CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-466-110718-A 2.5FT
Date Sampled: 11/07/18 11:06
Percent Solids: 96
Initial Volume: 5.06
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811171
ESS Laboratory Sample ID: 1811171-13RE1
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 11/12/18 16:48

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.2)		8082A		1	11/13/18 12:10	C8K0233	CK81211
Aroclor 1221	ND (0.2)		8082A		1	11/13/18 12:10	C8K0233	CK81211
Aroclor 1232	ND (0.2)		8082A		1	11/13/18 12:10	C8K0233	CK81211
Aroclor 1242	ND (0.2)		8082A		1	11/13/18 12:10	C8K0233	CK81211
Aroclor 1248	ND (0.2)		8082A		1	11/13/18 12:10	C8K0233	CK81211
Aroclor 1254	ND (0.2)		8082A		1	11/13/18 12:10	C8K0233	CK81211
Aroclor 1260	ND (0.2)		8082A		1	11/13/18 12:10	C8K0233	CK81211
Aroclor 1262	ND (0.2)		8082A		1	11/13/18 12:10	C8K0233	CK81211
Aroclor 1268	ND (0.2)		8082A		1	11/13/18 12:10	C8K0233	CK81211

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*33 %*	*SC*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*32 %*	*SC*	*30-150*
Surrogate: Tetrachloro-m-xylene	*28 %*	*SC*	*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*28 %*	*SC*	*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-565-110718-B 4-8FT
Date Sampled: 11/07/18 13:06
Percent Solids: 88
Initial Volume: 19.9
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811171
ESS Laboratory Sample ID: 1811171-14
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/7/18 16:45

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.03)		8082A		1	11/08/18 19:56	C8K0166	CK80705
Aroclor 1221	ND (0.03)		8082A		1	11/08/18 19:56	C8K0166	CK80705
Aroclor 1232	ND (0.03)		8082A		1	11/08/18 19:56	C8K0166	CK80705
Aroclor 1242	ND (0.03)		8082A		1	11/08/18 19:56	C8K0166	CK80705
Aroclor 1248	ND (0.03)		8082A		1	11/08/18 19:56	C8K0166	CK80705
Aroclor 1254	**0.3** (0.03)		8082A		1	11/08/18 19:56	C8K0166	CK80705
Aroclor 1260	ND (0.03)		8082A		1	11/08/18 19:56	C8K0166	CK80705
Aroclor 1262	ND (0.03)		8082A		1	11/08/18 19:56	C8K0166	CK80705
Aroclor 1268	ND (0.03)		8082A		1	11/08/18 19:56	C8K0166	CK80705

	%Recovery	Qualifier	Limits
Surrogate: Decachlorobiphenyl	*96 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*101 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*95 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*94 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-579-110718-B 4-7FT
Date Sampled: 11/07/18 13:20
Percent Solids: 77
Initial Volume: 19.3
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811171
ESS Laboratory Sample ID: 1811171-15
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/7/18 16:45

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (3.4)		8082A		100	11/09/18 10:46	C8K0167	CK80705
Aroclor 1221	ND (3.4)		8082A		100	11/09/18 10:46	C8K0167	CK80705
Aroclor 1232	ND (3.4)		8082A		100	11/09/18 10:46	C8K0167	CK80705
Aroclor 1242	ND (3.4)		8082A		100	11/09/18 10:46	C8K0167	CK80705
Aroclor 1248	**91.1** (3.4)		8082A		100	11/09/18 10:46	C8K0167	CK80705
Aroclor 1254	ND (3.4)		8082A		100	11/09/18 10:46	C8K0167	CK80705
Aroclor 1260 [2C]	**10.2** (3.4)		8082A		100	11/09/18 10:46	C8K0167	CK80705
Aroclor 1262	ND (3.4)		8082A		100	11/09/18 10:46	C8K0167	CK80705
Aroclor 1268	ND (3.4)		8082A		100	11/09/18 10:46	C8K0167	CK80705

	%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-583-110718-B 4-7FT
Date Sampled: 11/07/18 13:22
Percent Solids: 79
Initial Volume: 19.6
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811171
ESS Laboratory Sample ID: 1811171-16
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/7/18 16:45

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.03)		8082A		1	11/08/18 20:34	C8K0166	CK80705
Aroclor 1221	ND (0.03)		8082A		1	11/08/18 20:34	C8K0166	CK80705
Aroclor 1232	ND (0.03)		8082A		1	11/08/18 20:34	C8K0166	CK80705
Aroclor 1242	ND (0.03)		8082A		1	11/08/18 20:34	C8K0166	CK80705
Aroclor 1248	ND (0.03)		8082A		1	11/08/18 20:34	C8K0166	CK80705
Aroclor 1254	ND (0.03)		8082A		1	11/08/18 20:34	C8K0166	CK80705
Aroclor 1260	ND (0.03)		8082A		1	11/08/18 20:34	C8K0166	CK80705
Aroclor 1262	ND (0.03)		8082A		1	11/08/18 20:34	C8K0166	CK80705
Aroclor 1268	ND (0.03)		8082A		1	11/08/18 20:34	C8K0166	CK80705

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*107 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*67 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*94 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*74 %*		*30-150*

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1811171

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CK80705 - 3540C										
Blank										
Aroclor 1016	ND	0.02	mg/kg wet							
Aroclor 1016 [2C]	ND	0.02	mg/kg wet							
Aroclor 1221	ND	0.02	mg/kg wet							
Aroclor 1221 [2C]	ND	0.02	mg/kg wet							
Aroclor 1232	ND	0.02	mg/kg wet							
Aroclor 1232 [2C]	ND	0.02	mg/kg wet							
Aroclor 1242	ND	0.02	mg/kg wet							
Aroclor 1242 [2C]	ND	0.02	mg/kg wet							
Aroclor 1248	ND	0.02	mg/kg wet							
Aroclor 1248 [2C]	ND	0.02	mg/kg wet							
Aroclor 1254	ND	0.02	mg/kg wet							
Aroclor 1254 [2C]	ND	0.02	mg/kg wet							
Aroclor 1260	ND	0.02	mg/kg wet							
Aroclor 1260 [2C]	ND	0.02	mg/kg wet							
Aroclor 1262	ND	0.02	mg/kg wet							
Aroclor 1262 [2C]	ND	0.02	mg/kg wet							
Aroclor 1268	ND	0.02	mg/kg wet							
Aroclor 1268 [2C]	ND	0.02	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0214*		mg/kg wet	*0.02500*		*86*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0218*		mg/kg wet	*0.02500*		*87*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0197*		mg/kg wet	*0.02500*		*79*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0196*		mg/kg wet	*0.02500*		*79*	*30-150*			
LCS										
Aroclor 1016	0.5	0.02	mg/kg wet	0.5000		97	40-140			
Aroclor 1016 [2C]	0.4	0.02	mg/kg wet	0.5000		86	40-140			
Aroclor 1260	0.4	0.02	mg/kg wet	0.5000		89	40-140			
Aroclor 1260 [2C]	0.5	0.02	mg/kg wet	0.5000		96	40-140			
Surrogate: Decachlorobiphenyl	*0.0236*		mg/kg wet	*0.02500*		*94*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0239*		mg/kg wet	*0.02500*		*95*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0233*		mg/kg wet	*0.02500*		*93*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0209*		mg/kg wet	*0.02500*		*84*	*30-150*			
LCS Dup										
Aroclor 1016	0.5	0.02	mg/kg wet	0.5000		104	40-140	6	30	
Aroclor 1016 [2C]	0.5	0.02	mg/kg wet	0.5000		91	40-140	5	30	
Aroclor 1260	0.5	0.02	mg/kg wet	0.5000		95	40-140	6	30	
Aroclor 1260 [2C]	0.5	0.02	mg/kg wet	0.5000		103	40-140	7	30	
Surrogate: Decachlorobiphenyl	*0.0247*		mg/kg wet	*0.02500*		*99*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0252*		mg/kg wet	*0.02500*		*101*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0244*		mg/kg wet	*0.02500*		*97*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0219*		mg/kg wet	*0.02500*		*88*	*30-150*			
Matrix Spike **Source: 1811171-01**										

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1811171

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CK80705 - 3540C										
Aroclor 1016	0.6	0.1	mg/kg dry	2.091	ND	28	40-140			M-
Aroclor 1016 [2C]	0.4	0.1	mg/kg dry	2.091	ND	20	40-140			M-
Aroclor 1260	0.6	0.1	mg/kg dry	2.091	ND	31	40-140			M-
Aroclor 1260 [2C]	0.8	0.1	mg/kg dry	2.091	ND	36	40-140			M-
Surrogate: Decachlorobiphenyl	*0.0408*		mg/kg dry	*0.1046*		*39*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0527*		mg/kg dry	*0.1046*		*50*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0363*		mg/kg dry	*0.1046*		*35*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0357*		mg/kg dry	*0.1046*		*34*	*30-150*			
Matrix Spike Dup Source: 1811171-01										
Aroclor 1016	1.2	0.1	mg/kg dry	2.091	ND	59	40-140	71	30	D+
Aroclor 1016 [2C]	1.0	0.1	mg/kg dry	2.091	ND	49	40-140	82	30	D+
Aroclor 1260	1.4	0.1	mg/kg dry	2.091	ND	66	40-140	74	30	D+
Aroclor 1260 [2C]	1.5	0.1	mg/kg dry	2.091	ND	70	40-140	65	30	D+
Surrogate: Decachlorobiphenyl	*0.0650*		mg/kg dry	*0.1046*		*62*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0659*		mg/kg dry	*0.1046*		*63*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0618*		mg/kg dry	*0.1046*		*59*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0609*		mg/kg dry	*0.1046*		*58*	*30-150*			
Batch CK81211 - 3540C										
Blank										
Aroclor 1016	ND	0.02	mg/kg wet							
Aroclor 1016 [2C]	ND	0.02	mg/kg wet							
Aroclor 1221	ND	0.02	mg/kg wet							
Aroclor 1221 [2C]	ND	0.02	mg/kg wet							
Aroclor 1232	ND	0.02	mg/kg wet							
Aroclor 1232 [2C]	ND	0.02	mg/kg wet							
Aroclor 1242	ND	0.02	mg/kg wet							
Aroclor 1242 [2C]	ND	0.02	mg/kg wet							
Aroclor 1248	ND	0.02	mg/kg wet							
Aroclor 1248 [2C]	ND	0.02	mg/kg wet							
Aroclor 1254	ND	0.02	mg/kg wet							
Aroclor 1254 [2C]	ND	0.02	mg/kg wet							
Aroclor 1260	ND	0.02	mg/kg wet							
Aroclor 1260 [2C]	ND	0.02	mg/kg wet							
Aroclor 1262	ND	0.02	mg/kg wet							
Aroclor 1262 [2C]	ND	0.02	mg/kg wet							
Aroclor 1268	ND	0.02	mg/kg wet							
Aroclor 1268 [2C]	ND	0.02	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0227*		mg/kg wet	*0.02500*		*91*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0234*		mg/kg wet	*0.02500*		*94*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0214*		mg/kg wet	*0.02500*		*86*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0219*		mg/kg wet	*0.02500*		*88*	*30-150*			
LCS										

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1811171

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CK81211 - 3540C										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		101	40-140			
Aroclor 1016 [2C]	0.4	0.05	mg/kg wet	0.5000		89	40-140			
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		93	40-140			
Aroclor 1260 [2C]	0.5	0.05	mg/kg wet	0.5000		100	40-140			
Surrogate: Decachlorobiphenyl	*0.0242*		mg/kg wet	*0.02500*		*97*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0250*		mg/kg wet	*0.02500*		*100*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0243*		mg/kg wet	*0.02500*		*97*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0221*		mg/kg wet	*0.02500*		*88*	*30-150*			
LCS Dup										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		98	40-140	3	30	
Aroclor 1016 [2C]	0.4	0.05	mg/kg wet	0.5000		87	40-140	2	30	
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		90	40-140	3	30	
Aroclor 1260 [2C]	0.5	0.05	mg/kg wet	0.5000		97	40-140	3	30	
Surrogate: Decachlorobiphenyl	*0.0231*		mg/kg wet	*0.02500*		*93*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0238*		mg/kg wet	*0.02500*		*95*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0231*		mg/kg wet	*0.02500*		*92*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0210*		mg/kg wet	*0.02500*		*84*	*30-150*			

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1811171

Notes and Definitions

U	Analyte included in the analysis, but not detected
SD	Surrogate recovery(ies) diluted below the MRL (SD).
SC	Surrogate recovery(ies) outside of criteria. Reextraction/Reanalysis confirms results (SC).
M-	Matrix Spike recovery is below lower 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: 1811171

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: 1811171
Date Received: 11/7/2018
Project Due Date: 11/9/2018
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: 3.8 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	286833	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
01	286834	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
01	286835	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
02	286832	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
03	286831	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
04	286830	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
05	286829	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
06	286828	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
07	286827	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
08	286826	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
09	286825	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
10	286824	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
11	286823	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
12	286822	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
13	286821	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
14	286820	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
15	286819	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
16	286818	Yes	NA	Yes	4 oz. Jar - Unpres	NP	

2nd Review
Are barcode labels on correct containers? Yes / No
Are all necessary stickers attached? Yes / No

ESS Laboratory Sample and Cooler Receipt Checklist

Client: AEI Consultants, Inc. - TB/MM

ESS Project ID: 1811171

Date Received: 11/7/2018

Completed By: _____ Date & Time: 11/7/18 1547

Reviewed By: _____ Date & Time: 11/7/18 1552

Delivered By: _____ 11/7/18 1552

PLEASE REVISE SAMPLE TYPE FROM GRAB TO COMPOSITE FOR ALL SAMPLES - ACT 11/8/2018

1

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

CHAIN OF CUSTODY

ESS Lab # 1811171

Turn Time Rush 48hr

Regulatory State RI

Reporting Limits See note 1

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

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

Company Name: AEI

Project # 363655

Project Name: BASF Cranston

Contact Person: Aaron Ting

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

Analysis: PCBs (Soxhlet)

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	PCBs (Soxhlet)
1	11-7-18	0824	G	Concrete	B-738-110718-A (1.5')	X
2		0824			B-738-110718-A-1 (EAH) (1.5')	X
1		0824			B-738-110718-A (1.5') ms/msd	X
3		0837			B-724-110718-A (EAH) (2.5')	X
4		0842			B-725-110718-A (2.5')	X
5		0845			B-731-110718-A (4.5')	X
6		0856			B-668-110718-A (2.5')	X
7		0858			B-677-110718-A (2.5')	X
8		0910			B-939-110718-A (2.5')	X
9		0916			B-940-110718-A (2.5')	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 3.8 °C

Sampled by: A. Ting

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)
11/7/18 15:12	11-7-18 15:12	11-7-18 15:23	11/7/18 1527
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

2

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CHAIN OF CUSTODY

ESS Lab # 1811171

Turn Time Rush 48hr

Regulatory State RI

Reporting Limits See note 1

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

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

Company Name: AEI

Project #: 363655

Project Name: BASF Cranston

Contact Person: Aaron Ting

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: PCBs (Soxhlet)
10	11-7-18	0934	G	Concrete	B-925-110718-A (2.5')	X
11	↓	0936	↓	S	B-282-110718-A (2.5')	X
12	↓	0947	↓	Concrete	B-288-110718-A (2.5')	X
13	11-7-18	1106	G	↓	B-466-110718-A (2.5')	X
14	↓	1306	↓	S	SW-565-110718-B (4-8')	X
15	↓	1320	↓	↓	SW-574-110718-B (4-7')	X
16	↓	1322	↓	↓	SW-583-110718-B (4-7')	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: A. Ting

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)
11/7/18 1512	11-7-18 1512	11-7-18 1523	11/7/18 1527
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

1

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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 #: 1811171
Reporting Limits: See note 1
Electonic Deliverables: ☒Limit Checker ☒Standard Excel ☒Other (Please Specify →) PDF

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: PCBs (Soxhlet)
1	11-7-18	0824	G	Concrete	B-738-110718-A (1.5')	X
2		0824			B-738-110718-A-1 (1.5')	X
1		0824			B-738-110718-A (1.5') ms/msd	X
3		0837			B-724-110718-A (2.5')	X
4		0842			B-725-110718-A (2.5')	X
5		0845			B-731-110718-A (4.5')	X
6		0856			B-668-110718-A (2.5')	X
7		0858			B-677-110718-A (2.5')	X
8		0910			B-939-110718-A (2.5')	X
9		0916			B-940-110718-A (2.5')	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 3.8 °C

Sampled by: A. Ting
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)
11/7/18 15:12	11-7-18 15:12	11-7-18 15:23	11/7/18 1527
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

2

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CHAIN OF CUSTODY

ESS Lab # 1811171

Turn Time Rush 48hr

Regulatory State RI

Reporting Limits See note 1

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

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

Company Name: AEI

Project #: 363655

Project Name: BASF Cranston

Contact Person: Aaron Ting

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: PCBs (Soxhlet)
10	11-7-18	0934	G	Concrete	B-925-110718-A (2.5')	X
11	↓	0936	↓	S	B-282-110718-A (2.5')	X
12	↓	0947	↓	Concrete	B-288-110718-A (2.5')	X
13	11-7-18	1106	G	↓	B-466-110718-A (2.5')	X
14	↓	1306	↓	S	SW-565-110718-B (4-8')	X
15	↓	1320	↓	↓	SW-574-110718-B (4-7')	X
16	↓	1322	↓	↓	SW-583-110718-B (4-7')	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: A. Ting

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)
11/7/18 1512	11-7-18 1512	11-7-18 1523	11/7/18 1527
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: 1811209

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 5:52 pm, Nov 12, 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: 1811209

SAMPLE RECEIPT

The following samples were received on November 08, 2018 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	Sample Name	Matrix	Analysis
1811209-01	B-298-110818-A 2.5FT	Solid	8082A
1811209-02	B-299-110818-A 2.5FT	Solid	8082A
1811209-03	B-300-110818-A 2.5FT	Solid	8082A
1811209-04	B-307-110818-A 2.5FT	Solid	8082A
1811209-05	B-308-110818-A 2.5FT	Solid	8082A
1811209-06	B-309-110818-A 2.5FT	Solid	8082A
1811209-07	B-316-110818-A 2.5FT	Solid	8082A
1811209-08	B-317-110818-A 2.5FT	Solid	8082A
1811209-09	B-318-110818-A 2.5FT	Solid	8082A
1811209-10	SW-635-110818 2-6FT	Soil	8260B
1811209-11	SW-640-110818 2-6FT	Soil	8260B
1811209-12	SW-640-110818-1 2-6FT	Soil	8260B
1811209-13	SW-620-110818 2-6FT	Soil	8260B
1811209-14	SW-625-110818 2-6FT	Soil	8260B Low
1811209-15	SW-630-110818 2-6FT	Soil	8260B
1811209-16	TB	Solid	8260B, 8260B Low

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1811209

PROJECT NARRATIVE

5035/8260B Volatile Organic Compounds / Low Level

CK81244-BS1 **Blank Spike recovery is above upper control limit (B+).**
Tetrahydrofuran (134% @ 70-130%)

CK81244-BSD1 **Blank Spike recovery is above upper control limit (B+).**
Acetone (141% @ 70-130%), Tetrahydrofuran (137% @ 70-130%)

5035/8260B Volatile Organic Compounds / Methanol

CK80927-MS1 **Matrix Spike recovery is above upper control limit (M+).**
2-Chlorotoluene (142% @ 70-130%)

CK80927-MS1 **Matrix Spike recovery is below lower control limit (M-).**
1,4-Dioxane - Screen (94% @ 44-241%)

CK80927-MS1 **Surrogate recovery(ies) above upper control limit (S+).**
1,2-Dichloroethane-d4 (131% @ 70-130%)

CK80927-MSD1 **Surrogate recovery(ies) above upper control limit (S+).**
1,2-Dichloroethane-d4 (132% @ 70-130%)

8082A Polychlorinated Biphenyls (PCB)

1811209-01 **Surrogate recovery(ies) below lower control limit (S-).**
Tetrachloro-m-xylene (27% @ 30-150%)

C8K0182-CCV2 **Continuing Calibration %Diff/Drift is above control limit (CD+).**
Aroclor 1016 [2C] (22% @ 20%)

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: 1811209

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-298-110818-A 2.5FT
Date Sampled: 11/08/18 09:00
Percent Solids: 96
Initial Volume: 5.01
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-01
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 11/8/18 15:12

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.1)		8082A		1	11/09/18 12:04	C8K0183	CK80704
Aroclor 1221	ND (0.1)		8082A		1	11/09/18 12:04	C8K0183	CK80704
Aroclor 1232	ND (0.1)		8082A		1	11/09/18 12:04	C8K0183	CK80704
Aroclor 1242	ND (0.1)		8082A		1	11/09/18 12:04	C8K0183	CK80704
Aroclor 1248	ND (0.1)		8082A		1	11/09/18 12:04	C8K0183	CK80704
Aroclor 1254 [2C]	ND (0.1)		8082A		1	11/09/18 12:04	C8K0183	CK80704
Aroclor 1260	ND (0.1)		8082A		1	11/09/18 12:04	C8K0183	CK80704
Aroclor 1262	ND (0.1)		8082A		1	11/09/18 12:04	C8K0183	CK80704
Aroclor 1268	ND (0.1)		8082A		1	11/09/18 12:04	C8K0183	CK80704

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*33 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*31 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*27 %*	*S-*	*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*32 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-299-110818-A 2.5FT
Date Sampled: 11/08/18 09:00
Percent Solids: 96
Initial Volume: 5.04
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-02
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 11/8/18 15:12

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.1)		8082A		1	11/09/18 12:22	C8K0183	CK80704
Aroclor 1221	ND (0.1)		8082A		1	11/09/18 12:22	C8K0183	CK80704
Aroclor 1232	ND (0.1)		8082A		1	11/09/18 12:22	C8K0183	CK80704
Aroclor 1242	ND (0.1)		8082A		1	11/09/18 12:22	C8K0183	CK80704
Aroclor 1248	ND (0.1)		8082A		1	11/09/18 12:22	C8K0183	CK80704
Aroclor 1254	ND (0.1)		8082A		1	11/09/18 12:22	C8K0183	CK80704
Aroclor 1260	ND (0.1)		8082A		1	11/09/18 12:22	C8K0183	CK80704
Aroclor 1262	ND (0.1)		8082A		1	11/09/18 12:22	C8K0183	CK80704
Aroclor 1268	ND (0.1)		8082A		1	11/09/18 12:22	C8K0183	CK80704

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*53 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*51 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*46 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*53 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-300-110818-A 2.5FT
Date Sampled: 11/08/18 09:10
Percent Solids: 100
Initial Volume: 5.03
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-03
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 11/8/18 15:12

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.1)		8082A		1	11/09/18 12:41	C8K0183	CK80704
Aroclor 1221	ND (0.1)		8082A		1	11/09/18 12:41	C8K0183	CK80704
Aroclor 1232	ND (0.1)		8082A		1	11/09/18 12:41	C8K0183	CK80704
Aroclor 1242	ND (0.1)		8082A		1	11/09/18 12:41	C8K0183	CK80704
Aroclor 1248	ND (0.1)		8082A		1	11/09/18 12:41	C8K0183	CK80704
Aroclor 1254 [2C]	ND (0.1)		8082A		1	11/09/18 12:41	C8K0183	CK80704
Aroclor 1260	ND (0.1)		8082A		1	11/09/18 12:41	C8K0183	CK80704
Aroclor 1262	ND (0.1)		8082A		1	11/09/18 12:41	C8K0183	CK80704
Aroclor 1268	ND (0.1)		8082A		1	11/09/18 12:41	C8K0183	CK80704

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*49 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*47 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*40 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*47 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-307-110818-A 2.5FT
Date Sampled: 11/08/18 09:15
Percent Solids: 95
Initial Volume: 5.04
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-04
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 11/8/18 15:12

