



A Waters Company

Kate Verbeten
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USA

SOIL-107



Final Report

Soil/Hazardous Waste Proficiency Testing

Soil Study

Open Date: 07/22/19

Close Date: 09/05/19

Report Issued Date: 09/11/19



A Waters Company

September 11, 2019

Kate Verbeten
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Enclosed is your final report for ERA's SOIL-107 Proficiency Testing (PT) study. Your final report includes an evaluation of all results submitted by your laboratory to ERA.

Data Evaluation Protocols: All analytes in ERA's SOIL-107 Proficiency Testing study have been evaluated using the following tiered approach. If the analyte is listed in the current TNI Fields of Proficiency Testing (FoPT) tables, the evaluation was completed by comparing the reported result to the acceptance limits generated using the criteria contained in the current TNI FoPT tables. If the analyte is not included in the TNI FoPT tables, the reported result has been evaluated using the procedures outlined in ERA's Standard Operating Procedure for the Generation of Performance Acceptance Limits (SOP 730002268).

Corrective Action Help: As part of your accreditation(s), you may be required to identify the root cause of any "Not Acceptable" results, implement the necessary corrective actions, and then satisfy your PT requirements by participating in a Supplemental (QuiK™ Response) or future ERA PT study. ERA's technical staff is available to help your laboratory resolve any technical issues that may be impairing your PT performance and possibly affecting your routine data quality. Our laboratory and technical staff have many years of collective experience in performing the full range of environmental analyses. As part of our technical support, ERA offers QC samples that can be useful in helping you work through your technical issues.

At the request of the TNI Accreditation Council, we have included a Laboratory Exception Report that includes a list of all analytes reported with less than qualifiers when the assigned value was greater than "0." In addition, because we have received many requests from laboratories, this report also includes a list of all analytes with "Not Acceptable" evaluations.

Some states have elected not to convert to the 2009 TNI Standards at this time. If you have released your results to a state that has retained the 2003 NELAC Evaluation Criteria, your final report will include a section that evaluates the results according to the 2003 Standard in addition to the 2009 TNI Standards.

Thank you for your participation in ERA's SOIL-107 Proficiency Testing study. If you have any questions, please contact our Proficiency Testing Department at 1-800-372-0122.

Sincerely,

A handwritten signature in black ink, appearing to read "Matthew Seebeck", is written over a horizontal line.

Matthew Seebeck
Quality Officer

attachments



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Report Recipient	Contact/Phone Number	Reporting Type	Evaluation Type
Florida	Vanessa Soto / 904-791-1599	All Analytes	2009 TNI
Illinois	John South / (217) 558-7142	All Analytes	2009 TNI
Kentucky	Patrick Garrity / 502-782-6954	All Analytes	2009 TNI
Louisiana	Paul Bergeron / 225-219-3247	All Analytes	2009 TNI
Minnesota	Lynn Boysen / 218-332-5164	All Analytes	2009 TNI
North Dakota	Cynthia Auen / 701-328-6172	All Analytes	2009 TNI
Wisconsin	Tom Trainor / (920) 412-5970	All Analytes	2009 TNI
CADENA, Inc (E518002)	Jim Tomalia / (313) 871-5800	All Analytes	2009 TNI
Ford Motor Company (E518002)	Hilda Arellano / 313-845-1648	All Analytes	2009 TNI



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SOIL-107 Definitions & Study Discussion

Study Dates: 07/22/19 - 09/05/19

Report Issued: 09/11/19

SOIL Study Definitions

The Reported Value is the value that the laboratory reported to ERA.

The ERA Assigned Values for the Organic Proficiency Testing Standards are equal to 100% of the parameter present in the standard as determined by gravimetric and/or volumetric measurements made during standard preparation as applicable. The ERA assigned values for the Inorganic Proficiency Testing Standards, with the exception of the TCLP Metals in Soil and Total Organic Carbon (TOC) in the Nutrients in Soil sample, are equal to the maximum amount of the parameter available in the standard by applicable EPA methodologies. The ERA assigned values for the TCLP metals and TOC are equal to the mean of the study data, after the removal of outliers. All parameters not added to the standard are given an Assigned Value of "< PTRL", per the guidelines contained in the 2009 TNI Standards. The assigned values are directly traceable to the commercially prepared starting materials used to manufacture the PT standards.

The Acceptance Limits are established per the criteria contained in the most current TNI Fields of Proficiency Testing (FoPT) tables, or ERA's SOP for the Generation of Performance Acceptance Limits™ as applicable.

The Performance Evaluation:

Acceptable = Reported Value falls within the Acceptance Limits.

Not Acceptable = Reported Value falls outside the Acceptance Limits.

No Evaluation = Reported Value cannot be evaluated.

Not Reported = No Value reported.

The Method Description is the method the laboratory reported to ERA.

SOIL Study Discussion

ERA's SOIL-107 Proficiency Testing (PT) study has been reviewed by ERA senior management and certified compliant with the requirements of the 2009 TNI PT Standard and the criteria contained in the most current TNI Fields of Proficiency Testing (FoPT) tables.

ERA's SOIL-107 study standards were examined for any anomalies. A full review of all homogeneity, stability and accuracy verification data was completed. All analytical verification data for all analytes in the standards met the acceptance criteria contained in the 2009 TNI PT Standard and the criteria contained in the most current TNI FoPT tables.

The data submitted by participating laboratories was also examined for study anomalies. There were no anomalies observed during the statistical review of the data.

ERA's SOIL-107 Proficiency Testing study reports shall not be reproduced except in its entirety and not without the permission of the participating laboratory. The report must not be used by the participating laboratories to claim product endorsement any agency of the U. S. government.

The data contained herein are confidential and intended for your use only.

If you have any questions or concerns regarding your assessment in ERA's SOIL Proficiency Testing program, please contact our Proficiency Testing Department at 1-800-372-0122.





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SOIL-107 Laboratory Exception Report

Kate Verbeten
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WI01103
E518002
09/11/19
07/22/19 - 09/05/19

2009 TNI Evaluation Checks

There are no values reported with < where the assigned value was greater than 0.

2009 TNI Not Acceptable Evaluations

TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description
SOIL Metals in Soil (cat# 620, lot# D107-540)							
1095	Mercury	mg/kg	33.6	26.6	11.0 - 29.3	Not Acceptable	EPA 7473 2007



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) & 271, 401QR, 463, 928QR (Glycols) are included in ERA's A2LA accreditation.
 Lab Code: 1539-01

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Study # : SOIL-107





Final Report Results For Laboratory Pace Analytical Services - Green Bay





2009 TNI Evaluation Report

Study: **SOIL-107**

ERA Customer Number: **E518002**

Laboratory Name: **Pace Analytical Services
- Green Bay**

Inorganic Results





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SOIL-107 2009 TNI Evaluation Final Complete Report

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TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
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SOIL Metals in Soil (cat# 620, lot# D107-540)

1000	Aluminum	mg/kg		10100	4270 - 12700	Not Reported				8460	2080	
1005	Antimony	mg/kg		228	22.8 - 302	Not Reported				120	62.9	
1010	Arsenic	mg/kg		104	66.9 - 124	Not Reported				95.5	9.71	
1015	Barium	mg/kg		320	225 - 375	Not Reported				300	25.9	
1020	Beryllium	mg/kg		111	77.2 - 129	Not Reported				103	7.93	
1025	Boron	mg/kg		145	66.1 - 160	Not Reported				110	14.3	
1030	Cadmium	mg/kg		149	101 - 169	Not Reported				135	11.7	
1035	Calcium	mg/kg		5190	3430 - 6020	Not Reported				4720	456	
1040	Chromium	mg/kg		155	103 - 191	Not Reported				147	11.3	
1050	Cobalt	mg/kg		45.2	32.4 - 54.0	Not Reported				43.2	3.10	
1055	Copper	mg/kg		156	113 - 188	Not Reported				150	13.3	
1070	Iron	mg/kg		15000	5160 - 23700	Not Reported				14400	3990	
1075	Lead	mg/kg		92.4	64.6 - 120	Not Reported				92.3	8.81	
1085	Magnesium	mg/kg		2570	1420 - 3170	Not Reported				2300	304	
1090	Manganese	mg/kg		709	529 - 826	Not Reported				677	48.4	
1095	Mercury	mg/kg	19.6	26.6	11.0 - 29.3	Acceptable	EPA 7471A 1 1994	8/5/2019	0.427	18.4	2.89	AJT
1100	Molybdenum	mg/kg		47.2	27.7 - 55.1	Not Reported				41.4	5.13	
1105	Nickel	mg/kg		65.2	41.9 - 77.8	Not Reported				59.8	4.55	
1125	Potassium	mg/kg		2420	1200 - 2860	Not Reported				2030	346	
1140	Selenium	mg/kg		45.1	23.4 - 60.7	Not Reported				42.0	4.89	



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) & 271, 401QR, 463, 928QR (Glycols) are included in ERA's A2LA accreditation. Lab Code: 1539-01





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SOIL Metals in Soil (cat# 620, lot# D107-540) (Continued)

1150	Silver	mg/kg		41.0	27.9 - 52.7	Not Reported				40.3	4.57	
1155	Sodium	mg/kg		161	50.2 - 227	Not Reported				139	27.6	
1160	Strontium	mg/kg		161	110 - 193	Not Reported				152	13.7	
1165	Thallium	mg/kg		90.4	54.3 - 112	Not Reported				83.1	6.15	
1175	Tin	mg/kg		104	53.2 - 136	Not Reported				94.5	11.4	
1180	Titanium	mg/kg		530	0.00 - 885	Not Reported				402	161	
3055	Uranium	mg/kg		72.3	45.5 - 94.6	Not Reported				70.1	8.17	
1185	Vanadium	mg/kg		104	64.9 - 129	Not Reported				96.9	12.5	
1190	Zinc	mg/kg		393	258 - 480	Not Reported				369	33.2	



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) & 271, 401QR, 463, 928QR (Glycols) are included in ERA's A2LA accreditation. Lab Code: 1539-01





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1000	Aluminum	mg/kg		10100	4270 - 12700	Not Reported				8460	2080	
1005	Antimony	mg/kg		228	22.8 - 302	Not Reported				120	62.9	
1010	Arsenic	mg/kg		104	66.9 - 124	Not Reported				95.5	9.71	
1015	Barium	mg/kg		320	225 - 375	Not Reported				300	25.9	
1020	Beryllium	mg/kg		111	77.2 - 129	Not Reported				103	7.93	
1025	Boron	mg/kg		145	66.1 - 160	Not Reported				110	14.3	
1030	Cadmium	mg/kg		149	101 - 169	Not Reported				135	11.7	
1035	Calcium	mg/kg		5190	3430 - 6020	Not Reported				4720	456	
1040	Chromium	mg/kg		155	103 - 191	Not Reported				147	11.3	
1050	Cobalt	mg/kg		45.2	32.4 - 54.0	Not Reported				43.2	3.10	
1055	Copper	mg/kg		156	113 - 188	Not Reported				150	13.3	
1070	Iron	mg/kg		15000	5160 - 23700	Not Reported				14400	3990	
1075	Lead	mg/kg		92.4	64.6 - 120	Not Reported				92.3	8.81	
1085	Magnesium	mg/kg		2570	1420 - 3170	Not Reported				2300	304	
1090	Manganese	mg/kg		709	529 - 826	Not Reported				677	48.4	
1095	Mercury	mg/kg	33.6	26.6	11.0 - 29.3	Not Acceptable	EPA 7473 2007	8/7/2019	5.27	18.4	2.89	AJT
1100	Molybdenum	mg/kg		47.2	27.7 - 55.1	Not Reported				41.4	5.13	
1105	Nickel	mg/kg		65.2	41.9 - 77.8	Not Reported				59.8	4.55	
1125	Potassium	mg/kg		2420	1200 - 2860	Not Reported				2030	346	
1140	Selenium	mg/kg		45.1	23.4 - 60.7	Not Reported				42.0	4.89	



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) & 271, 401QR, 463, 928QR (Glycols) are included in ERA's A2LA accreditation. Lab Code: 1539-01





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SOIL Metals in Soil (cat# 620, lot# D107-540) (Continued)

1150	Silver	mg/kg		41.0	27.9 - 52.7	Not Reported				40.3	4.57	
1155	Sodium	mg/kg		161	50.2 - 227	Not Reported				139	27.6	
1160	Strontium	mg/kg		161	110 - 193	Not Reported				152	13.7	
1165	Thallium	mg/kg		90.4	54.3 - 112	Not Reported				83.1	6.15	
1175	Tin	mg/kg		104	53.2 - 136	Not Reported				94.5	11.4	
1180	Titanium	mg/kg		530	0.00 - 885	Not Reported				402	161	
3055	Uranium	mg/kg		72.3	45.5 - 94.6	Not Reported				70.1	8.17	
1185	Vanadium	mg/kg		104	64.9 - 129	Not Reported				96.9	12.5	
1190	Zinc	mg/kg		393	258 - 480	Not Reported				369	33.2	



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) & 271, 401QR, 463, 928QR (Glycols) are included in ERA's A2LA accreditation. Lab Code: 1539-01





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SOIL Metals in Soil (cat# 620, lot# D107-540)

1000	Aluminum	mg/kg	9040	10100	4270 - 12700	Acceptable	EPA 6020	8/2/2019	0.277	8460	2080	DS1
1005	Antimony	mg/kg	144	228	22.8 - 302	Acceptable	EPA 6020	8/2/2019	0.382	120	62.9	DS1
1010	Arsenic	mg/kg		104	66.9 - 124	Not Reported				95.5	9.71	
1015	Barium	mg/kg	325	320	225 - 375	Acceptable	EPA 6020	8/2/2019	0.967	300	25.9	DS1
1020	Beryllium	mg/kg	105	111	77.2 - 129	Acceptable	EPA 6020	8/2/2019	0.271	103	7.93	DS1
1025	Boron	mg/kg	117	145	66.1 - 160	Acceptable	EPA 6020	8/2/2019	0.473	110	14.3	DS1
1030	Cadmium	mg/kg		149	101 - 169	Not Reported				135	11.7	
1035	Calcium	mg/kg	4980	5190	3430 - 6020	Acceptable	EPA 6020	8/2/2019	0.562	4720	456	DS1
1040	Chromium	mg/kg	147	155	103 - 191	Acceptable	EPA 6020	8/2/2019	0.000616	147	11.3	DS1
1050	Cobalt	mg/kg	43.7	45.2	32.4 - 54.0	Acceptable	EPA 6020	8/2/2019	0.155	43.2	3.10	DS1
1055	Copper	mg/kg	154	156	113 - 188	Acceptable	EPA 6020	8/2/2019	0.267	150	13.3	DS1
1070	Iron	mg/kg	12600	15000	5160 - 23700	Acceptable	EPA 6020	8/2/2019	-0.460	14400	3990	DS1
1075	Lead	mg/kg	96.9	92.4	64.6 - 120	Acceptable	EPA 6020	8/2/2019	0.520	92.3	8.81	DS1
1085	Magnesium	mg/kg	2500	2570	1420 - 3170	Acceptable	EPA 6020	8/2/2019	0.664	2300	304	DS1
1090	Manganese	mg/kg	662	709	529 - 826	Acceptable	EPA 6020	8/2/2019	-0.319	677	48.4	DS1
1095	Mercury	mg/kg	18.9	26.6	11.0 - 29.3	Acceptable	EPA 6020	8/2/2019	0.184	18.4	2.89	DS1
1100	Molybdenum	mg/kg		47.2	27.7 - 55.1	Not Reported				41.4	5.13	
1105	Nickel	mg/kg	61.4	65.2	41.9 - 77.8	Acceptable	EPA 6020	8/2/2019	0.344	59.8	4.55	DS1
1125	Potassium	mg/kg	2200	2420	1200 - 2860	Acceptable	EPA 6020	8/2/2019	0.501	2030	346	DS1
1140	Selenium	mg/kg		45.1	23.4 - 60.7	Not Reported				42.0	4.89	



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) & 271, 401QR, 463, 928QR (Glycols) are included in ERA's A2LA accreditation. Lab Code: 1539-01





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1155	Sodium	mg/kg	132	161	50.2 - 227	Acceptable	EPA 6020	8/2/2019	-0.240	139	27.6	DS1
1160	Strontium	mg/kg		161	110 - 193	Not Reported				152	13.7	
1165	Thallium	mg/kg	86.8	90.4	54.3 - 112	Acceptable	EPA 6020	8/2/2019	0.601	83.1	6.15	DS1
1175	Tin	mg/kg	105	104	53.2 - 136	Acceptable	EPA 6020	8/2/2019	0.919	94.5	11.4	DS1
1180	Titanium	mg/kg		530	0.00 - 885	Not Reported				402	161	
3055	Uranium	mg/kg		72.3	45.5 - 94.6	Not Reported				70.1	8.17	
3055	Uranium	mg/kg	71.8	72.3	45.5 - 94.6	Acceptable	EPA 6020	8/2/2019	0.214	70.1	8.17	DS1
1185	Vanadium	mg/kg	96.8	104	64.9 - 129	Acceptable	EPA 6020	8/2/2019	-0.00994	96.9	12.5	DS1
1190	Zinc	mg/kg	397	393	258 - 480	Acceptable	EPA 6020	8/2/2019	0.841	369	33.2	DS1



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1010	Arsenic	mg/kg		104	66.9 - 124	Not Reported				95.5	9.71	
1015	Barium	mg/kg		320	225 - 375	Not Reported				300	25.9	
1020	Beryllium	mg/kg		111	77.2 - 129	Not Reported				103	7.93	
1025	Boron	mg/kg		145	66.1 - 160	Not Reported				110	14.3	
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1050	Cobalt	mg/kg		45.2	32.4 - 54.0	Not Reported				43.2	3.10	
1055	Copper	mg/kg		156	113 - 188	Not Reported				150	13.3	
1070	Iron	mg/kg		15000	5160 - 23700	Not Reported				14400	3990	
1075	Lead	mg/kg		92.4	64.6 - 120	Not Reported				92.3	8.81	
1085	Magnesium	mg/kg		2570	1420 - 3170	Not Reported				2300	304	
1090	Manganese	mg/kg		709	529 - 826	Not Reported				677	48.4	
1095	Mercury	mg/kg	15.6	26.6	11.0 - 29.3	Acceptable	EPA 1631E 2002	8/8/2019	-0.957	18.4	2.89	LMS
1100	Molybdenum	mg/kg		47.2	27.7 - 55.1	Not Reported				41.4	5.13	
1105	Nickel	mg/kg		65.2	41.9 - 77.8	Not Reported				59.8	4.55	
1125	Potassium	mg/kg		2420	1200 - 2860	Not Reported				2030	346	
1140	Selenium	mg/kg		45.1	23.4 - 60.7	Not Reported				42.0	4.89	



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07/22/19 - 09/05/19

TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
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SOIL Metals in Soil (cat# 620, lot# D107-540) (Continued)

1150	Silver	mg/kg		41.0	27.9 - 52.7	Not Reported				40.3	4.57	
1155	Sodium	mg/kg		161	50.2 - 227	Not Reported				139	27.6	
1160	Strontium	mg/kg		161	110 - 193	Not Reported				152	13.7	
1165	Thallium	mg/kg		90.4	54.3 - 112	Not Reported				83.1	6.15	
1175	Tin	mg/kg		104	53.2 - 136	Not Reported				94.5	11.4	
1180	Titanium	mg/kg		530	0.00 - 885	Not Reported				402	161	
3055	Uranium	mg/kg		72.3	45.5 - 94.6	Not Reported				70.1	8.17	
1185	Vanadium	mg/kg		104	64.9 - 129	Not Reported				96.9	12.5	
1190	Zinc	mg/kg		393	258 - 480	Not Reported				369	33.2	



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) & 271, 401QR, 463, 928QR (Glycols) are included in ERA's A2LA accreditation. Lab Code: 1539-01





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SOIL-107 2009 TNI Evaluation Final Complete Report

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SOIL Metals in Soil (cat# 620, lot# D107-540)

1000	Aluminum	mg/kg	9160	10100	4270 - 12700	Acceptable	EPA 6010B 2 1996	8/6/2019	0.335	8460	2080	TXW
1005	Antimony	mg/kg	137	228	22.8 - 302	Acceptable	EPA 6010B 2 1996	8/6/2019	0.271	120	62.9	TXW
1010	Arsenic	mg/kg	93.5	104	66.9 - 124	Acceptable	EPA 6010B 2 1996	8/6/2019	-0.207	95.5	9.71	TXW
1015	Barium	mg/kg	296	320	225 - 375	Acceptable	EPA 6010B 2 1996	8/6/2019	-0.152	300	25.9	TXW
1020	Beryllium	mg/kg	99.6	111	77.2 - 129	Acceptable	EPA 6010B 2 1996	8/6/2019	-0.410	103	7.93	TXW
1025	Boron	mg/kg	114	145	66.1 - 160	Acceptable	EPA 6010B 2 1996	8/6/2019	0.264	110	14.3	TXW
1030	Cadmium	mg/kg	126	149	101 - 169	Acceptable	EPA 6010B 2 1996	8/6/2019	-0.796	135	11.7	TXW
1035	Calcium	mg/kg	4750	5190	3430 - 6020	Acceptable	EPA 6010B 2 1996	8/6/2019	0.0577	4720	456	TXW
1040	Chromium	mg/kg	139	155	103 - 191	Acceptable	EPA 6010B 2 1996	8/6/2019	-0.710	147	11.3	TXW
1050	Cobalt	mg/kg	41.3	45.2	32.4 - 54.0	Acceptable	EPA 6010B 2 1996	8/6/2019	-0.618	43.2	3.10	TXW
1055	Copper	mg/kg	147	156	113 - 188	Acceptable	EPA 6010B 2 1996	8/6/2019	-0.258	150	13.3	TXW
1070	Iron	mg/kg	12500	15000	5160 - 23700	Acceptable	EPA 6010B 2 1996	8/6/2019	-0.485	14400	3990	TXW
1075	Lead	mg/kg	93.0	92.4	64.6 - 120	Acceptable	EPA 6010B 2 1996	8/6/2019	0.0772	92.3	8.81	TXW
1085	Magnesium	mg/kg	2510	2570	1420 - 3170	Acceptable	EPA 6010B 2 1996	8/6/2019	0.697	2300	304	TXW
1090	Manganese	mg/kg	636	709	529 - 826	Acceptable	EPA 6010B 2 1996	8/6/2019	-0.856	677	48.4	TXW
1095	Mercury	mg/kg		26.6	11.0 - 29.3	Not Reported				18.4	2.89	
1100	Molybdenum	mg/kg	42.5	47.2	27.7 - 55.1	Acceptable	EPA 6010B 2 1996	8/6/2019	0.217	41.4	5.13	TXW
1105	Nickel	mg/kg	58.2	65.2	41.9 - 77.8	Acceptable	EPA 6010B 2 1996	8/6/2019	-0.360	59.8	4.55	TXW
1125	Potassium	mg/kg	2190	2420	1200 - 2860	Acceptable	EPA 6010B 2 1996	8/6/2019	0.472	2030	346	TXW
1140	Selenium	mg/kg	43.0	45.1	23.4 - 60.7	Acceptable	EPA 6010B 2 1996	8/6/2019	0.200	42.0	4.89	TXW



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) & 271, 401QR, 463, 928QR (Glycols) are included in ERA's A2LA accreditation. Lab Code: 1539-01





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SOIL Metals in Soil (cat# 620, lot# D107-540) (Continued)

1150	Silver	mg/kg	45.1	41.0	27.9 - 52.7	Acceptable	EPA 6010B 2 1996	8/6/2019	1.04	40.3	4.57	TXW
1155	Sodium	mg/kg	134	161	50.2 - 227	Acceptable	EPA 6010B 2 1996	8/6/2019	-0.167	139	27.6	TXW
1160	Strontium	mg/kg	148	161	110 - 193	Acceptable	EPA 6010B 2 1996	8/6/2019	-0.270	152	13.7	TXW
1165	Thallium	mg/kg	83.6	90.4	54.3 - 112	Acceptable	EPA 6010B 2 1996	8/6/2019	0.0799	83.1	6.15	TXW
1175	Tin	mg/kg	96.3	104	53.2 - 136	Acceptable	EPA 6010B 2 1996	8/6/2019	0.159	94.5	11.4	TXW
1180	Titanium	mg/kg	486	530	0.00 - 885	Acceptable	EPA 6010B 2 1996	8/6/2019	0.521	402	161	TXW
3055	Uranium	mg/kg		72.3	45.5 - 94.6	Not Reported				70.1	8.17	
1185	Vanadium	mg/kg	95.6	104	64.9 - 129	Acceptable	EPA 6010B 2 1996	8/6/2019	-0.106	96.9	12.5	TXW
1190	Zinc	mg/kg	366	393	258 - 480	Acceptable	EPA 6010B 2 1996	8/6/2019	-0.0921	369	33.2	TXW



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) & 271, 401QR, 463, 928QR (Glycols) are included in ERA's A2LA accreditation. Lab Code: 1539-01





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SOIL Metals in Soil (cat# 620, lot# D107-540)

1000	Aluminum	mg/kg		10100	4270 - 12700	Not Reported				8460	2080	
1005	Antimony	mg/kg		228	22.8 - 302	Not Reported				120	62.9	
1010	Arsenic	mg/kg	109	104	66.9 - 124	Acceptable	EPA 6020	8/6/2019	1.39	95.5	9.71	DS1
1015	Barium	mg/kg		320	225 - 375	Not Reported				300	25.9	
1020	Beryllium	mg/kg		111	77.2 - 129	Not Reported				103	7.93	
1025	Boron	mg/kg		145	66.1 - 160	Not Reported				110	14.3	
1030	Cadmium	mg/kg	156	149	101 - 169	Acceptable	EPA 6020	8/6/2019	1.77	135	11.7	DS1
1035	Calcium	mg/kg		5190	3430 - 6020	Not Reported				4720	456	
1040	Chromium	mg/kg		155	103 - 191	Not Reported				147	11.3	
1050	Cobalt	mg/kg		45.2	32.4 - 54.0	Not Reported				43.2	3.10	
1055	Copper	mg/kg		156	113 - 188	Not Reported				150	13.3	
1070	Iron	mg/kg		15000	5160 - 23700	Not Reported				14400	3990	
1075	Lead	mg/kg		92.4	64.6 - 120	Not Reported				92.3	8.81	
1085	Magnesium	mg/kg		2570	1420 - 3170	Not Reported				2300	304	
1090	Manganese	mg/kg		709	529 - 826	Not Reported				677	48.4	
1095	Mercury	mg/kg		26.6	11.0 - 29.3	Not Reported				18.4	2.89	
1100	Molybdenum	mg/kg	46.2	47.2	27.7 - 55.1	Acceptable	EPA 6020	8/6/2019	0.939	41.4	5.13	DS1
1105	Nickel	mg/kg		65.2	41.9 - 77.8	Not Reported				59.8	4.55	
1125	Potassium	mg/kg		2420	1200 - 2860	Not Reported				2030	346	
1140	Selenium	mg/kg	50.0	45.1	23.4 - 60.7	Acceptable	EPA 6020	8/6/2019	1.63	42.0	4.89	DS1



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) & 271, 401QR, 463, 928QR (Glycols) are included in ERA's A2LA accreditation. Lab Code: 1539-01





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SOIL Metals in Soil (cat# 620, lot# D107-540) (Continued)

1150	Silver	mg/kg	45.4	41.0	27.9 - 52.7	Acceptable	EPA 6020	8/6/2019	1.11	40.3	4.57	DS1
1155	Sodium	mg/kg		161	50.2 - 227	Not Reported				139	27.6	
1160	Strontium	mg/kg	164	161	110 - 193	Acceptable	EPA 6020	8/6/2019	0.900	152	13.7	DS1
1165	Thallium	mg/kg		90.4	54.3 - 112	Not Reported				83.1	6.15	
1175	Tin	mg/kg		104	53.2 - 136	Not Reported				94.5	11.4	
1180	Titanium	mg/kg	486	530	0.00 - 885	Acceptable	EPA 6020	8/6/2019	0.521	402	161	DS1
3055	Uranium	mg/kg		72.3	45.5 - 94.6	Not Reported				70.1	8.17	
1185	Vanadium	mg/kg		104	64.9 - 129	Not Reported				96.9	12.5	
1190	Zinc	mg/kg		393	258 - 480	Not Reported				369	33.2	



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) & 271, 401QR, 463, 928QR (Glycols) are included in ERA's A2LA accreditation. Lab Code: 1539-01





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SOIL Metals in Soil (cat# 620, lot# D107-540)

1000	Aluminum	mg/kg	9040	10100	4270 - 12700	Acceptable	EPA 6020A 1 2007	8/2/2019	0.277	8460	2080	DS1
1005	Antimony	mg/kg	144	228	22.8 - 302	Acceptable	EPA 6020A 1 2007	8/2/2019	0.382	120	62.9	DS1
1010	Arsenic	mg/kg		104	66.9 - 124	Not Reported				95.5	9.71	
1015	Barium	mg/kg	325	320	225 - 375	Acceptable	EPA 6020A 1 2007	8/2/2019	0.967	300	25.9	DS1
1020	Beryllium	mg/kg	105	111	77.2 - 129	Acceptable	EPA 6020A 1 2007	8/2/2019	0.271	103	7.93	DS1
1025	Boron	mg/kg	117	145	66.1 - 160	Acceptable	EPA 6020A 1 2007	8/2/2019	0.473	110	14.3	DS1
1030	Cadmium	mg/kg		149	101 - 169	Not Reported				135	11.7	
1035	Calcium	mg/kg	4980	5190	3430 - 6020	Acceptable	EPA 6020A 1 2007	8/2/2019	0.562	4720	456	DS1
1040	Chromium	mg/kg	147	155	103 - 191	Acceptable	EPA 6020A 1 2007	8/2/2019	0.000616	147	11.3	DS1
1050	Cobalt	mg/kg	43.7	45.2	32.4 - 54.0	Acceptable	EPA 6020A 1 2007	8/2/2019	0.155	43.2	3.10	DS1
1055	Copper	mg/kg	154	156	113 - 188	Acceptable	EPA 6020A 1 2007	8/2/2019	0.267	150	13.3	DS1
1070	Iron	mg/kg	12600	15000	5160 - 23700	Acceptable	EPA 6020A 1 2007	8/2/2019	-0.460	14400	3990	DS1
1075	Lead	mg/kg	96.9	92.4	64.6 - 120	Acceptable	EPA 6020A 1 2007	8/2/2019	0.520	92.3	8.81	DS1
1085	Magnesium	mg/kg	2500	2570	1420 - 3170	Acceptable	EPA 6020A 1 2007	8/2/2019	0.664	2300	304	DS1
1090	Manganese	mg/kg	662	709	529 - 826	Acceptable	EPA 6020A 1 2007	8/2/2019	-0.319	677	48.4	DS1
1095	Mercury	mg/kg	18.9	26.6	11.0 - 29.3	Acceptable	EPA 6020A 1 2007	8/2/2019	0.184	18.4	2.89	DS1
1100	Molybdenum	mg/kg		47.2	27.7 - 55.1	Not Reported				41.4	5.13	
1105	Nickel	mg/kg	61.4	65.2	41.9 - 77.8	Acceptable	EPA 6020A 1 2007	8/2/2019	0.344	59.8	4.55	DS1
1125	Potassium	mg/kg	2200	2420	1200 - 2860	Acceptable	EPA 6020A 1 2007	8/2/2019	0.501	2030	346	DS1
1140	Selenium	mg/kg		45.1	23.4 - 60.7	Not Reported				42.0	4.89	



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) & 271, 401QR, 463, 928QR (Glycols) are included in ERA's A2LA accreditation. Lab Code: 1539-01





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SOIL Metals in Soil (cat# 620, lot# D107-540) (Continued)

1150	Silver	mg/kg		41.0	27.9 - 52.7	Not Reported				40.3	4.57	
1155	Sodium	mg/kg	132	161	50.2 - 227	Acceptable	EPA 6020A 1 2007	8/2/2019	-0.240	139	27.6	DS1
1160	Strontium	mg/kg		161	110 - 193	Not Reported				152	13.7	
1165	Thallium	mg/kg	86.8	90.4	54.3 - 112	Acceptable	EPA 6020A 1 2007	8/2/2019	0.601	83.1	6.15	DS1
1175	Tin	mg/kg	105	104	53.2 - 136	Acceptable	EPA 6020A 1 2007	8/2/2019	0.919	94.5	11.4	DS1
1180	Titanium	mg/kg		530	0.00 - 885	Not Reported				402	161	
3055	Uranium	mg/kg		72.3	45.5 - 94.6	Not Reported				70.1	8.17	
3055	Uranium	mg/kg	71.8	72.3	45.5 - 94.6	Acceptable	EPA 6020A 1 2007	8/2/2019	0.214	70.1	8.17	DS1
1185	Vanadium	mg/kg	96.8	104	64.9 - 129	Acceptable	EPA 6020A 1 2007	8/2/2019	-0.00994	96.9	12.5	DS1
1190	Zinc	mg/kg	397	393	258 - 480	Acceptable	EPA 6020A 1 2007	8/2/2019	0.841	369	33.2	DS1



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) & 271, 401QR, 463, 928QR (Glycols) are included in ERA's A2LA accreditation. Lab Code: 1539-01





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SOIL Metals in Soil (cat# 620, lot# D107-540)

1000	Aluminum	mg/kg		10100	4270 - 12700	Not Reported				8460	2080	
1005	Antimony	mg/kg		228	22.8 - 302	Not Reported				120	62.9	
1010	Arsenic	mg/kg	109	104	66.9 - 124	Acceptable	EPA 6020A 1 2007	8/6/2019	1.39	95.5	9.71	DS1
1015	Barium	mg/kg		320	225 - 375	Not Reported				300	25.9	
1020	Beryllium	mg/kg		111	77.2 - 129	Not Reported				103	7.93	
1025	Boron	mg/kg		145	66.1 - 160	Not Reported				110	14.3	
1030	Cadmium	mg/kg	156	149	101 - 169	Acceptable	EPA 6020A 1 2007	8/6/2019	1.77	135	11.7	DS1
1035	Calcium	mg/kg		5190	3430 - 6020	Not Reported				4720	456	
1040	Chromium	mg/kg		155	103 - 191	Not Reported				147	11.3	
1050	Cobalt	mg/kg		45.2	32.4 - 54.0	Not Reported				43.2	3.10	
1055	Copper	mg/kg		156	113 - 188	Not Reported				150	13.3	
1070	Iron	mg/kg		15000	5160 - 23700	Not Reported				14400	3990	
1075	Lead	mg/kg		92.4	64.6 - 120	Not Reported				92.3	8.81	
1085	Magnesium	mg/kg		2570	1420 - 3170	Not Reported				2300	304	
1090	Manganese	mg/kg		709	529 - 826	Not Reported				677	48.4	
1095	Mercury	mg/kg		26.6	11.0 - 29.3	Not Reported				18.4	2.89	
1100	Molybdenum	mg/kg	46.2	47.2	27.7 - 55.1	Acceptable	EPA 6020A 1 2007	8/6/2019	0.939	41.4	5.13	DS1
1105	Nickel	mg/kg		65.2	41.9 - 77.8	Not Reported				59.8	4.55	
1125	Potassium	mg/kg		2420	1200 - 2860	Not Reported				2030	346	
1140	Selenium	mg/kg	50.0	45.1	23.4 - 60.7	Acceptable	EPA 6020A 1 2007	8/6/2019	1.63	42.0	4.89	DS1



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) & 271, 401QR, 463, 928QR (Glycols) are included in ERA's A2LA accreditation. Lab Code: 1539-01





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SOIL Metals in Soil (cat# 620, lot# D107-540) (Continued)

1150	Silver	mg/kg	45.4	41.0	27.9 - 52.7	Acceptable	EPA 6020A 1 2007	8/6/2019	1.11	40.3	4.57	DS1
1155	Sodium	mg/kg		161	50.2 - 227	Not Reported				139	27.6	
1160	Strontium	mg/kg	164	161	110 - 193	Acceptable	EPA 6020A 1 2007	8/6/2019	0.900	152	13.7	DS1
1165	Thallium	mg/kg		90.4	54.3 - 112	Not Reported				83.1	6.15	
1175	Tin	mg/kg		104	53.2 - 136	Not Reported				94.5	11.4	
1180	Titanium	mg/kg	486	530	0.00 - 885	Acceptable	EPA 6020A 1 2007	8/6/2019	0.521	402	161	DS1
3055	Uranium	mg/kg		72.3	45.5 - 94.6	Not Reported				70.1	8.17	
1185	Vanadium	mg/kg		104	64.9 - 129	Not Reported				96.9	12.5	
1190	Zinc	mg/kg		393	258 - 480	Not Reported				369	33.2	



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) & 271, 401QR, 463, 928QR (Glycols) are included in ERA's A2LA accreditation. Lab Code: 1539-01





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TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
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SOIL Metals in Soil (cat# 620, lot# D107-540)

1000	Aluminum	mg/kg		10100	4270 - 12700	Not Reported				8460	2080	
1005	Antimony	mg/kg		228	22.8 - 302	Not Reported				120	62.9	
1010	Arsenic	mg/kg		104	66.9 - 124	Not Reported				95.5	9.71	
1015	Barium	mg/kg		320	225 - 375	Not Reported				300	25.9	
1020	Beryllium	mg/kg		111	77.2 - 129	Not Reported				103	7.93	
1025	Boron	mg/kg		145	66.1 - 160	Not Reported				110	14.3	
1030	Cadmium	mg/kg		149	101 - 169	Not Reported				135	11.7	
1035	Calcium	mg/kg		5190	3430 - 6020	Not Reported				4720	456	
1040	Chromium	mg/kg		155	103 - 191	Not Reported				147	11.3	
1050	Cobalt	mg/kg		45.2	32.4 - 54.0	Not Reported				43.2	3.10	
1055	Copper	mg/kg		156	113 - 188	Not Reported				150	13.3	
1070	Iron	mg/kg		15000	5160 - 23700	Not Reported				14400	3990	
1075	Lead	mg/kg		92.4	64.6 - 120	Not Reported				92.3	8.81	
1085	Magnesium	mg/kg		2570	1420 - 3170	Not Reported				2300	304	
1090	Manganese	mg/kg		709	529 - 826	Not Reported				677	48.4	
1095	Mercury	mg/kg	19.6	26.6	11.0 - 29.3	Acceptable	EPA 7471B 1998	8/5/2019	0.427	18.4	2.89	AJT
1100	Molybdenum	mg/kg		47.2	27.7 - 55.1	Not Reported				41.4	5.13	
1105	Nickel	mg/kg		65.2	41.9 - 77.8	Not Reported				59.8	4.55	
1125	Potassium	mg/kg		2420	1200 - 2860	Not Reported				2030	346	
1140	Selenium	mg/kg		45.1	23.4 - 60.7	Not Reported				42.0	4.89	



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) & 271, 401QR, 463, 928QR (Glycols) are included in ERA's A2LA accreditation. Lab Code: 1539-01





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SOIL-107 2009 TNI Evaluation Final Complete Report

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SOIL Metals in Soil (cat# 620, lot# D107-540) (Continued)

1150	Silver	mg/kg		41.0	27.9 - 52.7	Not Reported				40.3	4.57	
1155	Sodium	mg/kg		161	50.2 - 227	Not Reported				139	27.6	
1160	Strontium	mg/kg		161	110 - 193	Not Reported				152	13.7	
1165	Thallium	mg/kg		90.4	54.3 - 112	Not Reported				83.1	6.15	
1175	Tin	mg/kg		104	53.2 - 136	Not Reported				94.5	11.4	
1180	Titanium	mg/kg		530	0.00 - 885	Not Reported				402	161	
3055	Uranium	mg/kg		72.3	45.5 - 94.6	Not Reported				70.1	8.17	
1185	Vanadium	mg/kg		104	64.9 - 129	Not Reported				96.9	12.5	
1190	Zinc	mg/kg		393	258 - 480	Not Reported				369	33.2	



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SOIL Metals in Soil (cat# 620, lot# D107-540)

1000	Aluminum	mg/kg	9160	10100	4270 - 12700	Acceptable	EPA 6010C 2000	8/6/2019	0.335	8460	2080	TXW
1005	Antimony	mg/kg	137	228	22.8 - 302	Acceptable	EPA 6010C 2000	8/6/2019	0.271	120	62.9	TXW
1010	Arsenic	mg/kg	93.5	104	66.9 - 124	Acceptable	EPA 6010C 2000	8/6/2019	-0.207	95.5	9.71	TXW
1015	Barium	mg/kg	296	320	225 - 375	Acceptable	EPA 6010C 2000	8/6/2019	-0.152	300	25.9	TXW
1020	Beryllium	mg/kg	99.6	111	77.2 - 129	Acceptable	EPA 6010C 2000	8/6/2019	-0.410	103	7.93	TXW
1025	Boron	mg/kg	114	145	66.1 - 160	Acceptable	EPA 6010C 2000	8/6/2019	0.264	110	14.3	TXW
1030	Cadmium	mg/kg	126	149	101 - 169	Acceptable	EPA 6010C 2000	8/6/2019	-0.796	135	11.7	TXW
1035	Calcium	mg/kg	4750	5190	3430 - 6020	Acceptable	EPA 6010C 2000	8/6/2019	0.0577	4720	456	TXW
1040	Chromium	mg/kg	139	155	103 - 191	Acceptable	EPA 6010C 2000	8/6/2019	-0.710	147	11.3	TXW
1050	Cobalt	mg/kg	41.3	45.2	32.4 - 54.0	Acceptable	EPA 6010C 2000	8/6/2019	-0.618	43.2	3.10	TXW
1055	Copper	mg/kg	147	156	113 - 188	Acceptable	EPA 6010C 2000	8/6/2019	-0.258	150	13.3	TXW
1070	Iron	mg/kg	12500	15000	5160 - 23700	Acceptable	EPA 6010C 2000	8/6/2019	-0.485	14400	3990	TXW
1075	Lead	mg/kg	93.0	92.4	64.6 - 120	Acceptable	EPA 6010C 2000	8/6/2019	0.0772	92.3	8.81	TXW
1085	Magnesium	mg/kg	2510	2570	1420 - 3170	Acceptable	EPA 6010C 2000	8/6/2019	0.697	2300	304	TXW
1090	Manganese	mg/kg	636	709	529 - 826	Acceptable	EPA 6010C 2000	8/6/2019	-0.856	677	48.4	TXW
1095	Mercury	mg/kg		26.6	11.0 - 29.3	Not Reported				18.4	2.89	
1100	Molybdenum	mg/kg	42.5	47.2	27.7 - 55.1	Acceptable	EPA 6010C 2000	8/6/2019	0.217	41.4	5.13	TXW
1105	Nickel	mg/kg	58.2	65.2	41.9 - 77.8	Acceptable	EPA 6010C 2000	8/6/2019	-0.360	59.8	4.55	TXW
1125	Potassium	mg/kg	2190	2420	1200 - 2860	Acceptable	EPA 6010C 2000	8/6/2019	0.472	2030	346	TXW
1140	Selenium	mg/kg	43.0	45.1	23.4 - 60.7	Acceptable	EPA 6010C 2000	8/6/2019	0.200	42.0	4.89	TXW



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) & 271, 401QR, 463, 928QR (Glycols) are included in ERA's A2LA accreditation. Lab Code: 1539-01





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SOIL Metals in Soil (cat# 620, lot# D107-540) (Continued)

1150	Silver	mg/kg	45.1	41.0	27.9 - 52.7	Acceptable	EPA 6010C 2000	8/6/2019	1.04	40.3	4.57	TXW
1155	Sodium	mg/kg	134	161	50.2 - 227	Acceptable	EPA 6010C 2000	8/6/2019	-0.167	139	27.6	TXW
1160	Strontium	mg/kg	148	161	110 - 193	Acceptable	EPA 6010C 2000	8/6/2019	-0.270	152	13.7	TXW
1165	Thallium	mg/kg	83.6	90.4	54.3 - 112	Acceptable	EPA 6010C 2000	8/6/2019	0.0799	83.1	6.15	TXW
1175	Tin	mg/kg	96.3	104	53.2 - 136	Acceptable	EPA 6010C 2000	8/6/2019	0.159	94.5	11.4	TXW
1180	Titanium	mg/kg	486	530	0.00 - 885	Acceptable	EPA 6010C 2000	8/6/2019	0.521	402	161	TXW
3055	Uranium	mg/kg		72.3	45.5 - 94.6	Not Reported				70.1	8.17	
1185	Vanadium	mg/kg	95.6	104	64.9 - 129	Acceptable	EPA 6010C 2000	8/6/2019	-0.106	96.9	12.5	TXW
1190	Zinc	mg/kg	366	393	258 - 480	Acceptable	EPA 6010C 2000	8/6/2019	-0.0921	369	33.2	TXW

SOIL Anions in Soil (cat# 873, lot# D107-543)

1540	Bromide	mg/kg	15.7	15.6	8.35 - 17.3	Acceptable	EPA 300.0 2.1 1993	8/17/2019	1.47	12.8	1.97	HMB
1575	Chloride	mg/kg	791	725	501 - 911	Acceptable	EPA 300.0 2.1 1993	8/17/2019	1.79	706	47.3	HMB
1730	Fluoride	mg/kg	76.1	469	46.9 - 516	Acceptable	EPA 300.0 2.1 1993	8/17/2019	-0.469	84.1	17.1	HMB
1810	Nitrate as N	mg/kg	296	284	198 - 317	Acceptable	EPA 300.0 2.1 1993	8/17/2019	2.13	258	18.0	HMB
1870	Phosphate as P	mg/kg		97.7	3.56 - 107	Not Reported				11.7	2.70	
2000	Sulfate	mg/kg	855	1630	682 - 1790	Acceptable	EPA 300.0 2.1 1993	8/17/2019	-0.776	1170	410	HMB



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) & 271, 401QR, 463, 928QR (Glycols) are included in ERA's A2LA accreditation. Lab Code: 1539-01





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SOIL Anions in Soil (cat# 873, lot# D107-543)

1540	Bromide	mg/kg	15.7	15.6	8.35 - 17.3	Acceptable	EPA 9056 1994	8/17/2019	1.47	12.8	1.97	HMB
1575	Chloride	mg/kg	791	725	501 - 911	Acceptable	EPA 9056 1994	8/17/2019	1.79	706	47.3	HMB
1730	Fluoride	mg/kg	76.1	469	46.9 - 516	Acceptable	EPA 9056 1994	8/17/2019	-0.469	84.1	17.1	HMB
1810	Nitrate as N	mg/kg	296	284	198 - 317	Acceptable	EPA 9056 1994	8/17/2019	2.13	258	18.0	HMB
1870	Phosphate as P	mg/kg		97.7	3.56 - 107	Not Reported				11.7	2.70	
2000	Sulfate	mg/kg	855	1630	682 - 1790	Acceptable	EPA 9056 1994	8/17/2019	-0.776	1170	410	HMB

SOIL Anions in Soil (cat# 873, lot# D107-543)

1540	Bromide	mg/kg	15.7	15.6	8.35 - 17.3	Acceptable	EPA 9056A 2007	8/17/2019	1.47	12.8	1.97	HMB
1575	Chloride	mg/kg	791	725	501 - 911	Acceptable	EPA 9056A 2007	8/17/2019	1.79	706	47.3	HMB
1730	Fluoride	mg/kg	76.1	469	46.9 - 516	Acceptable	EPA 9056A 2007	8/17/2019	-0.469	84.1	17.1	HMB
1810	Nitrate as N	mg/kg	296	284	198 - 317	Acceptable	EPA 9056A 2007	8/17/2019	2.13	258	18.0	HMB
1870	Phosphate as P	mg/kg		97.7	3.56 - 107	Not Reported				11.7	2.70	
2000	Sulfate	mg/kg	855	1630	682 - 1790	Acceptable	EPA 9056A 2007	8/17/2019	-0.776	1170	410	HMB

SOIL Cyanide in Soil (cat# 621, lot# D107-541)

1645	Cyanide, total	mg/kg	38.3	124	30.8 - 136	Acceptable	EPA 9012B 2004	8/2/2019	-1.31	75.7	28.6	DAW
1923	Reactive Cyanide	mg/kg		< 200	0.00 - 200	Not Reported				24.0	24.2	
1510	Amenable Cyanide	mg/kg		< 200	0.00 - 200	Not Reported				36.8	22.8	

SOIL Cyanide in Soil (cat# 621, lot# D107-541)

1645	Cyanide, total	mg/kg	38.3	124	30.8 - 136	Acceptable	EPA 9012 1986	8/2/2019	-1.31	75.7	28.6	DAW
1923	Reactive Cyanide	mg/kg		< 200	0.00 - 200	Not Reported				24.0	24.2	
1510	Amenable Cyanide	mg/kg		< 200	0.00 - 200	Not Reported				36.8	22.8	



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) & 271, 401QR, 463, 928QR (Glycols) are included in ERA's A2LA accreditation. Lab Code: 1539-01





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SOIL Cyanide in Soil (cat# 621, lot# D107-541)

1645	Cyanide, total	mg/kg	38.3	124	30.8 - 136	Acceptable	EPA 9012A 1 1996	8/2/2019	-1.31	75.7	28.6	DAW
1923	Reactive Cyanide	mg/kg		< 200	0.00 - 200	Not Reported				24.0	24.2	
1510	Amenable Cyanide	mg/kg		< 200	0.00 - 200	Not Reported				36.8	22.8	

SOIL Nutrients in Soil (cat# 869, lot# D107-542)

1515	Ammonia as N	mg/kg	1440	1430	838 - 1810	Acceptable	EPA 350.1	8/6/2019	0.695	1330	164	TMK
1795	Total Kjeldahl Nitrogen	mg/kg	1650	2380	1290 - 3290	Acceptable	EPA 351.2 2 1993	8/5/2019	-3.23	2290	198	TMK
2040	Total Organic Carbon (TOC)	mg/kg	4810	4210	1610 - 6810	Acceptable	EPA 9060 1986	8/2/2019	0.691	4210	866	TJJ
1910	Total Phosphorus	mg/kg	597	579	107 - 1060	Acceptable	EPA 365.4	8/7/2019	0.177	584	72.6	BAF

SOIL Nutrients in Soil (cat# 869, lot# D107-542)

1515	Ammonia as N	mg/kg		1430	838 - 1810	Not Reported				1330	164	
1795	Total Kjeldahl Nitrogen	mg/kg		2380	1290 - 3290	Not Reported				2290	198	
2040	Total Organic Carbon (TOC)	mg/kg		4210	1610 - 6810	Not Reported				4210	866	
1910	Total Phosphorus	mg/kg	644	579	107 - 1060	Acceptable	EPA 6020	8/2/2019	0.824	584	72.6	DS1

SOIL Nutrients in Soil (cat# 869, lot# D107-542)

1515	Ammonia as N	mg/kg		1430	838 - 1810	Not Reported				1330	164	
1795	Total Kjeldahl Nitrogen	mg/kg		2380	1290 - 3290	Not Reported				2290	198	
2040	Total Organic Carbon (TOC)	mg/kg		4210	1610 - 6810	Not Reported				4210	866	
1910	Total Phosphorus	mg/kg	644	579	107 - 1060	Acceptable	EPA 6020A	8/2/2019	0.824	584	72.6	DS1



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) & 271, 401QR, 463, 928QR (Glycols) are included in ERA's A2LA accreditation. Lab Code: 1539-01





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SOIL Nutrients in Soil (cat# 869, lot# D107-542)

1515	Ammonia as N	mg/kg		1430	838 - 1810	Not Reported				1330	164	
1795	Total Kjeldahl Nitrogen	mg/kg		2380	1290 - 3290	Not Reported				2290	198	
2040	Total Organic Carbon (TOC)	mg/kg	4810	4210	1610 - 6810	Acceptable	EPA 9060A 2004	8/2/2019	0.691	4210	866	TJJ
1910	Total Phosphorus	mg/kg		579	107 - 1060	Not Reported				584	72.6	

SOIL Corrosivity/pH in Soil (cat# 875, lot# D107-914)

1625	Corrosivity (pH)	S.U.	7.13	7.36	6.76 - 7.96	Acceptable	EPA 9045C 3 1995	8/2/2019	-0.130	7.16	0.248	ALY
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SOIL Corrosivity/pH in Soil (cat# 875, lot# D107-914)

1625	Corrosivity (pH)	S.U.	7.13	7.36	6.76 - 7.96	Acceptable	EPA 9045D 2002	8/2/2019	-0.130	7.16	0.248	ALY
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SOIL Ignitability/Flashpoint (cat# 874, lot# D107-979)

1780	Ignitability/Flashpoint	°F	126	120	103 - 137	Acceptable	EPA 1010A 2002	8/1/2019	0.230	125	5.83	DEY
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2009 TNI Evaluation Report

Study: **SOIL-107**

ERA Customer Number: **E518002**

Laboratory Name: **Pace Analytical Services
- Green Bay**

Organic Results





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SOIL Volatiles in Soil (cat# 623, lot# D107-721)

4315	Acetone	µg/kg		630	63.0 - 984	Not Reported				562	193	
4320	Acetonitrile	µg/kg		902	0.00 - 1820	Not Reported				492	197	
4325	Acrolein	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4325	Acrolein	µg/kg	< 83.8	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4375	Benzene	µg/kg		< 13.0	0.00 - 13.0	Not Reported						
4375	Benzene	µg/kg	< 2.7	< 13.0	0.00 - 13.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4385	Bromobenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4385	Bromobenzene	µg/kg	< 2.6	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4390	Bromochloromethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4390	Bromochloromethane	µg/kg	< 3.5	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4395	Bromodichloromethane	µg/kg		< 12.0	0.00 - 12.0	Not Reported						
4395	Bromodichloromethane	µg/kg	< 2.5	< 12.0	0.00 - 12.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4400	Bromoform	µg/kg		53.8	29.6 - 78.0	Not Reported				56.5	10.4	
4400	Bromoform	µg/kg	72.8	53.8	29.6 - 78.0	Acceptable	EPA 8260B 2 1996	8/1/2019	1.57	56.5	10.4	HNW
4950	Bromomethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4950	Bromomethane	µg/kg	< 6.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4410	2-Butanone (MEK)	µg/kg		345	107 - 534	Not Reported				323	50.3	
4435	n-Butylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4435	n-Butylbenzene	µg/kg	< 4.3	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4440	sec-Butylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						



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SOIL Volatiles in Soil (cat# 623, lot# D107-721) (Continued)

4440	sec-Butylbenzene	µg/kg	< 3.6	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4445	tert-Butylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4445	tert-Butylbenzene	µg/kg	< 3.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
5000	tert-Butyl methyl ether (MTBE)	µg/kg		102	61.2 - 143	Not Reported				107	13.2	
5000	tert-Butyl methyl ether (MTBE)	µg/kg	109	102	61.2 - 143	Acceptable	EPA 8260B 2 1996	8/1/2019	0.189	107	13.2	HNW
4450	Carbon disulfide	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4450	Carbon disulfide	µg/kg	< 3.3	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4455	Carbon tetrachloride	µg/kg		43.1	21.5 - 64.7	Not Reported				44.5	9.71	
4455	Carbon tetrachloride	µg/kg	41.7	43.1	21.5 - 64.7	Acceptable	EPA 8260B 2 1996	8/1/2019	-0.292	44.5	9.71	HNW
4475	Chlorobenzene	µg/kg		< 10.0	0.00 - 10.0	Not Reported						
4475	Chlorobenzene	µg/kg	< 2.9	< 10.0	0.00 - 10.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4575	Chlorodibromomethane	µg/kg		83.4	50.0 - 117	Not Reported				85.6	12.7	
4575	Chlorodibromomethane	µg/kg	104	83.4	50.0 - 117	Acceptable	EPA 8260B 2 1996	8/1/2019	1.45	85.6	12.7	HNW
4485	Chloroethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4485	Chloroethane	µg/kg	< 3.6	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4500	2-Chloroethylvinylether	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4500	2-Chloroethylvinylether	µg/kg	< 18.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4505	Chloroform	µg/kg		152	91.2 - 213	Not Reported				153	22.9	
4505	Chloroform	µg/kg	133	152	91.2 - 213	Acceptable	EPA 8260B 2 1996	8/1/2019	-0.872	153	22.9	HNW
4960	Chloromethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						



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SOIL-107 2009 TNI Evaluation Final Complete Report

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SOIL Volatiles in Soil (cat# 623, lot# D107-721) (Continued)

4960	Chloromethane	µg/kg	< 2.5	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4535	2-Chlorotoluene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4535	2-Chlorotoluene	µg/kg	< 3.2	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4540	4-Chlorotoluene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4540	4-Chlorotoluene	µg/kg	< 2.9	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4570	1,2-Dibromo-3-chloropropane (DBCP)	µg/kg		167	83.5 - 251	Not Reported				166	31.0	
4570	1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	180	167	83.5 - 251	Acceptable	EPA 8260B 2 1996	8/1/2019	0.462	166	31.0	HNW
4585	1,2-Dibromoethane (EDB)	µg/kg		24.9	16.2 - 33.6	Not Reported				24.9	3.94	
4585	1,2-Dibromoethane (EDB)	µg/kg	28.4	24.9	16.2 - 33.6	Acceptable	EPA 8260B 2 1996	8/1/2019	0.884	24.9	3.94	HNW
4595	Dibromomethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4595	Dibromomethane	µg/kg	< 3.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4610	1,2-Dichlorobenzene	µg/kg		76.5	45.9 - 107	Not Reported				75.0	16.1	
4610	1,2-Dichlorobenzene	µg/kg	72.6	76.5	45.9 - 107	Acceptable	EPA 8260B 2 1996	8/1/2019	-0.148	75.0	16.1	HNW
4615	1,3-Dichlorobenzene	µg/kg		36.6	22.0 - 51.2	Not Reported				36.5	9.76	
4615	1,3-Dichlorobenzene	µg/kg	35.2	36.6	22.0 - 51.2	Acceptable	EPA 8260B 2 1996	8/1/2019	-0.135	36.5	9.76	HNW
4620	1,4-Dichlorobenzene	µg/kg		< 12.0	0.00 - 12.0	Not Reported						
4620	1,4-Dichlorobenzene	µg/kg	< 2.9	< 12.0	0.00 - 12.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4625	Dichlorodifluoromethane (Freon 12)	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4625	Dichlorodifluoromethane (Freon 12)	µg/kg	< 2.6	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4630	1,1-Dichloroethane	µg/kg		170	102 - 238	Not Reported				172	23.7	



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SOIL Volatiles in Soil (cat# 623, lot# D107-721) (Continued)

4630	1,1-Dichloroethane	µg/kg	145	170	102 - 238	Acceptable	EPA 8260B 2 1996	8/1/2019	-1.13	172	23.7	HNW
4635	1,2-Dichloroethane	µg/kg		114	68.4 - 160	Not Reported				115	17.4	
4635	1,2-Dichloroethane	µg/kg	110	114	68.4 - 160	Acceptable	EPA 8260B 2 1996	8/1/2019	-0.291	115	17.4	HNW
4640	1,1-Dichloroethylene	µg/kg		< 10.0	0.00 - 10.0	Not Reported						
4640	1,1-Dichloroethylene	µg/kg	< 3.4	< 10.0	0.00 - 10.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4645	cis-1,2-Dichloroethylene	µg/kg		< 12.0	0.00 - 12.0	Not Reported						
4645	cis-1,2-Dichloroethylene	µg/kg	< 4.3	< 12.0	0.00 - 12.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4700	trans-1,2-Dichloroethylene	µg/kg		58.9	35.3 - 82.5	Not Reported				60.5	11.4	
4700	trans-1,2-Dichloroethylene	µg/kg	52.0	58.9	35.3 - 82.5	Acceptable	EPA 8260B 2 1996	8/1/2019	-0.745	60.5	11.4	HNW
4655	1,2-Dichloropropane	µg/kg		97.3	63.2 - 131	Not Reported				98.5	16.4	
4655	1,2-Dichloropropane	µg/kg	105	97.3	63.2 - 131	Acceptable	EPA 8260B 2 1996	8/1/2019	0.394	98.5	16.4	HNW
4660	1,3-Dichloropropane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4660	1,3-Dichloropropane	µg/kg	< 2.2	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4665	2,2-Dichloropropane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4665	2,2-Dichloropropane	µg/kg	< 3.3	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4670	1,1-Dichloropropene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4670	1,1-Dichloropropene	µg/kg	< 3.2	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4680	cis-1,3-Dichloropropylene	µg/kg		114	68.4 - 160	Not Reported				102	17.4	
4680	cis-1,3-Dichloropropylene	µg/kg	123	114	68.4 - 160	Acceptable	EPA 8260B 2 1996	8/1/2019	1.20	102	17.4	HNW
4685	trans-1,3-Dichloropropylene	µg/kg		100	55.0 - 145	Not Reported				100	16.8	



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SOIL Volatiles in Soil (cat# 623, lot# D107-721) (Continued)

4685	trans-1,3-Dichloropropylene	µg/kg	116	100	55.0 - 145	Acceptable	EPA 8260B 2 1996	8/1/2019	0.933	100	16.8	HNW
4765	Ethylbenzene	µg/kg		151	90.6 - 211	Not Reported				153	32.1	
4765	Ethylbenzene	µg/kg	156	151	90.6 - 211	Acceptable	EPA 8260B 2 1996	8/1/2019	0.102	153	32.1	HNW
4835	Hexachlorobutadiene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4835	Hexachlorobutadiene	µg/kg	< 4.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4840	Hexachloroethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4840	Hexachloroethane	µg/kg	< 3.1	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4860	2-Hexanone	µg/kg		< 50.0	0.00 - 50.0	Not Reported						
4860	2-Hexanone	µg/kg	< 11.3	< 50.0	0.00 - 50.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4900	Isopropylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4900	Isopropylbenzene	µg/kg	< 2.9	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4910	4-Isopropyltoluene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4910	4-Isopropyltoluene	µg/kg	< 3.8	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
4975	Methylene chloride	µg/kg		151	75.5 - 227	Not Reported				153	25.5	
4975	Methylene chloride	µg/kg	137	151	75.5 - 227	Acceptable	EPA 8260B 2 1996	8/1/2019	-0.634	153	25.5	HNW
4995	4-Methyl-2-pentanone (MIBK)	µg/kg		345	172 - 518	Not Reported				319	55.7	
5005	Naphthalene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5005	Naphthalene	µg/kg	< 4.1	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
5015	Nitrobenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5090	n-Propylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						



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SOIL Volatiles in Soil (cat# 623, lot# D107-721) (Continued)

5090	n-Propylbenzene	µg/kg	< 3.5	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
5100	Styrene	µg/kg		167	109 - 225	Not Reported				160	37.4	
5100	Styrene	µg/kg	182	167	109 - 225	Acceptable	EPA 8260B 2 1996	8/1/2019	0.578	160	37.4	HNW
5105	1,1,1,2-Tetrachloroethane	µg/kg		192	115 - 269	Not Reported				195	40.3	
5105	1,1,1,2-Tetrachloroethane	µg/kg	235	192	115 - 269	Acceptable	EPA 8260B 2 1996	8/1/2019	0.981	195	40.3	HNW
5110	1,1,2,2-Tetrachloroethane	µg/kg		< 11.0	0.00 - 11.0	Not Reported						
5110	1,1,2,2-Tetrachloroethane	µg/kg	< 5.0	< 11.0	0.00 - 11.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
5115	Tetrachloroethylene	µg/kg		< 10.0	0.00 - 10.0	Not Reported						
5115	Tetrachloroethylene	µg/kg	< 4.9	< 10.0	0.00 - 10.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
5140	Toluene	µg/kg		180	117 - 243	Not Reported				179	30.5	
5140	Toluene	µg/kg	184	180	117 - 243	Acceptable	EPA 8260B 2 1996	8/1/2019	0.165	179	30.5	HNW
5150	1,2,3-Trichlorobenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5150	1,2,3-Trichlorobenzene	µg/kg	< 2.4	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
5155	1,2,4-Trichlorobenzene	µg/kg		173	69.2 - 277	Not Reported				162	45.0	
5155	1,2,4-Trichlorobenzene	µg/kg	152	173	69.2 - 277	Acceptable	EPA 8260B 2 1996	8/1/2019	-0.213	162	45.0	HNW
5160	1,1,1-Trichloroethane	µg/kg		< 11.0	0.00 - 11.0	Not Reported						
5160	1,1,1-Trichloroethane	µg/kg	< 3.2	< 11.0	0.00 - 11.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
5165	1,1,2-Trichloroethane	µg/kg		44.7	31.3 - 58.1	Not Reported				46.7	7.07	
5165	1,1,2-Trichloroethane	µg/kg	52.0	44.7	31.3 - 58.1	Acceptable	EPA 8260B 2 1996	8/1/2019	0.745	46.7	7.07	HNW
5170	Trichloroethylene	µg/kg		< 12.0	0.00 - 12.0	Not Reported						



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SOIL Volatiles in Soil (cat# 623, lot# D107-721) (Continued)

5170	Trichloroethylene	µg/kg	< 3.1	< 12.0	0.00 - 12.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
5175	Trichlorofluoromethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5175	Trichlorofluoromethane	µg/kg	< 4.4	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
5180	1,2,3-Trichloropropane (TCP)	µg/kg		181	90.5 - 272	Not Reported				180	22.8	
5180	1,2,3-Trichloropropane (TCP)	µg/kg	199	181	90.5 - 272	Acceptable	EPA 8260B 2 1996	8/1/2019	0.845	180	22.8	HNW
5210	1,2,4-Trimethylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5210	1,2,4-Trimethylbenzene	µg/kg	< 2.8	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
5215	1,3,5-Trimethylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5215	1,3,5-Trimethylbenzene	µg/kg	< 3.1	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
5225	Vinyl acetate	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5225	Vinyl acetate	µg/kg	< 3.4	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
5235	Vinyl chloride	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5235	Vinyl chloride	µg/kg	< 4.9	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
5240	m&p-Xylene	µg/kg		< 11.0	0.00 - 11.0	Not Reported						
5240	m&p-Xylene	µg/kg	< 6.3	< 11.0	0.00 - 11.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
5250	o-Xylene	µg/kg		< 11.0	0.00 - 11.0	Not Reported						
5250	o-Xylene	µg/kg	< 2.4	< 11.0	0.00 - 11.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW
5260	Xylenes, total	µg/kg		< 22.0	0.00 - 22.0	Not Reported						
5260	Xylenes, total	µg/kg	< 8.7	< 22.0	0.00 - 22.0	Acceptable	EPA 8260B 2 1996	8/1/2019				HNW



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SOIL Volatiles in Soil (cat# 623, lot# D107-721)

4315	Acetone	µg/kg		630	63.0 - 984	Not Reported				562	193	
4315	Acetone	µg/kg	576	630	63.0 - 984	Acceptable	EPA 8260B 2 1996	8/1/2019	0.0701	562	193	HNW
4320	Acetonitrile	µg/kg		902	0.00 - 1820	Not Reported				492	197	
4325	Acrolein	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4375	Benzene	µg/kg		< 13.0	0.00 - 13.0	Not Reported						
4385	Bromobenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4390	Bromochloromethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4395	Bromodichloromethane	µg/kg		< 12.0	0.00 - 12.0	Not Reported						
4400	Bromoform	µg/kg		53.8	29.6 - 78.0	Not Reported				56.5	10.4	
4950	Bromomethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4410	2-Butanone (MEK)	µg/kg		345	107 - 534	Not Reported				323	50.3	
4410	2-Butanone (MEK)	µg/kg	276	345	107 - 534	Acceptable	EPA 8260B 2 1996	8/1/2019	-0.930	323	50.3	HNW
4435	n-Butylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4440	sec-Butylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4445	tert-Butylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5000	tert-Butyl methyl ether (MTBE)	µg/kg		102	61.2 - 143	Not Reported				107	13.2	
4450	Carbon disulfide	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4455	Carbon tetrachloride	µg/kg		43.1	21.5 - 64.7	Not Reported				44.5	9.71	
4475	Chlorobenzene	µg/kg		< 10.0	0.00 - 10.0	Not Reported						
4575	Chlorodibromomethane	µg/kg		83.4	50.0 - 117	Not Reported				85.6	12.7	



