U	ND	0.098	ug/L	1					
Aroclor-1242	U	ND	0.098	ug/L	1					
Aroclor-1248	U	ND	0.098	ug/L	1					
Aroclor-1254	U	ND	0.098	ug/L	1					
Aroclor-1260	U	ND	0.098	ug/L	1					
Aroclor-Total	U	ND	0.098	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	SW3535A PCB SPE Extraction	RXC1	09/05/12	0945	1242848

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3535A/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3535A/8082A PCB Liquids "As Received"	0.137 ug/L	0.196	70.0	(34%-120%)
Decachlorobiphenyl	SW846 3535A/8082A PCB Liquids "As Received"	0.145 ug/L	0.196	73.9	(33%-120%)

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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 7, 2012

Client Sample ID: 12060523
Sample ID: 310427002
Matrix: Water
Collect Date: 29-AUG-12 09:15
Receive Date: 30-AUG-12
Collector: Client

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3535A/8082A PCB Liquids "As Received"										
Aroclor-1016	U	ND	0.0971	ug/L	1	JXM	09/06/12	1548	1242850	1
Aroclor-1221	U	ND	0.0971	ug/L	1					
Aroclor-1232	U	ND	0.0971	ug/L	1					
Aroclor-1242	U	ND	0.0971	ug/L	1					
Aroclor-1248	U	ND	0.0971	ug/L	1					
Aroclor-1254	U	ND	0.0971	ug/L	1					
Aroclor-1260	U	ND	0.0971	ug/L	1					
Aroclor-Total	U	ND	0.0971	ug/L	1					

MW

SDM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	SW3535A PCB SPE Extraction	RXC1	09/05/12	0945	1242848

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3535A/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3535A/8082A PCB Liquids "As Received"	0.124 ug/L	0.194	63.8	(34%-120%)
Decachlorobiphenyl	SW846 3535A/8082A PCB Liquids "As Received"	0.148 ug/L	0.194	76.1	(33%-120%)

MW
9-13-12

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Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: September 15, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-40

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one soil sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060213

Data Qualifications:

1. Sample Holding Times: Acceptable.

The sample was maintained at < 6°C. The sample was collected on August 31, 2012, extracted on September 5, 2012, and were analyzed by September 6, 2012, therefore meeting QC criteria of less than 7 days between collection and water sample extraction (14 days for soils) and less than 40 days between extraction and analysis.

2. Instrument Performance: Acceptable.

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. Initial and Continuing Calibration: Acceptable.

All initial calibration relative standard deviations (RSDs) were within QC limits. All continuing calibration % differences (% D) were within QC limits.

4. Error Determination: Not Provided.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Acceptable.

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

6. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. System Monitoring Compounds (SMCs): Acceptable.

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

8. Blank and Matrix Spikes: Acceptable.

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

9. Duplicates: Acceptable.

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

10. Compound Identification: Acceptable.

All results were dual-column confirmed with differences between the columns less than 25%.

11. Target Compound Quantitation and Quantitation Limits: Acceptable.

Sample results and quantitation limits were correctly calculated.

12. Laboratory Contact

No laboratory contact was required.

13. Overall Assessment

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

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JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

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NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 7, 2012

Client Sample ID:	12060213	Project:	ECOL00801
Sample ID:	310576001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	31-AUG-12 10:00		
Receive Date:	01-SEP-12		
Collector:	Client		
Moisture:	14.2%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	3.87	ug/kg	1	JXM	09/06/12	1345	1243548	1
Aroclor-1221	U	ND	3.87	ug/kg	1					
Aroclor-1232	U	ND	3.87	ug/kg	1					
Aroclor-1242	U	ND	3.87	ug/kg	1					
Aroclor-1248	U	ND	3.87	ug/kg	1					
Aroclor-1254	U	ND	3.87	ug/kg	1					
Aroclor-1260	U	ND	3.87	ug/kg	1					
Aroclor-Total	U	ND	3.87	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	09/05/12	1735	1243546

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	5.30 ug/kg	7.75	68.4	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	6.08 ug/kg	7.75	78.5	(19%-130%)

MW 9/5-R

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700
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Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: September 15, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-40

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one soil sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060213

Data Qualifications:

1. Sample Holding Times: Acceptable.

The sample was maintained and received within the QC limits of < 6°C. The sample was collected on August 22 2012, was extracted on September 5, 2012, and was analyzed on September 6, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Acceptable.

All average Relative Response Factors (RRFs) were within the QC limits. All Relative Standard Deviations (RSDs) were within the QC limits.

4. Continuing Calibration: Satisfactory.

All RRFs were within the QC limits. All % differences were within the QC limits except p-nitroaniline and carbazole with decreasing response factors (associated sample quantitation limits were qualified as estimated quantities with a low bias [UJL]) and bis(2-ethylhexyl)phthalate and di-n-octylphthalate with increasing response factors (no actions were taken as these analytes were not detected in the associated sample).

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

7. Matrix Spike (MS)/MS Duplicate (MSD)/Blank Spike (BS) Analysis: Acceptable.

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

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Acceptable.

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 12, 2012

Client Sample ID:	12060213	Project:	ECOL00801
Sample ID:	310576001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	31-AUG-12 10:00		
Receive Date:	01-SEP-12		
Collector:	Client		
Moisture:	14.2%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	387	ug/kg	1	AGS1	09/06/12	1638	1243372	1
1,2,4,5-Tetrachlorobenzene	U	ND	387	ug/kg	1					
1-Methylnaphthalene	U	ND	38.7	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	387	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	387	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	387	ug/kg	1					
2,4-Dichlorophenol	U	ND	387	ug/kg	1					
2,4-Dimethylphenol	U	ND	387	ug/kg	1					
2,4-Dinitrophenol	U	ND	775	ug/kg	1					
2,4-Dinitrotoluene	U	ND	387	ug/kg	1					
2,6-Dinitrotoluene	U	ND	387	ug/kg	1					
2-Chloronaphthalene	U	ND	38.7	ug/kg	1					
2-Chlorophenol	U	ND	387	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	387	ug/kg	1					
2-Methylnaphthalene	U	ND	38.7	ug/kg	1					
2-Nitrophenol	U	ND	387	ug/kg	1					
3,3'-Dichlorobenzidine	U	ND	387	ug/kg	1					
4-Bromophenylphenylether	U	ND	387	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	387	ug/kg	1					
4-Chloroaniline	U	ND	387	ug/kg	1					
4-Chlorophenylphenylether	U	ND	387	ug/kg	1					
4-Nitrophenol	U	ND	387	ug/kg	1					
Acenaphthene	U	ND	38.7	ug/kg	1					
Acenaphthylene	U	ND	38.7	ug/kg	1					
Acetophenone	U	ND	387	ug/kg	1					
Anthracene	U	ND	38.7	ug/kg	1					
Atrazine	U	ND	387	ug/kg	1					
Benzaldehyde	U	ND	387	ug/kg	1					
Benzo(a)anthracene	U	ND	38.7	ug/kg	1					
Benzo(a)pyrene	U	ND	38.7	ug/kg	1					
Benzo(b)fluoranthene	U	ND	38.7	ug/kg	1					
Benzo(ghi)perylene	U	ND	38.7	ug/kg	1					
Benzo(k)fluoranthene	U	ND	38.7	ug/kg	1					
Butylbenzylphthalate	U	ND	387	ug/kg	1					
Caprolactam	U	ND	387	ug/kg	1					
Carbazole	U	ND	38.7	ug/kg	1					
Chrysene	U	ND	38.7	ug/kg	1					

SLAM

MW

MW 9-15-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 12, 2012

Client Sample ID: 12060213
Sample ID: 310576001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	387	ug/kg	1					
Di-n-octylphthalate	U	ND	387	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	38.7	ug/kg	1					
Dibenzofuran	U	ND	387	ug/kg	1					
Diethylphthalate	U	ND	387	ug/kg	1					
Dimethylphthalate	U	ND	387	ug/kg	1					
Diphenylamine	U	ND	387	ug/kg	1					
Fluoranthene	U	ND	38.7	ug/kg	1					
Fluorene	U	ND	38.7	ug/kg	1					
Hexachlorobenzene	U	ND	387	ug/kg	1					
Hexachlorobutadiene	U	ND	387	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	387	ug/kg	1					
Hexachloroethane	U	ND	387	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	38.7	ug/kg	1					
Isophorone	U	ND	387	ug/kg	1					
N-Nitrosodipropylamine	U	ND	387	ug/kg	1					
Naphthalene	U	ND	38.7	ug/kg	1					
Nitrobenzene	U	ND	387	ug/kg	1					
Pentachlorophenol	U	ND	387	ug/kg	1					
Phenanthrene	U	ND	38.7	ug/kg	1					
Phenol	U	ND	387	ug/kg	1					
Pyrene	U	ND	38.7	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	387	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	387	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	387	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	387	ug/kg	1					
m,p-Cresols	U	ND	387	ug/kg	1					
m-Nitroaniline	U	ND	387	ug/kg	1					
o-Cresol	U	ND	387	ug/kg	1					
o-Nitroaniline	U	ND	387	ug/kg	1					
p-Nitroaniline	U	ND	387	ug/kg	1					

SHM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	09/05/12	1832	1243371

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

MW 9-15-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 12, 2012

Client Sample ID: 12060213
Sample ID: 310576001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1440 ug/kg	1940	74.6	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1670 ug/kg	1940	86.0	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1170 ug/kg	1940	60.1	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	3200 ug/kg	3870	82.5	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	3170 ug/kg	3870	81.9	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2940 ug/kg	3870	76.0	(26%-112%)

JMW
9/15/12

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MEMORANDUM

DATE: September 15, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-40

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one soil and one water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Volatile organic compound (VOC) analysis (EPA Method 8260) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060213 12061908

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on August 31, 2012, and were analyzed by September 5, 2012, therefore meeting QC criteria of less than 14 days between collection and analysis for soil and preserved water samples.