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.1)		8082A		1	11/09/18 13:00	C8K0183	CK80704
Aroclor 1221	ND (0.1)		8082A		1	11/09/18 13:00	C8K0183	CK80704
Aroclor 1232	ND (0.1)		8082A		1	11/09/18 13:00	C8K0183	CK80704
Aroclor 1242	ND (0.1)		8082A		1	11/09/18 13:00	C8K0183	CK80704
Aroclor 1248	ND (0.1)		8082A		1	11/09/18 13:00	C8K0183	CK80704
Aroclor 1254 [2C]	ND (0.1)		8082A		1	11/09/18 13:00	C8K0183	CK80704
Aroclor 1260	ND (0.1)		8082A		1	11/09/18 13:00	C8K0183	CK80704
Aroclor 1262	ND (0.1)		8082A		1	11/09/18 13:00	C8K0183	CK80704
Aroclor 1268	ND (0.1)		8082A		1	11/09/18 13:00	C8K0183	CK80704

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*40 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*40 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*36 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*41 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-308-110818-A 2.5FT
Date Sampled: 11/08/18 09:20
Percent Solids: 96
Initial Volume: 5.02
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-05
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 11/8/18 15:12

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.1)		8082A		1	11/09/18 13:19	C8K0183	CK80704
Aroclor 1221	ND (0.1)		8082A		1	11/09/18 13:19	C8K0183	CK80704
Aroclor 1232	ND (0.1)		8082A		1	11/09/18 13:19	C8K0183	CK80704
Aroclor 1242	ND (0.1)		8082A		1	11/09/18 13:19	C8K0183	CK80704
Aroclor 1248	ND (0.1)		8082A		1	11/09/18 13:19	C8K0183	CK80704
Aroclor 1254 [2C]	ND (0.1)		8082A		1	11/09/18 13:19	C8K0183	CK80704
Aroclor 1260	ND (0.1)		8082A		1	11/09/18 13:19	C8K0183	CK80704
Aroclor 1262	ND (0.1)		8082A		1	11/09/18 13:19	C8K0183	CK80704
Aroclor 1268	ND (0.1)		8082A		1	11/09/18 13:19	C8K0183	CK80704

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*49 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*47 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*41 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*48 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-309-110818-A 2.5FT
Date Sampled: 11/08/18 09:25
Percent Solids: 95
Initial Volume: 5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-06
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 11/8/18 15:12

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.1)		8082A		1	11/09/18 13:38	C8K0183	CK80704
Aroclor 1221	ND (0.1)		8082A		1	11/09/18 13:38	C8K0183	CK80704
Aroclor 1232	ND (0.1)		8082A		1	11/09/18 13:38	C8K0183	CK80704
Aroclor 1242	ND (0.1)		8082A		1	11/09/18 13:38	C8K0183	CK80704
Aroclor 1248	ND (0.1)		8082A		1	11/09/18 13:38	C8K0183	CK80704
Aroclor 1254 [2C]	**0.1** (0.1)		8082A		1	11/09/18 13:38	C8K0183	CK80704
Aroclor 1260	ND (0.1)		8082A		1	11/09/18 13:38	C8K0183	CK80704
Aroclor 1262	ND (0.1)		8082A		1	11/09/18 13:38	C8K0183	CK80704
Aroclor 1268	ND (0.1)		8082A		1	11/09/18 13:38	C8K0183	CK80704

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*47 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*45 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*40 %*		*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-316-110818-A 2.5FT
Date Sampled: 11/08/18 09:30
Percent Solids: 94
Initial Volume: 5
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-07
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 11/8/18 15:12

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.1)		8082A		1	11/09/18 13:57	C8K0183	CK80704
Aroclor 1221	ND (0.1)		8082A		1	11/09/18 13:57	C8K0183	CK80704
Aroclor 1232	ND (0.1)		8082A		1	11/09/18 13:57	C8K0183	CK80704
Aroclor 1242	ND (0.1)		8082A		1	11/09/18 13:57	C8K0183	CK80704
Aroclor 1248	ND (0.1)		8082A		1	11/09/18 13:57	C8K0183	CK80704
Aroclor 1254	ND (0.1)		8082A		1	11/09/18 13:57	C8K0183	CK80704
Aroclor 1260	ND (0.1)		8082A		1	11/09/18 13:57	C8K0183	CK80704
Aroclor 1262	ND (0.1)		8082A		1	11/09/18 13:57	C8K0183	CK80704
Aroclor 1268	ND (0.1)		8082A		1	11/09/18 13:57	C8K0183	CK80704

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*56 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*54 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*46 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*53 %*		*30-150*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: B-317-110818-A 2.5FT
Date Sampled: 11/08/18 09:35
Percent Solids: 95
Initial Volume: 5.02
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-08
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 11/8/18 15:12

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.1)		8082A		1	11/09/18 14:17	C8K0183	CK80704
Aroclor 1221	ND (0.1)		8082A		1	11/09/18 14:17	C8K0183	CK80704
Aroclor 1232	ND (0.1)		8082A		1	11/09/18 14:17	C8K0183	CK80704
Aroclor 1242	ND (0.1)		8082A		1	11/09/18 14:17	C8K0183	CK80704
Aroclor 1248	ND (0.1)		8082A		1	11/09/18 14:17	C8K0183	CK80704
Aroclor 1254 [2C]	ND (0.1)		8082A		1	11/09/18 14:17	C8K0183	CK80704
Aroclor 1260	ND (0.1)		8082A		1	11/09/18 14:17	C8K0183	CK80704
Aroclor 1262	ND (0.1)		8082A		1	11/09/18 14:17	C8K0183	CK80704
Aroclor 1268	ND (0.1)		8082A		1	11/09/18 14:17	C8K0183	CK80704

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*67 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*65 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*57 %*		*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-318-110818-A 2.5FT
Date Sampled: 11/08/18 09:40
Percent Solids: 95
Initial Volume: 5.01
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-09
Sample Matrix: Solid
Units: mg/kg dry
Analyst: CAD
Prepared: 11/8/18 15:12

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.1)		8082A		1	11/09/18 14:36	C8K0183	CK80704
Aroclor 1221	ND (0.1)		8082A		1	11/09/18 14:36	C8K0183	CK80704
Aroclor 1232	ND (0.1)		8082A		1	11/09/18 14:36	C8K0183	CK80704
Aroclor 1242	ND (0.1)		8082A		1	11/09/18 14:36	C8K0183	CK80704
Aroclor 1248	ND (0.1)		8082A		1	11/09/18 14:36	C8K0183	CK80704
Aroclor 1254	**0.6** (0.1)		8082A		1	11/09/18 14:36	C8K0183	CK80704
Aroclor 1260	ND (0.1)		8082A		1	11/09/18 14:36	C8K0183	CK80704
Aroclor 1262	ND (0.1)		8082A		1	11/09/18 14:36	C8K0183	CK80704
Aroclor 1268	ND (0.1)		8082A		1	11/09/18 14:36	C8K0183	CK80704

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*76 %*		*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: SW-635-110818 2-6FT
Date Sampled: 11/08/18 09:45
Percent Solids: 91
Initial Volume: 18.6
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.197)	0.0197	8260B		1	11/12/18 12:23	C8K0209	CK81240
1,1,1-Trichloroethane	ND (0.197)	0.0394	8260B		1	11/12/18 12:23	C8K0209	CK81240
1,1,2,2-Tetrachloroethane	ND (0.197)	0.0197	8260B		1	11/12/18 12:23	C8K0209	CK81240
1,1,2-Trichloroethane	ND (0.197)	0.0394	8260B		1	11/12/18 12:23	C8K0209	CK81240
1,1-Dichloroethane	ND (0.197)	0.0394	8260B		1	11/12/18 12:23	C8K0209	CK81240
1,1-Dichloroethene	ND (0.197)	0.0591	8260B		1	11/12/18 12:23	C8K0209	CK81240
1,1-Dichloropropene	ND (0.197)	0.0394	8260B		1	11/12/18 12:23	C8K0209	CK81240
1,2,3-Trichlorobenzene	ND (0.197)	0.0394	8260B		1	11/12/18 12:23	C8K0209	CK81240
1,2,3-Trichloropropane	ND (0.197)	0.0591	8260B		1	11/12/18 12:23	C8K0209	CK81240
1,2,4-Trichlorobenzene	ND (0.197)	0.0394	8260B		1	11/12/18 12:23	C8K0209	CK81240
1,2,4-Trimethylbenzene	ND (0.197)	0.0197	8260B		1	11/12/18 12:23	C8K0209	CK81240
1,2-Dibromo-3-Chloropropane	ND (0.985)	0.197	8260B		1	11/12/18 12:23	C8K0209	CK81240
1,2-Dibromoethane	ND (0.197)	0.0394	8260B		1	11/12/18 12:23	C8K0209	CK81240
1,2-Dichlorobenzene	ND (0.197)	0.0197	8260B		1	11/12/18 12:23	C8K0209	CK81240
1,2-Dichloroethane	ND (0.197)	0.0394	8260B		1	11/12/18 12:23	C8K0209	CK81240
1,2-Dichloropropane	ND (0.197)	0.0394	8260B		1	11/12/18 12:23	C8K0209	CK81240
1,3,5-Trimethylbenzene	ND (0.197)	0.0197	8260B		1	11/12/18 12:23	C8K0209	CK81240
1,3-Dichlorobenzene	ND (0.197)	0.0394	8260B		1	11/12/18 12:23	C8K0209	CK81240
1,3-Dichloropropane	ND (0.197)	0.0197	8260B		1	11/12/18 12:23	C8K0209	CK81240
1,4-Dichlorobenzene	ND (0.197)	0.0197	8260B		1	11/12/18 12:23	C8K0209	CK81240
1,4-Dioxane - Screen	ND (39.4)	37.4	8260B		1	11/12/18 12:23	C8K0209	CK81240
1-Chlorohexane	ND (0.197)	0.0788	8260B		1	11/12/18 12:23	C8K0209	CK81240
2,2-Dichloropropane	ND (0.197)	0.0591	8260B		1	11/12/18 12:23	C8K0209	CK81240
2-Butanone	ND (0.985)	0.670	8260B		1	11/12/18 12:23	C8K0209	CK81240
2-Chlorotoluene	**10.5** (0.197)	0.0197	8260B		1	11/12/18 12:23	C8K0209	CK81240
2-Hexanone	ND (0.985)	0.295	8260B		1	11/12/18 12:23	C8K0209	CK81240
4-Chlorotoluene	**0.561** (0.197)	0.0197	8260B		1	11/12/18 12:23	C8K0209	CK81240
4-Isopropyltoluene	ND (0.197)	0.0197	8260B		1	11/12/18 12:23	C8K0209	CK81240
4-Methyl-2-Pentanone	ND (0.985)	0.315	8260B		1	11/12/18 12:23	C8K0209	CK81240
Acetone	ND (0.985)	0.532	8260B		1	11/12/18 12:23	C8K0209	CK81240
Benzene	ND (0.197)	0.0197	8260B		1	11/12/18 12:23	C8K0209	CK81240
Bromobenzene	ND (0.197)	0.0394	8260B		1	11/12/18 12:23	C8K0209	CK81240

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-635-110818 2-6FT
Date Sampled: 11/08/18 09:45
Percent Solids: 91
Initial Volume: 18.6
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.197)	0.0591	8260B		1	11/12/18 12:23	C8K0209	CK81240
Bromodichloromethane	ND (0.197)	0.0197	8260B		1	11/12/18 12:23	C8K0209	CK81240
Bromoform	ND (0.197)	0.0394	8260B		1	11/12/18 12:23	C8K0209	CK81240
Bromomethane	ND (0.197)	0.0788	8260B		1	11/12/18 12:23	C8K0209	CK81240
Carbon Disulfide	ND (0.197)	0.0197	8260B		1	11/12/18 12:23	C8K0209	CK81240
Carbon Tetrachloride	ND (0.197)	0.0197	8260B		1	11/12/18 12:23	C8K0209	CK81240
Chlorobenzene	ND (0.197)	0.0197	8260B		1	11/12/18 12:23	C8K0209	CK81240
Chloroethane	ND (0.197)	0.0788	8260B		1	11/12/18 12:23	C8K0209	CK81240
Chloroform	ND (0.197)	0.0394	8260B		1	11/12/18 12:23	C8K0209	CK81240
Chloromethane	ND (0.197)	0.0197	8260B		1	11/12/18 12:23	C8K0209	CK81240
cis-1,2-Dichloroethene	ND (0.197)	0.0394	8260B		1	11/12/18 12:23	C8K0209	CK81240
cis-1,3-Dichloropropene	ND (0.197)	0.0591	8260B		1	11/12/18 12:23	C8K0209	CK81240
Dibromochloromethane	ND (0.197)	0.0394	8260B		1	11/12/18 12:23	C8K0209	CK81240
Dibromomethane	ND (0.197)	0.0591	8260B		1	11/12/18 12:23	C8K0209	CK81240
Dichlorodifluoromethane	ND (0.197)	0.0591	8260B		1	11/12/18 12:23	C8K0209	CK81240
Diethyl Ether	ND (0.197)	0.0591	8260B		1	11/12/18 12:23	C8K0209	CK81240
Di-isopropyl ether	ND (0.197)	0.0394	8260B		1	11/12/18 12:23	C8K0209	CK81240
Ethyl tertiary-butyl ether	ND (0.197)	0.0197	8260B		1	11/12/18 12:23	C8K0209	CK81240
Ethylbenzene	ND (0.197)	0.0197	8260B		1	11/12/18 12:23	C8K0209	CK81240
Hexachlorobutadiene	ND (0.197)	0.0394	8260B		1	11/12/18 12:23	C8K0209	CK81240
Isopropylbenzene	ND (0.197)	0.0197	8260B		1	11/12/18 12:23	C8K0209	CK81240
Methyl tert-Butyl Ether	ND (0.197)	0.0591	8260B		1	11/12/18 12:23	C8K0209	CK81240
Methylene Chloride	ND (0.394)	0.0394	8260B		1	11/12/18 12:23	C8K0209	CK81240
Naphthalene	ND (0.197)	0.0394	8260B		1	11/12/18 12:23	C8K0209	CK81240
n-Butylbenzene	ND (0.197)	0.0197	8260B		1	11/12/18 12:23	C8K0209	CK81240
n-Propylbenzene	ND (0.197)	0.0394	8260B		1	11/12/18 12:23	C8K0209	CK81240
sec-Butylbenzene	ND (0.197)	0.0197	8260B		1	11/12/18 12:23	C8K0209	CK81240
Styrene	ND (0.197)	0.0197	8260B		1	11/12/18 12:23	C8K0209	CK81240
tert-Butylbenzene	ND (0.197)	0.0197	8260B		1	11/12/18 12:23	C8K0209	CK81240
Tertiary-amyl methyl ether	ND (0.197)	0.0394	8260B		1	11/12/18 12:23	C8K0209	CK81240
Tetrachloroethene	ND (0.197)	0.0394	8260B		1	11/12/18 12:23	C8K0209	CK81240
Tetrahydrofuran	ND (0.985)	0.315	8260B		1	11/12/18 12:23	C8K0209	CK81240

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-635-110818 2-6FT
Date Sampled: 11/08/18 09:45
Percent Solids: 91
Initial Volume: 18.6
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-10
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	**J 0.106** (0.197)	0.0197	8260B		1	11/12/18 12:23	C8K0209	CK81240
trans-1,2-Dichloroethene	ND (0.197)	0.0591	8260B		1	11/12/18 12:23	C8K0209	CK81240
trans-1,3-Dichloropropene	ND (0.197)	0.0394	8260B		1	11/12/18 12:23	C8K0209	CK81240
Trichloroethene	ND (0.197)	0.0394	8260B		1	11/12/18 12:23	C8K0209	CK81240
Trichlorofluoromethane	ND (0.197)	0.0788	8260B		1	11/12/18 12:23	C8K0209	CK81240
Vinyl Acetate	ND (0.197)	0.0985	8260B		1	11/12/18 12:23	C8K0209	CK81240
Vinyl Chloride	ND (0.197)	0.0394	8260B		1	11/12/18 12:23	C8K0209	CK81240
Xylene O	**J 0.0315** (0.197)	0.0197	8260B		1	11/12/18 12:23	C8K0209	CK81240
Xylene P,M	**J 0.0552** (0.394)	0.0394	8260B		1	11/12/18 12:23	C8K0209	CK81240
Xylenes (Total)	ND (0.394)		8260B		1	11/12/18 12:23		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*124 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*118 %*		*70-130*
Surrogate: Dibromofluoromethane	*120 %*		*70-130*
Surrogate: Toluene-d8	*119 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-640-110818 2-6FT
Date Sampled: 11/08/18 09:50
Percent Solids: 95
Initial Volume: 20.5
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.164)	0.0164	8260B		1	11/09/18 18:27	C8K0177	CK80927
1,1,1-Trichloroethane	ND (0.164)	0.0327	8260B		1	11/09/18 18:27	C8K0177	CK80927
1,1,2,2-Tetrachloroethane	ND (0.164)	0.0164	8260B		1	11/09/18 18:27	C8K0177	CK80927
1,1,2-Trichloroethane	ND (0.164)	0.0327	8260B		1	11/09/18 18:27	C8K0177	CK80927
1,1-Dichloroethane	ND (0.164)	0.0327	8260B		1	11/09/18 18:27	C8K0177	CK80927
1,1-Dichloroethene	ND (0.164)	0.0491	8260B		1	11/09/18 18:27	C8K0177	CK80927
1,1-Dichloropropene	ND (0.164)	0.0327	8260B		1	11/09/18 18:27	C8K0177	CK80927
1,2,3-Trichlorobenzene	ND (0.164)	0.0327	8260B		1	11/09/18 18:27	C8K0177	CK80927
1,2,3-Trichloropropane	ND (0.164)	0.0491	8260B		1	11/09/18 18:27	C8K0177	CK80927
1,2,4-Trichlorobenzene	ND (0.164)	0.0327	8260B		1	11/09/18 18:27	C8K0177	CK80927
1,2,4-Trimethylbenzene	ND (0.164)	0.0164	8260B		1	11/09/18 18:27	C8K0177	CK80927
1,2-Dibromo-3-Chloropropane	ND (0.818)	0.164	8260B		1	11/09/18 18:27	C8K0177	CK80927
1,2-Dibromoethane	ND (0.164)	0.0327	8260B		1	11/09/18 18:27	C8K0177	CK80927
1,2-Dichlorobenzene	ND (0.164)	0.0164	8260B		1	11/09/18 18:27	C8K0177	CK80927
1,2-Dichloroethane	ND (0.164)	0.0327	8260B		1	11/09/18 18:27	C8K0177	CK80927
1,2-Dichloropropane	ND (0.164)	0.0327	8260B		1	11/09/18 18:27	C8K0177	CK80927
1,3,5-Trimethylbenzene	ND (0.164)	0.0164	8260B		1	11/09/18 18:27	C8K0177	CK80927
1,3-Dichlorobenzene	ND (0.164)	0.0327	8260B		1	11/09/18 18:27	C8K0177	CK80927
1,3-Dichloropropane	ND (0.164)	0.0164	8260B		1	11/09/18 18:27	C8K0177	CK80927
1,4-Dichlorobenzene	ND (0.164)	0.0164	8260B		1	11/09/18 18:27	C8K0177	CK80927
1,4-Dioxane - Screen	ND (32.7)	31.1	8260B		1	11/09/18 18:27	C8K0177	CK80927
1-Chlorohexane	ND (0.164)	0.0655	8260B		1	11/09/18 18:27	C8K0177	CK80927
2,2-Dichloropropane	ND (0.164)	0.0491	8260B		1	11/09/18 18:27	C8K0177	CK80927
2-Butanone	ND (0.818)	0.556	8260B		1	11/09/18 18:27	C8K0177	CK80927
2-Chlorotoluene	**7.11** (0.164)	0.0164	8260B		1	11/09/18 18:27	C8K0177	CK80927
2-Hexanone	ND (0.818)	0.245	8260B		1	11/09/18 18:27	C8K0177	CK80927
4-Chlorotoluene	**0.314** (0.164)	0.0164	8260B		1	11/09/18 18:27	C8K0177	CK80927
4-Isopropyltoluene	ND (0.164)	0.0164	8260B		1	11/09/18 18:27	C8K0177	CK80927
4-Methyl-2-Pentanone	ND (0.818)	0.262	8260B		1	11/09/18 18:27	C8K0177	CK80927
Acetone	ND (0.818)	0.442	8260B		1	11/09/18 18:27	C8K0177	CK80927
Benzene	ND (0.164)	0.0164	8260B		1	11/09/18 18:27	C8K0177	CK80927
Bromobenzene	ND (0.164)	0.0327	8260B		1	11/09/18 18:27	C8K0177	CK80927

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-640-110818 2-6FT
Date Sampled: 11/08/18 09:50
Percent Solids: 95
Initial Volume: 20.5
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.164)	0.0491	8260B		1	11/09/18 18:27	C8K0177	CK80927
Bromodichloromethane	ND (0.164)	0.0164	8260B		1	11/09/18 18:27	C8K0177	CK80927
Bromoform	ND (0.164)	0.0327	8260B		1	11/09/18 18:27	C8K0177	CK80927
Bromomethane	ND (0.164)	0.0655	8260B		1	11/09/18 18:27	C8K0177	CK80927
Carbon Disulfide	ND (0.164)	0.0164	8260B		1	11/09/18 18:27	C8K0177	CK80927
Carbon Tetrachloride	ND (0.164)	0.0164	8260B		1	11/09/18 18:27	C8K0177	CK80927
Chlorobenzene	ND (0.164)	0.0164	8260B		1	11/09/18 18:27	C8K0177	CK80927
Chloroethane	ND (0.164)	0.0655	8260B		1	11/09/18 18:27	C8K0177	CK80927
Chloroform	ND (0.164)	0.0327	8260B		1	11/09/18 18:27	C8K0177	CK80927
Chloromethane	ND (0.164)	0.0164	8260B		1	11/09/18 18:27	C8K0177	CK80927
cis-1,2-Dichloroethene	ND (0.164)	0.0327	8260B		1	11/09/18 18:27	C8K0177	CK80927
cis-1,3-Dichloropropene	ND (0.164)	0.0491	8260B		1	11/09/18 18:27	C8K0177	CK80927
Dibromochloromethane	ND (0.164)	0.0327	8260B		1	11/09/18 18:27	C8K0177	CK80927
Dibromomethane	ND (0.164)	0.0491	8260B		1	11/09/18 18:27	C8K0177	CK80927
Dichlorodifluoromethane	ND (0.164)	0.0491	8260B		1	11/09/18 18:27	C8K0177	CK80927
Diethyl Ether	ND (0.164)	0.0491	8260B		1	11/09/18 18:27	C8K0177	CK80927
Di-isopropyl ether	ND (0.164)	0.0327	8260B		1	11/09/18 18:27	C8K0177	CK80927
Ethyl tertiary-butyl ether	ND (0.164)	0.0164	8260B		1	11/09/18 18:27	C8K0177	CK80927
Ethylbenzene	ND (0.164)	0.0164	8260B		1	11/09/18 18:27	C8K0177	CK80927
Hexachlorobutadiene	ND (0.164)	0.0327	8260B		1	11/09/18 18:27	C8K0177	CK80927
Isopropylbenzene	ND (0.164)	0.0164	8260B		1	11/09/18 18:27	C8K0177	CK80927
Methyl tert-Butyl Ether	ND (0.164)	0.0491	8260B		1	11/09/18 18:27	C8K0177	CK80927
Methylene Chloride	ND (0.327)	0.0327	8260B		1	11/09/18 18:27	C8K0177	CK80927
Naphthalene	ND (0.164)	0.0327	8260B		1	11/09/18 18:27	C8K0177	CK80927
n-Butylbenzene	ND (0.164)	0.0164	8260B		1	11/09/18 18:27	C8K0177	CK80927
n-Propylbenzene	ND (0.164)	0.0327	8260B		1	11/09/18 18:27	C8K0177	CK80927
sec-Butylbenzene	ND (0.164)	0.0164	8260B		1	11/09/18 18:27	C8K0177	CK80927
Styrene	ND (0.164)	0.0164	8260B		1	11/09/18 18:27	C8K0177	CK80927
tert-Butylbenzene	ND (0.164)	0.0164	8260B		1	11/09/18 18:27	C8K0177	CK80927
Tertiary-amyl methyl ether	ND (0.164)	0.0327	8260B		1	11/09/18 18:27	C8K0177	CK80927
Tetrachloroethene	ND (0.164)	0.0327	8260B		1	11/09/18 18:27	C8K0177	CK80927
Tetrahydrofuran	ND (0.818)	0.262	8260B		1	11/09/18 18:27	C8K0177	CK80927