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SOIL-107 2009 TNI Evaluation Final Complete Report

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SOIL Volatiles in Soil (cat# 623, lot# D107-721) (Continued)

4485	Chloroethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4500	2-Chloroethylvinylether	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4505	Chloroform	µg/kg		152	91.2 - 213	Not Reported				153	22.9	
4960	Chloromethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4535	2-Chlorotoluene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4540	4-Chlorotoluene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4570	1,2-Dibromo-3-chloropropane (DBCP)	µg/kg		167	83.5 - 251	Not Reported				166	31.0	
4585	1,2-Dibromoethane (EDB)	µg/kg		24.9	16.2 - 33.6	Not Reported				24.9	3.94	
4595	Dibromomethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4610	1,2-Dichlorobenzene	µg/kg		76.5	45.9 - 107	Not Reported				75.0	16.1	
4615	1,3-Dichlorobenzene	µg/kg		36.6	22.0 - 51.2	Not Reported				36.5	9.76	
4620	1,4-Dichlorobenzene	µg/kg		< 12.0	0.00 - 12.0	Not Reported						
4625	Dichlorodifluoromethane (Freon 12)	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4630	1,1-Dichloroethane	µg/kg		170	102 - 238	Not Reported				172	23.7	
4635	1,2-Dichloroethane	µg/kg		114	68.4 - 160	Not Reported				115	17.4	
4640	1,1-Dichloroethylene	µg/kg		< 10.0	0.00 - 10.0	Not Reported						
4645	cis-1,2-Dichloroethylene	µg/kg		< 12.0	0.00 - 12.0	Not Reported						
4700	trans-1,2-Dichloroethylene	µg/kg		58.9	35.3 - 82.5	Not Reported				60.5	11.4	
4655	1,2-Dichloropropane	µg/kg		97.3	63.2 - 131	Not Reported				98.5	16.4	
4660	1,3-Dichloropropane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						



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SOIL Volatiles in Soil (cat# 623, lot# D107-721) (Continued)

4665	2,2-Dichloropropane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4670	1,1-Dichloropropene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4680	cis-1,3-Dichloropropylene	µg/kg		114	68.4 - 160	Not Reported				102	17.4	
4685	trans-1,3-Dichloropropylene	µg/kg		100	55.0 - 145	Not Reported				100	16.8	
4765	Ethylbenzene	µg/kg		151	90.6 - 211	Not Reported				153	32.1	
4835	Hexachlorobutadiene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4840	Hexachloroethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4860	2-Hexanone	µg/kg		< 50.0	0.00 - 50.0	Not Reported						
4900	Isopropylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4910	4-Isopropyltoluene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4975	Methylene chloride	µg/kg		151	75.5 - 227	Not Reported				153	25.5	
4995	4-Methyl-2-pentanone (MIBK)	µg/kg		345	172 - 518	Not Reported				319	55.7	
4995	4-Methyl-2-pentanone (MIBK)	µg/kg	315	345	172 - 518	Acceptable	EPA 8260B 2 1996	8/1/2019	-0.0741	319	55.7	HNW
5005	Naphthalene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5015	Nitrobenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5090	n-Propylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5100	Styrene	µg/kg		167	109 - 225	Not Reported				160	37.4	
5105	1,1,1,2-Tetrachloroethane	µg/kg		192	115 - 269	Not Reported				195	40.3	
5110	1,1,2,2-Tetrachloroethane	µg/kg		< 11.0	0.00 - 11.0	Not Reported						
5115	Tetrachloroethylene	µg/kg		< 10.0	0.00 - 10.0	Not Reported						



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SOIL Volatiles in Soil (cat# 623, lot# D107-721) (Continued)

5140	Toluene	µg/kg		180	117 - 243	Not Reported				179	30.5	
5150	1,2,3-Trichlorobenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5155	1,2,4-Trichlorobenzene	µg/kg		173	69.2 - 277	Not Reported				162	45.0	
5160	1,1,1-Trichloroethane	µg/kg		< 11.0	0.00 - 11.0	Not Reported						
5165	1,1,2-Trichloroethane	µg/kg		44.7	31.3 - 58.1	Not Reported				46.7	7.07	
5170	Trichloroethylene	µg/kg		< 12.0	0.00 - 12.0	Not Reported						
5175	Trichlorofluoromethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5180	1,2,3-Trichloropropane (TCP)	µg/kg		181	90.5 - 272	Not Reported				180	22.8	
5210	1,2,4-Trimethylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5215	1,3,5-Trimethylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5225	Vinyl acetate	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5235	Vinyl chloride	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5240	m&p-Xylene	µg/kg		< 11.0	0.00 - 11.0	Not Reported						
5250	o-Xylene	µg/kg		< 11.0	0.00 - 11.0	Not Reported						
5260	Xylenes, total	µg/kg		< 22.0	0.00 - 22.0	Not Reported						



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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D107-924)

4315	Acetone	µg/kg	< 77.8	< 929	0.00 - 929	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4320	Acetonitrile	µg/kg	< 129	< 4000	0.00 - 4000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4325	Acrolein	µg/kg	< 307	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4375	Benzene	µg/kg	5010	4850	3640 - 6060	Acceptable	EPA 8260B 2 1996	8/1/2019	0.124	4960	439	ALD
4385	Bromobenzene	µg/kg	< 25.0	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4390	Bromochloromethane	µg/kg	< 25.0	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4395	Bromodichloromethane	µg/kg	6040	5770	3750 - 7790	Acceptable	EPA 8260B 2 1996	8/1/2019	0.152	5970	444	ALD
4400	Bromoform	µg/kg	1330	1440	864 - 2020	Acceptable	EPA 8260B 2 1996	8/1/2019	-0.536	1410	145	ALD
4950	Bromomethane	µg/kg	< 69.9	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4410	2-Butanone (MEK)	µg/kg	12700	14000	3870 - 21400	Acceptable	EPA 8260B 2 1996	8/1/2019	-0.352	13600	2430	ALD
4435	n-Butylbenzene	µg/kg	< 25.0	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4440	sec-Butylbenzene	µg/kg	< 25.0	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4445	tert-Butylbenzene	µg/kg	< 25.0	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
5000	tert-Butyl methyl ether (MTBE)	µg/kg	6590	6820	4770 - 8870	Acceptable	EPA 8260B 2 1996	8/1/2019	-0.824	7060	574	ALD
4450	Carbon disulfide	µg/kg	< 25.0	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4455	Carbon tetrachloride	µg/kg	5220	5270	3300 - 7160	Acceptable	EPA 8260B 2 1996	8/1/2019	-0.454	5350	292	ALD
4475	Chlorobenzene	µg/kg	< 25.0	< 750	0.00 - 750	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4575	Chlorodibromomethane	µg/kg	220	< 700	0.00 - 700	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4485	Chloroethane	µg/kg	< 67.0	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4500	2-Chloroethylvinylether	µg/kg	< 46.6	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD



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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D107-924) (Continued)

4505	Chloroform	µg/kg	3020	2970	2080 - 3860	Acceptable	EPA 8260B 2 1996	8/1/2019	-0.184	3070	294	ALD
4960	Chloromethane	µg/kg	< 25.0	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4535	2-Chlorotoluene	µg/kg	< 25.0	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4540	4-Chlorotoluene	µg/kg	< 25.0	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4570	1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	< 91.2	< 1200	0.00 - 1200	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4585	1,2-Dibromoethane (EDB)	µg/kg	6200	6240	3740 - 8740	Acceptable	EPA 8260B 2 1996	8/1/2019	1.01	5870	328	ALD
4595	Dibromomethane	µg/kg	< 25.0	< 1200	0.00 - 1200	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4610	1,2-Dichlorobenzene	µg/kg	1950	1880	1410 - 2350	Acceptable	EPA 8260B 2 1996	8/1/2019	0.169	1920	152	ALD
4615	1,3-Dichlorobenzene	µg/kg	< 25.0	< 606	0.00 - 606	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4620	1,4-Dichlorobenzene	µg/kg	2770	2750	2090 - 3470	Acceptable	EPA 8260B 2 1996	8/1/2019	0.121	2740	252	ALD
4625	Dichlorodifluoromethane (Freon 12)	µg/kg	< 25.0	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4630	1,1-Dichloroethane	µg/kg	4870	4840	3150 - 6530	Acceptable	EPA 8260B 2 1996	8/1/2019	0.104	4830	412	ALD
4635	1,2-Dichloroethane	µg/kg	< 25.0	< 930	0.00 - 930	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4640	1,1-Dichloroethylene	µg/kg	6990	7560	3780 - 11300	Acceptable	EPA 8260B 2 1996	8/1/2019	-0.103	7080	908	ALD
4645	cis-1,2-Dichloroethylene	µg/kg	< 25.0	< 1200	0.00 - 1200	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4700	trans-1,2-Dichloroethylene	µg/kg	6620	6330	3800 - 8860	Acceptable	EPA 8260B 2 1996	8/1/2019	0.211	6490	600	ALD
4655	1,2-Dichloropropane	µg/kg	< 25.0	< 1400	0.00 - 1400	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4660	1,3-Dichloropropane	µg/kg	< 25.0	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4665	2,2-Dichloropropane	µg/kg	< 25.0	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4670	1,1-Dichloropropene	µg/kg	< 25.0	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD



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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D107-924) (Continued)

4680	cis-1,3-Dichloropropylene	µg/kg	6130	6320	3790 - 8850	Acceptable	EPA 8260B 2 1996	8/1/2019	0.130	6060	520	ALD
4685	trans-1,3-Dichloropropylene	µg/kg	< 25.0	< 1200	0.00 - 1200	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4765	Ethylbenzene	µg/kg	9950	9540	6680 - 12400	Acceptable	EPA 8260B 2 1996	8/1/2019	0.447	9720	518	ALD
4835	Hexachlorobutadiene	µg/kg	6430	6840	2150 - 12200	Acceptable	EPA 8260B 2 1996	8/1/2019	-0.728	7180	1030	ALD
4840	Hexachloroethane	µg/kg	6430	6170	617 - 13700	Acceptable	EPA 8260B 2 1996	8/1/2019	-1.10	6830	362	ALD
4860	2-Hexanone	µg/kg	12300	14900	7450 - 22400	Acceptable	EPA 8260B 2 1996	8/1/2019	-1.07	14100	1700	ALD
4900	Isopropylbenzene	µg/kg	< 25.0	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4910	4-Isopropyltoluene	µg/kg	< 25.0	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4975	Methylene chloride	µg/kg	< 25.0	< 600	0.00 - 600	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
4995	4-Methyl-2-pentanone (MIBK)	µg/kg	13300	15400	7700 - 23100	Acceptable	EPA 8260B 2 1996	8/1/2019	-1.09	15300	1830	ALD
5005	Naphthalene	µg/kg	< 40.0	< 721	0.00 - 721	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
5015	Nitrobenzene	µg/kg		< 150	0.00 - 150	Not Reported						
5090	n-Propylbenzene	µg/kg	< 25.0	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
5100	Styrene	µg/kg	2660	2760	1660 - 3860	Acceptable	EPA 8260B 2 1996	8/1/2019	-0.548	2760	178	ALD
5105	1,1,1,2-Tetrachloroethane	µg/kg	1380	1420	846 - 2140	Acceptable	EPA 8260B 2 1996	8/1/2019	-0.862	1490	133	ALD
5110	1,1,2,2-Tetrachloroethane	µg/kg	8850	8020	5090 - 10700	Acceptable	EPA 8260B 2 1996	8/1/2019	1.12	7740	992	ALD
5115	Tetrachloroethylene	µg/kg	6940	6570	4460 - 8920	Acceptable	EPA 8260B 2 1996	8/1/2019	-0.0987	7000	581	ALD
5140	Toluene	µg/kg	< 25.0	< 750	0.00 - 750	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
5150	1,2,3-Trichlorobenzene	µg/kg	< 25.0	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
5155	1,2,4-Trichlorobenzene	µg/kg	< 47.6	< 1200	0.00 - 1200	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD



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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D107-924) (Continued)

5160	1,1,1-Trichloroethane	µg/kg	33.4	< 600	0.00 - 600	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
5165	1,1,2-Trichloroethane	µg/kg	3300	3280	2130 - 4430	Acceptable	EPA 8260B 2 1996	8/1/2019	-0.114	3330	231	ALD
5170	Trichloroethylene	µg/kg	8820	8300	6080 - 10600	Acceptable	EPA 8260B 2 1996	8/1/2019	0.0104	8810	844	ALD
5175	Trichlorofluoromethane	µg/kg	< 25.0	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
5210	1,2,4-Trimethylbenzene	µg/kg	< 25.0	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
5215	1,3,5-Trimethylbenzene	µg/kg	< 25.0	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
5180	1,2,3-Trichloropropane (TCP)	µg/kg	4640	4160	2290 - 6030	Acceptable	EPA 8260B 2 1996	8/1/2019	0.883	4310	372	ALD
5225	Vinyl acetate	µg/kg	< 97.1	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
5235	Vinyl chloride	µg/kg	< 25.0	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
5240	m&p-Xylene	µg/kg	< 50.0	< 350	0.00 - 350	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
5250	o-Xylene	µg/kg	< 25.0	< 350	0.00 - 350	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD
5260	Xylenes, total	µg/kg	< 75.0	< 700	0.00 - 700	Acceptable	EPA 8260B 2 1996	8/1/2019				ALD



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EPA ID:
ERA Customer Number:
Report Issued:
Study Dates:

WI01103
E518002
09/11/19
07/22/19 - 09/05/19

TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
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SOIL Organochlorine Pesticides in Soil (cat# 468, lot# D107-728)

7025	Aldrin	µg/kg	181	218	67.3 - 304	Acceptable	EPA 8081A 1 1996	8/8/2019	-0.132	186	34.6	DMH
7110	alpha-BHC	µg/kg	188	236	71.0 - 333	Acceptable	EPA 8081A 1 1996	8/8/2019	-0.349	202	39.7	DMH
7115	beta-BHC	µg/kg	326	430	137 - 577	Acceptable	EPA 8081A 1 1996	8/8/2019	-0.393	357	78.7	DMH
7105	delta-BHC	µg/kg	255	294	86.5 - 446	Acceptable	EPA 8081A 1 1996	8/8/2019	-0.215	266	52.7	DMH
7120	gamma-BHC(Lindane)	µg/kg	312	385	118 - 541	Acceptable	EPA 8081A 1 1996	8/8/2019	-0.290	330	61.4	DMH
7240	alpha-Chlordane	µg/kg	170	212	78.5 - 290	Acceptable	EPA 8081A 1 1996	8/8/2019	-0.459	184	31.1	DMH
7245	gamma-Chlordane	µg/kg	395	466	197 - 615	Acceptable	EPA 8081A 1 1996	8/8/2019	-0.143	406	75.1	DMH
7355	4,4'-DDD	µg/kg	221	263	90.0 - 376	Acceptable	EPA 8081A 1 1996	8/8/2019	-0.245	233	49.8	DMH
7360	4,4'-DDE	µg/kg	380	444	166 - 623	Acceptable	EPA 8081A 1 1996	8/8/2019	-0.211	394	67.7	DMH
7365	4,4'-DDT	µg/kg	98.2	132	30.2 - 203	Acceptable	EPA 8081A 1 1996	8/8/2019	-0.775	117	23.7	DMH
7470	Dieldrin	µg/kg	239	279	112 - 385	Acceptable	EPA 8081A 1 1996	8/8/2019	-0.205	249	46.7	DMH
7540	Endrin	µg/kg	72.2	90.3	24.4 - 137	Acceptable	EPA 8081A 1 1996	8/8/2019	-0.504	80.6	16.6	DMH
7530	Endrin aldehyde	µg/kg	137	194	19.4 - 253	Acceptable	EPA 8081A 1 1996	8/8/2019	0.203	132	25.9	DMH
7535	Endrin ketone	µg/kg	108	136	29.3 - 189	Acceptable	EPA 8081A 1 1996	8/8/2019	-0.0498	109	22.9	DMH
7510	Endosulfan I	µg/kg	118	139	40.7 - 206	Acceptable	EPA 8081A 1 1996	8/8/2019	-0.238	124	23.6	DMH
7515	Endosulfan II	µg/kg	459	356	158 - 699	Acceptable	EPA 8081A 1 1996	8/8/2019	0.405	429	75.0	DMH
7520	Endosulfan sulfate	µg/kg	90.8	114	20.2 - 170	Acceptable	EPA 8081A 1 1996	8/8/2019	-0.209	95.2	21.0	DMH
7685	Heptachlor	µg/kg	189	227	77.7 - 322	Acceptable	EPA 8081A 1 1996	8/8/2019	-0.272	200	40.6	DMH
7690	Heptachlor epoxide	µg/kg	370	440	173 - 604	Acceptable	EPA 8081A 1 1996	8/8/2019	-0.258	389	72.5	DMH
7810	Methoxychlor	µg/kg	259	343	36.5 - 536	Acceptable	EPA 8081A 1 1996	8/8/2019	-0.404	286	67.3	DMH



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) & 271, 401QR, 463, 928QR (Glycols) are included in ERA's A2LA accreditation. Lab Code: 1539-01

16341 Table Mountain Pkwy • Golden, CO 80403 • 800.372.0122 • 303.431.8454 • fax 303.421.0159 • www.eraqc.com

Study # : SOIL-107





A Waters Company

SOIL-107 2009 TNI Evaluation Final Complete Report

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(920) 321-9426

EPA ID:
ERA Customer Number:
Report Issued:
Study Dates:

WI01103
E518002
09/11/19
07/22/19 - 09/05/19

TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
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SOIL Organochlorine Pesticides in Soil (cat# 468, lot# D107-728)

7025	Aldrin	µg/kg	181	218	67.3 - 304	Acceptable	EPA 8081B 2000	8/8/2019	-0.132	186	34.6	DMH
7110	alpha-BHC	µg/kg	188	236	71.0 - 333	Acceptable	EPA 8081B 2000	8/8/2019	-0.349	202	39.7	DMH
7115	beta-BHC	µg/kg	326	430	137 - 577	Acceptable	EPA 8081B 2000	8/8/2019	-0.393	357	78.7	DMH
7105	delta-BHC	µg/kg	255	294	86.5 - 446	Acceptable	EPA 8081B 2000	8/8/2019	-0.215	266	52.7	DMH
7120	gamma-BHC(Lindane)	µg/kg	312	385	118 - 541	Acceptable	EPA 8081B 2000	8/8/2019	-0.290	330	61.4	DMH
7240	alpha-Chlordane	µg/kg	170	212	78.5 - 290	Acceptable	EPA 8081B 2000	8/8/2019	-0.459	184	31.1	DMH
7245	gamma-Chlordane	µg/kg	395	466	197 - 615	Acceptable	EPA 8081B 2000	8/8/2019	-0.143	406	75.1	DMH
7355	4,4'-DDD	µg/kg	221	263	90.0 - 376	Acceptable	EPA 8081B 2000	8/8/2019	-0.245	233	49.8	DMH
7360	4,4'-DDE	µg/kg	380	444	166 - 623	Acceptable	EPA 8081B 2000	8/8/2019	-0.211	394	67.7	DMH
7365	4,4'-DDT	µg/kg	98.2	132	30.2 - 203	Acceptable	EPA 8081B 2000	8/8/2019	-0.775	117	23.7	DMH
7470	Dieldrin	µg/kg	239	279	112 - 385	Acceptable	EPA 8081B 2000	8/8/2019	-0.205	249	46.7	DMH
7540	Endrin	µg/kg	72.2	90.3	24.4 - 137	Acceptable	EPA 8081B 2000	8/8/2019	-0.504	80.6	16.6	DMH
7530	Endrin aldehyde	µg/kg	137	194	19.4 - 253	Acceptable	EPA 8081B 2000	8/8/2019	0.203	132	25.9	DMH
7535	Endrin ketone	µg/kg	108	136	29.3 - 189	Acceptable	EPA 8081B 2000	8/8/2019	-0.0498	109	22.9	DMH
7510	Endosulfan I	µg/kg	118	139	40.7 - 206	Acceptable	EPA 8081B 2000	8/8/2019	-0.238	124	23.6	DMH
7515	Endosulfan II	µg/kg	459	356	158 - 699	Acceptable	EPA 8081B 2000	8/8/2019	0.405	429	75.0	DMH
7520	Endosulfan sulfate	µg/kg	90.8	114	20.2 - 170	Acceptable	EPA 8081B 2000	8/8/2019	-0.209	95.2	21.0	DMH
7685	Heptachlor	µg/kg	189	227	77.7 - 322	Acceptable	EPA 8081B 2000	8/8/2019	-0.272	200	40.6	DMH
7690	Heptachlor epoxide	µg/kg	370	440	173 - 604	Acceptable	EPA 8081B 2000	8/8/2019	-0.258	389	72.5	DMH
7810	Methoxychlor	µg/kg	259	343	36.5 - 536	Acceptable	EPA 8081B 2000	8/8/2019	-0.404	286	67.3	DMH



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) & 271, 401QR, 463, 928QR (Glycols) are included in ERA's A2LA accreditation. Lab Code: 1539-01





A Waters Company

SOIL-107 2009 TNI Evaluation Final Complete Report

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EPA ID:
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Report Issued:
Study Dates:

WI01103
E518002
09/11/19
07/22/19 - 09/05/19

TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
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SOIL Chlordane in Soil (cat# 628, lot# D107-725)

7250	Chlordane, technical	µg/kg	333	578	127 - 762	Acceptable	EPA 8081A 1 1996	8/8/2019	-1.25	444	88.7	DMH
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SOIL Chlordane in Soil (cat# 628, lot# D107-725)

7250	Chlordane, technical	µg/kg	333	578	127 - 762	Acceptable	EPA 8081B 2000	8/8/2019	-1.25	444	88.7	DMH
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SOIL Toxaphene in Soil (cat# 627, lot# D107-724)

8250	Toxaphene	µg/kg	1240	1810	334 - 2290	Acceptable	EPA 8081A 1 1996	8/10/2019	-0.214	1310	325	DMH
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SOIL Toxaphene in Soil (cat# 627, lot# D107-724)

8250	Toxaphene	µg/kg	1240	1810	334 - 2290	Acceptable	EPA 8081B 2000	8/10/2019	-0.214	1310	325	DMH
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SOIL PCBs in Soil (cat# 624, lot# D107-726)

8880	Aroclor 1016	mg/kg	27.4	43.1	10.8 - 56.9	Acceptable	EPA 8082 1996	8/2/2019	-0.711	33.8	9.07	BLM
8885	Aroclor 1221	mg/kg	< 2.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082 1996	8/2/2019				BLM
8890	Aroclor 1232	mg/kg	< 2.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082 1996	8/2/2019				BLM
8895	Aroclor 1242	mg/kg	< 2.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082 1996	8/2/2019				BLM
8900	Aroclor 1248	mg/kg	< 2.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082 1996	8/2/2019				BLM
8905	Aroclor 1254	mg/kg	< 2.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082 1996	8/2/2019				BLM
8910	Aroclor 1260	mg/kg	< 2.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082 1996	8/2/2019				BLM



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) & 271, 401QR, 463, 928QR (Glycols) are included in ERA's A2LA accreditation. Lab Code: 1539-01





A Waters Company

SOIL-107 2009 TNI Evaluation Final Complete Report

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SOIL PCBs in Soil (cat# 624, lot# D107-726)

8880	Aroclor 1016	mg/kg	27.4	43.1	10.8 - 56.9	Acceptable	EPA 8082A 2000	8/2/2019	-0.711	33.8	9.07	BLM
8885	Aroclor 1221	mg/kg	< 2.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	8/2/2019				BLM
8890	Aroclor 1232	mg/kg	< 2.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	8/2/2019				BLM
8895	Aroclor 1242	mg/kg	< 2.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	8/2/2019				BLM
8900	Aroclor 1248	mg/kg	< 2.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	8/2/2019				BLM
8905	Aroclor 1254	mg/kg	< 2.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	8/2/2019				BLM
8910	Aroclor 1260	mg/kg	< 2.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	8/2/2019				BLM

SOIL Gasoline Range Organics (GRO) in Soil (cat# 630, lot# D107-763)

9408	Gasoline Range Organics (GRO)	mg/kg		647	64.7 - 812	Not Reported				374	194	
4375	Benzene in GRO	mg/kg	1.48	2.86	0.00 - 3.15	Acceptable	EPA 8021B 2 1996	8/7/2019	0.861	1.02	0.540	ALD
4765	Ethylbenzene in GRO	mg/kg	9.16	10.9	0.00 - 14.2	Acceptable	EPA 8021B 2 1996	8/7/2019	1.01	6.62	2.53	ALD
5140	Toluene in GRO	mg/kg	22.6	32.9	0.00 - 36.2	Acceptable	EPA 8021B 2 1996	8/7/2019	1.22	14.9	6.31	ALD
5260	Xylenes, total in GRO	mg/kg	43.4	55.6	22.9 - 61.2	Acceptable	EPA 8021B 2 1996	8/7/2019	1.40	36.9	4.66	ALD

SOIL Gasoline Range Organics (GRO) in Soil (cat# 630, lot# D107-763)

9408	Gasoline Range Organics (GRO)	mg/kg	640	647	64.7 - 812	Acceptable	EPA 8015D 2003	8/7/2019	1.37	374	194	ALD
4375	Benzene in GRO	mg/kg		2.86	0.00 - 3.15	Not Reported				1.02	0.540	
4765	Ethylbenzene in GRO	mg/kg		10.9	0.00 - 14.2	Not Reported				6.62	2.53	
5140	Toluene in GRO	mg/kg		32.9	0.00 - 36.2	Not Reported				14.9	6.31	
5260	Xylenes, total in GRO	mg/kg		55.6	22.9 - 61.2	Not Reported				36.9	4.66	



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) & 271, 401QR, 463, 928QR (Glycols) are included in ERA's A2LA accreditation. Lab Code: 1539-01





A Waters Company

SOIL-107 2009 TNI Evaluation Final Complete Report

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SOIL Gasoline Range Organics (GRO) in Soil (cat# 630, lot# D107-763)

9408	Gasoline Range Organics (GRO)	mg/kg	640	647	64.7 - 812	Acceptable	EPA 8015B 2 1996	8/7/2019	1.37	374	194	ALD
4375	Benzene in GRO	mg/kg		2.86	0.00 - 3.15	Not Reported				1.02	0.540	
4765	Ethylbenzene in GRO	mg/kg		10.9	0.00 - 14.2	Not Reported				6.62	2.53	
5140	Toluene in GRO	mg/kg		32.9	0.00 - 36.2	Not Reported				14.9	6.31	
5260	Xylenes, total in GRO	mg/kg		55.6	22.9 - 61.2	Not Reported				36.9	4.66	

SOIL Gasoline Range Organics (GRO) in Soil (cat# 630, lot# D107-763)

9408	Gasoline Range Organics (GRO)	mg/kg	640	647	64.7 - 812	Acceptable	EPA 8015C 3 2007	8/7/2019	1.37	374	194	ALD
4375	Benzene in GRO	mg/kg		2.86	0.00 - 3.15	Not Reported				1.02	0.540	
4765	Ethylbenzene in GRO	mg/kg		10.9	0.00 - 14.2	Not Reported				6.62	2.53	
5140	Toluene in GRO	mg/kg		32.9	0.00 - 36.2	Not Reported				14.9	6.31	
5260	Xylenes, total in GRO	mg/kg		55.6	22.9 - 61.2	Not Reported				36.9	4.66	

SOIL Diesel Range Organics (DRO) in Soil (cat# 631, lot# D107-765)

9369	Diesel Range Organics (DRO)	mg/kg	588	718	187 - 941	Acceptable	EPA 8015D 2003	8/8/2019	0.165	564	146	MRN
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SOIL Diesel Range Organics (DRO) in Soil (cat# 631, lot# D107-765)

9369	Diesel Range Organics (DRO)	mg/kg	588	718	187 - 941	Acceptable	EPA 8015B 2 1996	8/8/2019	0.165	564	146	MRN
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SOIL Diesel Range Organics (DRO) in Soil (cat# 631, lot# D107-765)

9369	Diesel Range Organics (DRO)	mg/kg	588	718	187 - 941	Acceptable	EPA 8015C 3 2007	8/8/2019	0.165	564	146	MRN
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All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) & 271, 401QR, 463, 928QR (Glycols) are included in ERA's A2LA accreditation. Lab Code: 1539-01



CERTIFICATE OF RECOGNITION

ERA congratulates

Pace Analytical Services - Green Bay
SOIL-107

For your participation and successful evaluation, we recognize the performance of this laboratory for achieving acceptable evaluation in the following standards.

Anions in Soil	Chlordane in Soil	Corrosivity/pH in Soil
Cyanide in Soil	Diesel Range Organics (DRO) in Soil	Gasoline Range Organics (GRO) in Soil
Ignitability/Flashpoint	Nutrients in Soil	Organochlorine Pesticides in Soil
PCBs in Soil	Ready-to-Use VOAs in Soil	Toxaphene in Soil
Volatiles in Soil		



Matthew Seebeck
Quality Officer



A Waters Company

Kate Verbeten
Pace Analytical Services - Green Bay
1241 Bellevue St, Ste 9
Green Bay, WI 54302
USA

SOIL-110



Final Report

Soil/Hazardous Waste Proficiency Testing

Soil Study

Open Date: 04/20/20

Close Date: 06/04/20

Report Issued Date: 06/10/20



A Waters Company

June 10, 2020

Kate Verbeten
Pace Analytical Services - Green Bay
1241 Bellevue St, Ste 9
Green Bay, WI 54302

Enclosed is your final report for ERA's SOIL-110 Proficiency Testing (PT) study. Your final report includes an evaluation of all results submitted by your laboratory to ERA.

Data Evaluation Protocols: All analytes in ERA's SOIL-110 Proficiency Testing study have been evaluated using the following tiered approach. If the analyte is listed in the most current NELAC Fields of Proficiency Testing (FoPT) table the evaluation was completed by comparing the reported result to the acceptance limits generated using the criteria contained in the table and the evaluation criteria contained in the 2016 TNI Standard, Volume 3. If the analyte is not included in the NELAC FoPT table, the reported result has been evaluated using the procedures outlined in ERA's Standard Operating Procedure for the Generation of Performance Acceptance Limits (SOP 730002268).

Corrective Action Help: As part of your accreditation(s), you may be required to identify the root cause of any "Not Acceptable" results, implement the necessary corrective actions, and then satisfy your PT requirements by participating in a Supplemental (QuiK™Response) or future ERA PT study. ERA's technical staff is available to help your laboratory resolve any technical issues that may be impairing your PT performance and possibly affecting your routine data quality. Our laboratory and technical staff have many years of collective experience in performing the full range of environmental analyses. As part of our technical support, ERA offers QC samples that can be useful in helping you work through your technical issues.

Thank you for your participation in ERA's SOIL-110 Proficiency Testing study. If you have any questions, please contact our Proficiency Testing Department at 1-800-372-0122.

Sincerely,

Matthew Seebeck
Quality Officer

attachments



A Waters Company

Report Recipient	Contact/Phone Number	Reporting Type
Florida	Vanessa Soto / 904-791-1599	All Analytes
Illinois	John South / (217) 558-7142	All Analytes
Kentucky	Patrick Garrity / 502-782-6954	All Analytes
Louisiana	Paul Bergeron / 225-219-3247	All Analytes
Minnesota	Lynn Boysen / 218-332-5164	All Analytes
North Dakota	Cynthia Auen / 701-328-6172	All Analytes
Wisconsin	Tom Trainor / (920) 412-5970	All Analytes
CADENA, Inc (E518002)	Jim Tomalia / (313) 871-5800	All Analytes
Ford Motor Company (E518002)	Hilda Arellano / 313-845-1648	All Analytes



A Waters Company

SOIL-110 Definitions & Study Discussion

Study Dates: 04/20/20 - 06/04/20

Report Issued: 06/10/20

SOIL Study Definitions

The Reported Value is the value that the laboratory reported to ERA.

The ERA Assigned Values are compliant with the most current NELAC Fields of Proficiency Testing (FoPT) table. The Assigned Values for the Organic Proficiency Testing Standards are equal to 100% of the parameter present in the standard as determined by gravimetric and/or volumetric measurements made during standard preparation as applicable. The assigned values for the Inorganic Proficiency Testing Standards, with the exception of the TCLP Metals in Soil and Total Organic Carbon (TOC) in the Nutrients in Soil sample, are equal to the maximum amount of the parameter available in the standard by applicable EPA methodologies. The assigned values for the TCLP metals and TOC are equal to the mean of the study data, after the removal of outliers. All parameters not added to the standard are given an Assigned Value of "< PTRL", per the guidelines contained in the 2009 TNI Standards. The assigned values are directly traceable to the commercially prepared starting materials used to manufacture the PT standards.

The Acceptance Limits are established per the criteria contained in the most current NELAC FoPT table or ERA's SOP for the Generation of Performance Acceptance Limits™ as applicable. This report is scored by the criteria in the 2016 TNI Standard, Volume 3, instead of by the criteria in the 2009 TNI Standard to which the Proficiency Testing Provider is accredited. This is a planned change and is endorsed by the TNI Proficiency Testing Program Executive Committee for transition to the 2016 TNI Standard.

The Performance Evaluation:

- | | |
|----------------|---|
| Acceptable | = Reported Value falls within the Acceptance Limits. |
| Not Acceptable | = Reported Value falls outside the Acceptance Limits. |
| No Evaluation | = Reported Value cannot be evaluated. |
| Not Reported | = No Value reported. |

The Method Description is the method the laboratory reported to ERA.

SOIL Study Discussion

ERA's SOIL-110 Proficiency Testing (PT) study has been reviewed by ERA senior management and certified compliant with the requirements of the 2009 TNI PT Standard and the 2016 TNI Standard, Volume 3, Section 5.9 and the criteria contained in the most current NELAC Fields of Proficiency Testing (FoPT) table.

ERA's SOIL-110 study standards were examined for any anomalies. A full review of all homogeneity, stability and accuracy verification data was completed. All analytical verification data for all analytes in the standards met the acceptance criteria contained in the 2009 TNI PT Standard and the criteria contained in the most current NELAC FoPT table.

All analytes are included in ERA's A2LA accreditation, certification number 1539.01.

The data submitted by participating laboratories was also examined for study anomalies. There were no anomalies observed during the statistical review of the data.

ERA's SOIL-110 Proficiency Testing study reports shall not be reproduced except in its entirety and not without the permission of the participating laboratory. The report must not be used by the participating laboratories to claim product endorsement any agency of the U. S. government.

The data contained herein are confidential and intended for your use only.

If you have any questions or concerns regarding your assessment in ERA's SOIL Proficiency Testing program, please contact our Proficiency Testing Department at 1-800-372-0122.





A Waters Company

SOIL-110 Laboratory Exception Report

Kate Verbeten
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(920) 321-9426

EPA ID:	WI01103
ERA Customer Number:	E518002
Report Issued:	06/10/20
Study Dates:	04/20/20 - 06/04/20

Not Acceptable Evaluations

There were no Not Acceptable evaluations for this study.



This report is scored by the criteria in the 2016 TNI Standard, Volume 3, instead of by the criteria in the 2009 TNI Standard to which the Proficiency Testing Provider is accredited. This is a planned change and is endorsed by the TNI Proficiency Testing Program Executive Committee for transition to the 2016 TNI Standard.





Final Report Results For Laboratory Pace Analytical Services - Green Bay





Final Evaluation Report

Study: SOIL-110

ERA Customer Number: E518002

**Laboratory Name: Pace Analytical Services
- Green Bay**

Organic Results





A Waters Company

Kate Verbeten
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EPA ID:
ERA Customer Number:
Report Issued:
Study Dates:

WI01103
E518002
06/10/20
04/20/20 - 06/04/20

SOIL-110 Final Evaluation Report

TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
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SOIL Volatiles in Soil (cat# 623, lot# D110-721)

4315	Acetone	µg/kg	522	564	56.4 - 886	Acceptable	EPA 8260D 2018	5/6/2020	0.445	438	189	HNW
4320	Acetonitrile	µg/kg		539	0.00 - 1090	Not Reported				150	94.8	
4325	Acrolein	µg/kg	< 279	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
4375	Benzene	µg/kg	22.8	26.7	17.4 - 36.0	Acceptable	EPA 8260D 2018	5/6/2020	-0.688	25.6	4.05	HNW
4385	Bromobenzene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
4390	Bromochloromethane	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
4395	Bromodichloromethane	µg/kg	76.5	72.4	43.4 - 101	Acceptable	EPA 8260D 2018	5/6/2020	0.707	70.3	8.82	HNW
4400	Bromoform	µg/kg	132	131	72.0 - 190	Acceptable	EPA 8260D 2018	5/6/2020	0.675	121	15.9	HNW
4950	Bromomethane	µg/kg	< 20.2	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
4410	2-Butanone (MEK)	µg/kg	184	191	46.3 - 304	Acceptable	EPA 8260D 2018	5/6/2020	0.618	159	41.2	HNW
4435	n-Butylbenzene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
4440	sec-Butylbenzene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
4445	tert-Butylbenzene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
5000	tert-Butyl methyl ether (MTBE)	µg/kg	208	193	116 - 270	Acceptable	EPA 8260D 2018	5/6/2020	0.597	190	29.6	HNW
4450	Carbon disulfide	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
4455	Carbon tetrachloride	µg/kg	115	109	54.5 - 164	Acceptable	EPA 8260D 2018	5/6/2020	0.415	108	16.5	HNW
4475	Chlorobenzene	µg/kg	34.7	39.4	19.7 - 59.1	Acceptable	EPA 8260D 2018	5/6/2020	-0.374	36.4	4.57	HNW
4575	Chlorodibromomethane	µg/kg	26.2	26.7	16.0 - 37.4	Acceptable	EPA 8260D 2018	5/6/2020	0.798	23.3	3.67	HNW
4485	Chloroethane	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
4500	2-Chloroethylvinylether	µg/kg	< 60.1	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW



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SOIL-110 Final Evaluation Report

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SOIL Volatiles in Soil (cat# 623, lot# D110-721) (Continued)

4505	Chloroform	µg/kg	24.4	23.8	14.3 - 33.3	Acceptable	EPA 8260D 2018	5/6/2020	0.196	23.6	3.93	HNW
4960	Chloromethane	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
4535	2-Chlorotoluene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
4540	4-Chlorotoluene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
4570	1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	203	173	86.5 - 260	Acceptable	EPA 8260D 2018	5/6/2020	1.45	158	31.0	HNW
4585	1,2-Dibromoethane (EDB)	µg/kg	72.0	71.2	46.3 - 96.1	Acceptable	EPA 8260D 2018	5/6/2020	0.585	68.2	6.41	HNW
4595	Dibromomethane	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
4610	1,2-Dichlorobenzene	µg/kg	165	174	104 - 244	Acceptable	EPA 8260D 2018	5/6/2020	0.297	156	30.7	HNW
4615	1,3-Dichlorobenzene	µg/kg	20.6	25.5	15.3 - 35.7	Acceptable	EPA 8260D 2018	5/6/2020	-0.341	21.9	3.87	HNW
4620	1,4-Dichlorobenzene	µg/kg	102	118	70.8 - 165	Acceptable	EPA 8260D 2018	5/6/2020	-0.0664	103	20.0	HNW
4625	Dichlorodifluoromethane (Freon 12)	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
4630	1,1-Dichloroethane	µg/kg	117	117	70.2 - 164	Acceptable	EPA 8260D 2018	5/6/2020	0.258	113	14.3	HNW
4635	1,2-Dichloroethane	µg/kg	44.1	45.7	27.4 - 64.0	Acceptable	EPA 8260D 2018	5/6/2020	0.0697	43.6	6.54	HNW
4640	1,1-Dichloroethylene	µg/kg	< 11.4	< 10.0	0.00 - 10.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
4645	cis-1,2-Dichloroethylene	µg/kg	185	181	109 - 253	Acceptable	EPA 8260D 2018	5/6/2020	0.289	178	23.6	HNW
4700	trans-1,2-Dichloroethylene	µg/kg	< 12.0	< 12.0	0.00 - 12.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
4655	1,2-Dichloropropane	µg/kg	182	188	122 - 254	Acceptable	EPA 8260D 2018	5/6/2020	0.0634	181	23.0	HNW
4660	1,3-Dichloropropane	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
4665	2,2-Dichloropropane	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
4670	1,1-Dichloropropene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW



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SOIL-110 Final Evaluation Report

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SOIL Volatiles in Soil (cat# 623, lot# D110-721) (Continued)

4680	cis-1,3-Dichloropropylene	µg/kg	18.9	20.5	12.3 - 28.7	Acceptable	EPA 8260D 2018	5/6/2020	0.231	18.0	3.94	HNW
4685	trans-1,3-Dichloropropylene	µg/kg	41.5	46.2	25.4 - 67.0	Acceptable	EPA 8260D 2018	5/6/2020	0.404	38.7	6.84	HNW
4765	Ethylbenzene	µg/kg	32.7	39.1	23.5 - 54.7	Acceptable	EPA 8260D 2018	5/6/2020	-0.759	37.1	5.79	HNW
4835	Hexachlorobutadiene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
4840	Hexachloroethane	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
4860	2-Hexanone	µg/kg	373	358	179 - 537	Acceptable	EPA 8260D 2018	5/6/2020	1.06	319	50.7	HNW
4900	Isopropylbenzene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
4910	4-Isopropyltoluene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
4975	Methylene chloride	µg/kg	104	99.5	49.8 - 149	Acceptable	EPA 8260D 2018	5/6/2020	0.0807	103	17.8	HNW
4995	4-Methyl-2-pentanone (MIBK)	µg/kg	388	386	193 - 579	Acceptable	EPA 8260D 2018	5/6/2020	0.493	356	65.3	HNW
5005	Naphthalene	µg/kg	111	110	55.0 - 165	Acceptable	EPA 8260D 2018	5/6/2020	0.565	97.0	24.8	HNW
5015	Nitrobenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5090	n-Propylbenzene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
5100	Styrene	µg/kg	< 39.9	< 26.0	0.00 - 26.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
5105	1,1,1,2-Tetrachloroethane	µg/kg	149	150	90.0 - 210	Acceptable	EPA 8260D 2018	5/6/2020	0.329	143	17.2	HNW
5110	1,1,2,2-Tetrachloroethane	µg/kg	25.9	25.0	13.8 - 36.2	Acceptable	EPA 8260D 2018	5/6/2020	0.818	22.4	4.34	HNW
5115	Tetrachloroethylene	µg/kg	67.7	74.4	37.2 - 112	Acceptable	EPA 8260D 2018	5/6/2020	-0.193	69.9	11.4	HNW
5140	Toluene	µg/kg	114	125	81.2 - 169	Acceptable	EPA 8260D 2018	5/6/2020	-0.599	124	16.3	HNW
5150	1,2,3-Trichlorobenzene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
5155	1,2,4-Trichlorobenzene	µg/kg	129	138	55.2 - 221	Acceptable	EPA 8260D 2018	5/6/2020	0.454	115	31.3	HNW



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SOIL Volatiles in Soil (cat# 623, lot# D110-721) (Continued)

5160	1,1,1-Trichloroethane	µg/kg	< 11.0	< 11.0	0.00 - 11.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
5165	1,1,2-Trichloroethane	µg/kg	< 14.0	< 14.0	0.00 - 14.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
5170	Trichloroethylene	µg/kg	181	189	113 - 265	Acceptable	EPA 8260D 2018	5/6/2020	-0.170	187	32.5	HNW
5175	Trichlorofluoromethane	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
5180	1,2,3-Trichloropropane (TCP)	µg/kg	108	100	50.0 - 150	Acceptable	EPA 8260D 2018	5/6/2020	1.22	87.8	16.5	HNW
5210	1,2,4-Trimethylbenzene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
5215	1,3,5-Trimethylbenzene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
5225	Vinyl acetate	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
5235	Vinyl chloride	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
5240	m&p-Xylene	µg/kg	< 20.9	< 11.0	0.00 - 11.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
5250	o-Xylene	µg/kg	< 11.0	< 11.0	0.00 - 11.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW
5260	Xylenes, total	µg/kg	< 28.9	< 22.0	0.00 - 22.0	Acceptable	EPA 8260D 2018	5/6/2020				HNW



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CERTIFICATE OF EXCELLENCE

In recognition of the quality of your laboratory in proficiency testing for
SOIL-110

Pace Analytical Services - Green Bay

is issued this certificate of achievement by ERA. This laboratory has been recognized as a Laboratory of Excellence for achieving 100% acceptable data in this study which included 291 participating laboratories. This achievement is a demonstration of the superior quality of the laboratory in evaluation of the standards listed below.

Volatiles in Soil



Matthew Seebeck
Quality Officer



A Waters Company

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USA

SOIL-109



Final Report

Soil/Hazardous Waste Proficiency Testing

Soil Study

Open Date: 01/20/20

Close Date: 03/05/20

Report Issued Date: 03/09/20



A Waters Company

March 9, 2020

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Enclosed is your final report for ERA's SOIL-109 Proficiency Testing (PT) study. Your final report includes an evaluation of all results submitted by your laboratory to ERA.

Data Evaluation Protocols: All analytes in ERA's SOIL-109 Proficiency Testing study have been evaluated using the following tiered approach. If the analyte is listed in the most current NELAC Fields of Proficiency Testing (FoPT) table the evaluation was completed by comparing the reported result to the acceptance limits generated using the criteria contained in the table and the evaluation criteria contained in the 2016 TNI Standard, Volume 3. If the analyte is not included in the NELAC FoPT table, the reported result has been evaluated using the procedures outlined in ERA's Standard Operating Procedure for the Generation of Performance Acceptance Limits (SOP 730002268).

Corrective Action Help: As part of your accreditation(s), you may be required to identify the root cause of any "Not Acceptable" results, implement the necessary corrective actions, and then satisfy your PT requirements by participating in a Supplemental (QuiK™ Response) or future ERA PT study. ERA's technical staff is available to help your laboratory resolve any technical issues that may be impairing your PT performance and possibly affecting your routine data quality. Our laboratory and technical staff have many years of collective experience in performing the full range of environmental analyses. As part of our technical support, ERA offers QC samples that can be useful in helping you work through your technical issues.

Thank you for your participation in ERA's SOIL-109 Proficiency Testing study. If you have any questions, please contact our Proficiency Testing Department at 1-800-372-0122.

Sincerely,

A handwritten signature in black ink, appearing to read "Matthew Seebeck".

Matthew Seebeck
Quality Officer

attachments



A Waters Company

Report Recipient	Contact/Phone Number	Reporting Type
Florida	Vanessa Soto / 904-791-1599	All Analytes
Illinois	John South / (217) 558-7142	All Analytes
Kentucky	Patrick Garrity / 502-782-6954	All Analytes
Louisiana	Paul Bergeron / 225-219-3247	All Analytes
Minnesota	Lynn Boysen / 218-332-5164	All Analytes
North Dakota	Cynthia Auen / 701-328-6172	All Analytes
Wisconsin	Tom Trainor / (920) 412-5970	All Analytes
CADENA, Inc (E518002)	Jim Tomalia / (313) 871-5800	All Analytes
Ford Motor Company (E518002)	Hilda Arellano / 313-845-1648	All Analytes



A Waters Company

SOIL-109 Definitions & Study Discussion

Study Dates: 01/20/20 - 03/05/20

Report Issued: 03/09/20

SOIL Study Definitions

The Reported Value is the value that the laboratory reported to ERA.

The ERA Assigned Values are compliant with the most current NELAC Fields of Proficiency Testing (FoPT) table. The Assigned Values for the Organic Proficiency Testing Standards are equal to 100% of the parameter present in the standard as determined by gravimetric and/or volumetric measurements made during standard preparation as applicable. The assigned values for the Inorganic Proficiency Testing Standards, with the exception of the TCLP Metals in Soil and Total Organic Carbon (TOC) in the Nutrients in Soil sample, are equal to the maximum amount of the parameter available in the standard by applicable EPA methodologies. The assigned values for the TCLP metals and TOC are equal to the mean of the study data, after the removal of outliers. All parameters not added to the standard are given an Assigned Value of "< PTRL", per the guidelines contained in the 2009 TNI Standards. The assigned values are directly traceable to the commercially prepared starting materials used to manufacture the PT standards.

The Acceptance Limits are established per the criteria contained in the most current NELAC FoPT table or ERA's SOP for the Generation of Performance Acceptance Limits™ as applicable. This report is scored by the criteria in the 2016 TNI Standard, Volume 3, instead of by the criteria in the 2009 TNI Standard to which the Proficiency Testing Provider is accredited. This is a planned change and is endorsed by the TNI Proficiency Testing Program Executive Committee for transition to the 2016 TNI Standard.

The Performance Evaluation:

- | | |
|----------------|---|
| Acceptable | = Reported Value falls within the Acceptance Limits. |
| Not Acceptable | = Reported Value falls outside the Acceptance Limits. |
| No Evaluation | = Reported Value cannot be evaluated. |
| Not Reported | = No Value reported. |

The Method Description is the method the laboratory reported to ERA.

SOIL Study Discussion

ERA's SOIL-109 Proficiency Testing (PT) study has been reviewed by ERA senior management and certified compliant with the requirements of the 2009 TNI PT Standard and the 2016 TNI Standard, Volume 3, Section 5.9 and the criteria contained in the most current NELAC Fields of Proficiency Testing (FoPT) table.

ERA's SOIL-109 study standards were examined for any anomalies. There was one anomaly observed and is addressed on the following page if your laboratory received the SOIL-109 Metals In Sludge sample, catalog #619. A full review of all homogeneity, stability and accuracy verification data was completed. With the exception of Mercury in the Metals In Sludge sample, all analytical verification data for all analytes in the standards met the acceptance criteria contained in the 2009 TNI PT Standard and the criteria contained in the most current NELAC FoPT table.

All analytes are included in ERA's A2LA accreditation, certification number 1539.01.

The data submitted by participating laboratories was also examined for study anomalies. There were no anomalies observed during the statistical review of the data.

ERA's SOIL-109 Proficiency Testing study reports shall not be reproduced except in its entirety and not without the permission of the participating laboratory. The report must not be used by the participating laboratories to claim product endorsement any agency of the U. S. government.

The data contained herein are confidential and intended for your use only.

If you have any questions or concerns regarding your assessment in ERA's SOIL Proficiency Testing program, please contact our Proficiency Testing Department at 1-800-372-0122.





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SOIL-109 Laboratory Exception Report

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Not Acceptable Evaluations

There were no Not Acceptable evaluations for this study.



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Final Report Results For Laboratory Pace Analytical Services - Green Bay





Final Evaluation Report

Study: SOIL-109

ERA Customer Number: **E518002**

Laboratory Name: **Pace Analytical Services**
- Green Bay

Inorganic Results





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SOIL Metals in Soil (cat# 620, lot# D109-540)

1000	Aluminum	mg/kg		10100	4060 - 12200	Not Reported				8130	1550	
1005	Antimony	mg/kg		259	25.9 - 335	Not Reported				134	75.9	
1010	Arsenic	mg/kg		171	109 - 203	Not Reported				156	16.0	
1015	Barium	mg/kg		253	179 - 298	Not Reported				239	21.4	
1020	Beryllium	mg/kg		179	127 - 212	Not Reported				169	15.2	
1025	Boron	mg/kg		114	52.5 - 125	Not Reported				87.5	12.2	
1030	Cadmium	mg/kg		149	103 - 171	Not Reported				137	11.9	
1035	Calcium	mg/kg		5190	3460 - 6070	Not Reported				4760	467	
1040	Chromium	mg/kg		163	108 - 200	Not Reported				154	12.8	
1050	Cobalt	mg/kg		127	90.8 - 151	Not Reported				121	10.2	
1055	Copper	mg/kg		57.0	41.1 - 68.6	Not Reported				54.9	5.13	
1070	Iron	mg/kg		15000	4920 - 23200	Not Reported				14100	3040	
1075	Lead	mg/kg		133	93.3 - 167	Not Reported				130	12.8	
1085	Magnesium	mg/kg		2570	1440 - 3200	Not Reported				2320	280	
1090	Manganese	mg/kg		277	199 - 340	Not Reported				269	21.9	
1095	Mercury	mg/kg	21.9	21.6	12.3 - 28.6	Acceptable	EPA 7471A 1 1994	1/31/2020	0.477	20.5	3.01	AJT
1100	Molybdenum	mg/kg		108	66.9 - 124	Not Reported				95.4	9.72	
1105	Nickel	mg/kg		58.7	37.7 - 70.0	Not Reported				53.9	4.84	
1125	Potassium	mg/kg		2420	1190 - 2850	Not Reported				2020	293	
1140	Selenium	mg/kg		181	113 - 221	Not Reported				167	17.0	



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SOIL-109 Final Evaluation Report

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SOIL Metals in Soil (cat# 620, lot# D109-540) (Continued)

1150	Silver	mg/kg		35.5	23.0 - 44.1	Not Reported				33.6	3.96	
1155	Sodium	mg/kg		161	46.5 - 220	Not Reported				133	25.9	
1160	Strontium	mg/kg		89.7	62.8 - 113	Not Reported				87.9	8.74	
1165	Thallium	mg/kg		121	76.1 - 147	Not Reported				112	10.6	
1175	Tin	mg/kg		83.5	39.7 - 108	Not Reported				74.0	8.01	
1180	Titanium	mg/kg		474	46.3 - 620	Not Reported				333	95.6	
3055	Uranium	mg/kg		51.9	35.9 - 68.0	Not Reported				51.9	5.36	
1185	Vanadium	mg/kg		68.1	37.0 - 88.3	Not Reported				62.6	8.50	
1190	Zinc	mg/kg		165	111 - 205	Not Reported				158	12.9	



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SOIL Metals in Soil (cat# 620, lot# D109-540)

1000	Aluminum	mg/kg	8730	10100	4060 - 12200	Acceptable	EPA 6020	1/28/2020	0.389	8130	1550	KXS
1005	Antimony	mg/kg	171	259	25.9 - 335	Acceptable	EPA 6020	1/28/2020	0.484	134	75.9	KXS
1010	Arsenic	mg/kg	147	171	109 - 203	Acceptable	EPA 6020	1/28/2020	-0.566	156	16.0	KXS
1015	Barium	mg/kg	233	253	179 - 298	Acceptable	EPA 6020	1/28/2020	-0.258	239	21.4	KXS
1020	Beryllium	mg/kg	146	179	127 - 212	Acceptable	EPA 6020	1/28/2020	-1.53	169	15.2	KXS
1025	Boron	mg/kg	78.2	114	52.5 - 125	Acceptable	EPA 6020	1/28/2020	-0.764	87.5	12.2	KXS
1030	Cadmium	mg/kg	136	149	103 - 171	Acceptable	EPA 6020	1/28/2020	-0.0646	137	11.9	KXS
1035	Calcium	mg/kg	4510	5190	3460 - 6070	Acceptable	EPA 6020	1/28/2020	-0.546	4760	467	KXS
1040	Chromium	mg/kg	141	163	108 - 200	Acceptable	EPA 6020	1/28/2020	-1.01	154	12.8	KXS
1050	Cobalt	mg/kg	111	127	90.8 - 151	Acceptable	EPA 6020	1/28/2020	-0.985	121	10.2	KXS
1055	Copper	mg/kg	52.1	57.0	41.1 - 68.6	Acceptable	EPA 6020	1/28/2020	-0.536	54.9	5.13	KXS
1070	Iron	mg/kg	13200	15000	4920 - 23200	Acceptable	EPA 6020	1/28/2020	-0.290	14100	3040	KXS
1075	Lead	mg/kg	124	133	93.3 - 167	Acceptable	EPA 6020	1/28/2020	-0.462	130	12.8	KXS
1085	Magnesium	mg/kg	2410	2570	1440 - 3200	Acceptable	EPA 6020	1/28/2020	0.334	2320	280	KXS
1090	Manganese	mg/kg	251	277	199 - 340	Acceptable	EPA 6020	1/28/2020	-0.836	269	21.9	KXS
1095	Mercury	mg/kg	18.5	21.6	12.3 - 28.6	Acceptable	EPA 6020	1/28/2020	-0.652	20.5	3.01	KXS
1100	Molybdenum	mg/kg	87.2	108	66.9 - 124	Acceptable	EPA 6020	1/28/2020	-0.845	95.4	9.72	KXS
1105	Nickel	mg/kg	51.1	58.7	37.7 - 70.0	Acceptable	EPA 6020	1/28/2020	-0.570	53.9	4.84	KXS
1125	Potassium	mg/kg	2010	2420	1190 - 2850	Acceptable	EPA 6020	1/28/2020	-0.0332	2020	293	KXS
1140	Selenium	mg/kg	164	181	113 - 221	Acceptable	EPA 6020	1/28/2020	-0.171	167	17.0	KXS

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SOIL Metals in Soil (cat# 620, lot# D109-540) (Continued)

1150	Silver	mg/kg	31.7	35.5	23.0 - 44.1	Acceptable	EPA 6020	1/28/2020	-0.468	33.6	3.96	KXS
1155	Sodium	mg/kg	130	161	46.5 - 220	Acceptable	EPA 6020	1/28/2020	-0.124	133	25.9	KXS
1160	Strontium	mg/kg	78.7	89.7	62.8 - 113	Acceptable	EPA 6020	1/28/2020	-1.06	87.9	8.74	KXS
1165	Thallium	mg/kg	106	121	76.1 - 147	Acceptable	EPA 6020	1/28/2020	-0.521	112	10.6	KXS
1175	Tin	mg/kg	71.9	83.5	39.7 - 108	Acceptable	EPA 6020	1/28/2020	-0.261	74.0	8.01	KXS
1180	Titanium	mg/kg	392	474	46.3 - 620	Acceptable	EPA 6020	1/28/2020	0.617	333	95.6	KXS
3055	Uranium	mg/kg	49.9	51.9	35.9 - 68.0	Acceptable	EPA 6020	1/28/2020	-0.382	51.9	5.36	KXS
1185	Vanadium	mg/kg	55.8	68.1	37.0 - 88.3	Acceptable	EPA 6020	1/28/2020	-0.801	62.6	8.50	KXS
1190	Zinc	mg/kg	152	165	111 - 205	Acceptable	EPA 6020	1/28/2020	-0.466	158	12.9	KXS



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SOIL Metals in Soil (cat# 620, lot# D109-540)

1000	Aluminum	mg/kg		10100	4060 - 12200	Not Reported				8130	1550	
1005	Antimony	mg/kg		259	25.9 - 335	Not Reported				134	75.9	
1010	Arsenic	mg/kg		171	109 - 203	Not Reported				156	16.0	
1015	Barium	mg/kg		253	179 - 298	Not Reported				239	21.4	
1020	Beryllium	mg/kg		179	127 - 212	Not Reported				169	15.2	
1025	Boron	mg/kg		114	52.5 - 125	Not Reported				87.5	12.2	
1030	Cadmium	mg/kg		149	103 - 171	Not Reported				137	11.9	
1035	Calcium	mg/kg		5190	3460 - 6070	Not Reported				4760	467	
1040	Chromium	mg/kg		163	108 - 200	Not Reported				154	12.8	
1050	Cobalt	mg/kg		127	90.8 - 151	Not Reported				121	10.2	
1055	Copper	mg/kg		57.0	41.1 - 68.6	Not Reported				54.9	5.13	
1070	Iron	mg/kg		15000	4920 - 23200	Not Reported				14100	3040	
1075	Lead	mg/kg		133	93.3 - 167	Not Reported				130	12.8	
1085	Magnesium	mg/kg		2570	1440 - 3200	Not Reported				2320	280	
1090	Manganese	mg/kg		277	199 - 340	Not Reported				269	21.9	
1095	Mercury	mg/kg	23.1	21.6	12.3 - 28.6	Acceptable	EPA 1631E 2002	2/11/2020	0.876	20.5	3.01	LMS
1100	Molybdenum	mg/kg		108	66.9 - 124	Not Reported				95.4	9.72	
1105	Nickel	mg/kg		58.7	37.7 - 70.0	Not Reported				53.9	4.84	
1125	Potassium	mg/kg		2420	1190 - 2850	Not Reported				2020	293	
1140	Selenium	mg/kg		181	113 - 221	Not Reported				167	17.0	



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SOIL Metals in Soil (cat# 620, lot# D109-540) (Continued)

1150	Silver	mg/kg		35.5	23.0 - 44.1	Not Reported				33.6	3.96	
1155	Sodium	mg/kg		161	46.5 - 220	Not Reported				133	25.9	
1160	Strontium	mg/kg		89.7	62.8 - 113	Not Reported				87.9	8.74	
1165	Thallium	mg/kg		121	76.1 - 147	Not Reported				112	10.6	
1175	Tin	mg/kg		83.5	39.7 - 108	Not Reported				74.0	8.01	
1180	Titanium	mg/kg		474	46.3 - 620	Not Reported				333	95.6	
3055	Uranium	mg/kg		51.9	35.9 - 68.0	Not Reported				51.9	5.36	
1185	Vanadium	mg/kg		68.1	37.0 - 88.3	Not Reported				62.6	8.50	
1190	Zinc	mg/kg		165	111 - 205	Not Reported				158	12.9	



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SOIL Metals in Soil (cat# 620, lot# D109-540)

1000	Aluminum	mg/kg	8610	10100	4060 - 12200	Acceptable	EPA 6010B 2 1996	1/29/2020	0.311	8130	1550	TXW
1005	Antimony	mg/kg	163	259	25.9 - 335	Acceptable	EPA 6010B 2 1996	1/29/2020	0.378	134	75.9	TXW
1010	Arsenic	mg/kg	144	171	109 - 203	Acceptable	EPA 6010B 2 1996	1/29/2020	-0.753	156	16.0	TXW
1015	Barium	mg/kg	223	253	179 - 298	Acceptable	EPA 6010B 2 1996	1/29/2020	-0.726	239	21.4	TXW
1020	Beryllium	mg/kg	155	179	127 - 212	Acceptable	EPA 6010B 2 1996	1/29/2020	-0.938	169	15.2	TXW
1025	Boron	mg/kg	85.3	114	52.5 - 125	Acceptable	EPA 6010B 2 1996	1/29/2020	-0.180	87.5	12.2	TXW
1030	Cadmium	mg/kg	126	149	103 - 171	Acceptable	EPA 6010B 2 1996	1/29/2020	-0.903	137	11.9	TXW
1035	Calcium	mg/kg	4440	5190	3460 - 6070	Acceptable	EPA 6010B 2 1996	1/29/2020	-0.696	4760	467	TXW
1040	Chromium	mg/kg	138	163	108 - 200	Acceptable	EPA 6010B 2 1996	1/29/2020	-1.24	154	12.8	TXW
1050	Cobalt	mg/kg	110	127	90.8 - 151	Acceptable	EPA 6010B 2 1996	1/29/2020	-1.08	121	10.2	TXW
1055	Copper	mg/kg	51.8	57.0	41.1 - 68.6	Acceptable	EPA 6010B 2 1996	1/29/2020	-0.594	54.9	5.13	TXW
1070	Iron	mg/kg	12300	15000	4920 - 23200	Acceptable	EPA 6010B 2 1996	1/29/2020	-0.586	14100	3040	TXW
1075	Lead	mg/kg	119	133	93.3 - 167	Acceptable	EPA 6010B 2 1996	1/29/2020	-0.853	130	12.8	TXW
1085	Magnesium	mg/kg	2350	2570	1440 - 3200	Acceptable	EPA 6010B 2 1996	1/29/2020	0.119	2320	280	TXW
1090	Manganese	mg/kg	247	277	199 - 340	Acceptable	EPA 6010B 2 1996	1/29/2020	-1.02	269	21.9	TXW
1095	Mercury	mg/kg		21.6	12.3 - 28.6	Not Reported				20.5	3.01	
1100	Molybdenum	mg/kg	91.6	108	66.9 - 124	Acceptable	EPA 6010B 2 1996	1/29/2020	-0.392	95.4	9.72	TXW
1105	Nickel	mg/kg	50.3	58.7	37.7 - 70.0	Acceptable	EPA 6010B 2 1996	1/29/2020	-0.735	53.9	4.84	TXW
1125	Potassium	mg/kg	2050	2420	1190 - 2850	Acceptable	EPA 6010B 2 1996	1/29/2020	0.103	2020	293	TXW
1140	Selenium	mg/kg	155	181	113 - 221	Acceptable	EPA 6010B 2 1996	1/29/2020	-0.699	167	17.0	TXW

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SOIL Metals in Soil (cat# 620, lot# D109-540) (Continued)

1150	Silver	mg/kg	31.1	35.5	23.0 - 44.1	Acceptable	EPA 6010B 2 1996	1/29/2020	-0.619	33.6	3.96	TXW
1155	Sodium	mg/kg	127	161	46.5 - 220	Acceptable	EPA 6010B 2 1996	1/29/2020	-0.240	133	25.9	TXW
1160	Strontium	mg/kg	84.6	89.7	62.8 - 113	Acceptable	EPA 6010B 2 1996	1/29/2020	-0.380	87.9	8.74	TXW
1165	Thallium	mg/kg	102	121	76.1 - 147	Acceptable	EPA 6010B 2 1996	1/29/2020	-0.900	112	10.6	TXW
1175	Tin	mg/kg	69.1	83.5	39.7 - 108	Acceptable	EPA 6010B 2 1996	1/29/2020	-0.611	74.0	8.01	TXW
1180	Titanium	mg/kg	396	474	46.3 - 620	Acceptable	EPA 6010B 2 1996	1/29/2020	0.659	333	95.6	TXW
3055	Uranium	mg/kg		51.9	35.9 - 68.0	Not Reported				51.9	5.36	
1185	Vanadium	mg/kg	57.6	68.1	37.0 - 88.3	Acceptable	EPA 6010B 2 1996	1/29/2020	-0.589	62.6	8.50	TXW
1190	Zinc	mg/kg	148	165	111 - 205	Acceptable	EPA 6010B 2 1996	1/29/2020	-0.776	158	12.9	TXW



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SOIL Metals in Soil (cat# 620, lot# D109-540)

