REI
CIVIL & ENVIRONMENTAL ENGINEERING, SURVEYING

February 28, 2020

Wisconsin Department of Natural Resources
Attn: Ms. Carrie Stoltz
107 Sutliff Avenue
Rhinelander, WI 54501

Subject:

Update Report
Lou John Appraisal
300 N Keller Avenue
Amery, WI
BRRTS #03-49-514936
PECFA #54001-1026-00

Dear Ms. Stoltz:

Enclosed is the Update Report for the above-mentioned site. REI has completed the approved post injection groundwater sampling and is recommending that this investigation be reviewed for case closure consideration.

Please call me with questions or comments toll free at 877-734-7745 or contact me electronically at dlarsen@reiengineering.com.

Sincerely,
REI Engineering, Inc.

David N. Larsen, P.G.
Senior Hydrogeologist/Project Manager

Enclosure

CC: Haley Appraisal, LLC., Attn: Mr. Pat Haley, 333 30th Ave, Clear Lake, WI 54005

REI

CIVIL & ENVIRONMENTAL
ENGINEERING, SURVEYING

Update Report

Lou John Appraisal
300 N Keller Avenue
Amery, Wisconsin

WDNR BRRTS #03-49-514936
PECFA #54001-1026-00
REI Project #6190

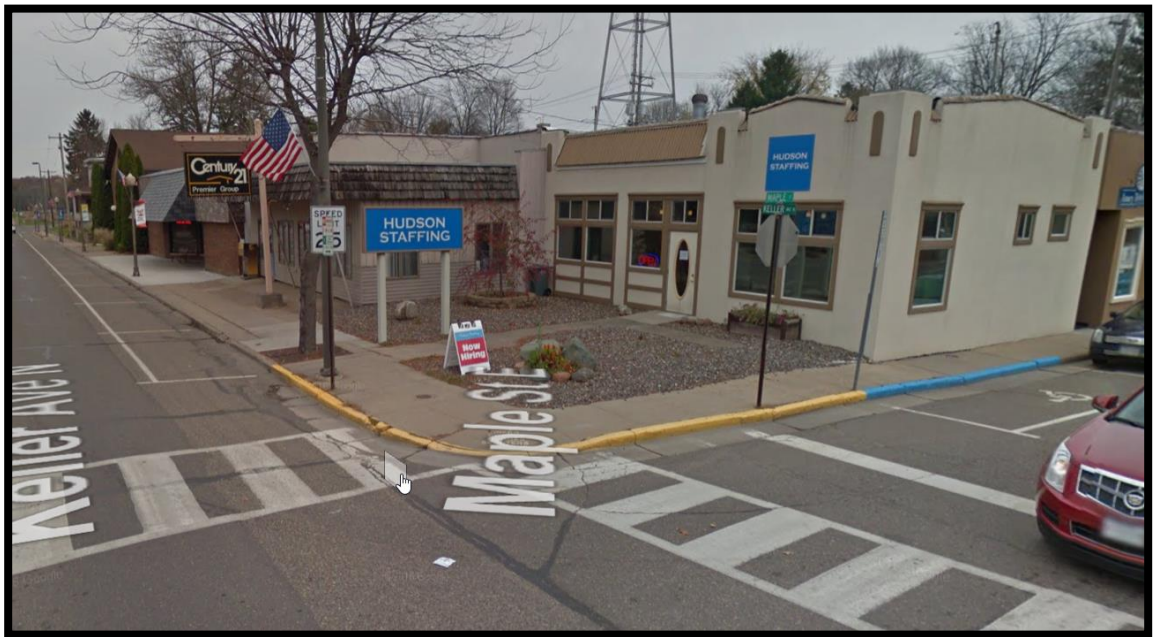
COMPREHENSIVE SERVICES WITH PRACTICAL SOLUTIONS

UPDATE REPORT

LOU JOHN APPRAISAL
300 N KELLER AVENUE
AMERY, WI 54001

BRRTS #03-49-514936
PECFA #54001-1026-00

REI #6190



PREPARED FOR:

Haley Appraisal, LLC.
Attn: Mr. Pat Haley
333 30th Avenue
Clear Lake, WI 54005

FEBRUARY 2020

UPDATE REPORT

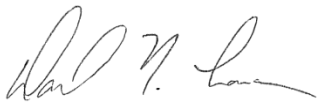
LOU JOHN APPRAISAL
300 N KELLER AVENUE
AMERY, WI 54001

BRRTS #03-49-514936
PECFA #54001-1026-00

REI #6190

The recommendations contained in this report are based on the information obtained from our study of the site and were arrived at in accordance with accepted hydrogeologic and our study of the site and were arrived at in accordance with accepted hydrogeologic and engineering practices at this time and location.

"I, David N. Larsen, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, am registered in accordance with the requirements of Ch. GHSS 2, Wis. Adm. Code, or licensed in accordance with the requirements of Ch. GHSS 3, Wis. Admn. Code, and that to the best of my knowledge, all the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code."



Hydrogeologist — 2-28-20 Date

"I, Brian J. Bailey, hereby certify that I am a scientist as that term is defined in s. NR 712.03 (3), Wis. Adm. Code, and that, to the best of my knowledge, all the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code."

Environmental Scientist — 2-28-20 Date

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UPDATE REPORT

LOU JOHN APPRAISAL
300 N KELLER AVENUE
AMERY, WI 54001

BRRTS #03-49-514936
PECFA #54001-1026-00

REI #6190

1.0 INTRODUCTION

1.1 Purpose

This report presents the completion of an approved scope of services at the Lou John Appraisal site. The approval was for four (4) post carbon injection groundwater sampling events, disposal of investigative waste and submittal of an update report.

The property is located in the SE¼ , SW¼ , Section 28, Township 33N, Range 16W, Polk County, Wisconsin (Figure 1). The property boundaries, location of the structure and former USTs, the soil boring and monitoring well locations are depicted on the Figure 2 site map.

2.0 SUMMARY OF WORK

2.1 Groundwater Monitoring and Analytical Results

REI personnel completed the approved groundwater sampling on December 11, 2018, May 13, 2019, September 5, 2019 and February 11, 2020. Depth to water and water level elevation data is presented in Table 1. Groundwater samples were submitted to State certified laboratories for analysis of PVOC and naphthalene compounds. Groundwater analytical results from the REI completed sampling events are summarized in Tables 2a-n.

Monitoring well AAMW7 has been the only well with detectable concentrations greater than the NR 140.10 Groundwater Quality limits based on the results from the February 11, 2020 sampling results. While free product remains in well AAMW7, the dissolved phase concentrations have reduced significantly following the 2018 carbon injection scope of services.

A copy of the laboratory analytical reports from the post injection groundwater sampling events is included in Appendix A. All liquid waste generated during this scope of services was temporarily stored in 55-gallon WDOT approved drums and final disposal arrangements were completed allowing the disposal and treatment of the liquid waste at the City of Wausau wastewater treatment facility.

2.2 Free Product Abatement

REI personnel measured the thickness of free product with an electronic oil water interface probe. The well specific measured thickness of free product is detailed on Table 3.

3.0 Conclusion and Recommendations

Based on the latest groundwater analytical results the degree and extent of the petroleum related groundwater plume has been adequately defined. Free product has been persistent in monitoring well AAMW7. Indoor air and soil gas samples suggest that vapor migration from the known soil and groundwater contamination does not appear to be a concern.

Monitoring well AAMW7 is the only well with residual groundwater contamination related to the former Lou John Appraisal release. While free product remains in place at AAMW7, the dissolved phase concentrations have reduced significantly following the 2018 carbon injection scope of services. While it appears that the carbon was not capable of addressing the residual free product, it appears to be successfully sequestering the dissolved phase impacts.