2. Tuning: Acceptable.

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. Initial Calibration: Acceptable.

All average Relative Response Factors (RRFs) were within the QC limits. All Relative Standard Deviations (RSDs) were within the QC limits.

4. Continuing Calibration: Acceptable.

All RRFs were within the QC limits. All % differences were within the QC limits.

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

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

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

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Acceptable.

All internal standards were within $\pm$ 30 seconds of the continuing calibration internal standard retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

<u>Data Qualifiers and Definitions</u>

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 12, 2012

Client Sample ID:	12061908	Project:	ECOL00801
Sample ID:	310577001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	31-AUG-12 11:00		
Receive Date:	01-SEP-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5030/8260A TCL in Liquid "As Received"										
1,1,1-Trichloroethane	U	ND	1.00	ug/L	1	ACJ	09/04/12	1759	1243291	1
1,1,2,2-Tetrachloroethane	U	ND	1.00	ug/L	1					
1,1,2-Trichloroethane	U	ND	1.00	ug/L	1					
1,1-Dichloroethane	U	ND	1.00	ug/L	1					
1,1-Dichloroethylene	U	ND	1.00	ug/L	1					
1,2-Dichloroethane	U	ND	1.00	ug/L	1					
1,2-Dichloropropane	U	ND	1.00	ug/L	1					
2-Butanone	U	ND	5.00	ug/L	1					
2-Hexanone	U	ND	5.00	ug/L	1					
4-Methyl-2-pentanone	U	ND	5.00	ug/L	1					
Acetone	U	ND	5.00	ug/L	1					
Benzene	U	ND	1.00	ug/L	1					
Bromodichloromethane	U	ND	1.00	ug/L	1					
Bromoform	U	ND	1.00	ug/L	1					
Bromomethane	U	ND	1.00	ug/L	1					
Carbon disulfide	U	ND	5.00	ug/L	1					
Carbon tetrachloride	U	ND	1.00	ug/L	1					
Chlorobenzene	U	ND	1.00	ug/L	1					
Chloroethane	U	ND	1.00	ug/L	1					
Chloroform	U	ND	1.00	ug/L	1					
Chloromethane	U	ND	1.00	ug/L	1					
Dibromochloromethane	U	ND	1.00	ug/L	1					
Ethylbenzene	U	ND	1.00	ug/L	1					
Methylene chloride	U	ND	5.00	ug/L	1					
Styrene	U	ND	1.00	ug/L	1					
Tetrachloroethylene	U	ND	1.00	ug/L	1					
Toluene	U	ND	1.00	ug/L	1					
Trichloroethylene	U	ND	1.00	ug/L	1					
Vinyl acetate	U	ND	5.00	ug/L	1					
Vinyl chloride	U	ND	1.00	ug/L	1					
Xylenes (total)	U	ND	3.00	ug/L	1					
cis-1,2-Dichloroethylene	U	ND	1.00	ug/L	1					
cis-1,3-Dichloropropylene	U	ND	1.00	ug/L	1					
tert-Butyl methyl ether	U	ND	1.00	ug/L	1					
trans-1,2-Dichloroethylene	U	ND	1.00	ug/L	1					
trans-1,3-Dichloropropylene	U	ND	1.00	ug/L	1					

MW

SHM

MW 9-15-12

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 12, 2012

Client Sample ID: 12061908
Sample ID: 310577001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5030/8260A TCL in Liquid "As Received"	49.1 ug/L	50.0	98.2	(80%-123%)
Bromofluorobenzene	5030/8260A TCL in Liquid "As Received"	51.8 ug/L	50.0	104	(80%-120%)
Toluene-d8	5030/8260A TCL in Liquid "As Received"	48.0 ug/L	50.0	95.9	(80%-120%)

MW 9-15-12

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 13, 2012

Client Sample ID:	12060213	Project:	ECOL00801
Sample ID:	310576001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	31-AUG-12 10:00		
Receive Date:	01-SEP-12		
Collector:	Client		
Moisture:	14.2%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	U	ND	0.925	ug/kg	1	RXY1	09/05/12	1310	1243386	1 SHVM
1,1,2,2-Tetrachloroethane	U	ND	0.925	ug/kg	1					
1,1,2-Trichloroethane	U	ND	0.925	ug/kg	1					
1,1-Dichloroethane	U	ND	0.925	ug/kg	1					
1,1-Dichloroethylene	U	ND	0.925	ug/kg	1					
1,2-Dichloroethane	U	ND	0.925	ug/kg	1					
1,2-Dichloroethylene (total)	U	ND	1.85	ug/kg	1					
1,2-Dichloropropane	U	ND	0.925	ug/kg	1					
2-Butanone	U	ND	4.62	ug/kg	1					
2-Hexanone	U	ND	4.62	ug/kg	1					
4-Methyl-2-pentanone	U	ND	4.62	ug/kg	1					
Acetone	U	ND	4.62	ug/kg	1					
Benzene	U	ND	0.925	ug/kg	1					
Bromodichloromethane	U	ND	0.925	ug/kg	1					
Bromoform	U	ND	0.925	ug/kg	1					
Bromomethane	U	ND	0.925	ug/kg	1					
Carbon disulfide	U	ND	4.62	ug/kg	1					
Carbon tetrachloride	U	ND	0.925	ug/kg	1					
Chlorobenzene	U	ND	0.925	ug/kg	1					
Chloroethane	U	ND	0.925	ug/kg	1					
Chloroform	U	ND	0.925	ug/kg	1					
Chloromethane	U	ND	0.925	ug/kg	1					
Dibromochloromethane	U	ND	0.925	ug/kg	1					
Ethylbenzene	U	ND	0.925	ug/kg	1					
Methylene chloride	U	ND	4.62	ug/kg	1					
Styrene	U	ND	0.925	ug/kg	1					
Tetrachloroethylene	U	ND	0.925	ug/kg	1					
Toluene	U	ND	0.925	ug/kg	1					
Trichloroethylene	U	ND	0.925	ug/kg	1					
Vinyl acetate	U	ND	4.62	ug/kg	1					
Vinyl chloride	U	ND	0.925	ug/kg	1					
Xylenes (total)	U	ND	2.77	ug/kg	1					
cis-1,2-Dichloroethylene	U	ND	0.925	ug/kg	1					
cis-1,3-Dichloropropylene	U	ND	0.925	ug/kg	1					
m,p-Xylenes	U	ND	1.85	ug/kg	1					
o-Xylene	U	ND	0.925	ug/kg	1					
tert-Butyl methyl ether	U	ND	0.925	ug/kg	1					

MW 9-15-12

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 13, 2012

Client Sample ID: 12060213
Sample ID: 310576001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										SHM
trans-1,2-Dichloroethylene	U	~~ND~~	0.925 U	ug/kg	1					
trans-1,3-Dichloropropylene	U	ND MW	0.925 U	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	RXY1	08/31/12	1000	1243383

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	53.7 ug/kg	50.0	116	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	47.6 ug/kg	50.0	103	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	46.7 ug/kg	50.0	101	(80%-120%)

MW 9-15-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700
Seattle, Washington 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: September 24, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-41

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of one soil sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Analysis for Extended Diesel Range Total Petroleum Hydrocarbons (Ecology Method NWTPH-Dx) was performed by TestAmerica Seattle, Tacoma, Washington. All sample analyses were evaluated following EPA's Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060213

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The sample was maintained at < 6°C. The sample was collected on August 31, 2012, extracted by September 12, 2012, and analyzed by September 13, 2012, therefore meeting QC criteria of less than 14 days between collection and extraction for soil samples, and less than 40 days between extraction and analysis.

2. **Initial and Continuing Calibrations: Acceptable.**

Calculations were verified as correct. All initial calibration correlation coefficients were ≥ 0.990 and/or all relative percent differences (RPDs) were within the laboratory control limits. All continuing calibration percent differences (%Ds) were within the laboratory control limits.

3. **Error Determination: Not Performed.**

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

4. **Blanks: Satisfactory.**

A method blank was analyzed for each extraction batch for each matrix and analysis system. Diesel-range TPHs were not detected in any blank, but motor oil-range TPHs were detected in one blank at 16.1 mg/kg; the associated sample result was qualified as not detected (U).

5. **System Monitoring Compounds (SMC): Satisfactory.**

All recoveries of the SMCs were greater than 10% and within QC criteria except one SMC in one continuing calibration; no action was taken based on this outlier as all continuing calibration results were within QC limits.

6. **Performance Evaluation Samples: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

7. **Matrix and Blank Spikes: Acceptable.**

Matrix and blank spike results were within QC limits.

8. **Duplicates: Acceptable.**

Spike duplicate results were within QC limits.

9. **Quantitation and Quantitation Limits: Acceptable.**

Sample concentrations were correctly calculated.

10. **Laboratory Contact: Not Required.**

No laboratory contact was required.

11. **Overall Assessment of Data for Use**

Positive sample results less than the reporting limit were qualified as estimated quantities (JQ).

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the Method Detection Limit (MDL) and the Reporting Limit (RL).

Client: Ecology and Environment, Inc.

