ESS Laboratory Sample and Cooler Receipt Checklist

Client: AEI Consultants, Inc. - TB/MM

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1810153
Date Received: 10/4/2018
Project Due Date: 10/9/2018
Days for Project: 2 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 3.3 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	274147	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
02	274146	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
03	274145	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
04	274144	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
04	274150	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
04	274151	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
05	274143	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
06	274142	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
06	274148	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
06	274149	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
07	274141	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
08	274140	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
09	274139	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
10	274138	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
11	274137	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
12	274136	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
13	274135	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
14	274134	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
15	274133	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
16	274132	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
17	274131	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
18	274130	Yes	NA	Yes	4 oz. Jar - Unpres	NP	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: AEI Consultants, Inc. - TB/MM

ESS Project ID: 1810153
Date Received: 10/4/2018

2nd Review

Are barcode labels on correct containers? Yes / No
Are all necessary stickers attached? Yes / No

Completed By: _____ Date & Time: 10/4/18 1652

Reviewed By: _____ Date & Time: 10/4/18 1623

Delivered By: _____ 10/4/18 1623

ESS Laboratory
Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1810153

Turn Time Rush 48hr

Regulatory State RI

Is this project for any of the following?: ○CT RCP ○MA MCP ○RGP

Reporting Limits See note 1

Electonic Deliverables ☐Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name	AEI
Contact Person	Aaron Ting
Project #	363655
Project Name	BASF Cranston
Address	112 Water St, 5th Floor
City	Boston
State	MA
Zip Code	02109
PO #	—
Telephone Number	978-577-7138
FAX Number	—
Email Address	ating@aeiconsultants.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: PCB (Soxhlet)
1	10-3-18	0816	C	S	SW-113-100318 (0-3')	X
2	↓	0818	↓	↓	SW-114-100318 (0-3')	X
3	10-3-18	0830	C	S	SW-120-100318 (0-3')	X
4		0834			SW-122-100318 (0-3')	X
5		0834			SW-122-100318-1 (0-3')	X
9		0834			SW-122-100318-ms/msd (0-3')	X
6		0836			SW-123-100318 (0-3')	X
7		0836			SW-123-100318-1 (0-3')	X
8		0836			SW-123-100318-ms/msd (0-3')	X
		0846			SW-128-100318 (0-3')	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial — AG

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* — 9

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Ascorbic Acid 12-Other* — 1

Number of Containers per Sample: 1

Laboratory Use Only

Cooler Present: ✓

Seals Intact: —

Cooler Temperature: Ice 3.5 °C

Sampled by: ATing

Comments: Please specify "Other" preservative and containers types in this space

note 1: see project QAPP

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
10/4/18 1515	10/4/18 15:16	10/4/18 15:27	10/4/18 1531
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

4/5

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CHAIN OF CUSTODY

Turn Time Rush 48hr
Regulatory State RI
Is this project for any of the following?: ○CT RCP ○MA MCP ○RGP

ESS Lab # K610183
Reporting Limits see note 1
Electonic Deliverables ☐Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name: AEI
Contact Person: Aaron Ting
Project #: 363655
Project Name: BASF Cranston
Address: 112 Water St, 5th Floor
City: Boston
State: MA
Zip Code: 02109
PO #: —
Telephone Number: 978-572-7138
FAX Number: —
Email Address: ating@aeiconsultants.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: PCB (Soxhlet)
9	10/4/18	0921 ✓	G	S	B-404-100418 (0.5') ✓	X
10	✓	0922 ✓			B-405-100418 (1') ✓	X
11	✓	0924 ✓			B-406-100418 (1') ✓	X
12	✓	0925 ✓			B-407-100418 (1') ✓	X
13	✓	0928 ✓			B-394-100418 (1') ✓	X
14	✓	0929 ✓			B-395-100418 (1') ✓	X
15	✓	0930 ✓			B-384-100418 (1') ✓	X
16	✓	0940 ✓			B-373-100418 (1') ✓	X
17	✓	0943 ✓			B-362-100418 (1') ✓	X
18	✓	0944 ✓			B-361-100418 (1') ✓	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G-Glass O-Other P-Poly S-Sterile V-Vial — AG
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* — 9
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Ascorbic Acid 12-Other* — 1
Number of Containers per Sample: 1

Laboratory Use Only
Cooler Present: ✓
Seals Intact: —
Cooler Temperature: Ice 3.3 °C

Sampled by: ATing
Comments: Please specify "Other" preservative and containers types in this space
note 1: see project QAPP

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
10/4/18 1515	10/4/18 15:46	10/4/18 1528	10/4/18 1532
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

CERTIFICATE OF ANALYSIS

Richard Kowalski
AEI Consultants, Inc.
148 Hathaway Road
Dartmouth, MA 02747

RE: BASF Cranston (363655)
ESS Laboratory Work Order Number: 1810153

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 2:19 pm, Oct 11, 2018

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1810153

SAMPLE RECEIPT

The following samples were received on October 04, 2018 for the analyses specified on the enclosed Chain of Custody Record.

Revision 1 (date): This report has been revised to include Sample ID change for 1810153-09 from "B-404-100418 0 POINT 5FT" to "B-404-100418 0.5FT".

Lab Number	Sample Name	Matrix	Analysis
1810153-01	SW-113-100318 0-3FT	Soil	8082A
1810153-02	SW-114-100318 0-3FT	Soil	8082A
1810153-03	SW-120-100318 0-3FT	Soil	8082A
1810153-04	SW-122-100318 0-3FT	Soil	8082A
1810153-05	SW-122-100318-1 0-3FT	Soil	8082A
1810153-06	SW-123-100318 0-3FT	Soil	8082A
1810153-07	SW-123-100318-1 0-3FT	Soil	8082A
1810153-08	SW-128-100318 0-3FT	Soil	8082A
1810153-09	B-404-100418 0.5FT	Soil	8082A
1810153-10	B-405-100418 1FT	Soil	8082A
1810153-11	B-406-100418 1FT	Soil	8082A
1810153-12	B-407-100418 1FT	Soil	8082A
1810153-13	B-394-100418 1FT	Soil	8082A
1810153-14	B-395-100418 1FT	Soil	8082A
1810153-15	B-384-100418 1FT	Soil	8082A
1810153-16	B-373-100418 1FT	Soil	8082A
1810153-17	B-362-100418 1FT	Soil	8082A
1810153-18	B-361-100418 1FT	Soil	8082A

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1810153

PROJECT NARRATIVE

8082A Polychlorinated Biphenyls (PCB)

1810153-01 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1810153-05 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

CJ80407-MS1 **Matrix Spike recovery is above upper control limit (M+).**
Aroclor 1016 (149% @ 40-140%), Aroclor 1016 [2C] (155% @ 40-140%), Aroclor 1260 (491% @ 40-140%), Aroclor 1260 [2C] (447% @ 40-140%)

CJ80407-MS2 **Matrix Spike recovery is above upper control limit (M+).**
Aroclor 1016 (150% @ 40-140%), Aroclor 1016 [2C] (149% @ 40-140%), Aroclor 1260 (286% @ 40-140%), Aroclor 1260 [2C] (327% @ 40-140%)

CJ80407-MSD1 **Matrix Spike recovery is above upper control limit (M+).**
Aroclor 1260 (238% @ 40-140%), Aroclor 1260 [2C] (249% @ 40-140%)

CJ80407-MSD1 **Relative percent difference for duplicate is outside of criteria (D+).**
Aroclor 1260 (68% @ 30%), Aroclor 1260 [2C] (55% @ 30%)

CJ80407-MSD2 **Matrix Spike recovery is above upper control limit (M+).**
Aroclor 1016 (147% @ 40-140%), Aroclor 1016 [2C] (150% @ 40-140%), Aroclor 1260 (293% @ 40-140%), Aroclor 1260 [2C] (347% @ 40-140%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1810153

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 04-2.1 - VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-113-100318 0-3FT
Date Sampled: 10/03/18 08:16
Percent Solids: 87
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810153
ESS Laboratory Sample ID: 1810153-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/4/18 17:13

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (1.2)		8082A		20	10/06/18 0:30	C8J0139	CJ80407
Aroclor 1221	ND (1.2)		8082A		20	10/06/18 0:30	C8J0139	CJ80407
Aroclor 1232	ND (1.2)		8082A		20	10/06/18 0:30	C8J0139	CJ80407
Aroclor 1242	ND (1.2)		8082A		20	10/06/18 0:30	C8J0139	CJ80407
Aroclor 1248	ND (1.2)		8082A		20	10/06/18 0:30	C8J0139	CJ80407
Aroclor 1254	**13.9** (1.2)		8082A		20	10/06/18 0:30	C8J0139	CJ80407
Aroclor 1260	ND (1.2)		8082A		20	10/06/18 0:30	C8J0139	CJ80407
Aroclor 1262	ND (1.2)		8082A		20	10/06/18 0:30	C8J0139	CJ80407
Aroclor 1268	ND (1.2)		8082A		20	10/06/18 0:30	C8J0139	CJ80407

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-114-100318 0-3FT
Date Sampled: 10/03/18 08:18
Percent Solids: 90
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810153
ESS Laboratory Sample ID: 1810153-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/4/18 17:13

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	10/05/18 10:53	C8J0139	CJ80407
Aroclor 1221	ND (0.06)		8082A		1	10/05/18 10:53	C8J0139	CJ80407
Aroclor 1232	ND (0.06)		8082A		1	10/05/18 10:53	C8J0139	CJ80407
Aroclor 1242	ND (0.06)		8082A		1	10/05/18 10:53	C8J0139	CJ80407
Aroclor 1248	ND (0.06)		8082A		1	10/05/18 10:53	C8J0139	CJ80407
Aroclor 1254	**4.9** (0.6)		8082A		10	10/06/18 0:49	C8J0139	CJ80407
Aroclor 1260	ND (0.06)		8082A		1	10/05/18 10:53	C8J0139	CJ80407
Aroclor 1262	ND (0.06)		8082A		1	10/05/18 10:53	C8J0139	CJ80407
Aroclor 1268	ND (0.06)		8082A		1	10/05/18 10:53	C8J0139	CJ80407

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*97 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*45 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*64 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*69 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-120-100318 0-3FT
Date Sampled: 10/03/18 08:30
Percent Solids: 92
Initial Volume: 19.9
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810153
ESS Laboratory Sample ID: 1810153-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/4/18 17:13

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	10/05/18 11:12	C8J0139	CJ80407
Aroclor 1221	ND (0.05)		8082A		1	10/05/18 11:12	C8J0139	CJ80407
Aroclor 1232	ND (0.05)		8082A		1	10/05/18 11:12	C8J0139	CJ80407
Aroclor 1242	ND (0.05)		8082A		1	10/05/18 11:12	C8J0139	CJ80407
Aroclor 1248	ND (0.05)		8082A		1	10/05/18 11:12	C8J0139	CJ80407
Aroclor 1254	**1.0** (0.05)		8082A		1	10/05/18 11:12	C8J0139	CJ80407
Aroclor 1260	ND (0.05)		8082A		1	10/05/18 11:12	C8J0139	CJ80407
Aroclor 1262	ND (0.05)		8082A		1	10/05/18 11:12	C8J0139	CJ80407
Aroclor 1268	ND (0.05)		8082A		1	10/05/18 11:12	C8J0139	CJ80407

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*123 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*64 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*89 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*91 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-122-100318 0-3FT
Date Sampled: 10/03/18 08:34
Percent Solids: 84
Initial Volume: 19.7
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810153
ESS Laboratory Sample ID: 1810153-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/4/18 17:13

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	10/05/18 11:46	C8J0139	CJ80407
Aroclor 1221	ND (0.06)		8082A		1	10/05/18 11:46	C8J0139	CJ80407
Aroclor 1232	ND (0.06)		8082A		1	10/05/18 11:46	C8J0139	CJ80407
Aroclor 1242	ND (0.06)		8082A		1	10/05/18 11:46	C8J0139	CJ80407
Aroclor 1248	ND (0.06)		8082A		1	10/05/18 11:46	C8J0139	CJ80407
Aroclor 1254	**5.1** (0.3)		8082A		5	10/06/18 3:03	C8J0139	CJ80407
Aroclor 1260	ND (0.06)		8082A		1	10/05/18 11:46	C8J0139	CJ80407
Aroclor 1262	ND (0.06)		8082A		1	10/05/18 11:46	C8J0139	CJ80407
Aroclor 1268	ND (0.06)		8082A		1	10/05/18 11:46	C8J0139	CJ80407

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*109 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*95 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*88 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*97 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-122-100318-1 0-3FT
Date Sampled: 10/03/18 08:34
Percent Solids: 87
Initial Volume: 19.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810153
ESS Laboratory Sample ID: 1810153-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/4/18 17:13

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (1.2)		8082A		20	10/06/18 3:22	C8J0139	CJ80407
Aroclor 1221	ND (1.2)		8082A		20	10/06/18 3:22	C8J0139	CJ80407
Aroclor 1232	ND (1.2)		8082A		20	10/06/18 3:22	C8J0139	CJ80407
Aroclor 1242	ND (1.2)		8082A		20	10/06/18 3:22	C8J0139	CJ80407
Aroclor 1248	ND (1.2)		8082A		20	10/06/18 3:22	C8J0139	CJ80407
Aroclor 1254	**11.7** (1.2)		8082A		20	10/06/18 3:22	C8J0139	CJ80407
Aroclor 1260	ND (1.2)		8082A		20	10/06/18 3:22	C8J0139	CJ80407
Aroclor 1262	ND (1.2)		8082A		20	10/06/18 3:22	C8J0139	CJ80407
Aroclor 1268	ND (1.2)		8082A		20	10/06/18 3:22	C8J0139	CJ80407

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-123-100318 0-3FT
Date Sampled: 10/03/18 08:36
Percent Solids: 88
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810153
ESS Laboratory Sample ID: 1810153-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/4/18 17:13

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	10/05/18 14:49	C8J0139	CJ80407
Aroclor 1221	ND (0.06)		8082A		1	10/05/18 14:49	C8J0139	CJ80407
Aroclor 1232	ND (0.06)		8082A		1	10/05/18 14:49	C8J0139	CJ80407
Aroclor 1242	ND (0.06)		8082A		1	10/05/18 14:49	C8J0139	CJ80407
Aroclor 1248	ND (0.06)		8082A		1	10/05/18 14:49	C8J0139	CJ80407
Aroclor 1254	**8.5** (0.6)		8082A		10	10/06/18 3:41	C8J0139	CJ80407
Aroclor 1260	ND (0.06)		8082A		1	10/05/18 14:49	C8J0139	CJ80407
Aroclor 1262	ND (0.06)		8082A		1	10/05/18 14:49	C8J0139	CJ80407
Aroclor 1268	ND (0.06)		8082A		1	10/05/18 14:49	C8J0139	CJ80407