REI is recommending that this investigation be reviewed for case closure consideration. If the Department agrees that this site can be reviewed for case closure, REI will complete the WDNR Form 4400-202 Case Closure submittal to allow this investigation to be officially reviewed for case closure consideration.

Table 1
Depth to Water and Water Table Elevations
Lou John Appraisal
Amery, Wisconsin

Depth to Water (feet) below Reference Elevation

Date	MW1	MW2	MW3	AAMW1R	AAMW2R	AAMW5	AAMW6	AAMW7	AAMW8	AAMW9	AAMW16	AAMW17	AAMW18	AAMW19
7/21/2015	8.10	8.41		10.37	9.31	11.58	8.45	8.80	9.64	9.72	11.71	12.87	11.84	9.73
10/12/2015			8.71											
4/13/2016	7.84	8.14	8.72		9.10		8.22				11.59			
6/27/2016	8.08	8.37	8.87		9.24			8.93						
9/21/2017	8.16	8.44	8.96	10.43	9.39	Abandoned	8.52	9.18	Abandoned	Abandoned	11.87	Abandoned	Abandoned	Abandoned
12/11/2018	8.52	8.77	9.45				8.76	8.34						
5/13/2019	7.75	7.94	8.85	9.99	8.95		8.15				11.36			
9/5/2019	7.84	8.21	8.89	10.12	9.10			8.57			11.59			
2/11/2020	8.37	8.62	9.14	10.81	9.87		8.54	9.21						

Measuring Point Elevations

Elevations referenced to a U.S.G.S. Benchmark (feet MSL)

Initial Survey	1,074.58	1,074.65	1,074.00	1,076.21	1,075.21	1,074.40	1,074.23	1,074.71	1,075.48	1,075.56	1,075.62	1,078.54	1,077.53	1,075.62

Ground Surface Elevation

	1,074.82	1,075.04	1,074.35	1,076.56	1,075.72	1,074.64	1,074.73	1,075.00	1,075.90	1,075.83	1,075.67	1,078.73	1,077.64	1,075.67

Depth to Water (feet) below Ground Surface

Average	8.32	8.75	9.30	10.69	9.79	11.82	8.94	9.13	10.06	9.99	11.67	13.06	11.95	9.78
Maximum	8.76	9.16	9.80	11.16	10.38	11.82	9.26	9.50	10.06	9.99	11.92	13.06	11.95	9.78
Minimum	7.99	8.33	9.06	10.34	9.46	11.82	8.65	8.63	10.06	9.99	11.41	13.06	11.95	9.78
Range	0.77	0.83	0.74	0.82	0.92	0.00	0.61	0.87	0.00	0.00	0.51	0.00	0.00	0.00

Water Level Elevation (feet MSL)

Date	MW1	MW2	MW3	AAMW1R	AAMW2R	AAMW5	AAMW6	AAMW7	AAMW8	AAMW9	AAMW16	AAMW17	AAMW18	AAMW19
7/21/2015	1,066.48	1,066.24		1,065.84	1,065.90	1,062.82	1,065.78	1,065.91	1,065.84	1,065.84	1,063.91	1,065.67	1,065.69	1,065.89
10/12/2015														
4/13/2016	1,066.74	1,066.51	1,065.28		1,066.11		1,066.01				1,064.03			
6/27/2016	1,066.50	1,066.28	1,065.13		1,065.97			1,065.78						
9/21/2017	1,066.42	1,066.21	1,065.04	1,065.78	1,065.82		1,065.71	1,065.53			1,063.75			
12/11/2018	1,066.06	1,065.88	1,064.55				1,065.47	1,066.37						
5/13/2019	1,066.83	1,066.71	1,065.15	1,066.22	1,066.26		1,066.08				1,064.26			
9/5/2019	1,066.74	1,066.44	1,065.11	1,066.09	1,066.11			1,066.14			1,064.03			
2/11/2020	1,066.21	1,066.03	1,064.86	1,065.40	1,065.34		1,065.69	1,065.50						