Job Number: 580-34757-1

Client Sample ID: **12060213**

Lab Sample ID: 580-34757-1

Client Matrix: Solid

% Moisture: 18.9

Date Sampled: 08/31/2012 1000

Date Received: 09/01/2012 0900

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-119852	Instrument ID:	TAC020
Prep Method:	3550B	Prep Batch:	580-119859	Lab File ID:	BO00357.D
Dilution:	1.0			Initial Weight/Volume:	10.2756 g
Analysis Date:	09/13/2012 0406			Final Weight/Volume:	10 mL
Prep Date:	09/12/2012 0940			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		7.3	J Q	6.8	30
Motor Oil (>C24-C36)		~~19~~	~~J~~ MW	11	60 U

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	89		50 - 150

MW 9-24-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700, Seattle, WA 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: October 4, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-42

REF:

TDDs:	12-05-0006	PANs: 002233.0790.01RA
	12-05-0007	PANs: 002233.0791.01RA
	12-05-0008	PANs: 002233.0792.01RA
	12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of two water samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060524 12060525

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on September 6, 2012, were extracted on September 12, 2012, and were analyzed on September 13, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction and less than 40 days between extraction and analysis.

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were within the QC limits. All Relative Standard Deviations (RSDs) were within the QC limits.

4. **Continuing Calibration: Acceptable.**

All RRFs were within the QC limits. All % differences were within the QC limits.

5. **Blanks: Acceptable.**

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

6. **System Monitoring Compounds (SMCs): Acceptable.**

All SMC recoveries were within QC limits.

7. **Matrix Spike (MS)/MS Duplicate (MSD)/Blank Spike (BS) Analysis: Acceptable.**

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

8. **Duplicate Analysis: Acceptable.**

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

9. **Internal Standards: Acceptable.**

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. **Precision and Bias Determination: Not Performed.**

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. **Performance Evaluation Sample Analysis: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

12. **Overall Assessment of Data for Use**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 13, 2012

Client Sample ID:	12060524	Project:	ECOL00801
Sample ID:	310839001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	06-SEP-12 09:20		
Receive Date:	07-SEP-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D Semivolatile Analysis by Separatory Funnel "As Received"										
Benzo(a)anthracene	U	ND	1.01	ug/L	1	JMB3	09/12/12	2123	1245262	1
Benzo(a)pyrene	U	ND	1.01	ug/L	1					
Benzo(b)fluoranthene	U	ND	1.01	ug/L	1					
Chrysene	U	ND	1.01	ug/L	1					
Diphenylamine	U	ND	10.1	ug/L	1					
bis(2-Ethylhexyl)phthalate	U	ND	10.1	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	SW846 3510C Prep Semivolatiles 8270D	RXC1	09/12/12	1030	1245261

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2,4,6-Tribromophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	53.2 ug/L	101	52.7	(26%-131%)
2-Fluorophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	25.6 ug/L	101	25.4	(15%-78%)
Phenol-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	14.1 ug/L	101	13.9	(10%-72%)
2-Fluorobiphenyl	8270D Semivolatile Analysis by Separatory Funnel "As Received"	28.5 ug/L	50.5	56.4	(29%-102%)
Nitrobenzene-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	35.9 ug/L	50.5	71.0	(36%-125%)
p-Terphenyl-d14	8270D Semivolatile Analysis by Separatory Funnel "As Received"	30.5 ug/L	50.5	60.4	(31%-133%)

JMW 10-4-12

GEL LABORATORIES LLC
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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 13, 2012

Client Sample ID:	12060525	Project:	ECOL00801
Sample ID:	310839002	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	06-SEP-12 09:21		
Receive Date:	07-SEP-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
8270D Semivolatile Analysis by Separatory Funnel "As Received"										
Benzo(a)anthracene	U	ND	1.00	ug/L	1	JMB3	09/13/12	1146	1245262	1
Benzo(a)pyrene	U	ND	1.00	ug/L	1					
Benzo(b)fluoranthene	U	ND	1.00	ug/L	1					
Chrysene	U	ND	1.00	ug/L	1					
Diphenylamine	U	ND	10.0	ug/L	1					
bis(2-Ethylhexyl)phthalate		20.3	10.0	ug/L	1					

SHM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3510C	SW846 3510C Prep Semivolatiles 8270D	RXC1	09/12/12	1030	1245261

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3510C/8270D	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2,4,6-Tribromophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	63.3 ug/L	100	63.3	(26%-131%)
2-Fluorophenol	8270D Semivolatile Analysis by Separatory Funnel "As Received"	28.3 ug/L	100	28.3	(15%-78%)
Phenol-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	15.6 ug/L	100	15.6	(10%-72%)
2-Fluorobiphenyl	8270D Semivolatile Analysis by Separatory Funnel "As Received"	35.8 ug/L	50.0	71.6	(29%-102%)
Nitrobenzene-d5	8270D Semivolatile Analysis by Separatory Funnel "As Received"	45.3 ug/L	50.0	90.5	(36%-125%)
p-Terphenyl-d14	8270D Semivolatile Analysis by Separatory Funnel "As Received"	33.6 ug/L	50.0	67.3	(31%-133%)

MW 10-4-12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: October 4, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Inorganic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-42

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of two water samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Target Analyte List (TAL) metals analyses (EPA Method 6020) were performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060524 12060525

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

All liquid samples were preserved to a pH < 2. The samples were maintained at < 6°C. The samples were collected on September 6, 2012, and were analyzed by September 15, 2012, therefore meeting QC criteria of less than 6 months between collection, extraction, and analysis.

2. **Initial and Continuing Calibration: Acceptable.**

A minimum of one calibration standard and a blank were analyzed at the beginning of the ICP analysis sequence and after every 10 samples. No results were greater than 110% of the highest calibration standard. All ICP recoveries were within the QC limits of 90% to 110%.

3. **Blanks: Acceptable.**

A preparation blank was analyzed for each 20 samples or per matrix per concentration level. Blanks were analyzed after each Initial or Continuing Calibration Verification. There were no detections in any blanks that affected sample results.

4. **ICP Interference Check Sample: Acceptable.**

An Interference Check Sample (ICS) was analyzed at the beginning of each sequence. All ICS (solution AB) results were within QC limits of 80% - 120% recovery.

5. **Precision and Bias Determination: Not Performed.**

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

6. **Performance Evaluation Sample Analysis: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

7. **ICP Serial Dilution: Acceptable.**

A serial dilution analysis was performed per matrix per concentration or per sample delivery group, whichever was more frequent. All serial dilution results were within QC limits.

8. **Matrix Spike Analysis: Acceptable.**

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

9. **Duplicate Analysis: Acceptable.**

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

10. **Laboratory Control Sample Analysis: Acceptable.**

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

11. **Overall Assessment of Data for Use**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 28, 2012

Client Sample ID:	12060524	Project:	ECOL00801
Sample ID:	310839001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	06-SEP-12 09:20		
Receive Date:	07-SEP-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS										
SW846 3005A/6020A Liquid "As Received"										
Arsenic	~~U~~	ND	5.00	ug/L	1	SKJ	09/15/12	0215	1244525	1
Cadmium	U	~~ND~~	1.00	ug/L	1					
Chromium	U	ND	10.0	ug/L	1					
Copper		1.42	1.00	ug/L	1					
Lead	~~U~~	ND	2.00	ug/L	1					
Thallium	U	~~ND~~	2.00	ug/L	1					
Zinc	U	ND	10.0	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	AXG2	09/10/12	0900	1244524

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6020A	

10-4-12

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 28, 2012

Client Sample ID:	12060525	Project:	ECOL00801
Sample ID:	310839002	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	06-SEP-12 09:21		
Receive Date:	07-SEP-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS										
SW846 3005A/6020A Liquid "As Received"										
Arsenic	U	ND	5.00	ug/L	1	SKJ	09/15/12	0245	1244525	1
Cadmium	U	ND	1.00	ug/L	1					
Chromium	U	ND	10.0	ug/L	1					
Copper		1.19	1.00	ug/L	1					
Lead	U	ND	2.00	ug/L	1					
Thallium	U	ND	2.00	ug/L	1					
Zinc	U	ND	10.0	ug/L	1					

SYMM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	AXG2	09/10/12	0900	1244524

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3005A/6020A	

MW 10/4/12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700, Seattle, WA 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: October 4, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-42

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of two water samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060524 12060525

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained at < 6°C. The samples were collected on September 6, 2012, extracted on September 19, 2012, and were analyzed by September 20, 2012, therefore meeting QC criteria of less than 7 days between collection and water sample extraction and less than 40 days between extraction and analysis.

2. Instrument Performance: Acceptable.

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. Initial and Continuing Calibration: Acceptable.

All initial calibration relative standard deviations (RSDs) were within QC limits. All continuing calibration % differences (% D) were within QC limits.

4. Error Determination: Not Provided.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Acceptable.

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

6. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. System Monitoring Compounds (SMCs): Acceptable.

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

8. Blank Spikes: Acceptable.

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

9. Duplicates: Acceptable.

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

10. Compound Identification: Acceptable.

All results were dual-column confirmed with differences between the columns less than 25%.

11. Target Compound Quantitation and Quantitation Limits: Acceptable.

Sample results and quantitation limits were correctly calculated.

12. Laboratory Contact

No laboratory contact was required.