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-640-110818 2-6FT
Date Sampled: 11/08/18 09:50
Percent Solids: 95
Initial Volume: 20.5
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-11
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.164)	0.0164	8260B		1	11/09/18 18:27	C8K0177	CK80927
trans-1,2-Dichloroethene	ND (0.164)	0.0491	8260B		1	11/09/18 18:27	C8K0177	CK80927
trans-1,3-Dichloropropene	ND (0.164)	0.0327	8260B		1	11/09/18 18:27	C8K0177	CK80927
Trichloroethene	ND (0.164)	0.0327	8260B		1	11/09/18 18:27	C8K0177	CK80927
Trichlorofluoromethane	ND (0.164)	0.0655	8260B		1	11/09/18 18:27	C8K0177	CK80927
Vinyl Acetate	ND (0.164)	0.0818	8260B		1	11/09/18 18:27	C8K0177	CK80927
Vinyl Chloride	ND (0.164)	0.0327	8260B		1	11/09/18 18:27	C8K0177	CK80927
Xylene O	**J 0.0245** (0.164)	0.0164	8260B		1	11/09/18 18:27	C8K0177	CK80927
Xylene P,M	**J 0.0491** (0.327)	0.0327	8260B		1	11/09/18 18:27	C8K0177	CK80927
Xylenes (Total)	ND (0.327)		8260B		1	11/09/18 18:27		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*120 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*118 %*		*70-130*
Surrogate: Dibromofluoromethane	*117 %*		*70-130*
Surrogate: Toluene-d8	*123 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-640-110818-1 2-6FT
Date Sampled: 11/08/18 09:50
Percent Solids: 96
Initial Volume: 19
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-12
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.175)	0.0175	8260B		1	11/09/18 18:53	C8K0177	CK80927
1,1,1-Trichloroethane	ND (0.175)	0.0349	8260B		1	11/09/18 18:53	C8K0177	CK80927
1,1,2,2-Tetrachloroethane	ND (0.175)	0.0175	8260B		1	11/09/18 18:53	C8K0177	CK80927
1,1,2-Trichloroethane	ND (0.175)	0.0349	8260B		1	11/09/18 18:53	C8K0177	CK80927
1,1-Dichloroethane	ND (0.175)	0.0349	8260B		1	11/09/18 18:53	C8K0177	CK80927
1,1-Dichloroethene	ND (0.175)	0.0524	8260B		1	11/09/18 18:53	C8K0177	CK80927
1,1-Dichloropropene	ND (0.175)	0.0349	8260B		1	11/09/18 18:53	C8K0177	CK80927
1,2,3-Trichlorobenzene	ND (0.175)	0.0349	8260B		1	11/09/18 18:53	C8K0177	CK80927
1,2,3-Trichloropropane	ND (0.175)	0.0524	8260B		1	11/09/18 18:53	C8K0177	CK80927
1,2,4-Trichlorobenzene	ND (0.175)	0.0349	8260B		1	11/09/18 18:53	C8K0177	CK80927
1,2,4-Trimethylbenzene	ND (0.175)	0.0175	8260B		1	11/09/18 18:53	C8K0177	CK80927
1,2-Dibromo-3-Chloropropane	ND (0.873)	0.175	8260B		1	11/09/18 18:53	C8K0177	CK80927
1,2-Dibromoethane	ND (0.175)	0.0349	8260B		1	11/09/18 18:53	C8K0177	CK80927
1,2-Dichlorobenzene	ND (0.175)	0.0175	8260B		1	11/09/18 18:53	C8K0177	CK80927
1,2-Dichloroethane	ND (0.175)	0.0349	8260B		1	11/09/18 18:53	C8K0177	CK80927
1,2-Dichloropropane	ND (0.175)	0.0349	8260B		1	11/09/18 18:53	C8K0177	CK80927
1,3,5-Trimethylbenzene	ND (0.175)	0.0175	8260B		1	11/09/18 18:53	C8K0177	CK80927
1,3-Dichlorobenzene	ND (0.175)	0.0349	8260B		1	11/09/18 18:53	C8K0177	CK80927
1,3-Dichloropropane	ND (0.175)	0.0175	8260B		1	11/09/18 18:53	C8K0177	CK80927
1,4-Dichlorobenzene	ND (0.175)	0.0175	8260B		1	11/09/18 18:53	C8K0177	CK80927
1,4-Dioxane - Screen	ND (34.9)	33.2	8260B		1	11/09/18 18:53	C8K0177	CK80927
1-Chlorohexane	ND (0.175)	0.0699	8260B		1	11/09/18 18:53	C8K0177	CK80927
2,2-Dichloropropane	ND (0.175)	0.0524	8260B		1	11/09/18 18:53	C8K0177	CK80927
2-Butanone	ND (0.873)	0.594	8260B		1	11/09/18 18:53	C8K0177	CK80927
2-Chlorotoluene	**9.87** (0.175)	0.0175	8260B		1	11/09/18 18:53	C8K0177	CK80927
2-Hexanone	ND (0.873)	0.262	8260B		1	11/09/18 18:53	C8K0177	CK80927
4-Chlorotoluene	**0.452** (0.175)	0.0175	8260B		1	11/09/18 18:53	C8K0177	CK80927
4-Isopropyltoluene	ND (0.175)	0.0175	8260B		1	11/09/18 18:53	C8K0177	CK80927
4-Methyl-2-Pentanone	ND (0.873)	0.279	8260B		1	11/09/18 18:53	C8K0177	CK80927
Acetone	ND (0.873)	0.472	8260B		1	11/09/18 18:53	C8K0177	CK80927
Benzene	ND (0.175)	0.0175	8260B		1	11/09/18 18:53	C8K0177	CK80927
Bromobenzene	ND (0.175)	0.0349	8260B		1	11/09/18 18:53	C8K0177	CK80927

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-640-110818-1 2-6FT
Date Sampled: 11/08/18 09:50
Percent Solids: 96
Initial Volume: 19
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-12
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.175)	0.0524	8260B		1	11/09/18 18:53	C8K0177	CK80927
Bromodichloromethane	ND (0.175)	0.0175	8260B		1	11/09/18 18:53	C8K0177	CK80927
Bromoform	ND (0.175)	0.0349	8260B		1	11/09/18 18:53	C8K0177	CK80927
Bromomethane	ND (0.175)	0.0699	8260B		1	11/09/18 18:53	C8K0177	CK80927
Carbon Disulfide	ND (0.175)	0.0175	8260B		1	11/09/18 18:53	C8K0177	CK80927
Carbon Tetrachloride	ND (0.175)	0.0175	8260B		1	11/09/18 18:53	C8K0177	CK80927
Chlorobenzene	ND (0.175)	0.0175	8260B		1	11/09/18 18:53	C8K0177	CK80927
Chloroethane	ND (0.175)	0.0699	8260B		1	11/09/18 18:53	C8K0177	CK80927
Chloroform	ND (0.175)	0.0349	8260B		1	11/09/18 18:53	C8K0177	CK80927
Chloromethane	ND (0.175)	0.0175	8260B		1	11/09/18 18:53	C8K0177	CK80927
cis-1,2-Dichloroethene	ND (0.175)	0.0349	8260B		1	11/09/18 18:53	C8K0177	CK80927
cis-1,3-Dichloropropene	ND (0.175)	0.0524	8260B		1	11/09/18 18:53	C8K0177	CK80927
Dibromochloromethane	ND (0.175)	0.0349	8260B		1	11/09/18 18:53	C8K0177	CK80927
Dibromomethane	ND (0.175)	0.0524	8260B		1	11/09/18 18:53	C8K0177	CK80927
Dichlorodifluoromethane	ND (0.175)	0.0524	8260B		1	11/09/18 18:53	C8K0177	CK80927
Diethyl Ether	ND (0.175)	0.0524	8260B		1	11/09/18 18:53	C8K0177	CK80927
Di-isopropyl ether	ND (0.175)	0.0349	8260B		1	11/09/18 18:53	C8K0177	CK80927
Ethyl tertiary-butyl ether	ND (0.175)	0.0175	8260B		1	11/09/18 18:53	C8K0177	CK80927
Ethylbenzene	ND (0.175)	0.0175	8260B		1	11/09/18 18:53	C8K0177	CK80927
Hexachlorobutadiene	ND (0.175)	0.0349	8260B		1	11/09/18 18:53	C8K0177	CK80927
Isopropylbenzene	ND (0.175)	0.0175	8260B		1	11/09/18 18:53	C8K0177	CK80927
Methyl tert-Butyl Ether	ND (0.175)	0.0524	8260B		1	11/09/18 18:53	C8K0177	CK80927
Methylene Chloride	ND (0.349)	0.0349	8260B		1	11/09/18 18:53	C8K0177	CK80927
Naphthalene	ND (0.175)	0.0349	8260B		1	11/09/18 18:53	C8K0177	CK80927
n-Butylbenzene	ND (0.175)	0.0175	8260B		1	11/09/18 18:53	C8K0177	CK80927
n-Propylbenzene	ND (0.175)	0.0349	8260B		1	11/09/18 18:53	C8K0177	CK80927
sec-Butylbenzene	ND (0.175)	0.0175	8260B		1	11/09/18 18:53	C8K0177	CK80927
Styrene	ND (0.175)	0.0175	8260B		1	11/09/18 18:53	C8K0177	CK80927
tert-Butylbenzene	ND (0.175)	0.0175	8260B		1	11/09/18 18:53	C8K0177	CK80927
Tertiary-amyl methyl ether	ND (0.175)	0.0349	8260B		1	11/09/18 18:53	C8K0177	CK80927
Tetrachloroethene	ND (0.175)	0.0349	8260B		1	11/09/18 18:53	C8K0177	CK80927
Tetrahydrofuran	ND (0.873)	0.279	8260B		1	11/09/18 18:53	C8K0177	CK80927

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-640-110818-1 2-6FT
Date Sampled: 11/08/18 09:50
Percent Solids: 96
Initial Volume: 19
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-12
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.175)	0.0175	8260B		1	11/09/18 18:53	C8K0177	CK80927
trans-1,2-Dichloroethene	ND (0.175)	0.0524	8260B		1	11/09/18 18:53	C8K0177	CK80927
trans-1,3-Dichloropropene	ND (0.175)	0.0349	8260B		1	11/09/18 18:53	C8K0177	CK80927
Trichloroethene	ND (0.175)	0.0349	8260B		1	11/09/18 18:53	C8K0177	CK80927
Trichlorofluoromethane	ND (0.175)	0.0699	8260B		1	11/09/18 18:53	C8K0177	CK80927
Vinyl Acetate	ND (0.175)	0.0873	8260B		1	11/09/18 18:53	C8K0177	CK80927
Vinyl Chloride	ND (0.175)	0.0349	8260B		1	11/09/18 18:53	C8K0177	CK80927
Xylene O	**J 0.0192** (0.175)	0.0175	8260B		1	11/09/18 18:53	C8K0177	CK80927
Xylene P,M	**J 0.0559** (0.349)	0.0349	8260B		1	11/09/18 18:53	C8K0177	CK80927
Xylenes (Total)	ND (0.349)		8260B		1	11/09/18 18:53		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*128 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*126 %*		*70-130*
Surrogate: Dibromofluoromethane	*120 %*		*70-130*
Surrogate: Toluene-d8	*128 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-620-110818 2-6FT
Date Sampled: 11/08/18 10:00
Percent Solids: 90
Initial Volume: 18.9
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-13
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.200)	0.0200	8260B		1	11/12/18 12:50	C8K0209	CK81240
1,1,1-Trichloroethane	ND (0.200)	0.0399	8260B		1	11/12/18 12:50	C8K0209	CK81240
1,1,2,2-Tetrachloroethane	ND (0.200)	0.0200	8260B		1	11/12/18 12:50	C8K0209	CK81240
1,1,2-Trichloroethane	ND (0.200)	0.0399	8260B		1	11/12/18 12:50	C8K0209	CK81240
1,1-Dichloroethane	ND (0.200)	0.0399	8260B		1	11/12/18 12:50	C8K0209	CK81240
1,1-Dichloroethene	ND (0.200)	0.0599	8260B		1	11/12/18 12:50	C8K0209	CK81240
1,1-Dichloropropene	ND (0.200)	0.0399	8260B		1	11/12/18 12:50	C8K0209	CK81240
1,2,3-Trichlorobenzene	ND (0.200)	0.0399	8260B		1	11/12/18 12:50	C8K0209	CK81240
1,2,3-Trichloropropane	ND (0.200)	0.0599	8260B		1	11/12/18 12:50	C8K0209	CK81240
1,2,4-Trichlorobenzene	**0.327** (0.200)	0.0399	8260B		1	11/12/18 12:50	C8K0209	CK81240
1,2,4-Trimethylbenzene	ND (0.200)	0.0200	8260B		1	11/12/18 12:50	C8K0209	CK81240
1,2-Dibromo-3-Chloropropane	ND (0.998)	0.200	8260B		1	11/12/18 12:50	C8K0209	CK81240
1,2-Dibromoethane	ND (0.200)	0.0399	8260B		1	11/12/18 12:50	C8K0209	CK81240
1,2-Dichlorobenzene	ND (0.200)	0.0200	8260B		1	11/12/18 12:50	C8K0209	CK81240
1,2-Dichloroethane	ND (0.200)	0.0399	8260B		1	11/12/18 12:50	C8K0209	CK81240
1,2-Dichloropropane	ND (0.200)	0.0399	8260B		1	11/12/18 12:50	C8K0209	CK81240
1,3,5-Trimethylbenzene	ND (0.200)	0.0200	8260B		1	11/12/18 12:50	C8K0209	CK81240
1,3-Dichlorobenzene	ND (0.200)	0.0399	8260B		1	11/12/18 12:50	C8K0209	CK81240
1,3-Dichloropropane	ND (0.200)	0.0200	8260B		1	11/12/18 12:50	C8K0209	CK81240
1,4-Dichlorobenzene	ND (0.200)	0.0200	8260B		1	11/12/18 12:50	C8K0209	CK81240
1,4-Dioxane - Screen	ND (39.9)	37.9	8260B		1	11/12/18 12:50	C8K0209	CK81240
1-Chlorohexane	ND (0.200)	0.0798	8260B		1	11/12/18 12:50	C8K0209	CK81240
2,2-Dichloropropane	ND (0.200)	0.0599	8260B		1	11/12/18 12:50	C8K0209	CK81240
2-Butanone	ND (0.998)	0.678	8260B		1	11/12/18 12:50	C8K0209	CK81240
2-Chlorotoluene	**84.6** (20.0)	2.00	8260B		100	11/09/18 16:40	C8K0209	CK81240
2-Hexanone	ND (0.998)	0.299	8260B		1	11/12/18 12:50	C8K0209	CK81240
4-Chlorotoluene	**3.86** (0.200)	0.0200	8260B		1	11/12/18 12:50	C8K0209	CK81240
4-Isopropyltoluene	ND (0.200)	0.0200	8260B		1	11/12/18 12:50	C8K0209	CK81240
4-Methyl-2-Pentanone	ND (0.998)	0.319	8260B		1	11/12/18 12:50	C8K0209	CK81240
Acetone	ND (0.998)	0.539	8260B		1	11/12/18 12:50	C8K0209	CK81240
Benzene	ND (0.200)	0.0200	8260B		1	11/12/18 12:50	C8K0209	CK81240
Bromobenzene	ND (0.200)	0.0399	8260B		1	11/12/18 12:50	C8K0209	CK81240

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-620-110818 2-6FT
Date Sampled: 11/08/18 10:00
Percent Solids: 90
Initial Volume: 18.9
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-13
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.200)	0.0599	8260B		1	11/12/18 12:50	C8K0209	CK81240
Bromodichloromethane	ND (0.200)	0.0200	8260B		1	11/12/18 12:50	C8K0209	CK81240
Bromoform	ND (0.200)	0.0399	8260B		1	11/12/18 12:50	C8K0209	CK81240
Bromomethane	ND (0.200)	0.0798	8260B		1	11/12/18 12:50	C8K0209	CK81240
Carbon Disulfide	ND (0.200)	0.0200	8260B		1	11/12/18 12:50	C8K0209	CK81240
Carbon Tetrachloride	ND (0.200)	0.0200	8260B		1	11/12/18 12:50	C8K0209	CK81240
Chlorobenzene	ND (0.200)	0.0200	8260B		1	11/12/18 12:50	C8K0209	CK81240
Chloroethane	ND (0.200)	0.0798	8260B		1	11/12/18 12:50	C8K0209	CK81240
Chloroform	ND (0.200)	0.0399	8260B		1	11/12/18 12:50	C8K0209	CK81240
Chloromethane	ND (0.200)	0.0200	8260B		1	11/12/18 12:50	C8K0209	CK81240
cis-1,2-Dichloroethene	ND (0.200)	0.0399	8260B		1	11/12/18 12:50	C8K0209	CK81240
cis-1,3-Dichloropropene	ND (0.200)	0.0599	8260B		1	11/12/18 12:50	C8K0209	CK81240
Dibromochloromethane	ND (0.200)	0.0399	8260B		1	11/12/18 12:50	C8K0209	CK81240
Dibromomethane	ND (0.200)	0.0599	8260B		1	11/12/18 12:50	C8K0209	CK81240
Dichlorodifluoromethane	ND (0.200)	0.0599	8260B		1	11/12/18 12:50	C8K0209	CK81240
Diethyl Ether	ND (0.200)	0.0599	8260B		1	11/12/18 12:50	C8K0209	CK81240
Di-isopropyl ether	ND (0.200)	0.0399	8260B		1	11/12/18 12:50	C8K0209	CK81240
Ethyl tertiary-butyl ether	ND (0.200)	0.0200	8260B		1	11/12/18 12:50	C8K0209	CK81240
Ethylbenzene	**J 0.0279** (0.200)	0.0200	8260B		1	11/12/18 12:50	C8K0209	CK81240
Hexachlorobutadiene	ND (0.200)	0.0399	8260B		1	11/12/18 12:50	C8K0209	CK81240
Isopropylbenzene	ND (0.200)	0.0200	8260B		1	11/12/18 12:50	C8K0209	CK81240
Methyl tert-Butyl Ether	ND (0.200)	0.0599	8260B		1	11/12/18 12:50	C8K0209	CK81240
Methylene Chloride	ND (0.399)	0.0399	8260B		1	11/12/18 12:50	C8K0209	CK81240
Naphthalene	**0.243** (0.200)	0.0399	8260B		1	11/12/18 12:50	C8K0209	CK81240
n-Butylbenzene	ND (0.200)	0.0200	8260B		1	11/12/18 12:50	C8K0209	CK81240
n-Propylbenzene	ND (0.200)	0.0399	8260B		1	11/12/18 12:50	C8K0209	CK81240
sec-Butylbenzene	ND (0.200)	0.0200	8260B		1	11/12/18 12:50	C8K0209	CK81240
Styrene	ND (0.200)	0.0200	8260B		1	11/12/18 12:50	C8K0209	CK81240
tert-Butylbenzene	ND (0.200)	0.0200	8260B		1	11/12/18 12:50	C8K0209	CK81240
Tertiary-amyl methyl ether	ND (0.200)	0.0399	8260B		1	11/12/18 12:50	C8K0209	CK81240
Tetrachloroethene	ND (0.200)	0.0399	8260B		1	11/12/18 12:50	C8K0209	CK81240
Tetrahydrofuran	ND (0.998)	0.319	8260B		1	11/12/18 12:50	C8K0209	CK81240

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-620-110818 2-6FT
Date Sampled: 11/08/18 10:00
Percent Solids: 90
Initial Volume: 18.9
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-13
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	**J 0.156** (0.200)	0.0200	8260B		1	11/12/18 12:50	C8K0209	CK81240
trans-1,2-Dichloroethene	ND (0.200)	0.0599	8260B		1	11/12/18 12:50	C8K0209	CK81240
trans-1,3-Dichloropropene	ND (0.200)	0.0399	8260B		1	11/12/18 12:50	C8K0209	CK81240
Trichloroethene	ND (0.200)	0.0399	8260B		1	11/12/18 12:50	C8K0209	CK81240
Trichlorofluoromethane	ND (0.200)	0.0798	8260B		1	11/12/18 12:50	C8K0209	CK81240
Vinyl Acetate	ND (0.200)	0.0998	8260B		1	11/12/18 12:50	C8K0209	CK81240
Vinyl Chloride	ND (0.200)	0.0399	8260B		1	11/12/18 12:50	C8K0209	CK81240
Xylene O	**J 0.124** (0.200)	0.0200	8260B		1	11/12/18 12:50	C8K0209	CK81240
Xylene P,M	**J 0.293** (0.399)	0.0399	8260B		1	11/12/18 12:50	C8K0209	CK81240
Xylenes (Total)	**0.417** (0.399)		8260B		1	11/12/18 12:50		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*125 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*118 %*		*70-130*
Surrogate: Dibromofluoromethane	*128 %*		*70-130*
Surrogate: Toluene-d8	*117 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-625-110818 2-6FT
Date Sampled: 11/08/18 10:06
Percent Solids: 85
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-14
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
1,1,1-Trichloroethane	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
1,1,2,2-Tetrachloroethane	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
1,1,2-Trichloroethane	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
1,1-Dichloroethane	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
1,1-Dichloroethene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
1,1-Dichloropropene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
1,2,3-Trichlorobenzene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
1,2,3-Trichloropropane	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
1,2,4-Trichlorobenzene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
1,2,4-Trimethylbenzene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
1,2-Dibromo-3-Chloropropane	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
1,2-Dibromoethane	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
1,2-Dichlorobenzene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
1,2-Dichloroethane	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
1,2-Dichloropropane	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
1,3,5-Trimethylbenzene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
1,3-Dichlorobenzene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
1,3-Dichloropropane	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
1,4-Dichlorobenzene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
1,4-Dioxane	ND (0.0893)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
1-Chlorohexane	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
2,2-Dichloropropane	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
2-Butanone	ND (0.0446)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
2-Chlorotoluene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
2-Hexanone	ND (0.0446)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
4-Chlorotoluene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
4-Isopropyltoluene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
4-Methyl-2-Pentanone	ND (0.0446)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Acetone	ND (0.0446)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Benzene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Bromobenzene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-625-110818 2-6FT
Date Sampled: 11/08/18 10:06
Percent Solids: 85
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-14
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Bromodichloromethane	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Bromoform	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Bromomethane	ND (0.0089)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Carbon Disulfide	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Carbon Tetrachloride	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Chlorobenzene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Chloroethane	ND (0.0089)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Chloroform	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Chloromethane	ND (0.0089)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
cis-1,2-Dichloroethene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
cis-1,3-Dichloropropene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Dibromochloromethane	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Dibromomethane	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Dichlorodifluoromethane	ND (0.0089)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Diethyl Ether	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Di-isopropyl ether	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Ethyl tertiary-butyl ether	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Ethylbenzene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Hexachlorobutadiene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Isopropylbenzene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Methyl tert-Butyl Ether	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Methylene Chloride	ND (0.0223)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Naphthalene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
n-Butylbenzene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
n-Propylbenzene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
sec-Butylbenzene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Styrene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
tert-Butylbenzene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Tertiary-amyl methyl ether	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Tetrachloroethene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Tetrahydrofuran	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-625-110818 2-6FT
Date Sampled: 11/08/18 10:06
Percent Solids: 85
Initial Volume: 6.6
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-14
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
trans-1,2-Dichloroethene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
trans-1,3-Dichloropropene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Trichloroethene	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Trichlorofluoromethane	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Vinyl Acetate	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Vinyl Chloride	ND (0.0089)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Xylene O	ND (0.0045)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Xylene P,M	ND (0.0089)		8260B Low		1	11/12/18 15:02	C8K0213	CK81244
Xylenes (Total)	ND (0.0089)		8260B Low		1	11/12/18 15:02		[CALC]