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*119 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*60 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*78 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*86 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-123-100318-1 0-3FT
Date Sampled: 10/03/18 08:36
Percent Solids: 89
Initial Volume: 20.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810153
ESS Laboratory Sample ID: 1810153-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/4/18 17:13

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	10/05/18 15:09	C8J0139	CJ80407
Aroclor 1221	ND (0.06)		8082A		1	10/05/18 15:09	C8J0139	CJ80407
Aroclor 1232	ND (0.06)		8082A		1	10/05/18 15:09	C8J0139	CJ80407
Aroclor 1242	ND (0.06)		8082A		1	10/05/18 15:09	C8J0139	CJ80407
Aroclor 1248	ND (0.06)		8082A		1	10/05/18 15:09	C8J0139	CJ80407
Aroclor 1254	**6.5** (0.6)		8082A		10	10/06/18 4:00	C8J0139	CJ80407
Aroclor 1260	ND (0.06)		8082A		1	10/05/18 15:09	C8J0139	CJ80407
Aroclor 1262	ND (0.06)		8082A		1	10/05/18 15:09	C8J0139	CJ80407
Aroclor 1268	ND (0.06)		8082A		1	10/05/18 15:09	C8J0139	CJ80407

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*118 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*55 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*80 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*87 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-128-100318 0-3FT
Date Sampled: 10/03/18 08:46
Percent Solids: 87
Initial Volume: 19.7
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810153
ESS Laboratory Sample ID: 1810153-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/4/18 17:13

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	10/05/18 15:28	C8J0139	CJ80407
Aroclor 1221	ND (0.06)		8082A		1	10/05/18 15:28	C8J0139	CJ80407
Aroclor 1232	ND (0.06)		8082A		1	10/05/18 15:28	C8J0139	CJ80407
Aroclor 1242	ND (0.06)		8082A		1	10/05/18 15:28	C8J0139	CJ80407
Aroclor 1248	ND (0.06)		8082A		1	10/05/18 15:28	C8J0139	CJ80407
Aroclor 1254	**6.7** (0.6)		8082A		10	10/06/18 4:19	C8J0139	CJ80407
Aroclor 1260	ND (0.06)		8082A		1	10/05/18 15:28	C8J0139	CJ80407
Aroclor 1262	ND (0.06)		8082A		1	10/05/18 15:28	C8J0139	CJ80407
Aroclor 1268	ND (0.06)		8082A		1	10/05/18 15:28	C8J0139	CJ80407

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*108 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*56 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*71 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*79 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-404-100418 0.5FT
Date Sampled: 10/04/18 09:21
Percent Solids: 96
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810153
ESS Laboratory Sample ID: 1810153-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/4/18 17:13

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	10/05/18 15:47	C8J0139	CJ80407
Aroclor 1221	ND (0.05)		8082A		1	10/05/18 15:47	C8J0139	CJ80407
Aroclor 1232	ND (0.05)		8082A		1	10/05/18 15:47	C8J0139	CJ80407
Aroclor 1242	**1.9** (0.5)		8082A		10	10/06/18 4:38	C8J0139	CJ80407
Aroclor 1248	ND (0.05)		8082A		1	10/05/18 15:47	C8J0139	CJ80407
Aroclor 1254	**2.6** (0.5)		8082A		10	10/06/18 4:38	C8J0139	CJ80407
Aroclor 1260	ND (0.05)		8082A		1	10/05/18 15:47	C8J0139	CJ80407
Aroclor 1262	ND (0.05)		8082A		1	10/05/18 15:47	C8J0139	CJ80407
Aroclor 1268	ND (0.05)		8082A		1	10/05/18 15:47	C8J0139	CJ80407

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*83 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*92 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*71 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*77 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-405-100418 1FT
Date Sampled: 10/04/18 09:22
Percent Solids: 83
Initial Volume: 19.8
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810153
ESS Laboratory Sample ID: 1810153-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/4/18 17:13

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	10/05/18 16:06	C8J0139	CJ80407
Aroclor 1221	ND (0.06)		8082A		1	10/05/18 16:06	C8J0139	CJ80407
Aroclor 1232	ND (0.06)		8082A		1	10/05/18 16:06	C8J0139	CJ80407
Aroclor 1242 [2C]	**0.2** (0.06)		8082A		1	10/05/18 16:06	C8J0139	CJ80407
Aroclor 1248	ND (0.06)		8082A		1	10/05/18 16:06	C8J0139	CJ80407
Aroclor 1254	**0.5** (0.06)		8082A		1	10/05/18 16:06	C8J0139	CJ80407
Aroclor 1260	ND (0.06)		8082A		1	10/05/18 16:06	C8J0139	CJ80407
Aroclor 1262	ND (0.06)		8082A		1	10/05/18 16:06	C8J0139	CJ80407
Aroclor 1268	ND (0.06)		8082A		1	10/05/18 16:06	C8J0139	CJ80407

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*72 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*73 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*59 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*68 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-406-100418 1FT
Date Sampled: 10/04/18 09:24
Percent Solids: 88
Initial Volume: 19.9
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810153
ESS Laboratory Sample ID: 1810153-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/4/18 17:13

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	10/05/18 18:45	C8J0139	CJ80407
Aroclor 1221	ND (0.06)		8082A		1	10/05/18 18:45	C8J0139	CJ80407
Aroclor 1232	ND (0.06)		8082A		1	10/05/18 18:45	C8J0139	CJ80407
Aroclor 1242	ND (0.06)		8082A		1	10/05/18 18:45	C8J0139	CJ80407
Aroclor 1248	ND (0.06)		8082A		1	10/05/18 18:45	C8J0139	CJ80407
Aroclor 1254	ND (0.06)		8082A		1	10/05/18 18:45	C8J0139	CJ80407
Aroclor 1260	ND (0.06)		8082A		1	10/05/18 18:45	C8J0139	CJ80407
Aroclor 1262	ND (0.06)		8082A		1	10/05/18 18:45	C8J0139	CJ80407
Aroclor 1268	ND (0.06)		8082A		1	10/05/18 18:45	C8J0139	CJ80407

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*54 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*49 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*36 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*43 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-407-100418 1FT
Date Sampled: 10/04/18 09:25
Percent Solids: 88
Initial Volume: 20.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810153
ESS Laboratory Sample ID: 1810153-12
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/4/18 17:13

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	10/05/18 19:05	C8J0139	CJ80407
Aroclor 1221	ND (0.06)		8082A		1	10/05/18 19:05	C8J0139	CJ80407
Aroclor 1232	ND (0.06)		8082A		1	10/05/18 19:05	C8J0139	CJ80407
Aroclor 1242	ND (0.06)		8082A		1	10/05/18 19:05	C8J0139	CJ80407
Aroclor 1248	ND (0.06)		8082A		1	10/05/18 19:05	C8J0139	CJ80407
Aroclor 1254	ND (0.06)		8082A		1	10/05/18 19:05	C8J0139	CJ80407
Aroclor 1260	ND (0.06)		8082A		1	10/05/18 19:05	C8J0139	CJ80407
Aroclor 1262	ND (0.06)		8082A		1	10/05/18 19:05	C8J0139	CJ80407
Aroclor 1268	ND (0.06)		8082A		1	10/05/18 19:05	C8J0139	CJ80407

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*73 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*66 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*53 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*63 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-394-100418 1FT
Date Sampled: 10/04/18 09:28
Percent Solids: 87
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810153
ESS Laboratory Sample ID: 1810153-13
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/4/18 17:13

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	10/05/18 19:24	C8J0139	CJ80407
Aroclor 1221	ND (0.06)		8082A		1	10/05/18 19:24	C8J0139	CJ80407
Aroclor 1232	ND (0.06)		8082A		1	10/05/18 19:24	C8J0139	CJ80407
Aroclor 1242 [2C]	**0.2** (0.06)		8082A		1	10/05/18 19:24	C8J0139	CJ80407
Aroclor 1248	ND (0.06)		8082A		1	10/05/18 19:24	C8J0139	CJ80407
Aroclor 1254	**0.2** (0.06)		8082A		1	10/05/18 19:24	C8J0139	CJ80407
Aroclor 1260	ND (0.06)		8082A		1	10/05/18 19:24	C8J0139	CJ80407
Aroclor 1262	ND (0.06)		8082A		1	10/05/18 19:24	C8J0139	CJ80407
Aroclor 1268	ND (0.06)		8082A		1	10/05/18 19:24	C8J0139	CJ80407

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*85 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*75 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*64 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*75 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-395-100418 1FT
Date Sampled: 10/04/18 09:29
Percent Solids: 90
Initial Volume: 20.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810153
ESS Laboratory Sample ID: 1810153-14
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/4/18 17:13

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	10/05/18 19:43	C8J0139	CJ80407
Aroclor 1221	ND (0.05)		8082A		1	10/05/18 19:43	C8J0139	CJ80407
Aroclor 1232	ND (0.05)		8082A		1	10/05/18 19:43	C8J0139	CJ80407
Aroclor 1242	ND (0.05)		8082A		1	10/05/18 19:43	C8J0139	CJ80407
Aroclor 1248	ND (0.05)		8082A		1	10/05/18 19:43	C8J0139	CJ80407
Aroclor 1254	ND (0.05)		8082A		1	10/05/18 19:43	C8J0139	CJ80407
Aroclor 1260	ND (0.05)		8082A		1	10/05/18 19:43	C8J0139	CJ80407
Aroclor 1262	ND (0.05)		8082A		1	10/05/18 19:43	C8J0139	CJ80407
Aroclor 1268	ND (0.05)		8082A		1	10/05/18 19:43	C8J0139	CJ80407

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*51 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*42 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*36 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*45 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-384-100418 1FT
Date Sampled: 10/04/18 09:30
Percent Solids: 88
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810153
ESS Laboratory Sample ID: 1810153-15
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/4/18 17:13

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	10/05/18 20:02	C8J0139	CJ80407
Aroclor 1221	ND (0.06)		8082A		1	10/05/18 20:02	C8J0139	CJ80407
Aroclor 1232	ND (0.06)		8082A		1	10/05/18 20:02	C8J0139	CJ80407
Aroclor 1242	ND (0.06)		8082A		1	10/05/18 20:02	C8J0139	CJ80407
Aroclor 1248	ND (0.06)		8082A		1	10/05/18 20:02	C8J0139	CJ80407
Aroclor 1254	ND (0.06)		8082A		1	10/05/18 20:02	C8J0139	CJ80407
Aroclor 1260	ND (0.06)		8082A		1	10/05/18 20:02	C8J0139	CJ80407
Aroclor 1262	ND (0.06)		8082A		1	10/05/18 20:02	C8J0139	CJ80407
Aroclor 1268	ND (0.06)		8082A		1	10/05/18 20:02	C8J0139	CJ80407

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*84 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*65 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*82 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-373-100418 1FT
Date Sampled: 10/04/18 09:40
Percent Solids: 88
Initial Volume: 19.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810153
ESS Laboratory Sample ID: 1810153-16
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/4/18 17:13

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	10/05/18 20:21	C8J0139	CJ80407
Aroclor 1221	ND (0.06)		8082A		1	10/05/18 20:21	C8J0139	CJ80407
Aroclor 1232	ND (0.06)		8082A		1	10/05/18 20:21	C8J0139	CJ80407
Aroclor 1242	ND (0.06)		8082A		1	10/05/18 20:21	C8J0139	CJ80407
Aroclor 1248	ND (0.06)		8082A		1	10/05/18 20:21	C8J0139	CJ80407
Aroclor 1254	ND (0.06)		8082A		1	10/05/18 20:21	C8J0139	CJ80407
Aroclor 1260	ND (0.06)		8082A		1	10/05/18 20:21	C8J0139	CJ80407
Aroclor 1262	ND (0.06)		8082A		1	10/05/18 20:21	C8J0139	CJ80407
Aroclor 1268	ND (0.06)		8082A		1	10/05/18 20:21	C8J0139	CJ80407

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*96 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*89 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*81 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*92 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-362-100418 1FT
Date Sampled: 10/04/18 09:43
Percent Solids: 97
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810153
ESS Laboratory Sample ID: 1810153-17
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/4/18 17:13

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	10/05/18 20:40	C8J0139	CJ80407
Aroclor 1221	ND (0.05)		8082A		1	10/05/18 20:40	C8J0139	CJ80407
Aroclor 1232	ND (0.05)		8082A		1	10/05/18 20:40	C8J0139	CJ80407
Aroclor 1242	ND (0.05)		8082A		1	10/05/18 20:40	C8J0139	CJ80407
Aroclor 1248	ND (0.05)		8082A		1	10/05/18 20:40	C8J0139	CJ80407
Aroclor 1254	**0.8** (0.05)		8082A		1	10/05/18 20:40	C8J0139	CJ80407
Aroclor 1260	ND (0.05)		8082A		1	10/05/18 20:40	C8J0139	CJ80407
Aroclor 1262	ND (0.05)		8082A		1	10/05/18 20:40	C8J0139	CJ80407
Aroclor 1268	ND (0.05)		8082A		1	10/05/18 20:40	C8J0139	CJ80407

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*114 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*100 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*91 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*101 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-361-100418 1FT
Date Sampled: 10/04/18 09:44
Percent Solids: 93
Initial Volume: 19.8
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810153
ESS Laboratory Sample ID: 1810153-18
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/4/18 17:13

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	10/05/18 20:59	C8J0139	CJ80407
Aroclor 1221	ND (0.05)		8082A		1	10/05/18 20:59	C8J0139	CJ80407
Aroclor 1232	ND (0.05)		8082A		1	10/05/18 20:59	C8J0139	CJ80407
Aroclor 1242	ND (0.05)		8082A		1	10/05/18 20:59	C8J0139	CJ80407
Aroclor 1248	ND (0.05)		8082A		1	10/05/18 20:59	C8J0139	CJ80407
Aroclor 1254	**0.8** (0.05)		8082A		1	10/05/18 20:59	C8J0139	CJ80407
Aroclor 1260	ND (0.05)		8082A		1	10/05/18 20:59	C8J0139	CJ80407
Aroclor 1262	ND (0.05)		8082A		1	10/05/18 20:59	C8J0139	CJ80407
Aroclor 1268	ND (0.05)		8082A		1	10/05/18 20:59	C8J0139	CJ80407

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*119 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*90 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*86 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*97 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1810153