13. Overall Assessment

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 21, 2012

Client Sample ID:	12060524	Project:	ECOL00801
Sample ID:	310839001	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	06-SEP-12 09:20		
Receive Date:	07-SEP-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3535A/8082A PCB Liquids "As Received"										
Aroclor-1016	U	ND	0.098	ug/L	1	JXM	09/20/12	1102	1247259	1
Aroclor-1221	U	ND	0.098	ug/L	1					
Aroclor-1232	U	ND	0.098	ug/L	1					
Aroclor-1242	U	ND	0.098	ug/L	1					
Aroclor-1248	U	ND	0.098	ug/L	1					
Aroclor-1254	U	ND	0.098	ug/L	1					
Aroclor-1260	U	ND	0.098	ug/L	1					
Aroclor-Total	U	ND	0.098	ug/L	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	SW3535A PCB SPE Extraction	TXA2	09/19/12	1221	1247258

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3535A/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3535A/8082A PCB Liquids "As Received"	0.129 ug/L	0.196	65.8	(34%-120%)
Decachlorobiphenyl	SW846 3535A/8082A PCB Liquids "As Received"	0.164 ug/L	0.196	83.7	(33%-120%)

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Certificate of Analysis

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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 21, 2012

Client Sample ID:	12060525	Project:	ECOL00801
Sample ID:	310839002	Client ID:	ECOL008
Matrix:	Water		
Collect Date:	06-SEP-12 09:21		
Receive Date:	07-SEP-12		
Collector:	Client		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3535A/8082A PCB Liquids "As Received"										
Aroclor-1016	U	ND	0.098	ug/L	1	JXM	09/20/12	1114	1247259	1
Aroclor-1221	U	ND	0.098	ug/L	1					
Aroclor-1232	U	ND	0.098	ug/L	1					
Aroclor-1242	U	ND	0.098	ug/L	1					
Aroclor-1248	U	ND	0.098	ug/L	1					
Aroclor-1254	U	ND	0.098	ug/L	1					
Aroclor-1260	U	ND	0.098	ug/L	1					
Aroclor-Total	U	ND	0.098	ug/L	1					

SHVM

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3535A	SW3535A PCB SPE Extraction	TXA2	09/19/12	1221	1247258

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3535A/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3535A/8082A PCB Liquids "As Received"	0.135 ug/L	0.196	68.8	(34%-120%)
Decachlorobiphenyl	SW846 3535A/8082A PCB Liquids "As Received"	0.158 ug/L	0.196	80.6	(33%-120%)

MW 10/4/12

ecology and environment, inc.
Global Environmental Specialists

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

MEMORANDUM

DATE: October 8, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-43

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of two soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Selected Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060121 12060122

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on September 10, 2012, were extracted on September 17, 2012, and were analyzed on September 18, 2012, therefore meeting holding time criteria of less than 7 days between collection and extraction (14 days for soil) and less than 40 days between extraction and analysis.

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were within the QC limits. All Relative Standard Deviations (RSDs) were within the QC limits.

4. **Continuing Calibration: Satisfactory.**

All RRFs were within the QC limits. All % differences were within the QC limits except the surrogate terphenyl-d14, bis(2-chloroisopropyl)ether, hexachlorocyclopentadiene, 2,4-dinitrophenol, 2-methyl-4,6-dinitrophenol, hexachlorobenzene, pentachlorophenol, pyrene, butylbenzylphthalate, bis(2-ethylhexyl)phthalate, di-n-octylphthalate, indeno(1,2,3-cd)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene with low recoveries in the continuing calibration. No action was taken based on the surrogate outlier. The results for the other low outliers were qualified as estimated quantities with a low bias (JL and UJL).

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits except when outside limits due to sample dilutions.

7. Matrix Spike (MS)/MS Duplicate (MSD)/Blank Spike (BS) Analysis: Acceptable.

All spike analyses were performed per SDG or per matrix per concentration level, whichever was more frequent. All recoveries were within the QC limits except when outside limits due to sample dilutions.

8. Duplicate Analysis: Acceptable.

Blank spike duplicate analysis was performed per SDG or per matrix per concentration level, whichever was more frequent. All spike duplicate results were within QC limits except when outside limits due to sample dilutions.

9. Internal Standards: Satisfactory.

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts except perylene-d12 with low area counts in both samples. Associated sample quantitation limits were qualified as estimated quantities with a low bias (UJL).

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

The overall usefulness of the data is based on the criteria outlined in the Site-Specific Sampling Plan, the OSWER Guidance Document "Quality Assurance/Quality Control Guidance for Removal

Activities, Sampling QA/QC Plan, and Data Validation Procedures" (EPA/540/G-90/004), the analytical method, and, when applicable, the Office of Emergency and Remedial Response Publication "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review". Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

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R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 24, 2012

Client Sample ID:	12060121	Project:	ECOL00801
Sample ID:	311021001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	10-SEP-12 08:10		
Receive Date:	11-SEP-12		
Collector:	Client		
Moisture:	24.6%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	44100	ug/kg	100	RMB	09/18/12	1416	1246910	1
1,2,4,5-Tetrachlorobenzene	U	ND	44100	ug/kg	100					
1-Methylnaphthalene		19900	4410	ug/kg	100					
2,3,4,6-Tetrachlorophenol	U	ND	44100	ug/kg	100					
2,4,5-Trichlorophenol	U	ND	44100	ug/kg	100					
2,4,6-Trichlorophenol	U	ND	44100	ug/kg	100					
2,4-Dichlorophenol	U	ND	44100	ug/kg	100					
2,4-Dimethylphenol	U	ND	44100	ug/kg	100					
2,4-Dinitrophenol	U	ND	88300	ug/kg	100					
2,4-Dinitrotoluene	U	ND	44100	ug/kg	100					
2,6-Dinitrotoluene	U	ND	44100	ug/kg	100					
2-Chloronaphthalene	U	ND	4410	ug/kg	100					
2-Chlorophenol	U	ND	44100	ug/kg	100					
2-Methyl-4,6-dinitrophenol	U	ND	44100	ug/kg	100					
2-Methylnaphthalene		17000	4410	ug/kg	100					
2-Nitrophenol	U	ND	44100	ug/kg	100					
3,3'-Dichlorobenzidine	U	ND	44100	ug/kg	100					
4-Bromophenylphenylether	U	ND	44100	ug/kg	100					
4-Chloro-3-methylphenol	U	ND	44100	ug/kg	100					
4-Chloroaniline	U	ND	44100	ug/kg	100					
4-Chlorophenylphenylether	U	ND	44100	ug/kg	100					
4-Nitrophenol	U	ND	44100	ug/kg	100					
Acenaphthene	U	ND	4410	ug/kg	100					
Acenaphthylene	U	ND	4410	ug/kg	100					
Acetophenone	U	ND	44100	ug/kg	100					
Anthracene	U	ND	4410	ug/kg	100					
Atrazine	U	ND	44100	ug/kg	100					
Benzaldehyde	U	ND	44100	ug/kg	100					
Benzo(a)anthracene	U	ND	4410	ug/kg	100					
Benzo(a)pyrene	U	ND	4410	ug/kg	100					
Benzo(b)fluoranthene	U	ND	4410	ug/kg	100					
Benzo(ghi)perylene	U	ND	4410	ug/kg	100					
Benzo(k)fluoranthene	U	ND	4410	ug/kg	100					
Butylbenzylphthalate	U	ND	44100	ug/kg	100					
Caprolactam	U	ND	44100	ug/kg	100					
Carbazole	U	ND	4410	ug/kg	100					
Chrysene	U	ND	4410	ug/kg	100					

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Certificate of Analysis

Company :	Ecology and Environment, Inc.
Address :	720 Third Ave Suite 1700 Seattle, Washington 98104
Contact:	Mr. Steve Hall
Project:	**Project No. 4500000347**

Report Date: September 24, 2012

Client Sample ID:	12060121	Project:	ECOL00801
Sample ID:	311021001	Client ID:	ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	44100	ug/kg	100					
Di-n-octylphthalate	U	ND	44100	ug/kg	100					
Dibenzo(a,h)anthracene	U	ND	4410	ug/kg	100					
Dibenzofuran	U	ND	44100	ug/kg	100					
Diethylphthalate	U	ND	44100	ug/kg	100					
Dimethylphthalate	U	ND	44100	ug/kg	100					
Diphenylamine	U	ND	44100	ug/kg	100					
Fluoranthene	U	ND	4410	ug/kg	100					
Fluorene	U	ND	4410	ug/kg	100					
Hexachlorobenzene	U	ND	44100	ug/kg	100					
Hexachlorobutadiene	U	ND	44100	ug/kg	100					
Hexachlorocyclopentadiene	U	ND	44100	ug/kg	100					
Hexachloroethane	U	ND	44100	ug/kg	100					
Indeno(1,2,3-cd)pyrene	U	ND	4410	ug/kg	100					
Isophorone	U	ND	44100	ug/kg	100					
N-Nitrosodipropylamine	U	ND	44100	ug/kg	100					
Naphthalene	U	ND	4410	ug/kg	100					
Nitrobenzene	U	ND	44100	ug/kg	100					
Pentachlorophenol	U	ND	44100	ug/kg	100					
Phenanthrene	U	ND	4410	ug/kg	100					
Phenol	U	ND	44100	ug/kg	100					
Pyrene	U	ND	4410	ug/kg	100					
bis(2-Chloroethoxy)methane	U	ND	44100	ug/kg	100					
bis(2-Chloroethyl) ether	U	ND	44100	ug/kg	100					
bis(2-Chloroisopropyl)ether	U	ND	44100	ug/kg	100					
bis(2-Ethylhexyl)phthalate	U	ND	44100	ug/kg	100					
m,p-Cresols	U	ND	44100	ug/kg	100					
m-Nitroaniline	U	ND	44100	ug/kg	100					
o-Cresol	U	ND	44100	ug/kg	100					
o-Nitroaniline	U	ND	44100	ug/kg	100					
p-Nitroaniline	U	ND	44100	ug/kg	100					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	AXV1	09/17/12	1905	1246909

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 24, 2012

Client Sample ID: 12060121
Sample ID: 311021001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1060 ug/kg	2210	48.0	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	3180 ug/kg	2210	144*	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1190 ug/kg	2210	54.0	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	0.00 ug/kg	4410	0.00*	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	0.00 ug/kg	4410	0.00*	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	0.00 ug/kg	4410	0.00*	(26%-112%)

The Following NCRs have been identified

NCR ID:1120127 Batch ID: 1245684

1. 1202737493MS and 1202737494MSD did not meet the spike recovery acceptance criteria.