	%Recovery	Qualifier	Limits
Surrogate: 1,2-Dichloroethane-d4	*116 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*93 %*		*70-130*
Surrogate: Dibromofluoromethane	*108 %*		*70-130*
Surrogate: Toluene-d8	*99 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-630-110818 2-6FT
Date Sampled: 11/08/18 10:08
Percent Solids: 93
Initial Volume: 22
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-15
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.162)	0.0162	8260B		1	11/09/18 19:47	C8K0177	CK80927
1,1,1-Trichloroethane	ND (0.162)	0.0323	8260B		1	11/09/18 19:47	C8K0177	CK80927
1,1,2,2-Tetrachloroethane	ND (0.162)	0.0162	8260B		1	11/09/18 19:47	C8K0177	CK80927
1,1,2-Trichloroethane	ND (0.162)	0.0323	8260B		1	11/09/18 19:47	C8K0177	CK80927
1,1-Dichloroethane	ND (0.162)	0.0323	8260B		1	11/09/18 19:47	C8K0177	CK80927
1,1-Dichloroethene	ND (0.162)	0.0485	8260B		1	11/09/18 19:47	C8K0177	CK80927
1,1-Dichloropropene	ND (0.162)	0.0323	8260B		1	11/09/18 19:47	C8K0177	CK80927
1,2,3-Trichlorobenzene	ND (0.162)	0.0323	8260B		1	11/09/18 19:47	C8K0177	CK80927
1,2,3-Trichloropropane	ND (0.162)	0.0485	8260B		1	11/09/18 19:47	C8K0177	CK80927
1,2,4-Trichlorobenzene	**0.407** (0.162)	0.0323	8260B		1	11/09/18 19:47	C8K0177	CK80927
1,2,4-Trimethylbenzene	ND (0.162)	0.0162	8260B		1	11/09/18 19:47	C8K0177	CK80927
1,2-Dibromo-3-Chloropropane	ND (0.808)	0.162	8260B		1	11/09/18 19:47	C8K0177	CK80927
1,2-Dibromoethane	ND (0.162)	0.0323	8260B		1	11/09/18 19:47	C8K0177	CK80927
1,2-Dichlorobenzene	**J 0.0388** (0.162)	0.0162	8260B		1	11/09/18 19:47	C8K0177	CK80927
1,2-Dichloroethane	ND (0.162)	0.0323	8260B		1	11/09/18 19:47	C8K0177	CK80927
1,2-Dichloropropane	ND (0.162)	0.0323	8260B		1	11/09/18 19:47	C8K0177	CK80927
1,3,5-Trimethylbenzene	ND (0.162)	0.0162	8260B		1	11/09/18 19:47	C8K0177	CK80927
1,3-Dichlorobenzene	ND (0.162)	0.0323	8260B		1	11/09/18 19:47	C8K0177	CK80927
1,3-Dichloropropane	ND (0.162)	0.0162	8260B		1	11/09/18 19:47	C8K0177	CK80927
1,4-Dichlorobenzene	ND (0.162)	0.0162	8260B		1	11/09/18 19:47	C8K0177	CK80927
1,4-Dioxane - Screen	ND (32.3)	30.7	8260B		1	11/09/18 19:47	C8K0177	CK80927
1-Chlorohexane	ND (0.162)	0.0646	8260B		1	11/09/18 19:47	C8K0177	CK80927
2,2-Dichloropropane	ND (0.162)	0.0485	8260B		1	11/09/18 19:47	C8K0177	CK80927
2-Butanone	ND (0.808)	0.549	8260B		1	11/09/18 19:47	C8K0177	CK80927
2-Chlorotoluene	**84.7** (16.2)	1.62	8260B		100	11/09/18 17:07	C8K0177	CK80927
2-Hexanone	ND (0.808)	0.242	8260B		1	11/09/18 19:47	C8K0177	CK80927
4-Chlorotoluene	**5.79** (0.162)	0.0162	8260B		1	11/09/18 19:47	C8K0177	CK80927
4-Isopropyltoluene	ND (0.162)	0.0162	8260B		1	11/09/18 19:47	C8K0177	CK80927
4-Methyl-2-Pentanone	ND (0.808)	0.258	8260B		1	11/09/18 19:47	C8K0177	CK80927
Acetone	ND (0.808)	0.436	8260B		1	11/09/18 19:47	C8K0177	CK80927
Benzene	ND (0.162)	0.0162	8260B		1	11/09/18 19:47	C8K0177	CK80927
Bromobenzene	ND (0.162)	0.0323	8260B		1	11/09/18 19:47	C8K0177	CK80927

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-630-110818 2-6FT
Date Sampled: 11/08/18 10:08
Percent Solids: 93
Initial Volume: 22
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-15
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.162)	0.0485	8260B		1	11/09/18 19:47	C8K0177	CK80927
Bromodichloromethane	ND (0.162)	0.0162	8260B		1	11/09/18 19:47	C8K0177	CK80927
Bromoform	ND (0.162)	0.0323	8260B		1	11/09/18 19:47	C8K0177	CK80927
Bromomethane	ND (0.162)	0.0646	8260B		1	11/09/18 19:47	C8K0177	CK80927
Carbon Disulfide	ND (0.162)	0.0162	8260B		1	11/09/18 19:47	C8K0177	CK80927
Carbon Tetrachloride	ND (0.162)	0.0162	8260B		1	11/09/18 19:47	C8K0177	CK80927
Chlorobenzene	ND (0.162)	0.0162	8260B		1	11/09/18 19:47	C8K0177	CK80927
Chloroethane	ND (0.162)	0.0646	8260B		1	11/09/18 19:47	C8K0177	CK80927
Chloroform	ND (0.162)	0.0323	8260B		1	11/09/18 19:47	C8K0177	CK80927
Chloromethane	ND (0.162)	0.0162	8260B		1	11/09/18 19:47	C8K0177	CK80927
cis-1,2-Dichloroethene	ND (0.162)	0.0323	8260B		1	11/09/18 19:47	C8K0177	CK80927
cis-1,3-Dichloropropene	ND (0.162)	0.0485	8260B		1	11/09/18 19:47	C8K0177	CK80927
Dibromochloromethane	ND (0.162)	0.0323	8260B		1	11/09/18 19:47	C8K0177	CK80927
Dibromomethane	ND (0.162)	0.0485	8260B		1	11/09/18 19:47	C8K0177	CK80927
Dichlorodifluoromethane	ND (0.162)	0.0485	8260B		1	11/09/18 19:47	C8K0177	CK80927
Diethyl Ether	ND (0.162)	0.0485	8260B		1	11/09/18 19:47	C8K0177	CK80927
Di-isopropyl ether	ND (0.162)	0.0323	8260B		1	11/09/18 19:47	C8K0177	CK80927
Ethyl tertiary-butyl ether	ND (0.162)	0.0162	8260B		1	11/09/18 19:47	C8K0177	CK80927
Ethylbenzene	**J 0.0275** (0.162)	0.0162	8260B		1	11/09/18 19:47	C8K0177	CK80927
Hexachlorobutadiene	ND (0.162)	0.0323	8260B		1	11/09/18 19:47	C8K0177	CK80927
Isopropylbenzene	ND (0.162)	0.0162	8260B		1	11/09/18 19:47	C8K0177	CK80927
Methyl tert-Butyl Ether	ND (0.162)	0.0485	8260B		1	11/09/18 19:47	C8K0177	CK80927
Methylene Chloride	ND (0.323)	0.0323	8260B		1	11/09/18 19:47	C8K0177	CK80927
Naphthalene	**J 0.126** (0.162)	0.0323	8260B		1	11/09/18 19:47	C8K0177	CK80927
n-Butylbenzene	ND (0.162)	0.0162	8260B		1	11/09/18 19:47	C8K0177	CK80927
n-Propylbenzene	ND (0.162)	0.0323	8260B		1	11/09/18 19:47	C8K0177	CK80927
sec-Butylbenzene	ND (0.162)	0.0162	8260B		1	11/09/18 19:47	C8K0177	CK80927
Styrene	ND (0.162)	0.0162	8260B		1	11/09/18 19:47	C8K0177	CK80927
tert-Butylbenzene	ND (0.162)	0.0162	8260B		1	11/09/18 19:47	C8K0177	CK80927
Tertiary-amyl methyl ether	ND (0.162)	0.0323	8260B		1	11/09/18 19:47	C8K0177	CK80927
Tetrachloroethene	ND (0.162)	0.0323	8260B		1	11/09/18 19:47	C8K0177	CK80927
Tetrahydrofuran	ND (0.808)	0.258	8260B		1	11/09/18 19:47	C8K0177	CK80927

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: SW-630-110818 2-6FT
Date Sampled: 11/08/18 10:08
Percent Solids: 93
Initial Volume: 22
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-15
Sample Matrix: Soil
Units: mg/kg dry
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	**0.344** (0.162)	0.0162	8260B		1	11/09/18 19:47	C8K0177	CK80927
trans-1,2-Dichloroethene	ND (0.162)	0.0485	8260B		1	11/09/18 19:47	C8K0177	CK80927
trans-1,3-Dichloropropene	ND (0.162)	0.0323	8260B		1	11/09/18 19:47	C8K0177	CK80927
Trichloroethene	ND (0.162)	0.0323	8260B		1	11/09/18 19:47	C8K0177	CK80927
Trichlorofluoromethane	ND (0.162)	0.0646	8260B		1	11/09/18 19:47	C8K0177	CK80927
Vinyl Acetate	ND (0.162)	0.0808	8260B		1	11/09/18 19:47	C8K0177	CK80927
Vinyl Chloride	ND (0.162)	0.0323	8260B		1	11/09/18 19:47	C8K0177	CK80927
Xylene O	**J 0.110** (0.162)	0.0162	8260B		1	11/09/18 19:47	C8K0177	CK80927
Xylene P,M	**J 0.278** (0.323)	0.0323	8260B		1	11/09/18 19:47	C8K0177	CK80927
Xylenes (Total)	**0.388** (0.323)		8260B		1	11/09/18 19:47		[CALC]

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*127 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*123 %*		*70-130*
Surrogate: Dibromofluoromethane	*119 %*		*70-130*
Surrogate: Toluene-d8	*122 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: TB
Date Sampled: 11/08/18 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-16
Sample Matrix: Solid
Units: mg/kg
Analyst: MD

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
1,1,1-Trichloroethane	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
1,1,2,2-Tetrachloroethane	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
1,1,2-Trichloroethane	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
1,1-Dichloroethane	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
1,1-Dichloroethene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
1,1-Dichloropropene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
1,2,3-Trichlorobenzene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
1,2,3-Trichloropropane	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
1,2,4-Trichlorobenzene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
1,2,4-Trimethylbenzene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
1,2-Dibromo-3-Chloropropane	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
1,2-Dibromoethane	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
1,2-Dichlorobenzene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
1,2-Dichloroethane	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
1,2-Dichloropropane	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
1,3,5-Trimethylbenzene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
1,3-Dichlorobenzene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
1,3-Dichloropropane	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
1,4-Dichlorobenzene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
1,4-Dioxane	ND (0.100)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
1-Chlorohexane	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
2,2-Dichloropropane	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
2-Butanone	ND (0.0500)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
2-Chlorotoluene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
2-Hexanone	ND (0.0500)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
4-Chlorotoluene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
4-Isopropyltoluene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
4-Methyl-2-Pentanone	ND (0.0500)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Acetone	ND (0.0500)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Benzene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Bromobenzene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: TB
Date Sampled: 11/08/18 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-16
Sample Matrix: Solid
Units: mg/kg
Analyst: MD

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Bromodichloromethane	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Bromoform	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Bromomethane	ND (0.0100)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Carbon Disulfide	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Carbon Tetrachloride	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Chlorobenzene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Chloroethane	ND (0.0100)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Chloroform	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Chloromethane	ND (0.0100)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
cis-1,2-Dichloroethene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
cis-1,3-Dichloropropene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Dibromochloromethane	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Dibromomethane	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Dichlorodifluoromethane	ND (0.0100)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Diethyl Ether	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Di-isopropyl ether	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Ethyl tertiary-butyl ether	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Ethylbenzene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Hexachlorobutadiene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Isopropylbenzene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Methyl tert-Butyl Ether	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Methylene Chloride	ND (0.0250)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Naphthalene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
n-Butylbenzene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
n-Propylbenzene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
sec-Butylbenzene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Styrene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
tert-Butylbenzene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Tertiary-amyl methyl ether	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Tetrachloroethene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Tetrahydrofuran	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: TB
Date Sampled: 11/08/18 00:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 10
Extraction Method: 5035

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-16
Sample Matrix: Solid
Units: mg/kg
Analyst: MD

5035/8260B Volatile Organic Compounds / Low Level

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
trans-1,2-Dichloroethene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
trans-1,3-Dichloropropene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Trichloroethene	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Trichlorofluoromethane	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Vinyl Acetate	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Vinyl Chloride	ND (0.0100)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Xylene O	ND (0.0050)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244
Xylene P,M	ND (0.0100)		8260B Low		1	11/12/18 14:11	C8K0213	CK81244

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*113 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*93 %*		*70-130*
Surrogate: Dibromofluoromethane	*105 %*		*70-130*
Surrogate: Toluene-d8	*97 %*		*70-130*

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: TB
Date Sampled: 11/08/18 00:00
Percent Solids: N/A
Initial Volume: 15
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-16
Sample Matrix: Solid
Units: mg/kg
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
1,1,1,2-Tetrachloroethane	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
1,1,1-Trichloroethane	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
1,1,2,2-Tetrachloroethane	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
1,1,2-Trichloroethane	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
1,1-Dichloroethane	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
1,1-Dichloroethene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
1,1-Dichloropropene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
1,2,3-Trichlorobenzene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
1,2,3-Trichloropropane	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
1,2,4-Trichlorobenzene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
1,2,4-Trimethylbenzene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
1,2-Dibromo-3-Chloropropane	ND (1.00)		8260B		1	11/09/18 12:40	C8K0177	CK80927
1,2-Dibromoethane	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
1,2-Dichlorobenzene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
1,2-Dichloroethane	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
1,2-Dichloropropane	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
1,3,5-Trimethylbenzene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
1,3-Dichlorobenzene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
1,3-Dichloropropane	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
1,4-Dichlorobenzene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
1,4-Dioxane - Screen	ND (40.0)		8260B		1	11/09/18 12:40	C8K0177	CK80927
1-Chlorohexane	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
2,2-Dichloropropane	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
2-Butanone	ND (1.00)		8260B		1	11/09/18 12:40	C8K0177	CK80927
2-Chlorotoluene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
2-Hexanone	ND (1.00)		8260B		1	11/09/18 12:40	C8K0177	CK80927
4-Chlorotoluene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
4-Isopropyltoluene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
4-Methyl-2-Pentanone	ND (1.00)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Acetone	ND (1.00)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Benzene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Bromobenzene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: TB
Date Sampled: 11/08/18 00:00
Percent Solids: N/A
Initial Volume: 15
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-16
Sample Matrix: Solid
Units: mg/kg
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Bromochloromethane	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Bromodichloromethane	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Bromoform	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Bromomethane	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Carbon Disulfide	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Carbon Tetrachloride	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Chlorobenzene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Chloroethane	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Chloroform	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Chloromethane	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
cis-1,2-Dichloroethene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
cis-1,3-Dichloropropene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Dibromochloromethane	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Dibromomethane	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Dichlorodifluoromethane	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Diethyl Ether	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Di-isopropyl ether	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Ethyl tertiary-butyl ether	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Ethylbenzene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Hexachlorobutadiene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Isopropylbenzene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Methyl tert-Butyl Ether	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Methylene Chloride	ND (0.400)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Naphthalene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
n-Butylbenzene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
n-Propylbenzene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
sec-Butylbenzene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Styrene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
tert-Butylbenzene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Tertiary-amyl methyl ether	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Tetrachloroethene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Tetrahydrofuran	ND (1.00)		8260B		1	11/09/18 12:40	C8K0177	CK80927

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
Client Sample ID: TB
Date Sampled: 11/08/18 00:00
Percent Solids: N/A
Initial Volume: 15
Final Volume: 15
Extraction Method: 5035

ESS Laboratory Work Order: 1811209
ESS Laboratory Sample ID: 1811209-16
Sample Matrix: Solid
Units: mg/kg
Analyst: MD

5035/8260B Volatile Organic Compounds / Methanol

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Toluene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
trans-1,2-Dichloroethene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
trans-1,3-Dichloropropene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Trichloroethene	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Trichlorofluoromethane	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Vinyl Acetate	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Vinyl Chloride	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Xylene O	ND (0.200)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Xylene P,M	ND (0.400)		8260B		1	11/09/18 12:40	C8K0177	CK80927
Xylenes (Total)	ND (0.600)		8260B		0	11/09/18 12:40	C8K0177	CK80927

	%Recovery	*Qualifier*	*Limits*
Surrogate: 1,2-Dichloroethane-d4	*114 %*		*70-130*
Surrogate: 4-Bromofluorobenzene	*112 %*		*70-130*
Surrogate: Dibromofluoromethane	*109 %*		*70-130*
Surrogate: Toluene-d8	*114 %*		*70-130*

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1811209

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CK81244 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.0050	mg/kg wet							
1,1,1-Trichloroethane	ND	0.0050	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.0050	mg/kg wet							
1,1,2-Trichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethane	ND	0.0050	mg/kg wet							
1,1-Dichloroethene	ND	0.0050	mg/kg wet							
1,1-Dichloropropene	ND	0.0050	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,3-Trichloropropane	ND	0.0050	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.0050	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	0.0050	mg/kg wet							
1,2-Dibromoethane	ND	0.0050	mg/kg wet							
1,2-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,2-Dichloroethane	ND	0.0050	mg/kg wet							
1,2-Dichloropropane	ND	0.0050	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.0050	mg/kg wet							
1,3-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,3-Dichloropropane	ND	0.0050	mg/kg wet							
1,4-Dichlorobenzene	ND	0.0050	mg/kg wet							
1,4-Dioxane	ND	0.100	mg/kg wet							
1-Chlorohexane	ND	0.0050	mg/kg wet							
2,2-Dichloropropane	ND	0.0050	mg/kg wet							
2-Butanone	ND	0.0500	mg/kg wet							
2-Chlorotoluene	ND	0.0050	mg/kg wet							
2-Hexanone	ND	0.0500	mg/kg wet							
4-Chlorotoluene	ND	0.0050	mg/kg wet							
4-Isopropyltoluene	ND	0.0050	mg/kg wet							
4-Methyl-2-Pentanone	ND	0.0500	mg/kg wet							
Acetone	ND	0.0500	mg/kg wet							
Benzene	ND	0.0050	mg/kg wet							
Bromobenzene	ND	0.0050	mg/kg wet							
Bromochloromethane	ND	0.0050	mg/kg wet							
Bromodichloromethane	ND	0.0050	mg/kg wet							
Bromoform	ND	0.0050	mg/kg wet							
Bromomethane	ND	0.0100	mg/kg wet							
Carbon Disulfide	ND	0.0050	mg/kg wet							
Carbon Tetrachloride	ND	0.0050	mg/kg wet							
Chlorobenzene	ND	0.0050	mg/kg wet							
Chloroethane	ND	0.0100	mg/kg wet							
Chloroform	ND	0.0050	mg/kg wet							
Chloromethane	ND	0.0100	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.0050	mg/kg wet							

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1811209

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CK81244 - 5035										
Dibromochloromethane	ND	0.0050	mg/kg wet							
Dibromomethane	ND	0.0050	mg/kg wet							
Dichlorodifluoromethane	ND	0.0100	mg/kg wet							
Diethyl Ether	ND	0.0050	mg/kg wet							
Di-isopropyl ether	ND	0.0050	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.0050	mg/kg wet							
Ethylbenzene	ND	0.0050	mg/kg wet							
Hexachlorobutadiene	ND	0.0050	mg/kg wet							
Isopropylbenzene	ND	0.0050	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.0050	mg/kg wet							
Methylene Chloride	ND	0.0250	mg/kg wet							
Naphthalene	ND	0.0050	mg/kg wet							
n-Butylbenzene	ND	0.0050	mg/kg wet							
n-Propylbenzene	ND	0.0050	mg/kg wet							
sec-Butylbenzene	ND	0.0050	mg/kg wet							
Styrene	ND	0.0050	mg/kg wet							
tert-Butylbenzene	ND	0.0050	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.0050	mg/kg wet							
Tetrachloroethene	ND	0.0050	mg/kg wet							
Tetrahydrofuran	ND	0.0050	mg/kg wet							
Toluene	ND	0.0050	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.0050	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.0050	mg/kg wet							
Trichloroethene	ND	0.0050	mg/kg wet							
Trichlorofluoromethane	ND	0.0050	mg/kg wet							
Vinyl Acetate	ND	0.0050	mg/kg wet							
Vinyl Chloride	ND	0.0100	mg/kg wet							
Xylene O	ND	0.0050	mg/kg wet							
Xylene P,M	ND	0.0100	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*0.0556*		mg/kg wet	*0.05000*		*111*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0471*		mg/kg wet	*0.05000*		*94*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0517*		mg/kg wet	*0.05000*		*103*	*70-130*			
Surrogate: Toluene-d8	*0.0484*		mg/kg wet	*0.05000*		*97*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	0.0501	0.0050	mg/kg wet	0.05000		100	70-130			
1,1,1-Trichloroethane	0.0502	0.0050	mg/kg wet	0.05000		100	70-130			
1,1,2,2-Tetrachloroethane	0.0565	0.0050	mg/kg wet	0.05000		113	70-130			
1,1,2-Trichloroethane	0.0545	0.0050	mg/kg wet	0.05000		109	70-130			
1,1-Dichloroethane	0.0490	0.0050	mg/kg wet	0.05000		98	70-130			
1,1-Dichloroethene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130			
1,1-Dichloropropene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130			
1,2,3-Trichlorobenzene	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
1,2,3-Trichloropropane	0.0563	0.0050	mg/kg wet	0.05000		113	70-130			
1,2,4-Trichlorobenzene	0.0510	0.0050	mg/kg wet	0.05000		102	70-130			
1,2,4-Trimethylbenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130			