1000	Aluminum	mg/kg	8730	10100	4060 - 12200	Acceptable	EPA 6020A 1 2007	1/28/2020	0.389	8130	1550	KXS
1005	Antimony	mg/kg	171	259	25.9 - 335	Acceptable	EPA 6020A 1 2007	1/28/2020	0.484	134	75.9	KXS
1010	Arsenic	mg/kg	147	171	109 - 203	Acceptable	EPA 6020A 1 2007	1/28/2020	-0.566	156	16.0	KXS
1015	Barium	mg/kg	233	253	179 - 298	Acceptable	EPA 6020A 1 2007	1/28/2020	-0.258	239	21.4	KXS
1020	Beryllium	mg/kg	146	179	127 - 212	Acceptable	EPA 6020A 1 2007	1/28/2020	-1.53	169	15.2	KXS
1025	Boron	mg/kg	78.2	114	52.5 - 125	Acceptable	EPA 6020A 1 2007	1/28/2020	-0.764	87.5	12.2	KXS
1030	Cadmium	mg/kg	136	149	103 - 171	Acceptable	EPA 6020A 1 2007	1/28/2020	-0.0646	137	11.9	KXS
1035	Calcium	mg/kg	4510	5190	3460 - 6070	Acceptable	EPA 6020A 1 2007	1/28/2020	-0.546	4760	467	KXS
1040	Chromium	mg/kg	141	163	108 - 200	Acceptable	EPA 6020A 1 2007	1/28/2020	-1.01	154	12.8	KXS
1050	Cobalt	mg/kg	111	127	90.8 - 151	Acceptable	EPA 6020A 1 2007	1/28/2020	-0.985	121	10.2	KXS
1055	Copper	mg/kg	52.1	57.0	41.1 - 68.6	Acceptable	EPA 6020A 1 2007	1/28/2020	-0.536	54.9	5.13	KXS
1070	Iron	mg/kg	13200	15000	4920 - 23200	Acceptable	EPA 6020A 1 2007	1/28/2020	-0.290	14100	3040	KXS
1075	Lead	mg/kg	124	133	93.3 - 167	Acceptable	EPA 6020A 1 2007	1/28/2020	-0.462	130	12.8	KXS
1085	Magnesium	mg/kg	2410	2570	1440 - 3200	Acceptable	EPA 6020A 1 2007	1/28/2020	0.334	2320	280	KXS
1090	Manganese	mg/kg	251	277	199 - 340	Acceptable	EPA 6020A 1 2007	1/28/2020	-0.836	269	21.9	KXS
1095	Mercury	mg/kg	18.5	21.6	12.3 - 28.6	Acceptable	EPA 6020A 1 2007	1/28/2020	-0.652	20.5	3.01	KXS
1100	Molybdenum	mg/kg	87.2	108	66.9 - 124	Acceptable	EPA 6020A 1 2007	1/28/2020	-0.845	95.4	9.72	KXS
1105	Nickel	mg/kg	51.1	58.7	37.7 - 70.0	Acceptable	EPA 6020A 1 2007	1/28/2020	-0.570	53.9	4.84	KXS
1125	Potassium	mg/kg	2010	2420	1190 - 2850	Acceptable	EPA 6020A 1 2007	1/28/2020	-0.0332	2020	293	KXS
1140	Selenium	mg/kg	164	181	113 - 221	Acceptable	EPA 6020A 1 2007	1/28/2020	-0.171	167	17.0	KXS



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SOIL Metals in Soil (cat# 620, lot# D109-540) (Continued)

1150	Silver	mg/kg	31.7	35.5	23.0 - 44.1	Acceptable	EPA 6020A 1 2007	1/28/2020	-0.468	33.6	3.96	KXS
1155	Sodium	mg/kg	130	161	46.5 - 220	Acceptable	EPA 6020A 1 2007	1/28/2020	-0.124	133	25.9	KXS
1160	Strontium	mg/kg	78.7	89.7	62.8 - 113	Acceptable	EPA 6020A 1 2007	1/28/2020	-1.06	87.9	8.74	KXS
1165	Thallium	mg/kg	106	121	76.1 - 147	Acceptable	EPA 6020A 1 2007	1/28/2020	-0.521	112	10.6	KXS
1175	Tin	mg/kg	71.9	83.5	39.7 - 108	Acceptable	EPA 6020A 1 2007	1/28/2020	-0.261	74.0	8.01	KXS
1180	Titanium	mg/kg	392	474	46.3 - 620	Acceptable	EPA 6020A 1 2007	1/28/2020	0.617	333	95.6	KXS
3055	Uranium	mg/kg	49.9	51.9	35.9 - 68.0	Acceptable	EPA 6020A 1 2007	1/28/2020	-0.382	51.9	5.36	KXS
1185	Vanadium	mg/kg	55.8	68.1	37.0 - 88.3	Acceptable	EPA 6020A 1 2007	1/28/2020	-0.801	62.6	8.50	KXS
1190	Zinc	mg/kg	152	165	111 - 205	Acceptable	EPA 6020A 1 2007	1/28/2020	-0.466	158	12.9	KXS



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SOIL Metals in Soil (cat# 620, lot# D109-540)

1000	Aluminum	mg/kg	8610	10100	4060 - 12200	Acceptable	EPA 6010C 2007	1/29/2020	0.311	8130	1550	TXW
1005	Antimony	mg/kg	163	259	25.9 - 335	Acceptable	EPA 6010C 2007	1/29/2020	0.378	134	75.9	TXW
1010	Arsenic	mg/kg	144	171	109 - 203	Acceptable	EPA 6010C 2007	1/29/2020	-0.753	156	16.0	TXW
1015	Barium	mg/kg	223	253	179 - 298	Acceptable	EPA 6010C 2007	1/29/2020	-0.726	239	21.4	TXW
1020	Beryllium	mg/kg	155	179	127 - 212	Acceptable	EPA 6010C 2007	1/29/2020	-0.938	169	15.2	TXW
1025	Boron	mg/kg	85.3	114	52.5 - 125	Acceptable	EPA 6010C 2007	1/29/2020	-0.180	87.5	12.2	TXW
1030	Cadmium	mg/kg	126	149	103 - 171	Acceptable	EPA 6010C 2007	1/29/2020	-0.903	137	11.9	TXW
1035	Calcium	mg/kg	4440	5190	3460 - 6070	Acceptable	EPA 6010C 2007	1/29/2020	-0.696	4760	467	TXW
1040	Chromium	mg/kg	138	163	108 - 200	Acceptable	EPA 6010C 2007	1/29/2020	-1.24	154	12.8	TXW
1050	Cobalt	mg/kg	110	127	90.8 - 151	Acceptable	EPA 6010C 2007	1/29/2020	-1.08	121	10.2	TXW
1055	Copper	mg/kg	51.8	57.0	41.1 - 68.6	Acceptable	EPA 6010C 2007	1/29/2020	-0.594	54.9	5.13	TXW
1070	Iron	mg/kg	12300	15000	4920 - 23200	Acceptable	EPA 6010C 2007	1/29/2020	-0.586	14100	3040	TXW
1075	Lead	mg/kg	119	133	93.3 - 167	Acceptable	EPA 6010C 2007	1/29/2020	-0.853	130	12.8	TXW
1085	Magnesium	mg/kg	2350	2570	1440 - 3200	Acceptable	EPA 6010C 2007	1/29/2020	0.119	2320	280	TXW
1090	Manganese	mg/kg	247	277	199 - 340	Acceptable	EPA 6010C 2007	1/29/2020	-1.02	269	21.9	TXW
1095	Mercury	mg/kg		21.6	12.3 - 28.6	Not Reported				20.5	3.01	
1100	Molybdenum	mg/kg	91.6	108	66.9 - 124	Acceptable	EPA 6010C 2007	1/29/2020	-0.392	95.4	9.72	TXW
1105	Nickel	mg/kg	50.3	58.7	37.7 - 70.0	Acceptable	EPA 6010C 2007	1/29/2020	-0.735	53.9	4.84	TXW
1125	Potassium	mg/kg	2050	2420	1190 - 2850	Acceptable	EPA 6010C 2007	1/29/2020	0.103	2020	293	TXW
1140	Selenium	mg/kg	155	181	113 - 221	Acceptable	EPA 6010C 2007	1/29/2020	-0.699	167	17.0	TXW

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SOIL Metals in Soil (cat# 620, lot# D109-540) (Continued)

1150	Silver	mg/kg	31.1	35.5	23.0 - 44.1	Acceptable	EPA 6010C 2007	1/29/2020	-0.619	33.6	3.96	TXW
1155	Sodium	mg/kg	127	161	46.5 - 220	Acceptable	EPA 6010C 2007	1/29/2020	-0.240	133	25.9	TXW
1160	Strontium	mg/kg	84.6	89.7	62.8 - 113	Acceptable	EPA 6010C 2007	1/29/2020	-0.380	87.9	8.74	TXW
1165	Thallium	mg/kg	102	121	76.1 - 147	Acceptable	EPA 6010C 2007	1/29/2020	-0.900	112	10.6	TXW
1175	Tin	mg/kg	69.1	83.5	39.7 - 108	Acceptable	EPA 6010C 2007	1/29/2020	-0.611	74.0	8.01	TXW
1180	Titanium	mg/kg	396	474	46.3 - 620	Acceptable	EPA 6010C 2007	1/29/2020	0.659	333	95.6	TXW
3055	Uranium	mg/kg		51.9	35.9 - 68.0	Not Reported				51.9	5.36	
1185	Vanadium	mg/kg	57.6	68.1	37.0 - 88.3	Acceptable	EPA 6010C 2007	1/29/2020	-0.589	62.6	8.50	TXW
1190	Zinc	mg/kg	148	165	111 - 205	Acceptable	EPA 6010C 2007	1/29/2020	-0.776	158	12.9	TXW



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SOIL Metals in Soil (cat# 620, lot# D109-540)

1000	Aluminum	mg/kg		10100	4060 - 12200	Not Reported				8130	1550	
1005	Antimony	mg/kg		259	25.9 - 335	Not Reported				134	75.9	
1010	Arsenic	mg/kg		171	109 - 203	Not Reported				156	16.0	
1015	Barium	mg/kg		253	179 - 298	Not Reported				239	21.4	
1020	Beryllium	mg/kg		179	127 - 212	Not Reported				169	15.2	
1025	Boron	mg/kg		114	52.5 - 125	Not Reported				87.5	12.2	
1030	Cadmium	mg/kg		149	103 - 171	Not Reported				137	11.9	
1035	Calcium	mg/kg		5190	3460 - 6070	Not Reported				4760	467	
1040	Chromium	mg/kg		163	108 - 200	Not Reported				154	12.8	
1050	Cobalt	mg/kg		127	90.8 - 151	Not Reported				121	10.2	
1055	Copper	mg/kg		57.0	41.1 - 68.6	Not Reported				54.9	5.13	
1070	Iron	mg/kg		15000	4920 - 23200	Not Reported				14100	3040	
1075	Lead	mg/kg		133	93.3 - 167	Not Reported				130	12.8	
1085	Magnesium	mg/kg		2570	1440 - 3200	Not Reported				2320	280	
1090	Manganese	mg/kg		277	199 - 340	Not Reported				269	21.9	
1095	Mercury	mg/kg	21.9	21.6	12.3 - 28.6	Acceptable	EPA 7471B 1998	1/31/2020	0.477	20.5	3.01	AJT
1100	Molybdenum	mg/kg		108	66.9 - 124	Not Reported				95.4	9.72	
1105	Nickel	mg/kg		58.7	37.7 - 70.0	Not Reported				53.9	4.84	
1125	Potassium	mg/kg		2420	1190 - 2850	Not Reported				2020	293	
1140	Selenium	mg/kg		181	113 - 221	Not Reported				167	17.0	



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SOIL Metals in Soil (cat# 620, lot# D109-540) (Continued)

1150	Silver	mg/kg		35.5	23.0 - 44.1	Not Reported				33.6	3.96	
1155	Sodium	mg/kg		161	46.5 - 220	Not Reported				133	25.9	
1160	Strontium	mg/kg		89.7	62.8 - 113	Not Reported				87.9	8.74	
1165	Thallium	mg/kg		121	76.1 - 147	Not Reported				112	10.6	
1175	Tin	mg/kg		83.5	39.7 - 108	Not Reported				74.0	8.01	
1180	Titanium	mg/kg		474	46.3 - 620	Not Reported				333	95.6	
3055	Uranium	mg/kg		51.9	35.9 - 68.0	Not Reported				51.9	5.36	
1185	Vanadium	mg/kg		68.1	37.0 - 88.3	Not Reported				62.6	8.50	
1190	Zinc	mg/kg		165	111 - 205	Not Reported				158	12.9	

SOIL Anions in Soil (cat# 873, lot# D109-543)

1540	Bromide	mg/kg	78.5	77.7	52.3 - 91.1	Acceptable	EPA 300.0 2.1 1993	2/5/2020	0.950	71.7	7.16	HMB
1575	Chloride	mg/kg	806	818	560 - 1010	Acceptable	EPA 300.0 2.1 1993	2/5/2020	0.297	787	65.2	HMB
1730	Fluoride	mg/kg	27.0	131	13.1 - 144	Acceptable	EPA 300.0 2.1 1993	2/5/2020	-0.478	30.2	6.69	HMB
1810	Nitrate as N	mg/kg	46.9	59.0	35.0 - 71.4	Acceptable	EPA 300.0 2.1 1993	2/5/2020	-1.24	53.2	5.07	HMB
1870	Phosphate as P	mg/kg		435	6.78 - 478	Not Reported				121	38.2	
2000	Sulfate	mg/kg	242	267	87.5 - 294	Acceptable	EPA 300.0 2.1 1993	2/5/2020	0.962	173	71.5	HMB



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SOIL Anions in Soil (cat# 873, lot# D109-543)

1540	Bromide	mg/kg	78.5	77.7	52.3 - 91.1	Acceptable	EPA 9056 1994	2/5/2020	0.950	71.7	7.16	HMB
1575	Chloride	mg/kg	806	818	560 - 1010	Acceptable	EPA 9056 1994	2/5/2020	0.297	787	65.2	HMB
1730	Fluoride	mg/kg	27.0	131	13.1 - 144	Acceptable	EPA 9056 1994	2/5/2020	-0.478	30.2	6.69	HMB
1810	Nitrate as N	mg/kg	46.9	59.0	35.0 - 71.4	Acceptable	EPA 9056 1994	2/5/2020	-1.24	53.2	5.07	HMB
1870	Phosphate as P	mg/kg		435	6.78 - 478	Not Reported				121	38.2	
2000	Sulfate	mg/kg	242	267	87.5 - 294	Acceptable	EPA 9056 1994	2/5/2020	0.962	173	71.5	HMB

SOIL Anions in Soil (cat# 873, lot# D109-543)

1540	Bromide	mg/kg	78.5	77.7	52.3 - 91.1	Acceptable	EPA 9056A 2007	2/5/2020	0.950	71.7	7.16	HMB
1575	Chloride	mg/kg	806	818	560 - 1010	Acceptable	EPA 9056A 2007	2/5/2020	0.297	787	65.2	HMB
1730	Fluoride	mg/kg	27.0	131	13.1 - 144	Acceptable	EPA 9056A 2007	2/5/2020	-0.478	30.2	6.69	HMB
1810	Nitrate as N	mg/kg	46.9	59.0	35.0 - 71.4	Acceptable	EPA 9056A 2007	2/5/2020	-1.24	53.2	5.07	HMB
1870	Phosphate as P	mg/kg		435	6.78 - 478	Not Reported				121	38.2	
2000	Sulfate	mg/kg	242	267	87.5 - 294	Acceptable	EPA 9056A 2007	2/5/2020	0.962	173	71.5	HMB

SOIL Cyanide in Soil (cat# 621, lot# D109-541)

1645	Cyanide, total	mg/kg	106	95.3	28.1 - 112	Acceptable	EPA 9012B 2004	1/28/2020	1.55	70.2	23.1	DAW
1923	Reactive Cyanide	mg/kg		< 200	0.00 - 200	Not Reported				22.6	42.4	
1510	Amenable Cyanide	mg/kg		< 200	0.00 - 200	Not Reported				20.6	23.0	

SOIL Cyanide in Soil (cat# 621, lot# D109-541)

1645	Cyanide, total	mg/kg	106	95.3	28.1 - 112	Acceptable	EPA 9012 1986	1/28/2020	1.55	70.2	23.1	DAW
1923	Reactive Cyanide	mg/kg		< 200	0.00 - 200	Not Reported				22.6	42.4	
1510	Amenable Cyanide	mg/kg		< 200	0.00 - 200	Not Reported				20.6	23.0	

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SOIL Cyanide in Soil (cat# 621, lot# D109-541)

1645	Cyanide, total	mg/kg	106	95.3	28.1 - 112	Acceptable	EPA 9012A 1 1996	1/28/2020	1.55	70.2	23.1	DAW
1923	Reactive Cyanide	mg/kg		< 200	0.00 - 200	Not Reported				22.6	42.4	
1510	Amenable Cyanide	mg/kg		< 200	0.00 - 200	Not Reported				20.6	23.0	

SOIL Nutrients in Soil (cat# 869, lot# D109-542)

1515	Ammonia as N	mg/kg	356	356	125 - 546	Acceptable	EPA 350.1	1/30/2020	0.453	335	45.9	TMK
1795	Total Kjeldahl Nitrogen	mg/kg	755	772	426 - 1230	Acceptable	EPA 351.2 2 1993	1/28/2020	-0.739	827	98.0	TMK
2040	Total Organic Carbon (TOC)	mg/kg	3400	3100	1470 - 4740	Acceptable	EPA 9060 1986	1/29/2020	0.544	3100	545	TJJ
1910	Total Phosphorus	mg/kg	544	604	112 - 1090	Acceptable	EPA 365.4	1/29/2020	-0.693	599	79.3	DAW

SOIL Nutrients in Soil (cat# 869, lot# D109-542)

1515	Ammonia as N	mg/kg		356	125 - 546	Not Reported				335	45.9	
1795	Total Kjeldahl Nitrogen	mg/kg		772	426 - 1230	Not Reported				827	98.0	
2040	Total Organic Carbon (TOC)	mg/kg		3100	1470 - 4740	Not Reported				3100	545	
1910	Total Phosphorus	mg/kg	695	604	112 - 1090	Acceptable	EPA 6020	1/28/2020	1.21	599	79.3	KXS

SOIL Nutrients in Soil (cat# 869, lot# D109-542)

1515	Ammonia as N	mg/kg		356	125 - 546	Not Reported				335	45.9	
1795	Total Kjeldahl Nitrogen	mg/kg		772	426 - 1230	Not Reported				827	98.0	
2040	Total Organic Carbon (TOC)	mg/kg		3100	1470 - 4740	Not Reported				3100	545	
1910	Total Phosphorus	mg/kg	695	604	112 - 1090	Acceptable	EPA 6020A 1 2007	1/28/2020	1.21	599	79.3	KXS



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SOIL Nutrients in Soil (cat# 869, lot# D109-542)

1515	Ammonia as N	mg/kg		356	125 - 546	Not Reported				335	45.9	
1795	Total Kjeldahl Nitrogen	mg/kg		772	426 - 1230	Not Reported				827	98.0	
2040	Total Organic Carbon (TOC)	mg/kg	3400	3100	1470 - 4740	Acceptable	EPA 9060A 2004	1/29/2020	0.544	3100	545	TJJ
1910	Total Phosphorus	mg/kg		604	112 - 1090	Not Reported				599	79.3	

SOIL Corrosivity/pH in Soil (cat# 875, lot# D109-914)

1625	Corrosivity (pH)	S.U.	4.96	4.95	4.35 - 5.55	Acceptable	EPA 9045C 3 1995	1/28/2020	-0.425	5.04	0.185	ALY
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SOIL Corrosivity/pH in Soil (cat# 875, lot# D109-914)

1625	Corrosivity (pH)	S.U.	4.96	4.95	4.35 - 5.55	Acceptable	EPA 9045D 2002	1/28/2020	-0.425	5.04	0.185	ALY
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SOIL Ignitability/Flashpoint (cat# 874, lot# D109-979)

1780	Ignitability/Flashpoint	°F	126	135	118 - 152	Acceptable	EPA 1010A 2002	1/28/2020	-0.860	130	5.04	DEY
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Final Evaluation Report

Study: **SOIL-109**

ERA Customer Number: **E518002**

Laboratory Name: **Pace Analytical Services
- Green Bay**

Organic Results



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SOIL Volatiles in Soil (cat# 623, lot# D109-721)

4315	Acetone	µg/kg		250	25.0 - 421	Not Reported				151	81.5	
4315	Acetone	µg/kg	177	250	25.0 - 421	Acceptable	EPA 8260B 2 1996	2/5/2020	0.324	151	81.5	SMT
4320	Acetonitrile	µg/kg		756	0.00 - 1520	Not Reported				276	103	
4325	Acrolein	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4325	Acrolein	µg/kg	< 279	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
4375	Benzene	µg/kg		98.4	64.0 - 133	Not Reported				91.9	16.1	
4375	Benzene	µg/kg	83.2	98.4	64.0 - 133	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.539	91.9	16.1	SMT
4385	Bromobenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4385	Bromobenzene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
4390	Bromochloromethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4390	Bromochloromethane	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
4395	Bromodichloromethane	µg/kg		40.5	24.3 - 56.7	Not Reported				39.2	6.71	
4395	Bromodichloromethane	µg/kg	36.3	40.5	24.3 - 56.7	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.438	39.2	6.71	SMT
4400	Bromoform	µg/kg		190	104 - 276	Not Reported				181	29.9	
4400	Bromoform	µg/kg	191	190	104 - 276	Acceptable	EPA 8260B 2 1996	2/5/2020	0.329	181	29.9	SMT
4950	Bromomethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4950	Bromomethane	µg/kg	< 20.2	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
4410	2-Butanone (MEK)	µg/kg		240	65.7 - 377	Not Reported				208	51.2	
4410	2-Butanone (MEK)	µg/kg	188	240	65.7 - 377	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.394	208	51.2	SMT
4435	n-Butylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						



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SOIL Volatiles in Soil (cat# 623, lot# D109-721) (Continued)

4435	n-Butylbenzene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
4440	sec-Butylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4440	sec-Butylbenzene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
4445	tert-Butylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4445	tert-Butylbenzene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
5000	tert-Butyl methyl ether (MTBE)	µg/kg		155	93.0 - 217	Not Reported				150	29.4	
5000	tert-Butyl methyl ether (MTBE)	µg/kg	134	155	93.0 - 217	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.558	150	29.4	SMT
4450	Carbon disulfide	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4450	Carbon disulfide	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
4455	Carbon tetrachloride	µg/kg		25.3	12.6 - 38.0	Not Reported				24.0	4.04	
4455	Carbon tetrachloride	µg/kg	21.7	25.3	12.6 - 38.0	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.578	24.0	4.04	SMT
4475	Chlorobenzene	µg/kg		176	88.0 - 264	Not Reported				161	30.8	
4475	Chlorobenzene	µg/kg	150	176	88.0 - 264	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.360	161	30.8	SMT
4575	Chlorodibromomethane	µg/kg		38.4	23.0 - 53.8	Not Reported				37.0	5.65	
4575	Chlorodibromomethane	µg/kg	38.3	38.4	23.0 - 53.8	Acceptable	EPA 8260B 2 1996	2/5/2020	0.223	37.0	5.65	SMT
4485	Chloroethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4485	Chloroethane	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
4500	2-Chloroethylvinylether	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4500	2-Chloroethylvinylether	µg/kg	< 60.1	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
4505	Chloroform	µg/kg		139	83.4 - 195	Not Reported				133	25.6	



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SOIL Volatiles in Soil (cat# 623, lot# D109-721) (Continued)

4505	Chloroform	µg/kg	121	139	83.4 - 195	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.463	133	25.6	SMT
4960	Chloromethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4960	Chloromethane	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
4535	2-Chlorotoluene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4535	2-Chlorotoluene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
4540	4-Chlorotoluene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4540	4-Chlorotoluene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
4570	1,2-Dibromo-3-chloropropane (DBCP)	µg/kg		42.1	21.0 - 63.2	Not Reported				38.9	7.78	
4570	1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	34.3	42.1	21.0 - 63.2	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.587	38.9	7.78	SMT
4585	1,2-Dibromoethane (EDB)	µg/kg		78.6	51.1 - 106	Not Reported				76.9	11.7	
4585	1,2-Dibromoethane (EDB)	µg/kg	73.1	78.6	51.1 - 106	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.330	76.9	11.7	SMT
4595	Dibromomethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4595	Dibromomethane	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
4610	1,2-Dichlorobenzene	µg/kg		88.9	53.3 - 124	Not Reported				82.2	18.3	
4610	1,2-Dichlorobenzene	µg/kg	72.2	88.9	53.3 - 124	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.549	82.2	18.3	SMT
4615	1,3-Dichlorobenzene	µg/kg		< 12.0	0.00 - 12.0	Not Reported						
4615	1,3-Dichlorobenzene	µg/kg	< 12.0	< 12.0	0.00 - 12.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
4620	1,4-Dichlorobenzene	µg/kg		162	97.2 - 227	Not Reported				148	30.6	
4620	1,4-Dichlorobenzene	µg/kg	133	162	97.2 - 227	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.490	148	30.6	SMT
4625	Dichlorodifluoromethane (Freon 12)	µg/kg		< 20.0	0.00 - 20.0	Not Reported						



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4625	Dichlorodifluoromethane (Freon 12)	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
4630	1,1-Dichloroethane	µg/kg		107	64.2 - 150	Not Reported				103	19.4	
4630	1,1-Dichloroethane	µg/kg	90.7	107	64.2 - 150	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.655	103	19.4	SMT
4635	1,2-Dichloroethane	µg/kg		138	82.8 - 193	Not Reported				135	18.9	
4635	1,2-Dichloroethane	µg/kg	129	138	82.8 - 193	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.314	135	18.9	SMT
4640	1,1-Dichloroethylene	µg/kg		142	71.0 - 213	Not Reported				128	29.2	
4640	1,1-Dichloroethylene	µg/kg	106	142	71.0 - 213	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.744	128	29.2	SMT
4645	cis-1,2-Dichloroethylene	µg/kg		146	87.6 - 204	Not Reported				145	30.1	
4645	cis-1,2-Dichloroethylene	µg/kg	134	146	87.6 - 204	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.353	145	30.1	SMT
4700	trans-1,2-Dichloroethylene	µg/kg		171	103 - 239	Not Reported				174	29.5	
4700	trans-1,2-Dichloroethylene	µg/kg	156	171	103 - 239	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.619	174	29.5	SMT
4655	1,2-Dichloropropane	µg/kg		< 13.0	0.00 - 13.0	Not Reported						
4655	1,2-Dichloropropane	µg/kg	< 13.0	< 13.0	0.00 - 13.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
4660	1,3-Dichloropropane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4660	1,3-Dichloropropane	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
4665	2,2-Dichloropropane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4665	2,2-Dichloropropane	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
4670	1,1-Dichloropropene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4670	1,1-Dichloropropene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
4680	cis-1,3-Dichloropropylene	µg/kg		29.7	17.8 - 41.6	Not Reported				28.6	3.84	



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SOIL Volatiles in Soil (cat# 623, lot# D109-721) (Continued)

4680	cis-1,3-Dichloropropylene	µg/kg	25.7	29.7	17.8 - 41.6	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.758	28.6	3.84	SMT
4685	trans-1,3-Dichloropropylene	µg/kg		100	55.0 - 145	Not Reported				94.9	15.1	
4685	trans-1,3-Dichloropropylene	µg/kg	82.9	100	55.0 - 145	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.799	94.9	15.1	SMT
4765	Ethylbenzene	µg/kg		< 12.0	0.00 - 12.0	Not Reported						
4765	Ethylbenzene	µg/kg	< 12.0	< 12.0	0.00 - 12.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
4835	Hexachlorobutadiene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4835	Hexachlorobutadiene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
4840	Hexachloroethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4840	Hexachloroethane	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
4860	2-Hexanone	µg/kg		270	135 - 405	Not Reported				252	53.9	
4860	2-Hexanone	µg/kg	300	270	135 - 405	Acceptable	EPA 8260B 2 1996	2/5/2020	0.885	252	53.9	SMT
4900	Isopropylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4900	Isopropylbenzene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
4910	4-Isopropyltoluene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4910	4-Isopropyltoluene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
4975	Methylene chloride	µg/kg		91.6	45.8 - 137	Not Reported				87.9	15.8	
4975	Methylene chloride	µg/kg	85.2	91.6	45.8 - 137	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.170	87.9	15.8	SMT
4995	4-Methyl-2-pentanone (MIBK)	µg/kg	406	349	174 - 524	Acceptable	EPA 8260B 2 1996	2/5/2020	1.03	339	65.0	SMT
5005	Naphthalene	µg/kg		68.8	34.4 - 103	Not Reported				58.3	15.7	
5005	Naphthalene	µg/kg	58.1	68.8	34.4 - 103	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.0109	58.3	15.7	SMT



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SOIL Volatiles in Soil (cat# 623, lot# D109-721) (Continued)

5015	Nitrobenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5090	n-Propylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5090	n-Propylbenzene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
5100	Styrene	µg/kg		< 26.0	0.00 - 26.0	Not Reported						
5100	Styrene	µg/kg	< 39.9	< 26.0	0.00 - 26.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
5105	1,1,1,2-Tetrachloroethane	µg/kg		177	106 - 248	Not Reported				171	25.7	
5105	1,1,1,2-Tetrachloroethane	µg/kg	164	177	106 - 248	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.264	171	25.7	SMT
5110	1,1,2,2-Tetrachloroethane	µg/kg		< 11.0	0.00 - 11.0	Not Reported						
5110	1,1,2,2-Tetrachloroethane	µg/kg	< 16.6	< 11.0	0.00 - 11.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
5115	Tetrachloroethylene	µg/kg		176	88.0 - 264	Not Reported				162	29.2	
5115	Tetrachloroethylene	µg/kg	153	176	88.0 - 264	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.324	162	29.2	SMT
5140	Toluene	µg/kg		181	118 - 244	Not Reported				170	33.0	
5140	Toluene	µg/kg	154	181	118 - 244	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.495	170	33.0	SMT
5150	1,2,3-Trichlorobenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5150	1,2,3-Trichlorobenzene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
5155	1,2,4-Trichlorobenzene	µg/kg		173	69.2 - 277	Not Reported				142	45.3	
5155	1,2,4-Trichlorobenzene	µg/kg	120	173	69.2 - 277	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.488	142	45.3	SMT
5160	1,1,1-Trichloroethane	µg/kg		< 11.0	0.00 - 11.0	Not Reported						
5160	1,1,1-Trichloroethane	µg/kg	< 11.0	< 11.0	0.00 - 11.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
5165	1,1,2-Trichloroethane	µg/kg		184	129 - 239	Not Reported				178	26.5	



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5165	1,1,2-Trichloroethane	µg/kg	167	184	129 - 239	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.402	178	26.5	SMT
5170	Trichloroethylene	µg/kg		88.7	53.2 - 124	Not Reported				83.4	14.6	
5170	Trichloroethylene	µg/kg	66.5	88.7	53.2 - 124	Acceptable	EPA 8260B 2 1996	2/5/2020	-1.15	83.4	14.6	SMT
5175	Trichlorofluoromethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5175	Trichlorofluoromethane	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
5180	1,2,3-Trichloropropane (TCP)	µg/kg		186	93.0 - 279	Not Reported				169	38.7	
5180	1,2,3-Trichloropropane (TCP)	µg/kg	161	186	93.0 - 279	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.212	169	38.7	SMT
5210	1,2,4-Trimethylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5210	1,2,4-Trimethylbenzene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
5215	1,3,5-Trimethylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5215	1,3,5-Trimethylbenzene	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
5225	Vinyl acetate	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5225	Vinyl acetate	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
5235	Vinyl chloride	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5235	Vinyl chloride	µg/kg	< 20.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
5240	m&p-Xylene	µg/kg		< 11.0	0.00 - 11.0	Not Reported						
5240	m&p-Xylene	µg/kg	< 20.9	< 11.0	0.00 - 11.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
5250	o-Xylene	µg/kg		< 11.0	0.00 - 11.0	Not Reported						
5250	o-Xylene	µg/kg	< 11.0	< 11.0	0.00 - 11.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
5260	Xylenes, total	µg/kg		< 22.0	0.00 - 22.0	Not Reported						



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SOIL Volatiles in Soil (cat# 623, lot# D109-721) (Continued)

5260	Xylenes, total	µg/kg	< 28.9	< 22.0	0.00 - 22.0	Acceptable	EPA 8260B 2 1996	2/5/2020				SMT
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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D109-924)

4315	Acetone	µg/kg	11000	11800	3300 - 18000	Acceptable	EPA 8260B 2 1996	2/5/2020	0.0229	11000	1960	ALD
4320	Acetonitrile	µg/kg	< 4000	< 4000	0.00 - 4000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
4325	Acrolein	µg/kg	< 2500	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
4375	Benzene	µg/kg	6150	6260	4700 - 7820	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.0159	6160	804	ALD
4385	Bromobenzene	µg/kg	< 2000	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
4390	Bromochloromethane	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
4395	Bromodichloromethane	µg/kg	2680	2670	1740 - 3600	Acceptable	EPA 8260B 2 1996	2/5/2020	0.268	2590	343	ALD
4400	Bromoform	µg/kg	4570	5540	3320 - 7760	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.758	5180	810	ALD
4950	Bromomethane	µg/kg	< 2000	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
4410	2-Butanone (MEK)	µg/kg	< 808	< 808	0.00 - 808	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
4435	n-Butylbenzene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
4440	sec-Butylbenzene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
4445	tert-Butylbenzene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
5000	tert-Butyl methyl ether (MTBE)	µg/kg	7770	8370	5860 - 10900	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.447	8280	1140	ALD
4450	Carbon disulfide	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
4455	Carbon tetrachloride	µg/kg	2490	2430	1420 - 3430	Acceptable	EPA 8260B 2 1996	2/5/2020	0.477	2320	365	ALD
4475	Chlorobenzene	µg/kg	7550	7640	5730 - 9550	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.00289	7550	814	ALD
4575	Chlorodibromomethane	µg/kg	< 763	< 700	0.00 - 700	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
4485	Chloroethane	µg/kg	< 2000	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
4500	2-Chloroethylvinylether	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD



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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D109-924) (Continued)

4505	Chloroform	µg/kg	7000	6980	4890 - 9070	Acceptable	EPA 8260B 2 1996	2/5/2020	0.358	6660	937	ALD
4960	Chloromethane	µg/kg	< 2000	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
4535	2-Chlorotoluene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
4540	4-Chlorotoluene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
4570	1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	9530	9710	5830 - 13600	Acceptable	EPA 8260B 2 1996	2/5/2020	0.173	9250	1630	ALD
4585	1,2-Dibromoethane (EDB)	µg/kg	9880	9690	5810 - 13600	Acceptable	EPA 8260B 2 1996	2/5/2020	0.311	9600	909	ALD
4595	Dibromomethane	µg/kg	9590	9350	5610 - 13100	Acceptable	EPA 8260B 2 1996	2/5/2020	0.208	9420	830	ALD
4610	1,2-Dichlorobenzene	µg/kg	7130	7110	5330 - 8890	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.101	7200	691	ALD
4615	1,3-Dichlorobenzene	µg/kg	2550	2580	1910 - 3290	Acceptable	EPA 8260B 2 1996	2/5/2020	0.109	2510	328	ALD
4620	1,4-Dichlorobenzene	µg/kg	7580	7670	5920 - 9290	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.0621	7630	821	ALD
4625	Dichlorodifluoromethane (Freon 12)	µg/kg	< 2000	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
4630	1,1-Dichloroethane	µg/kg	5300	5240	3410 - 7070	Acceptable	EPA 8260B 2 1996	2/5/2020	0.399	5020	709	ALD
4635	1,2-Dichloroethane	µg/kg	1920	1810	1200 - 2470	Acceptable	EPA 8260B 2 1996	2/5/2020	0.821	1740	225	ALD
4640	1,1-Dichloroethylene	µg/kg	6140	6050	3020 - 9080	Acceptable	EPA 8260B 2 1996	2/5/2020	0.203	5900	1200	ALD
4645	cis-1,2-Dichloroethylene	µg/kg	7260	7210	4330 - 10100	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.0795	7350	1170	ALD
4700	trans-1,2-Dichloroethylene	µg/kg	6770	6080	3650 - 8510	Acceptable	EPA 8260B 2 1996	2/5/2020	0.432	6370	932	ALD
4655	1,2-Dichloropropane	µg/kg	3270	3190	2230 - 4150	Acceptable	EPA 8260B 2 1996	2/5/2020	0.236	3190	323	ALD
4660	1,3-Dichloropropane	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
4665	2,2-Dichloropropane	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
4670	1,1-Dichloropropene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD



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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D109-924) (Continued)

4680	cis-1,3-Dichloropropylene	µg/kg	5870	5940	3560 - 8320	Acceptable	EPA 8260B 2 1996	2/5/2020	0.172	5760	647	ALD
4685	trans-1,3-Dichloropropylene	µg/kg	2940	3890	2330 - 5450	Acceptable	EPA 8260B 2 1996	2/5/2020	-1.25	3640	560	ALD
4765	Ethylbenzene	µg/kg	3800	3820	2670 - 4970	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.267	3930	497	ALD
4835	Hexachlorobutadiene	µg/kg	12400	13800	4410 - 23900	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.726	14200	2420	ALD
4840	Hexachloroethane	µg/kg	2170	2160	216 - 4190	Acceptable	EPA 8260B 2 1996	2/5/2020	0.414	2080	210	ALD
4860	2-Hexanone	µg/kg	< 2000	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
4900	Isopropylbenzene	µg/kg	< 2000	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
4910	4-Isopropyltoluene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
4975	Methylene chloride	µg/kg	8890	7850	4710 - 11000	Acceptable	EPA 8260B 2 1996	2/5/2020	0.558	8220	1210	ALD
4995	4-Methyl-2-pentanone (MIBK)	µg/kg	17400	18500	9250 - 27800	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.412	18300	2190	ALD
5005	Naphthalene	µg/kg	< 721	< 721	0.00 - 721	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
5015	Nitrobenzene	µg/kg		10900	3030 - 15200	Not Reported				9100	2840	
5090	n-Propylbenzene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
5100	Styrene	µg/kg	8130	8200	4920 - 11500	Acceptable	EPA 8260B 2 1996	2/5/2020	0.0125	8110	1250	ALD
5105	1,1,1,2-Tetrachloroethane	µg/kg	152	< 520	0.00 - 520	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
5110	1,1,2,2-Tetrachloroethane	µg/kg	3510	4370	2490 - 6050	Acceptable	EPA 8260B 2 1996	2/5/2020	-1.18	4220	604	ALD
5115	Tetrachloroethylene	µg/kg	2950	2920	2030 - 4030	Acceptable	EPA 8260B 2 1996	2/5/2020	-0.173	3030	485	ALD
5140	Toluene	µg/kg	< 750	< 750	0.00 - 750	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
5150	1,2,3-Trichlorobenzene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
5155	1,2,4-Trichlorobenzene	µg/kg	< 1200	< 1200	0.00 - 1200	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD



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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D109-924) (Continued)

5160	1,1,1-Trichloroethane	µg/kg	57.4	< 600	0.00 - 600	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
5165	1,1,2-Trichloroethane	µg/kg	2760	3080	2000 - 4160	Acceptable	EPA 8260B 2 1996	2/5/2020	-1.43	3190	299	ALD
5170	Trichloroethylene	µg/kg	5460	4530	3270 - 5890	Acceptable	EPA 8260B 2 1996	2/5/2020	1.25	4590	697	ALD
5175	Trichlorofluoromethane	µg/kg	< 2000	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
5210	1,2,4-Trimethylbenzene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
5215	1,3,5-Trimethylbenzene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
5180	1,2,3-Trichloropropane (TCP)	µg/kg	< 825	< 825	0.00 - 825	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
5225	Vinyl acetate	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
5235	Vinyl chloride	µg/kg	< 2000	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
5240	m&p-Xylene	µg/kg	< 350	< 350	0.00 - 350	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
5250	o-Xylene	µg/kg	< 350	< 350	0.00 - 350	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD
5260	Xylenes, total	µg/kg	< 700	< 700	0.00 - 700	Acceptable	EPA 8260B 2 1996	2/5/2020				ALD



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SOIL Organochlorine Pesticides in Soil (cat# 468, lot# D109-728)

7025	Aldrin	µg/kg	241	381	115 - 500	Acceptable	EPA 8081A 1 1996	2/11/2020	-1.08	308	61.9	DMH
7110	alpha-BHC	µg/kg	78.8	129	31.1 - 173	Acceptable	EPA 8081A 1 1996	2/11/2020	-1.05	102	21.9	DMH
7115	beta-BHC	µg/kg	65.2	108	11.3 - 159	Acceptable	EPA 8081A 1 1996	2/11/2020	-1.01	85.3	19.9	DMH
7105	delta-BHC	µg/kg	87.8	144	30.1 - 212	Acceptable	EPA 8081A 1 1996	2/11/2020	-1.24	121	26.7	DMH
7120	gamma-BHC(Lindane)	µg/kg	219	352	99.0 - 467	Acceptable	EPA 8081A 1 1996	2/11/2020	-1.11	283	57.8	DMH
7240	alpha-Chlordane	µg/kg	247	393	138 - 503	Acceptable	EPA 8081A 1 1996	2/11/2020	-1.15	320	63.8	DMH
7245	gamma-Chlordane	µg/kg	276	457	175 - 551	Acceptable	EPA 8081A 1 1996	2/11/2020	-1.25	363	69.4	DMH
7355	4,4'-DDD	µg/kg	94.4	172	45.1 - 239	Acceptable	EPA 8081A 1 1996	2/11/2020	-1.52	142	31.3	DMH
7360	4,4'-DDE	µg/kg	138	222	72.0 - 303	Acceptable	EPA 8081A 1 1996	2/11/2020	-1.25	188	39.6	DMH
7365	4,4'-DDT	µg/kg	76.9	160	32.9 - 217	Acceptable	EPA 8081A 1 1996	2/11/2020	-1.25	125	38.4	DMH
7470	Dieldrin	µg/kg	301	452	175 - 577	Acceptable	EPA 8081A 1 1996	2/11/2020	-1.04	376	72.3	DMH
7540	Endrin	µg/kg	238	378	152 - 457	Acceptable	EPA 8081A 1 1996	2/11/2020	-0.977	304	68.0	DMH
7530	Endrin aldehyde	µg/kg	227	454	60.9 - 533	Acceptable	EPA 8081A 1 1996	2/11/2020	-0.827	297	84.5	DMH
7535	Endrin ketone	µg/kg	291	478	118 - 617	Acceptable	EPA 8081A 1 1996	2/11/2020	-0.816	367	93.5	DMH
7510	Endosulfan I	µg/kg	62.2	102	21.6 - 141	Acceptable	EPA 8081A 1 1996	2/11/2020	-1.05	81.3	18.2	DMH
7515	Endosulfan II	µg/kg	158	232	62.8 - 307	Acceptable	EPA 8081A 1 1996	2/11/2020	-0.641	185	41.8	DMH
7520	Endosulfan sulfate	µg/kg	239	442	92.9 - 596	Acceptable	EPA 8081A 1 1996	2/11/2020	-1.24	344	84.9	DMH
7685	Heptachlor	µg/kg	89.3	137	41.6 - 189	Acceptable	EPA 8081A 1 1996	2/11/2020	-1.01	115	26.0	DMH
7690	Heptachlor epoxide	µg/kg	31.2	53.5	14.0 - 77.9	Acceptable	EPA 8081A 1 1996	2/11/2020	-1.49	46.0	9.94	DMH
7810	Methoxychlor	µg/kg	46.5	101	10.1 - 166	Acceptable	EPA 8081A 1 1996	2/11/2020	-1.30	81.9	27.3	DMH



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7025	Aldrin	µg/kg	241	381	115 - 500	Acceptable	EPA 8081B 2000	2/11/2020	-1.08	308	61.9	DMH
7110	alpha-BHC	µg/kg	78.8	129	31.1 - 173	Acceptable	EPA 8081B 2000	2/11/2020	-1.05	102	21.9	DMH
7115	beta-BHC	µg/kg	65.2	108	11.3 - 159	Acceptable	EPA 8081B 2000	2/11/2020	-1.01	85.3	19.9	DMH
7105	delta-BHC	µg/kg	87.8	144	30.1 - 212	Acceptable	EPA 8081B 2000	2/11/2020	-1.24	121	26.7	DMH
7120	gamma-BHC(Lindane)	µg/kg	219	352	99.0 - 467	Acceptable	EPA 8081B 2000	2/11/2020	-1.11	283	57.8	DMH
7240	alpha-Chlordane	µg/kg	247	393	138 - 503	Acceptable	EPA 8081B 2000	2/11/2020	-1.15	320	63.8	DMH
7245	gamma-Chlordane	µg/kg	276	457	175 - 551	Acceptable	EPA 8081B 2000	2/11/2020	-1.25	363	69.4	DMH
7355	4,4'-DDD	µg/kg	94.4	172	45.1 - 239	Acceptable	EPA 8081B 2000	2/11/2020	-1.52	142	31.3	DMH
7360	4,4'-DDE	µg/kg	138	222	72.0 - 303	Acceptable	EPA 8081B 2000	2/11/2020	-1.25	188	39.6	DMH
7365	4,4'-DDT	µg/kg	76.9	160	32.9 - 217	Acceptable	EPA 8081B 2000	2/11/2020	-1.25	125	38.4	DMH
7470	Dieldrin	µg/kg	301	452	175 - 577	Acceptable	EPA 8081B 2000	2/11/2020	-1.04	376	72.3	DMH
7540	Endrin	µg/kg	238	378	152 - 457	Acceptable	EPA 8081B 2000	2/11/2020	-0.977	304	68.0	DMH
7530	Endrin aldehyde	µg/kg	227	454	60.9 - 533	Acceptable	EPA 8081B 2000	2/11/2020	-0.827	297	84.5	DMH
7535	Endrin ketone	µg/kg	291	478	118 - 617	Acceptable	EPA 8081B 2000	2/11/2020	-0.816	367	93.5	DMH
7510	Endosulfan I	µg/kg	62.2	102	21.6 - 141	Acceptable	EPA 8081B 2000	2/11/2020	-1.05	81.3	18.2	DMH
7515	Endosulfan II	µg/kg	158	232	62.8 - 307	Acceptable	EPA 8081B 2000	2/11/2020	-0.641	185	41.8	DMH
7520	Endosulfan sulfate	µg/kg	239	442	92.9 - 596	Acceptable	EPA 8081B 2000	2/11/2020	-1.24	344	84.9	DMH
7685	Heptachlor	µg/kg	89.3	137	41.6 - 189	Acceptable	EPA 8081B 2000	2/11/2020	-1.01	115	26.0	DMH
7690	Heptachlor epoxide	µg/kg	31.2	53.5	14.0 - 77.9	Acceptable	EPA 8081B 2000	2/11/2020	-1.49	46.0	9.94	DMH
7810	Methoxychlor	µg/kg	46.5	101	10.1 - 166	Acceptable	EPA 8081B 2000	2/11/2020	-1.30	81.9	27.3	DMH



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SOIL Chlordane in Soil (cat# 628, lot# D109-725)

7250	Chlordane, technical	µg/kg	73.2	162	32.5 - 213	Acceptable	EPA 8081A 1 1996	2/11/2020	-1.58	123	31.3	DMH
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SOIL Chlordane in Soil (cat# 628, lot# D109-725)

7250	Chlordane, technical	µg/kg	73.2	162	32.5 - 213	Acceptable	EPA 8081B 2000	2/11/2020	-1.58	123	31.3	DMH
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SOIL Toxaphene in Soil (cat# 627, lot# D109-724)

8250	Toxaphene	µg/kg	701	1600	170 - 2090	Acceptable	EPA 8081A 1 1996	2/11/2020	-1.34	1130	320	DMH
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SOIL Toxaphene in Soil (cat# 627, lot# D109-724)

8250	Toxaphene	µg/kg	701	1600	170 - 2090	Acceptable	EPA 8081B 2000	2/11/2020	-1.34	1130	320	DMH
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SOIL PCBs in Soil (cat# 624, lot# D109-726)

8880	Aroclor 1016	mg/kg	< 0.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082 1996	1/28/2020				BLM
8885	Aroclor 1221	mg/kg	< 0.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082 1996	1/28/2020				BLM
8890	Aroclor 1232	mg/kg	6.80	8.28	1.72 - 10.9	Acceptable	EPA 8082 1996	1/28/2020	0.230	6.32	2.09	BLM
8895	Aroclor 1242	mg/kg	< 0.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082 1996	1/28/2020				BLM
8900	Aroclor 1248	mg/kg	< 0.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082 1996	1/28/2020				BLM
8905	Aroclor 1254	mg/kg	< 0.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082 1996	1/28/2020				BLM
8910	Aroclor 1260	mg/kg	< 0.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082 1996	1/28/2020				BLM



This report is scored by the criteria in the 2016 TNI Standard, Volume 3, instead of by the criteria in the 2009 TNI Standard to which the Proficiency Testing Provider is accredited. This is a planned change and is endorsed by the TNI Proficiency Testing Program Executive Committee for transition to the 2016 TNI Standard.





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EPA ID:
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Report Issued:
Study Dates:

WI01103
E518002
03/09/20
01/20/20 - 03/05/20

SOIL-109 Final Evaluation Report

TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
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SOIL PCBs in Soil (cat# 624, lot# D109-726)

8880	Aroclor 1016	mg/kg	< 0.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	1/28/2020				BLM
8885	Aroclor 1221	mg/kg	< 0.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	1/28/2020				BLM
8890	Aroclor 1232	mg/kg	6.80	8.28	1.72 - 10.9	Acceptable	EPA 8082A 2000	1/28/2020	0.230	6.32	2.09	BLM
8895	Aroclor 1242	mg/kg	< 0.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	1/28/2020				BLM
8900	Aroclor 1248	mg/kg	< 0.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	1/28/2020				BLM
8905	Aroclor 1254	mg/kg	< 0.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	1/28/2020				BLM
8910	Aroclor 1260	mg/kg	< 0.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	1/28/2020				BLM

SOIL Gasoline Range Organics (GRO) in Soil (cat# 630, lot# D109-763)

9408	Gasoline Range Organics (GRO)	mg/kg		1060	106 - 1280	Not Reported				674	269	
4375	Benzene in GRO	mg/kg	3.03	4.68	0.00 - 6.38	Acceptable	EPA 8021B 2 1996	1/30/2020	0.451	2.44	1.31	ALD
4765	Ethylbenzene in GRO	mg/kg	17.5	17.8	6.28 - 22.4	Acceptable	EPA 8021B 2 1996	1/30/2020	1.19	14.3	2.68	ALD
5140	Toluene in GRO	mg/kg	44.7	53.8	3.05 - 69.4	Acceptable	EPA 8021B 2 1996	1/30/2020	0.765	36.2	11.1	ALD
5260	Xylenes, total in GRO	mg/kg	87.0	91.0	34.0 - 117	Acceptable	EPA 8021B 2 1996	1/30/2020	0.840	75.4	13.8	ALD

SOIL Gasoline Range Organics (GRO) in Soil (cat# 630, lot# D109-763)

9408	Gasoline Range Organics (GRO)	mg/kg	1120	1060	106 - 1280	Acceptable	EPA 8015B 2 1996	1/30/2020	1.65	674	269	ALD
4375	Benzene in GRO	mg/kg		4.68	0.00 - 6.38	Not Reported				2.44	1.31	
4765	Ethylbenzene in GRO	mg/kg		17.8	6.28 - 22.4	Not Reported				14.3	2.68	
5140	Toluene in GRO	mg/kg		53.8	3.05 - 69.4	Not Reported				36.2	11.1	
5260	Xylenes, total in GRO	mg/kg		91.0	34.0 - 117	Not Reported				75.4	13.8	



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SOIL-109 Final Evaluation Report

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SOIL Gasoline Range Organics (GRO) in Soil (cat# 630, lot# D109-763)

9408	Gasoline Range Organics (GRO)	mg/kg	1120	1060	106 - 1280	Acceptable	EPA 8015C 3 2007	1/30/2020	1.65	674	269	ALD
4375	Benzene in GRO	mg/kg		4.68	0.00 - 6.38	Not Reported				2.44	1.31	
4765	Ethylbenzene in GRO	mg/kg		17.8	6.28 - 22.4	Not Reported				14.3	2.68	
5140	Toluene in GRO	mg/kg		53.8	3.05 - 69.4	Not Reported				36.2	11.1	
5260	Xylenes, total in GRO	mg/kg		91.0	34.0 - 117	Not Reported				75.4	13.8	

SOIL Gasoline Range Organics (GRO) in Soil (cat# 630, lot# D109-763)

9408	Gasoline Range Organics (GRO)	mg/kg	1120	1060	106 - 1280	Acceptable	EPA 8015D 2003	1/30/2020	1.65	674	269	ALD
4375	Benzene in GRO	mg/kg		4.68	0.00 - 6.38	Not Reported				2.44	1.31	
4765	Ethylbenzene in GRO	mg/kg		17.8	6.28 - 22.4	Not Reported				14.3	2.68	
5140	Toluene in GRO	mg/kg		53.8	3.05 - 69.4	Not Reported				36.2	11.1	
5260	Xylenes, total in GRO	mg/kg		91.0	34.0 - 117	Not Reported				75.4	13.8	

SOIL Diesel Range Organics (DRO) in Soil (cat# 631, lot# D109-765)

9369	Diesel Range Organics (DRO)	mg/kg	1380	2160	626 - 2870	Acceptable	EPA 8015D 2003	1/30/2020	-1.00	1750	368	MRN
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SOIL Diesel Range Organics (DRO) in Soil (cat# 631, lot# D109-765)

9369	Diesel Range Organics (DRO)	mg/kg	1380	2160	626 - 2870	Acceptable	EPA 8015B 2 1996	1/30/2020	-1.00	1750	368	MRN
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SOIL Diesel Range Organics (DRO) in Soil (cat# 631, lot# D109-765)

9369	Diesel Range Organics (DRO)	mg/kg	1380	2160	626 - 2870	Acceptable	EPA 8015C 3 2007	1/30/2020	-1.00	1750	368	MRN
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SOIL 1,4-Dioxane in Soil (cat# 461, lot# D109-538)

4735	1,4-Dioxane	µg/kg		146	71.7 - 217	Not Reported				126	10.0	
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CERTIFICATE OF EXCELLENCE

In recognition of the quality of your laboratory in proficiency testing for
SOIL-109

Pace Analytical Services - Green Bay

is issued this certificate of achievement by ERA. This laboratory has been recognized as a Laboratory of Excellence for achieving 100% acceptable data in this study which included 275 participating laboratories. This achievement is a demonstration of the superior quality of the laboratory in evaluation of the standards listed below.

Anions in Soil

Cyanide in Soil

Ignitability/Flashpoint

Organochlorine
Pesticides in Soil

Toxaphene in Soil

Chlordane in Soil

Diesel Range Organics
(DRO) in Soil

Metals in Soil

PCBs in Soil

Volatiles in Soil

Corrosivity/pH in Soil

Gasoline Range
Organics (GRO) in Soil

Nutrients in Soil

Ready-to-Use VOAs in
Soil



Matthew Seebeck
Quality Officer



A Waters Company

Kate Verbeten
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USA

SOIL-111



Final Report

Soil/Hazardous Waste Proficiency Testing

Soil Study

Open Date: 07/20/20

Close Date: 09/03/20

Report Issued Date: 09/10/20



A Waters Company

September 10, 2020

Kate Verbeten
Pace Analytical Services - Green Bay
1241 Bellevue St, Ste 9
Green Bay, WI 54302

Enclosed is your final report for ERA's SOIL-111 Proficiency Testing (PT) study. Your final report includes an evaluation of all results submitted by your laboratory to ERA.

Data Evaluation Protocols: All analytes in ERA's SOIL-111 Proficiency Testing study have been evaluated using the following tiered approach. If the analyte is listed in the most current NELAC Fields of Proficiency Testing (FoPT) table the evaluation was completed by comparing the reported result to the acceptance limits generated using the criteria contained in the table and the evaluation criteria contained in the 2016 TNI Standard, Volume 3. If the analyte is not included in the NELAC FoPT table, the reported result has been evaluated using the procedures outlined in ERA's Standard Operating Procedure for the Generation of Performance Acceptance Limits (SOP 730002268).

Corrective Action Help: As part of your accreditation(s), you may be required to identify the root cause of any "Not Acceptable" results, implement the necessary corrective actions, and then satisfy your PT requirements by participating in a Supplemental (QuiK™Response) or future ERA PT study. ERA's technical staff is available to help your laboratory resolve any technical issues that may be impairing your PT performance and possibly affecting your routine data quality. Our laboratory and technical staff have many years of collective experience in performing the full range of environmental analyses. As part of our technical support, ERA offers QC samples that can be useful in helping you work through your technical issues.

Thank you for your participation in ERA's SOIL-111 Proficiency Testing study. If you have any questions, please contact our Proficiency Testing Department at 1-800-372-0122.

Sincerely,

Matthew Seebeck
Quality Officer

attachments



A Waters Company

Report Recipient	Contact/Phone Number	Reporting Type
Florida	Vanessa Soto / 904-791-1599	All Analytes
Illinois	John South / (217) 558-7142	All Analytes
Kentucky	Patrick Garrity / 502-782-6954	All Analytes
Louisiana	Paul Bergeron / 225-219-3247	All Analytes
Minnesota	Lynn Boysen / 218-332-5164	All Analytes
New York	ELAP Office / 518-485-5570	All Analytes
North Dakota	Cynthia Auen / 701-328-6172	All Analytes
Wisconsin	Tom Trainor / (920) 412-5970	All Analytes
CADENA, Inc (E518002)	Jim Tomalia / (313) 871-5800	All Analytes
Ford Motor Company (E518002)	Hilda Arellano / 313-845-1648	All Analytes



A Waters Company

SOIL-111 Definitions & Study Discussion

Study Dates: 07/20/20 - 09/03/20

Report Issued: 09/10/20

SOIL Study Definitions

The Reported Value is the value that the laboratory reported to ERA.

The ERA Assigned Values are compliant with the most current NELAC Fields of Proficiency Testing (FoPT) table. The Assigned Values for the Organic Proficiency Testing Standards are equal to 100% of the parameter present in the standard as determined by gravimetric and/or volumetric measurements made during standard preparation as applicable. The assigned values for the Inorganic Proficiency Testing Standards, with the exception of the TCLP Metals in Soil and Total Organic Carbon (TOC) in the Nutrients in Soil sample, are equal to the maximum amount of the parameter available in the standard by applicable EPA methodologies. The assigned values for the TCLP metals and TOC are equal to the mean of the study data, after the removal of outliers. All parameters not added to the standard are given an Assigned Value of "< PTRL", per the guidelines contained in the 2009 TNI Standards. The assigned values are directly traceable to the commercially prepared starting materials used to manufacture the PT standards.

The Acceptance Limits are established per the criteria contained in the most current NELAC FoPT table or ERA's SOP for the Generation of Performance Acceptance Limits™ as applicable. This report is scored by the criteria in the 2016 TNI Standard, Volume 3, instead of by the criteria in the 2009 TNI Standard to which the Proficiency Testing Provider is accredited. This is a planned change and is endorsed by the TNI Proficiency Testing Program Executive Committee for transition to the 2016 TNI Standard.

The Performance Evaluation:

- | | |
|----------------|---|
| Acceptable | = Reported Value falls within the Acceptance Limits. |
| Not Acceptable | = Reported Value falls outside the Acceptance Limits. |
| No Evaluation | = Reported Value cannot be evaluated. |
| Not Reported | = No Value reported. |

The Method Description is the method the laboratory reported to ERA.

SOIL Study Discussion

ERA's SOIL-111 Proficiency Testing (PT) study has been reviewed by ERA senior management and certified compliant with the requirements of the 2009 TNI PT Standard and the 2016 TNI Standard, Volume 3, Section 5.9 and the criteria contained in the most current NELAC Fields of Proficiency Testing (FoPT) table.

ERA's SOIL-111 study standards were examined for any anomalies. A full review of all homogeneity, stability and accuracy verification data was completed. All analytical verification data for all analytes in the standards met the acceptance criteria contained in the 2009 TNI PT Standard and the criteria contained in the most current NELAC FoPT table.

All analytes are included in ERA's A2LA accreditation, certification number 1539.01.

The data submitted by participating laboratories was also examined for study anomalies. There were no anomalies observed during the statistical review of the data.

ERA's SOIL-111 Proficiency Testing study reports shall not be reproduced except in its entirety and not without the permission of the participating laboratory. The report must not be used by the participating laboratories to claim product endorsement any agency of the U. S. government.

The data contained herein are confidential and intended for your use only.

If you have any questions or concerns regarding your assessment in ERA's SOIL Proficiency Testing program, please contact our Proficiency Testing Department at 1-800-372-0122.