2. The following samples did not meet surrogate recovery acceptance criteria: 311021001, 1202737493MS, and 1202737494MSD.

NCR ID:1121336 Batch ID: 1246910

1. Samples 311021001, 311021002, the MS(1202740412) and MSD(1202740413) recovered surrogates outside of the acceptance limits. Please see the QC Summary report for the specific failures.

2. The MS(1202740412) and MSD(1202740413) recovered analytes outside of the acceptance limits. Please see the QC Summary report for the specific failures.

MW
10-8-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
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Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 24, 2012

Client Sample ID:	12060122	Project:	ECOL00801
Sample ID:	311021002	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	10-SEP-12 08:15		
Receive Date:	11-SEP-12		
Collector:	Client		
Moisture:	14.3%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	38800	ug/kg	100	RMB	09/18/12	1241	1246910	1
1,2,4,5-Tetrachlorobenzene	U	ND	38800	ug/kg	100					
1-Methylnaphthalene	U	ND	3880	ug/kg	100					
2,3,4,6-Tetrachlorophenol	U	ND	38800	ug/kg	100					
2,4,5-Trichlorophenol	U	ND	38800	ug/kg	100					
2,4,6-Trichlorophenol	U	ND	38800	ug/kg	100					
2,4-Dichlorophenol	U	ND	38800	ug/kg	100					
2,4-Dimethylphenol	U	ND	38800	ug/kg	100					
2,4-Dinitrophenol	U	ND	77600	JL ug/kg	100					
2,4-Dinitrotoluene	U	ND	38800	ug/kg	100					
2,6-Dinitrotoluene	U	ND	38800	ug/kg	100					
2-Chloronaphthalene	U	ND	3880	ug/kg	100					
2-Chlorophenol	U	ND	38800	ug/kg	100					
2-Methyl-4,6-dinitrophenol	U	ND	38800	JL ug/kg	100					
2-Methylnaphthalene	U	ND	3880	ug/kg	100					
2-Nitrophenol	U	ND	38800	ug/kg	100					
3,3'-Dichlorobenzidine	U	ND	38800	ug/kg	100					
4-Bromophenylphenylether	U	ND	38800	ug/kg	100					
4-Chloro-3-methylphenol	U	ND	38800	ug/kg	100					
4-Chloroaniline	U	ND	38800	ug/kg	100					
4-Chlorophenylphenylether	U	ND	38800	ug/kg	100					
4-Nitrophenol	U	ND	38800	ug/kg	100					
Acenaphthene	U	ND	3880	ug/kg	100					
Acenaphthylene	U	ND	3880	ug/kg	100					
Acetophenone	U	ND	38800	ug/kg	100					
Anthracene	U	ND	3880	ug/kg	100					
Atrazine	U	ND	38800	ug/kg	100					
Benzaldehyde	U	ND	38800	ug/kg	100					
Benzo(a)anthracene	U	ND	3880	JL ug/kg	100					
Benzo(a)pyrene	U	ND	3880	JL ug/kg	100					
Benzo(b)fluoranthene	U	ND	3880	JL ug/kg	100					
Benzo(ghi)perylene	U	ND	3880	JL ug/kg	100					
Benzo(k)fluoranthene	U	ND	3880	JL ug/kg	100					
Butylbenzylphthalate	U	ND	38800	JL ug/kg	100					
Caprolactam	U	ND	38800	ug/kg	100					
Carbazole	U	ND	3880	ug/kg	100					
Chrysene	U	ND	3880	ug/kg	100					

MW

MW 10-8-12

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Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 24, 2012

Client Sample ID: 12060122
Sample ID: 311021002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	38800	ug/kg	100					
Di-n-octylphthalate	U	ND	38800	ug/kg	100					
Dibenzo(a,h)anthracene	U	ND	3880	ug/kg	100					
Dibenzofuran	U	ND	38800	ug/kg	100					
Diethylphthalate	U	ND	38800	ug/kg	100					
Dimethylphthalate	U	ND	38800	ug/kg	100					
Diphenylamine	U	ND	38800	ug/kg	100					
Fluoranthene	U	ND	3880	ug/kg	100					
Fluorene	U	ND	3880	ug/kg	100					
Hexachlorobenzene	U	ND	38800	ug/kg	100					
Hexachlorobutadiene	U	ND	38800	ug/kg	100					
Hexachlorocyclopentadiene	U	ND	38800	ug/kg	100					
Hexachloroethane	U	ND	38800	ug/kg	100					
Indeno(1,2,3-cd)pyrene	U	ND	3880	ug/kg	100					
Isophorone	U	ND	38800	ug/kg	100					
N-Nitrosodipropylamine	U	ND	38800	ug/kg	100					
Naphthalene	U	ND	3880	ug/kg	100					
Nitrobenzene	U	ND	38800	ug/kg	100					
Pentachlorophenol	U	ND	38800	ug/kg	100					
Phenanthrene	U	ND	3880	ug/kg	100					
Phenol	U	ND	38800	ug/kg	100					
Pyrene	U	ND	3880	ug/kg	100					
bis(2-Chloroethoxy)methane	U	ND	38800	ug/kg	100					
bis(2-Chloroethyl) ether	U	ND	38800	ug/kg	100					
bis(2-Chloroisopropyl)ether	U	ND	38800	ug/kg	100					
bis(2-Ethylhexyl)phthalate	U	ND	38800	ug/kg	100					
m,p-Cresols	U	ND	38800	ug/kg	100					
m-Nitroaniline	U	ND	38800	ug/kg	100					
o-Cresol	U	ND	38800	ug/kg	100					
o-Nitroaniline	U	ND	38800	ug/kg	100					
p-Nitroaniline	U	ND	38800	ug/kg	100					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	AXV1	09/17/12	1905	1246909

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 24, 2012

Client Sample ID: 12060122
Sample ID: 311021002

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1120 ug/kg	1940	58.0	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	737 ug/kg	1940	38.0	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1440 ug/kg	1940	74.0	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	737 ug/kg	3880	19.0*	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	0.00 ug/kg	3880	0.00*	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	0.00 ug/kg	3880	0.00*	(26%-112%)

54%

The Following NCRs have been identified

NCR ID:1120127 Batch ID: 1245684 1. 1202737493MS and 1202737494MSD did not meet the spike recovery acceptance criteria.

2. The following samples did not meet surrogate recovery acceptance criteria: 311021001, 1202737493MS, and 1202737494MSD.

~~NCR ID:1121336 Batch ID: 1246910 1. Samples 311021001, 311021002, the MS(1202740412) and MSD(1202740413) recovered surrogates outside of~~ the acceptance limits. Please see the QC Summary report for the specific failures.

2. The MS(1202740412) and MSD(1202740413) recovered analytes outside of the acceptance limits. Please see the QC Summary report for the specific failures.

MW
10-8-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700, Seattle, WA 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: October 8, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-43

REF:

TDDs: 12-05-0006	PANs: 002233.0790.01RA
12-05-0007	PANs: 002233.0791.01RA
12-05-0008	PANs: 002233.0792.01RA
12-05-0009	PANs: 002233.0793.01RA

The data quality assurance review of two soil samples collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060121 12060122

Data Qualifications:

1. Sample Holding Times: Acceptable.

The samples were maintained at < 6°C. The samples were collected on September 10, 2012, extracted on September 12, 2012, and were analyzed by September 13, 2012, therefore meeting QC criteria of less than 7 days between collection and water sample extraction (14 days for soils) and less than 40 days between extraction and analysis.

2. Instrument Performance: Acceptable.

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. Initial and Continuing Calibration: Satisfactory.

All initial calibration relative standard deviations (RSDs) were within QC limits. All continuing calibration % differences (% D) were within QC limits except some low A1260(peak 5) and decachlorobiphenyl (surrogate) recoveries. No actions were taken based on the low surrogate recoveries.

Associated A1260 Associated A1260 results were qualified as estimated with a low bias (JL or UJL).

4. Error Determination: Not Provided.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. Blanks: Acceptable.

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

6. Performance Evaluation Samples: Not Provided.

Performance evaluation samples were not provided to the laboratory.

7. System Monitoring Compounds (SMCs): Acceptable.

All recoveries of the SMCs were within the established control limits except one high recovery in sample 12060121 (no action was taken based on this outlier as there were no detections in the sample) and one high recovery in the MSD (no action was taken based on this outliers as there were no high recoveries in the MSD). These samples were also diluted due to matrix interferences.

8. Blank and Matrix Spikes: Acceptable.

Recoveries of all spiked analytes were within the appropriate control limits except A1016 with low recoveries; no actions were taken as these samples were diluted due to matrix interferences.