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1811209

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CK81244 - 5035										
1,2-Dibromo-3-Chloropropane	0.0630	0.0050	mg/kg wet	0.05000		126	70-130			
1,2-Dibromoethane	0.0529	0.0050	mg/kg wet	0.05000		106	70-130			
1,2-Dichlorobenzene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130			
1,2-Dichloroethane	0.0522	0.0050	mg/kg wet	0.05000		104	70-130			
1,2-Dichloropropane	0.0499	0.0050	mg/kg wet	0.05000		100	70-130			
1,3,5-Trimethylbenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
1,3-Dichlorobenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
1,3-Dichloropropane	0.0527	0.0050	mg/kg wet	0.05000		105	70-130			
1,4-Dichlorobenzene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
1,4-Dioxane	1.21	0.100	mg/kg wet	1.000		121	70-130			
1-Chlorohexane	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
2,2-Dichloropropane	0.0516	0.0050	mg/kg wet	0.05000		103	70-130			
2-Butanone	0.299	0.0500	mg/kg wet	0.2500		120	70-130			
2-Chlorotoluene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
2-Hexanone	0.296	0.0500	mg/kg wet	0.2500		118	70-130			
4-Chlorotoluene	0.0475	0.0050	mg/kg wet	0.05000		95	70-130			
4-Isopropyltoluene	0.0478	0.0050	mg/kg wet	0.05000		96	70-130			
4-Methyl-2-Pentanone	0.314	0.0500	mg/kg wet	0.2500		126	70-130			
Acetone	0.323	0.0500	mg/kg wet	0.2500		129	70-130			
Benzene	0.0493	0.0050	mg/kg wet	0.05000		99	70-130			
Bromobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130			
Bromochloromethane	0.0519	0.0050	mg/kg wet	0.05000		104	70-130			
Bromodichloromethane	0.0536	0.0050	mg/kg wet	0.05000		107	70-130			
Bromoform	0.0568	0.0050	mg/kg wet	0.05000		114	70-130			
Bromomethane	0.0486	0.0100	mg/kg wet	0.05000		97	70-130			
Carbon Disulfide	0.0529	0.0050	mg/kg wet	0.05000		106	70-130			
Carbon Tetrachloride	0.0515	0.0050	mg/kg wet	0.05000		103	70-130			
Chlorobenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
Chloroethane	0.0501	0.0100	mg/kg wet	0.05000		100	70-130			
Chloroform	0.0506	0.0050	mg/kg wet	0.05000		101	70-130			
Chloromethane	0.0492	0.0100	mg/kg wet	0.05000		98	70-130			
cis-1,2-Dichloroethene	0.0512	0.0050	mg/kg wet	0.05000		102	70-130			
cis-1,3-Dichloropropene	0.0536	0.0050	mg/kg wet	0.05000		107	70-130			
Dibromochloromethane	0.0461	0.0050	mg/kg wet	0.05000		92	70-130			
Dibromomethane	0.0552	0.0050	mg/kg wet	0.05000		110	70-130			
Dichlorodifluoromethane	0.0561	0.0100	mg/kg wet	0.05000		112	70-130			
Diethyl Ether	0.0574	0.0050	mg/kg wet	0.05000		115	70-130			
Di-isopropyl ether	0.0516	0.0050	mg/kg wet	0.05000		103	70-130			
Ethyl tertiary-butyl ether	0.0504	0.0050	mg/kg wet	0.05000		101	70-130			
Ethylbenzene	0.0466	0.0050	mg/kg wet	0.05000		93	70-130			
Hexachlorobutadiene	0.0457	0.0050	mg/kg wet	0.05000		91	70-130			
Isopropylbenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Methyl tert-Butyl Ether	0.0568	0.0050	mg/kg wet	0.05000		114	70-130			
Methylene Chloride	0.0473	0.0250	mg/kg wet	0.05000		95	70-130			
Naphthalene	0.0601	0.0050	mg/kg wet	0.05000		120	70-130			

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1811209

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CK81244 - 5035										
n-Butylbenzene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130			
n-Propylbenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
sec-Butylbenzene	0.0465	0.0050	mg/kg wet	0.05000		93	70-130			
Styrene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130			
tert-Butylbenzene	0.0476	0.0050	mg/kg wet	0.05000		95	70-130			
Tertiary-amyl methyl ether	0.0552	0.0050	mg/kg wet	0.05000		110	70-130			
Tetrachloroethene	0.0446	0.0050	mg/kg wet	0.05000		89	70-130			
Tetrahydrofuran	0.0670	0.0050	mg/kg wet	0.05000		134	70-130			B+
Toluene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130			
trans-1,2-Dichloroethene	0.0482	0.0050	mg/kg wet	0.05000		96	70-130			
trans-1,3-Dichloropropene	0.0472	0.0050	mg/kg wet	0.05000		94	70-130			
Trichloroethene	0.0483	0.0050	mg/kg wet	0.05000		97	70-130			
Trichlorofluoromethane	0.0511	0.0050	mg/kg wet	0.05000		102	70-130			
Vinyl Acetate	0.0597	0.0050	mg/kg wet	0.05000		119	70-130			
Vinyl Chloride	0.0534	0.0100	mg/kg wet	0.05000		107	70-130			
Xylene O	0.0491	0.0050	mg/kg wet	0.05000		98	70-130			
Xylene P,M	0.0958	0.0100	mg/kg wet	0.1000		96	70-130			
Surrogate: 1,2-Dichloroethane-d4	*0.0536*		mg/kg wet	*0.05000*		*107*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0506*		mg/kg wet	*0.05000*		*101*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0517*		mg/kg wet	*0.05000*		*103*	*70-130*			
Surrogate: Toluene-d8	*0.0486*		mg/kg wet	*0.05000*		*97*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	0.0520	0.0050	mg/kg wet	0.05000		104	70-130	4	25	
1,1,1-Trichloroethane	0.0510	0.0050	mg/kg wet	0.05000		102	70-130	2	25	
1,1,2,2-Tetrachloroethane	0.0581	0.0050	mg/kg wet	0.05000		116	70-130	3	25	
1,1,2-Trichloroethane	0.0561	0.0050	mg/kg wet	0.05000		112	70-130	3	25	
1,1-Dichloroethane	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	2	25	
1,1-Dichloroethene	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	3	25	
1,1-Dichloropropene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	2	25	
1,2,3-Trichlorobenzene	0.0540	0.0050	mg/kg wet	0.05000		108	70-130	3	25	
1,2,3-Trichloropropane	0.0577	0.0050	mg/kg wet	0.05000		115	70-130	3	25	
1,2,4-Trichlorobenzene	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	2	25	
1,2,4-Trimethylbenzene	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	3	25	
1,2-Dibromo-3-Chloropropane	0.0629	0.0050	mg/kg wet	0.05000		126	70-130	0.2	25	
1,2-Dibromoethane	0.0554	0.0050	mg/kg wet	0.05000		111	70-130	5	25	
1,2-Dichlorobenzene	0.0503	0.0050	mg/kg wet	0.05000		101	70-130	3	25	
1,2-Dichloroethane	0.0536	0.0050	mg/kg wet	0.05000		107	70-130	3	25	
1,2-Dichloropropane	0.0515	0.0050	mg/kg wet	0.05000		103	70-130	3	25	
1,3,5-Trimethylbenzene	0.0499	0.0050	mg/kg wet	0.05000		100	70-130	3	25	
1,3-Dichlorobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	4	25	
1,3-Dichloropropane	0.0548	0.0050	mg/kg wet	0.05000		110	70-130	4	25	
1,4-Dichlorobenzene	0.0496	0.0050	mg/kg wet	0.05000		99	70-130	3	25	
1,4-Dioxane	1.22	0.100	mg/kg wet	1.000		122	70-130	0.8	20	
1-Chlorohexane	0.0497	0.0050	mg/kg wet	0.05000		99	70-130	4	25	
2,2-Dichloropropane	0.0522	0.0050	mg/kg wet	0.05000		104	70-130	1	25	

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CK81244 - 5035										
2-Butanone	0.310	0.0500	mg/kg wet	0.2500		124	70-130	4	25	
2-Chlorotoluene	0.0492	0.0050	mg/kg wet	0.05000		98	70-130	4	25	
2-Hexanone	0.312	0.0500	mg/kg wet	0.2500		125	70-130	5	25	
4-Chlorotoluene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	3	25	
4-Isopropyltoluene	0.0490	0.0050	mg/kg wet	0.05000		98	70-130	2	25	
4-Methyl-2-Pentanone	0.319	0.0500	mg/kg wet	0.2500		128	70-130	2	25	
Acetone	0.352	0.0500	mg/kg wet	0.2500		141	70-130	8	25	B+
Benzene	0.0507	0.0050	mg/kg wet	0.05000		101	70-130	3	25	
Bromobenzene	0.0508	0.0050	mg/kg wet	0.05000		102	70-130	5	25	
Bromochloromethane	0.0534	0.0050	mg/kg wet	0.05000		107	70-130	3	25	
Bromodichloromethane	0.0547	0.0050	mg/kg wet	0.05000		109	70-130	2	25	
Bromoform	0.0604	0.0050	mg/kg wet	0.05000		121	70-130	6	25	
Bromomethane	0.0485	0.0100	mg/kg wet	0.05000		97	70-130	0.2	25	
Carbon Disulfide	0.0544	0.0050	mg/kg wet	0.05000		109	70-130	3	25	
Carbon Tetrachloride	0.0525	0.0050	mg/kg wet	0.05000		105	70-130	2	25	
Chlorobenzene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	5	25	
Chloroethane	0.0512	0.0100	mg/kg wet	0.05000		102	70-130	2	25	
Chloroform	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	2	25	
Chloromethane	0.0506	0.0100	mg/kg wet	0.05000		101	70-130	3	25	
cis-1,2-Dichloroethene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	2	25	
cis-1,3-Dichloropropene	0.0549	0.0050	mg/kg wet	0.05000		110	70-130	3	25	
Dibromochloromethane	0.0478	0.0050	mg/kg wet	0.05000		96	70-130	4	25	
Dibromomethane	0.0569	0.0050	mg/kg wet	0.05000		114	70-130	3	25	
Dichlorodifluoromethane	0.0567	0.0100	mg/kg wet	0.05000		113	70-130	1	25	
Diethyl Ether	0.0593	0.0050	mg/kg wet	0.05000		119	70-130	3	25	
Di-isopropyl ether	0.0531	0.0050	mg/kg wet	0.05000		106	70-130	3	25	
Ethyl tertiary-butyl ether	0.0518	0.0050	mg/kg wet	0.05000		104	70-130	3	25	
Ethylbenzene	0.0484	0.0050	mg/kg wet	0.05000		97	70-130	4	25	
Hexachlorobutadiene	0.0464	0.0050	mg/kg wet	0.05000		93	70-130	2	25	
Isopropylbenzene	0.0498	0.0050	mg/kg wet	0.05000		100	70-130	4	25	
Methyl tert-Butyl Ether	0.0580	0.0050	mg/kg wet	0.05000		116	70-130	2	25	
Methylene Chloride	0.0484	0.0250	mg/kg wet	0.05000		97	70-130	2	25	
Naphthalene	0.0624	0.0050	mg/kg wet	0.05000		125	70-130	4	25	
n-Butylbenzene	0.0501	0.0050	mg/kg wet	0.05000		100	70-130	2	25	
n-Propylbenzene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	3	25	
sec-Butylbenzene	0.0480	0.0050	mg/kg wet	0.05000		96	70-130	3	25	
Styrene	0.0524	0.0050	mg/kg wet	0.05000		105	70-130	5	25	
tert-Butylbenzene	0.0491	0.0050	mg/kg wet	0.05000		98	70-130	3	25	
Tertiary-amyl methyl ether	0.0566	0.0050	mg/kg wet	0.05000		113	70-130	3	25	
Tetrachloroethene	0.0461	0.0050	mg/kg wet	0.05000		92	70-130	3	25	
Tetrahydrofuran	0.0685	0.0050	mg/kg wet	0.05000		137	70-130	2	25	B+
Toluene	0.0511	0.0050	mg/kg wet	0.05000		102	70-130	3	25	
trans-1,2-Dichloroethene	0.0495	0.0050	mg/kg wet	0.05000		99	70-130	3	25	
trans-1,3-Dichloropropene	0.0486	0.0050	mg/kg wet	0.05000		97	70-130	3	25	
Trichloroethene	0.0489	0.0050	mg/kg wet	0.05000		98	70-130	1	25	

CERTIFICATE OF ANALYSIS

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Low Level										
Batch CK81244 - 5035										
Trichlorofluoromethane	0.0519	0.0050	mg/kg wet	0.05000		104	70-130	2	25	
Vinyl Acetate	0.0616	0.0050	mg/kg wet	0.05000		123	70-130	3	25	
Vinyl Chloride	0.0535	0.0100	mg/kg wet	0.05000		107	70-130	0.3	25	
Xylene O	0.0512	0.0050	mg/kg wet	0.05000		102	70-130	4	25	
Xylene P,M	0.0996	0.0100	mg/kg wet	0.1000		100	70-130	4	25	
Surrogate: 1,2-Dichloroethane-d4	*0.0525*		mg/kg wet	*0.05000*		*105*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*0.0507*		mg/kg wet	*0.05000*		*101*	*70-130*			
Surrogate: Dibromofluoromethane	*0.0514*		mg/kg wet	*0.05000*		*103*	*70-130*			
Surrogate: Toluene-d8	*0.0489*		mg/kg wet	*0.05000*		*98*	*70-130*			
5035/8260B Volatile Organic Compounds / Methanol										
Batch CK80927 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.200	mg/kg wet							
1,1,1-Trichloroethane	ND	0.200	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.200	mg/kg wet							
1,1,2-Trichloroethane	ND	0.200	mg/kg wet							
1,1-Dichloroethane	ND	0.200	mg/kg wet							
1,1-Dichloroethene	ND	0.200	mg/kg wet							
1,1-Dichloropropene	ND	0.200	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,3-Trichloropropane	ND	0.200	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.200	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	1.00	mg/kg wet							
1,2-Dibromoethane	ND	0.200	mg/kg wet							
1,2-Dichlorobenzene	ND	0.200	mg/kg wet							
1,2-Dichloroethane	ND	0.200	mg/kg wet							
1,2-Dichloropropane	ND	0.200	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.200	mg/kg wet							
1,3-Dichlorobenzene	ND	0.200	mg/kg wet							
1,3-Dichloropropane	ND	0.200	mg/kg wet							
1,4-Dichlorobenzene	ND	0.200	mg/kg wet							
1,4-Dioxane - Screen	ND	40.0	mg/kg wet							
1-Chlorohexane	ND	0.200	mg/kg wet							
2,2-Dichloropropane	ND	0.200	mg/kg wet							
2-Butanone	ND	1.00	mg/kg wet							
2-Chlorotoluene	ND	0.200	mg/kg wet							
2-Hexanone	ND	1.00	mg/kg wet							
4-Chlorotoluene	ND	0.200	mg/kg wet							
4-Isopropyltoluene	ND	0.200	mg/kg wet							
4-Methyl-2-Pentanone	ND	1.00	mg/kg wet							
Acetone	ND	1.00	mg/kg wet							
Benzene	ND	0.200	mg/kg wet							
Bromobenzene	ND	0.200	mg/kg wet							

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CK80927 - 5035										
Bromochloromethane	ND	0.200	mg/kg wet							
Bromodichloromethane	ND	0.200	mg/kg wet							
Bromoform	ND	0.200	mg/kg wet							
Bromomethane	ND	0.200	mg/kg wet							
Carbon Disulfide	ND	0.200	mg/kg wet							
Carbon Tetrachloride	ND	0.200	mg/kg wet							
Chlorobenzene	ND	0.200	mg/kg wet							
Chloroethane	ND	0.200	mg/kg wet							
Chloroform	ND	0.200	mg/kg wet							
Chloromethane	ND	0.200	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.200	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.200	mg/kg wet							
Dibromochloromethane	ND	0.200	mg/kg wet							
Dibromomethane	ND	0.200	mg/kg wet							
Dichlorodifluoromethane	ND	0.200	mg/kg wet							
Diethyl Ether	ND	0.200	mg/kg wet							
Di-isopropyl ether	ND	0.200	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.200	mg/kg wet							
Ethylbenzene	ND	0.200	mg/kg wet							
Hexachlorobutadiene	ND	0.200	mg/kg wet							
Isopropylbenzene	ND	0.200	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.200	mg/kg wet							
Methylene Chloride	ND	0.400	mg/kg wet							
Naphthalene	ND	0.200	mg/kg wet							
n-Butylbenzene	ND	0.200	mg/kg wet							
n-Propylbenzene	ND	0.200	mg/kg wet							
sec-Butylbenzene	ND	0.200	mg/kg wet							
Styrene	ND	0.200	mg/kg wet							
tert-Butylbenzene	ND	0.200	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.200	mg/kg wet							
Tetrachloroethene	ND	0.200	mg/kg wet							
Tetrahydrofuran	ND	1.00	mg/kg wet							
Toluene	ND	0.200	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.200	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.200	mg/kg wet							
Trichloroethene	ND	0.200	mg/kg wet							
Trichlorofluoromethane	ND	0.200	mg/kg wet							
Vinyl Acetate	ND	0.200	mg/kg wet							
Vinyl Chloride	ND	0.200	mg/kg wet							
Xylene O	ND	0.200	mg/kg wet							
Xylene P,M	ND	0.400	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*5.43*		mg/kg wet	*5.000*		*109*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*5.54*		mg/kg wet	*5.000*		*111*	*70-130*			
Surrogate: Dibromofluoromethane	*5.40*		mg/kg wet	*5.000*		*108*	*70-130*			
Surrogate: Toluene-d8	*5.60*		mg/kg wet	*5.000*		*112*	*70-130*			

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CK80927 - 5035										
LCS										
1,1,1,2-Tetrachloroethane	1.78	0.200	mg/kg wet	2.000		89	70-130			
1,1,1-Trichloroethane	2.02	0.200	mg/kg wet	2.000		101	70-130			
1,1,2,2-Tetrachloroethane	1.92	0.200	mg/kg wet	2.000		96	70-130			
1,1,2-Trichloroethane	1.91	0.200	mg/kg wet	2.000		96	70-130			
1,1-Dichloroethane	2.07	0.200	mg/kg wet	2.000		104	70-130			
1,1-Dichloroethene	1.99	0.200	mg/kg wet	2.000		100	70-130			
1,1-Dichloropropene	2.01	0.200	mg/kg wet	2.000		100	70-130			
1,2,3-Trichlorobenzene	2.04	0.200	mg/kg wet	2.000		102	70-130			
1,2,3-Trichloropropane	1.88	0.200	mg/kg wet	2.000		94	70-130			
1,2,4-Trichlorobenzene	2.03	0.200	mg/kg wet	2.000		101	70-130			
1,2,4-Trimethylbenzene	1.94	0.200	mg/kg wet	2.000		97	70-130			
1,2-Dibromo-3-Chloropropane	2.05	1.00	mg/kg wet	2.000		102	70-130			
1,2-Dibromoethane	1.82	0.200	mg/kg wet	2.000		91	70-130			
1,2-Dichlorobenzene	1.86	0.200	mg/kg wet	2.000		93	70-130			
1,2-Dichloroethane	2.03	0.200	mg/kg wet	2.000		101	70-130			
1,2-Dichloropropane	2.03	0.200	mg/kg wet	2.000		102	70-130			
1,3,5-Trimethylbenzene	1.93	0.200	mg/kg wet	2.000		96	70-130			
1,3-Dichlorobenzene	1.87	0.200	mg/kg wet	2.000		94	70-130			
1,3-Dichloropropane	1.87	0.200	mg/kg wet	2.000		93	70-130			
1,4-Dichlorobenzene	1.90	0.200	mg/kg wet	2.000		95	70-130			
1,4-Dioxane - Screen	73.7	40.0	mg/kg wet	40.00		184	44-241			
1-Chlorohexane	1.80	0.200	mg/kg wet	2.000		90	70-130			
2,2-Dichloropropane	2.02	0.200	mg/kg wet	2.000		101	70-130			
2-Butanone	9.86	1.00	mg/kg wet	10.00		99	70-130			
2-Chlorotoluene	1.91	0.200	mg/kg wet	2.000		95	70-130			
2-Hexanone	9.73	1.00	mg/kg wet	10.00		97	70-130			
4-Chlorotoluene	1.94	0.200	mg/kg wet	2.000		97	70-130			
4-Isopropyltoluene	2.01	0.200	mg/kg wet	2.000		101	70-130			
4-Methyl-2-Pentanone	10.7	1.00	mg/kg wet	10.00		107	70-130			
Acetone	10.2	1.00	mg/kg wet	10.00		102	70-130			
Benzene	2.02	0.200	mg/kg wet	2.000		101	70-130			
Bromobenzene	1.90	0.200	mg/kg wet	2.000		95	70-130			
Bromochloromethane	1.87	0.200	mg/kg wet	2.000		93	70-130			
Bromodichloromethane	1.91	0.200	mg/kg wet	2.000		96	70-130			
Bromoform	1.92	0.200	mg/kg wet	2.000		96	70-130			
Bromomethane	1.87	0.200	mg/kg wet	2.000		94	70-130			
Carbon Disulfide	2.05	0.200	mg/kg wet	2.000		102	70-130			
Carbon Tetrachloride	2.08	0.200	mg/kg wet	2.000		104	70-130			
Chlorobenzene	1.96	0.200	mg/kg wet	2.000		98	70-130			
Chloroethane	1.93	0.200	mg/kg wet	2.000		97	70-130			
Chloroform	2.04	0.200	mg/kg wet	2.000		102	70-130			
Chloromethane	1.82	0.200	mg/kg wet	2.000		91	70-130			
cis-1,2-Dichloroethene	2.00	0.200	mg/kg wet	2.000		100	70-130			
cis-1,3-Dichloropropene	1.91	0.200	mg/kg wet	2.000		96	70-130			

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Client Name: AEI Consultants, Inc.
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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CK80927 - 5035										
Dibromochloromethane	1.55	0.200	mg/kg wet	2.000		78	70-130			
Dibromomethane	2.08	0.200	mg/kg wet	2.000		104	70-130			
Dichlorodifluoromethane	2.06	0.200	mg/kg wet	2.000		103	70-130			
Diethyl Ether	2.15	0.200	mg/kg wet	2.000		107	70-130			
Di-isopropyl ether	1.97	0.200	mg/kg wet	2.000		99	70-130			
Ethyl tertiary-butyl ether	1.88	0.200	mg/kg wet	2.000		94	70-130			
Ethylbenzene	1.88	0.200	mg/kg wet	2.000		94	70-130			
Hexachlorobutadiene	2.08	0.200	mg/kg wet	2.000		104	70-130			
Isopropylbenzene	1.97	0.200	mg/kg wet	2.000		99	70-130			
Methyl tert-Butyl Ether	2.14	0.200	mg/kg wet	2.000		107	70-130			
Methylene Chloride	1.84	0.400	mg/kg wet	2.000		92	70-130			
Naphthalene	1.96	0.200	mg/kg wet	2.000		98	70-130			
n-Butylbenzene	1.92	0.200	mg/kg wet	2.000		96	70-130			
n-Propylbenzene	1.95	0.200	mg/kg wet	2.000		97	70-130			
sec-Butylbenzene	1.97	0.200	mg/kg wet	2.000		98	70-130			
Styrene	1.98	0.200	mg/kg wet	2.000		99	70-130			
tert-Butylbenzene	2.00	0.200	mg/kg wet	2.000		100	70-130			
Tertiary-amyl methyl ether	2.17	0.200	mg/kg wet	2.000		109	70-130			
Tetrachloroethene	1.57	0.200	mg/kg wet	2.000		78	70-130			
Tetrahydrofuran	2.18	1.00	mg/kg wet	2.000		109	70-130			
Toluene	1.99	0.200	mg/kg wet	2.000		100	70-130			
trans-1,2-Dichloroethene	1.92	0.200	mg/kg wet	2.000		96	70-130			
trans-1,3-Dichloropropene	1.80	0.200	mg/kg wet	2.000		90	70-130			
Trichloroethene	1.94	0.200	mg/kg wet	2.000		97	70-130			
Trichlorofluoromethane	2.16	0.200	mg/kg wet	2.000		108	70-130			
Vinyl Acetate	2.07	0.200	mg/kg wet	2.000		103	70-130			
Vinyl Chloride	1.92	0.200	mg/kg wet	2.000		96	70-130			
Xylene O	2.00	0.200	mg/kg wet	2.000		100	70-130			
Xylene P,M	3.84	0.400	mg/kg wet	4.000		96	70-130			
Surrogate: 1,2-Dichloroethane-d4	*5.22*		mg/kg wet	*5.000*		*104*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*5.13*		mg/kg wet	*5.000*		*103*	*70-130*			
Surrogate: Dibromofluoromethane	*5.22*		mg/kg wet	*5.000*		*104*	*70-130*			
Surrogate: Toluene-d8	*5.15*		mg/kg wet	*5.000*		*103*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	1.87	0.200	mg/kg wet	2.000		94	70-130	5	25	
1,1,1-Trichloroethane	2.05	0.200	mg/kg wet	2.000		102	70-130	1	25	
1,1,2,2-Tetrachloroethane	1.75	0.200	mg/kg wet	2.000		87	70-130	9	25	
1,1,2-Trichloroethane	1.92	0.200	mg/kg wet	2.000		96	70-130	0.4	25	
1,1-Dichloroethane	2.07	0.200	mg/kg wet	2.000		103	70-130	0.2	25	
1,1-Dichloroethene	2.04	0.200	mg/kg wet	2.000		102	70-130	2	25	
1,1-Dichloropropene	1.94	0.200	mg/kg wet	2.000		97	70-130	3	25	
1,2,3-Trichlorobenzene	1.96	0.200	mg/kg wet	2.000		98	70-130	4	25	
1,2,3-Trichloropropane	1.76	0.200	mg/kg wet	2.000		88	70-130	7	25	
1,2,4-Trichlorobenzene	2.00	0.200	mg/kg wet	2.000		100	70-130	1	25	
1,2,4-Trimethylbenzene	1.88	0.200	mg/kg wet	2.000		94	70-130	3	25	