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CJ80407 - 3540C										
Blank										
Aroclor 1016	ND	0.05	mg/kg wet							
Aroclor 1016 [2C]	ND	0.05	mg/kg wet							
Aroclor 1221	ND	0.05	mg/kg wet							
Aroclor 1221 [2C]	ND	0.05	mg/kg wet							
Aroclor 1232	ND	0.05	mg/kg wet							
Aroclor 1232 [2C]	ND	0.05	mg/kg wet							
Aroclor 1242	ND	0.05	mg/kg wet							
Aroclor 1242 [2C]	ND	0.05	mg/kg wet							
Aroclor 1248	ND	0.05	mg/kg wet							
Aroclor 1248 [2C]	ND	0.05	mg/kg wet							
Aroclor 1254	ND	0.05	mg/kg wet							
Aroclor 1254 [2C]	ND	0.05	mg/kg wet							
Aroclor 1260	ND	0.05	mg/kg wet							
Aroclor 1260 [2C]	ND	0.05	mg/kg wet							
Aroclor 1262	ND	0.05	mg/kg wet							
Aroclor 1262 [2C]	ND	0.05	mg/kg wet							
Aroclor 1268	ND	0.05	mg/kg wet							
Aroclor 1268 [2C]	ND	0.05	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0275*		mg/kg wet	*0.02500*		*110*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0255*		mg/kg wet	*0.02500*		*102*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0210*		mg/kg wet	*0.02500*		*84*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0228*		mg/kg wet	*0.02500*		*91*	*30-150*			
LCS										
Aroclor 1016	0.4	0.05	mg/kg wet	0.5000		86	40-140			
Aroclor 1016 [2C]	0.4	0.05	mg/kg wet	0.5000		85	40-140			
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		99	40-140			
Aroclor 1260 [2C]	0.4	0.05	mg/kg wet	0.5000		88	40-140			
Surrogate: Decachlorobiphenyl	*0.0287*		mg/kg wet	*0.02500*		*115*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0263*		mg/kg wet	*0.02500*		*105*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0221*		mg/kg wet	*0.02500*		*88*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0229*		mg/kg wet	*0.02500*		*92*	*30-150*			
LCS Dup										
Aroclor 1016	0.4	0.05	mg/kg wet	0.5000		89	40-140	4	30	
Aroclor 1016 [2C]	0.4	0.05	mg/kg wet	0.5000		88	40-140	3	30	
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		102	40-140	3	30	
Aroclor 1260 [2C]	0.5	0.05	mg/kg wet	0.5000		91	40-140	3	30	
Surrogate: Decachlorobiphenyl	*0.0292*		mg/kg wet	*0.02500*		*117*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0267*		mg/kg wet	*0.02500*		*107*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0223*		mg/kg wet	*0.02500*		*89*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0232*		mg/kg wet	*0.02500*		*93*	*30-150*			
Matrix Spike **Source: 1810153-04**										

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1810153

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CJ80407 - 3540C										
Aroclor 1016	0.9	0.06	mg/kg dry	0.5942	ND	149	40-140			M+
Aroclor 1016 [2C]	0.9	0.06	mg/kg dry	0.5942	ND	155	40-140			M+
Aroclor 1260	2.9	0.06	mg/kg dry	0.5942	ND	491	40-140			M+
Aroclor 1260 [2C]	2.7	0.06	mg/kg dry	0.5942	ND	447	40-140			M+
Surrogate: Decachlorobiphenyl	*0.0423*		mg/kg dry	*0.02971*		*143*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0326*		mg/kg dry	*0.02971*		*110*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0294*		mg/kg dry	*0.02971*		*99*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0307*		mg/kg dry	*0.02971*		*103*	*30-150*			
Matrix Spike **Source: 1810153-06**										
Aroclor 1016	0.9	0.06	mg/kg dry	0.5952	ND	150	40-140			M+
Aroclor 1016 [2C]	0.9	0.06	mg/kg dry	0.5952	ND	149	40-140			M+
Aroclor 1260	1.7	0.06	mg/kg dry	0.5952	ND	286	40-140			M+
Aroclor 1260 [2C]	1.9	0.06	mg/kg dry	0.5952	ND	327	40-140			M+
Surrogate: Decachlorobiphenyl	*0.0360*		mg/kg dry	*0.02976*		*121*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0192*		mg/kg dry	*0.02976*		*64*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0268*		mg/kg dry	*0.02976*		*90*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0278*		mg/kg dry	*0.02976*		*93*	*30-150*			
Matrix Spike Dup **Source: 1810153-04**										
Aroclor 1016	0.7	0.06	mg/kg dry	0.6032	ND	112	40-140	27	30	
Aroclor 1016 [2C]	0.8	0.06	mg/kg dry	0.6032	ND	133	40-140	14	30	
Aroclor 1260	1.4	0.06	mg/kg dry	0.6032	ND	238	40-140	68	30	D+, M+
Aroclor 1260 [2C]	1.5	0.06	mg/kg dry	0.6032	ND	249	40-140	55	30	D+, M+
Surrogate: Decachlorobiphenyl	*0.0350*		mg/kg dry	*0.03016*		*116*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0133*		mg/kg dry	*0.03016*		*44*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0262*		mg/kg dry	*0.03016*		*87*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0280*		mg/kg dry	*0.03016*		*93*	*30-150*			
Matrix Spike Dup **Source: 1810153-06**										
Aroclor 1016	0.8	0.06	mg/kg dry	0.5656	ND	147	40-140	7	30	M+
Aroclor 1016 [2C]	0.8	0.06	mg/kg dry	0.5656	ND	150	40-140	4	30	M+
Aroclor 1260	1.7	0.06	mg/kg dry	0.5656	ND	293	40-140	3	30	M+
Aroclor 1260 [2C]	2.0	0.06	mg/kg dry	0.5656	ND	347	40-140	0.9	30	M+
Surrogate: Decachlorobiphenyl	*0.0334*		mg/kg dry	*0.02828*		*118*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0210*		mg/kg dry	*0.02828*		*74*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0266*		mg/kg dry	*0.02828*		*94*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0275*		mg/kg dry	*0.02828*		*97*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
ESS Laboratory Work Order: 1810153

Notes and Definitions

U	Analyte included in the analysis, but not detected
SD	Surrogate recovery(ies) diluted below the MRL (SD).
M+	Matrix Spike recovery is above upper control limit (M+).
D+	Relative percent difference for duplicate is outside of criteria (D+).
D	Diluted.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1810153

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: AEI Consultants, Inc. - TB/MM

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1810153
Date Received: 10/4/2018
Project Due Date: 10/9/2018
Days for Project: 2 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 3.3 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	274147	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
02	274146	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
03	274145	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
04	274144	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
04	274150	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
04	274151	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
05	274143	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
06	274142	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
06	274148	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
06	274149	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
07	274141	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
08	274140	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
09	274139	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
10	274138	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
11	274137	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
12	274136	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
13	274135	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
14	274134	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
15	274133	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
16	274132	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
17	274131	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
18	274130	Yes	NA	Yes	4 oz. Jar - Unpres	NP	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: AEI Consultants, Inc. - TB/MM

ESS Project ID: 1810153
Date Received: 10/4/2018

2nd Review

Are barcode labels on correct containers? Yes / No
Are all necessary stickers attached? Yes / No

Completed By: _____ Date & Time: 10/4/18 1652

Reviewed By: _____ Date & Time: 10/4/18 1623

Delivered By: _____ 10/4/18 1623

ESS Laboratory
Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1810153

Turn Time Rush 48hr

Regulatory State RI

Is this project for any of the following?: ○CT RCP ○MA MCP ○RGP

Reporting Limits See note 1

Electonic Deliverables ☐Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name	AEI
Contact Person	Aaron Ting
Project #	363655
Project Name	BASF Cranston
Address	112 Water St, 5th Floor
City	Boston
State	MA
Zip Code	02109
PO #	—
Telephone Number	978-577-7138
FAX Number	—
Email Address	ating@aeiconsultants.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: PCB (Soxhlet)
1	10-3-18	0816	C	S	SW-113-100318 (0-3')	X
2	↓	0818	↓	↓	SW-114-100318 (0-3')	X
3	10-3-18	0830	C	S	SW-120-100318 (0-3')	X
4		0834			SW-122-100318 (0-3')	X
5		0834			SW-122-100318-1 (0-3')	X
9		0834			SW-122-100318-ms/msd (0-3')	X
6		0836			SW-123-100318 (0-3')	X
7		0836			SW-123-100318-1 (0-3')	X
8		0836			SW-123-100318-ms/msd (0-3')	X
		0846			SW-128-100318 (0-3')	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial — AG

Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* — 9

Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Ascorbic Acid 12-Other* — 1

Number of Containers per Sample: 1

Laboratory Use Only

Cooler Present: ✓

Seals Intact: —

Cooler Temperature: Ice 3.5 °C

Sampled by: ATing

Comments: Please specify "Other" preservative and containers types in this space

note 1: see project QAPP

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
10/4/18 1515	10/4/18 15:16	10/4/18 15:27	10/4/18 1531
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

4/5

ESS Laboratory
Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

Turn Time Rush 48hr
Regulatory State RI
Is this project for any of the following?: ○CT RCP ○MA MCP ○RGP

ESS Lab # K610183
Reporting Limits see note 1
Electonic Deliverables ☐Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name: AEI
Contact Person: Aaron Ting
Project #: 363655
Project Name: BASF Cranston
Address: 112 Water St, 5th Floor
City: Boston
State: MA
Zip Code: 02109
PO #: —
Telephone Number: 978-572-7138
FAX Number: —
Email Address: ating@aeiconsultants.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: PCB (Soxhlet)
9	10/4/18	0921 ✓	G	S	B-404-100418 (0.5') ✓	X
10	✓	0922 ✓			B-405-100418 (1') ✓	X
11	✓	0924 ✓			B-406-100418 (1') ✓	X
12	✓	0925 ✓			B-407-100418 (1') ✓	X
13	✓	0928 ✓			B-394-100418 (1') ✓	X
14	✓	0929 ✓			B-395-100418 (1') ✓	X
15	✓	0930 ✓			B-384-100418 (1') ✓	X
16	✓	0940 ✓			B-373-100418 (1') ✓	X
17	✓	0943 ✓			B-362-100418 (1') ✓	X
18	✓	0944 ✓			B-361-100418 (1') ✓	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G-Glass O-Other P-Poly S-Sterile V-Vial — AG
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* — 9
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Ascorbic Acid 12-Other* — 1
Number of Containers per Sample: 1

Laboratory Use Only
Cooler Present: ✓
Seals Intact: —
Cooler Temperature: Ice 3.3 °C

Sampled by: ATing
Comments: Please specify "Other" preservative and containers types in this space
note 1: see project QAPP

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
10/4/18 1515	10/4/18 15:46	10/4/18 1528	10/4/18 1532
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

CERTIFICATE OF ANALYSIS

Richard Kowalski
AEI Consultants, Inc.
148 Hathaway Road
Dartmouth, MA 02747

RE: BASF Cranston (363655)
ESS Laboratory Work Order Number: 1810213

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 3:15 pm, Oct 10, 2018

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1810213

SAMPLE RECEIPT

The following samples were received on October 05, 2018 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	Sample Name	Matrix	Analysis
1810213-01	B-944-100318 2FT	Soil	8082A
1810213-02	B-945-100318 2FT	Soil	8082A
1810213-03	B-946-100318 2FT	Soil	8082A
1810213-04	SW-693-092518-A 0-3FT	Soil	8082A
1810213-05	SW-311-100518 0-3FT	Soil	8082A
1810213-06	SW-313-100518 0-3FT	Soil	8082A
1810213-07	SW-315-100518 0-3FT	Soil	8082A
1810213-08	SW-317-100518 0-3FT	Soil	8082A
1810213-09	SW-319-100518 0-3FT	Soil	8082A
1810213-10	SW-321-100518 0-3FT	Soil	8082A
1810213-11	SW-323-100518 0-3FT	Soil	8082A
1810213-12	SW-325-100518 0-3FT	Soil	8082A
1810213-13	SW-295-100518 0-3FT	Soil	8082A
1810213-14	SW-297-100518 0-3FT	Soil	8082A
1810213-15	SW-299-100518 0-3FT	Soil	8082A
1810213-16	SW-301-100518 0-3FT	Soil	8082A
1810213-17	SW-303-100518 0-3FT	Soil	8082A
1810213-18	SW-305-100518 0-3FT	Soil	8082A
1810213-19	SW-307-100518 0-3FT	Soil	8082A
1810213-20	SW-309-100518 0-3FT	Soil	8082A

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1810213

PROJECT NARRATIVE

8082A Polychlorinated Biphenyls (PCB)

1810213-01 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl (1440% @ 30-150%), Tetrachloro-m-xylene (1320% @ 30-150%)

1810213-02 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl (167% @ 30-150%)

1810213-04 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1810213-05 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl (289% @ 30-150%)

1810213-06 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl (183% @ 30-150%)

1810213-12 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1810213-14 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1810213-15 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl (241% @ 30-150%)

1810213-16 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl (173% @ 30-150%)

1810213-17 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl (286% @ 30-150%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1810213

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 04-2.1 - VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-944-100318 2FT
Date Sampled: 10/03/18 13:34
Percent Solids: 91
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810213
ESS Laboratory Sample ID: 1810213-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.6)		8082A		10	10/09/18 14:18	C8J0206	CJ80601
Aroclor 1221	ND (0.6)		8082A		10	10/09/18 14:18	C8J0206	CJ80601
Aroclor 1232	ND (0.6)		8082A		10	10/09/18 14:18	C8J0206	CJ80601
Aroclor 1242	ND (0.6)		8082A		10	10/09/18 14:18	C8J0206	CJ80601
Aroclor 1248	ND (0.6)		8082A		10	10/09/18 14:18	C8J0206	CJ80601
Aroclor 1254	**10.3** (0.6)		8082A		10	10/09/18 14:18	C8J0206	CJ80601
Aroclor 1260	ND (0.6)		8082A		10	10/09/18 14:18	C8J0206	CJ80601
Aroclor 1262	ND (0.6)		8082A		10	10/09/18 14:18	C8J0206	CJ80601
Aroclor 1268	ND (0.6)		8082A		10	10/09/18 14:18	C8J0206	CJ80601