9. Duplicates: Acceptable.

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

10. Compound Identification: Acceptable.

All results were dual-column confirmed with differences between the columns less than 25%.

11. Target Compound Quantitation and Quantitation Limits: Acceptable.

Sample results and quantitation limits were correctly calculated.

12. Laboratory Contact

No laboratory contact was required.

13. Overall Assessment

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

The overall usefulness of the data is based on the criteria outlined in the Site-Specific Sampling Plan, the OSWER Guidance Document "Quality Assurance/Quality Control Guidance for Removal

Activities, Sampling QA/QC Plan, and Data Validation Procedures" (EPA/540/G-90/004), the analytical method, and, when applicable, the Office of Emergency and Remedial Response Publication "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review". Based upon the information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 14, 2012

Client Sample ID:	12060121	Project:	ECOL00801
Sample ID:	311021001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	10-SEP-12 08:10		
Receive Date:	11-SEP-12		
Collector:	Client		
Moisture:	24.6%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	88.3	ug/kg	20	YS1	09/13/12	1345	1245684	1
Aroclor-1221	U	ND	88.3	ug/kg	20					
Aroclor-1232	U	ND	88.3	ug/kg	20					
Aroclor-1242	U	ND	88.3	ug/kg	20					
Aroclor-1248	U	ND	88.3	ug/kg	20					
Aroclor-1254	U	ND	88.3	ug/kg	20					
Aroclor-1260	U	ND	88.3	ug/kg	20					
Aroclor-Total	U	ND	88.3	ug/kg	20					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	09/12/12	1733	1245676

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	9.83 ug/kg	8.83	111	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	15.1 ug/kg	8.83	171*	(19%-130%)

The Following NCRs have been identified

NCR ID:1120127 Batch ID: 1245684 1. 1202737493MS and 1202737494MSD did not meet the spike recovery acceptance criteria.

2. The following samples did not meet surrogate recovery acceptance criteria: 311021001, 1202737493MS, and 1202737494MSD.

MW 10/8/12

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: September 14, 2012

Client Sample ID:	12060122	Project:	ECOL00801
Sample ID:	311021002	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	10-SEP-12 08:15		
Receive Date:	11-SEP-12		
Collector:	Client		
Moisture:	14.3%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	~~U~~	ND	77.6 U	ug/kg	20	YS1	09/13/12	1253	1245684	1 SYVM
Aroclor-1221	U	ND	77.6	ug/kg	20					
Aroclor-1232	U	ND	77.6	ug/kg	20					
Aroclor-1242	U	ND	77.6	ug/kg	20					
Aroclor-1248	U	ND MW	77.6	ug/kg	20					
Aroclor-1254		81.0	77.6	ug/kg	20					
Aroclor-1260		109 JL	77.6	ug/kg	20					
Aroclor-Total		190 JL	77.6	ug/kg	20					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	09/12/12	1733	1245676

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.20 ug/kg	7.76	54.1	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	3.84 ug/kg	7.76	49.5	(19%-130%)

The Following NCRs have been identified

NCR ID:1120127 Batch ID: 1245684 1. 1202737493MS and 1202737494MSD did not meet the spike recovery acceptance criteria.

2. The following samples did not meet surrogate recovery acceptance criteria: 311021001, 1202737493MS, and 1202737494MSD.

MW
10/8/12

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720 Third Avenue, Suite 1700
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MEMORANDUM

DATE: October 15, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-44

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of one soil sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Analysis for Extended Diesel Range Total Petroleum Hydrocarbons (Ecology Method NWTPH-Dx) was performed by TestAmerica Seattle, Tacoma, Washington. All sample analyses were evaluated following EPA's Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060018

Data Qualifications:

1. Sample Holding Times: Acceptable.

The sample was maintained at < 6°C. The sample was collected on September 26, 2012, extracted by October 9, 2012, and analyzed by October 9, 2012, therefore meeting QC criteria of less than 14 days between collection and extraction for soil samples, and less than 40 days between extraction and analysis.

2. Initial and Continuing Calibrations: Acceptable.

Calculations were verified as correct. All initial calibration correlation coefficients were ≥ 0.990 and/or all relative percent differences (RPDs) were within the laboratory control limits. All continuing calibration percent differences (%Ds) were within the laboratory control limits.

3. Error Determination: Not Performed.

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

4. Blanks: Satisfactory.

A method blank was analyzed for each extraction batch for each matrix and analysis system. Diesel-range TPHs were not detected in any blank, but motor oil-range TPHs were detected in one blank;

no action was taken as motor-oil range TPHs were not detected in the sample.

5. **System Monitoring Compounds (SMC): Acceptable.**
All recoveries of the SMCs were greater than 10% and within QC criteria.

6. **Performance Evaluation Samples: Not Provided.**
Performance evaluation samples were not provided to the laboratory.

7. **Blank Spikes: Acceptable.**
Blank spike results were within QC limits.

8. **Duplicates: Acceptable.**
Duplicate results were within QC limits.

9. **Quantitation and Quantitation Limits: Acceptable.**
Sample concentrations were correctly calculated.

10. **Laboratory Contact: Not Required.**
No laboratory contact was required.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the Method Detection Limit (MDL) and the Reporting Limit (RL).

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Client: Ecology and Environment, Inc.

Job Number: 580-35184-1

Client Sample ID: **12060018**

Lab Sample ID: 580-35184-1

Client Matrix: Solid

% Moisture: 2.9

Date Sampled: 09/26/2012 1400

Date Received: 09/28/2012 0955

NWTPH-Dx Northwest - Semi-Volatile Petroleum Products (GC)

Analysis Method:	NWTPH-Dx	Analysis Batch:	580-121912	Instrument ID:	TAC020
Prep Method:	3550B	Prep Batch:	580-121955	Lab File ID:	BO00652.D
Dilution:	1.0			Initial Weight/Volume:	10.7053 g
Analysis Date:	10/09/2012 1809			Final Weight/Volume:	10 mL
Prep Date:	10/09/2012 1203			Injection Volume:	1 uL

Analyte	DryWt Corrected: Y	Result (mg/Kg)	Qualifier	MDL	RL
#2 Diesel (C10-C24)		~~ND~~		5.5	24
Motor Oil (>C24-C36)		ND		8.8	48

54 km

Surrogate	%Rec	Qualifier	Acceptance Limits
o-Terphenyl	85		50 - 150

JMW 10-15-12

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

MEMORANDUM

DATE: October 25, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-45

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of one soil and one water sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Volatile organic compound (VOC) analysis (EPA Method 8260) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The samples were numbered: 12060018 12060909

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The samples were maintained and received within the QC limits of < 6°C. The samples were collected on September 26 and 27, 2012, and were analyzed by October 9, 2012, therefore meeting QC criteria of less than 14 days between collection and analysis for soil and preserved water samples.

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Acceptable.**

All average Relative Response Factors (RRFs) were within the QC limits. All Relative Standard Deviations (RSDs) were within the QC limits.

4. Continuing Calibration: Satisfactory.

All RRFs were within the QC limits. All % differences were within the QC limits except 2-hexanone with an increasing response factor in the continuing calibration. No action was taken based on this outlier as it was not detected in any sample.

5. Blanks: Acceptable.

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

6. System Monitoring Compounds (SMCs): Acceptable.

All SMC recoveries were within QC limits.

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

MS, MSD and BS analyses were performed per SDG or per matrix per concentration level, whichever was more frequent. All recoveries were within QC limits except high 1,1,2,2-tetrachloroethane and 4-methyl-2-pentanone recoveries; no actions were taken based on these outliers as neither analyte was detected in the samples.

8. Duplicate Analysis: Acceptable.

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

9. Internal Standards: Acceptable.

All internal standards were within $\pm$ 30 seconds of the continuing calibration internal standard retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. Precision and Bias Determination: Not Performed.

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. Performance Evaluation Sample Analysis: Not Provided.

Performance evaluation samples were not provided to the laboratory.

12. Overall Assessment of Data for Use

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample..

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: October 11, 2012

Client Sample ID:	12060018	Project:	ECOL00801
Sample ID:	312085001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	26-SEP-12 14:00		
Receive Date:	28-SEP-12		
Collector:	Client		
Moisture:	1.63%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
1,1,1-Trichloroethane	U	ND	0.978	ug/kg	1	CDS1	10/09/12	1027	1252494	1 SW
1,1,2,2-Tetrachloroethane	U	ND	0.978	ug/kg	1					
1,1,2-Trichloroethane	U	ND	0.978	ug/kg	1					
1,1-Dichloroethane	U	ND	0.978	ug/kg	1					
1,1-Dichloroethylene	U	ND	0.978	ug/kg	1					
1,2-Dichloroethane	U	ND	0.978	ug/kg	1					
1,2-Dichloroethylene (total)	U	ND	1.96	ug/kg	1					
1,2-Dichloropropane	U	ND	0.978	ug/kg	1					
2-Butanone	U	ND	4.89	ug/kg	1					
2-Hexanone	U	ND	4.89	ug/kg	1					
4-Methyl-2-pentanone	U	ND	4.89	ug/kg	1					
Acetone	U	ND	4.89	ug/kg	1					
Benzene	U	ND	0.978	ug/kg	1					
Bromodichloromethane	U	ND	0.978	ug/kg	1					
Bromoform	U	ND	0.978	ug/kg	1					
Bromomethane	U	ND	0.978	ug/kg	1					
Carbon disulfide	U	ND	4.89	ug/kg	1					
Carbon tetrachloride	U	ND	0.978	ug/kg	1					
Chlorobenzene	U	ND	0.978	ug/kg	1					
Chloroethane	U	ND	0.978	ug/kg	1					
Chloroform	U	ND	0.978	ug/kg	1					
Chloromethane	U	ND	0.978	ug/kg	1					
Dibromochloromethane	U	ND	0.978	ug/kg	1					
Ethylbenzene	U	ND	0.978	ug/kg	1					
Methylene chloride		5.21	4.89	ug/kg	1					
Styrene	U	ND	0.978	ug/kg	1					
Tetrachloroethylene	U	ND	0.978	ug/kg	1					
Toluene	U	ND	0.978	ug/kg	1					
Trichloroethylene	U	ND	0.978	ug/kg	1					
Vinyl acetate	U	ND	4.89	ug/kg	1					
Vinyl chloride	U	ND	0.978	ug/kg	1					
Xylenes (total)	U	ND	2.93	ug/kg	1					
cis-1,2-Dichloroethylene	U	ND	0.978	ug/kg	1					
cis-1,3-Dichloropropylene	U	ND	0.978	ug/kg	1					
m,p-Xylenes	U	ND	1.96	ug/kg	1					
o-Xylene	U	ND	0.978	ug/kg	1					
tert-Butyl methyl ether	U	ND	0.978	ug/kg	1					