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1811209

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CK80927 - 5035										
1,2-Dibromo-3-Chloropropane	1.91	1.00	mg/kg wet	2.000		96	70-130	7	25	
1,2-Dibromoethane	1.97	0.200	mg/kg wet	2.000		98	70-130	7	25	
1,2-Dichlorobenzene	1.88	0.200	mg/kg wet	2.000		94	70-130	1	25	
1,2-Dichloroethane	2.03	0.200	mg/kg wet	2.000		101	70-130	0	25	
1,2-Dichloropropane	1.84	0.200	mg/kg wet	2.000		92	70-130	10	25	
1,3,5-Trimethylbenzene	1.86	0.200	mg/kg wet	2.000		93	70-130	3	25	
1,3-Dichlorobenzene	1.92	0.200	mg/kg wet	2.000		96	70-130	2	25	
1,3-Dichloropropane	1.99	0.200	mg/kg wet	2.000		100	70-130	6	25	
1,4-Dichlorobenzene	1.87	0.200	mg/kg wet	2.000		93	70-130	2	25	
1,4-Dioxane - Screen	52.3	40.0	mg/kg wet	40.00		131	44-241	34	200	
1-Chlorohexane	1.84	0.200	mg/kg wet	2.000		92	70-130	2	25	
2,2-Dichloropropane	2.10	0.200	mg/kg wet	2.000		105	70-130	4	25	
2-Butanone	9.58	1.00	mg/kg wet	10.00		96	70-130	3	25	
2-Chlorotoluene	1.94	0.200	mg/kg wet	2.000		97	70-130	2	25	
2-Hexanone	9.33	1.00	mg/kg wet	10.00		93	70-130	4	25	
4-Chlorotoluene	1.93	0.200	mg/kg wet	2.000		96	70-130	0.7	25	
4-Isopropyltoluene	2.03	0.200	mg/kg wet	2.000		101	70-130	0.6	25	
4-Methyl-2-Pentanone	9.88	1.00	mg/kg wet	10.00		99	70-130	8	25	
Acetone	9.26	1.00	mg/kg wet	10.00		93	70-130	10	25	
Benzene	1.99	0.200	mg/kg wet	2.000		100	70-130	1	25	
Bromobenzene	1.91	0.200	mg/kg wet	2.000		96	70-130	0.4	25	
Bromochloromethane	2.03	0.200	mg/kg wet	2.000		101	70-130	8	25	
Bromodichloromethane	1.81	0.200	mg/kg wet	2.000		90	70-130	6	25	
Bromoform	1.89	0.200	mg/kg wet	2.000		95	70-130	2	25	
Bromomethane	1.98	0.200	mg/kg wet	2.000		99	70-130	6	25	
Carbon Disulfide	2.11	0.200	mg/kg wet	2.000		105	70-130	3	25	
Carbon Tetrachloride	2.11	0.200	mg/kg wet	2.000		105	70-130	1	25	
Chlorobenzene	2.01	0.200	mg/kg wet	2.000		100	70-130	2	25	
Chloroethane	1.88	0.200	mg/kg wet	2.000		94	70-130	3	25	
Chloroform	2.05	0.200	mg/kg wet	2.000		102	70-130	0.4	25	
Chloromethane	1.71	0.200	mg/kg wet	2.000		86	70-130	6	25	
cis-1,2-Dichloroethene	1.97	0.200	mg/kg wet	2.000		98	70-130	2	25	
cis-1,3-Dichloropropene	1.82	0.200	mg/kg wet	2.000		91	70-130	5	25	
Dibromochloromethane	1.59	0.200	mg/kg wet	2.000		79	70-130	2	25	
Dibromomethane	2.05	0.200	mg/kg wet	2.000		103	70-130	1	25	
Dichlorodifluoromethane	1.97	0.200	mg/kg wet	2.000		99	70-130	4	25	
Diethyl Ether	1.93	0.200	mg/kg wet	2.000		97	70-130	10	25	
Di-isopropyl ether	1.95	0.200	mg/kg wet	2.000		97	70-130	1	25	
Ethyl tertiary-butyl ether	1.91	0.200	mg/kg wet	2.000		95	70-130	2	25	
Ethylbenzene	1.99	0.200	mg/kg wet	2.000		100	70-130	6	25	
Hexachlorobutadiene	2.00	0.200	mg/kg wet	2.000		100	70-130	4	25	
Isopropylbenzene	1.94	0.200	mg/kg wet	2.000		97	70-130	1	25	
Methyl tert-Butyl Ether	2.05	0.200	mg/kg wet	2.000		102	70-130	5	25	
Methylene Chloride	1.79	0.400	mg/kg wet	2.000		90	70-130	3	25	
Naphthalene	1.88	0.200	mg/kg wet	2.000		94	70-130	4	25	

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1811209

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CK80927 - 5035										
n-Butylbenzene	1.90	0.200	mg/kg wet	2.000		95	70-130	1	25	
n-Propylbenzene	1.94	0.200	mg/kg wet	2.000		97	70-130	0.3	25	
sec-Butylbenzene	1.95	0.200	mg/kg wet	2.000		97	70-130	1	25	
Styrene	2.04	0.200	mg/kg wet	2.000		102	70-130	3	25	
tert-Butylbenzene	2.01	0.200	mg/kg wet	2.000		101	70-130	0.4	25	
Tertiary-amyl methyl ether	2.05	0.200	mg/kg wet	2.000		102	70-130	6	25	
Tetrachloroethene	1.61	0.200	mg/kg wet	2.000		80	70-130	2	25	
Tetrahydrofuran	2.00	1.00	mg/kg wet	2.000		100	70-130	8	25	
Toluene	1.98	0.200	mg/kg wet	2.000		99	70-130	0.3	25	
trans-1,2-Dichloroethene	1.85	0.200	mg/kg wet	2.000		93	70-130	3	25	
trans-1,3-Dichloropropene	1.81	0.200	mg/kg wet	2.000		90	70-130	0.4	25	
Trichloroethene	1.96	0.200	mg/kg wet	2.000		98	70-130	1	25	
Trichlorofluoromethane	2.12	0.200	mg/kg wet	2.000		106	70-130	2	25	
Vinyl Acetate	1.96	0.200	mg/kg wet	2.000		98	70-130	5	25	
Vinyl Chloride	1.89	0.200	mg/kg wet	2.000		95	70-130	1	25	
Xylene O	2.00	0.200	mg/kg wet	2.000		100	70-130	0.1	25	
Xylene P,M	3.91	0.400	mg/kg wet	4.000		98	70-130	2	25	
Surrogate: 1,2-Dichloroethane-d4	*5.21*		mg/kg wet	*5.000*		*104*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*5.42*		mg/kg wet	*5.000*		*108*	*70-130*			
Surrogate: Dibromofluoromethane	*5.26*		mg/kg wet	*5.000*		*105*	*70-130*			
Surrogate: Toluene-d8	*5.20*		mg/kg wet	*5.000*		*104*	*70-130*			
Matrix Spike **Source: 1811209-11**										
1,1,1,2-Tetrachloroethane	1.58	0.164	mg/kg dry	1.536	ND	103	70-130			
1,1,1-Trichloroethane	1.80	0.164	mg/kg dry	1.536	ND	117	70-130			
1,1,2,2-Tetrachloroethane	1.53	0.164	mg/kg dry	1.536	ND	100	70-130			
1,1,2-Trichloroethane	1.55	0.164	mg/kg dry	1.536	ND	101	70-130			
1,1-Dichloroethane	1.61	0.164	mg/kg dry	1.536	ND	104	70-130			
1,1-Dichloroethene	1.57	0.164	mg/kg dry	1.536	ND	102	70-130			
1,1-Dichloropropene	1.59	0.164	mg/kg dry	1.536	ND	104	70-130			
1,2,3-Trichlorobenzene	1.77	0.164	mg/kg dry	1.536	ND	115	70-130			
1,2,3-Trichloropropane	1.53	0.164	mg/kg dry	1.536	ND	100	70-130			
1,2,4-Trichlorobenzene	1.75	0.164	mg/kg dry	1.536	ND	114	70-130			
1,2,4-Trimethylbenzene	1.65	0.164	mg/kg dry	1.536	ND	108	70-130			
1,2-Dibromo-3-Chloropropane	1.65	0.818	mg/kg dry	1.536	ND	108	70-130			
1,2-Dibromoethane	1.66	0.164	mg/kg dry	1.536	ND	108	70-130			
1,2-Dichlorobenzene	1.66	0.164	mg/kg dry	1.536	ND	108	70-130			
1,2-Dichloroethane	1.81	0.164	mg/kg dry	1.536	ND	118	70-130			
1,2-Dichloropropane	1.51	0.164	mg/kg dry	1.536	ND	98	70-130			
1,3,5-Trimethylbenzene	1.70	0.164	mg/kg dry	1.536	ND	110	70-130			
1,3-Dichlorobenzene	1.65	0.164	mg/kg dry	1.536	ND	107	70-130			
1,3-Dichloropropane	1.68	0.164	mg/kg dry	1.536	ND	109	70-130			
1,4-Dichlorobenzene	1.73	0.164	mg/kg dry	1.536	ND	113	70-130			
1,4-Dioxane - Screen	29.0	32.7	mg/kg dry	30.73	ND	94	44-241			M-, J
1-Chlorohexane	1.56	0.164	mg/kg dry	1.536	ND	102	70-130			
2,2-Dichloropropane	1.69	0.164	mg/kg dry	1.536	ND	110	70-130			

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1811209

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CK80927 - 5035										
2-Butanone	7.40	0.818	mg/kg dry	7.682	ND	96	70-130			
2-Chlorotoluene	9.29	0.164	mg/kg dry	1.536	7.11	142	70-130			M+
2-Hexanone	8.19	0.818	mg/kg dry	7.682	ND	107	70-130			
4-Chlorotoluene	2.07	0.164	mg/kg dry	1.536	0.314	114	70-130			
4-Isopropyltoluene	1.83	0.164	mg/kg dry	1.536	ND	119	70-130			
4-Methyl-2-Pentanone	7.93	0.818	mg/kg dry	7.682	ND	103	70-130			
Acetone	7.92	0.818	mg/kg dry	7.682	ND	103	70-130			
Benzene	1.55	0.164	mg/kg dry	1.536	ND	101	70-130			
Bromobenzene	1.70	0.164	mg/kg dry	1.536	ND	111	70-130			
Bromochloromethane	1.80	0.164	mg/kg dry	1.536	ND	117	70-130			
Bromodichloromethane	1.50	0.164	mg/kg dry	1.536	ND	97	70-130			
Bromoform	1.56	0.164	mg/kg dry	1.536	ND	101	70-130			
Bromomethane	1.47	0.164	mg/kg dry	1.536	ND	96	70-130			
Carbon Disulfide	1.62	0.164	mg/kg dry	1.536	ND	106	70-130			
Carbon Tetrachloride	1.79	0.164	mg/kg dry	1.536	ND	117	70-130			
Chlorobenzene	1.74	0.164	mg/kg dry	1.536	ND	113	70-130			
Chloroethane	1.52	0.164	mg/kg dry	1.536	ND	99	70-130			
Chloroform	1.70	0.164	mg/kg dry	1.536	ND	110	70-130			
Chloromethane	1.54	0.164	mg/kg dry	1.536	ND	100	70-130			
cis-1,2-Dichloroethene	1.61	0.164	mg/kg dry	1.536	ND	105	70-130			
cis-1,3-Dichloropropene	1.48	0.164	mg/kg dry	1.536	ND	97	70-130			
Dibromochloromethane	1.30	0.164	mg/kg dry	1.536	ND	85	70-130			
Dibromomethane	1.71	0.164	mg/kg dry	1.536	ND	111	70-130			
Dichlorodifluoromethane	1.79	0.164	mg/kg dry	1.536	ND	116	70-130			
Diethyl Ether	1.65	0.164	mg/kg dry	1.536	ND	107	70-130			
Di-isopropyl ether	1.46	0.164	mg/kg dry	1.536	ND	95	70-130			
Ethyl tertiary-butyl ether	1.54	0.164	mg/kg dry	1.536	ND	100	70-130			
Ethylbenzene	1.64	0.164	mg/kg dry	1.536	ND	107	70-130			
Hexachlorobutadiene	1.61	0.164	mg/kg dry	1.536	ND	105	70-130			
Isopropylbenzene	1.71	0.164	mg/kg dry	1.536	ND	111	70-130			
Methyl tert-Butyl Ether	1.67	0.164	mg/kg dry	1.536	ND	109	70-130			
Methylene Chloride	1.47	0.327	mg/kg dry	1.536	ND	96	70-130			
Naphthalene	1.68	0.164	mg/kg dry	1.536	ND	109	70-130			
n-Butylbenzene	1.66	0.164	mg/kg dry	1.536	ND	108	70-130			
n-Propylbenzene	1.66	0.164	mg/kg dry	1.536	ND	108	70-130			
sec-Butylbenzene	1.71	0.164	mg/kg dry	1.536	ND	112	70-130			
Styrene	1.67	0.164	mg/kg dry	1.536	ND	109	70-130			
tert-Butylbenzene	1.77	0.164	mg/kg dry	1.536	ND	115	70-130			
Tertiary-amyl methyl ether	1.68	0.164	mg/kg dry	1.536	ND	109	70-130			
Tetrachloroethene	1.45	0.164	mg/kg dry	1.536	ND	94	70-130			
Tetrahydrofuran	1.30	0.818	mg/kg dry	1.536	ND	85	70-130			
Toluene	1.60	0.164	mg/kg dry	1.536	ND	104	70-130			
trans-1,2-Dichloroethene	1.57	0.164	mg/kg dry	1.536	ND	102	70-130			
trans-1,3-Dichloropropene	1.44	0.164	mg/kg dry	1.536	ND	94	70-130			
Trichloroethene	1.65	0.164	mg/kg dry	1.536	ND	107	70-130			

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1811209

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CK80927 - 5035										
Trichlorofluoromethane	1.92	0.164	mg/kg dry	1.536	ND	125	70-130			
Vinyl Acetate	1.59	0.164	mg/kg dry	1.536	ND	103	70-130			
Vinyl Chloride	1.62	0.164	mg/kg dry	1.536	ND	106	70-130			
Xylene O	1.74	0.164	mg/kg dry	1.536	0.0245	111	70-130			
Xylene P,M	3.38	0.327	mg/kg dry	3.073	0.0491	109	70-130			
Surrogate: 1,2-Dichloroethane-d4	*5.02*		mg/kg dry	*3.841*		*131*	*70-130*			*S+*
Surrogate: 4-Bromofluorobenzene	*4.98*		mg/kg dry	*3.841*		*130*	*70-130*			
Surrogate: Dibromofluoromethane	*4.72*		mg/kg dry	*3.841*		*123*	*70-130*			
Surrogate: Toluene-d8	*4.86*		mg/kg dry	*3.841*		*127*	*70-130*			
Matrix Spike Dup Source: 1811209-11										
1,1,1,2-Tetrachloroethane	1.54	0.164	mg/kg dry	1.536	ND	100	70-130	3	30	
1,1,1-Trichloroethane	1.75	0.164	mg/kg dry	1.536	ND	114	70-130	3	30	
1,1,2,2-Tetrachloroethane	1.41	0.164	mg/kg dry	1.536	ND	92	70-130	8	30	
1,1,2-Trichloroethane	1.54	0.164	mg/kg dry	1.536	ND	100	70-130	0.4	30	
1,1-Dichloroethane	1.71	0.164	mg/kg dry	1.536	ND	112	70-130	7	30	
1,1-Dichloroethene	1.60	0.164	mg/kg dry	1.536	ND	104	70-130	2	30	
1,1-Dichloropropene	1.59	0.164	mg/kg dry	1.536	ND	104	70-130	0	30	
1,2,3-Trichlorobenzene	1.66	0.164	mg/kg dry	1.536	ND	108	70-130	7	30	
1,2,3-Trichloropropane	1.49	0.164	mg/kg dry	1.536	ND	97	70-130	2	30	
1,2,4-Trichlorobenzene	1.70	0.164	mg/kg dry	1.536	ND	111	70-130	3	30	
1,2,4-Trimethylbenzene	1.66	0.164	mg/kg dry	1.536	ND	108	70-130	0.2	30	
1,2-Dibromo-3-Chloropropane	1.55	0.818	mg/kg dry	1.536	ND	101	70-130	6	30	
1,2-Dibromoethane	1.65	0.164	mg/kg dry	1.536	ND	107	70-130	0.5	30	
1,2-Dichlorobenzene	1.67	0.164	mg/kg dry	1.536	ND	109	70-130	0.5	30	
1,2-Dichloroethane	1.80	0.164	mg/kg dry	1.536	ND	117	70-130	0.5	30	
1,2-Dichloropropane	1.47	0.164	mg/kg dry	1.536	ND	96	70-130	3	30	
1,3,5-Trimethylbenzene	1.64	0.164	mg/kg dry	1.536	ND	107	70-130	3	30	
1,3-Dichlorobenzene	1.60	0.164	mg/kg dry	1.536	ND	104	70-130	3	30	
1,3-Dichloropropane	1.61	0.164	mg/kg dry	1.536	ND	105	70-130	4	30	
1,4-Dichlorobenzene	1.71	0.164	mg/kg dry	1.536	ND	111	70-130	2	30	
1,4-Dioxane - Screen	38.8	32.7	mg/kg dry	30.73	ND	126	44-241	200	200	
1-Chlorohexane	1.53	0.164	mg/kg dry	1.536	ND	99	70-130	2	30	
2,2-Dichloropropane	1.66	0.164	mg/kg dry	1.536	ND	108	70-130	2	30	
2-Butanone	7.82	0.818	mg/kg dry	7.682	ND	102	70-130	5	30	
2-Chlorotoluene	8.81	0.164	mg/kg dry	1.536	7.11	111	70-130	5	30	
2-Hexanone	7.90	0.818	mg/kg dry	7.682	ND	103	70-130	4	30	
4-Chlorotoluene	2.03	0.164	mg/kg dry	1.536	0.314	112	70-130	2	30	
4-Isopropyltoluene	1.70	0.164	mg/kg dry	1.536	ND	111	70-130	7	30	
4-Methyl-2-Pentanone	7.93	0.818	mg/kg dry	7.682	ND	103	70-130	0	30	
Acetone	8.04	0.818	mg/kg dry	7.682	ND	105	70-130	2	30	
Benzene	1.59	0.164	mg/kg dry	1.536	ND	103	70-130	2	30	
Bromobenzene	1.65	0.164	mg/kg dry	1.536	ND	107	70-130	3	30	
Bromochloromethane	1.68	0.164	mg/kg dry	1.536	ND	109	70-130	7	30	
Bromodichloromethane	1.47	0.164	mg/kg dry	1.536	ND	96	70-130	2	30	
Bromoform	1.49	0.164	mg/kg dry	1.536	ND	97	70-130	4	30	

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1811209

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CK80927 - 5035										
Bromomethane	1.54	0.164	mg/kg dry	1.536	ND	100	70-130	4	30	
Carbon Disulfide	1.61	0.164	mg/kg dry	1.536	ND	104	70-130	1	30	
Carbon Tetrachloride	1.73	0.164	mg/kg dry	1.536	ND	113	70-130	3	30	
Chlorobenzene	1.64	0.164	mg/kg dry	1.536	ND	107	70-130	6	30	
Chloroethane	1.59	0.164	mg/kg dry	1.536	ND	103	70-130	4	30	
Chloroform	1.68	0.164	mg/kg dry	1.536	ND	109	70-130	1	30	
Chloromethane	1.49	0.164	mg/kg dry	1.536	ND	97	70-130	3	30	
cis-1,2-Dichloroethene	1.65	0.164	mg/kg dry	1.536	ND	107	70-130	2	30	
cis-1,3-Dichloropropene	1.53	0.164	mg/kg dry	1.536	ND	100	70-130	3	30	
Dibromochloromethane	1.28	0.164	mg/kg dry	1.536	ND	83	70-130	2	30	
Dibromomethane	1.72	0.164	mg/kg dry	1.536	ND	112	70-130	0.7	30	
Dichlorodifluoromethane	1.83	0.164	mg/kg dry	1.536	ND	119	70-130	2	30	
Diethyl Ether	1.66	0.164	mg/kg dry	1.536	ND	108	70-130	0.9	30	
Di-isopropyl ether	1.49	0.164	mg/kg dry	1.536	ND	97	70-130	2	30	
Ethyl tertiary-butyl ether	1.57	0.164	mg/kg dry	1.536	ND	102	70-130	2	30	
Ethylbenzene	1.63	0.164	mg/kg dry	1.536	ND	106	70-130	1	30	
Hexachlorobutadiene	1.75	0.164	mg/kg dry	1.536	ND	114	70-130	9	30	
Isopropylbenzene	1.73	0.164	mg/kg dry	1.536	ND	112	70-130	1	30	
Methyl tert-Butyl Ether	1.69	0.164	mg/kg dry	1.536	ND	110	70-130	2	30	
Methylene Chloride	1.43	0.327	mg/kg dry	1.536	ND	93	70-130	2	30	
Naphthalene	1.62	0.164	mg/kg dry	1.536	ND	105	70-130	4	30	
n-Butylbenzene	1.64	0.164	mg/kg dry	1.536	ND	107	70-130	1	30	
n-Propylbenzene	1.67	0.164	mg/kg dry	1.536	ND	109	70-130	0.8	30	
sec-Butylbenzene	1.71	0.164	mg/kg dry	1.536	ND	111	70-130	0.2	30	
Styrene	1.66	0.164	mg/kg dry	1.536	ND	108	70-130	0.7	30	
tert-Butylbenzene	1.69	0.164	mg/kg dry	1.536	ND	110	70-130	5	30	
Tertiary-amyl methyl ether	1.70	0.164	mg/kg dry	1.536	ND	110	70-130	1	30	
Tetrachloroethene	1.40	0.164	mg/kg dry	1.536	ND	91	70-130	3	30	
Tetrahydrofuran	1.32	0.818	mg/kg dry	1.536	ND	86	70-130	2	30	
Toluene	1.60	0.164	mg/kg dry	1.536	ND	104	70-130	0.2	30	
trans-1,2-Dichloroethene	1.54	0.164	mg/kg dry	1.536	ND	100	70-130	2	30	
trans-1,3-Dichloropropene	1.40	0.164	mg/kg dry	1.536	ND	91	70-130	2	30	
Trichloroethene	1.59	0.164	mg/kg dry	1.536	ND	104	70-130	4	30	
Trichlorofluoromethane	1.93	0.164	mg/kg dry	1.536	ND	126	70-130	0.7	30	
Vinyl Acetate	1.62	0.164	mg/kg dry	1.536	ND	105	70-130	2	30	
Vinyl Chloride	1.72	0.164	mg/kg dry	1.536	ND	112	70-130	6	30	
Xylene O	1.68	0.164	mg/kg dry	1.536	0.0245	108	70-130	3	30	
Xylene P,M	3.32	0.327	mg/kg dry	3.073	0.0491	106	70-130	2	30	
Surrogate: 1,2-Dichloroethane-d4	*5.05*		mg/kg dry	*3.841*		*132*	*70-130*			*S+*
Surrogate: 4-Bromofluorobenzene	*4.90*		mg/kg dry	*3.841*		*127*	*70-130*			
Surrogate: Dibromofluoromethane	*4.71*		mg/kg dry	*3.841*		*123*	*70-130*			
Surrogate: Toluene-d8	*4.65*		mg/kg dry	*3.841*		*121*	*70-130*			
Batch CK81240 - 5035										
Blank										
1,1,1,2-Tetrachloroethane	ND	0.200	mg/kg wet							