SOIL-111 Laboratory Exception Report

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EPA ID: WI01103
ERA Customer Number: E518002
Report Issued: 09/10/20
Study Dates: 07/20/20 - 09/03/20

Not Acceptable Evaluations

TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description
SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D111-924)							
4840	Hexachloroethane	µg/kg	353	< 150	0.00 - 150	Not Acceptable	EPA 8260B 2 1996
4840	Hexachloroethane	µg/kg	353	< 150	0.00 - 150	Not Acceptable	EPA 8260D 2018



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Final Report Results For Laboratory Pace Analytical Services - Green Bay





Final Evaluation Report

Study: **SOIL-111**

ERA Customer Number: **E518002**

Laboratory Name: **Pace Analytical Services
- Green Bay**

Inorganic Results





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SOIL-111 Final Evaluation Report

TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
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SOIL Metals in Soil (cat# 620, lot# D111-540)

1000	Aluminum	mg/kg		10100	4050 - 12200	Not Reported				8110	1920	
1005	Antimony	mg/kg		269	26.9 - 336	Not Reported				134	80.1	
1010	Arsenic	mg/kg		185	119 - 221	Not Reported				170	17.8	
1015	Barium	mg/kg		193	138 - 229	Not Reported				183	17.0	
1020	Beryllium	mg/kg		122	87.0 - 145	Not Reported				116	9.98	
1025	Boron	mg/kg		273	120 - 300	Not Reported				200	22.2	
1030	Cadmium	mg/kg		98.3	67.1 - 112	Not Reported				89.5	7.27	
1035	Calcium	mg/kg		5190	3490 - 6120	Not Reported				4810	474	
1040	Chromium	mg/kg		107	70.6 - 131	Not Reported				101	10.6	
1050	Cobalt	mg/kg		90.2	63.6 - 106	Not Reported				84.8	7.36	
1055	Copper	mg/kg		155	112 - 186	Not Reported				149	13.9	
1070	Iron	mg/kg		15000	4920 - 23200	Not Reported				14100	3560	
1075	Lead	mg/kg		142	101 - 179	Not Reported				140	13.2	
1085	Magnesium	mg/kg		2570	1460 - 3240	Not Reported				2350	313	
1090	Manganese	mg/kg		680	505 - 791	Not Reported				648	52.3	
1095	Mercury	mg/kg	15.6	23.5	9.34 - 25.8	Acceptable	EPA 7471A 1 1994	7/30/2020	0.0244	15.6	1.70	AJT
1100	Molybdenum	mg/kg		108	66.2 - 123	Not Reported				94.3	8.82	
1105	Nickel	mg/kg		76.1	47.8 - 88.8	Not Reported				68.3	6.16	
1125	Potassium	mg/kg		2420	1210 - 2880	Not Reported				2050	344	
1140	Selenium	mg/kg		194	124 - 240	Not Reported				182	16.0	



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SOIL-111 Final Evaluation Report

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SOIL Metals in Soil (cat# 620, lot# D111-540) (Continued)

1150	Silver	mg/kg		52.6	35.1 - 65.2	Not Reported				50.1	5.75	
1155	Sodium	mg/kg		161	48.1 - 223	Not Reported				136	22.0	
1160	Strontium	mg/kg		180	122 - 213	Not Reported				167	14.9	
1165	Thallium	mg/kg		95.3	57.9 - 118	Not Reported				87.7	7.41	
1175	Tin	mg/kg		77.7	36.5 - 102	Not Reported				69.3	9.49	
1180	Titanium	mg/kg		433	0.00 - 670	Not Reported				324	115	
3055	Uranium	mg/kg		31.3	20.8 - 41.7	Not Reported				31.3	3.49	
1185	Vanadium	mg/kg		165	111 - 196	Not Reported				153	16.1	
1190	Zinc	mg/kg		238	159 - 296	Not Reported				228	21.5	



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SOIL Metals in Soil (cat# 620, lot# D111-540)

1000	Aluminum	mg/kg	8890	10100	4050 - 12200	Acceptable	EPA 6020	8/3/2020	0.406	8110	1920	DS1
1005	Antimony	mg/kg	217	269	26.9 - 336	Acceptable	EPA 6020	8/3/2020	1.03	134	80.1	DS1
1010	Arsenic	mg/kg	175	185	119 - 221	Acceptable	EPA 6020	8/3/2020	0.266	170	17.8	DS1
1015	Barium	mg/kg	180	193	138 - 229	Acceptable	EPA 6020	8/3/2020	-0.195	183	17.0	DS1
1020	Beryllium	mg/kg	117	122	87.0 - 145	Acceptable	EPA 6020	8/3/2020	0.102	116	9.98	DS1
1025	Boron	mg/kg	203	273	120 - 300	Acceptable	EPA 6020	8/3/2020	0.135	200	22.2	DS1
1030	Cadmium	mg/kg	94.3	98.3	67.1 - 112	Acceptable	EPA 6020	8/3/2020	0.660	89.5	7.27	DS1
1035	Calcium	mg/kg	4570	5190	3490 - 6120	Acceptable	EPA 6020	8/3/2020	-0.505	4810	474	DS1
1040	Chromium	mg/kg	101	107	70.6 - 131	Acceptable	EPA 6020	8/3/2020	0.0110	101	10.6	DS1
1050	Cobalt	mg/kg	82.5	90.2	63.6 - 106	Acceptable	EPA 6020	8/3/2020	-0.313	84.8	7.36	DS1
1055	Copper	mg/kg	142	155	112 - 186	Acceptable	EPA 6020	8/3/2020	-0.500	149	13.9	DS1
1070	Iron	mg/kg	13600	15000	4920 - 23200	Acceptable	EPA 6020	8/3/2020	-0.133	14100	3560	DS1
1075	Lead	mg/kg	135	142	101 - 179	Acceptable	EPA 6020	8/3/2020	-0.379	140	13.2	DS1
1085	Magnesium	mg/kg	2460	2570	1460 - 3240	Acceptable	EPA 6020	8/3/2020	0.352	2350	313	DS1
1090	Manganese	mg/kg	612	680	505 - 791	Acceptable	EPA 6020	8/3/2020	-0.689	648	52.3	DS1
1095	Mercury	mg/kg	15.6	23.5	9.34 - 25.8	Acceptable	EPA 6020	8/3/2020	0.0244	15.6	1.70	DS1
1100	Molybdenum	mg/kg	90.1	108	66.2 - 123	Acceptable	EPA 6020	8/3/2020	-0.481	94.3	8.82	DS1
1105	Nickel	mg/kg	67.7	76.1	47.8 - 88.8	Acceptable	EPA 6020	8/3/2020	-0.0929	68.3	6.16	DS1
1125	Potassium	mg/kg	2130	2420	1210 - 2880	Acceptable	EPA 6020	8/3/2020	0.246	2050	344	DS1
1140	Selenium	mg/kg	193	194	124 - 240	Acceptable	EPA 6020	8/3/2020	0.685	182	16.0	DS1



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SOIL Metals in Soil (cat# 620, lot# D111-540) (Continued)

1150	Silver	mg/kg	57	52.6	35.1 - 65.2	Acceptable	EPA 6020	8/3/2020	1.19	50.1	5.75	DS1
1155	Sodium	mg/kg	155	161	48.1 - 223	Acceptable	EPA 6020	8/3/2020	0.883	136	22.0	DS1
1160	Strontium	mg/kg	135	180	122 - 213	Acceptable	EPA 6020	8/3/2020	-2.18	167	14.9	DS1
1165	Thallium	mg/kg	89.2	95.3	57.9 - 118	Acceptable	EPA 6020	8/3/2020	0.197	87.7	7.41	DS1
1175	Tin	mg/kg	77	77.7	36.5 - 102	Acceptable	EPA 6020	8/3/2020	0.813	69.3	9.49	DS1
1180	Titanium	mg/kg	413	433	0.00 - 670	Acceptable	EPA 6020	8/3/2020	0.772	324	115	DS1
3055	Uranium	mg/kg	31.4	31.3	20.8 - 41.7	Acceptable	EPA 6020	8/3/2020	0.0377	31.3	3.49	DS1
1185	Vanadium	mg/kg	158	165	111 - 196	Acceptable	EPA 6020	8/3/2020	0.288	153	16.1	DS1
1190	Zinc	mg/kg	232	238	159 - 296	Acceptable	EPA 6020	8/3/2020	0.207	228	21.5	DS1



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SOIL Metals in Soil (cat# 620, lot# D111-540)

1000	Aluminum	mg/kg		10100	4050 - 12200	Not Reported				8110	1920	
1005	Antimony	mg/kg		269	26.9 - 336	Not Reported				134	80.1	
1010	Arsenic	mg/kg		185	119 - 221	Not Reported				170	17.8	
1015	Barium	mg/kg		193	138 - 229	Not Reported				183	17.0	
1020	Beryllium	mg/kg		122	87.0 - 145	Not Reported				116	9.98	
1025	Boron	mg/kg		273	120 - 300	Not Reported				200	22.2	
1030	Cadmium	mg/kg		98.3	67.1 - 112	Not Reported				89.5	7.27	
1035	Calcium	mg/kg		5190	3490 - 6120	Not Reported				4810	474	
1040	Chromium	mg/kg		107	70.6 - 131	Not Reported				101	10.6	
1050	Cobalt	mg/kg		90.2	63.6 - 106	Not Reported				84.8	7.36	
1055	Copper	mg/kg		155	112 - 186	Not Reported				149	13.9	
1070	Iron	mg/kg		15000	4920 - 23200	Not Reported				14100	3560	
1075	Lead	mg/kg		142	101 - 179	Not Reported				140	13.2	
1085	Magnesium	mg/kg		2570	1460 - 3240	Not Reported				2350	313	
1090	Manganese	mg/kg		680	505 - 791	Not Reported				648	52.3	
1095	Mercury	mg/kg	12.2	23.5	9.34 - 25.8	Acceptable	EPA 1631E 2002	8/14/2020	-1.98	15.6	1.70	LMS
1100	Molybdenum	mg/kg		108	66.2 - 123	Not Reported				94.3	8.82	
1105	Nickel	mg/kg		76.1	47.8 - 88.8	Not Reported				68.3	6.16	
1125	Potassium	mg/kg		2420	1210 - 2880	Not Reported				2050	344	
1140	Selenium	mg/kg		194	124 - 240	Not Reported				182	16.0	

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SOIL Metals in Soil (cat# 620, lot# D111-540) (Continued)

1150	Silver	mg/kg		52.6	35.1 - 65.2	Not Reported				50.1	5.75	
1155	Sodium	mg/kg		161	48.1 - 223	Not Reported				136	22.0	
1160	Strontium	mg/kg		180	122 - 213	Not Reported				167	14.9	
1165	Thallium	mg/kg		95.3	57.9 - 118	Not Reported				87.7	7.41	
1175	Tin	mg/kg		77.7	36.5 - 102	Not Reported				69.3	9.49	
1180	Titanium	mg/kg		433	0.00 - 670	Not Reported				324	115	
3055	Uranium	mg/kg		31.3	20.8 - 41.7	Not Reported				31.3	3.49	
1185	Vanadium	mg/kg		165	111 - 196	Not Reported				153	16.1	
1190	Zinc	mg/kg		238	159 - 296	Not Reported				228	21.5	



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SOIL Metals in Soil (cat# 620, lot# D111-540)

1000	Aluminum	mg/kg	9500	10100	4050 - 12200	Acceptable	EPA 6010B 2 1996	7/29/2020	0.725	8110	1920	TXW
1005	Antimony	mg/kg	134	269	26.9 - 336	Acceptable	EPA 6010B 2 1996	7/29/2020	-0.00387	134	80.1	TXW
1010	Arsenic	mg/kg	169	185	119 - 221	Acceptable	EPA 6010B 2 1996	7/29/2020	-0.0716	170	17.8	TXW
1015	Barium	mg/kg	183	193	138 - 229	Acceptable	EPA 6010B 2 1996	7/29/2020	-0.0184	183	17.0	TXW
1020	Beryllium	mg/kg	115	122	87.0 - 145	Acceptable	EPA 6010B 2 1996	7/29/2020	-0.0981	116	9.98	TXW
1025	Boron	mg/kg	219	273	120 - 300	Acceptable	EPA 6010B 2 1996	7/29/2020	0.854	200	22.2	TXW
1030	Cadmium	mg/kg	88.7	98.3	67.1 - 112	Acceptable	EPA 6010B 2 1996	7/29/2020	-0.110	89.5	7.27	TXW
1035	Calcium	mg/kg	4770	5190	3490 - 6120	Acceptable	EPA 6010B 2 1996	7/29/2020	-0.0831	4810	474	TXW
1040	Chromium	mg/kg	99.4	107	70.6 - 131	Acceptable	EPA 6010B 2 1996	7/29/2020	-0.139	101	10.6	TXW
1050	Cobalt	mg/kg	84.9	90.2	63.6 - 106	Acceptable	EPA 6010B 2 1996	7/29/2020	0.0133	84.8	7.36	TXW
1055	Copper	mg/kg	146	155	112 - 186	Acceptable	EPA 6010B 2 1996	7/29/2020	-0.212	149	13.9	TXW
1070	Iron	mg/kg	13300	15000	4920 - 23200	Acceptable	EPA 6010B 2 1996	7/29/2020	-0.217	14100	3560	TXW
1075	Lead	mg/kg	142	142	101 - 179	Acceptable	EPA 6010B 2 1996	7/29/2020	0.151	140	13.2	TXW
1085	Magnesium	mg/kg	2520	2570	1460 - 3240	Acceptable	EPA 6010B 2 1996	7/29/2020	0.544	2350	313	TXW
1090	Manganese	mg/kg	613	680	505 - 791	Acceptable	EPA 6010B 2 1996	7/29/2020	-0.670	648	52.3	TXW
1095	Mercury	mg/kg		23.5	9.34 - 25.8	Not Reported				15.6	1.70	
1100	Molybdenum	mg/kg	98.8	108	66.2 - 123	Acceptable	EPA 6010B 2 1996	7/29/2020	0.505	94.3	8.82	TXW
1105	Nickel	mg/kg	69.1	76.1	47.8 - 88.8	Acceptable	EPA 6010B 2 1996	7/29/2020	0.134	68.3	6.16	TXW
1125	Potassium	mg/kg	2220	2420	1210 - 2880	Acceptable	EPA 6010B 2 1996	7/29/2020	0.507	2050	344	TXW
1140	Selenium	mg/kg	184	194	124 - 240	Acceptable	EPA 6010B 2 1996	7/29/2020	0.123	182	16.0	TXW



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SOIL Metals in Soil (cat# 620, lot# D111-540) (Continued)

1150	Silver	mg/kg	50	52.6	35.1 - 65.2	Acceptable	EPA 6010B 2 1996	7/29/2020	-0.0257	50.1	5.75	TXW
1155	Sodium	mg/kg	140	161	48.1 - 223	Acceptable	EPA 6010B 2 1996	7/29/2020	0.201	136	22.0	TXW
1160	Strontium	mg/kg	172	180	122 - 213	Acceptable	EPA 6010B 2 1996	7/29/2020	0.311	167	14.9	TXW
1165	Thallium	mg/kg	88.4	95.3	57.9 - 118	Acceptable	EPA 6010B 2 1996	7/29/2020	0.0888	87.7	7.41	TXW
1175	Tin	mg/kg	72.5	77.7	36.5 - 102	Acceptable	EPA 6010B 2 1996	7/29/2020	0.339	69.3	9.49	TXW
1180	Titanium	mg/kg	404	433	0.00 - 670	Acceptable	EPA 6010B 2 1996	7/29/2020	0.694	324	115	TXW
3055	Uranium	mg/kg		31.3	20.8 - 41.7	Not Reported				31.3	3.49	
1185	Vanadium	mg/kg	153	165	111 - 196	Acceptable	EPA 6010B 2 1996	7/29/2020	-0.0228	153	16.1	TXW
1190	Zinc	mg/kg	227	238	159 - 296	Acceptable	EPA 6010B 2 1996	7/29/2020	-0.0255	228	21.5	TXW



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SOIL Metals in Soil (cat# 620, lot# D111-540)

1000	Aluminum	mg/kg		10100	4050 - 12200	Not Reported				8110	1920	
1005	Antimony	mg/kg		269	26.9 - 336	Not Reported				134	80.1	
1010	Arsenic	mg/kg		185	119 - 221	Not Reported				170	17.8	
1015	Barium	mg/kg		193	138 - 229	Not Reported				183	17.0	
1020	Beryllium	mg/kg		122	87.0 - 145	Not Reported				116	9.98	
1025	Boron	mg/kg		273	120 - 300	Not Reported				200	22.2	
1030	Cadmium	mg/kg		98.3	67.1 - 112	Not Reported				89.5	7.27	
1035	Calcium	mg/kg		5190	3490 - 6120	Not Reported				4810	474	
1040	Chromium	mg/kg		107	70.6 - 131	Not Reported				101	10.6	
1050	Cobalt	mg/kg		90.2	63.6 - 106	Not Reported				84.8	7.36	
1055	Copper	mg/kg		155	112 - 186	Not Reported				149	13.9	
1070	Iron	mg/kg		15000	4920 - 23200	Not Reported				14100	3560	
1075	Lead	mg/kg		142	101 - 179	Not Reported				140	13.2	
1085	Magnesium	mg/kg		2570	1460 - 3240	Not Reported				2350	313	
1090	Manganese	mg/kg		680	505 - 791	Not Reported				648	52.3	
1095	Mercury	mg/kg	15.6	23.5	9.34 - 25.8	Acceptable	EPA 7471B 2 2007	7/30/2020	0.0244	15.6	1.70	AJT
1100	Molybdenum	mg/kg		108	66.2 - 123	Not Reported				94.3	8.82	
1105	Nickel	mg/kg		76.1	47.8 - 88.8	Not Reported				68.3	6.16	
1125	Potassium	mg/kg		2420	1210 - 2880	Not Reported				2050	344	
1140	Selenium	mg/kg		194	124 - 240	Not Reported				182	16.0	

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SOIL Metals in Soil (cat# 620, lot# D111-540) (Continued)

1150	Silver	mg/kg		52.6	35.1 - 65.2	Not Reported				50.1	5.75	
1155	Sodium	mg/kg		161	48.1 - 223	Not Reported				136	22.0	
1160	Strontium	mg/kg		180	122 - 213	Not Reported				167	14.9	
1165	Thallium	mg/kg		95.3	57.9 - 118	Not Reported				87.7	7.41	
1175	Tin	mg/kg		77.7	36.5 - 102	Not Reported				69.3	9.49	
1180	Titanium	mg/kg		433	0.00 - 670	Not Reported				324	115	
3055	Uranium	mg/kg		31.3	20.8 - 41.7	Not Reported				31.3	3.49	
1185	Vanadium	mg/kg		165	111 - 196	Not Reported				153	16.1	
1190	Zinc	mg/kg		238	159 - 296	Not Reported				228	21.5	



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SOIL Metals in Soil (cat# 620, lot# D111-540)

1000	Aluminum	mg/kg	8890	10100	4050 - 12200	Acceptable	EPA 6020A 1 2007	8/3/2020	0.406	8110	1920	DS1
1005	Antimony	mg/kg	217	269	26.9 - 336	Acceptable	EPA 6020A 1 2007	8/3/2020	1.03	134	80.1	DS1
1010	Arsenic	mg/kg	175	185	119 - 221	Acceptable	EPA 6020A 1 2007	8/3/2020	0.266	170	17.8	DS1
1015	Barium	mg/kg	180	193	138 - 229	Acceptable	EPA 6020A 1 2007	8/3/2020	-0.195	183	17.0	DS1
1020	Beryllium	mg/kg	117	122	87.0 - 145	Acceptable	EPA 6020A 1 2007	8/3/2020	0.102	116	9.98	DS1
1025	Boron	mg/kg	203	273	120 - 300	Acceptable	EPA 6020A 1 2007	8/3/2020	0.135	200	22.2	DS1
1030	Cadmium	mg/kg	94.3	98.3	67.1 - 112	Acceptable	EPA 6020A 1 2007	8/3/2020	0.660	89.5	7.27	DS1
1035	Calcium	mg/kg	4570	5190	3490 - 6120	Acceptable	EPA 6020A 1 2007	8/3/2020	-0.505	4810	474	DS1
1040	Chromium	mg/kg	101	107	70.6 - 131	Acceptable	EPA 6020A 1 2007	8/3/2020	0.0110	101	10.6	DS1
1050	Cobalt	mg/kg	82.5	90.2	63.6 - 106	Acceptable	EPA 6020A 1 2007	8/3/2020	-0.313	84.8	7.36	DS1
1055	Copper	mg/kg	142	155	112 - 186	Acceptable	EPA 6020A 1 2007	8/3/2020	-0.500	149	13.9	DS1
1070	Iron	mg/kg	13600	15000	4920 - 23200	Acceptable	EPA 6020A 1 2007	8/3/2020	-0.133	14100	3560	DS1
1075	Lead	mg/kg	135	142	101 - 179	Acceptable	EPA 6020A 1 2007	8/3/2020	-0.379	140	13.2	DS1
1085	Magnesium	mg/kg	2460	2570	1460 - 3240	Acceptable	EPA 6020A 1 2007	8/3/2020	0.352	2350	313	DS1
1090	Manganese	mg/kg	612	680	505 - 791	Acceptable	EPA 6020A 1 2007	8/3/2020	-0.689	648	52.3	DS1
1095	Mercury	mg/kg	15.6	23.5	9.34 - 25.8	Acceptable	EPA 6020A 1 2007	8/3/2020	0.0244	15.6	1.70	DS1
1100	Molybdenum	mg/kg	90.1	108	66.2 - 123	Acceptable	EPA 6020A 1 2007	8/3/2020	-0.481	94.3	8.82	DS1
1105	Nickel	mg/kg	67.7	76.1	47.8 - 88.8	Acceptable	EPA 6020A 1 2007	8/3/2020	-0.0929	68.3	6.16	DS1
1125	Potassium	mg/kg	2130	2420	1210 - 2880	Acceptable	EPA 6020A 1 2007	8/3/2020	0.246	2050	344	DS1
1140	Selenium	mg/kg	193	194	124 - 240	Acceptable	EPA 6020A 1 2007	8/3/2020	0.685	182	16.0	DS1



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SOIL Metals in Soil (cat# 620, lot# D111-540) (Continued)

1150	Silver	mg/kg	57	52.6	35.1 - 65.2	Acceptable	EPA 6020A 1 2007	8/3/2020	1.19	50.1	5.75	DS1
1155	Sodium	mg/kg	155	161	48.1 - 223	Acceptable	EPA 6020A 1 2007	8/3/2020	0.883	136	22.0	DS1
1160	Strontium	mg/kg	135	180	122 - 213	Acceptable	EPA 6020A 1 2007	8/3/2020	-2.18	167	14.9	DS1
1165	Thallium	mg/kg	89.2	95.3	57.9 - 118	Acceptable	EPA 6020A 1 2007	8/3/2020	0.197	87.7	7.41	DS1
1175	Tin	mg/kg	77	77.7	36.5 - 102	Acceptable	EPA 6020A 1 2007	8/3/2020	0.813	69.3	9.49	DS1
1180	Titanium	mg/kg	413	433	0.00 - 670	Acceptable	EPA 6020A 1 2007	8/3/2020	0.772	324	115	DS1
3055	Uranium	mg/kg	31.4	31.3	20.8 - 41.7	Acceptable	EPA 6020A 1 2007	8/3/2020	0.0377	31.3	3.49	DS1
1185	Vanadium	mg/kg	158	165	111 - 196	Acceptable	EPA 6020A 1 2007	8/3/2020	0.288	153	16.1	DS1
1190	Zinc	mg/kg	232	238	159 - 296	Acceptable	EPA 6020A 1 2007	8/3/2020	0.207	228	21.5	DS1



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SOIL Metals in Soil (cat# 620, lot# D111-540)

1000	Aluminum	mg/kg	8890	10100	4050 - 12200	Acceptable	EPA 6020B 2014	8/3/2020	0.406	8110	1920	DS1
1005	Antimony	mg/kg	217	269	26.9 - 336	Acceptable	EPA 6020B 2014	8/3/2020	1.03	134	80.1	DS1
1010	Arsenic	mg/kg	175	185	119 - 221	Acceptable	EPA 6020B 2014	8/3/2020	0.266	170	17.8	DS1
1015	Barium	mg/kg	180	193	138 - 229	Acceptable	EPA 6020B 2014	8/3/2020	-0.195	183	17.0	DS1
1020	Beryllium	mg/kg	117	122	87.0 - 145	Acceptable	EPA 6020B 2014	8/3/2020	0.102	116	9.98	DS1
1025	Boron	mg/kg	203	273	120 - 300	Acceptable	EPA 6020B 2014	8/3/2020	0.135	200	22.2	DS1
1030	Cadmium	mg/kg	94.3	98.3	67.1 - 112	Acceptable	EPA 6020B 2014	8/3/2020	0.660	89.5	7.27	DS1
1035	Calcium	mg/kg	4570	5190	3490 - 6120	Acceptable	EPA 6020B 2014	8/3/2020	-0.505	4810	474	DS1
1040	Chromium	mg/kg	101	107	70.6 - 131	Acceptable	EPA 6020B 2014	8/3/2020	0.0110	101	10.6	DS1
1050	Cobalt	mg/kg	82.5	90.2	63.6 - 106	Acceptable	EPA 6020B 2014	8/3/2020	-0.313	84.8	7.36	DS1
1055	Copper	mg/kg	142	155	112 - 186	Acceptable	EPA 6020B 2014	8/3/2020	-0.500	149	13.9	DS1
1070	Iron	mg/kg	13600	15000	4920 - 23200	Acceptable	EPA 6020B 2014	8/3/2020	-0.133	14100	3560	DS1
1075	Lead	mg/kg	135	142	101 - 179	Acceptable	EPA 6020B 2014	8/3/2020	-0.379	140	13.2	DS1
1085	Magnesium	mg/kg	2460	2570	1460 - 3240	Acceptable	EPA 6020B 2014	8/3/2020	0.352	2350	313	DS1
1090	Manganese	mg/kg	612	680	505 - 791	Acceptable	EPA 6020B 2014	8/3/2020	-0.689	648	52.3	DS1
1095	Mercury	mg/kg	15.6	23.5	9.34 - 25.8	Acceptable	EPA 6020B 2014	8/3/2020	0.0244	15.6	1.70	DS1
1100	Molybdenum	mg/kg	90.1	108	66.2 - 123	Acceptable	EPA 6020B 2014	8/3/2020	-0.481	94.3	8.82	DS1
1105	Nickel	mg/kg	67.7	76.1	47.8 - 88.8	Acceptable	EPA 6020B 2014	8/3/2020	-0.0929	68.3	6.16	DS1
1125	Potassium	mg/kg	2130	2420	1210 - 2880	Acceptable	EPA 6020B 2014	8/3/2020	0.246	2050	344	DS1
1140	Selenium	mg/kg	193	194	124 - 240	Acceptable	EPA 6020B 2014	8/3/2020	0.685	182	16.0	DS1



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SOIL Metals in Soil (cat# 620, lot# D111-540) (Continued)

1150	Silver	mg/kg	57	52.6	35.1 - 65.2	Acceptable	EPA 6020B 2014	8/3/2020	1.19	50.1	5.75	DS1
1155	Sodium	mg/kg	155	161	48.1 - 223	Acceptable	EPA 6020B 2014	8/3/2020	0.883	136	22.0	DS1
1160	Strontium	mg/kg	135	180	122 - 213	Acceptable	EPA 6020B 2014	8/3/2020	-2.18	167	14.9	DS1
1165	Thallium	mg/kg	89.2	95.3	57.9 - 118	Acceptable	EPA 6020B 2014	8/3/2020	0.197	87.7	7.41	DS1
1175	Tin	mg/kg	77	77.7	36.5 - 102	Acceptable	EPA 6020B 2014	8/3/2020	0.813	69.3	9.49	DS1
1180	Titanium	mg/kg	413	433	0.00 - 670	Acceptable	EPA 6020B 2014	8/3/2020	0.772	324	115	DS1
3055	Uranium	mg/kg	31.4	31.3	20.8 - 41.7	Acceptable	EPA 6020B 2014	8/3/2020	0.0377	31.3	3.49	DS1
1185	Vanadium	mg/kg	158	165	111 - 196	Acceptable	EPA 6020B 2014	8/3/2020	0.288	153	16.1	DS1
1190	Zinc	mg/kg	232	238	159 - 296	Acceptable	EPA 6020B 2014	8/3/2020	0.207	228	21.5	DS1



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SOIL Metals in Soil (cat# 620, lot# D111-540)

1000	Aluminum	mg/kg	9500	10100	4050 - 12200	Acceptable	EPA 6010C 2007	7/29/2020	0.725	8110	1920	TXW
1005	Antimony	mg/kg	134	269	26.9 - 336	Acceptable	EPA 6010C 2007	7/29/2020	-0.00387	134	80.1	TXW
1010	Arsenic	mg/kg	169	185	119 - 221	Acceptable	EPA 6010C 2007	7/29/2020	-0.0716	170	17.8	TXW
1015	Barium	mg/kg	183	193	138 - 229	Acceptable	EPA 6010C 2007	7/29/2020	-0.0184	183	17.0	TXW
1020	Beryllium	mg/kg	115	122	87.0 - 145	Acceptable	EPA 6010C 2007	7/29/2020	-0.0981	116	9.98	TXW
1025	Boron	mg/kg	219	273	120 - 300	Acceptable	EPA 6010C 2007	7/29/2020	0.854	200	22.2	TXW
1030	Cadmium	mg/kg	88.7	98.3	67.1 - 112	Acceptable	EPA 6010C 2007	7/29/2020	-0.110	89.5	7.27	TXW
1035	Calcium	mg/kg	4770	5190	3490 - 6120	Acceptable	EPA 6010C 2007	7/29/2020	-0.0831	4810	474	TXW
1040	Chromium	mg/kg	99.4	107	70.6 - 131	Acceptable	EPA 6010C 2007	7/29/2020	-0.139	101	10.6	TXW
1050	Cobalt	mg/kg	84.9	90.2	63.6 - 106	Acceptable	EPA 6010C 2007	7/29/2020	0.0133	84.8	7.36	TXW
1055	Copper	mg/kg	146	155	112 - 186	Acceptable	EPA 6010C 2007	7/29/2020	-0.212	149	13.9	TXW
1070	Iron	mg/kg	13300	15000	4920 - 23200	Acceptable	EPA 6010C 2007	7/29/2020	-0.217	14100	3560	TXW
1075	Lead	mg/kg	142	142	101 - 179	Acceptable	EPA 6010C 2007	7/29/2020	0.151	140	13.2	TXW
1085	Magnesium	mg/kg	2520	2570	1460 - 3240	Acceptable	EPA 6010C 2007	7/29/2020	0.544	2350	313	TXW
1090	Manganese	mg/kg	613	680	505 - 791	Acceptable	EPA 6010C 2007	7/29/2020	-0.670	648	52.3	TXW
1095	Mercury	mg/kg		23.5	9.34 - 25.8	Not Reported				15.6	1.70	
1100	Molybdenum	mg/kg	98.8	108	66.2 - 123	Acceptable	EPA 6010C 2007	7/29/2020	0.505	94.3	8.82	TXW
1105	Nickel	mg/kg	69.1	76.1	47.8 - 88.8	Acceptable	EPA 6010C 2007	7/29/2020	0.134	68.3	6.16	TXW
1125	Potassium	mg/kg	2220	2420	1210 - 2880	Acceptable	EPA 6010C 2007	7/29/2020	0.507	2050	344	TXW
1140	Selenium	mg/kg	184	194	124 - 240	Acceptable	EPA 6010C 2007	7/29/2020	0.123	182	16.0	TXW



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SOIL Metals in Soil (cat# 620, lot# D111-540) (Continued)

1150	Silver	mg/kg	50	52.6	35.1 - 65.2	Acceptable	EPA 6010C 2007	7/29/2020	-0.0257	50.1	5.75	TXW
1155	Sodium	mg/kg	140	161	48.1 - 223	Acceptable	EPA 6010C 2007	7/29/2020	0.201	136	22.0	TXW
1160	Strontium	mg/kg	172	180	122 - 213	Acceptable	EPA 6010C 2007	7/29/2020	0.311	167	14.9	TXW
1165	Thallium	mg/kg	88.4	95.3	57.9 - 118	Acceptable	EPA 6010C 2007	7/29/2020	0.0888	87.7	7.41	TXW
1175	Tin	mg/kg	72.5	77.7	36.5 - 102	Acceptable	EPA 6010C 2007	7/29/2020	0.339	69.3	9.49	TXW
1180	Titanium	mg/kg	404	433	0.00 - 670	Acceptable	EPA 6010C 2007	7/29/2020	0.694	324	115	TXW
3055	Uranium	mg/kg		31.3	20.8 - 41.7	Not Reported				31.3	3.49	
1185	Vanadium	mg/kg	153	165	111 - 196	Acceptable	EPA 6010C 2007	7/29/2020	-0.0228	153	16.1	TXW
1190	Zinc	mg/kg	227	238	159 - 296	Acceptable	EPA 6010C 2007	7/29/2020	-0.0255	228	21.5	TXW



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SOIL Metals in Soil (cat# 620, lot# D111-540)

1000	Aluminum	mg/kg	9500	10100	4050 - 12200	Acceptable	EPA 6010D 2018	7/29/2020	0.725	8110	1920	TXW
1005	Antimony	mg/kg	134	269	26.9 - 336	Acceptable	EPA 6010D 2018	7/29/2020	-0.00387	134	80.1	TXW
1010	Arsenic	mg/kg	169	185	119 - 221	Acceptable	EPA 6010D 2018	7/29/2020	-0.0716	170	17.8	TXW
1015	Barium	mg/kg	183	193	138 - 229	Acceptable	EPA 6010D 2018	7/29/2020	-0.0184	183	17.0	TXW
1020	Beryllium	mg/kg	115	122	87.0 - 145	Acceptable	EPA 6010D 2018	7/29/2020	-0.0981	116	9.98	TXW
1025	Boron	mg/kg	219	273	120 - 300	Acceptable	EPA 6010D 2018	7/29/2020	0.854	200	22.2	TXW
1030	Cadmium	mg/kg	88.7	98.3	67.1 - 112	Acceptable	EPA 6010D 2018	7/29/2020	-0.110	89.5	7.27	TXW
1035	Calcium	mg/kg	4770	5190	3490 - 6120	Acceptable	EPA 6010D 2018	7/29/2020	-0.0831	4810	474	TXW
1040	Chromium	mg/kg	99.4	107	70.6 - 131	Acceptable	EPA 6010D 2018	7/29/2020	-0.139	101	10.6	TXW
1050	Cobalt	mg/kg	84.9	90.2	63.6 - 106	Acceptable	EPA 6010D 2018	7/29/2020	0.0133	84.8	7.36	TXW
1055	Copper	mg/kg	146	155	112 - 186	Acceptable	EPA 6010D 2018	7/29/2020	-0.212	149	13.9	TXW
1070	Iron	mg/kg	13300	15000	4920 - 23200	Acceptable	EPA 6010D 2018	7/29/2020	-0.217	14100	3560	TXW
1075	Lead	mg/kg	142	142	101 - 179	Acceptable	EPA 6010D 2018	7/29/2020	0.151	140	13.2	TXW
1085	Magnesium	mg/kg	2520	2570	1460 - 3240	Acceptable	EPA 6010D 2018	7/29/2020	0.544	2350	313	TXW
1090	Manganese	mg/kg	613	680	505 - 791	Acceptable	EPA 6010D 2018	7/29/2020	-0.670	648	52.3	TXW
1095	Mercury	mg/kg		23.5	9.34 - 25.8	Not Reported				15.6	1.70	
1100	Molybdenum	mg/kg	98.8	108	66.2 - 123	Acceptable	EPA 6010D 2018	7/29/2020	0.505	94.3	8.82	TXW
1105	Nickel	mg/kg	69.1	76.1	47.8 - 88.8	Acceptable	EPA 6010D 2018	7/29/2020	0.134	68.3	6.16	TXW
1125	Potassium	mg/kg	2220	2420	1210 - 2880	Acceptable	EPA 6010D 2018	7/29/2020	0.507	2050	344	TXW
1140	Selenium	mg/kg	184	194	124 - 240	Acceptable	EPA 6010D 2018	7/29/2020	0.123	182	16.0	TXW



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SOIL Metals in Soil (cat# 620, lot# D111-540) (Continued)

1150	Silver	mg/kg	50	52.6	35.1 - 65.2	Acceptable	EPA 6010D 2018	7/29/2020	-0.0257	50.1	5.75	TXW
1155	Sodium	mg/kg	140	161	48.1 - 223	Acceptable	EPA 6010D 2018	7/29/2020	0.201	136	22.0	TXW
1160	Strontium	mg/kg	172	180	122 - 213	Acceptable	EPA 6010D 2018	7/29/2020	0.311	167	14.9	TXW
1165	Thallium	mg/kg	88.4	95.3	57.9 - 118	Acceptable	EPA 6010D 2018	7/29/2020	0.0888	87.7	7.41	TXW
1175	Tin	mg/kg	72.5	77.7	36.5 - 102	Acceptable	EPA 6010D 2018	7/29/2020	0.339	69.3	9.49	TXW
1180	Titanium	mg/kg	404	433	0.00 - 670	Acceptable	EPA 6010D 2018	7/29/2020	0.694	324	115	TXW
3055	Uranium	mg/kg		31.3	20.8 - 41.7	Not Reported				31.3	3.49	
1185	Vanadium	mg/kg	153	165	111 - 196	Acceptable	EPA 6010D 2018	7/29/2020	-0.0228	153	16.1	TXW
1190	Zinc	mg/kg	227	238	159 - 296	Acceptable	EPA 6010D 2018	7/29/2020	-0.0255	228	21.5	TXW

SOIL Anions in Soil (cat# 873, lot# D111-543)

1540	Bromide	mg/kg	81.1	76.0	51.2 - 89.4	Acceptable	EPA 300.0 2.1 1993	7/30/2020	1.27	70.3	8.49	HMB
1575	Chloride	mg/kg	575	548	378 - 699	Acceptable	EPA 300.0 2.1 1993	7/30/2020	0.907	538	40.3	HMB
1730	Fluoride	mg/kg	39.8	230	23.0 - 253	Acceptable	EPA 300.0 2.1 1993	7/30/2020	-0.0849	40.7	10.5	HMB
1810	Nitrate as N	mg/kg	186	179	129 - 213	Acceptable	EPA 300.0 2.1 1993	7/30/2020	1.20	171	12.6	HMB
1870	Phosphate as P	mg/kg		379	1.83 - 417	Not Reported				92.4	30.2	
2000	Sulfate	mg/kg	409	422	219 - 571	Acceptable	EPA 300.0 2.1 1993	7/30/2020	0.302	395	45.5	HMB



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SOIL Anions in Soil (cat# 873, lot# D111-543)

1540	Bromide	mg/kg	81.1	76.0	51.2 - 89.4	Acceptable	EPA 9056 1994	7/30/2020	1.27	70.3	8.49	HMB
1575	Chloride	mg/kg	575	548	378 - 699	Acceptable	EPA 9056 1994	7/30/2020	0.907	538	40.3	HMB
1730	Fluoride	mg/kg	39.8	230	23.0 - 253	Acceptable	EPA 9056 1994	7/30/2020	-0.0849	40.7	10.5	HMB
1810	Nitrate as N	mg/kg	186	179	129 - 213	Acceptable	EPA 9056 1994	7/30/2020	1.20	171	12.6	HMB
1870	Phosphate as P	mg/kg		379	1.83 - 417	Not Reported				92.4	30.2	
2000	Sulfate	mg/kg	409	422	219 - 571	Acceptable	EPA 9056 1994	7/30/2020	0.302	395	45.5	HMB

SOIL Anions in Soil (cat# 873, lot# D111-543)

1540	Bromide	mg/kg	81.1	76.0	51.2 - 89.4	Acceptable	EPA 9056A 2007	7/30/2020	1.27	70.3	8.49	HMB
1575	Chloride	mg/kg	575	548	378 - 699	Acceptable	EPA 9056A 2007	7/30/2020	0.907	538	40.3	HMB
1730	Fluoride	mg/kg	39.8	230	23.0 - 253	Acceptable	EPA 9056A 2007	7/30/2020	-0.0849	40.7	10.5	HMB
1810	Nitrate as N	mg/kg	186	179	129 - 213	Acceptable	EPA 9056A 2007	7/30/2020	1.20	171	12.6	HMB
1870	Phosphate as P	mg/kg		379	1.83 - 417	Not Reported				92.4	30.2	
2000	Sulfate	mg/kg	409	422	219 - 571	Acceptable	EPA 9056A 2007	7/30/2020	0.302	395	45.5	HMB

SOIL Cyanide in Soil (cat# 621, lot# D111-541)

1645	Cyanide, total	mg/kg	74	141	39.6 - 155	Acceptable	EPA 9012B 2004	7/24/2020	-0.572	93.7	34.4	DAW
1923	Reactive Cyanide	mg/kg		< 200	0.00 - 200	Not Reported				254	385	
1510	Amenable Cyanide	mg/kg		< 200	0.00 - 200	Not Reported				37.1	32.7	

SOIL Cyanide in Soil (cat# 621, lot# D111-541)

1645	Cyanide, total	mg/kg	74	141	39.6 - 155	Acceptable	EPA 9012 1986	7/24/2020	-0.572	93.7	34.4	DAW
1923	Reactive Cyanide	mg/kg		< 200	0.00 - 200	Not Reported				254	385	
1510	Amenable Cyanide	mg/kg		< 200	0.00 - 200	Not Reported				37.1	32.7	



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SOIL Cyanide in Soil (cat# 621, lot# D111-541)

1645	Cyanide, total	mg/kg	74	141	39.6 - 155	Acceptable	EPA 9012A 1 1996	7/24/2020	-0.572	93.7	34.4	DAW
1923	Reactive Cyanide	mg/kg		< 200	0.00 - 200	Not Reported				254	385	
1510	Amenable Cyanide	mg/kg		< 200	0.00 - 200	Not Reported				37.1	32.7	

SOIL Nutrients in Soil (cat# 869, lot# D111-542)

1515	Ammonia as N	mg/kg	882	902	479 - 1170	Acceptable	EPA 350.1	7/24/2020	0.723	827	76.2	TMK
1795	Total Kjeldahl Nitrogen	mg/kg	1670	1720	957 - 2490	Acceptable	EPA 351.2 2 1993	7/31/2020	-0.289	1730	191	TMK
2040	Total Organic Carbon (TOC)	mg/kg	4680	4340	1690 - 6980	Acceptable	EPA 9060 1986	8/6/2020	0.391	4340	881	TJJ
1910	Total Phosphorus	mg/kg	982	1010	238 - 1710	Acceptable	EPA 365.4	7/28/2020	0.113	972	88.9	DAW

SOIL Nutrients in Soil (cat# 869, lot# D111-542)

1515	Ammonia as N	mg/kg		902	479 - 1170	Not Reported				827	76.2	
1795	Total Kjeldahl Nitrogen	mg/kg		1720	957 - 2490	Not Reported				1730	191	
2040	Total Organic Carbon (TOC)	mg/kg		4340	1690 - 6980	Not Reported				4340	881	
1910	Total Phosphorus	mg/kg	1100	1010	238 - 1710	Acceptable	EPA 6020 1994	7/31/2020	1.44	972	88.9	KXS

SOIL Nutrients in Soil (cat# 869, lot# D111-542)

1515	Ammonia as N	mg/kg		902	479 - 1170	Not Reported				827	76.2	
1795	Total Kjeldahl Nitrogen	mg/kg		1720	957 - 2490	Not Reported				1730	191	
2040	Total Organic Carbon (TOC)	mg/kg	4680	4340	1690 - 6980	Acceptable	EPA 9060A 2004	8/6/2020	0.391	4340	881	TJJ
1910	Total Phosphorus	mg/kg		1010	238 - 1710	Not Reported				972	88.9	



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SOIL Nutrients in Soil (cat# 869, lot# D111-542)

1515	Ammonia as N	mg/kg		902	479 - 1170	Not Reported				827	76.2	
1795	Total Kjeldahl Nitrogen	mg/kg		1720	957 - 2490	Not Reported				1730	191	
2040	Total Organic Carbon (TOC)	mg/kg		4340	1690 - 6980	Not Reported				4340	881	
1910	Total Phosphorus	mg/kg	1100	1010	238 - 1710	Acceptable	EPA 6020A 1 2007	7/31/2020	1.44	972	88.9	

SOIL Nutrients in Soil (cat# 869, lot# D111-542)

1515	Ammonia as N	mg/kg		902	479 - 1170	Not Reported				827	76.2	
1795	Total Kjeldahl Nitrogen	mg/kg		1720	957 - 2490	Not Reported				1730	191	
2040	Total Organic Carbon (TOC)	mg/kg		4340	1690 - 6980	Not Reported				4340	881	
1910	Total Phosphorus	mg/kg	1100	1010	238 - 1710	Acceptable	EPA 6020B 2014	7/31/2020	1.44	972	88.9	

SOIL Corrosivity/pH in Soil (cat# 875, lot# D111-914)

1625	Corrosivity (pH)	S.U.	5.82	5.48	4.88 - 6.08	Acceptable	EPA 9045C 3 1995	7/27/2020	1.13	5.57	0.222	ALY
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SOIL Corrosivity/pH in Soil (cat# 875, lot# D111-914)

1625	Corrosivity (pH)	S.U.	5.82	5.48	4.88 - 6.08	Acceptable	EPA 9045D 2004	7/27/2020	1.13	5.57	0.222	ALY
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SOIL Ignitability/Flashpoint (cat# 874, lot# D111-979)

1780	Ignitability/Flashpoint	°F	111	106	89.0 - 123	Acceptable	EPA 1010A 2002	7/28/2020	0.503	109	4.70	DEY
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Final Evaluation Report

Study: **SOIL-111**

ERA Customer Number: **E518002**

Laboratory Name: **Pace Analytical Services
- Green Bay**

Organic Results





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SOIL Volatiles in Soil (cat# 623, lot# D111-721)

4315	Acetone	µg/kg	862	916	98.6 - 1410	Acceptable	EPA 8260B 2 1996	7/24/2020	0.787	695	212	HNW
4320	Acetonitrile	µg/kg		478	0.00 - 962	Not Reported				485	202	
4325	Acrolein	µg/kg	< 279	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
4375	Benzene	µg/kg	62.8	65.5	42.6 - 88.4	Acceptable	EPA 8260B 2 1996	7/24/2020	-0.444	66.5	8.35	HNW
4385	Bromobenzene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
4390	Bromochloromethane	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
4395	Bromodichloromethane	µg/kg	73.3	68.9	41.3 - 96.5	Acceptable	EPA 8260B 2 1996	7/24/2020	0.220	71.5	8.09	HNW
4400	Bromoform	µg/kg	184	169	93.0 - 245	Acceptable	EPA 8260B 2 1996	7/24/2020	0.427	173	26.2	HNW
4950	Bromomethane	µg/kg	< 20.2	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
4410	2-Butanone (MEK)	µg/kg	327	404	131 - 622	Acceptable	EPA 8260B 2 1996	7/24/2020	-0.956	395	71.1	HNW
4435	n-Butylbenzene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
4440	sec-Butylbenzene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
4445	tert-Butylbenzene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
5000	tert-Butyl methyl ether (MTBE)	µg/kg	< 13.8	< 12.0	0.00 - 12.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
4450	Carbon disulfide	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
4455	Carbon tetrachloride	µg/kg	155	171	85.5 - 257	Acceptable	EPA 8260B 2 1996	7/24/2020	-0.709	175	28.1	HNW
4475	Chlorobenzene	µg/kg	< 10	< 10.0	0.00 - 10.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
4575	Chlorodibromomethane	µg/kg	168	162	97.2 - 227	Acceptable	EPA 8260B 2 1996	7/24/2020	-0.120	170	16.7	HNW
4485	Chloroethane	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
4500	2-Chloroethylvinylether	µg/kg	< 60.1	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW



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SOIL Volatiles in Soil (cat# 623, lot# D111-721) (Continued)

4505	Chloroform	µg/kg	182	187	112 - 262	Acceptable	EPA 8260B 2 1996	7/24/2020	-0.374	188	16.2	HNW
4960	Chloromethane	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
4535	2-Chlorotoluene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
4540	4-Chlorotoluene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
4570	1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	80.3	63.7	31.8 - 95.6	Acceptable	EPA 8260B 2 1996	7/24/2020	1.59	63.4	10.7	HNW
4585	1,2-Dibromoethane (EDB)	µg/kg	< 13	< 13.0	0.00 - 13.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
4595	Dibromomethane	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
4610	1,2-Dichlorobenzene	µg/kg	30.6	41.5	24.9 - 58.1	Acceptable	EPA 8260B 2 1996	7/24/2020	-1.25	40.6	8.02	HNW
4615	1,3-Dichlorobenzene	µg/kg	70.4	95.0	57.0 - 133	Acceptable	EPA 8260B 2 1996	7/24/2020	-1.30	89.6	14.8	HNW
4620	1,4-Dichlorobenzene	µg/kg	< 12	< 12.0	0.00 - 12.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
4625	Dichlorodifluoromethane (Freon 12)	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
4630	1,1-Dichloroethane	µg/kg	26.2	28.6	17.2 - 40.0	Acceptable	EPA 8260B 2 1996	7/24/2020	-0.379	27.3	2.83	HNW
4635	1,2-Dichloroethane	µg/kg	47.9	42.2	25.3 - 59.1	Acceptable	EPA 8260B 2 1996	7/24/2020	0.599	44.0	6.50	HNW
4640	1,1-Dichloroethylene	µg/kg	155	159	79.5 - 239	Acceptable	EPA 8260B 2 1996	7/24/2020	-0.514	169	26.3	HNW
4645	cis-1,2-Dichloroethylene	µg/kg	184	197	118 - 276	Acceptable	EPA 8260B 2 1996	7/24/2020	-0.518	196	22.9	HNW
4700	trans-1,2-Dichloroethylene	µg/kg	25	23.4	14.0 - 32.8	Acceptable	EPA 8260B 2 1996	7/24/2020	-0.484	26.8	3.81	HNW
4655	1,2-Dichloropropane	µg/kg	< 13	< 13.0	0.00 - 13.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
4660	1,3-Dichloropropane	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
4665	2,2-Dichloropropane	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
4670	1,1-Dichloropropene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW



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SOIL Volatiles in Soil (cat# 623, lot# D111-721) (Continued)

4680	cis-1,3-Dichloropropylene	µg/kg	< 19	< 12.0	0.00 - 12.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
4685	trans-1,3-Dichloropropylene	µg/kg	193	194	107 - 281	Acceptable	EPA 8260B 2 1996	7/24/2020	0.524	185	15.5	HNW
4765	Ethylbenzene	µg/kg	< 12	< 12.0	0.00 - 12.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
4835	Hexachlorobutadiene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
4840	Hexachloroethane	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
4860	2-Hexanone	µg/kg	271	233	116 - 350	Acceptable	EPA 8260B 2 1996	7/24/2020	0.848	236	41.7	HNW
4900	Isopropylbenzene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
4910	4-Isopropyltoluene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
4975	Methylene chloride	µg/kg	199	183	91.5 - 275	Acceptable	EPA 8260B 2 1996	7/24/2020	0.563	188	19.2	HNW
4995	4-Methyl-2-pentanone (MIBK)	µg/kg	440	379	190 - 569	Acceptable	EPA 8260B 2 1996	7/24/2020	0.818	392	58.5	HNW
5005	Naphthalene	µg/kg	109	151	75.5 - 227	Acceptable	EPA 8260B 2 1996	7/24/2020	-0.552	130	38.4	HNW
5015	Nitrobenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5090	n-Propylbenzene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
5100	Styrene	µg/kg	133	146	94.9 - 197	Acceptable	EPA 8260B 2 1996	7/24/2020	-0.292	140	24.5	HNW
5105	1,1,1,2-Tetrachloroethane	µg/kg	140	132	79.2 - 185	Acceptable	EPA 8260B 2 1996	7/24/2020	-0.00736	140	17.8	HNW
5110	1,1,2,2-Tetrachloroethane	µg/kg	67.8	57.3	31.5 - 83.1	Acceptable	EPA 8260B 2 1996	7/24/2020	0.834	60.2	9.16	HNW
5115	Tetrachloroethylene	µg/kg	47	55.3	27.6 - 83.0	Acceptable	EPA 8260B 2 1996	7/24/2020	-0.575	53.1	10.6	HNW
5140	Toluene	µg/kg	128	132	85.8 - 178	Acceptable	EPA 8260B 2 1996	7/24/2020	-0.282	133	17.6	HNW
5150	1,2,3-Trichlorobenzene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
5155	1,2,4-Trichlorobenzene	µg/kg	24.2	54.8	21.9 - 87.7	Acceptable	EPA 8260B 2 1996	7/24/2020	-1.55	48.4	15.6	HNW



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SOIL Volatiles in Soil (cat# 623, lot# D111-721) (Continued)

5160	1,1,1-Trichloroethane	µg/kg	< 11	< 11.0	0.00 - 11.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
5165	1,1,2-Trichloroethane	µg/kg	< 14	< 14.0	0.00 - 14.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
5170	Trichloroethylene	µg/kg	69.2	74.5	44.7 - 104	Acceptable	EPA 8260B 2 1996	7/24/2020	-0.477	73.8	9.67	HNW
5175	Trichlorofluoromethane	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
5180	1,2,3-Trichloropropane (TCP)	µg/kg	132	110	55.0 - 165	Acceptable	EPA 8260B 2 1996	7/24/2020	1.06	106	24.7	HNW
5210	1,2,4-Trimethylbenzene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
5215	1,3,5-Trimethylbenzene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
5225	Vinyl acetate	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
5235	Vinyl chloride	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
5240	m&p-Xylene	µg/kg	< 20.9	< 11.0	0.00 - 11.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
5250	o-Xylene	µg/kg	< 11	< 11.0	0.00 - 11.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW
5260	Xylenes, total	µg/kg	< 28.9	< 22.0	0.00 - 22.0	Acceptable	EPA 8260B 2 1996	7/24/2020				HNW



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SOIL Volatiles in Soil (cat# 623, lot# D111-721)

4315	Acetone	µg/kg	862	916	98.6 - 1410	Acceptable	EPA 8260D 2018	7/24/2020	0.787	695	212	HNW
4320	Acetonitrile	µg/kg		478	0.00 - 962	Not Reported				485	202	
4325	Acrolein	µg/kg	< 279	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
4375	Benzene	µg/kg	62.8	65.5	42.6 - 88.4	Acceptable	EPA 8260D 2018	7/24/2020	-0.444	66.5	8.35	HNW
4385	Bromobenzene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
4390	Bromochloromethane	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
4395	Bromodichloromethane	µg/kg	73.3	68.9	41.3 - 96.5	Acceptable	EPA 8260D 2018	7/24/2020	0.220	71.5	8.09	HNW
4400	Bromoform	µg/kg	184	169	93.0 - 245	Acceptable	EPA 8260D 2018	7/24/2020	0.427	173	26.2	HNW
4950	Bromomethane	µg/kg	< 20.2	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
4410	2-Butanone (MEK)	µg/kg	327	404	131 - 622	Acceptable	EPA 8260D 2018	7/24/2020	-0.956	395	71.1	HNW
4435	n-Butylbenzene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
4440	sec-Butylbenzene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
4445	tert-Butylbenzene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
5000	tert-Butyl methyl ether (MTBE)	µg/kg	< 13.8	< 12.0	0.00 - 12.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
4450	Carbon disulfide	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
4455	Carbon tetrachloride	µg/kg	155	171	85.5 - 257	Acceptable	EPA 8260D 2018	7/24/2020	-0.709	175	28.1	HNW
4475	Chlorobenzene	µg/kg	< 10	< 10.0	0.00 - 10.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
4575	Chlorodibromomethane	µg/kg	168	162	97.2 - 227	Acceptable	EPA 8260D 2018	7/24/2020	-0.120	170	16.7	HNW
4485	Chloroethane	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
4500	2-Chloroethylvinylether	µg/kg	< 60.1	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW



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SOIL Volatiles in Soil (cat# 623, lot# D111-721) (Continued)

4505	Chloroform	µg/kg	182	187	112 - 262	Acceptable	EPA 8260D 2018	7/24/2020	-0.374	188	16.2	HNW
4960	Chloromethane	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
4535	2-Chlorotoluene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
4540	4-Chlorotoluene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
4570	1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	80.3	63.7	31.8 - 95.6	Acceptable	EPA 8260D 2018	7/24/2020	1.59	63.4	10.7	HNW
4585	1,2-Dibromoethane (EDB)	µg/kg	< 13	< 13.0	0.00 - 13.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
4595	Dibromomethane	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
4610	1,2-Dichlorobenzene	µg/kg	30.6	41.5	24.9 - 58.1	Acceptable	EPA 8260D 2018	7/24/2020	-1.25	40.6	8.02	HNW
4615	1,3-Dichlorobenzene	µg/kg	70.4	95.0	57.0 - 133	Acceptable	EPA 8260D 2018	7/24/2020	-1.30	89.6	14.8	HNW
4620	1,4-Dichlorobenzene	µg/kg	< 12	< 12.0	0.00 - 12.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
4625	Dichlorodifluoromethane (Freon 12)	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
4630	1,1-Dichloroethane	µg/kg	26.2	28.6	17.2 - 40.0	Acceptable	EPA 8260D 2018	7/24/2020	-0.379	27.3	2.83	HNW
4635	1,2-Dichloroethane	µg/kg	47.9	42.2	25.3 - 59.1	Acceptable	EPA 8260D 2018	7/24/2020	0.599	44.0	6.50	HNW
4640	1,1-Dichloroethylene	µg/kg	155	159	79.5 - 239	Acceptable	EPA 8260D 2018	7/24/2020	-0.514	169	26.3	HNW
4645	cis-1,2-Dichloroethylene	µg/kg	184	197	118 - 276	Acceptable	EPA 8260D 2018	7/24/2020	-0.518	196	22.9	HNW
4700	trans-1,2-Dichloroethylene	µg/kg	25	23.4	14.0 - 32.8	Acceptable	EPA 8260D 2018	7/24/2020	-0.484	26.8	3.81	HNW
4655	1,2-Dichloropropane	µg/kg	< 13	< 13.0	0.00 - 13.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
4660	1,3-Dichloropropane	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
4665	2,2-Dichloropropane	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
4670	1,1-Dichloropropene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW



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SOIL Volatiles in Soil (cat# 623, lot# D111-721) (Continued)

4680	cis-1,3-Dichloropropylene	µg/kg	< 19	< 12.0	0.00 - 12.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
4685	trans-1,3-Dichloropropylene	µg/kg	193	194	107 - 281	Acceptable	EPA 8260D 2018	7/24/2020	0.524	185	15.5	HNW
4765	Ethylbenzene	µg/kg	< 12	< 12.0	0.00 - 12.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
4835	Hexachlorobutadiene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
4840	Hexachloroethane	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
4860	2-Hexanone	µg/kg	271	233	116 - 350	Acceptable	EPA 8260D 2018	7/24/2020	0.848	236	41.7	HNW
4900	Isopropylbenzene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
4910	4-Isopropyltoluene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
4975	Methylene chloride	µg/kg	199	183	91.5 - 275	Acceptable	EPA 8260D 2018	7/24/2020	0.563	188	19.2	HNW
4995	4-Methyl-2-pentanone (MIBK)	µg/kg	440	379	190 - 569	Acceptable	EPA 8260D 2018	7/24/2020	0.818	392	58.5	HNW
5005	Naphthalene	µg/kg	109	151	75.5 - 227	Acceptable	EPA 8260D 2018	7/24/2020	-0.552	130	38.4	HNW
5015	Nitrobenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5090	n-Propylbenzene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
5100	Styrene	µg/kg	133	146	94.9 - 197	Acceptable	EPA 8260D 2018	7/24/2020	-0.292	140	24.5	HNW
5105	1,1,1,2-Tetrachloroethane	µg/kg	140	132	79.2 - 185	Acceptable	EPA 8260D 2018	7/24/2020	-0.00736	140	17.8	HNW
5110	1,1,2,2-Tetrachloroethane	µg/kg	67.8	57.3	31.5 - 83.1	Acceptable	EPA 8260D 2018	7/24/2020	0.834	60.2	9.16	HNW
5115	Tetrachloroethylene	µg/kg	47	55.3	27.6 - 83.0	Acceptable	EPA 8260D 2018	7/24/2020	-0.575	53.1	10.6	HNW
5140	Toluene	µg/kg	128	132	85.8 - 178	Acceptable	EPA 8260D 2018	7/24/2020	-0.282	133	17.6	HNW
5150	1,2,3-Trichlorobenzene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
5155	1,2,4-Trichlorobenzene	µg/kg	24.2	54.8	21.9 - 87.7	Acceptable	EPA 8260D 2018	7/24/2020	-1.55	48.4	15.6	HNW



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SOIL Volatiles in Soil (cat# 623, lot# D111-721) (Continued)

5160	1,1,1-Trichloroethane	µg/kg	< 11	< 11.0	0.00 - 11.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
5165	1,1,2-Trichloroethane	µg/kg	< 14	< 14.0	0.00 - 14.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
5170	Trichloroethylene	µg/kg	69.2	74.5	44.7 - 104	Acceptable	EPA 8260D 2018	7/24/2020	-0.477	73.8	9.67	HNW
5175	Trichlorofluoromethane	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
5180	1,2,3-Trichloropropane (TCP)	µg/kg	132	110	55.0 - 165	Acceptable	EPA 8260D 2018	7/24/2020	1.06	106	24.7	HNW
5210	1,2,4-Trimethylbenzene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
5215	1,3,5-Trimethylbenzene	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
5225	Vinyl acetate	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
5235	Vinyl chloride	µg/kg	< 20	< 20.0	0.00 - 20.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
5240	m&p-Xylene	µg/kg	< 20.9	< 11.0	0.00 - 11.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
5250	o-Xylene	µg/kg	< 11	< 11.0	0.00 - 11.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW
5260	Xylenes, total	µg/kg	< 28.9	< 22.0	0.00 - 22.0	Acceptable	EPA 8260D 2018	7/24/2020				HNW



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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D111-924)

4315	Acetone	µg/kg	6110	8020	2150 - 12300	Acceptable	EPA 8260B 2 1996	8/13/2020	-0.694	7420	1880	MDS
4320	Acetonitrile	µg/kg	< 4000	< 4000	0.00 - 4000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
4325	Acrolein	µg/kg	< 2500	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
4375	Benzene	µg/kg	7920	7560	5670 - 9450	Acceptable	EPA 8260B 2 1996	8/13/2020	-0.0207	7930	598	MDS
4385	Bromobenzene	µg/kg	< 2000	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
4390	Bromochloromethane	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
4395	Bromodichloromethane	µg/kg	1750	1720	1120 - 2320	Acceptable	EPA 8260B 2 1996	8/13/2020	-0.407	1820	172	MDS
4400	Bromoform	µg/kg	6920	7890	4730 - 11000	Acceptable	EPA 8260B 2 1996	8/13/2020	-0.690	7550	910	MDS
4950	Bromomethane	µg/kg	< 2000	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
4410	2-Butanone (MEK)	µg/kg	20200	19000	5390 - 28600	Acceptable	EPA 8260B 2 1996	8/13/2020	0.864	18200	2360	MDS
4435	n-Butylbenzene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
4440	sec-Butylbenzene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
4445	tert-Butylbenzene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
5000	tert-Butyl methyl ether (MTBE)	µg/kg	4830	4570	3200 - 5940	Acceptable	EPA 8260B 2 1996	8/13/2020	-0.278	4960	461	MDS
4450	Carbon disulfide	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
4455	Carbon tetrachloride	µg/kg	5140	5080	3170 - 6910	Acceptable	EPA 8260B 2 1996	8/13/2020	-0.372	5390	668	MDS
4475	Chlorobenzene	µg/kg	8070	7940	5960 - 9920	Acceptable	EPA 8260B 2 1996	8/13/2020	-0.0895	8120	610	MDS
4575	Chlorodibromomethane	µg/kg	< 763	< 700	0.00 - 700	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
4485	Chloroethane	µg/kg	< 2000	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
4500	2-Chloroethylvinylether	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS



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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D111-924) (Continued)

4505	Chloroform	µg/kg	7080	6980	4890 - 9070	Acceptable	EPA 8260B 2 1996	8/13/2020	-0.153	7200	783	MDS
4960	Chloromethane	µg/kg	< 2000	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
4535	2-Chlorotoluene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
4540	4-Chlorotoluene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
4570	1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	< 1200	< 1200	0.00 - 1200	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
4585	1,2-Dibromoethane (EDB)	µg/kg	4680	4450	2670 - 6230	Acceptable	EPA 8260B 2 1996	8/13/2020	0.0669	4650	389	MDS
4595	Dibromomethane	µg/kg	7830	7950	4770 - 11100	Acceptable	EPA 8260B 2 1996	8/13/2020	-0.527	8260	813	MDS
4610	1,2-Dichlorobenzene	µg/kg	7660	7410	5560 - 9260	Acceptable	EPA 8260B 2 1996	8/13/2020	0.101	7570	867	MDS
4615	1,3-Dichlorobenzene	µg/kg	5350	5160	4040 - 6360	Acceptable	EPA 8260B 2 1996	8/13/2020	0.0282	5340	417	MDS
4620	1,4-Dichlorobenzene	µg/kg	5960	6100	4700 - 7430	Acceptable	EPA 8260B 2 1996	8/13/2020	-0.406	6150	478	MDS
4625	Dichlorodifluoromethane (Freon 12)	µg/kg	< 2000	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
4630	1,1-Dichloroethane	µg/kg	8480	8840	5750 - 11900	Acceptable	EPA 8260B 2 1996	8/13/2020	-0.266	8710	847	MDS
4635	1,2-Dichloroethane	µg/kg	< 930	< 930	0.00 - 930	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
4640	1,1-Dichloroethylene	µg/kg	3000	3100	1550 - 4650	Acceptable	EPA 8260B 2 1996	8/13/2020	-0.692	3300	439	MDS
4645	cis-1,2-Dichloroethylene	µg/kg	6020	6150	3690 - 8610	Acceptable	EPA 8260B 2 1996	8/13/2020	-0.493	6370	712	MDS
4700	trans-1,2-Dichloroethylene	µg/kg	4620	4810	2890 - 6730	Acceptable	EPA 8260B 2 1996	8/13/2020	-0.825	5100	577	MDS
4655	1,2-Dichloropropane	µg/kg	< 1400	< 1400	0.00 - 1400	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
4660	1,3-Dichloropropane	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
4665	2,2-Dichloropropane	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
4670	1,1-Dichloropropene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS

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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D111-924) (Continued)

4680	cis-1,3-Dichloropropylene	µg/kg	< 1200	< 1200	0.00 - 1200	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
4685	trans-1,3-Dichloropropylene	µg/kg	3050	3390	2030 - 4750	Acceptable	EPA 8260B 2 1996	8/13/2020	-0.432	3240	434	MDS
4765	Ethylbenzene	µg/kg	7640	7180	5030 - 9330	Acceptable	EPA 8260B 2 1996	8/13/2020	0.188	7480	847	MDS
4835	Hexachlorobutadiene	µg/kg	9390	10200	3360 - 18500	Acceptable	EPA 8260B 2 1996	8/13/2020	-0.702	10900	2170	MDS
4840	Hexachloroethane	µg/kg	353	< 150	0.00 - 150	Not Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
4860	2-Hexanone	µg/kg	4640	4660	2330 - 6990	Acceptable	EPA 8260B 2 1996	8/13/2020	-0.219	4780	651	MDS
4900	Isopropylbenzene	µg/kg	< 2000	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
4910	4-Isopropyltoluene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
4975	Methylene chloride	µg/kg	7120	7200	4320 - 10100	Acceptable	EPA 8260B 2 1996	8/13/2020	-0.384	7360	617	MDS
4995	4-Methyl-2-pentanone (MIBK)	µg/kg	15700	15900	7950 - 23800	Acceptable	EPA 8260B 2 1996	8/13/2020	-0.463	16300	1310	MDS
5005	Naphthalene	µg/kg	3190	3370	1740 - 4770	Acceptable	EPA 8260B 2 1996	8/13/2020	-0.0926	3250	645	MDS
5015	Nitrobenzene	µg/kg		6720	2160 - 11200	Not Reported				6680	1370	
5090	n-Propylbenzene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
5100	Styrene	µg/kg	< 1200	< 1200	0.00 - 1200	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
5105	1,1,1,2-Tetrachloroethane	µg/kg	9940	9210	6890 - 11500	Acceptable	EPA 8260B 2 1996	8/13/2020	0.572	9440	871	MDS
5110	1,1,2,2-Tetrachloroethane	µg/kg	8820	8640	5530 - 11500	Acceptable	EPA 8260B 2 1996	8/13/2020	-0.178	9000	995	MDS
5115	Tetrachloroethylene	µg/kg	7620	7750	5250 - 10500	Acceptable	EPA 8260B 2 1996	8/13/2020	-0.200	7810	974	MDS
5140	Toluene	µg/kg	4590	4510	3380 - 5640	Acceptable	EPA 8260B 2 1996	8/13/2020	-0.124	4630	357	MDS
5150	1,2,3-Trichlorobenzene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
5155	1,2,4-Trichlorobenzene	µg/kg	< 1200	< 1200	0.00 - 1200	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS



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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D111-924) (Continued)

5160	1,1,1-Trichloroethane	µg/kg	86.8	< 600	0.00 - 600	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
5165	1,1,2-Trichloroethane	µg/kg	142	< 650	0.00 - 650	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
5170	Trichloroethylene	µg/kg	9850	9810	7210 - 12500	Acceptable	EPA 8260B 2 1996	8/13/2020	-0.00927	9860	674	MDS
5175	Trichlorofluoromethane	µg/kg	< 2000	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
5210	1,2,4-Trimethylbenzene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
5215	1,3,5-Trimethylbenzene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
5180	1,2,3-Trichloropropane (TCP)	µg/kg	< 825	< 825	0.00 - 825	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
5225	Vinyl acetate	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
5235	Vinyl chloride	µg/kg	< 2000	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
5240	m&p-Xylene	µg/kg	< 350	< 350	0.00 - 350	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
5250	o-Xylene	µg/kg	< 350	< 350	0.00 - 350	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS
5260	Xylenes, total	µg/kg	< 700	< 700	0.00 - 700	Acceptable	EPA 8260B 2 1996	8/13/2020				MDS



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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D111-924)

4315	Acetone	µg/kg	6110	8020	2150 - 12300	Acceptable	EPA 8260D 2018	8/13/2020	-0.694	7420	1880	MDS
4320	Acetonitrile	µg/kg	< 4000	< 4000	0.00 - 4000	Acceptable	EPA 8260D 2018	8/13/2020				MDS
4325	Acrolein	µg/kg	< 2500	< 1000	0.00 - 1000	Acceptable	EPA 8260D 2018	8/13/2020				MDS
4375	Benzene	µg/kg	7920	7560	5670 - 9450	Acceptable	EPA 8260D 2018	8/13/2020	-0.0207	7930	598	MDS
4385	Bromobenzene	µg/kg	< 2000	< 2000	0.00 - 2000	Acceptable	EPA 8260D 2018	8/13/2020				MDS
4390	Bromochloromethane	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260D 2018	8/13/2020				MDS
4395	Bromodichloromethane	µg/kg	1750	1720	1120 - 2320	Acceptable	EPA 8260D 2018	8/13/2020	-0.407	1820	172	MDS
4400	Bromoform	µg/kg	6920	7890	4730 - 11000	Acceptable	EPA 8260D 2018	8/13/2020	-0.690	7550	910	MDS
4950	Bromomethane	µg/kg	< 2000	< 2000	0.00 - 2000	Acceptable	EPA 8260D 2018	8/13/2020				MDS
4410	2-Butanone (MEK)	µg/kg	20200	19000	5390 - 28600	Acceptable	EPA 8260D 2018	8/13/2020	0.864	18200	2360	MDS
4435	n-Butylbenzene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260D 2018	8/13/2020				MDS
4440	sec-Butylbenzene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260D 2018	8/13/2020				MDS
4445	tert-Butylbenzene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260D 2018	8/13/2020				MDS
5000	tert-Butyl methyl ether (MTBE)	µg/kg	4830	4570	3200 - 5940	Acceptable	EPA 8260D 2018	8/13/2020	-0.278	4960	461	MDS
4450	Carbon disulfide	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260D 2018	8/13/2020				MDS
4455	Carbon tetrachloride	µg/kg	5140	5080	3170 - 6910	Acceptable	EPA 8260D 2018	8/13/2020	-0.372	5390	668	MDS
4475	Chlorobenzene	µg/kg	8070	7940	5960 - 9920	Acceptable	EPA 8260D 2018	8/13/2020	-0.0895	8120	610	MDS
4575	Chlorodibromomethane	µg/kg	< 763	< 700	0.00 - 700	Acceptable	EPA 8260D 2018	8/13/2020				MDS
4485	Chloroethane	µg/kg	< 2000	< 2000	0.00 - 2000	Acceptable	EPA 8260D 2018	8/13/2020				MDS
4500	2-Chloroethylvinylether	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260D 2018	8/13/2020				MDS



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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D111-924) (Continued)

4505	Chloroform	µg/kg	7080	6980	4890 - 9070	Acceptable	EPA 8260D 2018	8/13/2020	-0.153	7200	783	MDS
4960	Chloromethane	µg/kg	< 2000	< 2000	0.00 - 2000	Acceptable	EPA 8260D 2018	8/13/2020				MDS
4535	2-Chlorotoluene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260D 2018	8/13/2020				MDS
4540	4-Chlorotoluene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260D 2018	8/13/2020				MDS
4570	1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	< 1200	< 1200	0.00 - 1200	Acceptable	EPA 8260D 2018	8/13/2020				MDS
4585	1,2-Dibromoethane (EDB)	µg/kg	4680	4450	2670 - 6230	Acceptable	EPA 8260D 2018	8/13/2020	0.0669	4650	389	MDS
4595	Dibromomethane	µg/kg	7830	7950	4770 - 11100	Acceptable	EPA 8260D 2018	8/13/2020	-0.527	8260	813	MDS
4610	1,2-Dichlorobenzene	µg/kg	7660	7410	5560 - 9260	Acceptable	EPA 8260D 2018	8/13/2020	0.101	7570	867	MDS
4615	1,3-Dichlorobenzene	µg/kg	5350	5160	4040 - 6360	Acceptable	EPA 8260D 2018	8/13/2020	0.0282	5340	417	MDS
4620	1,4-Dichlorobenzene	µg/kg	5960	6100	4700 - 7430	Acceptable	EPA 8260D 2018	8/13/2020	-0.406	6150	478	MDS
4625	Dichlorodifluoromethane (Freon 12)	µg/kg	< 2000	< 2000	0.00 - 2000	Acceptable	EPA 8260D 2018	8/13/2020				MDS
4630	1,1-Dichloroethane	µg/kg	8480	8840	5750 - 11900	Acceptable	EPA 8260D 2018	8/13/2020	-0.266	8710	847	MDS
4635	1,2-Dichloroethane	µg/kg	< 930	< 930	0.00 - 930	Acceptable	EPA 8260D 2018	8/13/2020				MDS
4640	1,1-Dichloroethylene	µg/kg	3000	3100	1550 - 4650	Acceptable	EPA 8260D 2018	8/13/2020	-0.692	3300	439	MDS
4645	cis-1,2-Dichloroethylene	µg/kg	6020	6150	3690 - 8610	Acceptable	EPA 8260D 2018	8/13/2020	-0.493	6370	712	MDS
4700	trans-1,2-Dichloroethylene	µg/kg	4620	4810	2890 - 6730	Acceptable	EPA 8260D 2018	8/13/2020	-0.825	5100	577	MDS
4655	1,2-Dichloropropane	µg/kg	< 1400	< 1400	0.00 - 1400	Acceptable	EPA 8260D 2018	8/13/2020				MDS
4660	1,3-Dichloropropane	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260D 2018	8/13/2020				MDS
4665	2,2-Dichloropropane	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260D 2018	8/13/2020				MDS
4670	1,1-Dichloropropene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260D 2018	8/13/2020				MDS