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*1440 %*	*SM*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*117 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*1320 %*	*SM*	*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*73 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-945-100318 2FT
Date Sampled: 10/03/18 13:36
Percent Solids: 91
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810213
ESS Laboratory Sample ID: 1810213-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	10/10/18 2:28	C8J0206	CJ80601
Aroclor 1221	ND (0.06)		8082A		1	10/10/18 2:28	C8J0206	CJ80601
Aroclor 1232	ND (0.06)		8082A		1	10/10/18 2:28	C8J0206	CJ80601
Aroclor 1242	ND (0.06)		8082A		1	10/10/18 2:28	C8J0206	CJ80601
Aroclor 1248	ND (0.06)		8082A		1	10/10/18 2:28	C8J0206	CJ80601
Aroclor 1254	**0.3** (0.06)		8082A		1	10/10/18 2:28	C8J0206	CJ80601
Aroclor 1260	ND (0.06)		8082A		1	10/10/18 2:28	C8J0206	CJ80601
Aroclor 1262	ND (0.06)		8082A		1	10/10/18 2:28	C8J0206	CJ80601
Aroclor 1268	ND (0.06)		8082A		1	10/10/18 2:28	C8J0206	CJ80601

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*167 %*	*SM*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*110 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*104 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*118 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-946-100318 2FT
Date Sampled: 10/03/18 13:36
Percent Solids: 92
Initial Volume: 20.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810213
ESS Laboratory Sample ID: 1810213-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.5)		8082A		10	10/09/18 14:54	C8J0206	CJ80601
Aroclor 1221	ND (0.5)		8082A		10	10/09/18 14:54	C8J0206	CJ80601
Aroclor 1232	ND (0.5)		8082A		10	10/09/18 14:54	C8J0206	CJ80601
Aroclor 1242	ND (0.5)		8082A		10	10/09/18 14:54	C8J0206	CJ80601
Aroclor 1248	ND (0.5)		8082A		10	10/09/18 14:54	C8J0206	CJ80601
Aroclor 1254	**2.0** (0.5)		8082A		10	10/09/18 14:54	C8J0206	CJ80601
Aroclor 1260	ND (0.5)		8082A		10	10/09/18 14:54	C8J0206	CJ80601
Aroclor 1262	ND (0.5)		8082A		10	10/09/18 14:54	C8J0206	CJ80601
Aroclor 1268	ND (0.5)		8082A		10	10/09/18 14:54	C8J0206	CJ80601

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*135 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*113 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*53 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*93 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-693-092518-A 0-3FT
Date Sampled: 09/25/18 10:48
Percent Solids: 89
Initial Volume: 19.9
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810213
ESS Laboratory Sample ID: 1810213-04
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (2.8)		8082A		50	10/10/18 9:05	C8J0207	CJ80601
Aroclor 1221	ND (2.8)		8082A		50	10/10/18 9:05	C8J0207	CJ80601
Aroclor 1232	ND (2.8)		8082A		50	10/10/18 9:05	C8J0207	CJ80601
Aroclor 1242	ND (2.8)		8082A		50	10/10/18 9:05	C8J0207	CJ80601
Aroclor 1248	ND (2.8)		8082A		50	10/10/18 9:05	C8J0207	CJ80601
Aroclor 1254	**25.6** (2.8)		8082A		50	10/10/18 9:05	C8J0207	CJ80601
Aroclor 1260	ND (2.8)		8082A		50	10/10/18 9:05	C8J0207	CJ80601
Aroclor 1262	ND (2.8)		8082A		50	10/10/18 9:05	C8J0207	CJ80601
Aroclor 1268	ND (2.8)		8082A		50	10/10/18 9:05	C8J0207	CJ80601

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-311-100518 0-3FT
Date Sampled: 10/05/18 13:57
Percent Solids: 93
Initial Volume: 19.9
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810213
ESS Laboratory Sample ID: 1810213-05
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.5)		8082A		10	10/09/18 15:33	C8J0206	CJ80601
Aroclor 1221	ND (0.5)		8082A		10	10/09/18 15:33	C8J0206	CJ80601
Aroclor 1232	ND (0.5)		8082A		10	10/09/18 15:33	C8J0206	CJ80601
Aroclor 1242	ND (0.5)		8082A		10	10/09/18 15:33	C8J0206	CJ80601
Aroclor 1248	ND (0.5)		8082A		10	10/09/18 15:33	C8J0206	CJ80601
Aroclor 1254	**4.6** (0.5)		8082A		10	10/09/18 15:33	C8J0206	CJ80601
Aroclor 1260	ND (0.5)		8082A		10	10/09/18 15:33	C8J0206	CJ80601
Aroclor 1262	ND (0.5)		8082A		10	10/09/18 15:33	C8J0206	CJ80601
Aroclor 1268	ND (0.5)		8082A		10	10/09/18 15:33	C8J0206	CJ80601

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*289 %*	*SM*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*106 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*82 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*95 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-313-100518 0-3FT
Date Sampled: 10/05/18 13:58
Percent Solids: 87
Initial Volume: 19.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810213
ESS Laboratory Sample ID: 1810213-06
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.6)		8082A		10	10/09/18 15:52	C8J0206	CJ80601
Aroclor 1221	ND (0.6)		8082A		10	10/09/18 15:52	C8J0206	CJ80601
Aroclor 1232	ND (0.6)		8082A		10	10/09/18 15:52	C8J0206	CJ80601
Aroclor 1242	ND (0.6)		8082A		10	10/09/18 15:52	C8J0206	CJ80601
Aroclor 1248	ND (0.6)		8082A		10	10/09/18 15:52	C8J0206	CJ80601
Aroclor 1254	**4.5** (0.6)		8082A		10	10/09/18 15:52	C8J0206	CJ80601
Aroclor 1260	ND (0.6)		8082A		10	10/09/18 15:52	C8J0206	CJ80601
Aroclor 1262	ND (0.6)		8082A		10	10/09/18 15:52	C8J0206	CJ80601
Aroclor 1268	ND (0.6)		8082A		10	10/09/18 15:52	C8J0206	CJ80601

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*183 %*	*SM*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*84 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*74 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*86 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-315-100518 0-3FT
Date Sampled: 10/05/18 13:59
Percent Solids: 93
Initial Volume: 19.8
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810213
ESS Laboratory Sample ID: 1810213-07
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.5)		8082A		10	10/09/18 16:12	C8J0206	CJ80601
Aroclor 1221	ND (0.5)		8082A		10	10/09/18 16:12	C8J0206	CJ80601
Aroclor 1232	ND (0.5)		8082A		10	10/09/18 16:12	C8J0206	CJ80601
Aroclor 1242	ND (0.5)		8082A		10	10/09/18 16:12	C8J0206	CJ80601
Aroclor 1248 [2C]	**3.2** (0.5)		8082A		10	10/09/18 16:12	C8J0206	CJ80601
Aroclor 1254 [2C]	**2.6** (0.5)		8082A		10	10/09/18 16:12	C8J0206	CJ80601
Aroclor 1260	ND (0.5)		8082A		10	10/09/18 16:12	C8J0206	CJ80601
Aroclor 1262	ND (0.5)		8082A		10	10/09/18 16:12	C8J0206	CJ80601
Aroclor 1268	ND (0.5)		8082A		10	10/09/18 16:12	C8J0206	CJ80601

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*131 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*107 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*86 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*103 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-317-100518 0-3FT
Date Sampled: 10/05/18 14:00
Percent Solids: 91
Initial Volume: 20.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810213
ESS Laboratory Sample ID: 1810213-08
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.5)		8082A		10	10/09/18 16:31	C8J0206	CJ80601
Aroclor 1221	ND (0.5)		8082A		10	10/09/18 16:31	C8J0206	CJ80601
Aroclor 1232	ND (0.5)		8082A		10	10/09/18 16:31	C8J0206	CJ80601
Aroclor 1242	ND (0.5)		8082A		10	10/09/18 16:31	C8J0206	CJ80601
Aroclor 1248 [2C]	**2.0** (0.5)		8082A		10	10/09/18 16:31	C8J0206	CJ80601
Aroclor 1254 [2C]	**1.7** (0.5)		8082A		10	10/09/18 16:31	C8J0206	CJ80601
Aroclor 1260	ND (0.5)		8082A		10	10/09/18 16:31	C8J0206	CJ80601
Aroclor 1262	ND (0.5)		8082A		10	10/09/18 16:31	C8J0206	CJ80601
Aroclor 1268	ND (0.5)		8082A		10	10/09/18 16:31	C8J0206	CJ80601

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*146 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*108 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*90 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*107 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-319-100518 0-3FT
Date Sampled: 10/05/18 14:01
Percent Solids: 96
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810213
ESS Laboratory Sample ID: 1810213-09
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.5)		8082A		10	10/09/18 16:50	C8J0206	CJ80601
Aroclor 1221	ND (0.5)		8082A		10	10/09/18 16:50	C8J0206	CJ80601
Aroclor 1232	ND (0.5)		8082A		10	10/09/18 16:50	C8J0206	CJ80601
Aroclor 1242	ND (0.5)		8082A		10	10/09/18 16:50	C8J0206	CJ80601
Aroclor 1248	ND (0.5)		8082A		10	10/09/18 16:50	C8J0206	CJ80601
Aroclor 1254	**2.8** (0.5)		8082A		10	10/09/18 16:50	C8J0206	CJ80601
Aroclor 1260	ND (0.5)		8082A		10	10/09/18 16:50	C8J0206	CJ80601
Aroclor 1262	ND (0.5)		8082A		10	10/09/18 16:50	C8J0206	CJ80601
Aroclor 1268	ND (0.5)		8082A		10	10/09/18 16:50	C8J0206	CJ80601

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*142 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*103 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*84 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*102 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-321-100518 0-3FT
Date Sampled: 10/05/18 14:03
Percent Solids: 90
Initial Volume: 19.7
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810213
ESS Laboratory Sample ID: 1810213-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.6)		8082A		10	10/09/18 17:09	C8J0206	CJ80601
Aroclor 1221	ND (0.6)		8082A		10	10/09/18 17:09	C8J0206	CJ80601
Aroclor 1232	ND (0.6)		8082A		10	10/09/18 17:09	C8J0206	CJ80601
Aroclor 1242	ND (0.6)		8082A		10	10/09/18 17:09	C8J0206	CJ80601
Aroclor 1248 [2C]	**3.7** (0.6)		8082A		10	10/09/18 17:09	C8J0206	CJ80601
Aroclor 1254	**2.9** (0.6)		8082A		10	10/09/18 17:09	C8J0206	CJ80601
Aroclor 1260	ND (0.6)		8082A		10	10/09/18 17:09	C8J0206	CJ80601
Aroclor 1262	ND (0.6)		8082A		10	10/09/18 17:09	C8J0206	CJ80601
Aroclor 1268	ND (0.6)		8082A		10	10/09/18 17:09	C8J0206	CJ80601

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*133 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*99 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*81 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*93 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-323-100518 0-3FT
Date Sampled: 10/05/18 14:04
Percent Solids: 93
Initial Volume: 20.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810213
ESS Laboratory Sample ID: 1810213-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.5)		8082A		10	10/09/18 17:29	C8J0206	CJ80601
Aroclor 1221	ND (0.5)		8082A		10	10/09/18 17:29	C8J0206	CJ80601
Aroclor 1232	ND (0.5)		8082A		10	10/09/18 17:29	C8J0206	CJ80601
Aroclor 1242	ND (0.5)		8082A		10	10/09/18 17:29	C8J0206	CJ80601
Aroclor 1248	ND (0.5)		8082A		10	10/09/18 17:29	C8J0206	CJ80601
Aroclor 1254	**4.7** (0.5)		8082A		10	10/09/18 17:29	C8J0206	CJ80601
Aroclor 1260	ND (0.5)		8082A		10	10/09/18 17:29	C8J0206	CJ80601
Aroclor 1262	ND (0.5)		8082A		10	10/09/18 17:29	C8J0206	CJ80601
Aroclor 1268	ND (0.5)		8082A		10	10/09/18 17:29	C8J0206	CJ80601

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*129 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*102 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*92 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*98 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-325-100518 0-3FT
Date Sampled: 10/05/18 14:05
Percent Solids: 95
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810213
ESS Laboratory Sample ID: 1810213-12
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (1.1)		8082A		20	10/10/18 9:24	C8J0207	CJ80601
Aroclor 1221	ND (1.1)		8082A		20	10/10/18 9:24	C8J0207	CJ80601
Aroclor 1232	ND (1.1)		8082A		20	10/10/18 9:24	C8J0207	CJ80601
Aroclor 1242	ND (1.1)		8082A		20	10/10/18 9:24	C8J0207	CJ80601
Aroclor 1248	ND (1.1)		8082A		20	10/10/18 9:24	C8J0207	CJ80601
Aroclor 1254	**14.2** (1.1)		8082A		20	10/10/18 9:24	C8J0207	CJ80601
Aroclor 1260	ND (1.1)		8082A		20	10/10/18 9:24	C8J0207	CJ80601
Aroclor 1262	ND (1.1)		8082A		20	10/10/18 9:24	C8J0207	CJ80601
Aroclor 1268	ND (1.1)		8082A		20	10/10/18 9:24	C8J0207	CJ80601

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	%	SD	30-150
Surrogate: Decachlorobiphenyl [2C]	%	SD	30-150
Surrogate: Tetrachloro-m-xylene	%	SD	30-150
Surrogate: Tetrachloro-m-xylene [2C]	%	SD	30-150

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-295-100518 0-3FT
Date Sampled: 10/05/18 14:06
Percent Solids: 92
Initial Volume: 19.7
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810213
ESS Laboratory Sample ID: 1810213-13
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.6)		8082A		10	10/09/18 18:07	C8J0206	CJ80601
Aroclor 1221	ND (0.6)		8082A		10	10/09/18 18:07	C8J0206	CJ80601
Aroclor 1232	ND (0.6)		8082A		10	10/09/18 18:07	C8J0206	CJ80601
Aroclor 1242	ND (0.6)		8082A		10	10/09/18 18:07	C8J0206	CJ80601
Aroclor 1248	ND (0.6)		8082A		10	10/09/18 18:07	C8J0206	CJ80601
Aroclor 1254 [2C]	**10.2** (0.6)		8082A		10	10/09/18 18:07	C8J0206	CJ80601
Aroclor 1260	ND (0.6)		8082A		10	10/09/18 18:07	C8J0206	CJ80601
Aroclor 1262	ND (0.6)		8082A		10	10/09/18 18:07	C8J0206	CJ80601
Aroclor 1268	ND (0.6)		8082A		10	10/09/18 18:07	C8J0206	CJ80601