MW 10-25-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: October 11, 2012

Client Sample ID: 12060018
Sample ID: 312085001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5035/8260B TCL in Solid "Dry Weight Corrected"										
trans-1,2-Dichloroethylene	U	ND	0.978	ug/kg	1					
trans-1,3-Dichloropropylene	U	ND	0.978	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 5035	5035/8260B Prep	CDS1	09/28/12	1100	1252493

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5035/8260B TCL in Solid "Dry Weight Corrected"	51.0 ug/kg	50.0	104	(80%-124%)
Bromofluorobenzene	5035/8260B TCL in Solid "Dry Weight Corrected"	48.1 ug/kg	50.0	98.4	(80%-120%)
Toluene-d8	5035/8260B TCL in Solid "Dry Weight Corrected"	50.4 ug/kg	50.0	103	(80%-120%)

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10-25-12

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Certificate of Analysis

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Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: October 11, 2012

Client Sample ID: 12060909
Sample ID: 312089001
Matrix: Water
Collect Date: 27-SEP-12 08:00
Receive Date: 28-SEP-12
Collector: Client

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Volatile Organics										
5030/8260A TCL in Liquid "As Received"										
1,1,1-Trichloroethane	U	ND	1.00	ug/L	1	JEB	10/09/12	1927	1252970	1 SW
1,1,2,2-Tetrachloroethane	U	ND	1.00	ug/L	1					
1,1,2-Trichloroethane	U	ND	1.00	ug/L	1					
1,1-Dichloroethane	U	ND	1.00	ug/L	1					
1,1-Dichloroethylene	U	ND	1.00	ug/L	1					
1,2-Dichloroethane	U	ND	1.00	ug/L	1					
1,2-Dichloropropane	U	ND	1.00	ug/L	1					
2-Butanone	U	ND	5.00	ug/L	1					
2-Hexanone	U	ND	5.00	ug/L	1					
4-Methyl-2-pentanone	U	ND	5.00	ug/L	1					
Acetone	U	ND	5.00	ug/L	1					
Benzene	U	ND	1.00	ug/L	1					
Bromodichloromethane	U	ND	1.00	ug/L	1					
Bromoform	U	ND	1.00	ug/L	1					
Bromomethane	U	ND	1.00	ug/L	1					
Carbon disulfide	U	ND	5.00	ug/L	1					
Carbon tetrachloride	U	ND	1.00	ug/L	1					
Chlorobenzene	U	ND	1.00	ug/L	1					
Chloroethane	U	ND	1.00	ug/L	1					
Chloroform	U	ND	1.00	ug/L	1					
Chloromethane	U	ND	1.00	ug/L	1					
Dibromochloromethane	U	ND	1.00	ug/L	1					
Ethylbenzene	U	ND	1.00	ug/L	1					
Methylene chloride	U	ND	5.00	ug/L	1					
Styrene	U	ND	1.00	ug/L	1					
Tetrachloroethylene	U	ND	1.00	ug/L	1					
Toluene	U	ND	1.00	ug/L	1					
Trichloroethylene	U	ND	1.00	ug/L	1					
Vinyl acetate	U	ND	5.00	ug/L	1					
Vinyl chloride	U	ND	1.00	ug/L	1					
Xylenes (total)	U	ND	3.00	ug/L	1					
cis-1,2-Dichloroethylene	U	ND	1.00	ug/L	1					
cis-1,3-Dichloropropylene	U	ND	1.00	ug/L	1					
tert-Butyl methyl ether	U	ND	1.00	ug/L	1					
trans-1,2-Dichloroethylene	U	ND	1.00	ug/L	1					
trans-1,3-Dichloropropylene	U	ND	1.00	ug/L	1					

MW 10-25-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: October 11, 2012

Client Sample ID: 12060909
Sample ID: 312089001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 8260B	

SHM

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
1,2-Dichloroethane-d4	5030/8260A TCL in Liquid "As Received"	51.8 ug/L	50.0	104	(80%-123%)
Bromofluorobenzene	5030/8260A TCL in Liquid "As Received"	54.9 ug/L	50.0	110	(80%-120%)
Toluene-d8	5030/8260A TCL in Liquid "As Received"	52.6 ug/L	50.0	105	(80%-120%)

MW
10-25-12

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700, Seattle, WA 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: October 25, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-45

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 PANs: 002233.0791.01RA
12-05-0008 PANs: 002233.0792.01RA
12-05-0009 PANs: 002233.0793.01RA

The data quality assurance review of one soil sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Semivolatile Organic Compound (SVOC) analysis (EPA Method 8270D) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060018

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The sample was maintained and received within the QC limits of < 6°C. The sample was collected on September 26, 2012, was extracted on October 1, 2012, and was analyzed on October 2, 2012, therefore meeting holding time criteria of less than 14 days between collection and extraction and less than 40 days between extraction and analysis.

2. **Tuning: Acceptable.**

Tuning was performed at the beginning of each 12-hour analysis sequence. All results were within QC limits.

3. **Initial Calibration: Satisfactory.**

All average Relative Response Factors (RRFs) were within the QC limits. All Relative Standard Deviations (RSDs) were within the QC limits except 2,4-dinitrophenol; the associated sample quantitation limit was qualified as an estimated quantity with an unknown bias (UJK).

4. **Continuing Calibration: Satisfactory.**

All RRFs were within the QC limits. All % differences were within the QC limits except the surrogate 2,4,6-tribromphenol (no action was taken based on this outlier), bis(2-chloroisoproply)ether, m-nitroaniline, 2,4-dinitrophenol, p-nitroaniline, carbazole, indeno(1,2,3-cd)pyrene, and dibenzo(a,h) anthracene with a decreasing response factor in the continuing calibration and benzaldehyde with an increasing response factor in the continuing calibrations. No action was taken based on the increasing response factor outlier as it was not detected in any sample. The decreasing response factor outliers were qualified as estimated quantities with a low bias (UJL).

5. **Blanks: Acceptable.**

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

6. **System Monitoring Compounds (SMCs): Acceptable.**

All SMC recoveries were within QC limits.

7. **Matrix Spike (MS)/MS Duplicate (MSD)/Blank Spike (BS) Analysis: Acceptable.**

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

8. **Duplicate Analysis: Acceptable.**

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

9. **Internal Standards: Acceptable.**

All internal standards (IS) were within $\pm$ 30 seconds of the continuing calibration IS retention times. All area counts were within 50 % to 200 % of the continuing calibration area counts.

10. **Precision and Bias Determination: Not Performed.**

Samples necessary to determine precision and bias were not provided to the laboratory. All results were flagged "PND" (Precision Not Determined) and "RND" (Recovery Not Determined), although the flags do not appear on the data sheets.

11. **Performance Evaluation Sample Analysis: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

12. **Overall Assessment of Data for Use**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

information provided, the data are acceptable for use with the above stated data qualifications.