Free Product in well =

Table 2a
Summary of Groundwater Analytical Results
MW1
Lou John Appraisal
Amery, Wisconsin

			Date ->	7/21/2015	4/13/2016	6/27/2016	9/21/2017	Oct 2018	12/11/2018	5/13/2019	9/5/2019	2/11/2020
Detected VOC Parameters	ES	PAL	Units									
Benzene	5	0.5	µg/l	< 0.50	< 0.40	< 0.40	< 0.40		< 0.31	< 0.25	< 0.25	< 0.25
Toluene	800	160	µg/l	< 0.50	< 0.39	< 0.39	< 0.39		< 0.49	< 0.17	< 0.17	< 0.17
Ethylbenzene	700	140	µg/l	< 0.50	< 0.39	< 0.39	< 0.39		< 0.33	< 0.22	< 0.22	< 0.22
Xylenes (mixed isomers)	2,000	400	µg/l	< 1.0	< 0.80	< 0.80	< 0.80		< 0.66	< 0.47	< 0.47	< 0.47
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.17	< 0.48	< 0.48	< 0.48		< 0.32	< 1.2	< 1.2	< 1.2
Trimethylbenzenes (mixed isomers)	480	96	µg/l	0.76[J]	< 0.42	< 0.42	< 0.42	Carbon	< 0.34	< 0.87	< 0.87	< 0.87
Naphthalene	100	10	µg/l	< 2.5	< 0.42	< 0.42	< 0.42	Injection	< 0.51	< 1.2	< 1.2	< 1.2
Field Measurements								Completed				
Temperature			°F	NA	NA	NA	63.21		53.2	49.5	61.0	NA
Conductivity			µS/cm	NA	NA	NA	587		2,667	1,508	850	NA
pH				NA	NA	NA	7.59		7.45	7.29	7.26	NA
Dissolved Oxygen			mg/l	NA	NA	NA	4.96		3.31	6.94	3.2	NA
ORP			mV	NA	NA	NA	38.4		96.1	178.2	154	NA

Notes:
ES = NR140.10 Enforcement Standards
PAL = NR140.10 Preventive Action Limits
Enforcement Standard exceeded **BOLD**
Preventive Action Limit exceeded *Italics*
NA = Not Analyzed
NS = Not Sampled
[J] = Estimated value, concentration between the Limit of Detection and the Limit of Quantitation

Table 2b
Summary of Groundwater Analytical Results
MW2
Lou John Appraisal
Amery, Wisconsin

			Date ->	7/21/2015	4/13/2016	6/27/2016	9/21/2017	Oct 2018	12/11/2018	5/13/2019	9/5/2019	2/11/2020
Detected VOC Parameters	ES	PAL	Units									
Benzene	5	0.5	µg/l	< 0.50	< 0.40	< 0.40	< 0.40		< 0.31	< 0.25	< 0.25	< 0.25
Toluene	800	160	µg/l	< 0.50	0.40[J]	< 0.39	< 0.39		< 0.49	< 0.17	< 0.17	< 0.17
Ethylbenzene	700	140	µg/l	0.64[J]	< 0.39	< 0.39	0.93[J]		2.0	< 0.22	< 0.22	0.33[J]
Xylenes (mixed isomers)	2,000	400	µg/l	2.31[J]	0.80[J]	< 0.80	2.23[J]		3.8	< 0.47	< 0.47	0.55[J]
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.17	< 0.48	< 0.48	< 0.48		0.43[J]	< 1.2	< 1.2	< 1.2
Trimethylbenzenes (mixed isomers)	480	96	µg/l	33	< 0.42	< 0.42	2.2	Carbon Injection Completed	0.90[J]	< 0.87	< 0.87	5.1
Naphthalene	100	10	µg/l	< 2.5	< 0.42	< 0.42	0.51[J]		< 0.51	< 1.2	< 1.2	< 1.2
Field Measurements												
Temperature			°F	NA	NA	NA	63.16		52.9	48.1	62.4	47.9
Conductivity			µS/cm	NA	NA	NA	451		769	1,171	568.3	488.4
pH				NA	NA	NA	7.39		7.21	7.2	6.74	7.05
Dissolved Oxygen			mg/l	NA	NA	NA	1.40		0.35	0.74	0.87	0.24
ORP			mV	NA	NA	NA	4.00		86.3	173.2	165.1	163.1