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*149 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*122 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*88 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*98 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-297-100518 0-3FT
Date Sampled: 10/05/18 14:07
Percent Solids: 93
Initial Volume: 19.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810213
ESS Laboratory Sample ID: 1810213-14
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (2.8)		8082A		50	10/10/18 9:44	C8J0207	CJ80601
Aroclor 1221	ND (2.8)		8082A		50	10/10/18 9:44	C8J0207	CJ80601
Aroclor 1232	ND (2.8)		8082A		50	10/10/18 9:44	C8J0207	CJ80601
Aroclor 1242	ND (2.8)		8082A		50	10/10/18 9:44	C8J0207	CJ80601
Aroclor 1248	ND (2.8)		8082A		50	10/10/18 9:44	C8J0207	CJ80601
Aroclor 1254	**17.7** (2.8)		8082A		50	10/10/18 9:44	C8J0207	CJ80601
Aroclor 1260	ND (2.8)		8082A		50	10/10/18 9:44	C8J0207	CJ80601
Aroclor 1262	ND (2.8)		8082A		50	10/10/18 9:44	C8J0207	CJ80601
Aroclor 1268	ND (2.8)		8082A		50	10/10/18 9:44	C8J0207	CJ80601

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*%*	*SD*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*%*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene	*%*	*SD*	*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*%*	*SD*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-299-100518 0-3FT
Date Sampled: 10/05/18 14:09
Percent Solids: 94
Initial Volume: 19.9
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810213
ESS Laboratory Sample ID: 1810213-15
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.5)		8082A		10	10/09/18 18:46	C8J0206	CJ80601
Aroclor 1221	ND (0.5)		8082A		10	10/09/18 18:46	C8J0206	CJ80601
Aroclor 1232	ND (0.5)		8082A		10	10/09/18 18:46	C8J0206	CJ80601
Aroclor 1242	ND (0.5)		8082A		10	10/09/18 18:46	C8J0206	CJ80601
Aroclor 1248	ND (0.5)		8082A		10	10/09/18 18:46	C8J0206	CJ80601
Aroclor 1254 [2C]	**8.3** (0.5)		8082A		10	10/09/18 18:46	C8J0206	CJ80601
Aroclor 1260	ND (0.5)		8082A		10	10/09/18 18:46	C8J0206	CJ80601
Aroclor 1262	ND (0.5)		8082A		10	10/09/18 18:46	C8J0206	CJ80601
Aroclor 1268	ND (0.5)		8082A		10	10/09/18 18:46	C8J0206	CJ80601

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*241 %*	*SM*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*113 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*81 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*95 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-301-100518 0-3FT
Date Sampled: 10/05/18 14:10
Percent Solids: 90
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810213
ESS Laboratory Sample ID: 1810213-16
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.6)		8082A		10	10/09/18 19:05	C8J0206	CJ80601
Aroclor 1221	ND (0.6)		8082A		10	10/09/18 19:05	C8J0206	CJ80601
Aroclor 1232	ND (0.6)		8082A		10	10/09/18 19:05	C8J0206	CJ80601
Aroclor 1242	ND (0.6)		8082A		10	10/09/18 19:05	C8J0206	CJ80601
Aroclor 1248	ND (0.6)		8082A		10	10/09/18 19:05	C8J0206	CJ80601
Aroclor 1254	**8.4** (0.6)		8082A		10	10/09/18 19:05	C8J0206	CJ80601
Aroclor 1260	ND (0.6)		8082A		10	10/09/18 19:05	C8J0206	CJ80601
Aroclor 1262	ND (0.6)		8082A		10	10/09/18 19:05	C8J0206	CJ80601
Aroclor 1268	ND (0.6)		8082A		10	10/09/18 19:05	C8J0206	CJ80601

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*173 %*	*SM*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*122 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*77 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*91 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-303-100518 0-3FT
Date Sampled: 10/05/18 14:12
Percent Solids: 91
Initial Volume: 19.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810213
ESS Laboratory Sample ID: 1810213-17
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.6)		8082A		10	10/09/18 19:24	C8J0206	CJ80601
Aroclor 1221	ND (0.6)		8082A		10	10/09/18 19:24	C8J0206	CJ80601
Aroclor 1232	ND (0.6)		8082A		10	10/09/18 19:24	C8J0206	CJ80601
Aroclor 1242	ND (0.6)		8082A		10	10/09/18 19:24	C8J0206	CJ80601
Aroclor 1248	ND (0.6)		8082A		10	10/09/18 19:24	C8J0206	CJ80601
Aroclor 1254 [2C]	**4.2** (0.6)		8082A		10	10/09/18 19:24	C8J0206	CJ80601
Aroclor 1260	ND (0.6)		8082A		10	10/09/18 19:24	C8J0206	CJ80601
Aroclor 1262	ND (0.6)		8082A		10	10/09/18 19:24	C8J0206	CJ80601
Aroclor 1268	ND (0.6)		8082A		10	10/09/18 19:24	C8J0206	CJ80601

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*286 %*	*SM*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*97 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*78 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*95 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-305-100518 0-3FT
Date Sampled: 10/05/18 14:13
Percent Solids: 93
Initial Volume: 20.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810213
ESS Laboratory Sample ID: 1810213-18
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.5)		8082A		10	10/09/18 21:59	C8J0206	CJ80601
Aroclor 1221	ND (0.5)		8082A		10	10/09/18 21:59	C8J0206	CJ80601
Aroclor 1232	ND (0.5)		8082A		10	10/09/18 21:59	C8J0206	CJ80601
Aroclor 1242	ND (0.5)		8082A		10	10/09/18 21:59	C8J0206	CJ80601
Aroclor 1248	ND (0.5)		8082A		10	10/09/18 21:59	C8J0206	CJ80601
Aroclor 1254 [2C]	**1.4** (0.5)		8082A		10	10/09/18 21:59	C8J0206	CJ80601
Aroclor 1260	ND (0.5)		8082A		10	10/09/18 21:59	C8J0206	CJ80601
Aroclor 1262	ND (0.5)		8082A		10	10/09/18 21:59	C8J0206	CJ80601
Aroclor 1268	ND (0.5)		8082A		10	10/09/18 21:59	C8J0206	CJ80601

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*138 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*114 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*84 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*104 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-307-100518 0-3FT
Date Sampled: 10/05/18 14:15
Percent Solids: 93
Initial Volume: 19.7
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810213
ESS Laboratory Sample ID: 1810213-19
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.5)		8082A		10	10/09/18 22:18	C8J0206	CJ80601
Aroclor 1221	ND (0.5)		8082A		10	10/09/18 22:18	C8J0206	CJ80601
Aroclor 1232	ND (0.5)		8082A		10	10/09/18 22:18	C8J0206	CJ80601
Aroclor 1242	ND (0.5)		8082A		10	10/09/18 22:18	C8J0206	CJ80601
Aroclor 1248	ND (0.5)		8082A		10	10/09/18 22:18	C8J0206	CJ80601
Aroclor 1254	**0.7** (0.5)		8082A		10	10/09/18 22:18	C8J0206	CJ80601
Aroclor 1260	ND (0.5)		8082A		10	10/09/18 22:18	C8J0206	CJ80601
Aroclor 1262	ND (0.5)		8082A		10	10/09/18 22:18	C8J0206	CJ80601
Aroclor 1268	ND (0.5)		8082A		10	10/09/18 22:18	C8J0206	CJ80601

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*141 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*105 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*85 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*106 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-309-100518 0-3FT
Date Sampled: 10/05/18 14:17
Percent Solids: 93
Initial Volume: 20
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810213
ESS Laboratory Sample ID: 1810213-20
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.5)		8082A		10	10/09/18 22:37	C8J0206	CJ80601
Aroclor 1221	ND (0.5)		8082A		10	10/09/18 22:37	C8J0206	CJ80601
Aroclor 1232	ND (0.5)		8082A		10	10/09/18 22:37	C8J0206	CJ80601
Aroclor 1242	ND (0.5)		8082A		10	10/09/18 22:37	C8J0206	CJ80601
Aroclor 1248	ND (0.5)		8082A		10	10/09/18 22:37	C8J0206	CJ80601
Aroclor 1254 [2C]	**6.8** (0.5)		8082A		10	10/09/18 22:37	C8J0206	CJ80601
Aroclor 1260	ND (0.5)		8082A		10	10/09/18 22:37	C8J0206	CJ80601
Aroclor 1262	ND (0.5)		8082A		10	10/09/18 22:37	C8J0206	CJ80601
Aroclor 1268	ND (0.5)		8082A		10	10/09/18 22:37	C8J0206	CJ80601

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*139 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*104 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*82 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*102 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1810213

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CJ80601 - 3540C										
Blank										
Aroclor 1016	ND	0.05	mg/kg wet							
Aroclor 1016 [2C]	ND	0.05	mg/kg wet							
Aroclor 1221	ND	0.05	mg/kg wet							
Aroclor 1221 [2C]	ND	0.05	mg/kg wet							
Aroclor 1232	ND	0.05	mg/kg wet							
Aroclor 1232 [2C]	ND	0.05	mg/kg wet							
Aroclor 1242	ND	0.05	mg/kg wet							
Aroclor 1242 [2C]	ND	0.05	mg/kg wet							
Aroclor 1248	ND	0.05	mg/kg wet							
Aroclor 1248 [2C]	ND	0.05	mg/kg wet							
Aroclor 1254	ND	0.05	mg/kg wet							
Aroclor 1254 [2C]	ND	0.05	mg/kg wet							
Aroclor 1260	ND	0.05	mg/kg wet							
Aroclor 1260 [2C]	ND	0.05	mg/kg wet							
Aroclor 1262	ND	0.05	mg/kg wet							
Aroclor 1262 [2C]	ND	0.05	mg/kg wet							
Aroclor 1268	ND	0.05	mg/kg wet							
Aroclor 1268 [2C]	ND	0.05	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0272*		mg/kg wet	*0.02500*		*109*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0211*		mg/kg wet	*0.02500*		*84*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0225*		mg/kg wet	*0.02500*		*90*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0250*		mg/kg wet	*0.02500*		*100*	*30-150*			
LCS										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		90	40-140			
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		92	40-140			
Aroclor 1260	0.4	0.05	mg/kg wet	0.5000		88	40-140			
Aroclor 1260 [2C]	0.5	0.05	mg/kg wet	0.5000		91	40-140			
Surrogate: Decachlorobiphenyl	*0.0291*		mg/kg wet	*0.02500*		*116*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0227*		mg/kg wet	*0.02500*		*91*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0239*		mg/kg wet	*0.02500*		*96*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0255*		mg/kg wet	*0.02500*		*102*	*30-150*			
LCS Dup										
Aroclor 1016	0.4	0.05	mg/kg wet	0.5000		90	40-140	0.3	30	
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		93	40-140	0.3	30	
Aroclor 1260	0.4	0.05	mg/kg wet	0.5000		88	40-140	0.5	30	
Aroclor 1260 [2C]	0.5	0.05	mg/kg wet	0.5000		90	40-140	0.7	30	
Surrogate: Decachlorobiphenyl	*0.0286*		mg/kg wet	*0.02500*		*114*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0223*		mg/kg wet	*0.02500*		*89*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0238*		mg/kg wet	*0.02500*		*95*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0255*		mg/kg wet	*0.02500*		*102*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
ESS Laboratory Work Order: 1810213

Notes and Definitions

U	Analyte included in the analysis, but not detected
SM	Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).
SD	Surrogate recovery(ies) diluted below the MRL (SD).
D	Diluted.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1810213

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: AEI Consultants, Inc. - TB/MM

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1810213
Date Received: 10/5/2018
Project Due Date: 10/10/2018
Days for Project: 2 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 5.8 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** Yes / No / NA
10. Were any analyses received outside of hold time? Yes / No

11. Any Subcontracting needed? Yes / No
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / No
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? Yes / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes / No
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	274807	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
02	274806	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
03	274805	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
04	274804	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
05	274803	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
06	274802	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
07	274801	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
08	274800	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
09	274799	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
10	274798	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
11	274797	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
12	274796	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
13	274795	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
14	274794	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
15	274793	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
16	274792	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
17	274791	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
18	274790	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
19	274789	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
20	274788	Yes	NA	Yes	4 oz. Jar - Unpres	NP	

2nd Review
Are barcode labels on correct containers? Yes / No

ESS Laboratory Sample and Cooler Receipt Checklist

Client: AEI Consultants, Inc. - TB/MM

ESS Project ID: 1810213
Date Received: 10/5/2018

Are all necessary stickers attached? Yes No

Completed By: Date & Time: 10/5/18 1619

Reviewed By: Date & Time: 10/5/18 1718

Delivered By: 10/5/18 1718

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ESS Laboratory
Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1810213

Turn Time Rush 48hr
Regulatory State RI
Is this project for any of the following?: ○CT RCP ○MA MCP ○RGP

Reporting Limits: see note 1
Electonic Deliverables: ☐Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
AEI	363655	BASF Cranston

Contact Person: Aaron Ting
Address:

City	State	Zip Code	PO #
Boston	MA	02109	—

Telephone Number	FAX Number	Email Address
978-572-7138	—	ating@aeiconsultants.com

Analysis: PCB (Soxhlet)

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	PCB (Soxhlet)
1	10-3-18	1334	G	S	B-944-100318(2')	X
2	↓	1336	↓	↓	B-945-100318(2')	X
3	↓	1336	↓	↓	B-946-100318(2')	X
4	9-25-18	1048	C	S	SW-693-D92518-A(0-3')	X
5	10-5-18	1357	↓	↓	SW-311-100518(0-3')	X
6	↓	1358	↓	↓	SW-313-100518(0-3')	X
7	↓	1359	↓	↓	SW-315-100518(0-3')	X
8	↓	1400	↓	↓	SW-317-100518(0-3')	X
9	↓	1401	↓	↓	SW-319-100518(0-3')	X
10	↓	1403	↓	↓	SW-321-100518(0-3')	X

Container Type:	AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G-Glass O-Other P-Poly S-Sterile V-Vial	AG
Container Volume:	1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*	9
Preservation Code:	1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Ascorbic Acid 12-Other*	1
Number of Containers per Sample:		1

Laboratory Use Only
Cooler Present: Y
Seals Intact: N/A
Cooler Temperature: 5-8 °C

Sampled by: ATing

Comments: Please specify "Other" preservative and containers types in this space
note 1: see project QAPP

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
10/5/18 1500	10/5/18 1500	10/5/18 1513	10/5/18 1517
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

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ESS Laboratory
Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
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www.esslaboratory.com

CHAIN OF CUSTODY

Turn Time: Rush 48hr
Regulatory State: RI
Is this project for any of the following?: ○CT RCP ○MA MCP ○RGP