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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D111-924) (Continued)

4680	cis-1,3-Dichloropropylene	µg/kg	< 1200	< 1200	0.00 - 1200	Acceptable	EPA 8260D 2018	8/13/2020				MDS
4685	trans-1,3-Dichloropropylene	µg/kg	3050	3390	2030 - 4750	Acceptable	EPA 8260D 2018	8/13/2020	-0.432	3240	434	MDS
4765	Ethylbenzene	µg/kg	7640	7180	5030 - 9330	Acceptable	EPA 8260D 2018	8/13/2020	0.188	7480	847	MDS
4835	Hexachlorobutadiene	µg/kg	9390	10200	3360 - 18500	Acceptable	EPA 8260D 2018	8/13/2020	-0.702	10900	2170	MDS
4840	Hexachloroethane	µg/kg	353	< 150	0.00 - 150	Not Acceptable	EPA 8260D 2018	8/13/2020				MDS
4860	2-Hexanone	µg/kg	4640	4660	2330 - 6990	Acceptable	EPA 8260D 2018	8/13/2020	-0.219	4780	651	MDS
4900	Isopropylbenzene	µg/kg	< 2000	< 2000	0.00 - 2000	Acceptable	EPA 8260D 2018	8/13/2020				MDS
4910	4-Isopropyltoluene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260D 2018	8/13/2020				MDS
4975	Methylene chloride	µg/kg	7120	7200	4320 - 10100	Acceptable	EPA 8260D 2018	8/13/2020	-0.384	7360	617	MDS
4995	4-Methyl-2-pentanone (MIBK)	µg/kg	15700	15900	7950 - 23800	Acceptable	EPA 8260D 2018	8/13/2020	-0.463	16300	1310	MDS
5005	Naphthalene	µg/kg	3190	3370	1740 - 4770	Acceptable	EPA 8260D 2018	8/13/2020	-0.0926	3250	645	MDS
5015	Nitrobenzene	µg/kg		6720	2160 - 11200	Not Reported				6680	1370	
5090	n-Propylbenzene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260D 2018	8/13/2020				MDS
5100	Styrene	µg/kg	< 1200	< 1200	0.00 - 1200	Acceptable	EPA 8260D 2018	8/13/2020				MDS
5105	1,1,1,2-Tetrachloroethane	µg/kg	9940	9210	6890 - 11500	Acceptable	EPA 8260D 2018	8/13/2020	0.572	9440	871	MDS
5110	1,1,2,2-Tetrachloroethane	µg/kg	8820	8640	5530 - 11500	Acceptable	EPA 8260D 2018	8/13/2020	-0.178	9000	995	MDS
5115	Tetrachloroethylene	µg/kg	7620	7750	5250 - 10500	Acceptable	EPA 8260D 2018	8/13/2020	-0.200	7810	974	MDS
5140	Toluene	µg/kg	4590	4510	3380 - 5640	Acceptable	EPA 8260D 2018	8/13/2020	-0.124	4630	357	MDS
5150	1,2,3-Trichlorobenzene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260D 2018	8/13/2020				MDS
5155	1,2,4-Trichlorobenzene	µg/kg	< 1200	< 1200	0.00 - 1200	Acceptable	EPA 8260D 2018	8/13/2020				MDS



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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D111-924) (Continued)

5160	1,1,1-Trichloroethane	µg/kg	86.8	< 600	0.00 - 600	Acceptable	EPA 8260D 2018	8/13/2020				MDS
5165	1,1,2-Trichloroethane	µg/kg	142	< 650	0.00 - 650	Acceptable	EPA 8260D 2018	8/13/2020				MDS
5170	Trichloroethylene	µg/kg	9850	9810	7210 - 12500	Acceptable	EPA 8260D 2018	8/13/2020	-0.00927	9860	674	MDS
5175	Trichlorofluoromethane	µg/kg	< 2000	< 2000	0.00 - 2000	Acceptable	EPA 8260D 2018	8/13/2020				MDS
5210	1,2,4-Trimethylbenzene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260D 2018	8/13/2020				MDS
5215	1,3,5-Trimethylbenzene	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260D 2018	8/13/2020				MDS
5180	1,2,3-Trichloropropane (TCP)	µg/kg	< 825	< 825	0.00 - 825	Acceptable	EPA 8260D 2018	8/13/2020				MDS
5225	Vinyl acetate	µg/kg	< 1000	< 1000	0.00 - 1000	Acceptable	EPA 8260D 2018	8/13/2020				MDS
5235	Vinyl chloride	µg/kg	< 2000	< 2000	0.00 - 2000	Acceptable	EPA 8260D 2018	8/13/2020				MDS
5240	m&p-Xylene	µg/kg	< 350	< 350	0.00 - 350	Acceptable	EPA 8260D 2018	8/13/2020				MDS
5250	o-Xylene	µg/kg	< 350	< 350	0.00 - 350	Acceptable	EPA 8260D 2018	8/13/2020				MDS
5260	Xylenes, total	µg/kg	< 700	< 700	0.00 - 700	Acceptable	EPA 8260D 2018	8/13/2020				MDS



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SOIL Organochlorine Pesticides in Soil (cat# 468, lot# D111-728)

7025	Aldrin	µg/kg	96.2	194	56.7 - 260	Acceptable	EPA 8081A 1 1996	7/31/2020	-1.62	158	38.4	DMH
7110	alpha-BHC	µg/kg	165	351	106 - 472	Acceptable	EPA 8081A 1 1996	7/31/2020	-2.19	289	56.6	DMH
7115	beta-BHC	µg/kg	189	412	123 - 530	Acceptable	EPA 8081A 1 1996	7/31/2020	-1.95	327	70.7	DMH
7105	delta-BHC	µg/kg	178	374	99.6 - 501	Acceptable	EPA 8081A 1 1996	7/31/2020	-2.07	300	59.1	DMH
7120	gamma-BHC(Lindane)	µg/kg	77.3	157	36.8 - 228	Acceptable	EPA 8081A 1 1996	7/31/2020	-1.65	132	33.3	DMH
7240	alpha-Chlordane	µg/kg	188	363	132 - 483	Acceptable	EPA 8081A 1 1996	7/31/2020	-1.94	308	61.7	DMH
7245	gamma-Chlordane	µg/kg	176	350	141 - 449	Acceptable	EPA 8081A 1 1996	7/31/2020	-1.85	295	64.6	DMH
7355	4,4'-DDD	µg/kg	159	344	117 - 460	Acceptable	EPA 8081A 1 1996	7/31/2020	-1.90	289	68.5	DMH
7360	4,4'-DDE	µg/kg	248	480	179 - 666	Acceptable	EPA 8081A 1 1996	7/31/2020	-2.13	422	81.9	DMH
7365	4,4'-DDT	µg/kg	138	319	82.0 - 468	Acceptable	EPA 8081A 1 1996	7/31/2020	-1.84	275	74.3	DMH
7470	Dieldrin	µg/kg	96.7	191	69.8 - 259	Acceptable	EPA 8081A 1 1996	7/31/2020	-2.09	164	32.4	DMH
7540	Endrin	µg/kg	104	171	62.6 - 233	Acceptable	EPA 8081A 1 1996	7/31/2020	-1.14	148	38.2	DMH
7530	Endrin aldehyde	µg/kg	180	491	68.2 - 573	Acceptable	EPA 8081A 1 1996	7/31/2020	-1.39	321	102	DMH
7535	Endrin ketone	µg/kg	165	385	86.5 - 466	Acceptable	EPA 8081A 1 1996	7/31/2020	-1.92	276	57.8	DMH
7510	Endosulfan I	µg/kg	157	335	106 - 429	Acceptable	EPA 8081A 1 1996	7/31/2020	-1.87	268	59.3	DMH
7515	Endosulfan II	µg/kg	115	286	66.5 - 322	Acceptable	EPA 8081A 1 1996	7/31/2020	-1.87	194	42.4	DMH
7520	Endosulfan sulfate	µg/kg	193	432	93.3 - 598	Acceptable	EPA 8081A 1 1996	7/31/2020	-1.75	346	87.4	DMH
7685	Heptachlor	µg/kg	70.3	126	41.9 - 191	Acceptable	EPA 8081A 1 1996	7/31/2020	-1.62	116	28.4	DMH
7690	Heptachlor epoxide	µg/kg	59	107	36.9 - 154	Acceptable	EPA 8081A 1 1996	7/31/2020	-1.74	95.2	20.9	DMH
7810	Methoxychlor	µg/kg	75.3	131	13.1 - 221	Acceptable	EPA 8081A 1 1996	7/31/2020	-1.21	112	30.6	DMH



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SOIL Organochlorine Pesticides in Soil (cat# 468, lot# D111-728)

7025	Aldrin	µg/kg	96.2	194	56.7 - 260	Acceptable	EPA 8081B 2 2007	7/31/2020	-1.62	158	38.4	DMH
7110	alpha-BHC	µg/kg	165	351	106 - 472	Acceptable	EPA 8081B 2 2007	7/31/2020	-2.19	289	56.6	DMH
7115	beta-BHC	µg/kg	189	412	123 - 530	Acceptable	EPA 8081B 2 2007	7/31/2020	-1.95	327	70.7	DMH
7105	delta-BHC	µg/kg	178	374	99.6 - 501	Acceptable	EPA 8081B 2 2007	7/31/2020	-2.07	300	59.1	DMH
7120	gamma-BHC(Lindane)	µg/kg	77.3	157	36.8 - 228	Acceptable	EPA 8081B 2 2007	7/31/2020	-1.65	132	33.3	DMH
7240	alpha-Chlordane	µg/kg	188	363	132 - 483	Acceptable	EPA 8081B 2 2007	7/31/2020	-1.94	308	61.7	DMH
7245	gamma-Chlordane	µg/kg	176	350	141 - 449	Acceptable	EPA 8081B 2 2007	7/31/2020	-1.85	295	64.6	DMH
7355	4,4'-DDD	µg/kg	159	344	117 - 460	Acceptable	EPA 8081B 2 2007	7/31/2020	-1.90	289	68.5	DMH
7360	4,4'-DDE	µg/kg	248	480	179 - 666	Acceptable	EPA 8081B 2 2007	7/31/2020	-2.13	422	81.9	DMH
7365	4,4'-DDT	µg/kg	138	319	82.0 - 468	Acceptable	EPA 8081B 2 2007	7/31/2020	-1.84	275	74.3	DMH
7470	Dieldrin	µg/kg	96.7	191	69.8 - 259	Acceptable	EPA 8081B 2 2007	7/31/2020	-2.09	164	32.4	DMH
7540	Endrin	µg/kg	104	171	62.6 - 233	Acceptable	EPA 8081B 2 2007	7/31/2020	-1.14	148	38.2	DMH
7530	Endrin aldehyde	µg/kg	180	491	68.2 - 573	Acceptable	EPA 8081B 2 2007	7/31/2020	-1.39	321	102	DMH
7535	Endrin ketone	µg/kg	165	385	86.5 - 466	Acceptable	EPA 8081B 2 2007	7/31/2020	-1.92	276	57.8	DMH
7510	Endosulfan I	µg/kg	157	335	106 - 429	Acceptable	EPA 8081B 2 2007	7/31/2020	-1.87	268	59.3	DMH
7515	Endosulfan II	µg/kg	115	286	66.5 - 322	Acceptable	EPA 8081B 2 2007	7/31/2020	-1.87	194	42.4	DMH
7520	Endosulfan sulfate	µg/kg	193	432	93.3 - 598	Acceptable	EPA 8081B 2 2007	7/31/2020	-1.75	346	87.4	DMH
7685	Heptachlor	µg/kg	70.3	126	41.9 - 191	Acceptable	EPA 8081B 2 2007	7/31/2020	-1.62	116	28.4	DMH
7690	Heptachlor epoxide	µg/kg	59	107	36.9 - 154	Acceptable	EPA 8081B 2 2007	7/31/2020	-1.74	95.2	20.9	DMH
7810	Methoxychlor	µg/kg	75.3	131	13.1 - 221	Acceptable	EPA 8081B 2 2007	7/31/2020	-1.21	112	30.6	DMH



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Study Dates:

WI01103
E518002
09/10/20
07/20/20 - 09/03/20

SOIL-111 Final Evaluation Report

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SOIL Chlordane in Soil (cat# 628, lot# D111-725)

7250	Chlordane, technical	µg/kg	435	771	162 - 967	Acceptable	EPA 8081A 1 1996	7/31/2020	-1.06	565	122	DMH
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SOIL Chlordane in Soil (cat# 628, lot# D111-725)

7250	Chlordane, technical	µg/kg	435	771	162 - 967	Acceptable	EPA 8081B 2 2007	7/31/2020	-1.06	565	122	DMH
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SOIL Toxaphene in Soil (cat# 627, lot# D111-724)

8250	Toxaphene	µg/kg	567	805	186 - 911	Acceptable	EPA 8081A 1 1996	7/31/2020	0.155	548	121	DMH
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SOIL Toxaphene in Soil (cat# 627, lot# D111-724)

8250	Toxaphene	µg/kg	567	805	186 - 911	Acceptable	EPA 8081B 2 2007	7/31/2020	0.155	548	121	DMH
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SOIL PCBs in Soil (cat# 624, lot# D111-726)

8880	Aroclor 1016	mg/kg	< 2.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082 1996	7/28/2020				BLM
8885	Aroclor 1221	mg/kg	18.7	27.3	6.27 - 34.1	Acceptable	EPA 8082 1996	7/28/2020	-0.262	20.2	5.69	BLM
8890	Aroclor 1232	mg/kg	< 2.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082 1996	7/28/2020				BLM
8895	Aroclor 1242	mg/kg	< 2.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082 1996	7/28/2020				BLM
8900	Aroclor 1248	mg/kg	< 2.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082 1996	7/28/2020				BLM
8905	Aroclor 1254	mg/kg	< 2.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082 1996	7/28/2020				BLM
8910	Aroclor 1260	mg/kg	< 2.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082 1996	7/28/2020				BLM



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SOIL PCBs in Soil (cat# 624, lot# D111-726)

8880	Aroclor 1016	mg/kg	< 2.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2007	7/28/2020				BLM
8885	Aroclor 1221	mg/kg	18.7	27.3	6.27 - 34.1	Acceptable	EPA 8082A 2007	7/28/2020	-0.262	20.2	5.69	BLM
8890	Aroclor 1232	mg/kg	< 2.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2007	7/28/2020				BLM
8895	Aroclor 1242	mg/kg	< 2.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2007	7/28/2020				BLM
8900	Aroclor 1248	mg/kg	< 2.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2007	7/28/2020				BLM
8905	Aroclor 1254	mg/kg	< 2.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2007	7/28/2020				BLM
8910	Aroclor 1260	mg/kg	< 2.5	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2007	7/28/2020				BLM

SOIL Gasoline Range Organics (GRO) in Soil (cat# 630, lot# D111-763)

9408	Gasoline Range Organics (GRO)	mg/kg		459	45.9 - 639	Not Reported				264	129	
4375	Benzene in GRO	mg/kg	1.09	2.03	0.00 - 2.23	Acceptable	EPA 8021B 2 1996	7/27/2020	1.27	0.702	0.305	ALD
4765	Ethylbenzene in GRO	mg/kg	6.89	7.72	0.869 - 9.00	Acceptable	EPA 8021B 2 1996	7/27/2020	1.44	4.94	1.36	ALD
5140	Toluene in GRO	mg/kg	16.8	23.4	0.00 - 25.7	Acceptable	EPA 8021B 2 1996	7/27/2020	1.28	11.7	3.97	ALD
5260	Xylenes, total in GRO	mg/kg	34.5	39.5	6.20 - 46.4	Acceptable	EPA 8021B 2 1996	7/27/2020	1.23	26.3	6.69	ALD

SOIL Gasoline Range Organics (GRO) in Soil (cat# 630, lot# D111-763)

9408	Gasoline Range Organics (GRO)	mg/kg	392	459	45.9 - 639	Acceptable	EPA 8015D 2003	7/27/2020	0.994	264	129	ALD
4375	Benzene in GRO	mg/kg		2.03	0.00 - 2.23	Not Reported				0.702	0.305	
4765	Ethylbenzene in GRO	mg/kg		7.72	0.869 - 9.00	Not Reported				4.94	1.36	
5140	Toluene in GRO	mg/kg		23.4	0.00 - 25.7	Not Reported				11.7	3.97	
5260	Xylenes, total in GRO	mg/kg		39.5	6.20 - 46.4	Not Reported				26.3	6.69	



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SOIL Gasoline Range Organics (GRO) in Soil (cat# 630, lot# D111-763)

9408	Gasoline Range Organics (GRO)	mg/kg	392	459	45.9 - 639	Acceptable	EPA 8015B 2 1996	7/27/2020	0.994	264	129	ALD
4375	Benzene in GRO	mg/kg		2.03	0.00 - 2.23	Not Reported				0.702	0.305	
4765	Ethylbenzene in GRO	mg/kg		7.72	0.869 - 9.00	Not Reported				4.94	1.36	
5140	Toluene in GRO	mg/kg		23.4	0.00 - 25.7	Not Reported				11.7	3.97	
5260	Xylenes, total in GRO	mg/kg		39.5	6.20 - 46.4	Not Reported				26.3	6.69	

SOIL Gasoline Range Organics (GRO) in Soil (cat# 630, lot# D111-763)

9408	Gasoline Range Organics (GRO)	mg/kg	392	459	45.9 - 639	Acceptable	EPA 8015C 3 2007	7/27/2020	0.994	264	129	ALD
4375	Benzene in GRO	mg/kg		2.03	0.00 - 2.23	Not Reported				0.702	0.305	
4765	Ethylbenzene in GRO	mg/kg		7.72	0.869 - 9.00	Not Reported				4.94	1.36	
5140	Toluene in GRO	mg/kg		23.4	0.00 - 25.7	Not Reported				11.7	3.97	
5260	Xylenes, total in GRO	mg/kg		39.5	6.20 - 46.4	Not Reported				26.3	6.69	

SOIL Diesel Range Organics (DRO) in Soil (cat# 631, lot# D111-765)

9369	Diesel Range Organics (DRO)	mg/kg	637	890	239 - 1170	Acceptable	EPA 8015C 3 2007	7/28/2020	-0.390	705	174	MRN
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SOIL Diesel Range Organics (DRO) in Soil (cat# 631, lot# D111-765)

9369	Diesel Range Organics (DRO)	mg/kg	637	890	239 - 1170	Acceptable	EPA 8015D 2003	7/28/2020	-0.390	705	174	MRN
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SOIL Diesel Range Organics (DRO) in Soil (cat# 631, lot# D111-765)

9369	Diesel Range Organics (DRO)	mg/kg	637	890	239 - 1170	Acceptable	EPA 8015B 2 1996	7/28/2020	-0.390	705	174	MRN
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SOIL 1,4-Dioxane in Soil (cat# 461, lot# D111-538)

4735	1,4-Dioxane	µg/kg		64.5	31.7 - 95.8	Not Reported				62.3	14.0	
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CERTIFICATE OF RECOGNITION

ERA congratulates

Pace Analytical Services - Green Bay
SOIL-111

For your participation and successful evaluation, we recognize the performance of this laboratory for achieving acceptable evaluation in the following standards.

Anions in Soil

Cyanide in Soil

Ignitability/Flashpoint

Organochlorine

Pesticides in Soil

Volatiles in Soil

Chlordane in Soil

Diesel Range Organics
(DRO) in Soil

Metals in Soil

PCBs in Soil

Corrosivity/pH in Soil

Gasoline Range
Organics (GRO) in Soil

Nutrients in Soil

Toxaphene in Soil



Matthew Seebeck
Quality Officer



A Waters Company

Kate Verbeten
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USA

SOIL-112



Final Report

Soil/Hazardous Waste Proficiency Testing

Soil Study

Open Date: 10/16/20

Close Date: 11/30/20

Report Issued Date: 12/03/20



A Waters Company

December 3, 2020

Kate Verbeten
Pace Analytical Services - Green Bay
1241 Bellevue St, Ste 9
Green Bay, WI 54302

Enclosed is your final report for ERA's SOIL-112 Proficiency Testing (PT) study. Your final report includes an evaluation of all results submitted by your laboratory to ERA.

Data Evaluation Protocols: All analytes in ERA's SOIL-112 Proficiency Testing study have been evaluated using the following tiered approach. If the analyte is listed in the most current NELAC Fields of Proficiency Testing (FoPT) table the evaluation was completed by comparing the reported result to the acceptance limits generated using the criteria contained in the table and the evaluation criteria contained in the 2016 TNI Standard, Volume 3. If the analyte is not included in the NELAC FoPT table, the reported result has been evaluated using the procedures outlined in ERA's Standard Operating Procedure for the Generation of Performance Acceptance Limits (SOP 730002268).

Corrective Action Help: As part of your accreditation(s), you may be required to identify the root cause of any "Not Acceptable" results, implement the necessary corrective actions, and then satisfy your PT requirements by participating in a Supplemental (QuiK™Response) or future ERA PT study. ERA's technical staff is available to help your laboratory resolve any technical issues that may be impairing your PT performance and possibly affecting your routine data quality. Our laboratory and technical staff have many years of collective experience in performing the full range of environmental analyses. As part of our technical support, ERA offers QC samples that can be useful in helping you work through your technical issues.

Thank you for your participation in ERA's SOIL-112 Proficiency Testing study. If you have any questions, please contact our Proficiency Testing Department at 1-800-372-0122.

Sincerely,

A handwritten signature in black ink, appearing to read "Matthew Seebeck".

Matthew Seebeck
Quality Officer

attachments



A Waters Company

Report Recipient	Contact/Phone Number	Reporting Type
Florida	Vanessa Soto / 904-791-1599	All Analytes
Illinois	John South / (217) 558-7142	All Analytes
Kentucky	Patrick Garrity / 502-782-6954	All Analytes
Louisiana	Paul Bergeron / 225-219-3247	All Analytes
Minnesota	Lynn Boysen / 218-332-5164	All Analytes
New York	ELAP Office / 518-485-5570	All Analytes
North Dakota	Cynthia Auen / 701-328-6172	All Analytes
CADENA, Inc (E518002)	Jim Tomalia / (313) 871-5800	All Analytes
Ford Motor Company (E518002)	Hilda Arellano / 313-845-1648	All Analytes



A Waters Company

SOIL-112 Definitions & Study Discussion

Study Dates: 10/16/20 - 11/30/20

Report Issued: 12/03/20

SOIL Study Definitions

The Reported Value is the value that the laboratory reported to ERA.

The ERA Assigned Values are compliant with the most current NELAC Fields of Proficiency Testing (FoPT) table. The Assigned Values for the Organic Proficiency Testing Standards are equal to 100% of the parameter present in the standard as determined by gravimetric and/or volumetric measurements made during standard preparation as applicable. The assigned values for the Inorganic Proficiency Testing Standards, with the exception of the TCLP Metals in Soil and Total Organic Carbon (TOC) in the Nutrients in Soil sample, are equal to the maximum amount of the parameter available in the standard by applicable EPA methodologies. The assigned values for the TCLP metals and TOC are equal to the mean of the study data, after the removal of outliers. All parameters not added to the standard are given an Assigned Value of "< PTRL", per the guidelines contained in the 2009 TNI Standards. The assigned values are directly traceable to the commercially prepared starting materials used to manufacture the PT standards.

The Acceptance Limits are established per the criteria contained in the most current NELAC FoPT table or ERA's SOP for the Generation of Performance Acceptance Limits™ as applicable. This report is scored by the criteria in the 2016 TNI Standard, Volume 3, instead of by the criteria in the 2009 TNI Standard to which the Proficiency Testing Provider is accredited. This is a planned change and is endorsed by the TNI Proficiency Testing Program Executive Committee for transition to the 2016 TNI Standard.

The Performance Evaluation:

- | | |
|----------------|---|
| Acceptable | = Reported Value falls within the Acceptance Limits. |
| Not Acceptable | = Reported Value falls outside the Acceptance Limits. |
| No Evaluation | = Reported Value cannot be evaluated. |
| Not Reported | = No Value reported. |

The Method Description is the method the laboratory reported to ERA.

SOIL Study Discussion

ERA's SOIL-112 Proficiency Testing (PT) study has been reviewed by ERA senior management and certified compliant with the requirements of the 2009 TNI PT Standard and the 2016 TNI Standard, Volume 3, Section 5.9 and the criteria contained in the most current NELAC Fields of Proficiency Testing (FoPT) table.

ERA's SOIL-112 study standards were examined for any anomalies. A full review of all homogeneity, stability and accuracy verification data was completed. All analytical verification data for all analytes in the standards met the acceptance criteria contained in the 2009 TNI PT Standard and the criteria contained in the most current NELAC FoPT table.

All analytes are included in ERA's A2LA accreditation, certification number 1539.01.

The data submitted by participating laboratories was also examined for study anomalies. There were no anomalies observed during the statistical review of the data.

ERA's SOIL-112 Proficiency Testing study reports shall not be reproduced except in its entirety and not without the permission of the participating laboratory. The report must not be used by the participating laboratories to claim product endorsement any agency of the U. S. government.

The data contained herein are confidential and intended for your use only.

If you have any questions or concerns regarding your assessment in ERA's SOIL Proficiency Testing program, please contact our Proficiency Testing Department at 1-800-372-0122.





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SOIL-112 Laboratory Exception Report

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EPA ID:	WI01103
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Study Dates:	10/16/20 - 11/30/20

Not Acceptable Evaluations

There were no Not Acceptable evaluations for this study.



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Final Report Results For Laboratory Pace Analytical Services - Green Bay





Final Evaluation Report

Study: **SOIL-112**

ERA Customer Number: **E518002**

Laboratory Name: **Pace Analytical Services
- Green Bay**

Organic Results





A Waters Company

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SOIL-112 Final Evaluation Report

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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D112-924)

4315	Acetone	µg/kg		5480	1380 - 8460	Not Reported				4610	940	
4320	Acetonitrile	µg/kg		< 4000	0.00 - 4000	Not Reported						
4325	Acrolein	µg/kg		< 1000	0.00 - 1000	Not Reported						
4375	Benzene	µg/kg		7860	5900 - 9820	Not Reported				8210	874	
4385	Bromobenzene	µg/kg		< 2000	0.00 - 2000	Not Reported						
4390	Bromochloromethane	µg/kg		< 1000	0.00 - 1000	Not Reported						
4395	Bromodichloromethane	µg/kg		6030	3920 - 8140	Not Reported				6170	556	
4400	Bromoform	µg/kg		7790	4670 - 10900	Not Reported				7780	889	
4950	Bromomethane	µg/kg		< 2000	0.00 - 2000	Not Reported						
4410	2-Butanone (MEK)	µg/kg		19000	5390 - 28600	Not Reported				16800	3190	
4435	n-Butylbenzene	µg/kg		< 1000	0.00 - 1000	Not Reported						
4440	sec-Butylbenzene	µg/kg		< 1000	0.00 - 1000	Not Reported						
4445	tert-Butylbenzene	µg/kg		< 1000	0.00 - 1000	Not Reported						
5000	tert-Butyl methyl ether (MTBE)	µg/kg		2490	1740 - 3240	Not Reported				2590	260	
4450	Carbon disulfide	µg/kg		< 1000	0.00 - 1000	Not Reported						
4455	Carbon tetrachloride	µg/kg		< 480	0.00 - 480	Not Reported						
4475	Chlorobenzene	µg/kg		6830	5120 - 8540	Not Reported				7070	553	
4575	Chlorodibromomethane	µg/kg		8080	5660 - 10500	Not Reported				8240	675	
4485	Chloroethane	µg/kg		< 2000	0.00 - 2000	Not Reported						
4500	2-Chloroethylvinylether	µg/kg		< 1000	0.00 - 1000	Not Reported						



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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D112-924) (Continued)

4505	Chloroform	µg/kg		2580	1810 - 3350	Not Reported				2550	176	
4960	Chloromethane	µg/kg		< 2000	0.00 - 2000	Not Reported						
4535	2-Chlorotoluene	µg/kg		< 1000	0.00 - 1000	Not Reported						
4540	4-Chlorotoluene	µg/kg		< 1000	0.00 - 1000	Not Reported						
4570	1,2-Dibromo-3-chloropropane (DBCP)	µg/kg		6660	4000 - 9320	Not Reported				6270	847	
4585	1,2-Dibromoethane (EDB)	µg/kg		3540	2120 - 4960	Not Reported				3570	373	
4595	Dibromomethane	µg/kg		7360	4420 - 10300	Not Reported				7370	676	
4610	1,2-Dichlorobenzene	µg/kg		8240	6180 - 10300	Not Reported				8320	1010	
4615	1,3-Dichlorobenzene	µg/kg		3120	2360 - 3930	Not Reported				3040	257	
4620	1,4-Dichlorobenzene	µg/kg		6620	5110 - 8050	Not Reported				6620	732	
4625	Dichlorodifluoromethane (Freon 12)	µg/kg		< 2000	0.00 - 2000	Not Reported						
4630	1,1-Dichloroethane	µg/kg		1070	696 - 1440	Not Reported				999	94.2	
4635	1,2-Dichloroethane	µg/kg		2090	1420 - 2800	Not Reported				2150	180	
4640	1,1-Dichloroethylene	µg/kg		4450	2220 - 6680	Not Reported				4810	800	
4645	cis-1,2-Dichloroethylene	µg/kg		5380	3230 - 7530	Not Reported				5280	609	
4700	trans-1,2-Dichloroethylene	µg/kg		3800	2280 - 5320	Not Reported				4060	447	
4655	1,2-Dichloropropane	µg/kg		9190	6430 - 11900	Not Reported				9540	823	
4660	1,3-Dichloropropane	µg/kg		< 1000	0.00 - 1000	Not Reported						
4665	2,2-Dichloropropane	µg/kg		< 1000	0.00 - 1000	Not Reported						
4670	1,1-Dichloropropene	µg/kg		< 1000	0.00 - 1000	Not Reported						



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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D112-924) (Continued)

4680	cis-1,3-Dichloropropylene	µg/kg		6480	3890 - 9070	Not Reported				6310	609	
4685	trans-1,3-Dichloropropylene	µg/kg		3260	1960 - 4560	Not Reported				3140	293	
4765	Ethylbenzene	µg/kg		2600	1820 - 3380	Not Reported				2680	294	
4835	Hexachlorobutadiene	µg/kg		7520	2370 - 13400	Not Reported				7870	880	
4840	Hexachloroethane	µg/kg	< 300	< 150	0.00 - 150	Acceptable	EPA 8260B 2 1996	11/3/2020				
4860	2-Hexanone	µg/kg		5590	2800 - 8390	Not Reported				5410	567	
4900	Isopropylbenzene	µg/kg		< 2000	0.00 - 2000	Not Reported						
4910	4-Isopropyltoluene	µg/kg		< 1000	0.00 - 1000	Not Reported						
4975	Methylene chloride	µg/kg		8380	5030 - 11700	Not Reported				8240	868	
4995	4-Methyl-2-pentanone (MIBK)	µg/kg		19400	9700 - 29100	Not Reported				19400	2750	
5005	Naphthalene	µg/kg		7800	5020 - 10400	Not Reported				7890	1220	
5015	Nitrobenzene	µg/kg		11600	3610 - 17800	Not Reported				10700	0.00	
5090	n-Propylbenzene	µg/kg		< 1000	0.00 - 1000	Not Reported						
5100	Styrene	µg/kg		5430	3260 - 7600	Not Reported				5790	680	
5105	1,1,1,2-Tetrachloroethane	µg/kg		7930	5900 - 9980	Not Reported				8230	641	
5110	1,1,2,2-Tetrachloroethane	µg/kg		6930	4310 - 9300	Not Reported				6680	1070	
5115	Tetrachloroethylene	µg/kg		< 747	0.00 - 747	Not Reported						
5140	Toluene	µg/kg		2740	2060 - 3420	Not Reported				2830	266	
5150	1,2,3-Trichlorobenzene	µg/kg		< 1000	0.00 - 1000	Not Reported						
5155	1,2,4-Trichlorobenzene	µg/kg		7060	4240 - 9880	Not Reported				7440	1020	



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EPA ID:
ERA Customer Number:
Report Issued:
Study Dates:

WI01103
E518002
12/03/20
10/16/20 - 11/30/20

SOIL-112 Final Evaluation Report

TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D112-924) (Continued)

5160	1,1,1-Trichloroethane	µg/kg		< 600	0.00 - 600	Not Reported						
5165	1,1,2-Trichloroethane	µg/kg		8390	5450 - 11300	Not Reported				8460	723	
5170	Trichloroethylene	µg/kg		7770	5690 - 9940	Not Reported				8160	831	
5175	Trichlorofluoromethane	µg/kg		< 2000	0.00 - 2000	Not Reported						
5210	1,2,4-Trimethylbenzene	µg/kg		< 1000	0.00 - 1000	Not Reported						
5215	1,3,5-Trimethylbenzene	µg/kg		< 1000	0.00 - 1000	Not Reported						
5180	1,2,3-Trichloropropane (TCP)	µg/kg		3970	2180 - 5760	Not Reported				3720	532	
5225	Vinyl acetate	µg/kg		< 1000	0.00 - 1000	Not Reported						
5235	Vinyl chloride	µg/kg		< 2000	0.00 - 2000	Not Reported						
5240	m&p-Xylene	µg/kg		7190	5030 - 9350	Not Reported				7660	679	
5250	o-Xylene	µg/kg		4820	3370 - 6270	Not Reported				5060	479	
5260	Xylenes, total	µg/kg		12000	8400 - 15600	Not Reported				12700	1290	



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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D112-924)

4315	Acetone	µg/kg		5480	1380 - 8460	Not Reported				4610	940	
4320	Acetonitrile	µg/kg		< 4000	0.00 - 4000	Not Reported						
4325	Acrolein	µg/kg		< 1000	0.00 - 1000	Not Reported						
4375	Benzene	µg/kg		7860	5900 - 9820	Not Reported				8210	874	
4385	Bromobenzene	µg/kg		< 2000	0.00 - 2000	Not Reported						
4390	Bromochloromethane	µg/kg		< 1000	0.00 - 1000	Not Reported						
4395	Bromodichloromethane	µg/kg		6030	3920 - 8140	Not Reported				6170	556	
4400	Bromoform	µg/kg		7790	4670 - 10900	Not Reported				7780	889	
4950	Bromomethane	µg/kg		< 2000	0.00 - 2000	Not Reported						
4410	2-Butanone (MEK)	µg/kg		19000	5390 - 28600	Not Reported				16800	3190	
4435	n-Butylbenzene	µg/kg		< 1000	0.00 - 1000	Not Reported						
4440	sec-Butylbenzene	µg/kg		< 1000	0.00 - 1000	Not Reported						
4445	tert-Butylbenzene	µg/kg		< 1000	0.00 - 1000	Not Reported						
5000	tert-Butyl methyl ether (MTBE)	µg/kg		2490	1740 - 3240	Not Reported				2590	260	
4450	Carbon disulfide	µg/kg		< 1000	0.00 - 1000	Not Reported						
4455	Carbon tetrachloride	µg/kg		< 480	0.00 - 480	Not Reported						
4475	Chlorobenzene	µg/kg		6830	5120 - 8540	Not Reported				7070	553	
4575	Chlorodibromomethane	µg/kg		8080	5660 - 10500	Not Reported				8240	675	
4485	Chloroethane	µg/kg		< 2000	0.00 - 2000	Not Reported						
4500	2-Chloroethylvinylether	µg/kg		< 1000	0.00 - 1000	Not Reported						



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SOIL-112 Final Evaluation Report

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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D112-924) (Continued)

4505	Chloroform	µg/kg		2580	1810 - 3350	Not Reported				2550	176	
4960	Chloromethane	µg/kg		< 2000	0.00 - 2000	Not Reported						
4535	2-Chlorotoluene	µg/kg		< 1000	0.00 - 1000	Not Reported						
4540	4-Chlorotoluene	µg/kg		< 1000	0.00 - 1000	Not Reported						
4570	1,2-Dibromo-3-chloropropane (DBCP)	µg/kg		6660	4000 - 9320	Not Reported				6270	847	
4585	1,2-Dibromoethane (EDB)	µg/kg		3540	2120 - 4960	Not Reported				3570	373	
4595	Dibromomethane	µg/kg		7360	4420 - 10300	Not Reported				7370	676	
4610	1,2-Dichlorobenzene	µg/kg		8240	6180 - 10300	Not Reported				8320	1010	
4615	1,3-Dichlorobenzene	µg/kg		3120	2360 - 3930	Not Reported				3040	257	
4620	1,4-Dichlorobenzene	µg/kg		6620	5110 - 8050	Not Reported				6620	732	
4625	Dichlorodifluoromethane (Freon 12)	µg/kg		< 2000	0.00 - 2000	Not Reported						
4630	1,1-Dichloroethane	µg/kg		1070	696 - 1440	Not Reported				999	94.2	
4635	1,2-Dichloroethane	µg/kg		2090	1420 - 2800	Not Reported				2150	180	
4640	1,1-Dichloroethylene	µg/kg		4450	2220 - 6680	Not Reported				4810	800	
4645	cis-1,2-Dichloroethylene	µg/kg		5380	3230 - 7530	Not Reported				5280	609	
4700	trans-1,2-Dichloroethylene	µg/kg		3800	2280 - 5320	Not Reported				4060	447	
4655	1,2-Dichloropropane	µg/kg		9190	6430 - 11900	Not Reported				9540	823	
4660	1,3-Dichloropropane	µg/kg		< 1000	0.00 - 1000	Not Reported						
4665	2,2-Dichloropropane	µg/kg		< 1000	0.00 - 1000	Not Reported						
4670	1,1-Dichloropropene	µg/kg		< 1000	0.00 - 1000	Not Reported						



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SOIL-112 Final Evaluation Report

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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D112-924) (Continued)

4680	cis-1,3-Dichloropropylene	µg/kg		6480	3890 - 9070	Not Reported				6310	609	
4685	trans-1,3-Dichloropropylene	µg/kg		3260	1960 - 4560	Not Reported				3140	293	
4765	Ethylbenzene	µg/kg		2600	1820 - 3380	Not Reported				2680	294	
4835	Hexachlorobutadiene	µg/kg		7520	2370 - 13400	Not Reported				7870	880	
4840	Hexachloroethane	µg/kg	< 300	< 150	0.00 - 150	Acceptable	EPA 8260D 2018	11/3/2020				
4860	2-Hexanone	µg/kg		5590	2800 - 8390	Not Reported				5410	567	
4900	Isopropylbenzene	µg/kg		< 2000	0.00 - 2000	Not Reported						
4910	4-Isopropyltoluene	µg/kg		< 1000	0.00 - 1000	Not Reported						
4975	Methylene chloride	µg/kg		8380	5030 - 11700	Not Reported				8240	868	
4995	4-Methyl-2-pentanone (MIBK)	µg/kg		19400	9700 - 29100	Not Reported				19400	2750	
5005	Naphthalene	µg/kg		7800	5020 - 10400	Not Reported				7890	1220	
5015	Nitrobenzene	µg/kg		11600	3610 - 17800	Not Reported				10700	0.00	
5090	n-Propylbenzene	µg/kg		< 1000	0.00 - 1000	Not Reported						
5100	Styrene	µg/kg		5430	3260 - 7600	Not Reported				5790	680	
5105	1,1,1,2-Tetrachloroethane	µg/kg		7930	5900 - 9980	Not Reported				8230	641	
5110	1,1,2,2-Tetrachloroethane	µg/kg		6930	4310 - 9300	Not Reported				6680	1070	
5115	Tetrachloroethylene	µg/kg		< 747	0.00 - 747	Not Reported						
5140	Toluene	µg/kg		2740	2060 - 3420	Not Reported				2830	266	
5150	1,2,3-Trichlorobenzene	µg/kg		< 1000	0.00 - 1000	Not Reported						
5155	1,2,4-Trichlorobenzene	µg/kg		7060	4240 - 9880	Not Reported				7440	1020	



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SOIL-112 Final Evaluation Report

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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D112-924) (Continued)

5160	1,1,1-Trichloroethane	µg/kg		< 600	0.00 - 600	Not Reported						
5165	1,1,2-Trichloroethane	µg/kg		8390	5450 - 11300	Not Reported				8460	723	
5170	Trichloroethylene	µg/kg		7770	5690 - 9940	Not Reported				8160	831	
5175	Trichlorofluoromethane	µg/kg		< 2000	0.00 - 2000	Not Reported						
5210	1,2,4-Trimethylbenzene	µg/kg		< 1000	0.00 - 1000	Not Reported						
5215	1,3,5-Trimethylbenzene	µg/kg		< 1000	0.00 - 1000	Not Reported						
5180	1,2,3-Trichloropropane (TCP)	µg/kg		3970	2180 - 5760	Not Reported				3720	532	
5225	Vinyl acetate	µg/kg		< 1000	0.00 - 1000	Not Reported						
5235	Vinyl chloride	µg/kg		< 2000	0.00 - 2000	Not Reported						
5240	m&p-Xylene	µg/kg		7190	5030 - 9350	Not Reported				7660	679	
5250	o-Xylene	µg/kg		4820	3370 - 6270	Not Reported				5060	479	
5260	Xylenes, total	µg/kg		12000	8400 - 15600	Not Reported				12700	1290	



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CERTIFICATE OF EXCELLENCE

In recognition of the quality of your laboratory in proficiency testing for
SOIL-112

Pace Analytical Services - Green Bay

is issued this certificate of achievement by ERA. This laboratory has been recognized as a Laboratory of Excellence for achieving 100% acceptable data in this study which included 271 participating laboratories. This achievement is a demonstration of the superior quality of the laboratory in evaluation of the standards listed below.

Ready-to-Use VOAs in Soil



Matthew Seebeck
Quality Officer



A Waters Company

Kate Verbeten
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USA

SOIL-105



Final Report

Soil/Hazardous Waste Proficiency Testing

Soil Study

Open Date: 01/21/19

Close Date: 03/07/19

Report Issued Date: 03/11/19



A Waters Company

March 11, 2019

Kate Verbeten
Pace Analytical Services - Green Bay
1241 Bellevue St, Ste 9
Green Bay, WI 54302

Enclosed is your final report for ERA's SOIL-105 Proficiency Testing (PT) study. Your final report includes an evaluation of all results submitted by your laboratory to ERA.

Data Evaluation Protocols: All analytes in ERA's SOIL-105 Proficiency Testing study have been evaluated using the following tiered approach. If the analyte is listed in the current TNI Fields of Proficiency Testing (FoPT) tables, the evaluation was completed by comparing the reported result to the acceptance limits generated using the criteria contained in the current TNI FoPT tables. If the analyte is not included in the TNI FoPT tables, the reported result has been evaluated using the procedures outlined in ERA's Standard Operating Procedure for the Generation of Performance Acceptance Limits (SOP 730002268).

Corrective Action Help: As part of your accreditation(s), you may be required to identify the root cause of any "Not Acceptable" results, implement the necessary corrective actions, and then satisfy your PT requirements by participating in a Supplemental (QuiK™ Response) or future ERA PT study. ERA's technical staff is available to help your laboratory resolve any technical issues that may be impairing your PT performance and possibly affecting your routine data quality. Our laboratory and technical staff have many years of collective experience in performing the full range of environmental analyses. As part of our technical support, ERA offers QC samples that can be useful in helping you work through your technical issues.

At the request of the TNI Accreditation Council, we have included a Laboratory Exception Report that includes a list of all analytes reported with less than qualifiers when the assigned value was greater than "0." In addition, because we have received many requests from laboratories, this report also includes a list of all analytes with "Not Acceptable" evaluations.

Some states have elected not to convert to the 2009 TNI Standards at this time. If you have released your results to a state that has retained the 2003 NELAC Evaluation Criteria, your final report will include a section that evaluates the results according to the 2003 Standard in addition to the 2009 TNI Standards.

Thank you for your participation in ERA's SOIL-105 Proficiency Testing study. If you have any questions, please contact our Proficiency Testing Department at 1-800-372-0122.

Sincerely,

Matthew Seebeck
Quality Officer

attachments



A Waters Company

Report Recipient	Contact/Phone Number	Reporting Type	Evaluation Type
Florida	Vanessa Soto / 904-791-1599	All Analytes	2009 TNI
Illinois	John South / (217) 558-7142	All Analytes	2009 TNI
Louisiana	Paul Bergeron / 225-219-3247	All Analytes	2009 TNI
Minnesota	Lynn Boysen / 218-332-5164	All Analytes	2009 TNI
North Dakota	Cynthia Auen / 701-328-6172	All Analytes	2009 TNI
Wisconsin	Tom Trainor / (920) 412-5970	All Analytes	2009 TNI
CADENA, Inc (E518002)	Jim Tomalia / (313) 871-5800	All Analytes	2009 TNI
Ford Motor Company (E518002)	John H Phillips / 313-845-1648	All Analytes	2009 TNI



A Waters Company

SOIL-105 Definitions & Study Discussion

Study Dates: 01/21/19 - 03/07/19

Report Issued: 03/11/19

SOIL Study Definitions

The Reported Value is the value that the laboratory reported to ERA.

The ERA Assigned Values for the Organic Proficiency Testing Standards are equal to 100% of the parameter present in the standard as determined by gravimetric and/or volumetric measurements made during standard preparation as applicable. The ERA assigned values for the Inorganic Proficiency Testing Standards, with the exception of the TCLP Metals in Soil and Total Organic Carbon (TOC) in the Nutrients in Soil sample, are equal to the maximum amount of the parameter available in the standard by applicable EPA methodologies. The ERA assigned values for the TCLP metals and TOC are equal to the mean of the study data, after the removal of outliers. All parameters not added to the standard are given an Assigned Value of "< PTRL", per the guidelines contained in the 2009 TNI Standards. The assigned values are directly traceable to the commercially prepared starting materials used to manufacture the PT standards.

The Acceptance Limits are established per the criteria contained in the most current TNI Fields of Proficiency Testing (FoPT) tables, or ERA's SOP for the Generation of Performance Acceptance Limits™ as applicable.

The Performance Evaluation:

Acceptable = Reported Value falls within the Acceptance Limits.

Not Acceptable = Reported Value falls outside the Acceptance Limits.

No Evaluation = Reported Value cannot be evaluated.

Not Reported = No Value reported.

The Method Description is the method the laboratory reported to ERA.

SOIL Study Discussion

ERA's SOIL-105 Proficiency Testing (PT) study has been reviewed by ERA senior management and certified compliant with the requirements of the 2009 TNI PT Standard and the criteria contained in the most current TNI Fields of Proficiency Testing (FoPT) tables.

ERA's SOIL-105 study standards were examined for any anomalies. A full review of all homogeneity, stability and accuracy verification data was completed. All analytical verification data for all analytes in the standards met the acceptance criteria contained in the 2009 TNI PT Standard and the criteria contained in the most current TNI FoPT tables.

The data submitted by participating laboratories was also examined for study anomalies. There were no anomalies observed during the statistical review of the data.

ERA's SOIL-105 Proficiency Testing study reports shall not be reproduced except in its entirety and not without the permission of the participating laboratory. The report must not be used by the participating laboratories to claim product endorsement any agency of the U. S. government.

The data contained herein are confidential and intended for your use only.

If you have any questions or concerns regarding your assessment in ERA's SOIL Proficiency Testing program, please contact our Proficiency Testing Department at 1-800-372-0122.





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SOIL-105 Laboratory Exception Report

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2009 TNI Evaluation Checks

There are no values reported with < where the assigned value was greater than 0.

2009 TNI Not Acceptable Evaluations

TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description
SOIL Anions in Soil (cat# 873, lot# D105-543)							
1730	Fluoride	mg/kg	18.5	197	19.7 - 217	Not Acceptable	EPA 300.0 2.1 1993
1730	Fluoride	mg/kg	18.5	197	19.7 - 217	Not Acceptable	EPA 9056 1994
1730	Fluoride	mg/kg	18.5	197	19.7 - 217	Not Acceptable	EPA 9056A 2007



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) are included in ERA's A2LA accreditation. Lab Code: 1539-01
16341 Table Mountain Pkwy • Golden, CO 80403 • 800.372.0122 • 303.431.8454 • fax 303.421.0159 • www.eraqc.com

Study # : SOIL-105





Final Report Results For Laboratory Pace Analytical Services - Green Bay





2009 TNI Evaluation Report

Study: **SOIL-105**

ERA Customer Number: **E518002**

Laboratory Name: **Pace Analytical Services
- Green Bay**

Inorganic Results





A Waters Company

SOIL-105 2009 TNI Evaluation Final Complete Report

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01/21/19 - 03/07/19

TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
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SOIL Metals in Soil (cat# 620, lot# D105-540)

1000	Aluminum	mg/kg		10100	4470 - 13100	Not Reported				8800	1880	
1005	Antimony	mg/kg		282	28.2 - 366	Not Reported				147	79.5	
1010	Arsenic	mg/kg		155	100 - 186	Not Reported				143	14.2	
1015	Barium	mg/kg		439	311 - 519	Not Reported				415	35.2	
1020	Beryllium	mg/kg		192	134 - 224	Not Reported				179	16.1	
1025	Boron	mg/kg		216	96.1 - 238	Not Reported				160	18.3	
1030	Cadmium	mg/kg		61.5	42.2 - 70.3	Not Reported				56.2	4.48	
1035	Calcium	mg/kg		5190	3610 - 6310	Not Reported				4960	465	
1040	Chromium	mg/kg		104	70.5 - 131	Not Reported				101	10.9	
1050	Cobalt	mg/kg		196	141 - 236	Not Reported				189	13.8	
1055	Copper	mg/kg		65.0	47.3 - 78.9	Not Reported				63.1	6.50	
1070	Iron	mg/kg		15000	6000 - 25400	Not Reported				15700	4130	
1075	Lead	mg/kg		126	89.3 - 160	Not Reported				125	11.9	
1085	Magnesium	mg/kg		2570	1520 - 3310	Not Reported				2410	312	
1090	Manganese	mg/kg		387	290 - 474	Not Reported				382	34.2	
1095	Mercury	mg/kg	8.75	7.76	4.57 - 10.7	Acceptable	EPA 7471A 1 1994	1/29/2019	0.942	7.61	1.21	AJT
1100	Molybdenum	mg/kg		120	75.5 - 139	Not Reported				107	9.41	
1105	Nickel	mg/kg		117	75.7 - 141	Not Reported				108	8.29	
1125	Potassium	mg/kg		2420	1260 - 2960	Not Reported				2110	369	
1140	Selenium	mg/kg		84.6	49.2 - 107	Not Reported				77.9	8.24	

All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) are included in ERA's A2LA accreditation. Lab Code: 1539-01

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Study # : SOIL-105





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SOIL-105 2009 TNI Evaluation Final Complete Report

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TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
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SOIL Metals in Soil (cat# 620, lot# D105-540) (Continued)

1150	Silver	mg/kg		34.6	23.6 - 45.1	Not Reported				34.3	3.75	
1155	Sodium	mg/kg		161	54.3 - 235	Not Reported				145	30.6	
1160	Strontium	mg/kg		104	74.8 - 133	Not Reported				104	10.6	
1165	Thallium	mg/kg		123	77.1 - 149	Not Reported				113	8.77	
1175	Tin	mg/kg		118	61.2 - 152	Not Reported				107	12.3	
1180	Titanium	mg/kg		512	0.00 - 854	Not Reported				421	144	
3055	Uranium	mg/kg		103	71.9 - 135	Not Reported				104	10.5	
1185	Vanadium	mg/kg		87.3	54.2 - 113	Not Reported				83.7	12.3	
1190	Zinc	mg/kg		251	168 - 312	Not Reported				240	23.1	

All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) are included in ERA's A2LA accreditation. Lab Code: 1539-01

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SOIL Metals in Soil (cat# 620, lot# D105-540)

1000	Aluminum	mg/kg		10100	4470 - 13100	Not Reported				8800	1880	
1005	Antimony	mg/kg		282	28.2 - 366	Not Reported				147	79.5	
1010	Arsenic	mg/kg		155	100 - 186	Not Reported				143	14.2	
1015	Barium	mg/kg		439	311 - 519	Not Reported				415	35.2	
1020	Beryllium	mg/kg		192	134 - 224	Not Reported				179	16.1	
1025	Boron	mg/kg		216	96.1 - 238	Not Reported				160	18.3	
1030	Cadmium	mg/kg		61.5	42.2 - 70.3	Not Reported				56.2	4.48	
1035	Calcium	mg/kg		5190	3610 - 6310	Not Reported				4960	465	
1040	Chromium	mg/kg		104	70.5 - 131	Not Reported				101	10.9	
1050	Cobalt	mg/kg		196	141 - 236	Not Reported				189	13.8	
1055	Copper	mg/kg		65.0	47.3 - 78.9	Not Reported				63.1	6.50	
1070	Iron	mg/kg		15000	6000 - 25400	Not Reported				15700	4130	
1075	Lead	mg/kg		126	89.3 - 160	Not Reported				125	11.9	
1085	Magnesium	mg/kg		2570	1520 - 3310	Not Reported				2410	312	
1090	Manganese	mg/kg		387	290 - 474	Not Reported				382	34.2	
1095	Mercury	mg/kg	9.76	7.76	4.57 - 10.7	Acceptable	EPA 7473 2007	2/14/2019	1.78	7.61	1.21	AJT
1100	Molybdenum	mg/kg		120	75.5 - 139	Not Reported				107	9.41	
1105	Nickel	mg/kg		117	75.7 - 141	Not Reported				108	8.29	
1125	Potassium	mg/kg		2420	1260 - 2960	Not Reported				2110	369	
1140	Selenium	mg/kg		84.6	49.2 - 107	Not Reported				77.9	8.24	



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) are included in ERA's A2LA accreditation. Lab Code: 1539-01

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SOIL Metals in Soil (cat# 620, lot# D105-540) (Continued)

1150	Silver	mg/kg		34.6	23.6 - 45.1	Not Reported				34.3	3.75	
1155	Sodium	mg/kg		161	54.3 - 235	Not Reported				145	30.6	
1160	Strontium	mg/kg		104	74.8 - 133	Not Reported				104	10.6	
1165	Thallium	mg/kg		123	77.1 - 149	Not Reported				113	8.77	
1175	Tin	mg/kg		118	61.2 - 152	Not Reported				107	12.3	
1180	Titanium	mg/kg		512	0.00 - 854	Not Reported				421	144	
3055	Uranium	mg/kg		103	71.9 - 135	Not Reported				104	10.5	
1185	Vanadium	mg/kg		87.3	54.2 - 113	Not Reported				83.7	12.3	
1190	Zinc	mg/kg		251	168 - 312	Not Reported				240	23.1	

All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) are included in ERA's A2LA accreditation. Lab Code: 1539-01

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SOIL Metals in Soil (cat# 620, lot# D105-540)

1000	Aluminum	mg/kg	10300	10100	4470 - 13100	Acceptable	EPA 6020	2/1/2019	0.798	8800	1880	KXS
1005	Antimony	mg/kg	225	282	28.2 - 366	Acceptable	EPA 6020	2/1/2019	0.976	147	79.5	KXS
1010	Arsenic	mg/kg	177	155	100 - 186	Acceptable	EPA 6020	2/1/2019	2.37	143	14.2	KXS
1015	Barium	mg/kg	502	439	311 - 519	Acceptable	EPA 6020	2/1/2019	2.47	415	35.2	KXS
1020	Beryllium	mg/kg		192	134 - 224	Not Reported				179	16.1	
1025	Boron	mg/kg		216	96.1 - 238	Not Reported				160	18.3	
1030	Cadmium	mg/kg	63.9	61.5	42.2 - 70.3	Acceptable	EPA 6020	2/1/2019	1.71	56.2	4.48	KXS
1035	Calcium	mg/kg	5680	5190	3610 - 6310	Acceptable	EPA 6020	2/1/2019	1.54	4960	465	KXS
1040	Chromium	mg/kg	113	104	70.5 - 131	Acceptable	EPA 6020	2/1/2019	1.13	101	10.9	KXS
1050	Cobalt	mg/kg	209	196	141 - 236	Acceptable	EPA 6020	2/1/2019	1.48	189	13.8	KXS
1055	Copper	mg/kg	73.2	65.0	47.3 - 78.9	Acceptable	EPA 6020	2/1/2019	1.55	63.1	6.50	KXS
1070	Iron	mg/kg	12900	15000	6000 - 25400	Acceptable	EPA 6020	2/1/2019	-0.674	15700	4130	KXS
1075	Lead	mg/kg	145	126	89.3 - 160	Acceptable	EPA 6020	2/1/2019	1.71	125	11.9	KXS
1085	Magnesium	mg/kg	2770	2570	1520 - 3310	Acceptable	EPA 6020	2/1/2019	1.14	2410	312	KXS
1090	Manganese	mg/kg	427	387	290 - 474	Acceptable	EPA 6020	2/1/2019	1.31	382	34.2	KXS
1095	Mercury	mg/kg		7.76	4.57 - 10.7	Not Reported				7.61	1.21	
1100	Molybdenum	mg/kg	127	120	75.5 - 139	Acceptable	EPA 6020	2/1/2019	2.10	107	9.41	KXS
1105	Nickel	mg/kg	122	117	75.7 - 141	Acceptable	EPA 6020	2/1/2019	1.66	108	8.29	KXS
1125	Potassium	mg/kg		2420	1260 - 2960	Not Reported				2110	369	
1140	Selenium	mg/kg	105	84.6	49.2 - 107	Acceptable	EPA 6020	2/1/2019	3.29	77.9	8.24	KXS



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) are included in ERA's A2LA accreditation. Lab Code: 1539-01

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SOIL Metals in Soil (cat# 620, lot# D105-540) (Continued)

1150	Silver	mg/kg	42.6	34.6	23.6 - 45.1	Acceptable	EPA 6020	2/1/2019	2.20	34.3	3.75	KXS
1155	Sodium	mg/kg	149	161	54.3 - 235	Acceptable	EPA 6020	2/1/2019	0.143	145	30.6	KXS
1160	Strontium	mg/kg	113	104	74.8 - 133	Acceptable	EPA 6020	2/1/2019	0.854	104	10.6	KXS
1165	Thallium	mg/kg	131	123	77.1 - 149	Acceptable	EPA 6020	2/1/2019	2.07	113	8.77	KXS
1175	Tin	mg/kg	134	118	61.2 - 152	Acceptable	EPA 6020	2/1/2019	2.23	107	12.3	KXS
1180	Titanium	mg/kg	513	512	0.00 - 854	Acceptable	EPA 6020	2/1/2019	0.638	421	144	KXS
3055	Uranium	mg/kg		103	71.9 - 135	Not Reported				104	10.5	
3055	Uranium	mg/kg	118	103	71.9 - 135	Acceptable	EPA 6020	2/1/2019	1.37	104	10.5	KXS
1185	Vanadium	mg/kg	90	87.3	54.2 - 113	Acceptable	EPA 6020	2/1/2019	0.511	83.7	12.3	KXS
1190	Zinc	mg/kg	278	251	168 - 312	Acceptable	EPA 6020	2/1/2019	1.66	240	23.1	KXS





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SOIL Metals in Soil (cat# 620, lot# D105-540)

1000	Aluminum	mg/kg		10100	4470 - 13100	Not Reported				8800	1880	
1005	Antimony	mg/kg		282	28.2 - 366	Not Reported				147	79.5	
1010	Arsenic	mg/kg		155	100 - 186	Not Reported				143	14.2	
1015	Barium	mg/kg		439	311 - 519	Not Reported				415	35.2	
1020	Beryllium	mg/kg		192	134 - 224	Not Reported				179	16.1	
1025	Boron	mg/kg		216	96.1 - 238	Not Reported				160	18.3	
1030	Cadmium	mg/kg		61.5	42.2 - 70.3	Not Reported				56.2	4.48	
1035	Calcium	mg/kg		5190	3610 - 6310	Not Reported				4960	465	
1040	Chromium	mg/kg		104	70.5 - 131	Not Reported				101	10.9	
1050	Cobalt	mg/kg		196	141 - 236	Not Reported				189	13.8	
1055	Copper	mg/kg		65.0	47.3 - 78.9	Not Reported				63.1	6.50	
1070	Iron	mg/kg		15000	6000 - 25400	Not Reported				15700	4130	
1075	Lead	mg/kg		126	89.3 - 160	Not Reported				125	11.9	
1085	Magnesium	mg/kg		2570	1520 - 3310	Not Reported				2410	312	
1090	Manganese	mg/kg		387	290 - 474	Not Reported				382	34.2	
1095	Mercury	mg/kg	5.96	7.76	4.57 - 10.7	Acceptable	EPA 1631E 2002	3/5/2019	-1.36	7.61	1.21	LMS
1100	Molybdenum	mg/kg		120	75.5 - 139	Not Reported				107	9.41	
1105	Nickel	mg/kg		117	75.7 - 141	Not Reported				108	8.29	
1125	Potassium	mg/kg		2420	1260 - 2960	Not Reported				2110	369	
1140	Selenium	mg/kg		84.6	49.2 - 107	Not Reported				77.9	8.24	



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) are included in ERA's A2LA accreditation. Lab Code: 1539-01

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SOIL Metals in Soil (cat# 620, lot# D105-540) (Continued)

1150	Silver	mg/kg		34.6	23.6 - 45.1	Not Reported				34.3	3.75	
1155	Sodium	mg/kg		161	54.3 - 235	Not Reported				145	30.6	
1160	Strontium	mg/kg		104	74.8 - 133	Not Reported				104	10.6	
1165	Thallium	mg/kg		123	77.1 - 149	Not Reported				113	8.77	
1175	Tin	mg/kg		118	61.2 - 152	Not Reported				107	12.3	
1180	Titanium	mg/kg		512	0.00 - 854	Not Reported				421	144	
3055	Uranium	mg/kg		103	71.9 - 135	Not Reported				104	10.5	
1185	Vanadium	mg/kg		87.3	54.2 - 113	Not Reported				83.7	12.3	
1190	Zinc	mg/kg		251	168 - 312	Not Reported				240	23.1	

All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) are included in ERA's A2LA accreditation. Lab Code: 1539-01

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SOIL Metals in Soil (cat# 620, lot# D105-540)

1000	Aluminum	mg/kg	9740	10100	4470 - 13100	Acceptable	EPA 6010B 2 1996	2/1/2019	0.499	8800	1880	TXW
1005	Antimony	mg/kg	200	282	28.2 - 366	Acceptable	EPA 6010B 2 1996	2/1/2019	0.662	147	79.5	TXW
1010	Arsenic	mg/kg	151	155	100 - 186	Acceptable	EPA 6010B 2 1996	2/1/2019	0.536	143	14.2	TXW
1015	Barium	mg/kg	446	439	311 - 519	Acceptable	EPA 6010B 2 1996	2/1/2019	0.876	415	35.2	TXW
1020	Beryllium	mg/kg	189	192	134 - 224	Acceptable	EPA 6010B 2 1996	2/1/2019	0.602	179	16.1	TXW
1025	Boron	mg/kg	172	216	96.1 - 238	Acceptable	EPA 6010B 2 1996	2/1/2019	0.646	160	18.3	TXW
1030	Cadmium	mg/kg	57.7	61.5	42.2 - 70.3	Acceptable	EPA 6010B 2 1996	2/1/2019	0.325	56.2	4.48	TXW
1035	Calcium	mg/kg	5320	5190	3610 - 6310	Acceptable	EPA 6010B 2 1996	2/1/2019	0.771	4960	465	TXW
1040	Chromium	mg/kg	106	104	70.5 - 131	Acceptable	EPA 6010B 2 1996	2/1/2019	0.487	101	10.9	TXW
1050	Cobalt	mg/kg	192	196	141 - 236	Acceptable	EPA 6010B 2 1996	2/1/2019	0.252	189	13.8	TXW
1055	Copper	mg/kg	71.9	65.0	47.3 - 78.9	Acceptable	EPA 6010B 2 1996	2/1/2019	1.35	63.1	6.50	TXW
1070	Iron	mg/kg	13600	15000	6000 - 25400	Acceptable	EPA 6010B 2 1996	2/1/2019	-0.505	15700	4130	TXW
1075	Lead	mg/kg	128	126	89.3 - 160	Acceptable	EPA 6010B 2 1996	2/1/2019	0.277	125	11.9	TXW
1085	Magnesium	mg/kg	2600	2570	1520 - 3310	Acceptable	EPA 6010B 2 1996	2/1/2019	0.596	2410	312	TXW
1090	Manganese	mg/kg	398	387	290 - 474	Acceptable	EPA 6010B 2 1996	2/1/2019	0.465	382	34.2	TXW
1095	Mercury	mg/kg		7.76	4.57 - 10.7	Not Reported				7.61	1.21	
1100	Molybdenum	mg/kg	114	120	75.5 - 139	Acceptable	EPA 6010B 2 1996	2/1/2019	0.720	107	9.41	TXW
1105	Nickel	mg/kg	110	117	75.7 - 141	Acceptable	EPA 6010B 2 1996	2/1/2019	0.217	108	8.29	TXW
1125	Potassium	mg/kg	2250	2420	1260 - 2960	Acceptable	EPA 6010B 2 1996	2/1/2019	0.380	2110	369	TXW
1140	Selenium	mg/kg	84.3	84.6	49.2 - 107	Acceptable	EPA 6010B 2 1996	2/1/2019	0.776	77.9	8.24	TXW



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) are included in ERA's A2LA accreditation. Lab Code: 1539-01

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SOIL Metals in Soil (cat# 620, lot# D105-540) (Continued)

1150	Silver	mg/kg	41.1	34.6	23.6 - 45.1	Acceptable	EPA 6010B 2 1996	2/1/2019	1.80	34.3	3.75	TXW
1155	Sodium	mg/kg	144	161	54.3 - 235	Acceptable	EPA 6010B 2 1996	2/1/2019	-0.0199	145	30.6	TXW
1160	Strontium	mg/kg	106	104	74.8 - 133	Acceptable	EPA 6010B 2 1996	2/1/2019	0.196	104	10.6	TXW
1165	Thallium	mg/kg	116	123	77.1 - 149	Acceptable	EPA 6010B 2 1996	2/1/2019	0.358	113	8.77	TXW
1175	Tin	mg/kg	114	118	61.2 - 152	Acceptable	EPA 6010B 2 1996	2/1/2019	0.599	107	12.3	TXW
1180	Titanium	mg/kg	494	512	0.00 - 854	Acceptable	EPA 6010B 2 1996	2/1/2019	0.506	421	144	TXW
3055	Uranium	mg/kg		103	71.9 - 135	Not Reported				104	10.5	
1185	Vanadium	mg/kg	86.8	87.3	54.2 - 113	Acceptable	EPA 6010B 2 1996	2/1/2019	0.251	83.7	12.3	TXW
1190	Zinc	mg/kg	250	251	168 - 312	Acceptable	EPA 6010B 2 1996	2/1/2019	0.444	240	23.1	TXW

All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) are included in ERA's A2LA accreditation. Lab Code: 1539-01

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Study # : SOIL-105





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SOIL-105 2009 TNI Evaluation Final Complete Report

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Study Dates:

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01/21/19 - 03/07/19

TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
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SOIL Metals in Soil (cat# 620, lot# D105-540)