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1811209

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CK81240 - 5035										
1,1,1-Trichloroethane	ND	0.200	mg/kg wet							
1,1,2,2-Tetrachloroethane	ND	0.200	mg/kg wet							
1,1,2-Trichloroethane	ND	0.200	mg/kg wet							
1,1-Dichloroethane	ND	0.200	mg/kg wet							
1,1-Dichloroethene	ND	0.200	mg/kg wet							
1,1-Dichloropropene	ND	0.200	mg/kg wet							
1,2,3-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,3-Trichloropropane	ND	0.200	mg/kg wet							
1,2,4-Trichlorobenzene	ND	0.200	mg/kg wet							
1,2,4-Trimethylbenzene	ND	0.200	mg/kg wet							
1,2-Dibromo-3-Chloropropane	ND	1.00	mg/kg wet							
1,2-Dibromoethane	ND	0.200	mg/kg wet							
1,2-Dichlorobenzene	ND	0.200	mg/kg wet							
1,2-Dichloroethane	ND	0.200	mg/kg wet							
1,2-Dichloropropane	ND	0.200	mg/kg wet							
1,3,5-Trimethylbenzene	ND	0.200	mg/kg wet							
1,3-Dichlorobenzene	ND	0.200	mg/kg wet							
1,3-Dichloropropane	ND	0.200	mg/kg wet							
1,4-Dichlorobenzene	ND	0.200	mg/kg wet							
1,4-Dioxane - Screen	ND	40.0	mg/kg wet							
1-Chlorohexane	ND	0.200	mg/kg wet							
2,2-Dichloropropane	ND	0.200	mg/kg wet							
2-Butanone	ND	1.00	mg/kg wet							
2-Chlorotoluene	ND	0.200	mg/kg wet							
2-Hexanone	ND	1.00	mg/kg wet							
4-Chlorotoluene	ND	0.200	mg/kg wet							
4-Isopropyltoluene	ND	0.200	mg/kg wet							
4-Methyl-2-Pentanone	ND	1.00	mg/kg wet							
Acetone	ND	1.00	mg/kg wet							
Benzene	ND	0.200	mg/kg wet							
Bromobenzene	ND	0.200	mg/kg wet							
Bromochloromethane	ND	0.200	mg/kg wet							
Bromodichloromethane	ND	0.200	mg/kg wet							
Bromoform	ND	0.200	mg/kg wet							
Bromomethane	ND	0.200	mg/kg wet							
Carbon Disulfide	ND	0.200	mg/kg wet							
Carbon Tetrachloride	ND	0.200	mg/kg wet							
Chlorobenzene	ND	0.200	mg/kg wet							
Chloroethane	ND	0.200	mg/kg wet							
Chloroform	ND	0.200	mg/kg wet							
Chloromethane	ND	0.200	mg/kg wet							
cis-1,2-Dichloroethene	ND	0.200	mg/kg wet							
cis-1,3-Dichloropropene	ND	0.200	mg/kg wet							
Dibromochloromethane	ND	0.200	mg/kg wet							
Dibromomethane	ND	0.200	mg/kg wet							

CERTIFICATE OF ANALYSIS

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Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CK81240 - 5035										
Dichlorodifluoromethane	ND	0.200	mg/kg wet							
Diethyl Ether	ND	0.200	mg/kg wet							
Di-isopropyl ether	ND	0.200	mg/kg wet							
Ethyl tertiary-butyl ether	ND	0.200	mg/kg wet							
Ethylbenzene	ND	0.200	mg/kg wet							
Hexachlorobutadiene	ND	0.200	mg/kg wet							
Isopropylbenzene	ND	0.200	mg/kg wet							
Methyl tert-Butyl Ether	ND	0.200	mg/kg wet							
Methylene Chloride	ND	0.400	mg/kg wet							
Naphthalene	ND	0.200	mg/kg wet							
n-Butylbenzene	ND	0.200	mg/kg wet							
n-Propylbenzene	ND	0.200	mg/kg wet							
sec-Butylbenzene	ND	0.200	mg/kg wet							
Styrene	ND	0.200	mg/kg wet							
tert-Butylbenzene	ND	0.200	mg/kg wet							
Tertiary-amyl methyl ether	ND	0.200	mg/kg wet							
Tetrachloroethene	ND	0.200	mg/kg wet							
Tetrahydrofuran	ND	1.00	mg/kg wet							
Toluene	ND	0.200	mg/kg wet							
trans-1,2-Dichloroethene	ND	0.200	mg/kg wet							
trans-1,3-Dichloropropene	ND	0.200	mg/kg wet							
Trichloroethene	ND	0.200	mg/kg wet							
Trichlorofluoromethane	ND	0.200	mg/kg wet							
Vinyl Acetate	ND	0.200	mg/kg wet							
Vinyl Chloride	ND	0.200	mg/kg wet							
Xylene O	ND	0.200	mg/kg wet							
Xylene P,M	ND	0.400	mg/kg wet							
Surrogate: 1,2-Dichloroethane-d4	*6.06*		mg/kg wet	*5.000*		*121*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*5.77*		mg/kg wet	*5.000*		*115*	*70-130*			
Surrogate: Dibromofluoromethane	*6.06*		mg/kg wet	*5.000*		*121*	*70-130*			
Surrogate: Toluene-d8	*5.77*		mg/kg wet	*5.000*		*115*	*70-130*			
LCS										
1,1,1,2-Tetrachloroethane	1.96	0.200	mg/kg wet	2.000		98	70-130			
1,1,1-Trichloroethane	2.21	0.200	mg/kg wet	2.000		110	70-130			
1,1,2,2-Tetrachloroethane	1.65	0.200	mg/kg wet	2.000		82	70-130			
1,1,2-Trichloroethane	1.80	0.200	mg/kg wet	2.000		90	70-130			
1,1-Dichloroethane	2.08	0.200	mg/kg wet	2.000		104	70-130			
1,1-Dichloroethene	1.98	0.200	mg/kg wet	2.000		99	70-130			
1,1-Dichloropropene	2.04	0.200	mg/kg wet	2.000		102	70-130			
1,2,3-Trichlorobenzene	2.07	0.200	mg/kg wet	2.000		103	70-130			
1,2,3-Trichloropropane	1.79	0.200	mg/kg wet	2.000		90	70-130			
1,2,4-Trichlorobenzene	2.08	0.200	mg/kg wet	2.000		104	70-130			
1,2,4-Trimethylbenzene	2.03	0.200	mg/kg wet	2.000		101	70-130			
1,2-Dibromo-3-Chloropropane	2.03	1.00	mg/kg wet	2.000		102	70-130			
1,2-Dibromoethane	1.94	0.200	mg/kg wet	2.000		97	70-130			

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1811209

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CK81240 - 5035										
1,2-Dichlorobenzene	2.04	0.200	mg/kg wet	2.000		102	70-130			
1,2-Dichloroethane	2.26	0.200	mg/kg wet	2.000		113	70-130			
1,2-Dichloropropane	1.86	0.200	mg/kg wet	2.000		93	70-130			
1,3,5-Trimethylbenzene	2.02	0.200	mg/kg wet	2.000		101	70-130			
1,3-Dichlorobenzene	2.03	0.200	mg/kg wet	2.000		101	70-130			
1,3-Dichloropropane	1.93	0.200	mg/kg wet	2.000		97	70-130			
1,4-Dichlorobenzene	2.09	0.200	mg/kg wet	2.000		104	70-130			
1,4-Dioxane - Screen	69.1	40.0	mg/kg wet	40.00		173	44-241			
1-Chlorohexane	1.88	0.200	mg/kg wet	2.000		94	70-130			
2,2-Dichloropropane	2.25	0.200	mg/kg wet	2.000		113	70-130			
2-Butanone	9.19	1.00	mg/kg wet	10.00		92	70-130			
2-Chlorotoluene	2.02	0.200	mg/kg wet	2.000		101	70-130			
2-Hexanone	8.92	1.00	mg/kg wet	10.00		89	70-130			
4-Chlorotoluene	1.98	0.200	mg/kg wet	2.000		99	70-130			
4-Isopropyltoluene	2.14	0.200	mg/kg wet	2.000		107	70-130			
4-Methyl-2-Pentanone	9.56	1.00	mg/kg wet	10.00		96	70-130			
Acetone	9.58	1.00	mg/kg wet	10.00		96	70-130			
Benzene	1.96	0.200	mg/kg wet	2.000		98	70-130			
Bromobenzene	1.99	0.200	mg/kg wet	2.000		100	70-130			
Bromochloromethane	2.07	0.200	mg/kg wet	2.000		104	70-130			
Bromodichloromethane	1.97	0.200	mg/kg wet	2.000		98	70-130			
Bromoform	1.94	0.200	mg/kg wet	2.000		97	70-130			
Bromomethane	1.91	0.200	mg/kg wet	2.000		96	70-130			
Carbon Disulfide	2.02	0.200	mg/kg wet	2.000		101	70-130			
Carbon Tetrachloride	2.24	0.200	mg/kg wet	2.000		112	70-130			
Chlorobenzene	2.00	0.200	mg/kg wet	2.000		100	70-130			
Chloroethane	1.86	0.200	mg/kg wet	2.000		93	70-130			
Chloroform	2.16	0.200	mg/kg wet	2.000		108	70-130			
Chloromethane	1.95	0.200	mg/kg wet	2.000		98	70-130			
cis-1,2-Dichloroethene	2.05	0.200	mg/kg wet	2.000		103	70-130			
cis-1,3-Dichloropropene	1.86	0.200	mg/kg wet	2.000		93	70-130			
Dibromochloromethane	1.67	0.200	mg/kg wet	2.000		83	70-130			
Dibromomethane	2.08	0.200	mg/kg wet	2.000		104	70-130			
Dichlorodifluoromethane	2.37	0.200	mg/kg wet	2.000		119	70-130			
Diethyl Ether	2.03	0.200	mg/kg wet	2.000		101	70-130			
Di-isopropyl ether	1.94	0.200	mg/kg wet	2.000		97	70-130			
Ethyl tertiary-butyl ether	1.95	0.200	mg/kg wet	2.000		98	70-130			
Ethylbenzene	1.98	0.200	mg/kg wet	2.000		99	70-130			
Hexachlorobutadiene	2.25	0.200	mg/kg wet	2.000		113	70-130			
Isopropylbenzene	2.07	0.200	mg/kg wet	2.000		104	70-130			
Methyl tert-Butyl Ether	2.04	0.200	mg/kg wet	2.000		102	70-130			
Methylene Chloride	1.81	0.400	mg/kg wet	2.000		90	70-130			
Naphthalene	2.01	0.200	mg/kg wet	2.000		100	70-130			
n-Butylbenzene	2.05	0.200	mg/kg wet	2.000		102	70-130			
n-Propylbenzene	2.05	0.200	mg/kg wet	2.000		103	70-130			

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1811209

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CK81240 - 5035										
sec-Butylbenzene	2.06	0.200	mg/kg wet	2.000		103	70-130			
Styrene	2.02	0.200	mg/kg wet	2.000		101	70-130			
tert-Butylbenzene	2.11	0.200	mg/kg wet	2.000		106	70-130			
Tertiary-amyl methyl ether	2.01	0.200	mg/kg wet	2.000		101	70-130			
Tetrachloroethene	1.67	0.200	mg/kg wet	2.000		84	70-130			
Tetrahydrofuran	1.85	1.00	mg/kg wet	2.000		92	70-130			
Toluene	1.91	0.200	mg/kg wet	2.000		96	70-130			
trans-1,2-Dichloroethene	1.95	0.200	mg/kg wet	2.000		97	70-130			
trans-1,3-Dichloropropene	1.82	0.200	mg/kg wet	2.000		91	70-130			
Trichloroethene	2.02	0.200	mg/kg wet	2.000		101	70-130			
Trichlorofluoromethane	2.31	0.200	mg/kg wet	2.000		115	70-130			
Vinyl Acetate	1.98	0.200	mg/kg wet	2.000		99	70-130			
Vinyl Chloride	2.09	0.200	mg/kg wet	2.000		105	70-130			
Xylene O	2.04	0.200	mg/kg wet	2.000		102	70-130			
Xylene P,M	4.02	0.400	mg/kg wet	4.000		100	70-130			
Surrogate: 1,2-Dichloroethane-d4	*5.87*		mg/kg wet	*5.000*		*117*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*5.82*		mg/kg wet	*5.000*		*116*	*70-130*			
Surrogate: Dibromofluoromethane	*6.08*		mg/kg wet	*5.000*		*122*	*70-130*			
Surrogate: Toluene-d8	*5.74*		mg/kg wet	*5.000*		*115*	*70-130*			
LCS Dup										
1,1,1,2-Tetrachloroethane	1.94	0.200	mg/kg wet	2.000		97	70-130	1	25	
1,1,1-Trichloroethane	2.15	0.200	mg/kg wet	2.000		107	70-130	3	25	
1,1,2,2-Tetrachloroethane	1.74	0.200	mg/kg wet	2.000		87	70-130	5	25	
1,1,2-Trichloroethane	1.83	0.200	mg/kg wet	2.000		92	70-130	2	25	
1,1-Dichloroethane	2.05	0.200	mg/kg wet	2.000		103	70-130	1	25	
1,1-Dichloroethene	2.03	0.200	mg/kg wet	2.000		101	70-130	2	25	
1,1-Dichloropropene	2.05	0.200	mg/kg wet	2.000		102	70-130	0.3	25	
1,2,3-Trichlorobenzene	2.10	0.200	mg/kg wet	2.000		105	70-130	1	25	
1,2,3-Trichloropropane	1.76	0.200	mg/kg wet	2.000		88	70-130	2	25	
1,2,4-Trichlorobenzene	2.17	0.200	mg/kg wet	2.000		108	70-130	4	25	
1,2,4-Trimethylbenzene	2.04	0.200	mg/kg wet	2.000		102	70-130	0.6	25	
1,2-Dibromo-3-Chloropropane	2.18	1.00	mg/kg wet	2.000		109	70-130	7	25	
1,2-Dibromoethane	2.01	0.200	mg/kg wet	2.000		100	70-130	3	25	
1,2-Dichlorobenzene	2.06	0.200	mg/kg wet	2.000		103	70-130	1	25	
1,2-Dichloroethane	2.30	0.200	mg/kg wet	2.000		115	70-130	2	25	
1,2-Dichloropropane	1.90	0.200	mg/kg wet	2.000		95	70-130	2	25	
1,3,5-Trimethylbenzene	2.01	0.200	mg/kg wet	2.000		101	70-130	0.5	25	
1,3-Dichlorobenzene	2.05	0.200	mg/kg wet	2.000		102	70-130	0.9	25	
1,3-Dichloropropane	2.00	0.200	mg/kg wet	2.000		100	70-130	4	25	
1,4-Dichlorobenzene	2.03	0.200	mg/kg wet	2.000		102	70-130	3	25	
1,4-Dioxane - Screen	47.5	40.0	mg/kg wet	40.00		119	44-241	37	200	
1-Chlorohexane	1.88	0.200	mg/kg wet	2.000		94	70-130	0	25	
2,2-Dichloropropane	2.17	0.200	mg/kg wet	2.000		109	70-130	4	25	
2-Butanone	10.2	1.00	mg/kg wet	10.00		102	70-130	11	25	
2-Chlorotoluene	2.09	0.200	mg/kg wet	2.000		105	70-130	4	25	

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1811209

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CK81240 - 5035										
2-Hexanone	10.5	1.00	mg/kg wet	10.00		105	70-130	16	25	
4-Chlorotoluene	2.00	0.200	mg/kg wet	2.000		100	70-130	0.8	25	
4-Isopropyltoluene	2.16	0.200	mg/kg wet	2.000		108	70-130	1	25	
4-Methyl-2-Pentanone	9.75	1.00	mg/kg wet	10.00		98	70-130	2	25	
Acetone	10.5	1.00	mg/kg wet	10.00		105	70-130	9	25	
Benzene	1.99	0.200	mg/kg wet	2.000		100	70-130	2	25	
Bromobenzene	2.06	0.200	mg/kg wet	2.000		103	70-130	3	25	
Bromochloromethane	2.08	0.200	mg/kg wet	2.000		104	70-130	0.3	25	
Bromodichloromethane	1.91	0.200	mg/kg wet	2.000		96	70-130	3	25	
Bromoform	2.06	0.200	mg/kg wet	2.000		103	70-130	6	25	
Bromomethane	1.90	0.200	mg/kg wet	2.000		95	70-130	0.7	25	
Carbon Disulfide	2.00	0.200	mg/kg wet	2.000		100	70-130	1	25	
Carbon Tetrachloride	2.20	0.200	mg/kg wet	2.000		110	70-130	2	25	
Chlorobenzene	2.06	0.200	mg/kg wet	2.000		103	70-130	3	25	
Chloroethane	1.93	0.200	mg/kg wet	2.000		96	70-130	3	25	
Chloroform	2.08	0.200	mg/kg wet	2.000		104	70-130	4	25	
Chloromethane	1.97	0.200	mg/kg wet	2.000		98	70-130	0.8	25	
cis-1,2-Dichloroethene	2.08	0.200	mg/kg wet	2.000		104	70-130	1	25	
cis-1,3-Dichloropropene	1.87	0.200	mg/kg wet	2.000		94	70-130	0.8	25	
Dibromochloromethane	1.69	0.200	mg/kg wet	2.000		84	70-130	1	25	
Dibromomethane	2.12	0.200	mg/kg wet	2.000		106	70-130	2	25	
Dichlorodifluoromethane	2.30	0.200	mg/kg wet	2.000		115	70-130	3	25	
Diethyl Ether	2.11	0.200	mg/kg wet	2.000		105	70-130	4	25	
Di-isopropyl ether	1.94	0.200	mg/kg wet	2.000		97	70-130	0	25	
Ethyl tertiary-butyl ether	1.91	0.200	mg/kg wet	2.000		96	70-130	2	25	
Ethylbenzene	2.04	0.200	mg/kg wet	2.000		102	70-130	3	25	
Hexachlorobutadiene	2.05	0.200	mg/kg wet	2.000		103	70-130	9	25	
Isopropylbenzene	2.12	0.200	mg/kg wet	2.000		106	70-130	2	25	
Methyl tert-Butyl Ether	2.13	0.200	mg/kg wet	2.000		107	70-130	4	25	
Methylene Chloride	1.90	0.400	mg/kg wet	2.000		95	70-130	5	25	
Naphthalene	2.00	0.200	mg/kg wet	2.000		100	70-130	0.4	25	
n-Butylbenzene	2.04	0.200	mg/kg wet	2.000		102	70-130	0.2	25	
n-Propylbenzene	2.03	0.200	mg/kg wet	2.000		102	70-130	1	25	
sec-Butylbenzene	2.08	0.200	mg/kg wet	2.000		104	70-130	1	25	
Styrene	2.11	0.200	mg/kg wet	2.000		106	70-130	5	25	
tert-Butylbenzene	2.08	0.200	mg/kg wet	2.000		104	70-130	2	25	
Tertiary-amyl methyl ether	2.09	0.200	mg/kg wet	2.000		104	70-130	4	25	
Tetrachloroethene	1.73	0.200	mg/kg wet	2.000		87	70-130	3	25	
Tetrahydrofuran	1.80	1.00	mg/kg wet	2.000		90	70-130	3	25	
Toluene	2.04	0.200	mg/kg wet	2.000		102	70-130	6	25	
trans-1,2-Dichloroethene	1.97	0.200	mg/kg wet	2.000		99	70-130	1	25	
trans-1,3-Dichloropropene	1.86	0.200	mg/kg wet	2.000		93	70-130	2	25	
Trichloroethene	1.99	0.200	mg/kg wet	2.000		100	70-130	1	25	
Trichlorofluoromethane	2.37	0.200	mg/kg wet	2.000		118	70-130	3	25	
Vinyl Acetate	1.97	0.200	mg/kg wet	2.000		99	70-130	0.2	25	

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1811209

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
5035/8260B Volatile Organic Compounds / Methanol										
Batch CK81240 - 5035										
Vinyl Chloride	2.03	0.200	mg/kg wet	2.000		102	70-130	3	25	
Xylene O	2.12	0.200	mg/kg wet	2.000		106	70-130	4	25	
Xylene P,M	4.20	0.400	mg/kg wet	4.000		105	70-130	4	25	
Surrogate: 1,2-Dichloroethane-d4	*5.89*		mg/kg wet	*5.000*		*118*	*70-130*			
Surrogate: 4-Bromofluorobenzene	*6.16*		mg/kg wet	*5.000*		*123*	*70-130*			
Surrogate: Dibromofluoromethane	*6.09*		mg/kg wet	*5.000*		*122*	*70-130*			
Surrogate: Toluene-d8	*6.27*		mg/kg wet	*5.000*		*125*	*70-130*			
8082A Polychlorinated Biphenyls (PCB)										
Batch CK80704 - 3540C										
Blank										
Aroclor 1016	ND	0.02	mg/kg wet							
Aroclor 1016 [2C]	ND	0.02	mg/kg wet							
Aroclor 1221	ND	0.02	mg/kg wet							
Aroclor 1221 [2C]	ND	0.02	mg/kg wet							
Aroclor 1232	ND	0.02	mg/kg wet							
Aroclor 1232 [2C]	ND	0.02	mg/kg wet							
Aroclor 1242	ND	0.02	mg/kg wet							
Aroclor 1242 [2C]	ND	0.02	mg/kg wet							
Aroclor 1248	ND	0.02	mg/kg wet							
Aroclor 1248 [2C]	ND	0.02	mg/kg wet							
Aroclor 1254	ND	0.02	mg/kg wet							
Aroclor 1254 [2C]	ND	0.02	mg/kg wet							
Aroclor 1260	ND	0.02	mg/kg wet							
Aroclor 1260 [2C]	ND	0.02	mg/kg wet							
Aroclor 1262	ND	0.02	mg/kg wet							
Aroclor 1262 [2C]	ND	0.02	mg/kg wet							
Aroclor 1268	ND	0.02	mg/kg wet							
Aroclor 1268 [2C]	ND	0.02	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0202*		mg/kg wet	*0.02500*		*81*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0194*		mg/kg wet	*0.02500*		*78*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0181*		mg/kg wet	*0.02500*		*72*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0214*		mg/kg wet	*0.02500*		*86*	*30-150*			
LCS										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		97	40-140			
Aroclor 1016 [2C]	0.5	0.05	mg/kg wet	0.5000		108	40-140			
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		100	40-140			
Aroclor 1260 [2C]	0.5	0.05	mg/kg wet	0.5000		102	40-140			
Surrogate: Decachlorobiphenyl	*0.0223*		mg/kg wet	*0.02500*		*89*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0212*		mg/kg wet	*0.02500*		*85*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0212*		mg/kg wet	*0.02500*		*85*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0234*		mg/kg wet	*0.02500*		*94*	*30-150*			
LCS Dup										