ESS Lab #: 1810213
Reporting Limits: See note 1
Electonic Deliverables: ☐Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name: AEI
Contact Person: Aaron Ting
Project #: 363655
Project Name: BASF Cranston
Address:
City: Boston
State: MA
Zip Code: 02109
PO #: —
Telephone Number: 978-572-7138
FAX Number: —
Email Address: ating@aeiconsultants.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: PCB (Soxhlet)
11	10-5-18	1404	C	S	SW-323-100518 (0-3')	X
12	↓	1405	↓	↓	SW-325-100518 (0-3')	X
13		1406			SW-295-100518 (0-3')	X
14		1407			SW-297-100518 (0-3')	X
15		1409			SW-299-100518 (0-3')	X
16		1410			SW-301-100518 (0-3')	X
17		1412			SW-303-100518 (0-3')	X
18		1413			SW-305-100518 (0-3')	X
19		1415			SW-307-100518 (0-3')	X
20	↓	1417	↓	↓	SW-309-100518 (0-3')	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial: AG
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other*: 4
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Ascorbic Acid 12-Other*: 1
Number of Containers per Sample: 1

Laboratory Use Only
Cooler Present: ✓
Seals Intact: not
Cooler Temperature: 5.7 °C

Sampled by: ATing
Comments: Please specify "Other" preservative and containers types in this space
note 1: see project QAPP

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
10/5/18 1500	10/5/18 1500	10/5/18 1513	10/5/18 1517
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

CERTIFICATE OF ANALYSIS

Richard Kowalski
AEI Consultants, Inc.
148 Hathaway Road
Dartmouth, MA 02747

RE: BASF Cranston (363655)
ESS Laboratory Work Order Number: 1810214

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 3:17 pm, Oct 10, 2018

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1810214

SAMPLE RECEIPT

The following samples were received on October 05, 2018 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	Sample Name	Matrix	Analysis
1810214-01	B-923-100318 2FT	Solid	8082A
1810214-02	B-924-100318 2FT	Solid	8082A
1810214-03	B-925-100318 2FT	Solid	8082A
1810214-04	B-927-100318 2FT	Solid	8082A
1810214-05	B-928-100318 2FT	Solid	8082A
1810214-06	B-929-100318 2FT	Solid	8082A
1810214-07	B-931-100318 2FT	Solid	8082A
1810214-08	B-932-100318 2FT	Solid	8082A
1810214-09	B-933-100318 2FT	Solid	8082A
1810214-10	B-935-100318 2FT	Solid	8082A
1810214-11	B-936-100318 2FT	Solid	8082A
1810214-12	B-937-100318 2FT	Solid	8082A
1810214-13	B-938-100318 2FT	Solid	8082A
1810214-14	B-939-100318 2FT	Solid	8082A
1810214-15	B-940-100318 2FT	Solid	8082A
1810214-16	B-941-100318 2FT	Solid	8082A
1810214-17	B-941-100318-1 2FT	Solid	8082A
1810214-18	B-942-100318 2FT	Solid	8082A
1810214-19	B-943-100318 2FT	Solid	8082A

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1810214

PROJECT NARRATIVE

8082A Polychlorinated Biphenyls (PCB)

1810214-02 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl (% @ 30-150%)

1810214-04 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl [2C] (190% @ 30-150%)

1810214-05 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl (3020% @ 30-150%), Tetrachloro-m-xylene [2C] (293% @ 30-150%)

1810214-06 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl (2800% @ 30-150%)

1810214-07 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl (664% @ 30-150%)

1810214-08 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl (1190% @ 30-150%)

1810214-09 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl (634% @ 30-150%)

1810214-11 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Tetrachloro-m-xylene [2C] (394% @ 30-150%)

1810214-12 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl (633% @ 30-150%)

1810214-14 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl (2160% @ 30-150%)

1810214-15 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl (1240% @ 30-150%)

1810214-16 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl (217% @ 30-150%)

CJ80603-MS1 **Matrix Spike recovery is above upper control limit (M+).**
Aroclor 1260 (267% @ 40-140%), Aroclor 1260 [2C] (312% @ 40-140%)

CJ80603-MSD1 **Matrix Spike recovery is above upper control limit (M+).**
Aroclor 1260 (343% @ 40-140%), Aroclor 1260 [2C] (350% @ 40-140%)

No other observations noted.

End of Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1810214

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 04-2.1 - VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-923-100318 2FT
Date Sampled: 10/03/18 11:10
Percent Solids: 90
Initial Volume: 19.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810214
ESS Laboratory Sample ID: 1810214-01
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.6)		8082A		10	10/09/18 14:18	C8J0208	CJ80603
Aroclor 1221	ND (0.6)		8082A		10	10/09/18 14:18	C8J0208	CJ80603
Aroclor 1232	ND (0.6)		8082A		10	10/09/18 14:18	C8J0208	CJ80603
Aroclor 1242	ND (0.6)		8082A		10	10/09/18 14:18	C8J0208	CJ80603
Aroclor 1248	ND (0.6)		8082A		10	10/09/18 14:18	C8J0208	CJ80603
Aroclor 1254	**8.3** (0.6)		8082A		10	10/09/18 14:18	C8J0208	CJ80603
Aroclor 1260	ND (0.6)		8082A		10	10/09/18 14:18	C8J0208	CJ80603
Aroclor 1262	ND (0.6)		8082A		10	10/09/18 14:18	C8J0208	CJ80603
Aroclor 1268	ND (0.6)		8082A		10	10/09/18 14:18	C8J0208	CJ80603

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*97 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*109 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*73 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*76 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-924-100318 2FT
Date Sampled: 10/03/18 11:14
Percent Solids: 91
Initial Volume: 19.7
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810214
ESS Laboratory Sample ID: 1810214-02
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.6)		8082A		10	10/09/18 14:35	C8J0208	CJ80603
Aroclor 1221	ND (0.6)		8082A		10	10/09/18 14:35	C8J0208	CJ80603
Aroclor 1232	ND (0.6)		8082A		10	10/09/18 14:35	C8J0208	CJ80603
Aroclor 1242	ND (0.6)		8082A		10	10/09/18 14:35	C8J0208	CJ80603
Aroclor 1248	ND (0.6)		8082A		10	10/09/18 14:35	C8J0208	CJ80603
Aroclor 1254	**7.6** (0.6)		8082A		10	10/09/18 14:35	C8J0208	CJ80603
Aroclor 1260	ND (0.6)		8082A		10	10/09/18 14:35	C8J0208	CJ80603
Aroclor 1262	ND (0.6)		8082A		10	10/09/18 14:35	C8J0208	CJ80603
Aroclor 1268	ND (0.6)		8082A		10	10/09/18 14:35	C8J0208	CJ80603

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*%*	*SM*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*122 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*66 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*88 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-925-100318 2FT
Date Sampled: 10/03/18 11:18
Percent Solids: 85
Initial Volume: 20.1
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810214
ESS Laboratory Sample ID: 1810214-03
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.6)		8082A		10	10/09/18 14:54	C8J0208	CJ80603
Aroclor 1221	ND (0.6)		8082A		10	10/09/18 14:54	C8J0208	CJ80603
Aroclor 1232	ND (0.6)		8082A		10	10/09/18 14:54	C8J0208	CJ80603
Aroclor 1242	ND (0.6)		8082A		10	10/09/18 14:54	C8J0208	CJ80603
Aroclor 1248	ND (0.6)		8082A		10	10/09/18 14:54	C8J0208	CJ80603
Aroclor 1254 [2C]	**2.6** (0.6)		8082A		10	10/09/18 14:54	C8J0208	CJ80603
Aroclor 1260	ND (0.6)		8082A		10	10/09/18 14:54	C8J0208	CJ80603
Aroclor 1262	ND (0.6)		8082A		10	10/09/18 14:54	C8J0208	CJ80603
Aroclor 1268	ND (0.6)		8082A		10	10/09/18 14:54	C8J0208	CJ80603

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*69 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*119 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*88 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*115 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-927-100318 2FT
Date Sampled: 10/03/18 11:26
Percent Solids: 90
Initial Volume: 19.9
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810214
ESS Laboratory Sample ID: 1810214-04
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.6)		8082A		10	10/09/18 15:14	C8J0208	CJ80603
Aroclor 1221	ND (0.6)		8082A		10	10/09/18 15:14	C8J0208	CJ80603
Aroclor 1232	ND (0.6)		8082A		10	10/09/18 15:14	C8J0208	CJ80603
Aroclor 1242	ND (0.6)		8082A		10	10/09/18 15:14	C8J0208	CJ80603
Aroclor 1248	ND (0.6)		8082A		10	10/09/18 15:14	C8J0208	CJ80603
Aroclor 1254	**6.5** (0.6)		8082A		10	10/09/18 15:14	C8J0208	CJ80603
Aroclor 1260	ND (0.6)		8082A		10	10/09/18 15:14	C8J0208	CJ80603
Aroclor 1262	ND (0.6)		8082A		10	10/09/18 15:14	C8J0208	CJ80603
Aroclor 1268	ND (0.6)		8082A		10	10/09/18 15:14	C8J0208	CJ80603

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*83 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*190 %*	*SM*	*30-150*
Surrogate: Tetrachloro-m-xylene	*88 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*107 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-928-100318 2FT
Date Sampled: 10/03/18 11:30
Percent Solids: 91
Initial Volume: 20.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810214
ESS Laboratory Sample ID: 1810214-05
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	10/10/18 1:05	C8J0208	CJ80603
Aroclor 1221	ND (0.05)		8082A		1	10/10/18 1:05	C8J0208	CJ80603
Aroclor 1232	ND (0.05)		8082A		1	10/10/18 1:05	C8J0208	CJ80603
Aroclor 1242	ND (0.05)		8082A		1	10/10/18 1:05	C8J0208	CJ80603
Aroclor 1248	ND (0.05)		8082A		1	10/10/18 1:05	C8J0208	CJ80603
Aroclor 1254	ND (0.05)		8082A		1	10/10/18 1:05	C8J0208	CJ80603
Aroclor 1260	ND (0.05)		8082A		1	10/10/18 1:05	C8J0208	CJ80603
Aroclor 1262	ND (0.05)		8082A		1	10/10/18 1:05	C8J0208	CJ80603
Aroclor 1268	ND (0.05)		8082A		1	10/10/18 1:05	C8J0208	CJ80603

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*3020 %*	*SM*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*149 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*89 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*293 %*	*SM*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-929-100318 2FT
Date Sampled: 10/03/18 11:32
Percent Solids: 87
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810214
ESS Laboratory Sample ID: 1810214-06
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	10/10/18 1:24	C8J0208	CJ80603
Aroclor 1221	ND (0.06)		8082A		1	10/10/18 1:24	C8J0208	CJ80603
Aroclor 1232	ND (0.06)		8082A		1	10/10/18 1:24	C8J0208	CJ80603
Aroclor 1242	ND (0.06)		8082A		1	10/10/18 1:24	C8J0208	CJ80603
Aroclor 1248	ND (0.06)		8082A		1	10/10/18 1:24	C8J0208	CJ80603
Aroclor 1254	**0.9** (0.06)		8082A		1	10/10/18 1:24	C8J0208	CJ80603
Aroclor 1260	ND (0.06)		8082A		1	10/10/18 1:24	C8J0208	CJ80603
Aroclor 1262	ND (0.06)		8082A		1	10/10/18 1:24	C8J0208	CJ80603
Aroclor 1268	ND (0.06)		8082A		1	10/10/18 1:24	C8J0208	CJ80603

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*2800 %*	*SM*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*105 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*99 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*95 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-931-100318 2FT
Date Sampled: 10/03/18 12:26
Percent Solids: 89
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810214
ESS Laboratory Sample ID: 1810214-07
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	10/10/18 1:44	C8J0208	CJ80603
Aroclor 1221	ND (0.06)		8082A		1	10/10/18 1:44	C8J0208	CJ80603
Aroclor 1232	ND (0.06)		8082A		1	10/10/18 1:44	C8J0208	CJ80603
Aroclor 1242	ND (0.06)		8082A		1	10/10/18 1:44	C8J0208	CJ80603
Aroclor 1248	ND (0.06)		8082A		1	10/10/18 1:44	C8J0208	CJ80603
Aroclor 1254	ND (0.06)		8082A		1	10/10/18 1:44	C8J0208	CJ80603
Aroclor 1260	ND (0.06)		8082A		1	10/10/18 1:44	C8J0208	CJ80603
Aroclor 1262	ND (0.06)		8082A		1	10/10/18 1:44	C8J0208	CJ80603
Aroclor 1268	ND (0.06)		8082A		1	10/10/18 1:44	C8J0208	CJ80603

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*664 %*	*SM*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*58 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*97 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*112 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-932-100318 2FT
Date Sampled: 10/03/18 12:28
Percent Solids: 92
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810214
ESS Laboratory Sample ID: 1810214-08
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.6)		8082A		10	10/09/18 16:30	C8J0208	CJ80603
Aroclor 1221	ND (0.6)		8082A		10	10/09/18 16:30	C8J0208	CJ80603
Aroclor 1232	ND (0.6)		8082A		10	10/09/18 16:30	C8J0208	CJ80603
Aroclor 1242	ND (0.6)		8082A		10	10/09/18 16:30	C8J0208	CJ80603
Aroclor 1248	ND (0.6)		8082A		10	10/09/18 16:30	C8J0208	CJ80603
Aroclor 1254 [2C]	**4.5** (0.6)		8082A		10	10/09/18 16:30	C8J0208	CJ80603
Aroclor 1260	ND (0.6)		8082A		10	10/09/18 16:30	C8J0208	CJ80603
Aroclor 1262	ND (0.6)		8082A		10	10/09/18 16:30	C8J0208	CJ80603
Aroclor 1268	ND (0.6)		8082A		10	10/09/18 16:30	C8J0208	CJ80603

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*1190 %*	*SM*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*110 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*61 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*109 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-933-100318 2FT
Date Sampled: 10/03/18 12:30
Percent Solids: 91
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810214
ESS Laboratory Sample ID: 1810214-09
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	10/10/18 2:22	C8J0208	CJ80603
Aroclor 1221	ND (0.06)		8082A		1	10/10/18 2:22	C8J0208	CJ80603
Aroclor 1232	ND (0.06)		8082A		1	10/10/18 2:22	C8J0208	CJ80603
Aroclor 1242	ND (0.06)		8082A		1	10/10/18 2:22	C8J0208	CJ80603
Aroclor 1248	ND (0.06)		8082A		1	10/10/18 2:22	C8J0208	CJ80603
Aroclor 1254	**0.4** (0.06)		8082A		1	10/10/18 2:22	C8J0208	CJ80603
Aroclor 1260	ND (0.06)		8082A		1	10/10/18 2:22	C8J0208	CJ80603
Aroclor 1262	ND (0.06)		8082A		1	10/10/18 2:22	C8J0208	CJ80603
Aroclor 1268	ND (0.06)		8082A		1	10/10/18 2:22	C8J0208	CJ80603