1000	Aluminum	mg/kg	10300	10100	4470 - 13100	Acceptable	EPA 6020A 1 2007	2/1/2019	0.798	8800	1880	KXS
1005	Antimony	mg/kg	225	282	28.2 - 366	Acceptable	EPA 6020A 1 2007	2/1/2019	0.976	147	79.5	KXS
1010	Arsenic	mg/kg	177	155	100 - 186	Acceptable	EPA 6020A 1 2007	2/1/2019	2.37	143	14.2	KXS
1015	Barium	mg/kg	502	439	311 - 519	Acceptable	EPA 6020A 1 2007	2/1/2019	2.47	415	35.2	KXS
1020	Beryllium	mg/kg		192	134 - 224	Not Reported				179	16.1	
1025	Boron	mg/kg		216	96.1 - 238	Not Reported				160	18.3	
1030	Cadmium	mg/kg	63.9	61.5	42.2 - 70.3	Acceptable	EPA 6020A 1 2007	2/1/2019	1.71	56.2	4.48	KXS
1035	Calcium	mg/kg	5680	5190	3610 - 6310	Acceptable	EPA 6020A 1 2007	2/1/2019	1.54	4960	465	KXS
1040	Chromium	mg/kg	113	104	70.5 - 131	Acceptable	EPA 6020A 1 2007	2/1/2019	1.13	101	10.9	KXS
1050	Cobalt	mg/kg	209	196	141 - 236	Acceptable	EPA 6020A 1 2007	2/1/2019	1.48	189	13.8	KXS
1055	Copper	mg/kg	73.2	65.0	47.3 - 78.9	Acceptable	EPA 6020A 1 2007	2/1/2019	1.55	63.1	6.50	KXS
1070	Iron	mg/kg	12900	15000	6000 - 25400	Acceptable	EPA 6020A 1 2007	2/1/2019	-0.674	15700	4130	KXS
1075	Lead	mg/kg	145	126	89.3 - 160	Acceptable	EPA 6020A 1 2007	2/1/2019	1.71	125	11.9	KXS
1085	Magnesium	mg/kg	2770	2570	1520 - 3310	Acceptable	EPA 6020A 1 2007	2/1/2019	1.14	2410	312	KXS
1090	Manganese	mg/kg	427	387	290 - 474	Acceptable	EPA 6020A 1 2007	2/1/2019	1.31	382	34.2	KXS
1095	Mercury	mg/kg		7.76	4.57 - 10.7	Not Reported				7.61	1.21	
1100	Molybdenum	mg/kg	127	120	75.5 - 139	Acceptable	EPA 6020A 1 2007	2/1/2019	2.10	107	9.41	KXS
1105	Nickel	mg/kg	122	117	75.7 - 141	Acceptable	EPA 6020A 1 2007	2/1/2019	1.66	108	8.29	KXS
1125	Potassium	mg/kg		2420	1260 - 2960	Not Reported				2110	369	
1140	Selenium	mg/kg	105	84.6	49.2 - 107	Acceptable	EPA 6020A 1 2007	2/1/2019	3.29	77.9	8.24	KXS



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) are included in ERA's A2LA accreditation. Lab Code: 1539-01

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SOIL Metals in Soil (cat# 620, lot# D105-540) (Continued)

1150	Silver	mg/kg	42.6	34.6	23.6 - 45.1	Acceptable	EPA 6020A 1 2007	2/1/2019	2.20	34.3	3.75	KXS
1155	Sodium	mg/kg	149	161	54.3 - 235	Acceptable	EPA 6020A 1 2007	2/1/2019	0.143	145	30.6	KXS
1160	Strontium	mg/kg	113	104	74.8 - 133	Acceptable	EPA 6020A 1 2007	2/1/2019	0.854	104	10.6	KXS
1165	Thallium	mg/kg	131	123	77.1 - 149	Acceptable	EPA 6020A 1 2007	2/1/2019	2.07	113	8.77	KXS
1175	Tin	mg/kg	134	118	61.2 - 152	Acceptable	EPA 6020A 1 2007	2/1/2019	2.23	107	12.3	KXS
1180	Titanium	mg/kg	513	512	0.00 - 854	Acceptable	EPA 6020A 1 2007	2/1/2019	0.638	421	144	KXS
3055	Uranium	mg/kg		103	71.9 - 135	Not Reported				104	10.5	
3055	Uranium	mg/kg	118	103	71.9 - 135	Acceptable	EPA 6020A 1 2007	2/1/2019	1.37	104	10.5	KXS
1185	Vanadium	mg/kg	90	87.3	54.2 - 113	Acceptable	EPA 6020A 1 2007	2/1/2019	0.511	83.7	12.3	KXS
1190	Zinc	mg/kg	278	251	168 - 312	Acceptable	EPA 6020A 1 2007	2/1/2019	1.66	240	23.1	KXS





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SOIL Metals in Soil (cat# 620, lot# D105-540)

1000	Aluminum	mg/kg		10100	4470 - 13100	Not Reported				8800	1880	
1005	Antimony	mg/kg		282	28.2 - 366	Not Reported				147	79.5	
1010	Arsenic	mg/kg		155	100 - 186	Not Reported				143	14.2	
1015	Barium	mg/kg		439	311 - 519	Not Reported				415	35.2	
1020	Beryllium	mg/kg		192	134 - 224	Not Reported				179	16.1	
1025	Boron	mg/kg		216	96.1 - 238	Not Reported				160	18.3	
1030	Cadmium	mg/kg		61.5	42.2 - 70.3	Not Reported				56.2	4.48	
1035	Calcium	mg/kg		5190	3610 - 6310	Not Reported				4960	465	
1040	Chromium	mg/kg		104	70.5 - 131	Not Reported				101	10.9	
1050	Cobalt	mg/kg		196	141 - 236	Not Reported				189	13.8	
1055	Copper	mg/kg		65.0	47.3 - 78.9	Not Reported				63.1	6.50	
1070	Iron	mg/kg		15000	6000 - 25400	Not Reported				15700	4130	
1075	Lead	mg/kg		126	89.3 - 160	Not Reported				125	11.9	
1085	Magnesium	mg/kg		2570	1520 - 3310	Not Reported				2410	312	
1090	Manganese	mg/kg		387	290 - 474	Not Reported				382	34.2	
1095	Mercury	mg/kg	8.75	7.76	4.57 - 10.7	Acceptable	EPA 7471B 1998	1/29/2019	0.942	7.61	1.21	AJT
1100	Molybdenum	mg/kg		120	75.5 - 139	Not Reported				107	9.41	
1105	Nickel	mg/kg		117	75.7 - 141	Not Reported				108	8.29	
1125	Potassium	mg/kg		2420	1260 - 2960	Not Reported				2110	369	
1140	Selenium	mg/kg		84.6	49.2 - 107	Not Reported				77.9	8.24	



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) are included in ERA's A2LA accreditation. Lab Code: 1539-01

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SOIL Metals in Soil (cat# 620, lot# D105-540) (Continued)

1150	Silver	mg/kg		34.6	23.6 - 45.1	Not Reported				34.3	3.75	
1155	Sodium	mg/kg		161	54.3 - 235	Not Reported				145	30.6	
1160	Strontium	mg/kg		104	74.8 - 133	Not Reported				104	10.6	
1165	Thallium	mg/kg		123	77.1 - 149	Not Reported				113	8.77	
1175	Tin	mg/kg		118	61.2 - 152	Not Reported				107	12.3	
1180	Titanium	mg/kg		512	0.00 - 854	Not Reported				421	144	
3055	Uranium	mg/kg		103	71.9 - 135	Not Reported				104	10.5	
1185	Vanadium	mg/kg		87.3	54.2 - 113	Not Reported				83.7	12.3	
1190	Zinc	mg/kg		251	168 - 312	Not Reported				240	23.1	

All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) are included in ERA's A2LA accreditation. Lab Code: 1539-01

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SOIL Metals in Soil (cat# 620, lot# D105-540)

1000	Aluminum	mg/kg	9740	10100	4470 - 13100	Acceptable	EPA 6010C 2000	2/1/2019	0.499	8800	1880	TXW
1005	Antimony	mg/kg	200	282	28.2 - 366	Acceptable	EPA 6010C 2000	2/1/2019	0.662	147	79.5	TXW
1010	Arsenic	mg/kg	151	155	100 - 186	Acceptable	EPA 6010C 2000	2/1/2019	0.536	143	14.2	TXW
1015	Barium	mg/kg	446	439	311 - 519	Acceptable	EPA 6010C 2000	2/1/2019	0.876	415	35.2	TXW
1020	Beryllium	mg/kg	189	192	134 - 224	Acceptable	EPA 6010C 2000	2/1/2019	0.602	179	16.1	TXW
1025	Boron	mg/kg	172	216	96.1 - 238	Acceptable	EPA 6010C 2000	2/1/2019	0.646	160	18.3	TXW
1030	Cadmium	mg/kg	57.7	61.5	42.2 - 70.3	Acceptable	EPA 6010C 2000	2/1/2019	0.325	56.2	4.48	TXW
1035	Calcium	mg/kg	5320	5190	3610 - 6310	Acceptable	EPA 6010C 2000	2/1/2019	0.771	4960	465	TXW
1040	Chromium	mg/kg	106	104	70.5 - 131	Acceptable	EPA 6010C 2000	2/1/2019	0.487	101	10.9	TXW
1050	Cobalt	mg/kg	192	196	141 - 236	Acceptable	EPA 6010C 2000	2/1/2019	0.252	189	13.8	TXW
1055	Copper	mg/kg	71.9	65.0	47.3 - 78.9	Acceptable	EPA 6010C 2000	2/1/2019	1.35	63.1	6.50	TXW
1070	Iron	mg/kg	13600	15000	6000 - 25400	Acceptable	EPA 6010C 2000	2/1/2019	-0.505	15700	4130	TXW
1075	Lead	mg/kg	128	126	89.3 - 160	Acceptable	EPA 6010C 2000	2/1/2019	0.277	125	11.9	TXW
1085	Magnesium	mg/kg	2600	2570	1520 - 3310	Acceptable	EPA 6010C 2000	2/1/2019	0.596	2410	312	TXW
1090	Manganese	mg/kg	398	387	290 - 474	Acceptable	EPA 6010C 2000	2/1/2019	0.465	382	34.2	TXW
1095	Mercury	mg/kg		7.76	4.57 - 10.7	Not Reported				7.61	1.21	
1100	Molybdenum	mg/kg	114	120	75.5 - 139	Acceptable	EPA 6010C 2000	2/1/2019	0.720	107	9.41	TXW
1105	Nickel	mg/kg	110	117	75.7 - 141	Acceptable	EPA 6010C 2000	2/1/2019	0.217	108	8.29	TXW
1125	Potassium	mg/kg	2250	2420	1260 - 2960	Acceptable	EPA 6010C 2000	2/1/2019	0.380	2110	369	TXW
1140	Selenium	mg/kg	84.3	84.6	49.2 - 107	Acceptable	EPA 6010C 2000	2/1/2019	0.776	77.9	8.24	TXW



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) are included in ERA's A2LA accreditation. Lab Code: 1539-01

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SOIL Metals in Soil (cat# 620, lot# D105-540) (Continued)

1150	Silver	mg/kg	41.1	34.6	23.6 - 45.1	Acceptable	EPA 6010C 2000	2/1/2019	1.80	34.3	3.75	TXW
1155	Sodium	mg/kg	144	161	54.3 - 235	Acceptable	EPA 6010C 2000	2/1/2019	-0.0199	145	30.6	TXW
1160	Strontium	mg/kg	106	104	74.8 - 133	Acceptable	EPA 6010C 2000	2/1/2019	0.196	104	10.6	TXW
1165	Thallium	mg/kg	116	123	77.1 - 149	Acceptable	EPA 6010C 2000	2/1/2019	0.358	113	8.77	TXW
1175	Tin	mg/kg	114	118	61.2 - 152	Acceptable	EPA 6010C 2000	2/1/2019	0.599	107	12.3	TXW
1180	Titanium	mg/kg	494	512	0.00 - 854	Acceptable	EPA 6010C 2000	2/1/2019	0.506	421	144	TXW
3055	Uranium	mg/kg		103	71.9 - 135	Not Reported				104	10.5	
1185	Vanadium	mg/kg	86.8	87.3	54.2 - 113	Acceptable	EPA 6010C 2000	2/1/2019	0.251	83.7	12.3	TXW
1190	Zinc	mg/kg	250	251	168 - 312	Acceptable	EPA 6010C 2000	2/1/2019	0.444	240	23.1	TXW





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SOIL Metals in Soil (cat# 620, lot# D105-540)

1000	Aluminum	mg/kg		10100	4470 - 13100	Not Reported				8800	1880	
1005	Antimony	mg/kg		282	28.2 - 366	Not Reported				147	79.5	
1010	Arsenic	mg/kg		155	100 - 186	Not Reported				143	14.2	
1015	Barium	mg/kg		439	311 - 519	Not Reported				415	35.2	
1020	Beryllium	mg/kg	208	192	134 - 224	Acceptable	EPA 6020	2/4/2019	1.78	179	16.1	KXS
1025	Boron	mg/kg	180	216	96.1 - 238	Acceptable	EPA 6020	2/4/2019	1.08	160	18.3	KXS
1030	Cadmium	mg/kg		61.5	42.2 - 70.3	Not Reported				56.2	4.48	
1035	Calcium	mg/kg		5190	3610 - 6310	Not Reported				4960	465	
1040	Chromium	mg/kg		104	70.5 - 131	Not Reported				101	10.9	
1050	Cobalt	mg/kg		196	141 - 236	Not Reported				189	13.8	
1055	Copper	mg/kg		65.0	47.3 - 78.9	Not Reported				63.1	6.50	
1070	Iron	mg/kg		15000	6000 - 25400	Not Reported				15700	4130	
1075	Lead	mg/kg		126	89.3 - 160	Not Reported				125	11.9	
1085	Magnesium	mg/kg		2570	1520 - 3310	Not Reported				2410	312	
1090	Manganese	mg/kg		387	290 - 474	Not Reported				382	34.2	
1095	Mercury	mg/kg		7.76	4.57 - 10.7	Not Reported				7.61	1.21	
1100	Molybdenum	mg/kg		120	75.5 - 139	Not Reported				107	9.41	
1105	Nickel	mg/kg		117	75.7 - 141	Not Reported				108	8.29	
1125	Potassium	mg/kg	2340	2420	1260 - 2960	Acceptable	EPA 6020	2/4/2019	0.624	2110	369	KXS
1140	Selenium	mg/kg		84.6	49.2 - 107	Not Reported				77.9	8.24	



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SOIL Metals in Soil (cat# 620, lot# D105-540) (Continued)

1150	Silver	mg/kg		34.6	23.6 - 45.1	Not Reported				34.3	3.75	
1155	Sodium	mg/kg		161	54.3 - 235	Not Reported				145	30.6	
1160	Strontium	mg/kg		104	74.8 - 133	Not Reported				104	10.6	
1165	Thallium	mg/kg		123	77.1 - 149	Not Reported				113	8.77	
1175	Tin	mg/kg		118	61.2 - 152	Not Reported				107	12.3	
1180	Titanium	mg/kg		512	0.00 - 854	Not Reported				421	144	
3055	Uranium	mg/kg		103	71.9 - 135	Not Reported				104	10.5	
1185	Vanadium	mg/kg		87.3	54.2 - 113	Not Reported				83.7	12.3	
1190	Zinc	mg/kg		251	168 - 312	Not Reported				240	23.1	





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SOIL Metals in Soil (cat# 620, lot# D105-540)

1000	Aluminum	mg/kg		10100	4470 - 13100	Not Reported				8800	1880	
1005	Antimony	mg/kg		282	28.2 - 366	Not Reported				147	79.5	
1010	Arsenic	mg/kg		155	100 - 186	Not Reported				143	14.2	
1015	Barium	mg/kg		439	311 - 519	Not Reported				415	35.2	
1020	Beryllium	mg/kg	208	192	134 - 224	Acceptable	EPA 6020A 1 2007	2/4/2019	1.78	179	16.1	KXS
1025	Boron	mg/kg	180	216	96.1 - 238	Acceptable	EPA 6020A 1 2007	2/4/2019	1.08	160	18.3	KXS
1030	Cadmium	mg/kg		61.5	42.2 - 70.3	Not Reported				56.2	4.48	
1035	Calcium	mg/kg		5190	3610 - 6310	Not Reported				4960	465	
1040	Chromium	mg/kg		104	70.5 - 131	Not Reported				101	10.9	
1050	Cobalt	mg/kg		196	141 - 236	Not Reported				189	13.8	
1055	Copper	mg/kg		65.0	47.3 - 78.9	Not Reported				63.1	6.50	
1070	Iron	mg/kg		15000	6000 - 25400	Not Reported				15700	4130	
1075	Lead	mg/kg		126	89.3 - 160	Not Reported				125	11.9	
1085	Magnesium	mg/kg		2570	1520 - 3310	Not Reported				2410	312	
1090	Manganese	mg/kg		387	290 - 474	Not Reported				382	34.2	
1095	Mercury	mg/kg		7.76	4.57 - 10.7	Not Reported				7.61	1.21	
1100	Molybdenum	mg/kg		120	75.5 - 139	Not Reported				107	9.41	
1105	Nickel	mg/kg		117	75.7 - 141	Not Reported				108	8.29	
1125	Potassium	mg/kg	2340	2420	1260 - 2960	Acceptable	EPA 6020A 1 2007	2/4/2019	0.624	2110	369	KXS
1140	Selenium	mg/kg		84.6	49.2 - 107	Not Reported				77.9	8.24	



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) are included in ERA's A2LA accreditation. Lab Code: 1539-01

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Study # : SOIL-105





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SOIL-105 2009 TNI Evaluation Final Complete Report

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SOIL Metals in Soil (cat# 620, lot# D105-540) (Continued)

1150	Silver	mg/kg		34.6	23.6 - 45.1	Not Reported				34.3	3.75	
1155	Sodium	mg/kg		161	54.3 - 235	Not Reported				145	30.6	
1160	Strontium	mg/kg		104	74.8 - 133	Not Reported				104	10.6	
1165	Thallium	mg/kg		123	77.1 - 149	Not Reported				113	8.77	
1175	Tin	mg/kg		118	61.2 - 152	Not Reported				107	12.3	
1180	Titanium	mg/kg		512	0.00 - 854	Not Reported				421	144	
3055	Uranium	mg/kg		103	71.9 - 135	Not Reported				104	10.5	
1185	Vanadium	mg/kg		87.3	54.2 - 113	Not Reported				83.7	12.3	
1190	Zinc	mg/kg		251	168 - 312	Not Reported				240	23.1	

All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) are included in ERA's A2LA accreditation. Lab Code: 1539-01

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SOIL Metals in Soil (cat# 620, lot# D105-540)

1000	Aluminum	mg/kg		10100	4470 - 13100	Not Reported				8800	1880	
1005	Antimony	mg/kg		282	28.2 - 366	Not Reported				147	79.5	
1010	Arsenic	mg/kg		155	100 - 186	Not Reported				143	14.2	
1015	Barium	mg/kg		439	311 - 519	Not Reported				415	35.2	
1020	Beryllium	mg/kg		192	134 - 224	Not Reported				179	16.1	
1025	Boron	mg/kg		216	96.1 - 238	Not Reported				160	18.3	
1030	Cadmium	mg/kg		61.5	42.2 - 70.3	Not Reported				56.2	4.48	
1035	Calcium	mg/kg		5190	3610 - 6310	Not Reported				4960	465	
1040	Chromium	mg/kg		104	70.5 - 131	Not Reported				101	10.9	
1050	Cobalt	mg/kg		196	141 - 236	Not Reported				189	13.8	
1055	Copper	mg/kg		65.0	47.3 - 78.9	Not Reported				63.1	6.50	
1070	Iron	mg/kg		15000	6000 - 25400	Not Reported				15700	4130	
1075	Lead	mg/kg		126	89.3 - 160	Not Reported				125	11.9	
1085	Magnesium	mg/kg		2570	1520 - 3310	Not Reported				2410	312	
1090	Manganese	mg/kg		387	290 - 474	Not Reported				382	34.2	
1095	Mercury	mg/kg	8.05	7.76	4.57 - 10.7	Acceptable	EPA 6020	2/7/2019	0.364	7.61	1.21	KXS
1100	Molybdenum	mg/kg		120	75.5 - 139	Not Reported				107	9.41	
1105	Nickel	mg/kg		117	75.7 - 141	Not Reported				108	8.29	
1125	Potassium	mg/kg		2420	1260 - 2960	Not Reported				2110	369	
1140	Selenium	mg/kg		84.6	49.2 - 107	Not Reported				77.9	8.24	



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SOIL Metals in Soil (cat# 620, lot# D105-540) (Continued)

1150	Silver	mg/kg		34.6	23.6 - 45.1	Not Reported				34.3	3.75	
1155	Sodium	mg/kg		161	54.3 - 235	Not Reported				145	30.6	
1160	Strontium	mg/kg		104	74.8 - 133	Not Reported				104	10.6	
1165	Thallium	mg/kg		123	77.1 - 149	Not Reported				113	8.77	
1175	Tin	mg/kg		118	61.2 - 152	Not Reported				107	12.3	
1180	Titanium	mg/kg		512	0.00 - 854	Not Reported				421	144	
3055	Uranium	mg/kg		103	71.9 - 135	Not Reported				104	10.5	
1185	Vanadium	mg/kg		87.3	54.2 - 113	Not Reported				83.7	12.3	
1190	Zinc	mg/kg		251	168 - 312	Not Reported				240	23.1	





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SOIL Metals in Soil (cat# 620, lot# D105-540)

1000	Aluminum	mg/kg		10100	4470 - 13100	Not Reported				8800	1880	
1005	Antimony	mg/kg		282	28.2 - 366	Not Reported				147	79.5	
1010	Arsenic	mg/kg		155	100 - 186	Not Reported				143	14.2	
1015	Barium	mg/kg		439	311 - 519	Not Reported				415	35.2	
1020	Beryllium	mg/kg		192	134 - 224	Not Reported				179	16.1	
1025	Boron	mg/kg		216	96.1 - 238	Not Reported				160	18.3	
1030	Cadmium	mg/kg		61.5	42.2 - 70.3	Not Reported				56.2	4.48	
1035	Calcium	mg/kg		5190	3610 - 6310	Not Reported				4960	465	
1040	Chromium	mg/kg		104	70.5 - 131	Not Reported				101	10.9	
1050	Cobalt	mg/kg		196	141 - 236	Not Reported				189	13.8	
1055	Copper	mg/kg		65.0	47.3 - 78.9	Not Reported				63.1	6.50	
1070	Iron	mg/kg		15000	6000 - 25400	Not Reported				15700	4130	
1075	Lead	mg/kg		126	89.3 - 160	Not Reported				125	11.9	
1085	Magnesium	mg/kg		2570	1520 - 3310	Not Reported				2410	312	
1090	Manganese	mg/kg		387	290 - 474	Not Reported				382	34.2	
1095	Mercury	mg/kg	8.05	7.76	4.57 - 10.7	Acceptable	EPA 6020A 1 2007	2/7/2019	0.364	7.61	1.21	KXS
1100	Molybdenum	mg/kg		120	75.5 - 139	Not Reported				107	9.41	
1105	Nickel	mg/kg		117	75.7 - 141	Not Reported				108	8.29	
1125	Potassium	mg/kg		2420	1260 - 2960	Not Reported				2110	369	
1140	Selenium	mg/kg		84.6	49.2 - 107	Not Reported				77.9	8.24	



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) are included in ERA's A2LA accreditation. Lab Code: 1539-01

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SOIL Metals in Soil (cat# 620, lot# D105-540) (Continued)

1150	Silver	mg/kg		34.6	23.6 - 45.1	Not Reported				34.3	3.75	
1155	Sodium	mg/kg		161	54.3 - 235	Not Reported				145	30.6	
1160	Strontium	mg/kg		104	74.8 - 133	Not Reported				104	10.6	
1165	Thallium	mg/kg		123	77.1 - 149	Not Reported				113	8.77	
1175	Tin	mg/kg		118	61.2 - 152	Not Reported				107	12.3	
1180	Titanium	mg/kg		512	0.00 - 854	Not Reported				421	144	
3055	Uranium	mg/kg		103	71.9 - 135	Not Reported				104	10.5	
1185	Vanadium	mg/kg		87.3	54.2 - 113	Not Reported				83.7	12.3	
1190	Zinc	mg/kg		251	168 - 312	Not Reported				240	23.1	

SOIL Anions in Soil (cat# 873, lot# D105-543)

1540	Bromide	mg/kg	87.4	87.8	60.9 - 106	Acceptable	EPA 300.0 2.1 1993	2/1/2019	0.517	83.3	7.97	HMB
1575	Chloride	mg/kg	717	691	483 - 880	Acceptable	EPA 300.0 2.1 1993	2/1/2019	0.805	682	43.9	HMB
1730	Fluoride	mg/kg	18.5	197	19.7 - 217	Not Acceptable	EPA 300.0 2.1 1993	2/1/2019	-1.27	32.4	10.9	HMB
1810	Nitrate as N	mg/kg	444	467	352 - 550	Acceptable	EPA 300.0 2.1 1993	2/1/2019	-0.258	451	26.3	HMB
1870	Phosphate as P	mg/kg		209	17.0 - 230	Not Reported				66.1	16.4	
2000	Sulfate	mg/kg	456	492	256 - 658	Acceptable	EPA 300.0 2.1 1993	2/1/2019	-0.0197	457	53.4	HMB





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SOIL Anions in Soil (cat# 873, lot# D105-543)

1540	Bromide	mg/kg	87.4	87.8	60.9 - 106	Acceptable	EPA 9056 1994	2/1/2019	0.517	83.3	7.97	HMB
1575	Chloride	mg/kg	717	691	483 - 880	Acceptable	EPA 9056 1994	2/1/2019	0.805	682	43.9	HMB
1730	Fluoride	mg/kg	18.5	197	19.7 - 217	Not Acceptable	EPA 9056 1994	2/1/2019	-1.27	32.4	10.9	HMB
1810	Nitrate as N	mg/kg	444	467	352 - 550	Acceptable	EPA 9056 1994	2/1/2019	-0.258	451	26.3	HMB
1870	Phosphate as P	mg/kg		209	17.0 - 230	Not Reported				66.1	16.4	
2000	Sulfate	mg/kg	456	492	256 - 658	Acceptable	EPA 9056 1994	2/1/2019	-0.0197	457	53.4	HMB

SOIL Anions in Soil (cat# 873, lot# D105-543)

1540	Bromide	mg/kg	87.4	87.8	60.9 - 106	Acceptable	EPA 9056A 2007	2/1/2019	0.517	83.3	7.97	HMB
1575	Chloride	mg/kg	717	691	483 - 880	Acceptable	EPA 9056A 2007	2/1/2019	0.805	682	43.9	HMB
1730	Fluoride	mg/kg	18.5	197	19.7 - 217	Not Acceptable	EPA 9056A 2007	2/1/2019	-1.27	32.4	10.9	HMB
1810	Nitrate as N	mg/kg	444	467	352 - 550	Acceptable	EPA 9056A 2007	2/1/2019	-0.258	451	26.3	HMB
1870	Phosphate as P	mg/kg		209	17.0 - 230	Not Reported				66.1	16.4	
2000	Sulfate	mg/kg	456	492	256 - 658	Acceptable	EPA 9056A 2007	2/1/2019	-0.0197	457	53.4	HMB

SOIL Cyanide in Soil (cat# 621, lot# D105-541)

1645	Cyanide, total	mg/kg	69.9	134	38.8 - 147	Acceptable	EPA 9012B 2004	1/30/2019	-0.798	91.9	27.6	DAW
1923	Reactive Cyanide	mg/kg		< 200	0.00 - 200	Not Reported				54.8	62.7	
1510	Amenable Cyanide	mg/kg		< 200	0.00 - 200	Not Reported				46.6	33.5	

SOIL Cyanide in Soil (cat# 621, lot# D105-541)

1645	Cyanide, total	mg/kg	69.9	134	38.8 - 147	Acceptable	EPA 9012 1986	1/30/2019	-0.798	91.9	27.6	DAW
1923	Reactive Cyanide	mg/kg		< 200	0.00 - 200	Not Reported				54.8	62.7	
1510	Amenable Cyanide	mg/kg		< 200	0.00 - 200	Not Reported				46.6	33.5	

All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) are included in ERA's A2LA accreditation. Lab Code: 1539-01

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SOIL Cyanide in Soil (cat# 621, lot# D105-541)

1645	Cyanide, total	mg/kg	69.9	134	38.8 - 147	Acceptable	EPA 9012A 1 1996	1/30/2019	-0.798	91.9	27.6	DAW
1923	Reactive Cyanide	mg/kg		< 200	0.00 - 200	Not Reported				54.8	62.7	
1510	Amenable Cyanide	mg/kg		< 200	0.00 - 200	Not Reported				46.6	33.5	

SOIL Nutrients in Soil (cat# 869, lot# D105-542)

1515	Ammonia as N	mg/kg	662	697	347 - 941	Acceptable	EPA 350.1	2/1/2019	0.246	644	73.8	TMK
1795	Total Kjeldahl Nitrogen	mg/kg	1160	1140	652 - 1770	Acceptable	EPA 351.2 2 1993	2/6/2019	-0.391	1210	125	TMK
2040	Total Organic Carbon (TOC)	mg/kg	3920	3560	1350 - 5770	Acceptable	EPA 9060 1986	2/11/2019	0.487	3560	736	TJJ
1910	Total Phosphorus	mg/kg	911	825	177 - 1410	Acceptable	EPA 365.4	1/29/2019	0.911	792	131	DAW

SOIL Nutrients in Soil (cat# 869, lot# D105-542)

1515	Ammonia as N	mg/kg		697	347 - 941	Not Reported				644	73.8	
1795	Total Kjeldahl Nitrogen	mg/kg		1140	652 - 1770	Not Reported				1210	125	
2040	Total Organic Carbon (TOC)	mg/kg		3560	1350 - 5770	Not Reported				3560	736	
1910	Total Phosphorus	mg/kg	896	825	177 - 1410	Acceptable	EPA 6020	2/1/2019	0.796	792	131	KXS

SOIL Nutrients in Soil (cat# 869, lot# D105-542)

1515	Ammonia as N	mg/kg		697	347 - 941	Not Reported				644	73.8	
1795	Total Kjeldahl Nitrogen	mg/kg		1140	652 - 1770	Not Reported				1210	125	
2040	Total Organic Carbon (TOC)	mg/kg	3920	3560	1350 - 5770	Acceptable	EPA 9060A 2004	2/11/2019	0.487	3560	736	TJJ
1910	Total Phosphorus	mg/kg		825	177 - 1410	Not Reported				792	131	



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SOIL Nutrients in Soil (cat# 869, lot# D105-542)

1515	Ammonia as N	mg/kg		697	347 - 941	Not Reported				644	73.8	
1795	Total Kjeldahl Nitrogen	mg/kg		1140	652 - 1770	Not Reported				1210	125	
2040	Total Organic Carbon (TOC)	mg/kg		3560	1350 - 5770	Not Reported				3560	736	
1910	Total Phosphorus	mg/kg	896	825	177 - 1410	Acceptable	EPA 6020A	2/1/2019	0.796	792	131	KXS

SOIL Corrosivity/pH in Soil (cat# 875, lot# D105-914)

1625	Corrosivity (pH)	S.U.	3.76	3.86	3.26 - 4.46	Acceptable	EPA 9045C 3 1995	1/28/2019	0.239	3.73	0.131	ALY
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SOIL Corrosivity/pH in Soil (cat# 875, lot# D105-914)

1625	Corrosivity (pH)	S.U.	3.76	3.86	3.26 - 4.46	Acceptable	EPA 9045D 2002	1/28/2019	0.239	3.73	0.131	ALY
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SOIL Ignitability/Flashpoint (cat# 874, lot# D105-979)

1780	Ignitability/Flashpoint	°F	146	145	128 - 162	Acceptable	EPA 1010A 2002	1/29/2019	0.300	144	5.91	DEY
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2009 TNI Evaluation Report

Study: **SOIL-105**

ERA Customer Number: **E518002**

Laboratory Name: **Pace Analytical Services
- Green Bay**

Organic Results





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SOIL Volatiles in Soil (cat# 623, lot# D105-721)

4315	Acetone	µg/kg		579	57.9 - 909	Not Reported				483	138	
4315	Acetone	µg/kg	558	579	57.9 - 909	Acceptable	EPA 8260B 2 1996	1/30/2019	0.543	483	138	HNW
4320	Acetonitrile	µg/kg		889	0.00 - 1790	Not Reported				461	103	
4325	Acrolein	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4325	Acrolein	µg/kg	< 83.8	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4375	Benzene	µg/kg		63.1	41.0 - 85.2	Not Reported				63.6	7.62	
4375	Benzene	µg/kg	82	63.1	41.0 - 85.2	Acceptable	EPA 8260B 2 1996	1/30/2019	2.42	63.6	7.62	HNW
4385	Bromobenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4385	Bromobenzene	µg/kg	< 2.6	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4390	Bromochloromethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4390	Bromochloromethane	µg/kg	< 3.5	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4395	Bromodichloromethane	µg/kg		24.1	14.5 - 33.7	Not Reported				24.1	2.95	
4395	Bromodichloromethane	µg/kg	26.4	24.1	14.5 - 33.7	Acceptable	EPA 8260B 2 1996	1/30/2019	0.794	24.1	2.95	HNW
4400	Bromoform	µg/kg		122	67.1 - 177	Not Reported				117	21.6	
4400	Bromoform	µg/kg	138	122	67.1 - 177	Acceptable	EPA 8260B 2 1996	1/30/2019	0.961	117	21.6	HNW
4950	Bromomethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4950	Bromomethane	µg/kg	< 6.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4410	2-Butanone (MEK)	µg/kg		455	151 - 699	Not Reported				432	73.7	
4410	2-Butanone (MEK)	µg/kg	471	455	151 - 699	Acceptable	EPA 8260B 2 1996	1/30/2019	0.534	432	73.7	HNW
4435	n-Butylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						



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Study # : SOIL-105





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SOIL-105 2009 TNI Evaluation Final Complete Report

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SOIL Volatiles in Soil (cat# 623, lot# D105-721) (Continued)

4435	n-Butylbenzene	µg/kg	< 4.3	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4440	sec-Butylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4440	sec-Butylbenzene	µg/kg	< 3.6	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4445	tert-Butylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4445	tert-Butylbenzene	µg/kg	< 3.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
5000	tert-Butyl methyl ether (MTBE)	µg/kg		< 12.0	0.00 - 12.0	Not Reported						
5000	tert-Butyl methyl ether (MTBE)	µg/kg	< 4.2	< 12.0	0.00 - 12.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4450	Carbon disulfide	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4450	Carbon disulfide	µg/kg	< 3.3	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4455	Carbon tetrachloride	µg/kg		132	66.0 - 198	Not Reported				131	19.4	
4455	Carbon tetrachloride	µg/kg	158	132	66.0 - 198	Acceptable	EPA 8260B 2 1996	1/30/2019	1.40	131	19.4	HNW
4475	Chlorobenzene	µg/kg		116	58.0 - 174	Not Reported				112	12.4	
4475	Chlorobenzene	µg/kg	124	116	58.0 - 174	Acceptable	EPA 8260B 2 1996	1/30/2019	0.956	112	12.4	HNW
4575	Chlorodibromomethane	µg/kg		< 12.0	0.00 - 12.0	Not Reported						
4575	Chlorodibromomethane	µg/kg	< 2.6	< 12.0	0.00 - 12.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4485	Chloroethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4485	Chloroethane	µg/kg	< 3.6	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4500	2-Chloroethylvinylether	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4500	2-Chloroethylvinylether	µg/kg	< 18.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4505	Chloroform	µg/kg		110	66.0 - 154	Not Reported				109	13.7	



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SOIL Volatiles in Soil (cat# 623, lot# D105-721) (Continued)

4505	Chloroform	µg/kg	139	110	66.0 - 154	Acceptable	EPA 8260B 2 1996	1/30/2019	2.21	109	13.7	HNW
4960	Chloromethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4960	Chloromethane	µg/kg	< 2.5	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4535	2-Chlorotoluene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4535	2-Chlorotoluene	µg/kg	< 3.2	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4540	4-Chlorotoluene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4540	4-Chlorotoluene	µg/kg	< 2.9	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4570	1,2-Dibromo-3-chloropropane (DBCP)	µg/kg		< 10.0	0.00 - 10.0	Not Reported						
4570	1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	< 6.0	< 10.0	0.00 - 10.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4585	1,2-Dibromoethane (EDB)	µg/kg		187	122 - 252	Not Reported				181	23.1	
4585	1,2-Dibromoethane (EDB)	µg/kg	218	187	122 - 252	Acceptable	EPA 8260B 2 1996	1/30/2019	1.59	181	23.1	HNW
4595	Dibromomethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4595	Dibromomethane	µg/kg	< 3.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4610	1,2-Dichlorobenzene	µg/kg		168	101 - 235	Not Reported				159	25.2	
4610	1,2-Dichlorobenzene	µg/kg	174	168	101 - 235	Acceptable	EPA 8260B 2 1996	1/30/2019	0.608	159	25.2	HNW
4615	1,3-Dichlorobenzene	µg/kg		38.0	22.8 - 53.2	Not Reported				36.5	4.44	
4615	1,3-Dichlorobenzene	µg/kg	36.1	38.0	22.8 - 53.2	Acceptable	EPA 8260B 2 1996	1/30/2019	-0.0796	36.5	4.44	HNW
4620	1,4-Dichlorobenzene	µg/kg		168	101 - 235	Not Reported				158	23.6	
4620	1,4-Dichlorobenzene	µg/kg	172	168	101 - 235	Acceptable	EPA 8260B 2 1996	1/30/2019	0.573	158	23.6	HNW
4625	Dichlorodifluoromethane (Freon 12)	µg/kg		< 20.0	0.00 - 20.0	Not Reported						



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SOIL Volatiles in Soil (cat# 623, lot# D105-721) (Continued)

4625	Dichlorodifluoromethane (Freon 12)	µg/kg	< 2.6	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4630	1,1-Dichloroethane	µg/kg		< 12.0	0.00 - 12.0	Not Reported						
4630	1,1-Dichloroethane	µg/kg	< 4.1	< 12.0	0.00 - 12.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4635	1,2-Dichloroethane	µg/kg		163	97.8 - 228	Not Reported				154	23.0	
4635	1,2-Dichloroethane	µg/kg	197	163	97.8 - 228	Acceptable	EPA 8260B 2 1996	1/30/2019	1.86	154	23.0	HNW
4640	1,1-Dichloroethylene	µg/kg		196	98.0 - 294	Not Reported				182	23.6	
4640	1,1-Dichloroethylene	µg/kg	217	196	98.0 - 294	Acceptable	EPA 8260B 2 1996	1/30/2019	1.49	182	23.6	HNW
4645	cis-1,2-Dichloroethylene	µg/kg		146	87.6 - 204	Not Reported				145	17.8	
4645	cis-1,2-Dichloroethylene	µg/kg	171	146	87.6 - 204	Acceptable	EPA 8260B 2 1996	1/30/2019	1.47	145	17.8	HNW
4700	trans-1,2-Dichloroethylene	µg/kg		35.4	21.2 - 49.6	Not Reported				36.5	5.01	
4700	trans-1,2-Dichloroethylene	µg/kg	42.6	35.4	21.2 - 49.6	Acceptable	EPA 8260B 2 1996	1/30/2019	1.22	36.5	5.01	HNW
4655	1,2-Dichloropropane	µg/kg		< 13.0	0.00 - 13.0	Not Reported						
4655	1,2-Dichloropropane	µg/kg	< 2.6	< 13.0	0.00 - 13.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4660	1,3-Dichloropropane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4660	1,3-Dichloropropane	µg/kg	< 2.2	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4665	2,2-Dichloropropane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4665	2,2-Dichloropropane	µg/kg	< 3.3	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4670	1,1-Dichloropropene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4670	1,1-Dichloropropene	µg/kg	< 3.2	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4680	cis-1,3-Dichloropropylene	µg/kg		< 12.0	0.00 - 12.0	Not Reported						



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SOIL Volatiles in Soil (cat# 623, lot# D105-721) (Continued)

4680	cis-1,3-Dichloropropylene	µg/kg	< 5.7	< 12.0	0.00 - 12.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4685	trans-1,3-Dichloropropylene	µg/kg		153	84.2 - 222	Not Reported				137	18.1	
4685	trans-1,3-Dichloropropylene	µg/kg	161	153	84.2 - 222	Acceptable	EPA 8260B 2 1996	1/30/2019	1.34	137	18.1	HNW
4765	Ethylbenzene	µg/kg		176	106 - 246	Not Reported				174	23.7	
4765	Ethylbenzene	µg/kg	211	176	106 - 246	Acceptable	EPA 8260B 2 1996	1/30/2019	1.55	174	23.7	HNW
4835	Hexachlorobutadiene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4835	Hexachlorobutadiene	µg/kg	< 4.0	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4840	Hexachloroethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4840	Hexachloroethane	µg/kg	< 3.1	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4860	2-Hexanone	µg/kg		242	121 - 363	Not Reported				236	33.2	
4860	2-Hexanone	µg/kg	294	242	121 - 363	Acceptable	EPA 8260B 2 1996	1/30/2019	1.75	236	33.2	HNW
4900	Isopropylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4900	Isopropylbenzene	µg/kg	< 2.9	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4910	4-Isopropyltoluene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
4910	4-Isopropyltoluene	µg/kg	< 3.8	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
4975	Methylene chloride	µg/kg		160	80.0 - 240	Not Reported				163	20.3	
4975	Methylene chloride	µg/kg	181	160	80.0 - 240	Acceptable	EPA 8260B 2 1996	1/30/2019	0.896	163	20.3	HNW
4995	4-Methyl-2-pentanone (MIBK)	µg/kg		349	174 - 524	Not Reported				351	39.0	
4995	4-Methyl-2-pentanone (MIBK)	µg/kg	361	349	174 - 524	Acceptable	EPA 8260B 2 1996	1/30/2019	0.258	351	39.0	HNW
5005	Naphthalene	µg/kg		189	94.5 - 284	Not Reported				165	38.3	



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SOIL Volatiles in Soil (cat# 623, lot# D105-721) (Continued)

5005	Naphthalene	µg/kg	220	189	94.5 - 284	Acceptable	EPA 8260B 2 1996	1/30/2019	1.42	165	38.3	HNW
5015	Nitrobenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5090	n-Propylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5090	n-Propylbenzene	µg/kg	< 3.5	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
5100	Styrene	µg/kg		191	124 - 258	Not Reported				182	18.1	
5100	Styrene	µg/kg	212	191	124 - 258	Acceptable	EPA 8260B 2 1996	1/30/2019	1.67	182	18.1	HNW
5105	1,1,1,2-Tetrachloroethane	µg/kg		139	83.4 - 195	Not Reported				137	15.2	
5105	1,1,1,2-Tetrachloroethane	µg/kg	152	139	83.4 - 195	Acceptable	EPA 8260B 2 1996	1/30/2019	0.961	137	15.2	HNW
5110	1,1,2,2-Tetrachloroethane	µg/kg		< 11.0	0.00 - 11.0	Not Reported						
5110	1,1,2,2-Tetrachloroethane	µg/kg	< 5.0	< 11.0	0.00 - 11.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
5115	Tetrachloroethylene	µg/kg		164	82.0 - 246	Not Reported				159	23.8	
5115	Tetrachloroethylene	µg/kg	181	164	82.0 - 246	Acceptable	EPA 8260B 2 1996	1/30/2019	0.915	159	23.8	HNW
5140	Toluene	µg/kg		105	68.2 - 142	Not Reported				104	14.1	
5140	Toluene	µg/kg	120	105	68.2 - 142	Acceptable	EPA 8260B 2 1996	1/30/2019	1.15	104	14.1	HNW
5150	1,2,3-Trichlorobenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5150	1,2,3-Trichlorobenzene	µg/kg	< 2.4	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
5155	1,2,4-Trichlorobenzene	µg/kg		63.1	25.2 - 101	Not Reported				55.0	11.4	
5155	1,2,4-Trichlorobenzene	µg/kg	53.8	63.1	25.2 - 101	Acceptable	EPA 8260B 2 1996	1/30/2019	-0.106	55.0	11.4	HNW
5160	1,1,1-Trichloroethane	µg/kg		< 11.0	0.00 - 11.0	Not Reported						
5160	1,1,1-Trichloroethane	µg/kg	< 3.2	< 11.0	0.00 - 11.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW



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5165	1,1,2-Trichloroethane	µg/kg		< 14.0	0.00 - 14.0	Not Reported						
5165	1,1,2-Trichloroethane	µg/kg	< 3.1	< 14.0	0.00 - 14.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
5170	Trichloroethylene	µg/kg		< 12.0	0.00 - 12.0	Not Reported						
5170	Trichloroethylene	µg/kg	< 3.1	< 12.0	0.00 - 12.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
5175	Trichlorofluoromethane	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5175	Trichlorofluoromethane	µg/kg	< 4.4	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
5180	1,2,3-Trichloropropane (TCP)	µg/kg		149	74.5 - 224	Not Reported				148	23.4	
5180	1,2,3-Trichloropropane (TCP)	µg/kg	171	149	74.5 - 224	Acceptable	EPA 8260B 2 1996	1/30/2019	0.967	148	23.4	HNW
5210	1,2,4-Trimethylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5210	1,2,4-Trimethylbenzene	µg/kg	< 2.8	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
5215	1,3,5-Trimethylbenzene	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5215	1,3,5-Trimethylbenzene	µg/kg	< 3.1	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
5225	Vinyl acetate	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5225	Vinyl acetate	µg/kg	< 3.4	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
5235	Vinyl chloride	µg/kg		< 20.0	0.00 - 20.0	Not Reported						
5235	Vinyl chloride	µg/kg	< 4.9	< 20.0	0.00 - 20.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
5240	m&p-Xylene	µg/kg		< 11.0	0.00 - 11.0	Not Reported						
5240	m&p-Xylene	µg/kg	< 6.3	< 11.0	0.00 - 11.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW
5250	o-Xylene	µg/kg		< 11.0	0.00 - 11.0	Not Reported						
5250	o-Xylene	µg/kg	< 2.4	< 11.0	0.00 - 11.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW



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Study # : SOIL-105





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SOIL-105 2009 TNI Evaluation Final Complete Report

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SOIL Volatiles in Soil (cat# 623, lot# D105-721) (Continued)

5260	Xylenes, total	µg/kg		< 22.0	0.00 - 22.0	Not Reported						
5260	Xylenes, total	µg/kg	< 8.7	< 22.0	0.00 - 22.0	Acceptable	EPA 8260B 2 1996	1/30/2019				HNW



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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D105-924)

4315	Acetone	µg/kg	19500	18700	5390 - 28500	Acceptable	EPA 8260B 2 1996	1/31/2019	0.406	18000	3790	MDS
4320	Acetonitrile	µg/kg	< 1000	< 4000	0.00 - 4000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
4325	Acrolein	µg/kg	< 2500	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
4375	Benzene	µg/kg	< 60	< 750	0.00 - 750	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
4385	Bromobenzene	µg/kg	< 60	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
4390	Bromochloromethane	µg/kg	< 60	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
4395	Bromodichloromethane	µg/kg	2130	2310	1500 - 3120	Acceptable	EPA 8260B 2 1996	1/31/2019	-0.661	2340	318	MDS
4400	Bromoform	µg/kg	7440	8090	4850 - 11300	Acceptable	EPA 8260B 2 1996	1/31/2019	-0.679	8090	951	MDS
4950	Bromomethane	µg/kg	< 250	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
4410	2-Butanone (MEK)	µg/kg	11700	11000	2950 - 17100	Acceptable	EPA 8260B 2 1996	1/31/2019	0.287	11100	2030	MDS
4435	n-Butylbenzene	µg/kg	< 60	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
4440	sec-Butylbenzene	µg/kg	< 60	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
4445	tert-Butylbenzene	µg/kg	< 60	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
5000	tert-Butyl methyl ether (MTBE)	µg/kg	6960	6200	4340 - 8060	Acceptable	EPA 8260B 2 1996	1/31/2019	0.532	6620	647	MDS
4450	Carbon disulfide	µg/kg	< 60	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
4455	Carbon tetrachloride	µg/kg	< 60	< 480	0.00 - 480	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
4475	Chlorobenzene	µg/kg	4610	4320	3240 - 5400	Acceptable	EPA 8260B 2 1996	1/31/2019	0.359	4490	343	MDS
4575	Chlorodibromomethane	µg/kg	< 42.3	< 700	0.00 - 700	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
4485	Chloroethane	µg/kg	< 250	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
4500	2-Chloroethylvinylether	µg/kg	< 250	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS



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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D105-924) (Continued)

4505	Chloroform	µg/kg	3400	3100	2170 - 4030	Acceptable	EPA 8260B 2 1996	1/31/2019	0.251	3310	347	MDS
4960	Chloromethane	µg/kg	< 35.3	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
4535	2-Chlorotoluene	µg/kg	< 60	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
4540	4-Chlorotoluene	µg/kg	< 60	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
4570	1,2-Dibromo-3-chloropropane (DBCP)	µg/kg	< 250	< 1200	0.00 - 1200	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
4585	1,2-Dibromoethane (EDB)	µg/kg	6830	6550	3930 - 9170	Acceptable	EPA 8260B 2 1996	1/31/2019	0.461	6570	561	MDS
4595	Dibromomethane	µg/kg	6230	5870	3520 - 8220	Acceptable	EPA 8260B 2 1996	1/31/2019	0.448	5970	588	MDS
4610	1,2-Dichlorobenzene	µg/kg	1930	1770	1330 - 2210	Acceptable	EPA 8260B 2 1996	1/31/2019	0.627	1840	144	MDS
4615	1,3-Dichlorobenzene	µg/kg	< 60	< 606	0.00 - 606	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
4620	1,4-Dichlorobenzene	µg/kg	3160	2960	2250 - 3720	Acceptable	EPA 8260B 2 1996	1/31/2019	0.243	3100	236	MDS
4625	Dichlorodifluoromethane (Freon 12)	µg/kg	< 60	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
4630	1,1-Dichloroethane	µg/kg	< 60	< 650	0.00 - 650	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
4635	1,2-Dichloroethane	µg/kg	7000	6430	4820 - 8050	Acceptable	EPA 8260B 2 1996	1/31/2019	1.25	6330	539	MDS
4640	1,1-Dichloroethylene	µg/kg	2500	2670	1340 - 4010	Acceptable	EPA 8260B 2 1996	1/31/2019	-0.229	2580	349	MDS
4645	cis-1,2-Dichloroethylene	µg/kg	9680	9360	5620 - 13100	Acceptable	EPA 8260B 2 1996	1/31/2019	0.00299	9680	987	MDS
4700	trans-1,2-Dichloroethylene	µg/kg	10000	9620	5770 - 13500	Acceptable	EPA 8260B 2 1996	1/31/2019	-0.226	10300	1220	MDS
4655	1,2-Dichloropropane	µg/kg	< 60	< 1400	0.00 - 1400	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
4660	1,3-Dichloropropane	µg/kg	< 60	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
4665	2,2-Dichloropropane	µg/kg	< 60	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
4670	1,1-Dichloropropene	µg/kg	< 60	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS



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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D105-924) (Continued)

4680	cis-1,3-Dichloropropylene	µg/kg	68.6	< 1200	0.00 - 1200	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
4685	trans-1,3-Dichloropropylene	µg/kg	7850	9130	5480 - 12800	Acceptable	EPA 8260B 2 1996	1/31/2019	-0.963	8500	671	MDS
4765	Ethylbenzene	µg/kg	< 60	< 700	0.00 - 700	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
4835	Hexachlorobutadiene	µg/kg	7390	6380	2170 - 12300	Acceptable	EPA 8260B 2 1996	1/31/2019	0.149	7250	944	MDS
4840	Hexachloroethane	µg/kg	13500	14400	1440 - 28100	Acceptable	EPA 8260B 2 1996	1/31/2019	-0.452	14000	1020	MDS
4860	2-Hexanone	µg/kg	7330	6610	3300 - 9920	Acceptable	EPA 8260B 2 1996	1/31/2019	0.591	6710	1060	MDS
4900	Isopropylbenzene	µg/kg	< 60	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
4910	4-Isopropyltoluene	µg/kg	< 60	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
4975	Methylene chloride	µg/kg	8160	6940	4160 - 9720	Acceptable	EPA 8260B 2 1996	1/31/2019	0.853	7450	830	MDS
4995	4-Methyl-2-pentanone (MIBK)	µg/kg	12700	13300	6650 - 20000	Acceptable	EPA 8260B 2 1996	1/31/2019	-0.412	13700	2330	MDS
5005	Naphthalene	µg/kg	4800	3790	2050 - 5310	Acceptable	EPA 8260B 2 1996	1/31/2019	1.34	4020	582	MDS
5015	Nitrobenzene	µg/kg		< 150	0.00 - 150	Not Reported						
5090	n-Propylbenzene	µg/kg	< 60	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
5100	Styrene	µg/kg	6870	6390	3830 - 8950	Acceptable	EPA 8260B 2 1996	1/31/2019	0.461	6590	607	MDS
5105	1,1,1,2-Tetrachloroethane	µg/kg	8970	8460	6310 - 10600	Acceptable	EPA 8260B 2 1996	1/31/2019	0.285	8730	845	MDS
5110	1,1,2,2-Tetrachloroethane	µg/kg	5180	4790	2790 - 6590	Acceptable	EPA 8260B 2 1996	1/31/2019	0.726	4770	568	MDS
5115	Tetrachloroethylene	µg/kg	3030	2790	1940 - 3850	Acceptable	EPA 8260B 2 1996	1/31/2019	-0.575	3270	414	MDS
5140	Toluene	µg/kg	307	< 750	0.00 - 750	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
5150	1,2,3-Trichlorobenzene	µg/kg	61.9	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
5155	1,2,4-Trichlorobenzene	µg/kg	7990	6610	3970 - 9250	Acceptable	EPA 8260B 2 1996	1/31/2019	0.766	7300	898	MDS



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SOIL Ready-to-Use VOAs in Soil (cat# 870, lot# D105-924) (Continued)

5160	1,1,1-Trichloroethane	µg/kg	< 60	< 600	0.00 - 600	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
5165	1,1,2-Trichloroethane	µg/kg	< 60	< 650	0.00 - 650	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
5170	Trichloroethylene	µg/kg	9470	8870	6510 - 11300	Acceptable	EPA 8260B 2 1996	1/31/2019	-0.0821	9560	1060	MDS
5175	Trichlorofluoromethane	µg/kg	< 60	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
5210	1,2,4-Trimethylbenzene	µg/kg	< 60	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
5215	1,3,5-Trimethylbenzene	µg/kg	< 60	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
5180	1,2,3-Trichloropropane (TCP)	µg/kg	8210	7240	3980 - 10500	Acceptable	EPA 8260B 2 1996	1/31/2019	0.887	7440	868	MDS
5225	Vinyl acetate	µg/kg	< 250	< 1000	0.00 - 1000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
5235	Vinyl chloride	µg/kg	< 60	< 2000	0.00 - 2000	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
5240	m&p-Xylene	µg/kg	< 120	< 350	0.00 - 350	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
5250	o-Xylene	µg/kg	< 60	< 350	0.00 - 350	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS
5260	Xylenes, total	µg/kg	< 180	< 700	0.00 - 700	Acceptable	EPA 8260B 2 1996	1/31/2019				MDS

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SOIL Organochlorine Pesticides in Soil (cat# 468, lot# D105-728)

7025	Aldrin	µg/kg	179	355	110 - 476	Acceptable	EPA 8081A 1 1996	2/1/2019	-2.69	293	42.4	DMH
7110	alpha-BHC	µg/kg	174	351	104 - 465	Acceptable	EPA 8081A 1 1996	2/1/2019	-2.06	285	53.8	DMH
7115	beta-BHC	µg/kg	139	305	80.7 - 389	Acceptable	EPA 8081A 1 1996	2/1/2019	-1.98	235	48.3	DMH
7105	delta-BHC	µg/kg	51.6	110	18.9 - 165	Acceptable	EPA 8081A 1 1996	2/1/2019	-2.25	91.9	18.0	DMH
7120	gamma-BHC(Lindane)	µg/kg	218	398	127 - 576	Acceptable	EPA 8081A 1 1996	2/1/2019	-1.96	352	68.4	DMH
7240	alpha-Chlordane	µg/kg	186	363	131 - 477	Acceptable	EPA 8081A 1 1996	2/1/2019	-2.33	304	50.6	DMH
7245	gamma-Chlordane	µg/kg	154	311	121 - 387	Acceptable	EPA 8081A 1 1996	2/1/2019	-2.29	254	43.6	DMH
7355	4,4'-DDD	µg/kg	192	421	149 - 557	Acceptable	EPA 8081A 1 1996	2/1/2019	-2.95	353	54.6	DMH
7360	4,4'-DDE	µg/kg	195	397	141 - 538	Acceptable	EPA 8081A 1 1996	2/1/2019	-2.68	340	54.0	DMH
7365	4,4'-DDT	µg/kg	114	261	58.5 - 348	Acceptable	EPA 8081A 1 1996	2/1/2019	-2.22	203	40.3	DMH
7470	Dieldrin	µg/kg	204	412	161 - 533	Acceptable	EPA 8081A 1 1996	2/1/2019	-2.42	347	58.9	DMH
7540	Endrin	µg/kg	110	208	77.1 - 269	Acceptable	EPA 8081A 1 1996	2/1/2019	-1.74	173	36.3	DMH
7530	Endrin aldehyde	µg/kg	167	442	60.7 - 531	Acceptable	EPA 8081A 1 1996	2/1/2019	-1.83	296	70.4	DMH
7535	Endrin ketone	µg/kg	181	401	100 - 532	Acceptable	EPA 8081A 1 1996	2/1/2019	-2.02	316	66.8	DMH
7510	Endosulfan I	µg/kg	222	462	147 - 571	Acceptable	EPA 8081A 1 1996	2/1/2019	-2.14	359	64.2	DMH
7515	Endosulfan II	µg/kg	96.8	205	59.2 - 292	Acceptable	EPA 8081A 1 1996	2/1/2019	-2.40	176	32.9	DMH
7520	Endosulfan sulfate	µg/kg	168	354	73.9 - 485	Acceptable	EPA 8081A 1 1996	2/1/2019	-1.96	279	56.8	DMH
7685	Heptachlor	µg/kg	118	233	72.7 - 304	Acceptable	EPA 8081A 1 1996	2/1/2019	-1.87	188	37.6	DMH
7690	Heptachlor epoxide	µg/kg	105	208	73.2 - 274	Acceptable	EPA 8081A 1 1996	2/1/2019	-2.41	174	28.4	DMH
7810	Methoxychlor	µg/kg	171	428	45.0 - 617	Acceptable	EPA 8081A 1 1996	2/1/2019	-2.16	331	74.0	DMH



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7025	Aldrin	µg/kg	179	355	110 - 476	Acceptable	EPA 8081B 2000	2/1/2019	-2.69	293	42.4	DMH
7110	alpha-BHC	µg/kg	174	351	104 - 465	Acceptable	EPA 8081B 2000	2/1/2019	-2.06	285	53.8	DMH
7115	beta-BHC	µg/kg	139	305	80.7 - 389	Acceptable	EPA 8081B 2000	2/1/2019	-1.98	235	48.3	DMH
7105	delta-BHC	µg/kg	51.6	110	18.9 - 165	Acceptable	EPA 8081B 2000	2/1/2019	-2.25	91.9	18.0	DMH
7120	gamma-BHC(Lindane)	µg/kg	218	398	127 - 576	Acceptable	EPA 8081B 2000	2/1/2019	-1.96	352	68.4	DMH
7240	alpha-Chlordane	µg/kg	186	363	131 - 477	Acceptable	EPA 8081B 2000	2/1/2019	-2.33	304	50.6	DMH
7245	gamma-Chlordane	µg/kg	154	311	121 - 387	Acceptable	EPA 8081B 2000	2/1/2019	-2.29	254	43.6	DMH
7355	4,4'-DDD	µg/kg	192	421	149 - 557	Acceptable	EPA 8081B 2000	2/1/2019	-2.95	353	54.6	DMH
7360	4,4'-DDE	µg/kg	195	397	141 - 538	Acceptable	EPA 8081B 2000	2/1/2019	-2.68	340	54.0	DMH
7365	4,4'-DDT	µg/kg	114	261	58.5 - 348	Acceptable	EPA 8081B 2000	2/1/2019	-2.22	203	40.3	DMH
7470	Dieldrin	µg/kg	204	412	161 - 533	Acceptable	EPA 8081B 2000	2/1/2019	-2.42	347	58.9	DMH
7540	Endrin	µg/kg	110	208	77.1 - 269	Acceptable	EPA 8081B 2000	2/1/2019	-1.74	173	36.3	DMH
7530	Endrin aldehyde	µg/kg	167	442	60.7 - 531	Acceptable	EPA 8081B 2000	2/1/2019	-1.83	296	70.4	DMH
7535	Endrin ketone	µg/kg	181	401	100 - 532	Acceptable	EPA 8081B 2000	2/1/2019	-2.02	316	66.8	DMH
7510	Endosulfan I	µg/kg	222	462	147 - 571	Acceptable	EPA 8081B 2000	2/1/2019	-2.14	359	64.2	DMH
7515	Endosulfan II	µg/kg	96.8	205	59.2 - 292	Acceptable	EPA 8081B 2000	2/1/2019	-2.40	176	32.9	DMH
7520	Endosulfan sulfate	µg/kg	168	354	73.9 - 485	Acceptable	EPA 8081B 2000	2/1/2019	-1.96	279	56.8	DMH
7685	Heptachlor	µg/kg	118	233	72.7 - 304	Acceptable	EPA 8081B 2000	2/1/2019	-1.87	188	37.6	DMH
7690	Heptachlor epoxide	µg/kg	105	208	73.2 - 274	Acceptable	EPA 8081B 2000	2/1/2019	-2.41	174	28.4	DMH
7810	Methoxychlor	µg/kg	171	428	45.0 - 617	Acceptable	EPA 8081B 2000	2/1/2019	-2.16	331	74.0	DMH



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) are included in ERA's A2LA accreditation. Lab Code: 1539-01

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Study # : SOIL-105





A Waters Company

SOIL-105 2009 TNI Evaluation Final Complete Report

Kate Verbeten
Quality Manager
Pace Analytical Services - Green Bay
1241 Bellevue St, Ste 9
Green Bay, WI 54302
(920) 321-9426

EPA ID:
ERA Customer Number:
Report Issued:
Study Dates:

WI01103
E518002
03/11/19
01/21/19 - 03/07/19

TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
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SOIL Chlordane in Soil (cat# 628, lot# D105-725)

7250	Chlordane, technical	µg/kg	218	456	99.0 - 601	Acceptable	EPA 8081A 1 1996	2/1/2019	-1.68	350	78.5	DMH
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SOIL Chlordane in Soil (cat# 628, lot# D105-725)

7250	Chlordane, technical	µg/kg	218	456	99.0 - 601	Acceptable	EPA 8081B 2000	2/1/2019	-1.68	350	78.5	DMH
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SOIL Toxaphene in Soil (cat# 627, lot# D105-724)

8250	Toxaphene	µg/kg	104	270	27.0 - 409	Acceptable	EPA 8081A 1 1996	2/1/2019	-1.29	196	71.2	DMH
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SOIL Toxaphene in Soil (cat# 627, lot# D105-724)

8250	Toxaphene	µg/kg	104	270	27.0 - 409	Acceptable	EPA 8081B 2000	2/1/2019	-1.29	196	71.2	DMH
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SOIL PCBs in Soil (cat# 624, lot# D105-726)

8880	Aroclor 1016	mg/kg	< 0.75	< 0.100	0.00 - 0.100	Acceptable	EPA 8082 1996	1/31/2019				BLM
8885	Aroclor 1221	mg/kg	< 0.75	< 0.100	0.00 - 0.100	Acceptable	EPA 8082 1996	1/31/2019				BLM
8890	Aroclor 1232	mg/kg	< 0.75	< 0.100	0.00 - 0.100	Acceptable	EPA 8082 1996	1/31/2019				BLM
8895	Aroclor 1242	mg/kg	< 0.75	< 0.100	0.00 - 0.100	Acceptable	EPA 8082 1996	1/31/2019				BLM
8900	Aroclor 1248	mg/kg	< 0.75	< 0.100	0.00 - 0.100	Acceptable	EPA 8082 1996	1/31/2019				BLM
8905	Aroclor 1254	mg/kg	< 0.75	< 0.100	0.00 - 0.100	Acceptable	EPA 8082 1996	1/31/2019				BLM
8910	Aroclor 1260	mg/kg	5.66	8.57	1.85 - 11.6	Acceptable	EPA 8082 1996	1/31/2019	-0.661	6.74	1.64	BLM



All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) are included in ERA's A2LA accreditation. Lab Code: 1539-01

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Study # : SOIL-105





A Waters Company

SOIL-105 2009 TNI Evaluation Final Complete Report

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EPA ID:
ERA Customer Number:
Report Issued:
Study Dates:

WI01103
E518002
03/11/19
01/21/19 - 03/07/19

TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
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SOIL PCBs in Soil (cat# 624, lot# D105-726)

8880	Aroclor 1016	mg/kg	< 0.75	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	1/31/2019				BLM
8885	Aroclor 1221	mg/kg	< 0.75	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	1/31/2019				BLM
8890	Aroclor 1232	mg/kg	< 0.75	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	1/31/2019				BLM
8895	Aroclor 1242	mg/kg	< 0.75	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	1/31/2019				BLM
8900	Aroclor 1248	mg/kg	< 0.75	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	1/31/2019				BLM
8905	Aroclor 1254	mg/kg	< 0.75	< 0.100	0.00 - 0.100	Acceptable	EPA 8082A 2000	1/31/2019				BLM
8910	Aroclor 1260	mg/kg	5.66	8.57	1.85 - 11.6	Acceptable	EPA 8082A 2000	1/31/2019	-0.661	6.74	1.64	BLM

SOIL Gasoline Range Organics (GRO) in Soil (cat# 630, lot# D105-763)

9408	Gasoline Range Organics (GRO)	mg/kg		1140	115 - 1470	Not Reported				790	301	
4375	Benzene in GRO	mg/kg	2.96	5.04	0.00 - 5.54	Acceptable	EPA 8021B 2 1996	1/30/2019	1.69	1.73	0.728	ALD
4765	Ethylbenzene in GRO	mg/kg	16.7	19.2	1.76 - 21.3	Acceptable	EPA 8021B 2 1996	1/30/2019	1.59	11.5	3.26	ALD
5140	Toluene in GRO	mg/kg	43.1	58.0	0.00 - 63.8	Acceptable	EPA 8021B 2 1996	1/30/2019	1.46	27.3	10.9	ALD
5260	Xylenes, total in GRO	mg/kg	80.1	98.0	1.95 - 113	Acceptable	EPA 8021B 2 1996	1/30/2019	1.22	57.6	18.5	ALD

SOIL Gasoline Range Organics (GRO) in Soil (cat# 630, lot# D105-763)

9408	Gasoline Range Organics (GRO)	mg/kg	1220	1140	115 - 1470	Acceptable	EPA 8015B 2 1996	1/30/2019	1.43	790	301	ALD
4375	Benzene in GRO	mg/kg		5.04	0.00 - 5.54	Not Reported				1.73	0.728	
4765	Ethylbenzene in GRO	mg/kg		19.2	1.76 - 21.3	Not Reported				11.5	3.26	
5140	Toluene in GRO	mg/kg		58.0	0.00 - 63.8	Not Reported				27.3	10.9	
5260	Xylenes, total in GRO	mg/kg		98.0	1.95 - 113	Not Reported				57.6	18.5	

All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) are included in ERA's A2LA accreditation. Lab Code: 1539-01

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Study # : SOIL-105





A Waters Company

SOIL-105 2009 TNI Evaluation Final Complete Report

Kate Verbeten
Quality Manager
Pace Analytical Services - Green Bay
1241 Bellevue St, Ste 9
Green Bay, WI 54302
(920) 321-9426

EPA ID:
ERA Customer Number:
Report Issued:
Study Dates:

WI01103
E518002
03/11/19
01/21/19 - 03/07/19

TNI Analyte Code	Analyte	Units	Reported Value	Assigned Value	Acceptance Limits	Performance Evaluation	Method Description	Analysis Date	Z Score	Study Mean	Study Standard Deviation	Analyst Name
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SOIL Gasoline Range Organics (GRO) in Soil (cat# 630, lot# D105-763)

9408	Gasoline Range Organics (GRO)	mg/kg	1220	1140	115 - 1470	Acceptable	EPA 8015C 3 2007	1/30/2019	1.43	790	301	ALD
4375	Benzene in GRO	mg/kg		5.04	0.00 - 5.54	Not Reported				1.73	0.728	
4765	Ethylbenzene in GRO	mg/kg		19.2	1.76 - 21.3	Not Reported				11.5	3.26	
5140	Toluene in GRO	mg/kg		58.0	0.00 - 63.8	Not Reported				27.3	10.9	
5260	Xylenes, total in GRO	mg/kg		98.0	1.95 - 113	Not Reported				57.6	18.5	

SOIL Gasoline Range Organics (GRO) in Soil (cat# 630, lot# D105-763)

9408	Gasoline Range Organics (GRO)	mg/kg	1220	1140	115 - 1470	Acceptable	EPA 8015D 2003	1/30/2019	1.43	790	301	ALD
4375	Benzene in GRO	mg/kg		5.04	0.00 - 5.54	Not Reported				1.73	0.728	
4765	Ethylbenzene in GRO	mg/kg		19.2	1.76 - 21.3	Not Reported				11.5	3.26	
5140	Toluene in GRO	mg/kg		58.0	0.00 - 63.8	Not Reported				27.3	10.9	
5260	Xylenes, total in GRO	mg/kg		98.0	1.95 - 113	Not Reported				57.6	18.5	

SOIL Diesel Range Organics (DRO) in Soil (cat# 631, lot# D105-765)

9369	Diesel Range Organics (DRO)	mg/kg	1670	1770	525 - 2430	Acceptable	EPA 8015D 2003	1/28/2019	0.618	1480	314	CAH
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SOIL Diesel Range Organics (DRO) in Soil (cat# 631, lot# D105-765)

9369	Diesel Range Organics (DRO)	mg/kg	1670	1770	525 - 2430	Acceptable	EPA 8015B 2 1996	1/28/2019	0.618	1480	314	CAH
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SOIL Diesel Range Organics (DRO) in Soil (cat# 631, lot# D105-765)

9369	Diesel Range Organics (DRO)	mg/kg	1670	1770	525 - 2430	Acceptable	EPA 8015C 3 2007	1/28/2019	0.618	1480	314	CAH
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All analytes except PT catalog numbers 462, 604QR, 929, 731QR, 960, 735QR (PFAS) are included in ERA's A2LA accreditation. Lab Code: 1539-01

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Study # : SOIL-105



CERTIFICATE OF RECOGNITION

ERA congratulates

Pace Analytical Services - Green Bay
SOIL-105

For your participation and successful evaluation, we recognize the performance of this laboratory for achieving acceptable evaluation in the following standards.