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: October 5, 2012

Client Sample ID: 12060018
Sample ID: 312085001
Matrix: Soil
Collect Date: 26-SEP-12 14:00
Receive Date: 28-SEP-12
Collector: Client
Moisture: 1.63%

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
1,1'-Biphenyl	U	ND	338	ug/kg	1	RMB	10/02/12	1832	1250498	8270D
1,2,4,5-Tetrachlorobenzene	U	ND	338	ug/kg	1					
1-Methylnaphthalene	U	ND	33.8	ug/kg	1					
2,3,4,6-Tetrachlorophenol	U	ND	338	ug/kg	1					
2,4,5-Trichlorophenol	U	ND	338	ug/kg	1					
2,4,6-Trichlorophenol	U	ND	338	ug/kg	1					
2,4-Dichlorophenol	U	ND	338	ug/kg	1					
2,4-Dimethylphenol	U	ND	338	ug/kg	1					
2,4-Dinitrophenol	U	ND	675	ug/kg	1					
2,4-Dinitrotoluene	U	ND	338	ug/kg	1					
2,6-Dinitrotoluene	U	ND	338	ug/kg	1					
2-Chloronaphthalene	U	ND	33.8	ug/kg	1					
2-Chlorophenol	U	ND	338	ug/kg	1					
2-Methyl-4,6-dinitrophenol	U	ND	338	ug/kg	1					
2-Methylnaphthalene	U	ND	33.8	ug/kg	1					
2-Nitrophenol	U	ND	338	ug/kg	1					
3,3'-Dichlorobenzidine	U	ND	338	ug/kg	1					
4-Bromophenylphenylether	U	ND	338	ug/kg	1					
4-Chloro-3-methylphenol	U	ND	338	ug/kg	1					
4-Chloroaniline	U	ND	338	ug/kg	1					
4-Chlorophenylphenylether	U	ND	338	ug/kg	1					
4-Nitrophenol	U	ND	338	ug/kg	1					
Acenaphthene	U	ND	33.8	ug/kg	1					
Acenaphthylene	U	ND	33.8	ug/kg	1					
Acetophenone	U	ND	338	ug/kg	1					
Anthracene	U	ND	33.8	ug/kg	1					
Atrazine	U	ND	338	ug/kg	1					
Benzaldehyde	U	ND	338	ug/kg	1					
Benzo(a)anthracene		62.8	33.8	ug/kg	1					
Benzo(a)pyrene		49.3	33.8	ug/kg	1					
Benzo(b)fluoranthene		60.5	33.8	ug/kg	1					
Benzo(ghi)perylene	U	ND	33.8	ug/kg	1					
Benzo(k)fluoranthene	U	ND	33.8	ug/kg	1					
Butylbenzylphthalate	U	ND	338	ug/kg	1					
Caprolactam	U	ND	338	ug/kg	1					
Carbazole	U	ND	33.8	ug/kg	1					
Chrysene		62.1	33.8	ug/kg	1					

JK

MW 10-25-12

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: October 5, 2012

Client Sample ID: 12060018
Sample ID: 312085001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatile-GC/MS										
SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"										
Di-n-butylphthalate	U	ND	338	ug/kg	1					
Di-n-octylphthalate	U	ND	338	ug/kg	1					
Dibenzo(a,h)anthracene	U	ND	33.8	ug/kg	1					
Dibenzofuran	U	ND	338	ug/kg	1					
Diethylphthalate	U	ND	338	ug/kg	1					
Dimethylphthalate	U	ND	338	ug/kg	1					
Diphenylamine	U	ND	338	ug/kg	1					
Fluoranthene		72.3	33.8	ug/kg	1					
Fluorene	U	ND	33.8	ug/kg	1					
Hexachlorobenzene	U	ND	338	ug/kg	1					
Hexachlorobutadiene	U	ND	338	ug/kg	1					
Hexachlorocyclopentadiene	U	ND	338	ug/kg	1					
Hexachloroethane	U	ND	338	ug/kg	1					
Indeno(1,2,3-cd)pyrene	U	ND	33.8	ug/kg	1					
Isophorone	U	ND	338	ug/kg	1					
N-Nitrosodipropylamine	U	ND	338	ug/kg	1					
Naphthalene	U	ND	33.8	ug/kg	1					
Nitrobenzene	U	ND	338	ug/kg	1					
Pentachlorophenol	U	ND	338	ug/kg	1					
Phenanthrene		52.4	33.8	ug/kg	1					
Phenol	U	ND	338	ug/kg	1					
Pyrene		186	33.8	ug/kg	1					
bis(2-Chloroethoxy)methane	U	ND	338	ug/kg	1					
bis(2-Chloroethyl) ether	U	ND	338	ug/kg	1					
bis(2-Chloroisopropyl)ether	U	ND	338	ug/kg	1					
bis(2-Ethylhexyl)phthalate	U	ND	338	ug/kg	1					
m,p-Cresols	U	ND	338	ug/kg	1					
m-Nitroaniline	U	ND	338	ug/kg	1					
o-Cresol	U	ND	338	ug/kg	1					
o-Nitroaniline	U	ND	338	ug/kg	1					
p-Nitroaniline	U	ND	338	ug/kg	1					

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3550C	3550C BNA Soil Prep for 8270D	MXS4	10/01/12	1832	1250496

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3550C/8270D	

Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: October 5, 2012

Client Sample ID: 12060018
Sample ID: 312085001

Project: ECOL00801
Client ID: ECOL008

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
2-Fluorobiphenyl	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1050 ug/kg	1690	62.0	(24%-106%)
Nitrobenzene-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1460 ug/kg	1690	86.4	(22%-124%)
p-Terphenyl-d14	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1150 ug/kg	1690	67.8	(24%-137%)
2,4,6-Tribromophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	1720 ug/kg	3380	50.9	(23%-124%)
2-Fluorophenol	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2460 ug/kg	3380	72.8	(27%-112%)
Phenol-d5	SW846 3550C/8270D Semivolatile Analysis "Dry Weight Corrected"	2300 ug/kg	3380	68.1	(26%-112%)

ecology and environment, inc.
Global Environmental Specialists
720 Third Avenue, Suite 1700, Seattle, WA 98104
Tel: (206) 624-9537, Fax: (206) 621-9832

MEMORANDUM

DATE: October 25, 2012

TO: Steve Hall, START-3 Project Manager, E & E, Seattle, WA

FROM: Mark Woodke, START-3 Chemist, E & E, Seattle, Washington MW

SUBJ: **Organic Data Quality Assurance Review, Avery Landing Site, Avery, Idaho**

COC: 12-05-0006-45

REF: TDDs: 12-05-0006 PANs: 002233.0790.01RA
12-05-0007 002233.0791.01RA
12-05-0008 002233.0792.01RA
12-05-0009 002233.0793.01RA

The data quality assurance review of one soil sample collected from the Avery Landing Site (consisting of the Avery Bentcik, Avery IDOL, Avery FHWA, and Avery Potlatch sites) located in Avery, Idaho, has been completed. Polychlorinated Biphenyl (PCB) analysis (EPA Method 8082A) was performed by GEL Labs, Inc., Charleston, South Carolina. All sample analyses were evaluated following EPA's Stage 2 Data Validation Manual Process (S2VM) and/or Stage 4 Data Validation Manual Process (S4VM).

The sample was numbered: 12060018

Data Qualifications:

1. **Sample Holding Times: Acceptable.**

The sample was maintained at < 6°C. The sample was collected on September 26, 2012, extracted on October 1, 2012, and was analyzed by October 2, 2012, therefore meeting QC criteria of less than 14 days between collection and soil sample extraction and less than 40 days between extraction and analysis.

2. **Instrument Performance: Acceptable.**

The surrogate retention time percent difference between the initial calibration standards and the remaining standards and samples was ≤ 0.3% for capillary column analyses.

3. **Initial and Continuing Calibration: Acceptable.**

All initial calibration relative standard deviations (RSDs) were within QC limits. All continuing calibration % differences (% D) were within QC limits except one low Aroclor-1260 result in one peak; no action was taken based on this outlier as all other peaks in that calibration, as well as the average calibration result, were within QC limits.

4. **Error Determination: Not Provided.**

Samples necessary for bias and precision determination were not provided to the laboratory. All samples were flagged RND (Recovery Not Determined) and PND (Precision Not Determined), although the flags are not found on the Form I's.

5. **Blanks: Acceptable.**

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

6. **Performance Evaluation Samples: Not Provided.**

Performance evaluation samples were not provided to the laboratory.

7. **System Monitoring Compounds (SMCs): Acceptable.**

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

8. **Blank and Matrix Spikes: Acceptable.**

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

9. **Duplicates: Acceptable.**

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

10. **Compound Identification: Acceptable.**

All positive results were dual-column confirmed with differences between the columns less than 25%.

11. **Target Compound Quantitation and Quantitation Limits: Acceptable.**

Sample results and quantitation limits were correctly calculated.

12. **Laboratory Contact**

No laboratory contact was required.

13. **Overall Assessment**

The reviewer used professional judgment to apply a single bias qualifier when more than one bias qualifier was applicable to an individual estimated sample result.

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

Data Qualifiers and Definitions

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

JH - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a high bias.

JL - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with a low bias.

JK - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias.

JQ – The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample with an unknown direction of bias and falls between the MDL and the Minimum (or Practical) Quantitation Limit (MQL, PQL).

N - The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".

NJ - The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Ecology and Environment, Inc.
Address : 720 Third Ave
Suite 1700
Seattle, Washington 98104
Contact: Mr. Steve Hall
Project: **Project No. 4500000347**

Report Date: October 3, 2012

Client Sample ID:	12060018	Project:	ECOL00801
Sample ID:	312085001	Client ID:	ECOL008
Matrix:	Soil		
Collect Date:	26-SEP-12 14:00		
Receive Date:	28-SEP-12		
Collector:	Client		
Moisture:	1.63%		

Parameter	Qualifier	Result	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB										
SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"										
Aroclor-1016	U	ND	3.31	ug/kg	1	JMB3	10/02/12	1316	1250209	1
Aroclor-1221	U	ND	3.31	ug/kg	1					
Aroclor-1232	U	ND	3.31	ug/kg	1					
Aroclor-1242	U	ND	3.31	ug/kg	1					
Aroclor-1248	U	ND	3.31	ug/kg	1					
Aroclor-1254	U	ND	3.31	ug/kg	1					
Aroclor-1260	U	ND	3.31	ug/kg	1					
Aroclor-Total	U	ND	3.31	ug/kg	1					

SHM

MW

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	MXS3	10/01/12	1016	1250208

The following Analytical Methods were performed

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	2.98 ug/kg	6.62	45.0	(25%-112%)
Decachlorobiphenyl	SW846 3541/8082A PCB Solid Automated Soxhlet "Dry Weight Corrected"	4.81 ug/kg	6.62	72.7	(19%-130%)

MW 10-25-12