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*634 %*	*SM*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*54 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*97 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*116 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-935-100318 2FT
Date Sampled: 10/03/18 12:34
Percent Solids: 92
Initial Volume: 20.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810214
ESS Laboratory Sample ID: 1810214-10
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	10/10/18 9:47	C8J0209	CJ80603
Aroclor 1221	ND (0.05)		8082A		1	10/10/18 9:47	C8J0209	CJ80603
Aroclor 1232	ND (0.05)		8082A		1	10/10/18 9:47	C8J0209	CJ80603
Aroclor 1242	ND (0.05)		8082A		1	10/10/18 9:47	C8J0209	CJ80603
Aroclor 1248	ND (0.05)		8082A		1	10/10/18 9:47	C8J0209	CJ80603
Aroclor 1254 [2C]	ND (0.05)		8082A		1	10/10/18 9:47	C8J0209	CJ80603
Aroclor 1260	ND (0.05)		8082A		1	10/10/18 9:47	C8J0209	CJ80603
Aroclor 1262	ND (0.05)		8082A		1	10/10/18 9:47	C8J0209	CJ80603
Aroclor 1268	ND (0.05)		8082A		1	10/10/18 9:47	C8J0209	CJ80603

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*89 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*104 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*99 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*112 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-936-100318 2FT
Date Sampled: 10/03/18 13:36
Percent Solids: 90
Initial Volume: 19.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810214
ESS Laboratory Sample ID: 1810214-11
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.6)		8082A		10	10/09/18 17:28	C8J0208	CJ80603
Aroclor 1221	ND (0.6)		8082A		10	10/09/18 17:28	C8J0208	CJ80603
Aroclor 1232	ND (0.6)		8082A		10	10/09/18 17:28	C8J0208	CJ80603
Aroclor 1242	ND (0.6)		8082A		10	10/09/18 17:28	C8J0208	CJ80603
Aroclor 1248	ND (0.6)		8082A		10	10/09/18 17:28	C8J0208	CJ80603
Aroclor 1254 [2C]	**6.5** (0.6)		8082A		10	10/09/18 17:28	C8J0208	CJ80603
Aroclor 1260	ND (0.6)		8082A		10	10/09/18 17:28	C8J0208	CJ80603
Aroclor 1262	ND (0.6)		8082A		10	10/09/18 17:28	C8J0208	CJ80603
Aroclor 1268	ND (0.6)		8082A		10	10/09/18 17:28	C8J0208	CJ80603

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*42 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*37 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*71 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*394 %*	*SM*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-937-100318 2FT
Date Sampled: 10/03/18 12:38
Percent Solids: 91
Initial Volume: 20.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810214
ESS Laboratory Sample ID: 1810214-12
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.5)		8082A		10	10/09/18 17:47	C8J0208	CJ80603
Aroclor 1221	ND (0.5)		8082A		10	10/09/18 17:47	C8J0208	CJ80603
Aroclor 1232	ND (0.5)		8082A		10	10/09/18 17:47	C8J0208	CJ80603
Aroclor 1242	ND (0.5)		8082A		10	10/09/18 17:47	C8J0208	CJ80603
Aroclor 1248	ND (0.5)		8082A		10	10/09/18 17:47	C8J0208	CJ80603
Aroclor 1254	**3.3** (0.5)		8082A		10	10/09/18 17:47	C8J0208	CJ80603
Aroclor 1260	ND (0.5)		8082A		10	10/09/18 17:47	C8J0208	CJ80603
Aroclor 1262	ND (0.5)		8082A		10	10/09/18 17:47	C8J0208	CJ80603
Aroclor 1268	ND (0.5)		8082A		10	10/09/18 17:47	C8J0208	CJ80603

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*633 %*	*SM*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*84 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*83 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*88 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-938-100318 2FT
Date Sampled: 10/03/18 12:40
Percent Solids: 91
Initial Volume: 19.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810214
ESS Laboratory Sample ID: 1810214-13
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.6)		8082A		10	10/09/18 18:06	C8J0208	CJ80603
Aroclor 1221	ND (0.6)		8082A		10	10/09/18 18:06	C8J0208	CJ80603
Aroclor 1232	ND (0.6)		8082A		10	10/09/18 18:06	C8J0208	CJ80603
Aroclor 1242	ND (0.6)		8082A		10	10/09/18 18:06	C8J0208	CJ80603
Aroclor 1248	ND (0.6)		8082A		10	10/09/18 18:06	C8J0208	CJ80603
Aroclor 1254	**2.1** (0.6)		8082A		10	10/09/18 18:06	C8J0208	CJ80603
Aroclor 1260	ND (0.6)		8082A		10	10/09/18 18:06	C8J0208	CJ80603
Aroclor 1262	ND (0.6)		8082A		10	10/09/18 18:06	C8J0208	CJ80603
Aroclor 1268	ND (0.6)		8082A		10	10/09/18 18:06	C8J0208	CJ80603

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*60 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*40 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*90 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*99 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-939-100318 2FT
Date Sampled: 10/03/18 13:24
Percent Solids: 90
Initial Volume: 19.7
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810214
ESS Laboratory Sample ID: 1810214-14
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.6)		8082A		10	10/09/18 18:25	C8J0208	CJ80603
Aroclor 1221	ND (0.6)		8082A		10	10/09/18 18:25	C8J0208	CJ80603
Aroclor 1232	ND (0.6)		8082A		10	10/09/18 18:25	C8J0208	CJ80603
Aroclor 1242	ND (0.6)		8082A		10	10/09/18 18:25	C8J0208	CJ80603
Aroclor 1248	ND (0.6)		8082A		10	10/09/18 18:25	C8J0208	CJ80603
Aroclor 1254 [2C]	**6.4** (0.6)		8082A		10	10/09/18 18:25	C8J0208	CJ80603
Aroclor 1260	ND (0.6)		8082A		10	10/09/18 18:25	C8J0208	CJ80603
Aroclor 1262	ND (0.6)		8082A		10	10/09/18 18:25	C8J0208	CJ80603
Aroclor 1268	ND (0.6)		8082A		10	10/09/18 18:25	C8J0208	CJ80603

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*2160 %*	*SM*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*145 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*94 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*113 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-940-100318 2FT
Date Sampled: 10/03/18 13:26
Percent Solids: 91
Initial Volume: 20.5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810214
ESS Laboratory Sample ID: 1810214-15
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.5)		8082A		10	10/09/18 18:44	C8J0208	CJ80603
Aroclor 1221	ND (0.5)		8082A		10	10/09/18 18:44	C8J0208	CJ80603
Aroclor 1232	ND (0.5)		8082A		10	10/09/18 18:44	C8J0208	CJ80603
Aroclor 1242	ND (0.5)		8082A		10	10/09/18 18:44	C8J0208	CJ80603
Aroclor 1248	ND (0.5)		8082A		10	10/09/18 18:44	C8J0208	CJ80603
Aroclor 1254 [2C]	**3.8** (0.5)		8082A		10	10/09/18 18:44	C8J0208	CJ80603
Aroclor 1260	ND (0.5)		8082A		10	10/09/18 18:44	C8J0208	CJ80603
Aroclor 1262	ND (0.5)		8082A		10	10/09/18 18:44	C8J0208	CJ80603
Aroclor 1268	ND (0.5)		8082A		10	10/09/18 18:44	C8J0208	CJ80603

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*1240 %*	*SM*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*84 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*74 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*138 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-941-100318 2FT
Date Sampled: 10/03/18 13:28
Percent Solids: 90
Initial Volume: 19.9
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810214
ESS Laboratory Sample ID: 1810214-16
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.6)		8082A		10	10/09/18 19:03	C8J0208	CJ80603
Aroclor 1221	ND (0.6)		8082A		10	10/09/18 19:03	C8J0208	CJ80603
Aroclor 1232	ND (0.6)		8082A		10	10/09/18 19:03	C8J0208	CJ80603
Aroclor 1242	ND (0.6)		8082A		10	10/09/18 19:03	C8J0208	CJ80603
Aroclor 1248	ND (0.6)		8082A		10	10/09/18 19:03	C8J0208	CJ80603
Aroclor 1254 [2C]	**4.7** (0.6)		8082A		10	10/09/18 19:03	C8J0208	CJ80603
Aroclor 1260	ND (0.6)		8082A		10	10/09/18 19:03	C8J0208	CJ80603
Aroclor 1262	ND (0.6)		8082A		10	10/09/18 19:03	C8J0208	CJ80603
Aroclor 1268	ND (0.6)		8082A		10	10/09/18 19:03	C8J0208	CJ80603

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*217 %*	*SM*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*54 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*78 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*81 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-941-100318-1 2FT
Date Sampled: 10/03/18 13:28
Percent Solids: 88
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810214
ESS Laboratory Sample ID: 1810214-17
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.6)		8082A		10	10/09/18 19:22	C8J0208	CJ80603
Aroclor 1221	ND (0.6)		8082A		10	10/09/18 19:22	C8J0208	CJ80603
Aroclor 1232	ND (0.6)		8082A		10	10/09/18 19:22	C8J0208	CJ80603
Aroclor 1242	ND (0.6)		8082A		10	10/09/18 19:22	C8J0208	CJ80603
Aroclor 1248	ND (0.6)		8082A		10	10/09/18 19:22	C8J0208	CJ80603
Aroclor 1254 [2C]	**5.6** (0.6)		8082A		10	10/09/18 19:22	C8J0208	CJ80603
Aroclor 1260	ND (0.6)		8082A		10	10/09/18 19:22	C8J0208	CJ80603
Aroclor 1262	ND (0.6)		8082A		10	10/09/18 19:22	C8J0208	CJ80603
Aroclor 1268	ND (0.6)		8082A		10	10/09/18 19:22	C8J0208	CJ80603

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*75 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*69 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*81 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*127 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-942-100318 2FT
Date Sampled: 10/03/18 13:30
Percent Solids: 87
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810214
ESS Laboratory Sample ID: 1810214-18
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.6)		8082A		10	10/09/18 21:55	C8J0208	CJ80603
Aroclor 1221	ND (0.6)		8082A		10	10/09/18 21:55	C8J0208	CJ80603
Aroclor 1232	ND (0.6)		8082A		10	10/09/18 21:55	C8J0208	CJ80603
Aroclor 1242	ND (0.6)		8082A		10	10/09/18 21:55	C8J0208	CJ80603
Aroclor 1248	ND (0.6)		8082A		10	10/09/18 21:55	C8J0208	CJ80603
Aroclor 1254 [2C]	**1.4** (0.6)		8082A		10	10/09/18 21:55	C8J0208	CJ80603
Aroclor 1260	ND (0.6)		8082A		10	10/09/18 21:55	C8J0208	CJ80603
Aroclor 1262	ND (0.6)		8082A		10	10/09/18 21:55	C8J0208	CJ80603
Aroclor 1268	ND (0.6)		8082A		10	10/09/18 21:55	C8J0208	CJ80603

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*136 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*124 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*114 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*128 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-943-100318 2FT
Date Sampled: 10/03/18 13:32
Percent Solids: 91
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1810214
ESS Laboratory Sample ID: 1810214-19
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 10/6/18 16:00

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.6)		8082A		10	10/09/18 22:14	C8J0208	CJ80603
Aroclor 1221	ND (0.6)		8082A		10	10/09/18 22:14	C8J0208	CJ80603
Aroclor 1232	ND (0.6)		8082A		10	10/09/18 22:14	C8J0208	CJ80603
Aroclor 1242	ND (0.6)		8082A		10	10/09/18 22:14	C8J0208	CJ80603
Aroclor 1248	ND (0.6)		8082A		10	10/09/18 22:14	C8J0208	CJ80603
Aroclor 1254	**3.4** (0.6)		8082A		10	10/09/18 22:14	C8J0208	CJ80603
Aroclor 1260	ND (0.6)		8082A		10	10/09/18 22:14	C8J0208	CJ80603
Aroclor 1262	ND (0.6)		8082A		10	10/09/18 22:14	C8J0208	CJ80603
Aroclor 1268	ND (0.6)		8082A		10	10/09/18 22:14	C8J0208	CJ80603

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*48 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*88 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*68 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*80 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1810214

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CJ80603 - 3540C										
Blank										
Aroclor 1016	ND	0.05	mg/kg wet							
Aroclor 1016 [2C]	ND	0.05	mg/kg wet							
Aroclor 1221	ND	0.05	mg/kg wet							
Aroclor 1221 [2C]	ND	0.05	mg/kg wet							
Aroclor 1232	ND	0.05	mg/kg wet							
Aroclor 1232 [2C]	ND	0.05	mg/kg wet							
Aroclor 1242	ND	0.05	mg/kg wet							
Aroclor 1242 [2C]	ND	0.05	mg/kg wet							
Aroclor 1248	ND	0.05	mg/kg wet							
Aroclor 1248 [2C]	ND	0.05	mg/kg wet							
Aroclor 1254	ND	0.05	mg/kg wet							
Aroclor 1254 [2C]	ND	0.05	mg/kg wet							
Aroclor 1260	ND	0.05	mg/kg wet							
Aroclor 1260 [2C]	ND	0.05	mg/kg wet							
Aroclor 1262	ND	0.05	mg/kg wet							
Aroclor 1262 [2C]	ND	0.05	mg/kg wet							
Aroclor 1268	ND	0.05	mg/kg wet							
Aroclor 1268 [2C]	ND	0.05	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0206*		mg/kg wet	*0.02500*		*82*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0251*		mg/kg wet	*0.02500*		*100*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0214*		mg/kg wet	*0.02500*		*86*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0264*		mg/kg wet	*0.02500*		*105*	*30-150*			
LCS										
Aroclor 1016	0.4	0.05	mg/kg wet	0.5000		85	40-140			
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		91	40-140			
Aroclor 1260	0.4	0.05	mg/kg wet	0.5000		79	40-140			
Aroclor 1260 [2C]	0.4	0.05	mg/kg wet	0.5000		88	40-140			
Surrogate: Decachlorobiphenyl	*0.0207*		mg/kg wet	*0.02500*		*83*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0254*		mg/kg wet	*0.02500*		*102*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0227*		mg/kg wet	*0.02500*		*91*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0248*		mg/kg wet	*0.02500*		*99*	*30-150*			
LCS Dup										
Aroclor 1016	0.4	0.05	mg/kg wet	0.5000		78	40-140	9	30	
Aroclor 1016 [2C]	0.4	0.05	mg/kg wet	0.5000		84	40-140	9	30	
Aroclor 1260	0.4	0.05	mg/kg wet	0.5000		72	40-140	10	30	
Aroclor 1260 [2C]	0.4	0.05	mg/kg wet	0.5000		79	40-140	11	30	
Surrogate: Decachlorobiphenyl	*0.0189*		mg/kg wet	*0.02500*		*76*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0231*		mg/kg wet	*0.02500*		*92*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0207*		mg/kg wet	*0.02500*		*83*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0224*		mg/kg wet	*0.02500*		*89*	*30-150*			
Matrix Spike **Source: 1810214-16**										