Notes:
ES = NR140.10 Enforcement Standards
PAL = NR140.10 Preventive Action Limits
Enforcement Standard exceeded **BOLD**
Preventive Action Limit exceeded *Italics*
NA = Not Analyzed
NS = Not Sampled
[J] = Estimated value, concentration between the Limit of Detection and the Limit of Quantitation

Table 2c
Summary of Groundwater Analytical Results
MW3
Lou John Appraisal
Amery, Wisconsin

			Date ->	10/12/2015	4/13/2016	6/27/2016	9/21/2017	Oct 2018	12/11/2018	5/13/2019	9/5/2019	2/11/2020
Detected VOC Parameters	ES	PAL	Units									
Benzene	5	0.5	µg/l	**10.9**	< 0.40	< 0.40	< 0.40		< 0.31	< 0.25	< 0.25	< 0.25
Toluene	800	160	µg/l	20.0	< 0.39	< 0.39	< 0.39		< 0.49	< 0.17	< 0.17	< 0.17
Ethylbenzene	700	140	µg/l	1.5	< 0.39	< 0.39	< 0.39		< 0.33	< 0.22	< 0.22	< 0.22
Xylenes (mixed isomers)	2,000	400	µg/l	5.7	< 0.80	< 0.80	< 0.80		< 0.66	< 0.47	< 0.47	< 0.47
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.17	< 0.48	< 0.48	< 0.48		< 0.32	< 1.2	< 1.2	< 1.2
Trimethylbenzenes (mixed isomers)	480	96	µg/l	< 0.50	< 0.42	< 0.42	< 0.42	Carbon	< 0.34	< 0.87	< 0.87	< 0.87
Naphthalene	100	10	µg/l	< 2.5	< 0.42	< 0.42	< 0.42	Injection	< 0.51	< 1.2	< 1.2	< 1.2
Field Measurements								Completed				
Temperature			°F	NA	NA	NA	62.44		51.5	47.5	61.1	46.5
Conductivity			µS/cm	NA	NA	NA	1,650		2,522	2,869	3,267	734.2
pH				NA	NA	NA	7.31		6.89	7.71	6.31	6.56
Dissolved Oxygen			mg/l	NA	NA	NA	1.45		2.42	2.30	4.26	4.89
ORP			mV	NA	NA	NA	34.6		187.9	165.5	181.7	196.3

Notes:
ES = NR140.10 Enforcement Standards
PAL = NR140.10 Preventive Action Limits
Enforcement Standard exceeded **BOLD**
Preventive Action Limit exceeded *Italics*
NA = Not Analyzed
NS = Not Sampled
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Table 2d
Summary of Groundwater Analytical Results
AAMW1R
Lou John Appraisal
Amery, Wisconsin

			Date ->	7/21/2015	4/13/2016	6/27/2016	9/21/2017	Oct 2018	12/11/2018	5/13/2019	9/5/2019	2/11/2020
Detected VOC Parameters	ES	PAL	Units									
Benzene	5	0.5	µg/l	*2.0*	Well Not Sampled	Well Not Sampled	Well Not Sampled	Carbon Injection Completed	Well Not Sampled	Well Not Sampled	Well Not Sampled	Well Not Sampled
Toluene	800	160	µg/l	15.9								
Ethylbenzene	700	140	µg/l	*141*								
Xylenes (mixed isomers)	2,000	400	µg/l	275								
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	0.91[J]								
Trimethylbenzenes (mixed isomers)	480	96	µg/l	*133.5*								
Naphthalene	100	10	µg/l	*16.9*								