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1811209

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CK80704 - 3540C										
Aroclor 1016	0.5	0.05	mg/kg wet	0.5000		100	40-140	2	30	
Aroclor 1016 [2C]	0.6	0.05	mg/kg wet	0.5000		111	40-140	3	30	
Aroclor 1260	0.5	0.05	mg/kg wet	0.5000		103	40-140	2	30	
Aroclor 1260 [2C]	0.5	0.05	mg/kg wet	0.5000		104	40-140	2	30	
Surrogate: Decachlorobiphenyl	*0.0226*		mg/kg wet	*0.02500*		*90*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0216*		mg/kg wet	*0.02500*		*86*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0215*		mg/kg wet	*0.02500*		*86*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0238*		mg/kg wet	*0.02500*		*95*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
ESS Laboratory Work Order: 1811209

Notes and Definitions

U	Analyte included in the analysis, but not detected
S+	Surrogate recovery(ies) above upper control limit (S+).
S-	Surrogate recovery(ies) below lower control limit (S-).
M+	Matrix Spike recovery is above upper control limit (M+).
M-	Matrix Spike recovery is below lower control limit (M-).
J	Reported between MDL and MRL
D	Diluted.
CD+	Continuing Calibration %Diff/Drift is above control limit (CD+).
B+	Blank Spike recovery is above upper control limit (B+).
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: 1811209

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~~ client

ESS Project ID: 1811209
Date Received: 11/8/2018
Project Due Date: 11/15/2018
Days for Project: ~~5 Day~~ 20 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: 0.8 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: 11/8/18 Time: 1457 By: [illegible]

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	287353	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
02	287352	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
03	287351	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
04	287350	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
05	287349	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
06	287348	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
07	287347	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
08	287346	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
09	287345	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
10	287297	Yes	NA	Yes	VOA Vial - Other	Other	
10	287298	Yes	NA	Yes	VOA Vial - Other	Other	
10	287327	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
10	287344	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
11	287295	Yes	NA	Yes	VOA Vial - Other	Other	
11	287296	Yes	NA	Yes	VOA Vial - Other	Other	
11	287317	Yes	NA	Yes	VOA Vial - Other	Other	
11	287318	Yes	NA	Yes	VOA Vial - Other	Other	
11	287326	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
11	287337	Yes	NA	Yes	VOA Vial - Methanol	MeOH	
11	287343	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
11	287354	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
12	287293	Yes	NA	Yes	VOA Vial - Other	Other	
12	287294	Yes	NA	Yes	VOA Vial - Other	Other	
12	287325	Yes	NA	Yes	VOA Vial - Methanol	MeOH	

ESS Laboratory Sample and Cooler Receipt Checklist

Client: AEI Consultants, Inc. - TB/MM

ESS Project ID: 1811209
Date Received: 11/8/2018

12	287342	Yes	NA	Yes	4 oz. Jar - Unpres	NP
13	287291	Yes	NA	Yes	VOA Vial - Other	Other
13	287292	Yes	NA	Yes	VOA Vial - Other	Other
13	287324	Yes	NA	Yes	VOA Vial - Methanol	MeOH
13	287341	Yes	NA	Yes	4 oz. Jar - Unpres	NP
14	287289	Yes	NA	Yes	VOA Vial - Other	Other
14	287290	Yes	NA	Yes	VOA Vial - Other	Other
14	287323	Yes	NA	Yes	VOA Vial - Methanol	MeOH
14	287340	Yes	NA	Yes	4 oz. Jar - Unpres	NP
15	287287	Yes	NA	Yes	VOA Vial - Other	Other
15	287288	Yes	NA	Yes	VOA Vial - Other	Other
15	287322	Yes	NA	Yes	VOA Vial - Methanol	MeOH
15	287339	Yes	NA	Yes	4 oz. Jar - Unpres	NP
16	287286	Yes	NA	Yes	VOA Vial - Other	Other
16	287321	Yes	NA	Yes	VOA Vial - Methanol	MeOH

2nd Review

Are barcode labels on correct containers? Yes / No

Are all necessary stickers attached? Yes / No

Completed By: _____ Date & Time: 11/8/18 1457

Reviewed By: _____ Date & Time: 11/8/18 1457

Delivered By: _____ 11/8/18 1457

Changes made per client 11/9/18 - PRB

1

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

CHAIN OF CUSTODY

ESS Lab # K811209

Turn Time Rush 48hr

Reporting Limits See note 1

Regulatory State RI

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

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

Company Name: AEI

Project # 363655

Project Name: BASF Cranston

Contact Person: Aaron Ting

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	PCBs (Soxhlet)	% Solids	VOCs
1	11-8-18	0900	~~G~~ C	Concrete	B-298-110818-A(2.5')	X		
2		0905			B-299-110818-A(2.5')	X		
3		0910			B-300-110818-A(2.5')	X		
4		0915			B-307-110818-A(2.5')	X		
5		0920			B-308-110818-A(2.5')	X		
6		0925			B-309-110818-A(2.5')	X		
7		0930			B-316-110818-A(2.5')	X		
8		0935			B-317-110818-A(2.5')	X		
9		0940			B-318-110818-A(2.5')	X		
10		0945	C	S	SW-635-110818 (2-6')		X	X

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

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*

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*

Number of Containers per Sample:	AG	9	1	1

Laboratory Use Only

Cooler Present: Y

Seals Intact: NA

Cooler Temperature: 0.8 °C

Sampled by: A. Ting

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

Note 1: See project QAPP ☆ High VOCs (toluene) ☆

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
11-8-18 1410	11/8/18 1411		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

2

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

CHAIN OF CUSTODY

ESS Lab # 1811209

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 →) PDF

Company Name: AEI

Project #: 363655

Project Name: BASF Cranston

Contact Person: Aaron Ting

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

Analysis: PCBs (Soxhlet) 8082; VOC

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	PCBs (Soxhlet) 8082	VOC
11	11 0818	0950	C	S	SW-640-110818 (2-6')	X	X
11	110818	0950	C	S	SW-640-110818 (2-6') MS/MSD	X	X
12	110818	0950	C	S	SW-640-110818-1 (2-6')	X	X
13	110818	10:00	C	S	SW-620-110818 (2-6')	X	X
14	110818	10:06	C	S	SW-625-110818 (2-6')	X	X
15	110818	10:08	C	S	SW-630-110818 (2-6')	X	X
16	—	—			TB		X

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

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*

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*

	PCBs (Soxhlet) 8082	VOC
Container Type	AG	
Container Volume	9	
Preservation Code	1	
Number of Containers per Sample	1	

Laboratory Use Only

Cooler Present: ✓

Seals Intact: ✓

Cooler Temperature: 0.6 °C

Sampled by: A. Ting

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

Note 1: See Project QAPP ☆ Potentially high VOCs (toluene)

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
11-8-18 1410	11/8/18 1411		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

1

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CHAIN OF CUSTODY

ESS Lab # K11209

Turn Time Rush 48hr

Reporting Limits See note 1

Regulatory State RI

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

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

Company Name: AEI

Project #: 363655

Project Name: BASF Cranston

Contact Person: Aaron Ting

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

Analysis: PCBs (Soxhlet), % Solids, VOCs

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	PCBs (Soxhlet)	% Solids	VOCs
1	11-8-18	0900	G	Concrete	B-298-110818-A(2.5')	X		
2		0905			B-299-110818-A(2.5')	X		
3		0910			B-300-110818-A(2.5')	X		
4		0915			B-307-110818-A(2.5')	X		
5		0920			B-308-110818-A(2.5')	X		
6		0925			B-309-110818-A(2.5')	X		
7		0930			B-316-110818-A(2.5')	X		
8		0935			B-317-110818-A(2.5')	X		
9		0940			B-318-110818-A(2.5')	X		
10		0945	C	S	SW-635-110818		X	X

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

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*

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*

Number of Containers per Sample:	AG	9	1	1

Laboratory Use Only

Cooler Present: Y

Seals Intact: NA

Cooler Temperature: 0.8 °C

Sampled by: A. Ting

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

Note 1: See project QAPP ☆ High VOCs (toluene) ☆

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
[signature] 11-8-18 1410	[signature] 11/8/18 1411		
Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)

2

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

CHAIN OF CUSTODY

ESS Lab # 1811209

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 →) PDF

Company Name: AEI

Project #: 363655

Project Name: BASF Cranston

Contact Person: Aaron Ting

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

Analysis: PCBs (Soxhlet) % solids; VOC

ESS Lab ID	Collection Date	Collection Time	Sample Type	Sample Matrix	Sample ID	PCBs (Soxhlet)	% solids	VOC
11	11 0818	0950	C	S	SW-640-110818 (2-6')		X	X
11	110818	0950	C	S	SW-640-110818 (2-6') MS/MSD		X	X
12	110818	0950	C	S	SW-640-110818-1 (2-6')		X	X
13	110818	10:00	C	S	SW-620-110818 (2-6')		X	X
14	110818	10:06	C	S	SW-625-110818 (2-6')		X	X
15	110818	10:08	C	S	SW-630-110818 (2-6')		X	X
16	—	—			TB			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: 0.5 °C

Sampled by: A. Ting

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

Note 1: See Project QAPP ☆ Potentially high VOCs (toluene)

Relinquished by: (Signature, Date & Time)	Received By: (Signature, Date & Time)	Relinquished By: (Signature, Date & Time)	Received By: (Signature, Date & Time)
11-8-18 1410	11/8/18 1411		
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: 1811261

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 3:47 pm, Nov 13, 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: 1811261

SAMPLE RECEIPT

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

Lab Number	Sample Name	Matrix	Analysis
1811261-01	SW-64-110918-C 4-6FT	Soil	8082A
1811261-02	SW-77-110918-C 4-6FT	Soil	8082A
1811261-03	B-559-110918-E 9.5FT	Soil	8082A

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1811261

PROJECT NARRATIVE

8082A Polychlorinated Biphenyls (PCB)

1811261-01 **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%)

1811261-02 **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%)

1811261-03 **Surrogate recovery(ies) outside of criteria due to matrix (UCM/coelution/matrix is present) (SM).**
Decachlorobiphenyl (437% @ 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: 1811261

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-64-110918-C 4-6FT
Date Sampled: 11/09/18 09:18
Percent Solids: 89
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811261
ESS Laboratory Sample ID: 1811261-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/9/18 17:19

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.6)		8082A		20	11/12/18 13:58	C8K0206	CK80905
Aroclor 1221	ND (0.6)		8082A		20	11/12/18 13:58	C8K0206	CK80905
Aroclor 1232	ND (0.6)		8082A		20	11/12/18 13:58	C8K0206	CK80905
Aroclor 1242	ND (0.6)		8082A		20	11/12/18 13:58	C8K0206	CK80905
Aroclor 1248	ND (0.6)		8082A		20	11/12/18 13:58	C8K0206	CK80905
Aroclor 1254	**13.0** (0.6)		8082A		20	11/12/18 13:58	C8K0206	CK80905
Aroclor 1260	ND (0.6)		8082A		20	11/12/18 13:58	C8K0206	CK80905
Aroclor 1262	ND (0.6)		8082A		20	11/12/18 13:58	C8K0206	CK80905
Aroclor 1268	ND (0.6)		8082A		20	11/12/18 13:58	C8K0206	CK80905

	%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-77-110918-C 4-6FT
Date Sampled: 11/09/18 09:28
Percent Solids: 89
Initial Volume: 19.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811261
ESS Laboratory Sample ID: 1811261-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/9/18 17:19

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.6)		8082A		20	11/12/18 14:17	C8K0206	CK80905
Aroclor 1221	ND (0.6)		8082A		20	11/12/18 14:17	C8K0206	CK80905
Aroclor 1232	ND (0.6)		8082A		20	11/12/18 14:17	C8K0206	CK80905
Aroclor 1242	ND (0.6)		8082A		20	11/12/18 14:17	C8K0206	CK80905
Aroclor 1248	ND (0.6)		8082A		20	11/12/18 14:17	C8K0206	CK80905
Aroclor 1254	**9.2** (0.6)		8082A		20	11/12/18 14:17	C8K0206	CK80905
Aroclor 1260	ND (0.6)		8082A		20	11/12/18 14:17	C8K0206	CK80905
Aroclor 1262	ND (0.6)		8082A		20	11/12/18 14:17	C8K0206	CK80905
Aroclor 1268	ND (0.6)		8082A		20	11/12/18 14:17	C8K0206	CK80905

	%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: B-559-110918-E 9.5FT
Date Sampled: 11/09/18 12:58
Percent Solids: 83
Initial Volume: 19.4
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811261
ESS Laboratory Sample ID: 1811261-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/9/18 17:19

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.03)		8082A		1	11/12/18 13:02	C8K0206	CK80905
Aroclor 1221	ND (0.03)		8082A		1	11/12/18 13:02	C8K0206	CK80905
Aroclor 1232	ND (0.03)		8082A		1	11/12/18 13:02	C8K0206	CK80905
Aroclor 1242	ND (0.03)		8082A		1	11/12/18 13:02	C8K0206	CK80905
Aroclor 1248	ND (0.03)		8082A		1	11/12/18 13:02	C8K0206	CK80905
Aroclor 1254 [2C]	**0.09** (0.03)		8082A		1	11/12/18 13:02	C8K0206	CK80905
Aroclor 1260	ND (0.03)		8082A		1	11/12/18 13:02	C8K0206	CK80905
Aroclor 1262	ND (0.03)		8082A		1	11/12/18 13:02	C8K0206	CK80905
Aroclor 1268	ND (0.03)		8082A		1	11/12/18 13:02	C8K0206	CK80905

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*437 %*	*SM*	*30-150*
Surrogate: Decachlorobiphenyl [2C]	*61 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*82 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*74 %*		*30-150*

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1811261

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
8082A Polychlorinated Biphenyls (PCB)										
Batch CK80905 - 3540C										
Blank										
Aroclor 1016	ND	0.02	mg/kg wet							
Aroclor 1016 [2C]	ND	0.02	mg/kg wet							
Aroclor 1221	ND	0.02	mg/kg wet							
Aroclor 1221 [2C]	ND	0.02	mg/kg wet							
Aroclor 1232	ND	0.02	mg/kg wet							
Aroclor 1232 [2C]	ND	0.02	mg/kg wet							
Aroclor 1242	ND	0.02	mg/kg wet							
Aroclor 1242 [2C]	ND	0.02	mg/kg wet							
Aroclor 1248	ND	0.02	mg/kg wet							
Aroclor 1248 [2C]	ND	0.02	mg/kg wet							
Aroclor 1254	ND	0.02	mg/kg wet							
Aroclor 1254 [2C]	ND	0.02	mg/kg wet							
Aroclor 1260	ND	0.02	mg/kg wet							
Aroclor 1260 [2C]	ND	0.02	mg/kg wet							
Aroclor 1262	ND	0.02	mg/kg wet							
Aroclor 1262 [2C]	ND	0.02	mg/kg wet							
Aroclor 1268	ND	0.02	mg/kg wet							
Aroclor 1268 [2C]	ND	0.02	mg/kg wet							
Surrogate: Decachlorobiphenyl	*0.0178*		mg/kg wet	*0.02500*		*71*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0196*		mg/kg wet	*0.02500*		*78*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0185*		mg/kg wet	*0.02500*		*74*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0189*		mg/kg wet	*0.02500*		*76*	*30-150*			
LCS										
Aroclor 1016	0.4	0.02	mg/kg wet	0.5000		88	40-140			
Aroclor 1016 [2C]	0.4	0.02	mg/kg wet	0.5000		78	40-140			
Aroclor 1260	0.4	0.02	mg/kg wet	0.5000		80	40-140			
Aroclor 1260 [2C]	0.4	0.02	mg/kg wet	0.5000		88	40-140			
Surrogate: Decachlorobiphenyl	*0.0197*		mg/kg wet	*0.02500*		*79*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0217*		mg/kg wet	*0.02500*		*87*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0204*		mg/kg wet	*0.02500*		*82*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0182*		mg/kg wet	*0.02500*		*73*	*30-150*			
LCS Dup										
Aroclor 1016	0.5	0.02	mg/kg wet	0.5000		93	40-140	6	30	
Aroclor 1016 [2C]	0.4	0.02	mg/kg wet	0.5000		83	40-140	6	30	
Aroclor 1260	0.4	0.02	mg/kg wet	0.5000		83	40-140	4	30	
Aroclor 1260 [2C]	0.5	0.02	mg/kg wet	0.5000		91	40-140	2	30	
Surrogate: Decachlorobiphenyl	*0.0204*		mg/kg wet	*0.02500*		*81*	*30-150*			
Surrogate: Decachlorobiphenyl [2C]	*0.0223*		mg/kg wet	*0.02500*		*89*	*30-150*			
Surrogate: Tetrachloro-m-xylene	*0.0220*		mg/kg wet	*0.02500*		*88*	*30-150*			
Surrogate: Tetrachloro-m-xylene [2C]	*0.0195*		mg/kg wet	*0.02500*		*78*	*30-150*			

CERTIFICATE OF ANALYSIS

Client Name: AEI Consultants, Inc.
Client Project ID: BASF Cranston
ESS Laboratory Work Order: 1811261

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: 1811261

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: Client

ESS Project ID: 1811261
Date Received: 11/9/2018
Project Due Date: 11/13/2018
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: 5.1 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	288169	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
02	288168	Yes	NA	Yes	4 oz. Jar - Unpres	NP	
03	288170	Yes	NA	Yes	4 oz. Jar - Unpres	NP	

2nd Review
Are barcode labels on correct containers? Yes / No
Are all necessary stickers attached? Yes / No

Completed By: Date & Time: 11/9/18 1602
Reviewed By: Date & Time: 11.9.18 16:42
Delivered By: 11/9/18 1649

1

ESS Laboratory
Division of Thielsch Engineering, Inc.
85 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 # 1811261
Reporting Limits See note 1
Electonic Deliverables ☒Limit Checker ☒Standard Excel ☒Other (Please Specify →) PDF

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: PCBs (Soxhlet)
1	11-9-18	0918	C	S	SW-69-110918-C (4-6')	X
2	↓	0928	↓	↓	SW-77-110918-C (4-6')	X
3	↓	1258	↓	↓	BS59-110918-E (9.5')	X

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

Number of Containers per Sample: AG 9 1 1

Laboratory Use Only
Cooler Present: yes
Seals Intact: ✓
Cooler Temperature: 5.1 °C Ice

Sampled by: A. Ting
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)
Erin L 11-9-18 1440	11/9/18 1440		
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: 1811303

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 3:00 pm, Nov 14, 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: 1811303

SAMPLE RECEIPT

The following samples were received on November 12, 2018 for the analyses specified on the enclosed Chain of Custody Record.

Lab Number	Sample Name	Matrix	Analysis
1811303-01	W-28-111218 0-2FT	Soil	8082A
1811303-02	W-27-111218 0-2FT	Soil	8082A
1811303-03	SW-244-111218-A 0-2FT	Soil	8082A
1811303-04	SW-243-111218-A 0-2FT	Soil	8082A

CERTIFICATE OF ANALYSIS

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

ESS Laboratory Work Order: 1811303

PROJECT NARRATIVE

No unusual 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: 1811303

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: W-28-111218 0-2FT
Date Sampled: 11/12/18 11:55
Percent Solids: 93
Initial Volume: 19.2
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811303
ESS Laboratory Sample ID: 1811303-01
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/12/18 16:48

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	11/13/18 12:30	C8K0233	CK81211
Aroclor 1221	ND (0.06)		8082A		1	11/13/18 12:30	C8K0233	CK81211
Aroclor 1232	ND (0.06)		8082A		1	11/13/18 12:30	C8K0233	CK81211
Aroclor 1242	ND (0.06)		8082A		1	11/13/18 12:30	C8K0233	CK81211
Aroclor 1248	ND (0.06)		8082A		1	11/13/18 12:30	C8K0233	CK81211
Aroclor 1254 [2C]	**0.09** (0.06)		8082A		1	11/13/18 12:30	C8K0233	CK81211
Aroclor 1260	ND (0.06)		8082A		1	11/13/18 12:30	C8K0233	CK81211
Aroclor 1262	ND (0.06)		8082A		1	11/13/18 12:30	C8K0233	CK81211
Aroclor 1268	ND (0.06)		8082A		1	11/13/18 12:30	C8K0233	CK81211

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*96 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*100 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*97 %*		*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: W-27-111218 0-2FT
Date Sampled: 11/12/18 11:56
Percent Solids: 91
Initial Volume: 19.9
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811303
ESS Laboratory Sample ID: 1811303-02
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/12/18 16:48

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.06)		8082A		1	11/13/18 12:48	C8K0233	CK81211
Aroclor 1221	ND (0.06)		8082A		1	11/13/18 12:48	C8K0233	CK81211
Aroclor 1232	ND (0.06)		8082A		1	11/13/18 12:48	C8K0233	CK81211
Aroclor 1242	ND (0.06)		8082A		1	11/13/18 12:48	C8K0233	CK81211
Aroclor 1248	ND (0.06)		8082A		1	11/13/18 12:48	C8K0233	CK81211
Aroclor 1254	**0.07** (0.06)		8082A		1	11/13/18 12:48	C8K0233	CK81211
Aroclor 1260	ND (0.06)		8082A		1	11/13/18 12:48	C8K0233	CK81211
Aroclor 1262	ND (0.06)		8082A		1	11/13/18 12:48	C8K0233	CK81211
Aroclor 1268	ND (0.06)		8082A		1	11/13/18 12:48	C8K0233	CK81211

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*90 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*95 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*91 %*		*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-244-111218-A 0-2FT
Date Sampled: 11/12/18 13:53
Percent Solids: 94
Initial Volume: 19.7
Final Volume: 10
Extraction Method: 3540C

ESS Laboratory Work Order: 1811303
ESS Laboratory Sample ID: 1811303-03
Sample Matrix: Soil
Units: mg/kg dry
Analyst: CAD
Prepared: 11/12/18 16:48

8082A Polychlorinated Biphenyls (PCB)

Analyte	Results (MRL)	MDL	Method	Limit	DF	Analyzed	Sequence	Batch
Aroclor 1016	ND (0.05)		8082A		1	11/13/18 13:07	C8K0233	CK81211
Aroclor 1221	ND (0.05)		8082A		1	11/13/18 13:07	C8K0233	CK81211
Aroclor 1232	ND (0.05)		8082A		1	11/13/18 13:07	C8K0233	CK81211
Aroclor 1242	ND (0.05)		8082A		1	11/13/18 13:07	C8K0233	CK81211
Aroclor 1248	ND (0.05)		8082A		1	11/13/18 13:07	C8K0233	CK81211
Aroclor 1254	**0.2** (0.05)		8082A		1	11/13/18 13:07	C8K0233	CK81211
Aroclor 1260 [2C]	**0.1** (0.05)		8082A		1	11/13/18 13:07	C8K0233	CK81211
Aroclor 1262	ND (0.05)		8082A		1	11/13/18 13:07	C8K0233	CK81211
Aroclor 1268	ND (0.05)		8082A		1	11/13/18 13:07	C8K0233	CK81211

	%Recovery	*Qualifier*	*Limits*
Surrogate: Decachlorobiphenyl	*100 %*		*30-150*
Surrogate: Decachlorobiphenyl [2C]	*102 %*		*30-150*
Surrogate: Tetrachloro-m-xylene	*95 %*		*30-150*
Surrogate: Tetrachloro-m-xylene [2C]	*98 %*		*30-150*