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1810214

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CJ80603 - 3540C										
Aroclor 1016	0.7	0.06	mg/kg dry	0.5712	ND	120	40-140			
Aroclor 1016 [2C]	0.6	0.06	mg/kg dry	0.5712	ND	98	40-140			
Aroclor 1260	1.5	0.06	mg/kg dry	0.5712	ND	267	40-140			M+
Aroclor 1260 [2C]	1.8	0.06	mg/kg dry	0.5712	ND	312	40-140			M+
Surrogate: Decachlorobiphenyl	*0.0248*		mg/kg dry	*0.02856*		*87*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0141*		mg/kg dry	*0.02856*		*49*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0308*		mg/kg dry	*0.02856*		*108*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0314*		mg/kg dry	*0.02856*		*110*	*30-150*			
Matrix Spike Dup Source: 1810214-16										
Aroclor 1016	0.5	0.06	mg/kg dry	0.5771	ND	95	40-140	22	30	
Aroclor 1016 [2C]	0.6	0.06	mg/kg dry	0.5771	ND	101	40-140	4	30	
Aroclor 1260	2.0	0.06	mg/kg dry	0.5771	ND	343	40-140	26	30	M+
Aroclor 1260 [2C]	2.0	0.06	mg/kg dry	0.5771	ND	350	40-140	12	30	M+
Surrogate: Decachlorobiphenyl	*0.0214*		mg/kg dry	*0.02886*		*74*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0295*		mg/kg dry	*0.02886*		*102*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0259*		mg/kg dry	*0.02886*		*90*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0278*		mg/kg dry	*0.02886*		*96*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
ESS Laboratory Work Order: 1810214

Notes and Definitions

U	Analyte included in the analysis, but not detected
SM	Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).
M+	Matrix Spike recovery is above upper control limit (M+).
D	Diluted.
ND	Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
MDL	Method Detection Limit
MRL	Method Reporting Limit
LOD	Limit of Detection
LOQ	Limit of Quantitation
DL	Detection Limit
I/V	Initial Volume
F/V	Final Volume
§	Subcontracted analysis; see attached report
1	Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
2	Range result excludes concentrations of target analytes eluting in that range.
3	Range result excludes the concentration of the C9-C10 aromatic range.
Avg	Results reported as a mathematical average.
NR	No Recovery
[CALC]	Calculated Analyte
SUB	Subcontracted analysis; see attached report
RL	Reporting Limit
EDL	Estimated Detection Limit

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1810214

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Rhode Island Potable and Non Potable Water: LAI00179
http://www.health.ri.gov/find/labs/analytical/ESS.pdf

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI00002
http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/partners/labCert.shtml

Massachusetts Potable and Non Potable Water: M-RI002
http://public.dep.state.ma.us/Labcert/Labcert.aspx

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
http://des.nh.gov/organization/divisions/water/dwgb/nhelap/index.htm

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
http://www.wadsworth.org/labcert/elap/comm.html

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/DEP_OPRA/OpraMain/pi_main?mode=pi_by_site&sort_order=PI_NAMEA&Select+a+Site:=58715

United States Department of Agriculture Soil Permit: P330-12-00139

Pennsylvania: 68-01752
http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx

ESS Laboratory Sample and Cooler Receipt Checklist

Client: AEI Consultants, Inc. - TB/MM

Shipped/Delivered Via: ESS Courier

ESS Project ID: 1810214
Date Received: 10/5/2018
Project Due Date: 10/10/2018
Days for Project: 2 Day

1. Air bill manifest present? No
   Air No.: NA
2. Were custody seals present? No
3. Is radiation count <100 CPM? Yes
4. Is a Cooler Present? Yes
   Temp: 5.8 Iced with: Ice
5. Was COC signed and dated by client? Yes
6. Does COC match bottles? Yes
7. Is COC complete and correct? Yes
8. Were samples received intact? Yes
9. **Were labs informed about short holds & rushes?** (Yes) No / NA
10. Were any analyses received outside of hold time? Yes / (No)

11. Any Subcontracting needed? Yes / (No)
    ESS Sample IDs:
    Analysis:
    TAT:
12. Were VOAs received? Yes / (No)
    a. Air bubbles in aqueous VOAs? Yes / No
    b. Does methanol cover soil completely? Yes / No / NA

13. Are the samples properly preserved? (Yes) / No
    a. If metals preserved upon receipt: Date: Time: By:
    b. Low Level VOA vials frozen: Date: Time: By:

Sample Receiving Notes:

14. Was there a need to contact Project Manager? Yes (No)
    a. Was there a need to contact the client? Yes / No
    Who was contacted? Date: Time: By:

Sample Number	Container ID	Proper Container	Air Bubbles Present	Sufficient Volume	Container Type	Preservative	Record pH (Cyanide and 608 Pesticides)
01	274827	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
02	274826	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
03	274825	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
04	274824	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
05	274823	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
06	274822	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
07	274821	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
08	274820	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
09	274819	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
10	274818	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
11	274817	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
12	274816	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
13	274815	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
14	274814	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
15	274813	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
16	274812	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
16	274828	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
16	274829	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
17	274811	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
18	274810	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
19	274809	Yes	NA	Yes	4 oz. Jar - Unpres	NP	

2nd Review

ESS Laboratory Sample and Cooler Receipt Checklist

Client: AEI Consultants, Inc. - TB/MM

ESS Project ID: 1810214
Date Received: 10/5/2018

Are barcode labels on correct containers? Yes / No
Are all necessary stickers attached? Yes / No

Completed By: _____ Date & Time: 10/5/18 1619
Reviewed By: _____ Date & Time: 10/5/18 1710
Delivered By: _____ 10/5/18 1710

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ESS Laboratory

Division of Thielsch Engineering, Inc.
185 Frances Avenue, Cranston RI 02910
Tel. (401) 461-7181 Fax (401) 461-4486
www.esslaboratory.com

CHAIN OF CUSTODY

ESS Lab # 1810214

Turn Time Rush 48hr
Regulatory State RI
Is this project for any of the following?: ○CT RCP ○MA MCP ○RGP

Reporting Limits: See note 1
Electonic Deliverables: ☐Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name	Project #	Project Name
AEI	363655	BASF Cranston

Contact Person: Aaron Ting
Address:

City	State	Zip Code	PO #
Boston	MA	02109	—

Telephone Number	FAX Number	Email Address
978-577-7138	—	ating@aeiconsultants.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	Analysis: PCB (Soxhlet)
1	10-3-18	1110	G	S	B-923-100318 (2')	X
2	↓	1114	↓	↓	B-924-100318 (2')	X
3		1118			B-925-100318 (2')	X
4		1126			B-927-100318 (2')	X
5		1130			B-928-100318 (2')	X
6		1132			B-929-100318 (2')	X
7		1226			B-931-100318 (2')	X
8		1228			B-932-100318 (2')	X
9		1230			B-933-100318 (2')	X
10	↓	1234	↓	↓	B-935-100318 (2')	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G - Glass O-Other P-Poly S-Sterile V-Vial — AG
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* — 9
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Ascorbic Acid 12-Other* — 1
Number of Containers per Sample: 1

Laboratory Use Only
Cooler Present: yes
Seals Intact: not
Cooler Temperature: 5.8 °C lac

Sampled by: ATing
Comments: Please specify "Other" preservative and containers types in this space
note 1: see project QAPP

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
10/5/18 1500	10/5/18 1500	10/5/18 1513	10/5/18 1516
Relinquished by: (Signature, Date & Time)	**Received By: (Signature, Date & Time)**	**Relinquished By: (Signature, Date & Time)**	**Received By: (Signature, Date & Time)**

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ESS Laboratory
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CHAIN OF CUSTODY

ESS Lab # 1810214

Turn Time Rush 48hr
Regulatory State RI
Is this project for any of the following?: ○CT RCP ○MA MCP ○RGP

Reporting Limits: See note 1
Electonic Deliverables: ☐Limit Checker ☐Standard Excel ☐Other (Please Specify →)

Company Name: AEI
Project #: 363655
Project Name: BASF Cranston
Contact Person: Aaron Ting
Address:
City: Boston
State: MA
Zip Code: 02109
PO #: —
Telephone Number: 978-572-7138
FAX Number: —
Email Address: ating@aeiconsultants.com

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	PCB (Soxhlet)
11	10-3-18	1236	G	S	B-936-100318 (2')	X
12		1238			B-937-100318 (2')	X
13		1240			B-938-100318 (2')	X
14		1324			B-939-100318 (2')	X
15		1326			B-940-100318 (2')	X
16		1328			B-941-100318 (2')	X
17		1328			B-941-100318-1 (2')	X
16		1328			B-941-100318-MS/MSD (2')	X
18		1330			B-942-100318 (2')	X
19		1332			B-943-100318 (2')	X

Container Type: AC-Air Cassette AG-Amber Glass B-BOD Bottle C-Cubitainer G-Glass O-Other P-Poly S-Sterile V-Vial — AG
Container Volume: 1-100 mL 2-2.5 gal 3-250 mL 4-300 mL 5-500 mL 6-1L 7-VOA 8-2 oz 9-4 oz 10-8 oz 11-Other* — 9
Preservation Code: 1-Non Preserved 2-HCl 3-H2SO4 4-HNO3 5-NaOH 6-Methanol 7-Na2S2O3 8-ZnAce, NaOH 9-NH4Cl 10-DI H2O 11-Ascorbic Acid 12-Other* — 1
Number of Containers per Sample: 1

Laboratory Use Only
Cooler Present: ~~Y~~ Yes
Seals Intact: N/A
Cooler Temperature: 5.8 °C

Sampled by: ATing
Comments: Please specify "Other" preservative and containers types in this space
note 1: see project QAPP

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
10/5/18 1500	10/5/18 1500	10/5/18 1513	10/5/18 1516
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

CERTIFICATE OF ANALYSIS

Richard Kowalski
AEI Consultants, Inc.
148 Hathaway Road
Dartmouth, MA 02747

RE: BASF Cranston (363655)
ESS Laboratory Work Order Number: 1810256

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED
By ESS Laboratory at 5:57 pm, Oct 11, 2018

Analytical Summary
The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with TNI and relative state standards, and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1810256

SAMPLE RECEIPT

The following samples were received on October 09, 2018 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	Sample Name	Matrix	Analysis
1810256-01	SW-364-100818 0-4	Soil	8082A
1810256-02	SW-687-100818 0-4	Soil	8082A
1810256-03	SW-331-100818 0-4	Soil	8082A
1810256-04	SW-333-100818 0-4	Soil	8082A
1810256-05	SW-335-100818 0-4	Soil	8082A
1810256-06	SW-337-100818 0-4	Soil	8082A
1810256-07	SW-344-100818 0-4	Soil	8082A
1810256-08	SW-346-100818 0-4	Soil	8082A
1810256-09	SW-348-100818 0-4	Soil	8082A
1810256-10	SW-352-100818 0-4	Soil	8082A
1810256-11	SW-354-100818 0-4	Soil	8082A
1810256-12	B-350-100818 1FT	Solid	8082A
1810256-13	B-363-100818 1FT	Solid	8082A
1810256-14	B-374-100818 1FT	Solid	8082A
1810256-15	B-385-100818 1FT	Solid	8082A
1810256-16	B-412-100818 4FT	Solid	8082A
1810256-17	B-382-100818 4FT	Soil	8082A
1810256-18	B-371-100818 4FT	Soil	8082A
1810256-19	B-360-100818 4FT	Soil	8082A

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1810256

PROJECT NARRATIVE

8082A Polychlorinated Biphenyls (PCB)

1810256-02 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1810256-09 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1810256-10 **Surrogate recovery(ies) above upper control limit (S+).**
Decachlorobiphenyl [2C] (221% @ 30-150%)

1810256-18 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

1810256-19 **Surrogate recovery(ies) diluted below the MRL (SD).**
Decachlorobiphenyl (% @ 30-150%), Decachlorobiphenyl [2C] (% @ 30-150%), Tetrachloro-m-xylene (% @ 30-150%), Tetrachloro-m-xylene [2C] (% @ 30-150%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

To ensure you are viewing the most current version of the documents below, please clear your internet cookies for www.ESSLaboratory.com. Consult your IT Support personnel for information on how to clear your internet cookies.

Definitions of Quality Control Parameters

Semivolatile Organics Internal Standard Information

Semivolatile Organics Surrogate Information

Volatile Organics Internal Standard Information

Volatile Organics Surrogate Information

EPH and VPH Alkane Lists

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston

ESS Laboratory Work Order: 1810256

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

1010A - Flashpoint
6010C - ICP
6020A - ICP MS
7010 - Graphite Furnace
7196A - Hexavalent Chromium
7470A - Aqueous Mercury
7471B - Solid Mercury
8011 - EDB/DBCP/TCP
8015C - GRO/DRO
8081B - Pesticides
8082A - PCB
8100M - TPH
8151A - Herbicides
8260B - VOA
8270D - SVOA
8270D SIM - SVOA Low Level
9014 - Cyanide
9038 - Sulfate
9040C - Aqueous pH
9045D - Solid pH (Corrosivity)
9050A - Specific Conductance
9056A - Anions (IC)
9060A - TOC
9095B - Paint Filter
MADEP 04-1.1 - EPH
MADEP 04-2.1 - VPH

Prep Methods

3005A - Aqueous ICP Digestion
3020A - Aqueous Graphite Furnace / ICP MS Digestion
3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
3060A - Solid Hexavalent Chromium Digestion
3510C - Separatory Funnel Extraction
3520C - Liquid / Liquid Extraction
3540C - Manual Soxhlet Extraction
3541 - Automated Soxhlet Extraction
3546 - Microwave Extraction
3580A - Waste Dilution
5030B - Aqueous Purge and Trap
5030C - Aqueous Purge and Trap
5035 - Solid Purge and Trap

SW846 Reactivity Methods 7.3.3.2 (Reactive Cyanide) and 7.3.4.1 (Reactive Sulfide) have been withdrawn by EPA. These methods are reported per client request and are not NELAP accredited.