Chlordane in Soil

Diesel Range Organics
(DRO) in Soil

Metals in Soil

PCBs in Soil

Volatiles in Soil

Corrosivity/pH in Soil

Gasoline Range
Organics (GRO) in Soil

Nutrients in Soil

Ready-to-Use VOAs in
Soil

Cyanide in Soil

Ignitability/Flashpoint

Organochlorine
Pesticides in Soil

Toxaphene in Soil



Matthew Seebeck
Quality Officer



March 19, 2020

Ms. Kate Verbeten
Pace Analytical Services, LLC - Green Bay Laboratory
1241 Bellevue Street
Suite 9
Green Bay, WI 54302
USA

Dear Kate,

Thank you for participating in the HW0120 Soil / Hazardous Waste PT Study. Enclosed is your final report, which has been carefully reviewed by the PT specialists at Phenova. This report presents some additional sections and features which will give you more information on the study data for the standards that were reported by your laboratory and more information regarding the overall performance of your laboratory in relation to other study participants.

The enclosed report is in two sections, the "Evaluation Report" and the "Statistical Report". The "Evaluation Report" contains the evaluation of your reported data as well the reported method, analysis date and analyst. The "Evaluation Report" is an updated and enhanced version of the reports you previously received at the conclusion of our PT studies. The "Statistical Report" contains your passing percentage as well as statistics from the study for the analytes reported by your laboratory.

For any analyte falling outside the established acceptance limits, our PT management staff would like to assist you in determining the most appropriate course of corrective action for your facility. Please contact us at any time if we may be of service to you.

Thank you again for participating in the HW0120 Soil / Hazardous Waste PT Study. We appreciate working with you and look forward to our next study. If you have any questions, please call us at 866-942-2978.



Report Definitions:

Assigned Value

The Assigned Value is determined from the study mean, gravimetric and volumetric true concentration of an analyte to be analyzed, calculation and/or an appropriate reference value as stipulated in the EPA National Standards for Water Proficiency Testing Studies Criteria Document (current version), the National Environmental Laboratory Accreditation Conference Institute (TNI) criteria (ref: TNI FOT tables, TNI PT Committee) and other documents distributed by accrediting agencies as applicable.

Evaluation Limits

Acceptance Limits are derived from fixed limits, coefficients, constants and calculations stipulated in the EPA National Standards for Water Proficiency Testing Studies Criteria Documents (current version), the National Environmental Laboratory Accreditation Conference Institute (TNI) criteria (ref: TNI FOT tables, TNI PT Committee) and other documents distributed by accrediting agencies as applicable.

Evaluation

Acceptable

The reported value falls within the Acceptance Limits.

Not Acceptable

The reported value falls outside the Acceptance Limits.

No Evaluation

The reported value is non-numeric and can not be evaluated.

NR

As required by the TNI standards and requested by state authorities, any analyte purchased but not reported by your facility is listed as NR (Not Reported).

Study Mean and Standard Deviation

The mean and standard deviation are calculated from the study data using robust statistical calculations when possible. Other statistical calculations may be used if robust statistical calculations are not possible. The displayed values are independent of any statistical calculations required for the calculation of the analyte evaluation limits.

This report must not be reproduced except in full, without the written approval of Phenova.

Various aspects of Phenova's proficiency testing schemes can from time to time be subcontracted. If subcontracting occurs, it is placed with a competent and qualified subcontractor and Phenova is responsible for all work performed.

This report must not be used to claim product certification, approval, or endorsement by the American Association for Laboratory Accreditation (A2LA) or any agency of the federal government.



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100
Golden, CO 80403

Phone 303-940-0033
Fax 866-283-0269
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State Regulatory Agency Request(s):

Phenova has been authorized to send a copy of your HW0120 final results to the following state agencies:

FL, IL, KY, LA, MN and ND

Other Regulatory Agency Request(s):

Phenova has been authorized to send a copy of your HW0120 final results to the following agencies:

Ford

Third Party Request(s):

Phenova has been requested to send a copy of your HW0120 final results to the following third parties:

CADENA, Inc.
1099 Highland Drive, Suite E
Ann Arbor, MI 48108
Jim Tomalia
Senior Environmental Compliance Specialist
jtomalia@cadenaco.com

6390 Joyce Drive
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Golden, CO 80403

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Final Report - Soil / Hazardous Waste PT

Study: HW0120

Opening Date: January 27, 2020 - Closing Date: March 12, 2020

Laboratory: Pace Analytical Services, LLC - Green Bay Laboratory
1241 Bellevue Street
Suite 9
Green Bay, WI 54302
USA

Contact: Ms. Kate Verbeten
920-469-2436

EPA Lab ID: WI01103

Base, Neutrals and Acids (PT-BNA-SOIL)

Lot #: 7079-13

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
5500	Acenaphthene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	5340	3560	1540 - 6000	Acceptable
5505	Acenaphthylene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<100	<198		Acceptable
5555	Anthracene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<100	<100		Acceptable
5575	Benzo(a)anthracene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	2360	1570	839 - 2770	Acceptable
5585	Benzo(b)fluoranthene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	2270	1620	680 - 2890	Acceptable
5600	Benzo(k)fluoranthene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	2370	1790	740 - 2950	Acceptable
5590	Benzo(g,h,i)perylene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<100	<145		Acceptable
5580	Benzo(a)pyrene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<100	<100		Acceptable
5660	4-Bromophenyl-phenylether	2/4/2020	RJN	10185805	EPA 8270	µg/kg	7310	4940	2350 - 9320	Acceptable
5670	Butyl benzyl phthalate	2/4/2020	RJN	10185805	EPA 8270	µg/kg	9820	7030	3050 - 13700	Acceptable
5700	4-Chloro-3-methylphenol	2/4/2020	RJN	10185805	EPA 8270	µg/kg	3190	1890	775 - 3850	Acceptable
5760	Bis(2-chloroethoxy)methane	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<100	<150		Acceptable
5765	bis(2-Chloroethyl)ether	2/4/2020	RJN	10185805	EPA 8270	µg/kg	8780	5050	1550 - 10200	Acceptable
5795	2-Chloronaphthalene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	9710	6730	2390 - 11600	Acceptable
5800	2-Chlorophenol	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<150	<150		Acceptable
5825	4-Chlorophenyl-phenylether	2/4/2020	RJN	10185805	EPA 8270	µg/kg	4110	3020	1130 - 4980	Acceptable
4659	2,2'-Oxybis(1-Chloropropane)	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<150	<150		Acceptable
5855	Chrysene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<100	<100		Acceptable
5895	Dibenzo(a,h)anthracene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	2140	1540	505 - 2910	Acceptable
5905	Dibenzofuran	2/4/2020	RJN	10185805	EPA 8270	µg/kg	7970	5680	2610 - 8970	Acceptable
5925	Di-n-butylphthalate	2/4/2020	RJN	10185805	EPA 8270	µg/kg	8020	5450	2050 - 10800	Acceptable
4610	1,2-Dichlorobenzene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	9940	6100	994 - 11700	Acceptable
4615	1,3-Dichlorobenzene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	5730	3400	573 - 6620	Acceptable
4620	1,4-Dichlorobenzene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	3630	2170	363 - 4120	Acceptable
6000	2,4-Dichlorophenol	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<150	<150		Acceptable
6070	Diethylphthalate	2/4/2020	RJN	10185805	EPA 8270	µg/kg	3720	2650	1140 - 4550	Acceptable
6135	Dimethylphthalate	2/4/2020	RJN	10185805	EPA 8270	µg/kg	5120	3460	1590 - 6310	Acceptable
6185	2,4-Dinitrotoluene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<150	<150		Acceptable

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Final Report - Soil / Hazardous Waste PT

Study: HW0120

Opening Date: January 27, 2020 - Closing Date: March 12, 2020

Laboratory: Pace Analytical Services, LLC - Green Bay Laboratory
1241 Bellevue Street
Suite 9
Green Bay, WI 54302
USA

Contact: Ms. Kate Verbeten
920-469-2436

EPA Lab ID: WI01103

Base, Neutrals and Acids (PT-BNA-SOIL) cont'd

Lot #: 7079-13

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
6190	2,6-Dinitrotoluene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	9400	7060	3180 - 10900	Acceptable
6200	Di-n-octylphthalate	2/4/2020	RJN	10185805	EPA 8270	µg/kg	3790	2590	816 - 5490	Acceptable
6065	Bis(2-ethylhexyl)phthalate	2/4/2020	RJN	10185805	EPA 8270	µg/kg	10700	7500	2950 - 14800	Acceptable
6265	Fluoranthene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<100	<100		Acceptable
6270	Fluorene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	2700	2080	830 - 3290	Acceptable
6275	Hexachlorobenzene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	3340	2220	1230 - 3900	Acceptable
4835	Hexachlorobutadiene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	8490	5350	1700 - 9900	Acceptable
4840	Hexachloroethane	2/4/2020	RJN	10185805	EPA 8270	µg/kg	5120	3010	512 - 5930	Acceptable
6315	Indeno(1,2,3-cd)pyrene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	2860	1720	473 - 3860	Acceptable
6320	Isophorone	2/4/2020	RJN	10185805	EPA 8270	µg/kg	3590	1820	792 - 4370	Acceptable
6385	2-Methylnaphthalene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<100	<144		Acceptable
6400	2-Methylphenol	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<300	<300		Acceptable
6410	4-Methylphenol (and/or 3-Methylphenol)	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<300	<300		Acceptable
5005	Naphthalene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<100	<194		Acceptable
5015	Nitrobenzene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	3730	2190	656 - 4380	Acceptable
6490	2-Nitrophenol	2/4/2020	RJN	10185805	EPA 8270	µg/kg	12700	7170	1910 - 14100	Acceptable
6500	4-Nitrophenol	2/4/2020	RJN	10185805	EPA 8270	µg/kg	11400	3730	1140 - 14400	Acceptable
6545	N-Nitroso-di-n-propylamine	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<150	<150		Acceptable
6605	Pentachlorophenol	2/4/2020	RJN	10185805	EPA 8270	µg/kg	4350	935	435 - 4790	Acceptable
6615	Phenanthrene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<100	<100		Acceptable
6625	Phenol	2/4/2020	RJN	10185805	EPA 8270	µg/kg	5630	2630	968 - 6360	Acceptable
6665	Pyrene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<100	<123		Acceptable
5155	1,2,4-Trichlorobenzene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<150	<150		Acceptable
6835	2,4,5-Trichlorophenol	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<150	<150		Acceptable
6840	2,4,6-Trichlorophenol	2/4/2020	RJN	10185805	EPA 8270	µg/kg	5840	3650	1370 - 6740	Acceptable
Additional State Specific Analytes										
5145	2-Amino-1-methylbenzene					µg/kg	<500			NR
5545	Aniline	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<500	<312		Acceptable

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Final Report - Soil / Hazardous Waste PT

Study: HW0120

Opening Date: January 27, 2020 - Closing Date: March 12, 2020

Laboratory: Pace Analytical Services, LLC - Green Bay Laboratory
1241 Bellevue Street
Suite 9
Green Bay, WI 54302
USA

Contact: Ms. Kate Verbeten
920-469-2436

EPA Lab ID: WI01103

Base, Neutrals and Acids (PT-BNA-SOIL) cont'd

Lot #: 7079-13

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
Additional State Specific Analytes cont'd										
5595	Benzidine	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<500	<1060		Acceptable
5610	Benzoic acid	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<500	<651		Acceptable
5625	Benzotrichloride					µg/kg	<500			NR
5630	Benzyl alcohol	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<500	<206		Acceptable
5635	Benzyl chloride					µg/kg	<500			NR
5680	Carbazole	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<500	<86.9		Acceptable
5745	4-Chloroaniline	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<500	<91.2		Acceptable
5790	1-Chloronaphthalene					µg/kg	<500			NR
5945	3,3'-Dichlorobenzidine	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<500	<151		Acceptable
6005	2,6-Dichlorophenol					µg/kg	<1500			NR
6130	2,4-Dimethylphenol	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<3000	<110		Acceptable
6175	2,4-Dinitrophenol	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<3000	<169		Acceptable
6280	Hexachlorocyclohexane					µg/kg	<500			NR
6285	Hexachlorocyclopentadiene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<1500	<131		Acceptable
6360	2-Methyl-4,6-Dinitrophenol	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<3000	<171		Acceptable
6460	2-Nitroaniline	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<500	<158		Acceptable
6465	3-Nitroaniline	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<500	<94.4		Acceptable
6470	4-Nitroaniline	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<500	<230		Acceptable
6495	3-Nitrophenol					µg/kg	<500			NR
6525	N-Nitrosodiethylamine					µg/kg	<1500			NR
6530	N-Nitrosodimethylamine	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<1500	<131		Acceptable
6535	N-Nitrosodiphenylamine	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<1500	<753		Acceptable
6590	Pentachlorobenzene					µg/kg	<500			NR
5095	Pyridine	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<500	<89.4		Acceptable
6705	1,2,3,4-Tetrachlorobenzene					µg/kg	<500			NR
6710	1,2,3,5-Tetrachlorobenzene					µg/kg	<500			NR
6715	1,2,4,5-Tetrachlorobenzene	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<500	<232		Acceptable

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Base, Neutrals and Acids (PT-BNA-SOIL) cont'd

Lot #: 7079-13

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
Additional State Specific Analytes cont'd										
6730	2,3,4,5-Tetrachlorophenol					µg/kg	<500			NR
6735	2,3,4,6-Tetrachlorophenol	2/4/2020	RJN	10185805	EPA 8270	µg/kg	<500	<711		Acceptable
5150	1,2,3-Trichlorobenzene					µg/kg	<500			NR
6800	1,3,5-Trichlorobenzene					µg/kg	<500			NR

PAHs (PT-PAH-SOIL)

Lot #: 7079-22

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
5500	Acenaphthene	2/4/2020	RJN	10242407	EPA 8270 by SIM	µg/kg	675	421	159 - 870	Acceptable
5505	Acenaphthylene	2/4/2020	RJN	10242407	EPA 8270 by SIM	µg/kg	466	258	46.6 - 684	Acceptable
5555	Anthracene	2/4/2020	RJN	10242407	EPA 8270 by SIM	µg/kg	564	301	175 - 649	Acceptable
5575	Benzo(a)anthracene	2/4/2020	RJN	10242407	EPA 8270 by SIM	µg/kg	457	246	191 - 560	Acceptable
5585	Benzo(b)fluoranthene	2/4/2020	RJN	10242407	EPA 8270 by SIM	µg/kg	321	210	146 - 382	Acceptable
5600	Benzo(k)fluoranthene	2/4/2020	RJN	10242407	EPA 8270 by SIM	µg/kg	310	221	144 - 382	Acceptable
5590	Benzo(g,h,i)perylene	2/4/2020	RJN	10242407	EPA 8270 by SIM	µg/kg	264	167	86.3 - 328	Acceptable
5580	Benzo(a)pyrene	2/4/2020	RJN	10242407	EPA 8270 by SIM	µg/kg	318	199	112 - 414	Acceptable
5855	Chrysene	2/4/2020	RJN	10242407	EPA 8270 by SIM	µg/kg	259	154	90.1 - 325	Acceptable
5895	Dibenz(a,h)anthracene	2/4/2020	RJN	10242407	EPA 8270 by SIM	µg/kg	290	213	126 - 386	Acceptable
6265	Fluoranthene	2/4/2020	RJN	10242407	EPA 8270 by SIM	µg/kg	468	271	187 - 547	Acceptable
6270	Fluorene	2/4/2020	RJN	10242407	EPA 8270 by SIM	µg/kg	442	260	112 - 568	Acceptable
6315	Indeno(1,2,3-cd)pyrene	2/4/2020	RJN	10242407	EPA 8270 by SIM	µg/kg	458	296	210 - 550	Acceptable
5005	Naphthalene	2/4/2020	RJN	10242407	EPA 8270 by SIM	µg/kg	865	489	86.5 - 1150	Acceptable
6615	Phenanthrene	2/4/2020	RJN	10242407	EPA 8270 by SIM	µg/kg	864	512	288 - 1070	Acceptable
6665	Pyrene	2/4/2020	RJN	10242407	EPA 8270 by SIM	µg/kg	421	250	151 - 540	Acceptable

Additional State Specific Analytes

6385	2-Methylnaphthalene					µg/kg	321		24.1 - 478	NR
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Final Report - Soil / Hazardous Waste PT

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Contact: Ms. Kate Verbeten
920-469-2436

EPA Lab ID: WI01103

Medium Level Volatiles - GC (PT-VOAMGC-SOIL)

Lot #: 7079-81

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
4375	Benzene	1/31/2020	ALD	10174808	EPA 8021	µg/kg	2390	2100	1790 - 2990	Acceptable
4475	Chlorobenzene					µg/kg	8340		6260 - 10400	NR
4610	1,2-Dichlorobenzene					µg/kg	2460		1840 - 3070	NR
4615	1,3-Dichlorobenzene					µg/kg	2480		1830 - 3170	NR
4620	1,4-Dichlorobenzene					µg/kg	8000		6190 - 9680	NR
4765	Ethylbenzene	1/31/2020	ALD	10174808	EPA 8021	µg/kg	3840	4120	2690 - 5000	Acceptable
5000	Methyl-tert-butyl ether (MTBE)	1/31/2020	ALD	10174808	EPA 8021	µg/kg	5250	5030	3670 - 6820	Acceptable
5005	Naphthalene	1/31/2020	ALD	10174808	EPA 8021	µg/kg	3180	3370	1590 - 4520	Acceptable
5140	Toluene	1/31/2020	ALD	10174808	EPA 8021	µg/kg	8110	7870	6080 - 10100	Acceptable
5260	Xylenes, total	1/31/2020	ALD	10174808	EPA 8021	µg/kg	8110	8670	5680 - 10500	Acceptable
Additional State Specific Analytes										
4900	Isopropylbenzene					µg/kg	8400		5530 - 12100	NR
5210	1,2,4-Trimethylbenzene					µg/kg	6910		4450 - 9350	NR
5215	1,3,5-Trimethylbenzene					µg/kg	3400		2260 - 4600	NR
5250	o-Xylene					µg/kg	4000		2800 - 5200	NR
5240	m+p-Xylene					µg/kg	4110		2880 - 5340	NR



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PT Study Score Report

EPA ID: WI01103
Laboratory: Pace Analytical Services, LLC - Green Bay Laboratory
1241 Bellevue Street
Suite 9
Green Bay, WI 54302
USA

Study Number	Number of Reported Results	Number of Passing Results	Percent Passing
HW0120	94	94	100%

Report Definitions:

<i>Number of Reported Results</i>	The number of results reported which could be evaluated. Results receiving an evaluation of "NR" or "No Evaluation" are not included.
<i>Number of Passing Results</i>	The number of results reported receiving an evaluation of "Acceptable" or "Check for Error".
<i>Percent Passing</i>	The percentage of results reported receiving an evaluation of "Acceptable" or "Check for Error".



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Statistical Summary Report - Soil / Hazardous Waste PT

Opening Date: January 27, 2020 - Closing Date: March 12, 2020

Laboratory: Pace Analytical Services, LLC - Green Bay Laboratory
1241 Bellevue Street
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Green Bay, WI 54302
USA

Contact: Ms. Kate Verbeten
920-469-2436

EPA Lab ID: WI01103

Base, Neutrals and Acids (PT-BNA-SOIL) Lot #: 7079-13

NELAC Code	Analyte	Units	Study Mean	Study Standard Deviation	Low Acceptance Limit %	High Acceptance Limit %
5500	Acenaphthene	µg/kg	3770	835	28.8	112
5505	Acenaphthylene	µg/kg	N/A	N/A	N/A	N/A
5555	Anthracene	µg/kg	N/A	N/A	N/A	N/A
5575	Benzo(a)anthracene	µg/kg	1810	390	35.6	117
5585	Benzo(b)fluoranthene	µg/kg	1780	394	30.0	127
5600	Benzo(k)fluoranthene	µg/kg	1840	418	31.2	124
5590	Benzo(g,h,i)perylene	µg/kg	N/A	N/A	N/A	N/A
5580	Benzo(a)pyrene	µg/kg	N/A	N/A	N/A	N/A
5660	4-Bromophenyl-phenylether	µg/kg	5830	1330	32.1	127
5670	Butyl benzyl phthalate	µg/kg	8350	1940	31.1	140
5700	4-Chloro-3-methylphenol	µg/kg	2310	427	24.3	121
5760	Bis(2-chloroethoxy)methane	µg/kg	N/A	N/A	N/A	N/A
5765	bis(2-Chloroethyl)ether	µg/kg	5870	1330	17.7	116
5795	2-Chloronaphthalene	µg/kg	6980	1480	24.6	119
5800	2-Chlorophenol	µg/kg	N/A	N/A	N/A	N/A
5825	4-Chlorophenyl-phenylether	µg/kg	3060	714	27.5	121
4659	2,2'-Oxybis(1-Chloropropane)	µg/kg	N/A	N/A	N/A	N/A
5855	Chrysene	µg/kg	N/A	N/A	N/A	N/A
5895	Dibenzo(a,h)anthracene	µg/kg	1710	391	23.6	136
5905	Dibenzofuran	µg/kg	5790	1300	32.7	113
5925	Di-n-butylphthalate	µg/kg	6410	1400	25.6	135
4610	1,2-Dichlorobenzene	µg/kg	6220	1500	10.0	118
4615	1,3-Dichlorobenzene	µg/kg	3220	785	10.0	116
4620	1,4-Dichlorobenzene	µg/kg	2040	451	10.0	113
6000	2,4-Dichlorophenol	µg/kg	N/A	N/A	N/A	N/A
6070	Diethylphthalate	µg/kg	2840	609	30.6	122
6135	Dimethylphthalate	µg/kg	3950	755	31.1	123
6185	2,4-Dinitrotoluene	µg/kg	N/A	N/A	N/A	N/A
6190	2,6-Dinitrotoluene	µg/kg	7040	1690	33.8	116
6200	Di-n-octylphthalate	µg/kg	3150	883	21.5	145
6065	Bis(2-ethylhexyl)phthalate	µg/kg	8860	2080	27.6	138
6265	Fluoranthene	µg/kg	N/A	N/A	N/A	N/A
6270	Fluorene	µg/kg	2060	415	30.7	122
6275	Hexachlorobenzene	µg/kg	2570	574	36.8	117
4835	Hexachlorobutadiene	µg/kg	5800	1320	20.0	117
4840	Hexachloroethane	µg/kg	2950	732	10.0	116
6315	Indeno(1,2,3-cd)pyrene	µg/kg	2160	589	16.5	135
6320	Isophorone	µg/kg	2580	620	22.1	122
6385	2-Methylnaphthalene	µg/kg	N/A	N/A	N/A	N/A
6400	2-Methylphenol	µg/kg	N/A	N/A	N/A	N/A
6410	4-Methylphenol (and/or 3-Methylphenol)	µg/kg	N/A	N/A	N/A	N/A
5005	Naphthalene	µg/kg	N/A	N/A	N/A	N/A
5015	Nitrobenzene	µg/kg	2520	568	17.6	117
6490	2-Nitrophenol	µg/kg	7990	2110	15.0	111

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Statistical Summary Report - Soil / Hazardous Waste PT

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Contact: Ms. Kate Verbeten
920-469-2436

EPA Lab ID: WI01103

Base, Neutrals and Acids (PT-BNA-SOIL) Lot #: 7079-13 cont'd

NELAC Code	Analyte	Units	Study Mean	Study Standard Deviation	Low Acceptance Limit %	High Acceptance Limit %
6500	4-Nitrophenol	µg/kg	6660	2130	10.0	126
6545	N-Nitroso-di-n-propylamine	µg/kg	N/A	N/A	N/A	N/A
6605	Pentachlorophenol	µg/kg	2130	606	10.0	110
6615	Phenanthrene	µg/kg	N/A	N/A	N/A	N/A
6625	Phenol	µg/kg	3670	751	17.2	113
6665	Pyrene	µg/kg	N/A	N/A	N/A	N/A
5155	1,2,4-Trichlorobenzene	µg/kg	N/A	N/A	N/A	N/A
6835	2,4,5-Trichlorophenol	µg/kg	N/A	N/A	N/A	N/A
6840	2,4,6-Trichlorophenol	µg/kg	4060	923	23.5	115
Additional State Specific Analytes						
5145	2-Amino-1-methylbenzene	µg/kg	N/A	N/A	N/A	N/A
5545	Aniline	µg/kg	N/A	N/A	N/A	N/A
5595	Benzidine	µg/kg	N/A	N/A	N/A	N/A
5610	Benzoic acid	µg/kg	N/A	N/A	N/A	N/A
5625	Benzotrichloride	µg/kg	N/A	N/A	N/A	N/A
5630	Benzyl alcohol	µg/kg	N/A	N/A	N/A	N/A
5635	Benzyl chloride	µg/kg	N/A	N/A	N/A	N/A
5680	Carbazole	µg/kg	N/A	N/A	N/A	N/A
5745	4-Chloroaniline	µg/kg	N/A	N/A	N/A	N/A
5790	1-Chloronaphthalene	µg/kg	N/A	N/A	N/A	N/A
5945	3,3'-Dichlorobenzidine	µg/kg	N/A	N/A	N/A	N/A
6005	2,6-Dichlorophenol	µg/kg	N/A	N/A	N/A	N/A
6130	2,4-Dimethylphenol	µg/kg	N/A	N/A	N/A	N/A
6175	2,4-Dinitrophenol	µg/kg	N/A	N/A	N/A	N/A
6280	Hexachlorocyclohexane	µg/kg	N/A	N/A	N/A	N/A
6285	Hexachlorocyclopentadiene	µg/kg	N/A	N/A	N/A	N/A
6360	2-Methyl-4,6-Dinitrophenol	µg/kg	N/A	N/A	N/A	N/A
6460	2-Nitroaniline	µg/kg	N/A	N/A	N/A	N/A
6465	3-Nitroaniline	µg/kg	N/A	N/A	N/A	N/A
6470	4-Nitroaniline	µg/kg	N/A	N/A	N/A	N/A
6495	3-Nitrophenol	µg/kg	N/A	N/A	N/A	N/A
6525	N-Nitrosodiethylamine	µg/kg	N/A	N/A	N/A	N/A
6530	N-Nitrosodimethylamine	µg/kg	N/A	N/A	N/A	N/A
6535	N-Nitrosodiphenylamine	µg/kg	N/A	N/A	N/A	N/A
6590	Pentachlorobenzene	µg/kg	N/A	N/A	N/A	N/A
5095	Pyridine	µg/kg	N/A	N/A	N/A	N/A
6705	1,2,3,4-Tetrachlorobenzene	µg/kg	N/A	N/A	N/A	N/A
6710	1,2,3,5-Tetrachlorobenzene	µg/kg	N/A	N/A	N/A	N/A
6715	1,2,4,5-Tetrachlorobenzene	µg/kg	N/A	N/A	N/A	N/A
6730	2,3,4,5-Tetrachlorophenol	µg/kg	N/A	N/A	N/A	N/A
6735	2,3,4,6-Tetrachlorophenol	µg/kg	N/A	N/A	N/A	N/A
5150	1,2,3-Trichlorobenzene	µg/kg	N/A	N/A	N/A	N/A
6800	1,3,5-Trichlorobenzene	µg/kg	N/A	N/A	N/A	N/A



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Contact: Ms. Kate Verbeten
920-469-2436

EPA Lab ID: WI01103

PAHs (PT-PAH-SOIL) Lot #: 7079-22

NELAC Code	Analyte	Units	Study Mean	Study Standard Deviation	Low Acceptance Limit %	High Acceptance Limit %
5500	Acenaphthene	µg/kg	514	110	23.6	129
5505	Acenaphthylene	µg/kg	344	70.2	10.0	147
5555	Anthracene	µg/kg	412	78.0	31.0	115
5575	Benzo(a)anthracene	µg/kg	375	61.6	41.8	123
5585	Benzo(b)fluoranthene	µg/kg	264	42.6	45.5	119
5600	Benzo(k)fluoranthene	µg/kg	263	33.8	46.5	123
5590	Benzo(g,h,i)perylene	µg/kg	207	31.5	32.7	124
5580	Benzo(a)pyrene	µg/kg	263	46.9	35.2	130
5855	Chrysene	µg/kg	207	39.5	34.8	125
5895	Dibenz(a,h)anthracene	µg/kg	256	42.5	43.4	133
6265	Fluoranthene	µg/kg	367	71.5	40.0	117
6270	Fluorene	µg/kg	340	69.3	25.3	129
6315	Indeno(1,2,3-cd)pyrene	µg/kg	380	70.4	45.9	120
5005	Naphthalene	µg/kg	594	113	10.0	133
6615	Phenanthrene	µg/kg	680	162	33.3	124
6665	Pyrene	µg/kg	346	74.9	35.9	128

Additional State Specific Analytes

6385	2-Methylnaphthalene	µg/kg	241	44.3	7.51	149
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Medium Level Volatiles - GC (PT-VOAMGC-SOIL) Lot #: 7079-81

NELAC Code	Analyte	Units	Study Mean	Study Standard Deviation	Low Acceptance Limit %	High Acceptance Limit %
4375	Benzene	µg/kg	2200	285	74.9	125
4475	Chlorobenzene	µg/kg	7160	0.00	75.1	125
4610	1,2-Dichlorobenzene	µg/kg	2350	0.00	74.8	125
4615	1,3-Dichlorobenzene	µg/kg	2370	0.00	73.8	128
4620	1,4-Dichlorobenzene	µg/kg	7470	0.00	77.4	121
4765	Ethylbenzene	µg/kg	3920	550	70.1	130
5000	Methyl-tert-butyl ether (MTBE)	µg/kg	4820	364	69.9	130
5005	Naphthalene	µg/kg	5340	2270	50.0	142
5140	Toluene	µg/kg	7490	638	75.0	125
5260	Xylenes, total	µg/kg	8540	1300	70.0	129

Additional State Specific Analytes

4900	Isopropylbenzene	µg/kg	N/A	0.00	65.8	144
5210	1,2,4-Trimethylbenzene	µg/kg	7660	1450	64.4	135
5215	1,3,5-Trimethylbenzene	µg/kg	3560	410	66.5	135
5250	o-Xylene	µg/kg	3910	565	70.0	130
5240	m+p-Xylene	µg/kg	4590	938	70.1	130



September 19, 2019

Ms. Kate Verbeten
Pace Analytical Services, LLC - Green Bay Laboratory
1241 Bellevue Street
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Green Bay, WI 54302
USA

Dear Kate,

Thank you for participating in the HW0719 Soil / Hazardous Waste PT Study. Enclosed is your final report, which has been carefully reviewed by the PT specialists at Phenova. This report presents some additional sections and features which will give you more information on the study data for the standards that were reported by your laboratory and more information regarding the overall performance of your laboratory in relation to other study participants.

The enclosed report is in two sections, the "Evaluation Report" and the "Statistical Report". The "Evaluation Report" contains the evaluation of your reported data as well the reported method, analysis date and analyst. The "Evaluation Report" is an updated and enhanced version of the reports you previously received at the conclusion of our PT studies. The "Statistical Report" contains your passing percentage as well as statistics from the study for the analytes reported by your laboratory.

For any analyte falling outside the established acceptance limits, our PT management staff would like to assist you in determining the most appropriate course of corrective action for your facility. Please contact us at any time if we may be of service to you.

Thank you again for participating in the HW0719 Soil / Hazardous Waste PT Study. We appreciate working with you and look forward to our next study. If you have any questions, please call us at 866-942-2978.



Report Definitions:

Assigned Value

The Assigned Value is determined from the study mean, gravimetric and volumetric true concentration of an analyte to be analyzed, calculation and/or an appropriate reference value as stipulated in the EPA National Standards for Water Proficiency Testing Studies Criteria Document (current version), the National Environmental Laboratory Accreditation Conference Institute (TNI) criteria (ref: TNI FOT tables, TNI PT Committee) and other documents distributed by accrediting agencies as applicable.

Evaluation Limits

Acceptance Limits are derived from fixed limits, coefficients, constants and calculations stipulated in the EPA National Standards for Water Proficiency Testing Studies Criteria Documents (current version), the National Environmental Laboratory Accreditation Conference Institute (TNI) criteria (ref: TNI FOT tables, TNI PT Committee) and other documents distributed by accrediting agencies as applicable.

Evaluation

Acceptable

The reported value falls within the Acceptance Limits.

Not Acceptable

The reported value falls outside the Acceptance Limits.

No Evaluation

The reported value is non-numeric and can not be evaluated.

NR

As required by the TNI standards and requested by state authorities, any analyte purchased but not reported by your facility is listed as NR (Not Reported).

Study Mean and Standard Deviation

The mean and standard deviation are calculated from the study data using robust statistical calculations when possible. Other statistical calculations may be used if robust statistical calculations are not possible. The displayed values are independent of any statistical calculations required for the calculation of the analyte evaluation limits.

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Various aspects of Phenova's proficiency testing schemes can from time to time be subcontracted. If subcontracting occurs, it is placed with a competent and qualified subcontractor and Phenova is responsible for all work performed.

This report must not be used to claim product certification, approval, or endorsement by the American Association for Laboratory Accreditation (A2LA) or any agency of the federal government.



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State Regulatory Agency Request(s):

Phenova has been authorized to send a copy of your HW0719 final results to the following state agencies:

FL, IL, KY, LA, MN and ND

Other Regulatory Agency Request(s):

Phenova has been authorized to send a copy of your HW0719 final results to the following agencies:

Ford

Third Party Request(s):

Phenova has been requested to send a copy of your HW0719 final results to the following third parties:

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1099 Highland Drive, Suite E
Ann Arbor, MI 48108
Jim Tomalia
Senior Environmental Compliance Specialist
jtomalia@cadenaco.com

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Final Report - Soil / Hazardous Waste PT

Study: HW0719

Opening Date: July 29, 2019 - Closing Date: September 12, 2019

Laboratory: Pace Analytical Services, LLC - Green Bay Laboratory
1241 Bellevue Street
Suite 9
Green Bay, WI 54302
USA

Contact: Ms. Kate Verbeten
920-469-2436

EPA Lab ID: WI01103

Base, Neutrals and Acids (PT-BNA-SOIL)

Lot #: 7077-13

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
5500	Acenaphthene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	2940	2340	870 - 3410	Acceptable
5505	Acenaphthylene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	2360	1940	669 - 2990	Acceptable
5555	Anthracene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<100	<26.6		Acceptable
5575	Benzo(a)anthracene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<100	<25.8		Acceptable
5585	Benzo(b)fluoranthene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<100	<28.6		Acceptable
5600	Benzo(k)fluoranthene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	5350	3730	1690 - 6630	Acceptable
5590	Benzo(g,h,i)perylene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<100	<43.5		Acceptable
5580	Benzo(a)pyrene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	3430	2610	1010 - 4250	Acceptable
5660	4-Bromophenyl-phenylether	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	6360	4920	1970 - 7900	Acceptable
5670	Butyl benzyl phthalate	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	4110	3330	1230 - 5650	Acceptable
5700	4-Chloro-3-methylphenol	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	14000	9370	3640 - 15400	Acceptable
5760	Bis(2-chloroethoxy)methane	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	5570	3840	1300 - 6280	Acceptable
5765	bis(2-Chloroethyl)ether	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	12200	7740	2290 - 13600	Acceptable
5795	2-Chloronaphthalene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	6080	4440	1480 - 7190	Acceptable
5800	2-Chlorophenol	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	12900	7940	2160 - 14200	Acceptable
5825	4-Chlorophenyl-phenylether	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	9780	7950	2810 - 12200	Acceptable
4659	2,2'-Oxybis(1-Chloropropane)	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	4200	2750	614 - 5030	Acceptable
5855	Chrysene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<100	<24.9		Acceptable
5895	Dibenzo(a,h)anthracene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<100	<45.2		Acceptable
5905	Dibenzofuran	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	6120	4650	1980 - 6930	Acceptable
5925	Di-n-butylphthalate	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<100	<24.9		Acceptable
4610	1,2-Dichlorobenzene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	3900	2900	390 - 4430	Acceptable
4615	1,3-Dichlorobenzene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	8270	5360	827 - 9140	Acceptable
4620	1,4-Dichlorobenzene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	8290	5600	829 - 9120	Acceptable
6000	2,4-Dichlorophenol	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	7550	4900	1590 - 8300	Acceptable
6070	Diethylphthalate	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<100	<27.6		Acceptable
6135	Dimethylphthalate	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<100	<21.6		Acceptable
6185	2,4-Dinitrotoluene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<150	<23.8		Acceptable

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Base, Neutrals and Acids (PT-BNA-SOIL) cont'd

Lot #: 7077-13

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
6190	2,6-Dinitrotoluene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	13100	9600	4320 - 14700	Acceptable
6200	Di-n-octylphthalate	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	6310	5180	1440 - 8920	Acceptable
6065	Bis(2-ethylhexyl)phthalate	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	7050	5960	1840 - 9800	Acceptable
6265	Fluoranthene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	6960	5470	2270 - 8750	Acceptable
6270	Fluorene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<100	<58.7		Acceptable
6275	Hexachlorobenzene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<150	<28.0		Acceptable
4835	Hexachlorobutadiene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	5830	4580	1050 - 6550	Acceptable
4840	Hexachloroethane	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	10200	7040	1020 - 11400	Acceptable
6315	Indeno(1,2,3-cd)pyrene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<100	<36.0		Acceptable
6320	Isophorone	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	7530	5000	1890 - 9240	Acceptable
6385	2-Methylnaphthalene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<100	<43.2		Acceptable
6400	2-Methylphenol	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<300	<30.2		Acceptable
6410	4-Methylphenol (and/or 3-Methylphenol)	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<300	<30.5		Acceptable
5005	Naphthalene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	2350	1980	346 - 2920	Acceptable
5015	Nitrobenzene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	2200	1870	306 - 2800	Acceptable
6490	2-Nitrophenol	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	7940	5140	1140 - 8730	Acceptable
6500	4-Nitrophenol	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	6890	3600	689 - 9190	Acceptable
6545	N-Nitroso-di-n-propylamine	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	4210	3260	789 - 5380	Acceptable
6605	Pentachlorophenol	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	5250	2340	525 - 5870	Acceptable
6615	Phenanthrene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<100	<21.3		Acceptable
6625	Phenol	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	5890	3770	992 - 6510	Acceptable
6665	Pyrene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<100	<36.9		Acceptable
5155	1,2,4-Trichlorobenzene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<150	<18.8		Acceptable
6835	2,4,5-Trichlorophenol	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	3820	2810	745 - 4450	Acceptable
6840	2,4,6-Trichlorophenol	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<150	<25.4		Acceptable
Additional State Specific Analytes										
5145	2-Amino-1-methylbenzene					µg/kg	<500			NR
5545	Aniline	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<500	<93.4		Acceptable

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EPA Lab ID: WI01103

Base, Neutrals and Acids (PT-BNA-SOIL) cont'd

Lot #: 7077-13

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
Additional State Specific Analytes cont'd										
5595	Benzidine	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<500	<318		Acceptable
5610	Benzoic acid	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<500	<195		Acceptable
5625	Benzotrichloride					µg/kg	<500			NR
5630	Benzyl alcohol	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<500	<61.7		Acceptable
5635	Benzyl chloride					µg/kg	<500			NR
5680	Carbazole	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<500	<26.0		Acceptable
5745	4-Chloroaniline	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<500	<27.3		Acceptable
5790	1-Chloronaphthalene					µg/kg	<500			NR
5945	3,3'-Dichlorobenzidine	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<500	<45.1		Acceptable
6005	2,6-Dichlorophenol					µg/kg	<1500			NR
6130	2,4-Dimethylphenol	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<3000	<32.9		Acceptable
6175	2,4-Dinitrophenol	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<3000	<50.7		Acceptable
6280	Hexachlorocyclohexane					µg/kg	<500			NR
6285	Hexachlorocyclopentadiene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<1500	<39.4		Acceptable
6360	2-Methyl-4,6-Dinitrophenol	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<3000	<51.3		Acceptable
6460	2-Nitroaniline	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<500	<47.4		Acceptable
6465	3-Nitroaniline	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<500	<28.3		Acceptable
6470	4-Nitroaniline	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<500	<69.0		Acceptable
6495	3-Nitrophenol					µg/kg	<500			NR
6525	N-Nitrosodiethylamine					µg/kg	<1500			NR
6530	N-Nitrosodimethylamine	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<1500	<39.1		Acceptable
6535	N-Nitrosodiphenylamine	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<1500	<226		Acceptable
6590	Pentachlorobenzene					µg/kg	<500			NR
5095	Pyridine	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<500	<26.8		Acceptable
6705	1,2,3,4-Tetrachlorobenzene					µg/kg	<500			NR
6710	1,2,3,5-Tetrachlorobenzene					µg/kg	<500			NR
6715	1,2,4,5-Tetrachlorobenzene	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<500	<69.4		Acceptable

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Base, Neutrals and Acids (PT-BNA-SOIL) cont'd

Lot #: 7077-13

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
Additional State Specific Analytes cont'd										
6730	2,3,4,5-Tetrachlorophenol					µg/kg	<500			NR
6735	2,3,4,6-Tetrachlorophenol	8/6/2019	TPO	10185805	EPA 8270C 1996	µg/kg	<500	<213		Acceptable
5150	1,2,3-Trichlorobenzene					µg/kg	<500			NR
6800	1,3,5-Trichlorobenzene					µg/kg	<500			NR

PAHs (PT-PAH-SOIL)

Lot #: 7077-22

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
5500	Acenaphthene	8/5/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	896	687	201 - 1090	Acceptable
5505	Acenaphthylene	8/5/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	876	637	87.6 - 1200	Acceptable
5555	Anthracene	8/5/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	408	334	126 - 478	Acceptable
5575	Benzo(a)anthracene	8/5/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	199	141	78.5 - 249	Acceptable
5585	Benzo(b)fluoranthene	8/5/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	413	322	184 - 473	Acceptable
5600	Benzo(k)fluoranthene	8/5/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	457	363	195 - 503	Acceptable
5590	Benzo(g,h,i)perylene	8/5/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	336	259	113 - 413	Acceptable
5580	Benzo(a)pyrene	8/5/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	458	387	162 - 577	Acceptable
5855	Chrysene	8/5/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	214	147	66.8 - 241	Acceptable
5895	Dibenz(a,h)anthracene	8/5/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	239	201	98.9 - 310	Acceptable
6265	Fluoranthene	8/5/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	368	278	139 - 419	Acceptable
6270	Fluorene	8/5/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	401	289	93.3 - 479	Acceptable
6315	Indeno(1,2,3-cd)pyrene	8/5/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	181	146	67.0 - 218	Acceptable
5005	Naphthalene	8/5/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	719	510	71.9 - 892	Acceptable
6615	Phenanthrene	8/5/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	194	142	63.4 - 239	Acceptable
6665	Pyrene	8/5/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	87.7	65.4	25.8 - 116	Acceptable

Additional State Specific Analytes

6385	2-Methylnaphthalene					µg/kg	429		28.5 - 564	NR
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Medium Level Volatiles - GC (PT-VOAMGC-SOIL)

Lot #: 7077-81

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
4375	Benzene	8/7/2019	ALD	10174808	EPA 8021B 1996	µg/kg	5430	5310	4070 - 6790	Acceptable
4475	Chlorobenzene					µg/kg	8750		6560 - 10900	NR
4610	1,2-Dichlorobenzene					µg/kg	4300		3230 - 5380	NR
4615	1,3-Dichlorobenzene					µg/kg	8480		6780 - 10300	NR
4620	1,4-Dichlorobenzene					µg/kg	5020		3860 - 6160	NR
4765	Ethylbenzene	8/7/2019	ALD	10174808	EPA 8021B 1996	µg/kg	8630	9130	6040 - 11200	Acceptable
5000	Methyl-tert-butyl ether (MTBE)	8/7/2019	ALD	10174808	EPA 8021B 1996	µg/kg	6090	5900	4260 - 7910	Acceptable
5005	Naphthalene	8/7/2019	ALD	10174808	EPA 8021B 1996	µg/kg	7090	7270	4490 - 9530	Acceptable
5140	Toluene	8/7/2019	ALD	10174808	EPA 8021B 1996	µg/kg	3910	4370	2930 - 4880	Acceptable
5260	Xylenes, total	8/7/2019	ALD	10174808	EPA 8021B 1996	µg/kg	8230	8690	5760 - 10700	Acceptable
Additional State Specific Analytes										
4900	Isopropylbenzene					µg/kg	5030		3310 - 7260	NR
5210	1,2,4-Trimethylbenzene					µg/kg	6910		4450 - 9350	NR
5215	1,3,5-Trimethylbenzene					µg/kg	5800		3850 - 7840	NR
5250	o-Xylene					µg/kg	4080		2860 - 5300	NR
5240	m+p-Xylene					µg/kg	4150		2910 - 5400	NR



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PT Study Score Report

EPA ID: WI01103
Laboratory: Pace Analytical Services, LLC - Green Bay Laboratory
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USA

Study Number	Number of Reported Results	Number of Passing Results	Percent Passing
HW0719	94	94	100%

Report Definitions:

<i>Number of Reported Results</i>	The number of results reported which could be evaluated. Results receiving an evaluation of "NR" or "No Evaluation" are not included.
<i>Number of Passing Results</i>	The number of results reported receiving an evaluation of "Acceptable" or "Check for Error".
<i>Percent Passing</i>	The percentage of results reported receiving an evaluation of "Acceptable" or "Check for Error".



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Statistical Summary Report - Soil / Hazardous Waste PT

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Base, Neutrals and Acids (PT-BNA-SOIL) Lot #: 7077-13

NELAC Code	Analyte	Units	Study Mean	Study Standard Deviation	Low Acceptance Limit %	High Acceptance Limit %
5500	Acenaphthene	µg/kg	2140	391	29.6	116
5505	Acenaphthylene	µg/kg	1830	361	28.3	127
5555	Anthracene	µg/kg	N/A	N/A	N/A	N/A
5575	Benzo(a)anthracene	µg/kg	N/A	N/A	N/A	N/A
5585	Benzo(b)fluoranthene	µg/kg	N/A	N/A	N/A	N/A
5600	Benzo(k)fluoranthene	µg/kg	4160	762	31.6	124
5590	Benzo(g,h,i)perylene	µg/kg	N/A	N/A	N/A	N/A
5580	Benzo(a)pyrene	µg/kg	2630	539	29.4	124
5660	4-Bromophenyl-phenylether	µg/kg	4940	1020	31.0	124
5670	Butyl benzyl phthalate	µg/kg	3440	816	29.9	137
5700	4-Chloro-3-methylphenol	µg/kg	9410	1820	26.0	110
5760	Bis(2-chloroethoxy)methane	µg/kg	3790	810	23.3	113
5765	bis(2-Chloroethyl)ether	µg/kg	7970	1900	18.8	111
5795	2-Chloronaphthalene	µg/kg	4330	908	24.3	118
5800	2-Chlorophenol	µg/kg	8030	1630	16.7	110
5825	4-Chlorophenyl-phenylether	µg/kg	7490	1510	28.7	125
4659	2,2'-Oxybis(1-Chloropropane)	µg/kg	2820	628	14.6	120
5855	Chrysene	µg/kg	N/A	N/A	N/A	N/A
5895	Dibenzo(a,h)anthracene	µg/kg	N/A	N/A	N/A	N/A
5905	Dibenzofuran	µg/kg	4460	890	32.4	113
5925	Di-n-butylphthalate	µg/kg	N/A	N/A	N/A	N/A
4610	1,2-Dichlorobenzene	µg/kg	2280	514	10.0	114
4615	1,3-Dichlorobenzene	µg/kg	4490	1200	10.0	111
4620	1,4-Dichlorobenzene	µg/kg	4470	1120	10.0	110
6000	2,4-Dichlorophenol	µg/kg	4850	822	21.1	110
6070	Diethylphthalate	µg/kg	N/A	N/A	N/A	N/A
6135	Dimethylphthalate	µg/kg	N/A	N/A	N/A	N/A
6185	2,4-Dinitrotoluene	µg/kg	N/A	N/A	N/A	N/A
6190	2,6-Dinitrotoluene	µg/kg	9520	2190	33.0	112
6200	Di-n-octylphthalate	µg/kg	5180	1170	22.8	141
6065	Bis(2-ethylhexyl)phthalate	µg/kg	5820	1300	26.1	139
6265	Fluoranthene	µg/kg	5510	1160	32.6	126
6270	Fluorene	µg/kg	N/A	N/A	N/A	N/A
6275	Hexachlorobenzene	µg/kg	N/A	N/A	N/A	N/A
4835	Hexachlorobutadiene	µg/kg	3800	740	18.0	112
4840	Hexachloroethane	µg/kg	5660	1570	10.0	112
6315	Indeno(1,2,3-cd)pyrene	µg/kg	N/A	N/A	N/A	N/A
6320	Isophorone	µg/kg	5560	1180	25.1	123
6385	2-Methylnaphthalene	µg/kg	N/A	N/A	N/A	N/A
6400	2-Methylphenol	µg/kg	N/A	N/A	N/A	N/A
6410	4-Methylphenol (and/or 3-Methylphenol)	µg/kg	N/A	N/A	N/A	N/A
5005	Naphthalene	µg/kg	1630	344	14.7	124
5015	Nitrobenzene	µg/kg	1550	326	13.9	127
6490	2-Nitrophenol	µg/kg	4860	1060	14.4	110



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Statistical Summary Report - Soil / Hazardous Waste PT

Opening Date: July 29, 2019 - Closing Date: September 12, 2019

Laboratory: Pace Analytical Services, LLC - Green Bay Laboratory
1241 Bellevue Street
Suite 9
Green Bay, WI 54302
USA

Contact: Ms. Kate Verbeten
920-469-2436

EPA Lab ID: WI01103

Base, Neutrals and Acids (PT-BNA-SOIL) Lot #: 7077-13 cont'd

NELAC Code	Analyte	Units	Study Mean	Study Standard Deviation	Low Acceptance Limit %	High Acceptance Limit %
6500	4-Nitrophenol	µg/kg	4150	1000	10.0	133
6545	N-Nitroso-di-n-propylamine	µg/kg	3080	657	18.7	128
6605	Pentachlorophenol	µg/kg	2770	1030	10.0	112
6615	Phenanthrene	µg/kg	N/A	N/A	N/A	N/A
6625	Phenol	µg/kg	3750	670	16.8	111
6665	Pyrene	µg/kg	N/A	N/A	N/A	N/A
5155	1,2,4-Trichlorobenzene	µg/kg	N/A	N/A	N/A	N/A
6835	2,4,5-Trichlorophenol	µg/kg	2600	459	19.5	116
6840	2,4,6-Trichlorophenol	µg/kg	N/A	N/A	N/A	N/A
Additional State Specific Analytes						
5145	2-Amino-1-methylbenzene	µg/kg	N/A	N/A	N/A	N/A
5545	Aniline	µg/kg	N/A	N/A	N/A	N/A
5595	Benzidine	µg/kg	N/A	N/A	N/A	N/A
5610	Benzoic acid	µg/kg	N/A	N/A	N/A	N/A
5625	Benzotrichloride	µg/kg	N/A	N/A	N/A	N/A
5630	Benzyl alcohol	µg/kg	N/A	N/A	N/A	N/A
5635	Benzyl chloride	µg/kg	N/A	N/A	N/A	N/A
5680	Carbazole	µg/kg	N/A	N/A	N/A	N/A
5745	4-Chloroaniline	µg/kg	N/A	N/A	N/A	N/A
5790	1-Chloronaphthalene	µg/kg	N/A	N/A	N/A	N/A
5945	3,3'-Dichlorobenzidine	µg/kg	N/A	N/A	N/A	N/A
6005	2,6-Dichlorophenol	µg/kg	N/A	N/A	N/A	N/A
6130	2,4-Dimethylphenol	µg/kg	N/A	N/A	N/A	N/A
6175	2,4-Dinitrophenol	µg/kg	N/A	N/A	N/A	N/A
6280	Hexachlorocyclohexane	µg/kg	N/A	N/A	N/A	N/A
6285	Hexachlorocyclopentadiene	µg/kg	N/A	N/A	N/A	N/A
6360	2-Methyl-4,6-Dinitrophenol	µg/kg	N/A	N/A	N/A	N/A
6460	2-Nitroaniline	µg/kg	N/A	N/A	N/A	N/A
6465	3-Nitroaniline	µg/kg	N/A	N/A	N/A	N/A
6470	4-Nitroaniline	µg/kg	N/A	N/A	N/A	N/A
6495	3-Nitrophenol	µg/kg	N/A	N/A	N/A	N/A
6525	N-Nitrosodiethylamine	µg/kg	N/A	N/A	N/A	N/A
6530	N-Nitrosodimethylamine	µg/kg	N/A	N/A	N/A	N/A
6535	N-Nitrosodiphenylamine	µg/kg	N/A	N/A	N/A	N/A
6590	Pentachlorobenzene	µg/kg	N/A	N/A	N/A	N/A
5095	Pyridine	µg/kg	N/A	N/A	N/A	N/A
6705	1,2,3,4-Tetrachlorobenzene	µg/kg	N/A	N/A	N/A	N/A
6710	1,2,3,5-Tetrachlorobenzene	µg/kg	N/A	N/A	N/A	N/A
6715	1,2,4,5-Tetrachlorobenzene	µg/kg	N/A	N/A	N/A	N/A
6730	2,3,4,5-Tetrachlorophenol	µg/kg	N/A	N/A	N/A	N/A
6735	2,3,4,6-Tetrachlorophenol	µg/kg	N/A	N/A	N/A	N/A
5150	1,2,3-Trichlorobenzene	µg/kg	N/A	N/A	N/A	N/A
6800	1,3,5-Trichlorobenzene	µg/kg	N/A	N/A	N/A	N/A



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USA

Contact: Ms. Kate Verbeten
920-469-2436

EPA Lab ID: WI01103

PAHs (PT-PAH-SOIL) Lot #: 7077-22

NELAC Code	Analyte	Units	Study Mean	Study Standard Deviation	Low Acceptance Limit %	High Acceptance Limit %
5500	Acenaphthene	µg/kg	646	155	22.4	122
5505	Acenaphthylene	µg/kg	609	157	10.0	137
5555	Anthracene	µg/kg	302	68.9	30.9	117
5575	Benzo(a)anthracene	µg/kg	164	30.6	39.4	125
5585	Benzo(b)fluoranthene	µg/kg	329	51.1	44.6	115
5600	Benzo(k)fluoranthene	µg/kg	347	60.6	42.7	110
5590	Benzo(g,h,i)perylene	µg/kg	263	45.0	33.6	123
5580	Benzo(a)pyrene	µg/kg	370	57.1	35.4	126
5855	Chrysene	µg/kg	154	29.9	31.2	113
5895	Dibenz(a,h)anthracene	µg/kg	204	33.1	41.4	130
6265	Fluoranthene	µg/kg	279	53.7	37.8	114
6270	Fluorene	µg/kg	286	65.4	23.3	119
6315	Indeno(1,2,3-cd)pyrene	µg/kg	143	21.2	37.0	120
5005	Naphthalene	µg/kg	461	140	10.0	124
6615	Phenanthrene	µg/kg	151	29.3	32.7	123
6665	Pyrene	µg/kg	70.9	15.4	29.4	132

Additional State Specific Analytes

6385	2-Methylnaphthalene	µg/kg	285	67.9	6.64	131
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Medium Level Volatiles - GC (PT-VOAMGC-SOIL) Lot #: 7077-81

NELAC Code	Analyte	Units	Study Mean	Study Standard Deviation	Low Acceptance Limit %	High Acceptance Limit %
4375	Benzene	µg/kg	5380	1130	75.0	125
4475	Chlorobenzene	µg/kg	6310	0.00	75.0	125
4610	1,2-Dichlorobenzene	µg/kg	3490	0.00	75.1	125
4615	1,3-Dichlorobenzene	µg/kg	6960	0.00	80.0	121
4620	1,4-Dichlorobenzene	µg/kg	4160	0.00	76.9	123
4765	Ethylbenzene	µg/kg	8680	1550	70.0	130
5000	Methyl-tert-butyl ether (MTBE)	µg/kg	5780	1090	70.0	130
5005	Naphthalene	µg/kg	5910	933	63.3	134
5140	Toluene	µg/kg	4070	692	74.9	125
5260	Xylenes, total	µg/kg	8070	1270	70.0	130

Additional State Specific Analytes

4900	Isopropylbenzene	µg/kg	N/A	0.00	65.8	144
5210	1,2,4-Trimethylbenzene	µg/kg	6680	1240	64.4	135
5215	1,3,5-Trimethylbenzene	µg/kg	6030	1330	66.4	135
5250	o-Xylene	µg/kg	3870	698	70.1	130
5240	m+p-Xylene	µg/kg	4050	712	70.1	130



March 21, 2019

Ms. Kate Verbeten
Pace Analytical Services, LLC - Green Bay Laboratory
1241 Bellevue Street
Suite 9
Green Bay, WI 54302
USA

Dear Kate,

Thank you for participating in the HW0119 Soil / Hazardous Waste PT Study. Enclosed is your final report, which has been carefully reviewed by the PT specialists at Phenova. This report presents some additional sections and features which will give you more information on the study data for the standards that were reported by your laboratory and more information regarding the overall performance of your laboratory in relation to other study participants.

The enclosed report is in two sections, the "Evaluation Report" and the "Statistical Report". The "Evaluation Report" contains the evaluation of your reported data as well the reported method, analysis date and analyst. The "Evaluation Report" is an updated and enhanced version of the reports you previously received at the conclusion of our PT studies. The "Statistical Report" contains your passing percentage as well as statistics from the study for the analytes reported by your laboratory.

For any analyte falling outside the established acceptance limits, our PT management staff would like to assist you in determining the most appropriate course of corrective action for your facility. Please contact us at any time if we may be of service to you.

Thank you again for participating in the HW0119 Soil / Hazardous Waste PT Study. We appreciate working with you and look forward to our next study. If you have any questions, please call us at 866-942-2978.



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Report Definitions:

Assigned Value

The Assigned Value is determined from the study mean, gravimetric and volumetric true concentration of an analyte to be analyzed, calculation and/or an appropriate reference value as stipulated in the EPA National Standards for Water Proficiency Testing Studies Criteria Document (current version), the National Environmental Laboratory Accreditation Conference Institute (TNI) criteria (ref: TNI FOT tables, TNI PT Committee) and other documents distributed by accrediting agencies as applicable.

Evaluation Limits

Acceptance Limits are derived from fixed limits, coefficients, constants and calculations stipulated in the EPA National Standards for Water Proficiency Testing Studies Criteria Documents (current version), the National Environmental Laboratory Accreditation Conference Institute (TNI) criteria (ref: TNI FOT tables, TNI PT Committee) and other documents distributed by accrediting agencies as applicable.

Evaluation

Acceptable

The reported value falls within the Acceptance Limits.

Not Acceptable

The reported value falls outside the Acceptance Limits.

No Evaluation

The reported value is non-numeric and can not be evaluated.

NR

As required by the TNI standards and requested by state authorities, any analyte purchased but not reported by your facility is listed as NR (Not Reported).

Study Mean and Standard Deviation

The mean and standard deviation are calculated from the study data using robust statistical calculations when possible. Other statistical calculations may be used if robust statistical calculations are not possible. The displayed values are independent of any statistical calculations required for the calculation of the analyte evaluation limits.

This report must not be reproduced except in full, without the written approval of Phenova.

Various aspects of Phenova's proficiency testing schemes can from time to time be subcontracted. If subcontracting occurs, it is placed with a competent and qualified subcontractor and Phenova is responsible for all work performed.

This report must not be used to claim product certification, approval, or endorsement by the American Association for Laboratory Accreditation (A2LA) or any agency of the federal government.



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State Regulatory Agency Request(s):

Phenova has been authorized to send a copy of your HW0119 final results to the following state agencies:

FL, GA, IL, KY, LA, MN and ND

Other Regulatory Agency Request(s):

Phenova has been authorized to send a copy of your HW0119 final results to the following agencies:

Ford

Third Party Request(s):

Phenova has been requested to send a copy of your HW0119 final results to the following third parties:

CADENA, Inc.
1099 Highland Drive, Suite E
Ann Arbor, MI 48108
Jim Tomalia
Senior Environmental Compliance Specialist
jtomalia@cadenaco.com

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Final Report - Soil / Hazardous Waste PT

Study: HW0119

Opening Date: January 28, 2019 - Closing Date: March 14, 2019

Laboratory: Pace Analytical Services, LLC - Green Bay Laboratory
1241 Bellevue Street
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Green Bay, WI 54302
USA

Contact: Ms. Kate Verbeten
920-469-2436

EPA Lab ID: WI01103

Base, Neutrals and Acids (PT-BNA-SOIL)

Lot #: 7075-13

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
5500	Acenaphthene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<100	<59.2		Acceptable
5505	Acenaphthylene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<100	<59.5		Acceptable
5555	Anthracene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<100	<26.7		Acceptable
5575	Benzo(a)anthracene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	1130	832	405 - 1470	Acceptable
5585	Benzo(b)fluoranthene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<100	45.9		Acceptable
5600	Benzo(k)fluoranthene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	2480	1550	790 - 3140	Acceptable
5590	Benzo(g,h,i)perylene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<100	<43.7		Acceptable
5580	Benzo(a)pyrene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<100	<25.1		Acceptable
5660	4-Bromophenyl-phenylether	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	12200	9100	3930 - 15400	Acceptable
5670	Butyl benzyl phthalate	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	11100	8960	3380 - 15100	Acceptable
5700	4-Chloro-3-methylphenol	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	13100	7520	3060 - 14400	Acceptable
5760	Bis(2-chloroethoxy)methane	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	3460	2580	683 - 3900	Acceptable
5765	bis(2-Chloroethyl)ether	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	9380	7430	1580 - 10400	Acceptable
5795	2-Chloronaphthalene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	3990	2720	949 - 4660	Acceptable
5800	2-Chlorophenol	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	10300	6780	1580 - 11300	Acceptable
5825	4-Chlorophenyl-phenylether	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<100	<31.1		Acceptable
4659	2,2'-Oxybis(1-Chloropropane)	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<150	<43.0		Acceptable
5855	Chrysene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	2430	1650	871 - 2870	Acceptable
5895	Dibenzo(a,h)anthracene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	1950	1270	436 - 2670	Acceptable
5905	Dibenzofuran	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	7220	5480	2390 - 8260	Acceptable
5925	Di-n-butylphthalate	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	9400	8620	2490 - 13000	Acceptable
4610	1,2-Dichlorobenzene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	4340	2930	434 - 4780	Acceptable
4615	1,3-Dichlorobenzene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	11800	8170	1180 - 13000	Acceptable
4620	1,4-Dichlorobenzene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	11400	7970	1140 - 12500	Acceptable
6000	2,4-Dichlorophenol	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<150	<44.6		Acceptable
6070	Diethylphthalate	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	11700	9070	3700 - 14400	Acceptable
6135	Dimethylphthalate	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	2160	1530	603 - 2710	Acceptable
6185	2,4-Dinitrotoluene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<150	<23.9		Acceptable

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Final Report - Soil / Hazardous Waste PT

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920-469-2436

EPA Lab ID: WI01103

Base, Neutrals and Acids (PT-BNA-SOIL) cont'd

Lot #: 7075-13

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
6190	2,6-Dinitrotoluene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	12600	9220	4300 - 14700	Acceptable
6200	Di-n-octylphthalate	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	8950	7380	2200 - 13100	Acceptable
6065	Bis(2-ethylhexyl)phthalate	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	5350	4830	1320 - 7510	Acceptable
6265	Fluoranthene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	1150	958	332 - 1610	Acceptable
6270	Fluorene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<100	<19.5		Acceptable
6275	Hexachlorobenzene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<150	<28.1		Acceptable
4835	Hexachlorobutadiene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<150	<42.5		Acceptable
4840	Hexachloroethane	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	15000	9150	1500 - 16400	Acceptable
6315	Indeno(1,2,3-cd)pyrene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<100	<36.1		Acceptable
6320	Isophorone	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	12800	9780	3220 - 15100	Acceptable
6385	2-Methylnaphthalene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<100	<43.3		Acceptable
6400	2-Methylphenol	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<300	<30.3		Acceptable
6410	4-Methylphenol (and/or 3-Methylphenol)	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<300	<30.6		Acceptable
5005	Naphthalene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<100	<58.4		Acceptable
5015	Nitrobenzene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	9990	7710	2220 - 11500	Acceptable
6490	2-Nitrophenol	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	9370	7820	1450 - 10800	Acceptable
6500	4-Nitrophenol	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	11500	6280	1150 - 15300	Acceptable
6545	N-Nitroso-di-n-propylamine	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<150	<26.5		Acceptable
6605	Pentachlorophenol	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	12100	4950	1210 - 13300	Acceptable
6615	Phenanthrene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	1390	1030	497 - 1730	Acceptable
6625	Phenol	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	6290	4470	1020 - 6920	Acceptable
6665	Pyrene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<100	<37.0		Acceptable
5155	1,2,4-Trichlorobenzene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	3680	2250	368 - 4040	Acceptable
6835	2,4,5-Trichlorophenol	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	11700	8100	2460 - 13900	Acceptable
6840	2,4,6-Trichlorophenol	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	13000	7870	2840 - 14300	Acceptable
Additional State Specific Analytes										
5145	2-Amino-1-methylbenzene					µg/kg	<500			NR
5545	Aniline	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<500	<93.8		Acceptable

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Contact: Ms. Kate Verbeten
920-469-2436

EPA Lab ID: WI01103

Base, Neutrals and Acids (PT-BNA-SOIL) cont'd

Lot #: 7075-13

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
Additional State Specific Analytes cont'd										
5595	Benzidine	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<500	<319		Acceptable
5610	Benzoic acid	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<500	<196		Acceptable
5625	Benzotrichloride					µg/kg	<500			NR
5630	Benzyl alcohol	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<500	<61.9		Acceptable
5635	Benzyl chloride					µg/kg	<500			NR
5680	Carbazole	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<500	<26.1		Acceptable
5745	4-Chloroaniline	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<500	<27.4		Acceptable
5790	1-Chloronaphthalene					µg/kg	<500			NR
5945	3,3'-Dichlorobenzidine	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<500	<45.3		Acceptable
6005	2,6-Dichlorophenol					µg/kg	<1500			NR
6130	2,4-Dimethylphenol	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<3000	<33.0		Acceptable
6175	2,4-Dinitrophenol	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<3000	<50.8		Acceptable
6280	Hexachlorocyclohexane					µg/kg	<500			NR
6285	Hexachlorocyclopentadiene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<1500	<39.5		Acceptable
6360	2-Methyl-4,6-Dinitrophenol	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<3000	<51.4		Acceptable
6460	2-Nitroaniline	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<500	<47.6		Acceptable
6465	3-Nitroaniline	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<500	<28.4		Acceptable
6470	4-Nitroaniline	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<500	<69.3		Acceptable
6495	3-Nitrophenol					µg/kg	<500			NR
6525	N-Nitrosodiethylamine					µg/kg	<1500			NR
6530	N-Nitrosodimethylamine	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<1500	<39.2		Acceptable
6535	N-Nitrosodiphenylamine	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<1500	<226		Acceptable
6590	Pentachlorobenzene					µg/kg	<500			NR
5095	Pyridine	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<500	<26.9		Acceptable
6705	1,2,3,4-Tetrachlorobenzene					µg/kg	<500			NR
6710	1,2,3,5-Tetrachlorobenzene					µg/kg	<500			NR
6715	1,2,4,5-Tetrachlorobenzene	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<500	<69.6		Acceptable

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Final Report - Soil / Hazardous Waste PT

Study: HW0119

Opening Date: January 28, 2019 - Closing Date: March 14, 2019

Laboratory: Pace Analytical Services, LLC - Green Bay Laboratory
1241 Bellevue Street
Suite 9
Green Bay, WI 54302
USA

Contact: Ms. Kate Verbeten
920-469-2436

EPA Lab ID: WI01103

Base, Neutrals and Acids (PT-BNA-SOIL) cont'd

Lot #: 7075-13

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
Additional State Specific Analytes cont'd										
6730	2,3,4,5-Tetrachlorophenol					µg/kg	<500			NR
6735	2,3,4,6-Tetrachlorophenol	2/8/2019	RJN	10185805	EPA 8270C 1996	µg/kg	<500	<214		Acceptable
5150	1,2,3-Trichlorobenzene					µg/kg	<500			NR
6800	1,3,5-Trichlorobenzene					µg/kg	<500			NR

PAHs (PT-PAH-SOIL)

Lot #: 7075-22

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
5500	Acenaphthene	2/11/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	229	181	40.4 - 255	Acceptable
5505	Acenaphthylene	2/11/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	578	481	57.8 - 783	Acceptable
5555	Anthracene	2/11/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	641	549	192 - 708	Acceptable
5575	Benzo(a)anthracene	2/11/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	96.8	69.4	29.9 - 115	Acceptable
5585	Benzo(b)fluoranthene	2/11/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	113	95.2	41.1 - 130	Acceptable
5600	Benzo(k)fluoranthene	2/11/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	112	97.7	35.2 - 134	Acceptable
5590	Benzo(g,h,i)perylene	2/11/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	161	127	44.2 - 195	Acceptable
5580	Benzo(a)pyrene	2/11/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	128	97.9	31.1 - 150	Acceptable
5855	Chrysene	2/11/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	200	154	60.9 - 220	Acceptable
5895	Dibenz(a,h)anthracene	2/11/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	414	349	156 - 473	Acceptable
6265	Fluoranthene	2/11/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	436	355	159 - 480	Acceptable
6270	Fluorene	2/11/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	84.3	69.0	14.5 - 107	Acceptable
6315	Indeno(1,2,3-cd)pyrene	2/11/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	349	288	136 - 384	Acceptable
5005	Naphthalene	2/11/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	190	151	19.0 - 229	Acceptable
6615	Phenanthrene	2/11/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	597	490	174 - 656	Acceptable
6665	Pyrene	2/11/2019	ARO	10242407	EPA 8270C SIM 1996	µg/kg	324	252	100 - 369	Acceptable

Additional State Specific Analytes

6385	2-Methylnaphthalene					µg/kg	67.0		4.08 - 89.0	NR
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Final Report - Soil / Hazardous Waste PT

Study: HW0119

Opening Date: January 28, 2019 - Closing Date: March 14, 2019

Laboratory: Pace Analytical Services, LLC - Green Bay Laboratory
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USA

Contact: Ms. Kate Verbeten
920-469-2436

EPA Lab ID: WI01103

Medium Level Volatiles - GC (PT-VOAMGC-SOIL)

Lot #: 7075-81

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
4375	Benzene	2/13/2019	ALD	10174808	EPA 8021B 1996	µg/kg	2820	2660	2120 - 3530	Acceptable
4475	Chlorobenzene					µg/kg	9770		7330 - 12200	NR
4610	1,2-Dichlorobenzene					µg/kg	2870		2150 - 3580	NR
4615	1,3-Dichlorobenzene					µg/kg	9100		7290 - 11100	NR
4620	1,4-Dichlorobenzene					µg/kg	2410		1820 - 3070	NR
4765	Ethylbenzene	2/13/2019	ALD	10174808	EPA 8021B 1996	µg/kg	2050	2320	1440 - 2670	Acceptable
5000	Methyl-tert-butyl ether (MTBE)	2/13/2019	ALD	10174808	EPA 8021B 1996	µg/kg	7670	6860	5370 - 9980	Acceptable
5005	Naphthalene	2/13/2019	ALD	10174808	EPA 8021B 1996	µg/kg	3840	3920	2080 - 5370	Acceptable
5140	Toluene	2/13/2019	ALD	10174808	EPA 8021B 1996	µg/kg	4780	4630	3590 - 5980	Acceptable
5260	Xylenes, total	2/13/2019	ALD	10174808	EPA 8021B 1996	µg/kg	12700	13400	8880 - 16500	Acceptable
Additional State Specific Analytes										
4900	Isopropylbenzene					µg/kg	8060		5300 - 11600	NR
5210	1,2,4-Trimethylbenzene					µg/kg	7960		5120 - 10800	NR
5215	1,3,5-Trimethylbenzene					µg/kg	6970		4620 - 9420	NR
5250	o-Xylene					µg/kg	6320		4430 - 8220	NR
5240	m+p-Xylene					µg/kg	6370		4460 - 8280	NR



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PT Study Score Report

EPA ID: WI01103
Laboratory: Pace Analytical Services, LLC - Green Bay Laboratory
1241 Bellevue Street
Suite 9
Green Bay, WI 54302
USA

Study Number	Number of Reported Results	Number of Passing Results	Percent Passing
HW0119	94	94	100%

Report Definitions:

<i>Number of Reported Results</i>	The number of results reported which could be evaluated. Results receiving an evaluation of "NR" or "No Evaluation" are not included.
<i>Number of Passing Results</i>	The number of results reported receiving an evaluation of "Acceptable" or "Check for Error".
<i>Percent Passing</i>	The percentage of results reported receiving an evaluation of "Acceptable" or "Check for Error".



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Statistical Summary Report - Soil / Hazardous Waste PT

Opening Date: January 28, 2019 - Closing Date: March 14, 2019

Laboratory: Pace Analytical Services, LLC - Green Bay Laboratory
1241 Bellevue Street
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Green Bay, WI 54302
USA

Contact: Ms. Kate Verbeten
920-469-2436

EPA Lab ID: WI01103

Base, Neutrals and Acids (PT-BNA-SOIL) Lot #: 7075-13

NELAC Code	Analyte	Units	Study Mean	Study Standard Deviation	Low Acceptance Limit %	High Acceptance Limit %
5500	Acenaphthene	µg/kg	N/A	N/A	N/A	N/A
5505	Acenaphthylene	µg/kg	N/A	N/A	N/A	N/A
5555	Anthracene	µg/kg	N/A	N/A	N/A	N/A
5575	Benzo(a)anthracene	µg/kg	937	185	35.8	130
5585	Benzo(b)fluoranthene	µg/kg	N/A	N/A	N/A	N/A
5600	Benzo(k)fluoranthene	µg/kg	1960	414	31.9	127
5590	Benzo(g,h,i)perylene	µg/kg	N/A	N/A	N/A	N/A
5580	Benzo(a)pyrene	µg/kg	N/A	N/A	N/A	N/A
5660	4-Bromophenyl-phenylether	µg/kg	9650	1660	32.2	126
5670	Butyl benzyl phthalate	µg/kg	9240	1750	30.5	136
5700	4-Chloro-3-methylphenol	µg/kg	7980	1870	23.4	110
5760	Bis(2-chloroethoxy)methane	µg/kg	2290	562	19.7	113
5765	bis(2-Chloroethyl)ether	µg/kg	5970	1650	16.8	111
5795	2-Chloronaphthalene	µg/kg	2810	732	23.8	117
5800	2-Chlorophenol	µg/kg	5910	1610	15.3	110
5825	4-Chlorophenyl-phenylether	µg/kg	N/A	N/A	N/A	N/A
4659	2,2'-Oxybis(1-Chloropropane)	µg/kg	N/A	N/A	N/A	N/A
5855	Chrysene	µg/kg	1870	394	35.8	118
5895	Dibenzo(a,h)anthracene	µg/kg	1550	332	22.4	137
5905	Dibenzofuran	µg/kg	5330	1310	33.1	114
5925	Di-n-butylphthalate	µg/kg	7750	1400	26.5	138
4610	1,2-Dichlorobenzene	µg/kg	2440	791	10.0	110
4615	1,3-Dichlorobenzene	µg/kg	6360	2330	10.0	110
4620	1,4-Dichlorobenzene	µg/kg	6230	2250	10.0	110
6000	2,4-Dichlorophenol	µg/kg	N/A	N/A	N/A	N/A
6070	Diethylphthalate	µg/kg	9040	1650	31.6	123
6135	Dimethylphthalate	µg/kg	1660	406	27.9	125
6185	2,4-Dinitrotoluene	µg/kg	N/A	N/A	N/A	N/A
6190	2,6-Dinitrotoluene	µg/kg	9480	1860	34.1	117
6200	Di-n-octylphthalate	µg/kg	7640	1500	24.6	146
6065	Bis(2-ethylhexyl)phthalate	µg/kg	4420	885	24.7	140
6265	Fluoranthene	µg/kg	969	170	28.9	140
6270	Fluorene	µg/kg	N/A	N/A	N/A	N/A
6275	Hexachlorobenzene	µg/kg	N/A	N/A	N/A	N/A
4835	Hexachlorobutadiene	µg/kg	N/A	N/A	N/A	N/A
4840	Hexachloroethane	µg/kg	8160	2760	10.0	109
6315	Indeno(1,2,3-cd)pyrene	µg/kg	N/A	N/A	N/A	N/A
6320	Isophorone	µg/kg	9170	2400	25.2	118
6385	2-Methylnaphthalene	µg/kg	N/A	N/A	N/A	N/A
6400	2-Methylphenol	µg/kg	N/A	N/A	N/A	N/A
6410	4-Methylphenol (and/or 3-Methylphenol)	µg/kg	N/A	N/A	N/A	N/A
5005	Naphthalene	µg/kg	N/A	N/A	N/A	N/A
5015	Nitrobenzene	µg/kg	6840	1720	22.2	115
6490	2-Nitrophenol	µg/kg	6120	1660	15.5	115



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Statistical Summary Report - Soil / Hazardous Waste PT

Opening Date: January 28, 2019 - Closing Date: March 14, 2019

Laboratory: Pace Analytical Services, LLC - Green Bay Laboratory
1241 Bellevue Street
Suite 9
Green Bay, WI 54302
USA

Contact: Ms. Kate Verbeten
920-469-2436

EPA Lab ID: WI01103

Base, Neutrals and Acids (PT-BNA-SOIL) Lot #: 7075-13 cont'd

NELAC Code	Analyte	Units	Study Mean	Study Standard Deviation	Low Acceptance Limit %	High Acceptance Limit %
6500	4-Nitrophenol	µg/kg	7080	2000	10.0	133
6545	N-Nitroso-di-n-propylamine	µg/kg	N/A	N/A	N/A	N/A
6605	Pentachlorophenol	µg/kg	6110	1840	10.0	110
6615	Phenanthrene	µg/kg	1110	219	35.8	124
6625	Phenol	µg/kg	3860	1000	16.2	110
6665	Pyrene	µg/kg	N/A	N/A	N/A	N/A
5155	1,2,4-Trichlorobenzene	µg/kg	2060	509	10.0	110
6835	2,4,5-Trichlorophenol	µg/kg	8180	1560	21.0	119
6840	2,4,6-Trichlorophenol	µg/kg	7820	1670	21.8	110
Additional State Specific Analytes						
5145	2-Amino-1-methylbenzene	µg/kg	N/A	N/A	N/A	N/A
5545	Aniline	µg/kg	N/A	N/A	N/A	N/A
5595	Benzidine	µg/kg	N/A	N/A	N/A	N/A
5610	Benzoic acid	µg/kg	N/A	N/A	N/A	N/A
5625	Benzotrichloride	µg/kg	N/A	N/A	N/A	N/A
5630	Benzyl alcohol	µg/kg	N/A	N/A	N/A	N/A
5635	Benzyl chloride	µg/kg	N/A	N/A	N/A	N/A
5680	Carbazole	µg/kg	N/A	N/A	N/A	N/A
5745	4-Chloroaniline	µg/kg	N/A	N/A	N/A	N/A
5790	1-Chloronaphthalene	µg/kg	N/A	N/A	N/A	N/A
5945	3,3'-Dichlorobenzidine	µg/kg	N/A	N/A	N/A	N/A
6005	2,6-Dichlorophenol	µg/kg	N/A	N/A	N/A	N/A
6130	2,4-Dimethylphenol	µg/kg	N/A	N/A	N/A	N/A
6175	2,4-Dinitrophenol	µg/kg	N/A	N/A	N/A	N/A
6280	Hexachlorocyclohexane	µg/kg	N/A	N/A	N/A	N/A
6285	Hexachlorocyclopentadiene	µg/kg	N/A	N/A	N/A	N/A
6360	2-Methyl-4,6-Dinitrophenol	µg/kg	N/A	N/A	N/A	N/A
6460	2-Nitroaniline	µg/kg	N/A	N/A	N/A	N/A
6465	3-Nitroaniline	µg/kg	N/A	N/A	N/A	N/A
6470	4-Nitroaniline	µg/kg	N/A	N/A	N/A	N/A
6495	3-Nitrophenol	µg/kg	N/A	N/A	N/A	N/A
6525	N-Nitrosodiethylamine	µg/kg	N/A	N/A	N/A	N/A
6530	N-Nitrosodimethylamine	µg/kg	N/A	N/A	N/A	N/A
6535	N-Nitrosodiphenylamine	µg/kg	N/A	N/A	N/A	N/A
6590	Pentachlorobenzene	µg/kg	N/A	N/A	N/A	N/A
5095	Pyridine	µg/kg	N/A	N/A	N/A	N/A
6705	1,2,3,4-Tetrachlorobenzene	µg/kg	N/A	N/A	N/A	N/A
6710	1,2,3,5-Tetrachlorobenzene	µg/kg	N/A	N/A	N/A	N/A
6715	1,2,4,5-Tetrachlorobenzene	µg/kg	N/A	N/A	N/A	N/A
6730	2,3,4,5-Tetrachlorophenol	µg/kg	N/A	N/A	N/A	N/A
6735	2,3,4,6-Tetrachlorophenol	µg/kg	N/A	N/A	N/A	N/A
5150	1,2,3-Trichlorobenzene	µg/kg	N/A	N/A	N/A	N/A
6800	1,3,5-Trichlorobenzene	µg/kg	N/A	N/A	N/A	N/A



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Contact: Ms. Kate Verbeten
920-469-2436

EPA Lab ID: WI01103

PAHs (PT-PAH-SOIL) Lot #: 7075-22

NELAC Code	Analyte	Units	Study Mean	Study Standard Deviation	Low Acceptance Limit %	High Acceptance Limit %
5500	Acenaphthene	µg/kg	148	29.4	17.6	111
5505	Acenaphthylene	µg/kg	394	81.6	10.0	135
5555	Anthracene	µg/kg	450	96.0	30.0	110
5575	Benzo(a)anthracene	µg/kg	72.4	15.1	30.9	119
5585	Benzo(b)fluoranthene	µg/kg	85.6	14.1	36.4	115
5600	Benzo(k)fluoranthene	µg/kg	84.5	16.9	31.4	120
5590	Benzo(g,h,i)perylene	µg/kg	120	26.5	27.5	121
5580	Benzo(a)pyrene	µg/kg	90.5	16.2	24.3	117
5855	Chrysene	µg/kg	140	29.6	30.5	110
5895	Dibenz(a,h)anthracene	µg/kg	315	59.8	37.7	114
6265	Fluoranthene	µg/kg	316	33.2	36.5	110
6270	Fluorene	µg/kg	60.7	13.7	17.2	127
6315	Indeno(1,2,3-cd)pyrene	µg/kg	257	57.6	39.0	110
5005	Naphthalene	µg/kg	117	26.9	10.0	121
6615	Phenanthrene	µg/kg	411	90.5	29.1	110
6665	Pyrene	µg/kg	235	47.6	30.9	114

Additional State Specific Analytes

6385	2-Methylnaphthalene	µg/kg	40.8	9.48	6.09	133
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Medium Level Volatiles - GC (PT-VOAMGC-SOIL) Lot #: 7075-81

NELAC Code	Analyte	Units	Study Mean	Study Standard Deviation	Low Acceptance Limit %	High Acceptance Limit %
4375	Benzene	µg/kg	2850	181	75.2	125
4475	Chlorobenzene	µg/kg	10800	0.00	75.0	125
4610	1,2-Dichlorobenzene	µg/kg	3040	0.00	74.9	125
4615	1,3-Dichlorobenzene	µg/kg	9920	0.00	80.1	122
4620	1,4-Dichlorobenzene	µg/kg	2770	0.00	75.5	127
4765	Ethylbenzene	µg/kg	2230	60.0	70.2	130
5000	Methyl-tert-butyl ether (MTBE)	µg/kg	7520	449	70.0	130
5005	Naphthalene	µg/kg	3750	292	54.2	140
5140	Toluene	µg/kg	4690	133	75.1	125
5260	Xylenes, total	µg/kg	13700	377	69.9	130

Additional State Specific Analytes

4900	Isopropylbenzene	µg/kg	N/A	0.00	65.8	144
5210	1,2,4-Trimethylbenzene	µg/kg	8030	404	64.3	136
5215	1,3,5-Trimethylbenzene	µg/kg	7230	57.7	66.3	135
5250	o-Xylene	µg/kg	6750	260	70.1	130
5240	m+p-Xylene	µg/kg	6880	34.6	70.0	130



September 17, 2020

Ms. Kate Verbeten
Pace Analytical Services, LLC - Green Bay Laboratory
1241 Bellevue Street
Suite 9
Green Bay, WI 54302
USA

Dear Kate,

Thank you for participating in the HW0720 Soil / Hazardous Waste PT Study. Enclosed is your final report, which has been carefully reviewed by the PT specialists at Phenova. This report presents some additional sections and features which will give you more information on the study data for the standards that were reported by your laboratory and more information regarding the overall performance of your laboratory in relation to other study participants.

The enclosed report is in two sections, the "Evaluation Report" and the "Statistical Report". The "Evaluation Report" contains the evaluation of your reported data as well the reported method, analysis date and analyst. The "Evaluation Report" is an updated and enhanced version of the reports you previously received at the conclusion of our PT studies. The "Statistical Report" contains your passing percentage as well as statistics from the study for the analytes reported by your laboratory.

For any analyte falling outside the established acceptance limits, our PT management staff would like to assist you in determining the most appropriate course of corrective action for your facility. Please contact us at any time if we may be of service to you.

Thank you again for participating in the HW0720 Soil / Hazardous Waste PT Study. We appreciate working with you and look forward to our next study. If you have any questions, please call us at 866-942-2978.



Report Definitions:

Assigned Value

The Assigned Value is determined from the study mean, gravimetric and volumetric true concentration of an analyte to be analyzed, calculation and/or an appropriate reference value as stipulated in the EPA National Standards for Water Proficiency Testing Studies Criteria Document (current version), the National Environmental Laboratory Accreditation Conference Institute (TNI) criteria (ref: TNI FOT tables, TNI PT Committee) and other documents distributed by accrediting agencies as applicable.

Evaluation Limits

Acceptance Limits are derived from fixed limits, coefficients, constants and calculations stipulated in the EPA National Standards for Water Proficiency Testing Studies Criteria Documents (current version), the National Environmental Laboratory Accreditation Conference Institute (TNI) criteria (ref: TNI FOT tables, TNI PT Committee) and other documents distributed by accrediting agencies as applicable.

Evaluation

Acceptable

The reported value falls within the Acceptance Limits.

Not Acceptable

The reported value falls outside the Acceptance Limits.

No Evaluation

The reported value is non-numeric and can not be evaluated.

NR

As required by the TNI standards and requested by state authorities, any analyte purchased but not reported by your facility is listed as NR (Not Reported).

Study Mean and Standard Deviation

The mean and standard deviation are calculated from the study data using robust statistical calculations when possible. Other statistical calculations may be used if robust statistical calculations are not possible. The displayed values are independent of any statistical calculations required for the calculation of the analyte evaluation limits.

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State Regulatory Agency Request(s):

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FL, IL, KY, LA, MN and ND

Other Regulatory Agency Request(s):

Phenova has been authorized to send a copy of your HW0720 final results to the following agencies:

Ford

Third Party Request(s):

Phenova has been requested to send a copy of your HW0720 final results to the following third parties:

CADENA, Inc.
1099 Highland Drive, Suite E
Ann Arbor, MI 48108
Jim Tomalia
Senior Environmental Compliance Specialist
jtomalia@cadenaco.com

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Final Report - Soil / Hazardous Waste PT

Study: HW0720

Opening Date: July 27, 2020 - Closing Date: September 10, 2020

Laboratory: Pace Analytical Services, LLC - Green Bay Laboratory
1241 Bellevue Street
Suite 9
Green Bay, WI 54302
USA

Contact: Ms. Kate Verbeten
920-469-2436

EPA Lab ID: WI01103

Base, Neutrals and Acids (PT-BNA-SOIL)

Lot #: 7081-13

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
5500	Acenaphthene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	5220	1710	1580 - 6180	Acceptable
5500	Acenaphthene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	5220	1710	1580 - 6180	Acceptable
5505	Acenaphthylene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	5570	1920	1660 - 7380	Acceptable
5505	Acenaphthylene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	5570	1920	1660 - 7380	Acceptable
5555	Anthracene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	4830	1870	1710 - 5990	Acceptable
5555	Anthracene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	4830	1870	1710 - 5990	Acceptable
5575	Benzo(a)anthracene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	3830	1260	1530 - 4840	Not Acceptable
5575	Benzo(a)anthracene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	3830	1260	1530 - 4840	Not Acceptable
5585	Benzo(b)fluoranthene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<100	<100		Acceptable
5585	Benzo(b)fluoranthene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<100	<100		Acceptable
5600	Benzo(k)fluoranthene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<100	<133		Acceptable
5600	Benzo(k)fluoranthene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<100	<133		Acceptable
5590	Benzo(g,h,i)perylene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<100	<146		Acceptable
5590	Benzo(g,h,i)perylene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<100	<146		Acceptable
5580	Benzo(a)pyrene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<100	<100		Acceptable
5580	Benzo(a)pyrene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<100	<100		Acceptable
5660	4-Bromophenyl-phenylether	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	9630	3560	3170 - 12500	Acceptable
5660	4-Bromophenyl-phenylether	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	9630	3560	3170 - 12500	Acceptable
5670	Butyl benzyl phthalate	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	3890	1370	1210 - 5580	Acceptable
5670	Butyl benzyl phthalate	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	3890	1370	1210 - 5580	Acceptable
5700	4-Chloro-3-methylphenol	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	9150	3010	2380 - 10200	Acceptable
5700	4-Chloro-3-methylphenol	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	9150	3010	2380 - 10200	Acceptable
5760	Bis(2-chloroethoxy)methane	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<100	<150		Acceptable
5760	Bis(2-chloroethoxy)methane	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<100	<150		Acceptable
5765	bis(2-Chloroethyl)ether	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	5130	1510	705 - 6250	Acceptable
5765	bis(2-Chloroethyl)ether	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	5130	1510	705 - 6250	Acceptable
5795	2-Chloronaphthalene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<100	<100		Acceptable
5795	2-Chloronaphthalene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<100	<100		Acceptable

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Base, Neutrals and Acids (PT-BNA-SOIL) cont'd

Lot #: 7081-13

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
5800	2-Chlorophenol	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<150	<150		Acceptable
5800	2-Chlorophenol	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<150	<150		Acceptable
5825	4-Chlorophenyl-phenylether	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<100	<100		Acceptable
5825	4-Chlorophenyl-phenylether	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<100	<100		Acceptable
4659	2,2'-Oxybis(1-Chloropropane)	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	3490	1110	500 - 4220	Acceptable
4659	2,2'-Oxybis(1-Chloropropane)	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	3490	1110	500 - 4220	Acceptable
5855	Chrysene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	6300	2120	2570 - 7820	Not Acceptable
5855	Chrysene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	6300	2120	2570 - 7820	Not Acceptable
5895	Dibenzo(a,h)anthracene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	2930	1050	790 - 3920	Acceptable
5895	Dibenzo(a,h)anthracene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	2930	1050	790 - 3920	Acceptable
5905	Dibenzofuran	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	10800	3660	3640 - 12300	Acceptable
5905	Dibenzofuran	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	10800	3660	3640 - 12300	Acceptable
5925	Di-n-butylphthalate	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	4350	1750	1170 - 6360	Acceptable
5925	Di-n-butylphthalate	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	4350	1750	1170 - 6360	Acceptable
4610	1,2-Dichlorobenzene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	6300	1810	630 - 6930	Acceptable
4610	1,2-Dichlorobenzene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	6300	1810	630 - 6930	Acceptable
4615	1,3-Dichlorobenzene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	9250	2530	925 - 10200	Acceptable
4615	1,3-Dichlorobenzene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	9250	2530	925 - 10200	Acceptable
4620	1,4-Dichlorobenzene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<150	<150		Acceptable
4620	1,4-Dichlorobenzene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<150	<150		Acceptable
6000	2,4-Dichlorophenol	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	10100	2990	2330 - 11300	Acceptable
6000	2,4-Dichlorophenol	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	10100	2990	2330 - 11300	Acceptable
6070	Diethylphthalate	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	7890	2790	2610 - 10200	Acceptable
6070	Diethylphthalate	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	7890	2790	2610 - 10200	Acceptable
6135	Dimethylphthalate	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	7830	2560	2570 - 9890	Not Acceptable
6135	Dimethylphthalate	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	7830	2560	2570 - 9890	Not Acceptable
6185	2,4-Dinitrotoluene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	9820	3340	2890 - 11400	Acceptable
6185	2,4-Dinitrotoluene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	9820	3340	2890 - 11400	Acceptable

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Base, Neutrals and Acids (PT-BNA-SOIL) cont'd

Lot #: 7081-13

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
6190	2,6-Dinitrotoluene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<150	<150		Acceptable
6190	2,6-Dinitrotoluene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<150	<150		Acceptable
6200	Di-n-octylphthalate	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<100	<125		Acceptable
6200	Di-n-octylphthalate	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<100	<125		Acceptable
6065	Bis(2-ethylhexyl)phthalate	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	5390	2030	1410 - 7920	Acceptable
6065	Bis(2-ethylhexyl)phthalate	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	5390	2030	1410 - 7920	Acceptable
6265	Fluoranthene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	2000	787	643 - 2750	Acceptable
6265	Fluoranthene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	2000	787	643 - 2750	Acceptable
6270	Fluorene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	5560	2040	2020 - 7010	Acceptable
6270	Fluorene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	5560	2040	2020 - 7010	Acceptable
6275	Hexachlorobenzene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	4440	1660	1760 - 5550	Not Acceptable
6275	Hexachlorobenzene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	4440	1660	1760 - 5550	Not Acceptable
4835	Hexachlorobutadiene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	4270	1400	721 - 4860	Acceptable
4835	Hexachlorobutadiene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	4270	1400	721 - 4860	Acceptable
4840	Hexachloroethane	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<150	<150		Acceptable
4840	Hexachloroethane	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<150	<150		Acceptable
6315	Indeno(1,2,3-cd)pyrene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<100	<121		Acceptable
6315	Indeno(1,2,3-cd)pyrene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<100	<121		Acceptable
6320	Isophorone	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	3840	1230	902 - 4850	Acceptable
6320	Isophorone	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	3840	1230	902 - 4850	Acceptable
6385	2-Methylnaphthalene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<100	<145		Acceptable
6385	2-Methylnaphthalene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<100	<145		Acceptable
6400	2-Methylphenol	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<300	<300		Acceptable
6400	2-Methylphenol	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<300	<300		Acceptable
6410	4-Methylphenol (and/or 3-Methylphenol)	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<300	<300		Acceptable
6410	4-Methylphenol (and/or 3-Methylphenol)	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<300	<300		Acceptable
5005	Naphthalene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<100	<195		Acceptable
5005	Naphthalene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<100	<195		Acceptable

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Base, Neutrals and Acids (PT-BNA-SOIL) cont'd

Lot #: 7081-13

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
5015	Nitrobenzene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<150	<150		Acceptable
5015	Nitrobenzene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<150	<150		Acceptable
6490	2-Nitrophenol	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	11100	3260	1620 - 12200	Acceptable
6490	2-Nitrophenol	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	11100	3260	1620 - 12200	Acceptable
6500	4-Nitrophenol	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<300	<300		Acceptable
6500	4-Nitrophenol	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<300	<300		Acceptable
6545	N-Nitroso-di-n-propylamine	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	4100	1280	808 - 5510	Acceptable
6545	N-Nitroso-di-n-propylamine	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	4100	1280	808 - 5510	Acceptable
6605	Pentachlorophenol	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	6340	1110	634 - 6980	Acceptable
6605	Pentachlorophenol	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	6340	1110	634 - 6980	Acceptable
6615	Phenanthrene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<100	<100		Acceptable
6615	Phenanthrene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<100	<100		Acceptable
6625	Phenol	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	3290	859	555 - 3890	Acceptable
6625	Phenol	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	3290	859	555 - 3890	Acceptable
6665	Pyrene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	6360	2260	1990 - 8390	Acceptable
6665	Pyrene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	6360	2260	1990 - 8390	Acceptable
5155	1,2,4-Trichlorobenzene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	5060	1610	832 - 5650	Acceptable
5155	1,2,4-Trichlorobenzene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	5060	1610	832 - 5650	Acceptable
6835	2,4,5-Trichlorophenol	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	7570	2150	1550 - 8860	Acceptable
6835	2,4,5-Trichlorophenol	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	7570	2150	1550 - 8860	Acceptable
6840	2,4,6-Trichlorophenol	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	2830	811	554 - 3390	Acceptable
6840	2,4,6-Trichlorophenol	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	2830	811	554 - 3390	Acceptable
Additional State Specific Analytes										
5145	2-Amino-1-methylbenzene					µg/kg	<500			NR
5545	Aniline	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<500	<313		Acceptable
5545	Aniline	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<500	<313		Acceptable
5595	Benzidine	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<500	<1070		Acceptable
5595	Benzidine	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<500	<1070		Acceptable

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NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
Additional State Specific Analytes cont'd										
5610	Benzoic acid	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<500	<654		Acceptable
5610	Benzoic acid	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<500	<654		Acceptable
5625	Benzotrichloride					µg/kg	<500			NR
5630	Benzyl alcohol	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<500	<207		Acceptable
5630	Benzyl alcohol	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<500	<207		Acceptable
5635	Benzyl chloride					µg/kg	<500			NR
5680	Carbazole	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<500	<87.2		Acceptable
5680	Carbazole	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<500	<87.2		Acceptable
5745	4-Chloroaniline	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<500	<91.6		Acceptable
5745	4-Chloroaniline	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<500	<91.6		Acceptable
5790	1-Chloronaphthalene					µg/kg	<500			NR
5945	3,3'-Dichlorobenzidine	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<500	<151		Acceptable
5945	3,3'-Dichlorobenzidine	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<500	<151		Acceptable
6005	2,6-Dichlorophenol					µg/kg	<1500			NR
6130	2,4-Dimethylphenol	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<3000	<110		Acceptable
6130	2,4-Dimethylphenol	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<3000	<110		Acceptable
6175	2,4-Dinitrophenol	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<3000	<170		Acceptable
6175	2,4-Dinitrophenol	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<3000	<170		Acceptable
6280	Hexachlorocyclohexane					µg/kg	<500			NR
6285	Hexachlorocyclopentadiene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<1500	<132		Acceptable
6285	Hexachlorocyclopentadiene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<1500	<132		Acceptable
6360	2-Methyl-4,6-Dinitrophenol	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<3000	<172		Acceptable
6360	2-Methyl-4,6-Dinitrophenol	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<3000	<172		Acceptable
6460	2-Nitroaniline	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<500	<159		Acceptable
6460	2-Nitroaniline	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<500	<159		Acceptable
6465	3-Nitroaniline	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<500	<94.7		Acceptable
6465	3-Nitroaniline	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<500	<94.7		Acceptable

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Final Report - Soil / Hazardous Waste PT

Study: HW0720

Opening Date: July 27, 2020 - Closing Date: September 10, 2020

Laboratory: Pace Analytical Services, LLC - Green Bay Laboratory
1241 Bellevue Street
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Green Bay, WI 54302
USA

Contact: Ms. Kate Verbeten
920-469-2436

EPA Lab ID: WI01103

Base, Neutrals and Acids (PT-BNA-SOIL) cont'd

Lot #: 7081-13

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
Additional State Specific Analytes cont'd										
6470	4-Nitroaniline	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<500	<231		Acceptable
6470	4-Nitroaniline	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<500	<231		Acceptable
6495	3-Nitrophenol					µg/kg	<500			NR
6525	N-Nitrosodiethylamine					µg/kg	<1500			NR
6530	N-Nitrosodimethylamine	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<1500	<131		Acceptable
6530	N-Nitrosodimethylamine	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<1500	<131		Acceptable
6535	N-Nitrosodiphenylamine	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<1500	<756		Acceptable
6535	N-Nitrosodiphenylamine	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<1500	<756		Acceptable
6590	Pentachlorobenzene					µg/kg	<500			NR
5095	Pyridine	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<500	<89.7		Acceptable
5095	Pyridine	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<500	<89.7		Acceptable
6705	1,2,3,4-Tetrachlorobenzene					µg/kg	<500			NR
6710	1,2,3,5-Tetrachlorobenzene					µg/kg	<500			NR
6715	1,2,4,5-Tetrachlorobenzene	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<500	<232		Acceptable
6715	1,2,4,5-Tetrachlorobenzene	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<500	<232		Acceptable
6730	2,3,4,5-Tetrachlorophenol					µg/kg	<500			NR
6735	2,3,4,6-Tetrachlorophenol	7/31/2020	RJN	10185805	EPA 8270C 1996	µg/kg	<500	<714		Acceptable
6735	2,3,4,6-Tetrachlorophenol	7/31/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	<500	<714		Acceptable
5150	1,2,3-Trichlorobenzene					µg/kg	<500			NR
6800	1,3,5-Trichlorobenzene					µg/kg	<500			NR

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920-469-2436

EPA Lab ID: WI01103

PAHs (PT-PAH-SOIL)

Lot #: 7081-22

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
5500	Acenaphthene	8/4/2020	JJJ	10242407	EPA 8270C SIM 1996	µg/kg	676	538	146 - 802	Acceptable
5500	Acenaphthene	8/4/2020	JJJ	10242565	EPA 8270E SIM Rev.Update VI 2018	µg/kg	676	538	146 - 802	Acceptable
5505	Acenaphthylene	8/4/2020	JJJ	10242407	EPA 8270C SIM 1996	µg/kg	486	300	48.6 - 591	Acceptable
5505	Acenaphthylene	8/4/2020	JJJ	10242565	EPA 8270E SIM Rev.Update VI 2018	µg/kg	486	300	48.6 - 591	Acceptable
5555	Anthracene	8/4/2020	JJJ	10242407	EPA 8270C SIM 1996	µg/kg	580	372	154 - 638	Acceptable
5555	Anthracene	8/4/2020	JJJ	10242565	EPA 8270E SIM Rev.Update VI 2018	µg/kg	580	372	154 - 638	Acceptable
5575	Benzo(a)anthracene	8/4/2020	JJJ	10242407	EPA 8270C SIM 1996	µg/kg	423	271	149 - 465	Acceptable
5575	Benzo(a)anthracene	8/4/2020	JJJ	10242565	EPA 8270E SIM Rev.Update VI 2018	µg/kg	423	271	149 - 465	Acceptable
5585	Benzo(b)fluoranthene	8/4/2020	JJJ	10242407	EPA 8270C SIM 1996	µg/kg	72.2	62.7	23.0 - 86.8	Acceptable
5585	Benzo(b)fluoranthene	8/4/2020	JJJ	10242565	EPA 8270E SIM Rev.Update VI 2018	µg/kg	72.2	62.7	23.0 - 86.8	Acceptable
5600	Benzo(k)fluoranthene	8/4/2020	JJJ	10242407	EPA 8270C SIM 1996	µg/kg	499	468	185 - 549	Acceptable
5600	Benzo(k)fluoranthene	8/4/2020	JJJ	10242565	EPA 8270E SIM Rev.Update VI 2018	µg/kg	499	468	185 - 549	Acceptable
5590	Benzo(g,h,i)perylene	8/4/2020	JJJ	10242407	EPA 8270C SIM 1996	µg/kg	123	103	31.7 - 156	Acceptable
5590	Benzo(g,h,i)perylene	8/4/2020	JJJ	10242565	EPA 8270E SIM Rev.Update VI 2018	µg/kg	123	103	31.7 - 156	Acceptable
5580	Benzo(a)pyrene	8/4/2020	JJJ	10242407	EPA 8270C SIM 1996	µg/kg	59.3	58.1	11.2 - 85.0	Acceptable
5580	Benzo(a)pyrene	8/4/2020	JJJ	10242565	EPA 8270E SIM Rev.Update VI 2018	µg/kg	59.3	58.1	11.2 - 85.0	Acceptable
5855	Chrysene	8/4/2020	JJJ	10242407	EPA 8270C SIM 1996	µg/kg	268	208	84.9 - 306	Acceptable
5855	Chrysene	8/4/2020	JJJ	10242565	EPA 8270E SIM Rev.Update VI 2018	µg/kg	268	208	84.9 - 306	Acceptable
5895	Dibenz(a,h)anthracene	8/4/2020	JJJ	10242407	EPA 8270C SIM 1996	µg/kg	159	144	56.6 - 190	Acceptable
5895	Dibenz(a,h)anthracene	8/4/2020	JJJ	10242565	EPA 8270E SIM Rev.Update VI 2018	µg/kg	159	144	56.6 - 190	Acceptable
6265	Fluoranthene	8/4/2020	JJJ	10242407	EPA 8270C SIM 1996	µg/kg	226	144	72.1 - 248	Acceptable

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EPA Lab ID: WI01103

PAHs (PT-PAH-SOIL) cont'd

Lot #: 7081-22

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
6265	Fluoranthene	8/4/2020	JJB	10242565	EPA 8270E SIM Rev.Update VI 2018	µg/kg	226	144	72.1 - 248	Acceptable
6270	Fluorene	8/4/2020	JJB	10242407	EPA 8270C SIM 1996	µg/kg	250	179	54.6 - 296	Acceptable
6270	Fluorene	8/4/2020	JJB	10242565	EPA 8270E SIM Rev.Update VI 2018	µg/kg	250	179	54.6 - 296	Acceptable
6315	Indeno(1,2,3-cd)pyrene	8/4/2020	JJB	10242407	EPA 8270C SIM 1996	µg/kg	383	287	154 - 421	Acceptable
6315	Indeno(1,2,3-cd)pyrene	8/4/2020	JJB	10242565	EPA 8270E SIM Rev.Update VI 2018	µg/kg	383	287	154 - 421	Acceptable
5005	Naphthalene	8/4/2020	JJB	10242407	EPA 8270C SIM 1996	µg/kg	396	262	39.6 - 475	Acceptable
5005	Naphthalene	8/4/2020	JJB	10242565	EPA 8270E SIM Rev.Update VI 2018	µg/kg	396	262	39.6 - 475	Acceptable
6615	Phenanthrene	8/4/2020	JJB	10242407	EPA 8270C SIM 1996	µg/kg	540	397	160 - 600	Acceptable
6615	Phenanthrene	8/4/2020	JJB	10242565	EPA 8270E SIM Rev.Update VI 2018	µg/kg	540	397	160 - 600	Acceptable
6665	Pyrene	8/4/2020	JJB	10242407	EPA 8270C SIM 1996	µg/kg	97.5	74.3	26.0 - 116	Acceptable
6665	Pyrene	8/4/2020	JJB	10242565	EPA 8270E SIM Rev.Update VI 2018	µg/kg	97.5	74.3	26.0 - 116	Acceptable
Additional State Specific Analytes										
6385	2-Methylnaphthalene					µg/kg	445		28.7 - 568	NR

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EPA Lab ID: WI01103

Medium Level Volatiles - GC (PT-VOAMGC-SOIL)

Lot #: 7081-81

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
4375	Benzene	8/12/2020	ALD	10174808	EPA 8021B 1996	µg/kg	8380	7970	6290 - 10500	Acceptable
4475	Chlorobenzene					µg/kg	8030		6020 - 10000	NR
4610	1,2-Dichlorobenzene					µg/kg	4100		3070 - 5120	NR
4615	1,3-Dichlorobenzene					µg/kg	3720		2850 - 4650	NR
4620	1,4-Dichlorobenzene					µg/kg	8000		6190 - 9680	NR
4765	Ethylbenzene	8/12/2020	ALD	10174808	EPA 8021B 1996	µg/kg	5000	5160	3500 - 6500	Acceptable
5000	Methyl-tert-butyl ether (MTBE)	8/12/2020	ALD	10174808	EPA 8021B 1996	µg/kg	8390	7790	5880 - 10900	Acceptable
5005	Naphthalene	8/12/2020	ALD	10174808	EPA 8021B 1996	µg/kg	5020	5160	2960 - 6880	Acceptable
5140	Toluene	8/12/2020	ALD	10174808	EPA 8021B 1996	µg/kg	8060	7850	6050 - 10100	Acceptable
5260	Xylenes, total	8/12/2020	ALD	10174808	EPA 8021B 1996	µg/kg	7280	7570	5090 - 9460	Acceptable
Additional State Specific Analytes										
4900	Isopropylbenzene					µg/kg	7170		4720 - 10300	NR
5210	1,2,4-Trimethylbenzene					µg/kg	5240		3370 - 7080	NR
5215	1,3,5-Trimethylbenzene					µg/kg	6000		3980 - 8110	NR
5250	o-Xylene					µg/kg	3640		2550 - 4730	NR
5240	m+p-Xylene					µg/kg	3640		2550 - 4730	NR



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PT Study Score Report

EPA ID: WI01103
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USA

Study Number	Number of Reported Results	Number of Passing Results	Percent Passing
HW0720	182	174	95.6%

Report Definitions:

<i>Number of Reported Results</i>	The number of results reported which could be evaluated. Results receiving an evaluation of "NR" or "No Evaluation" are not included.
<i>Number of Passing Results</i>	The number of results reported receiving an evaluation of "Acceptable" or "Check for Error".
<i>Percent Passing</i>	The percentage of results reported receiving an evaluation of "Acceptable" or "Check for Error".



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Statistical Summary Report - Soil / Hazardous Waste PT

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Contact: Ms. Kate Verbeten
920-469-2436

EPA Lab ID: WI01103

Base, Neutrals and Acids (PT-BNA-SOIL) Lot #: 7081-13

NELAC Code	Analyte	Units	Study Mean	Study Standard Deviation	Low Acceptance Limit %	High Acceptance Limit %
5500	Acenaphthene	µg/kg	3880	769	30.3	118
5505	Acenaphthylene	µg/kg	4520	915	29.8	132
5555	Anthracene	µg/kg	3850	637	35.4	124
5575	Benzo(a)anthracene	µg/kg	3180	574	39.9	126
5585	Benzo(b)fluoranthene	µg/kg	N/A	N/A	N/A	N/A
5600	Benzo(k)fluoranthene	µg/kg	N/A	N/A	N/A	N/A
5590	Benzo(g,h,i)perylene	µg/kg	N/A	N/A	N/A	N/A
5580	Benzo(a)pyrene	µg/kg	N/A	N/A	N/A	N/A
5660	4-Bromophenyl-phenylether	µg/kg	7810	1340	32.9	130
5670	Butyl benzyl phthalate	µg/kg	3400	698	31.1	143
5700	4-Chloro-3-methylphenol	µg/kg	6300	1520	26.0	111
5760	Bis(2-chloroethoxy)methane	µg/kg	N/A	N/A	N/A	N/A
5765	bis(2-Chloroethyl)ether	µg/kg	3480	909	13.7	122
5795	2-Chloronaphthalene	µg/kg	N/A	N/A	N/A	N/A
5800	2-Chlorophenol	µg/kg	N/A	N/A	N/A	N/A
5825	4-Chlorophenyl-phenylether	µg/kg	N/A	N/A	N/A	N/A
4659	2,2'-Oxybis(1-Chloropropane)	µg/kg	2360	506	14.3	121
5855	Chrysene	µg/kg	5200	861	40.8	124
5895	Dibenzo(a,h)anthracene	µg/kg	2360	372	27.0	134
5905	Dibenzofuran	µg/kg	7990	2000	33.7	114
5925	Di-n-butylphthalate	µg/kg	3770	680	26.9	146
4610	1,2-Dichlorobenzene	µg/kg	3550	1090	10.0	110
4615	1,3-Dichlorobenzene	µg/kg	4760	1700	10.0	110
4620	1,4-Dichlorobenzene	µg/kg	N/A	N/A	N/A	N/A
6000	2,4-Dichlorophenol	µg/kg	6810	1390	23.1	112
6070	Diethylphthalate	µg/kg	6390	1040	33.1	129
6135	Dimethylphthalate	µg/kg	6230	1350	32.8	126
6185	2,4-Dinitrotoluene	µg/kg	7150	1710	29.4	116
6190	2,6-Dinitrotoluene	µg/kg	N/A	N/A	N/A	N/A
6200	Di-n-octylphthalate	µg/kg	N/A	N/A	N/A	N/A
6065	Bis(2-ethylhexyl)phthalate	µg/kg	4670	878	26.2	147
6265	Fluoranthene	µg/kg	1700	261	32.2	138
6270	Fluorene	µg/kg	4520	743	36.3	126
6275	Hexachlorobenzene	µg/kg	3650	653	39.6	125
4835	Hexachlorobutadiene	µg/kg	2790	589	16.9	114
4840	Hexachloroethane	µg/kg	N/A	N/A	N/A	N/A
6315	Indeno(1,2,3-cd)pyrene	µg/kg	N/A	N/A	N/A	N/A
6320	Isophorone	µg/kg	2880	543	23.5	126
6385	2-Methylnaphthalene	µg/kg	N/A	N/A	N/A	N/A
6400	2-Methylphenol	µg/kg	N/A	N/A	N/A	N/A
6410	4-Methylphenol (and/or 3-Methylphenol)	µg/kg	N/A	N/A	N/A	N/A
5005	Naphthalene	µg/kg	N/A	N/A	N/A	N/A
5015	Nitrobenzene	µg/kg	N/A	N/A	N/A	N/A
6490	2-Nitrophenol	µg/kg	6790	2180	14.6	110



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Base, Neutrals and Acids (PT-BNA-SOIL) Lot #: 7081-13 cont'd

NELAC Code	Analyte	Units	Study Mean	Study Standard Deviation	Low Acceptance Limit %	High Acceptance Limit %
6500	4-Nitrophenol	µg/kg	N/A	N/A	N/A	N/A
6545	N-Nitroso-di-n-propylamine	µg/kg	3160	527	19.7	134
6605	Pentachlorophenol	µg/kg	3200	903	10.0	110
6615	Phenanthrene	µg/kg	N/A	N/A	N/A	N/A
6625	Phenol	µg/kg	2220	417	16.9	118
6665	Pyrene	µg/kg	5190	1260	31.3	132
5155	1,2,4-Trichlorobenzene	µg/kg	3240	678	16.4	112
6835	2,4,5-Trichlorophenol	µg/kg	5200	1180	20.5	117
6840	2,4,6-Trichlorophenol	µg/kg	1970	292	19.6	120
Additional State Specific Analytes						
5145	2-Amino-1-methylbenzene	µg/kg	N/A	N/A	N/A	N/A
5545	Aniline	µg/kg	N/A	N/A	N/A	N/A
5595	Benzidine	µg/kg	N/A	N/A	N/A	N/A
5610	Benzoic acid	µg/kg	N/A	N/A	N/A	N/A
5625	Benzotrichloride	µg/kg	N/A	N/A	N/A	N/A
5630	Benzyl alcohol	µg/kg	N/A	N/A	N/A	N/A
5635	Benzyl chloride	µg/kg	N/A	N/A	N/A	N/A
5680	Carbazole	µg/kg	N/A	N/A	N/A	N/A
5745	4-Chloroaniline	µg/kg	N/A	N/A	N/A	N/A
5790	1-Chloronaphthalene	µg/kg	N/A	N/A	N/A	N/A
5945	3,3'-Dichlorobenzidine	µg/kg	N/A	N/A	N/A	N/A
6005	2,6-Dichlorophenol	µg/kg	N/A	N/A	N/A	N/A
6130	2,4-Dimethylphenol	µg/kg	N/A	N/A	N/A	N/A
6175	2,4-Dinitrophenol	µg/kg	N/A	N/A	N/A	N/A
6280	Hexachlorocyclohexane	µg/kg	N/A	N/A	N/A	N/A
6285	Hexachlorocyclopentadiene	µg/kg	N/A	N/A	N/A	N/A
6360	2-Methyl-4,6-Dinitrophenol	µg/kg	N/A	N/A	N/A	N/A
6460	2-Nitroaniline	µg/kg	N/A	N/A	N/A	N/A
6465	3-Nitroaniline	µg/kg	N/A	N/A	N/A	N/A
6470	4-Nitroaniline	µg/kg	N/A	N/A	N/A	N/A
6495	3-Nitrophenol	µg/kg	N/A	N/A	N/A	N/A
6525	N-Nitrosodiethylamine	µg/kg	N/A	N/A	N/A	N/A
6530	N-Nitrosodimethylamine	µg/kg	N/A	N/A	N/A	N/A
6535	N-Nitrosodiphenylamine	µg/kg	N/A	N/A	N/A	N/A
6590	Pentachlorobenzene	µg/kg	N/A	N/A	N/A	N/A
5095	Pyridine	µg/kg	N/A	N/A	N/A	N/A
6705	1,2,3,4-Tetrachlorobenzene	µg/kg	N/A	N/A	N/A	N/A
6710	1,2,3,5-Tetrachlorobenzene	µg/kg	N/A	N/A	N/A	N/A
6715	1,2,4,5-Tetrachlorobenzene	µg/kg	N/A	N/A	N/A	N/A
6730	2,3,4,5-Tetrachlorophenol	µg/kg	N/A	N/A	N/A	N/A
6735	2,3,4,6-Tetrachlorophenol	µg/kg	N/A	N/A	N/A	N/A
5150	1,2,3-Trichlorobenzene	µg/kg	N/A	N/A	N/A	N/A
6800	1,3,5-Trichlorobenzene	µg/kg	N/A	N/A	N/A	N/A

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PAHs (PT-PAH-SOIL) Lot #: 7081-22

NELAC Code	Analyte	Units	Study Mean	Study Standard Deviation	Low Acceptance Limit %	High Acceptance Limit %
5500	Acenaphthene	µg/kg	474	83.0	21.6	119
5505	Acenaphthylene	µg/kg	296	56.7	10.0	122
5555	Anthracene	µg/kg	365	50.7	26.6	110
5575	Benzo(a)anthracene	µg/kg	296	23.9	35.2	110
5585	Benzo(b)fluoranthene	µg/kg	54.9	9.68	31.9	120
5600	Benzo(k)fluoranthene	µg/kg	331	49.0	37.1	110
5590	Benzo(g,h,i)perylene	µg/kg	94.0	15.9	25.8	127
5580	Benzo(a)pyrene	µg/kg	48.1	8.70	18.9	143
5855	Chrysene	µg/kg	196	18.5	31.7	114
5895	Dibenz(a,h)anthracene	µg/kg	123	23.3	35.6	119
6265	Fluoranthene	µg/kg	155	19.3	31.9	110
6270	Fluorene	µg/kg	176	9.85	21.8	118
6315	Indeno(1,2,3-cd)pyrene	µg/kg	287	68.5	40.2	110
5005	Naphthalene	µg/kg	245	39.0	10.0	120
6615	Phenanthrene	µg/kg	380	55.9	29.6	111
6665	Pyrene	µg/kg	71.2	9.04	26.7	119

Additional State Specific Analytes

6385	2-Methylnaphthalene	µg/kg	287	70.7	6.45	128
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Medium Level Volatiles - GC (PT-VOAMGC-SOIL) Lot #: 7081-81

NELAC Code	Analyte	Units	Study Mean	Study Standard Deviation	Low Acceptance Limit %	High Acceptance Limit %
4375	Benzene	µg/kg	7990	162	75.1	125
4475	Chlorobenzene	µg/kg	6560	0.00	75.0	125
4610	1,2-Dichlorobenzene	µg/kg	4140	0.00	74.9	125
4615	1,3-Dichlorobenzene	µg/kg	3810	0.00	76.6	125
4620	1,4-Dichlorobenzene	µg/kg	8160	0.00	77.4	121
4765	Ethylbenzene	µg/kg	5110	572	70.0	130
5000	Methyl-tert-butyl ether (MTBE)	µg/kg	7820	586	70.1	130
5005	Naphthalene	µg/kg	4910	233	59.0	137
5140	Toluene	µg/kg	8130	640	75.1	125
5260	Xylenes, total	µg/kg	7350	680	69.9	130

Additional State Specific Analytes

4900	Isopropylbenzene	µg/kg	N/A	0.00	65.8	144
5210	1,2,4-Trimethylbenzene	µg/kg	5710	423	64.3	135
5215	1,3,5-Trimethylbenzene	µg/kg	6300	529	66.3	135
5250	o-Xylene	µg/kg	3550	369	70.1	130
5240	m+p-Xylene	µg/kg	3720	371	70.1	130



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November 23, 2020

Ms. Kate Verbeten
Pace Analytical Services, LLC - Green Bay Laboratory
1241 Bellevue Street
Suite 9
Green Bay, WI 54302
USA

Dear Kate,

Thank you for participating in the R28967 Rapid Return™ Proficiency Testing Study. Enclosed is your final report, which has been carefully reviewed by the PT specialists at Phenova. A final report for your laboratory has been sent to all accrediting agencies you requested at the time of your data submittal.

Thank you again for participating in the R28967 Rapid Return™ Proficiency Testing Study. We appreciate working with you and look forward to our next study. If you have any questions, please call us at 866-942-2978.



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Report Definitions:

Assigned Value

The Assigned Value is determined from the study mean, gravimetric and volumetric true concentration of an analyte to be analyzed, calculation and/or an appropriate reference value as stipulated in the EPA National Standards for Water Proficiency Testing Studies Criteria Document (current version), the National Environmental Laboratory Accreditation Conference Institute (TNI) criteria (ref: TNI FOT tables, TNI PT Committee) and other documents distributed by accrediting agencies as applicable.

Evaluation Limits

Acceptance Limits are derived from fixed limits, coefficients, constants and calculations stipulated in the EPA National Standards for Water Proficiency Testing Studies Criteria Documents (current version), the National Environmental Laboratory Accreditation Conference Institute (TNI) criteria (ref: TNI FOT tables, TNI PT Committee) and other documents distributed by accrediting agencies as applicable.

Evaluation

<i>Acceptable</i>	The reported value falls within the Acceptance Limits.
<i>Not Acceptable</i>	The reported value falls outside the Acceptance Limits.
<i>No Evaluation</i>	The reported value is non-numeric and can not be evaluated.
<i>NR</i>	As required by the TNI standards and requested by state authorities, any analyte purchased but not reported by your facility is listed as NR (Not Reported).

This report must not be reproduced except in full, without the written approval of Phenova.

Various aspects of Phenova's proficiency testing schemes can from time to time be subcontracted. If subcontracting occurs, it is placed with a competent and qualified subcontractor and Phenova is responsible for all work performed.

This report must not be used to claim product certification, approval, or endorsement by the American Association for Laboratory Accreditation (A2LA) or any agency of the federal government.



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State Regulatory Agency Request(s):

Phenova has been authorized to send a copy of your R28967 final results to the following state agencies:

FL, IL, KY, LA, MN and ND

Other Regulatory Agency Request(s):

Phenova has been authorized to send a copy of your R28967 final results to the following agencies:

Ford

Third Party Request(s):

Phenova has been requested to send a copy of your R28967 final results to the following third parties:

CADENA, Inc.
1099 Highland Drive, Suite E
Ann Arbor, MI 48108
Jim Tomalia
Senior Environmental Compliance Specialist
jtomalia@cadenaco.com

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Final Report - Rapid ReturnTM

Study: R28967

Opening Date: October 5, 2020 - Closing Date: November 19, 2020

Laboratory: Pace Analytical Services, LLC - Green Bay Laboratory
1241 Bellevue Street
Suite 9
Green Bay, WI 54302
USA

Contact: Ms. Kate Verbeten
920-469-2436

EPA Lab ID: WI01103

Base, Neutrals and Acids (RR-BNA-SOIL)

Lot #: R28967-13A

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
5500	Acenaphthene					µg/kg	1500		398 - 1650	NR
5505	Acenaphthylene					µg/kg	3080		814 - 3630	NR
5555	Anthracene					µg/kg	<100			NR
5575	Benzo(a)anthracene	11/9/2020	RJN	10185805	EPA 8270C 1996	µg/kg	2040	1550	721 - 2420	Acceptable
5575	Benzo(a)anthracene	11/9/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	2040	1550	721 - 2420	Acceptable
5585	Benzo(b)fluoranthene					µg/kg	<100			NR
5600	Benzo(k)fluoranthene					µg/kg	<100			NR
5590	Benzo(g,h,i)perylene					µg/kg	2340		612 - 2740	NR
5580	Benzo(a)pyrene					µg/kg	<100			NR
5660	4-Bromophenyl-phenylether					µg/kg	6700		2030 - 8100	NR
5670	Butyl benzyl phthalate					µg/kg	8650		2590 - 11600	NR
5700	4-Chloro-3-methylphenol					µg/kg	7490		1870 - 8240	NR
5760	Bis(2-chloroethoxy)methane					µg/kg	7380		1780 - 8120	NR
5765	bis(2-Chloroethyl)ether					µg/kg	5520		749 - 6460	NR
5795	2-Chloronaphthalene					µg/kg	6130		1410 - 6870	NR
5800	2-Chlorophenol					µg/kg	<150			NR
5825	4-Chlorophenyl-phenylether					µg/kg	5840		1640 - 7160	NR
4659	2,2'-Oxybis(1-Chloropropane)					µg/kg	<150			NR
5855	Chrysene	11/9/2020	RJN	10185805	EPA 8270C 1996	µg/kg	2070	1740	719 - 2430	Acceptable
5855	Chrysene	11/9/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	2070	1740	719 - 2430	Acceptable
5895	Dibenzo(a,h)anthracene					µg/kg	<100			NR
5905	Dibenzofuran					µg/kg	6350		2050 - 7130	NR
5925	Di-n-butylphthalate					µg/kg	6990		1650 - 8800	NR
4610	1,2-Dichlorobenzene					µg/kg	5830		583 - 6730	NR
4615	1,3-Dichlorobenzene					µg/kg	5520		552 - 6370	NR
4620	1,4-Dichlorobenzene					µg/kg	9980		998 - 11000	NR
6000	2,4-Dichlorophenol					µg/kg	8070		1740 - 8870	NR
6070	Diethylphthalate					µg/kg	6860		2020 - 7930	NR
6135	Dimethylphthalate	11/9/2020	RJN	10185805	EPA 8270C 1996	µg/kg	2410	1940	656 - 2910	Acceptable

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Base, Neutrals and Acids (RR-BNA-SOIL) cont'd

Lot #: R28967-13A

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
6135	Dimethylphthalate	11/9/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	2410	1940	656 - 2910	Acceptable
6185	2,4-Dinitrotoluene					µg/kg	<150			NR
6190	2,6-Dinitrotoluene					µg/kg	4590		1410 - 5050	NR
6200	Di-n-octylphthalate					µg/kg	<100			NR
6065	Bis(2-ethylhexyl)phthalate					µg/kg	7970		2070 - 10900	NR
6265	Fluoranthene					µg/kg	<100			NR
6270	Fluorene					µg/kg	<100			NR
4835	Hexachlorobutadiene					µg/kg	9620		1940 - 11200	NR
4840	Hexachloroethane					µg/kg	<150			NR
6315	Indeno(1,2,3-cd)pyrene					µg/kg	3550		521 - 4230	NR
6320	Isophorone					µg/kg	9690		2260 - 10900	NR
6385	2-Methylnaphthalene					µg/kg	1570		345 - 1850	NR
6400	2-Methylphenol					µg/kg	<300			NR
6410	4-Methylphenol (and/or 3-Methylphenol)					µg/kg	<300			NR
5005	Naphthalene					µg/kg	<100			NR
5015	Nitrobenzene					µg/kg	7460		1460 - 8210	NR
6490	2-Nitrophenol					µg/kg	4160		580 - 4580	NR
6500	4-Nitrophenol					µg/kg	4960		496 - 6370	NR
6545	N-Nitroso-di-n-propylamine					µg/kg	5210		896 - 6090	NR
6605	Pentachlorophenol					µg/kg	<300			NR
6615	Phenanthrene					µg/kg	<100			NR
6625	Phenol					µg/kg	4400		711 - 4840	NR
6665	Pyrene					µg/kg	<100			NR
5155	1,2,4-Trichlorobenzene					µg/kg	9080		1950 - 9990	NR
6835	2,4,5-Trichlorophenol					µg/kg	<150			NR
6840	2,4,6-Trichlorophenol					µg/kg	2530		441 - 2930	NR
Additional State Specific Analytes										
5145	2-Amino-1-methylbenzene					µg/kg	<500			NR
5545	Aniline					µg/kg	<500			NR

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Base, Neutrals and Acids (RR-BNA-SOIL) cont'd

Lot #: R28967-13A

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
Additional State Specific Analytes cont'd										
5595	Benzidine					µg/kg	<500			NR
5610	Benzoic acid					µg/kg	<500			NR
5625	Benzotrichloride					µg/kg	<500			NR
5630	Benzyl alcohol					µg/kg	<500			NR
5635	Benzyl chloride					µg/kg	<500			NR
5680	Carbazole					µg/kg	<500			NR
5745	4-Chloroaniline					µg/kg	<500			NR
5790	1-Chloronaphthalene					µg/kg	<500			NR
5945	3,3'-Dichlorobenzidine					µg/kg	<500			NR
6005	2,6-Dichlorophenol					µg/kg	<1500			NR
6130	2,4-Dimethylphenol					µg/kg	<3000			NR
6175	2,4-Dinitrophenol					µg/kg	<3000			NR
6280	Hexachlorocyclohexane					µg/kg	<500			NR
6285	Hexachlorocyclopentadiene					µg/kg	<1500			NR
6360	2-Methyl-4,6-Dinitrophenol					µg/kg	<3000			NR
6460	2-Nitroaniline					µg/kg	<500			NR
6465	3-Nitroaniline					µg/kg	<500			NR
6470	4-Nitroaniline					µg/kg	<500			NR
6495	3-Nitrophenol					µg/kg	<500			NR
6525	N-Nitrosodiethylamine					µg/kg	<1500			NR
6530	N-Nitrosodimethylamine					µg/kg	<1500			NR
6535	N-Nitrosodiphenylamine					µg/kg	<1500			NR
6590	Pentachlorobenzene					µg/kg	<500			NR
5095	Pyridine					µg/kg	<500			NR
6705	1,2,3,4-Tetrachlorobenzene					µg/kg	<500			NR
6710	1,2,3,5-Tetrachlorobenzene					µg/kg	<500			NR
6715	1,2,4,5-Tetrachlorobenzene					µg/kg	<500			NR
6730	2,3,4,5-Tetrachlorophenol					µg/kg	<500			NR
6735	2,3,4,6-Tetrachlorophenol					µg/kg	<500			NR

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EPA Lab ID: WI01103

Base, Neutrals and Acids (RR-BNA-SOIL) cont'd

Lot #: R28967-13A

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
Additional State Specific Analytes cont'd										
5150	1,2,3-Trichlorobenzene					µg/kg	<500			NR
6800	1,3,5-Trichlorobenzene					µg/kg	<500			NR

Base, Neutrals and Acids (RR-BNA-SOIL)

Lot #: R28967-13B

NELAC Code	Analyte	Analysis Date	Analyst	Method Code	Method Description	Units	Assigned Value	Result	Acceptance Limits	Evaluation
6275	Hexachlorobenzene	11/9/2020	RJN	10185805	EPA 8270C 1996	µg/kg	5180	3740	1840 - 5790	Acceptable
6275	Hexachlorobenzene	11/9/2020	RJN	10242543	EPA 8270E Rev.Update VI 2018	µg/kg	5180	3740	1840 - 5790	Acceptable