Notes:
ES = NR140.10 Enforcement Standards
PAL = NR140.10 Preventive Action Limits
Enforcement Standard exceeded **BOLD**
Preventive Action Limit exceeded *Italics*
NA = Not Analyzed
NS = Not Sampled
[J] = Estimated value, concentration between the Limit of Detection and the Limit of Quantitation

Table 2e
Summary of Groundwater Analytical Results
AAMW2R
Lou John Appraisal
Amery, Wisconsin

			Date ->	7/21/2015	4/13/2016	6/27/2016	9/21/2017	Oct 2018	12/11/2018	5/13/2019	9/5/2019	2/11/2020
Detected VOC Parameters	ES	PAL	Units									
Benzene	5	0.5	µg/l	**254**	Well Not Sampled	Well Not Sampled	Well Not Sampled	Carbon Injection Completed	Well Not Sampled	Well Not Sampled	Well Not Sampled	Well Not Sampled
Toluene	800	160	µg/l	**7,310**								
Ethylbenzene	700	140	µg/l	**2,770**								
Xylenes (mixed isomers)	2,000	400	µg/l	**9,920**								
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 48.5								
Trimethylbenzenes (mixed isomers)	480	96	µg/l	**1,599**								
Naphthalene	100	10	µg/l	**380**								

Notes:
ES = NR140.10 Enforcement Standards
PAL = NR140.10 Preventive Action Limits
Enforcement Standard exceeded **BOLD**
Preventive Action Limit exceeded *Italics*
NA = Not Analyzed
NS = Not Sampled
J = Estimated value, concentration between the Limit of Detection and the Limit of Quantitation

Table 2f
Summary of Groundwater Analytical Results
AAMW5
Lou John Appraisal
Amery, Wisconsin

			Date ->	7/21/2015	4/13/2016	6/27/2016	9/21/2017	10/31/2017
Detected VOC Parameters	ES	PAL	Units					
Benzene	5	0.5	µg/l	**30.6**	Well Not Sampled	Well Not Sampled	Well Not Sampled	Well Abandoned
Toluene	800	160	µg/l	0.54[J]				
Ethylbenzene	700	140	µg/l	0.77[J]				
Xylenes (mixed isomers)	2,000	400	µg/l	8.8				
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.48				
Trimethylbenzenes (mixed isomers)	480	96	µg/l	3.2				
Naphthalene	100	10	µg/l	0.82[J]				

Notes:
ES = NR140.10 Enforcement Standards
PAL = NR140.10 Preventive Action Limits
Enforcement Standard exceeded **BOLD**
Preventive Action Limit exceeded *Italics*
NA = Not Analyzed
NS = Not Sampled
[J] = Estimated value, concentration between the Limit of Detection and the Limit of Quantitation

Table 2g
Summary of Groundwater Analytical Results
AAMW6
Lou John Appraisal
Amery, Wisconsin

			Date ->	7/21/2015	4/13/2016	6/27/2016	9/21/2017	Oct 2018	12/11/2018	5/13/2019	9/5/2019	2/11/2020
Detected VOC Parameters	ES	PAL	Units									
Benzene	5	0.5	µg/l	< 0.40			< 0.40		< 0.31	< 0.25	< 0.25	< 0.25
Toluene	800	160	µg/l	< 0.39			< 0.39		< 0.49	< 0.17	< 0.17	< 0.17
Ethylbenzene	700	140	µg/l	< 0.39			< 0.39		< 0.33	< 0.22	< 0.22	< 0.22
Xylenes (mixed isomers)	2,000	400	µg/l	< 0.80			< 0.80		< 0.66	< 0.47	< 0.47	< 0.47
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.48			< 0.48		< 0.32	< 1.2	< 1.2	< 1.2
Trimethylbenzenes (mixed isomers)	480	96	µg/l	< 0.42	Well Not	Well Not	< 0.42	Carbon	< 0.34	< 0.87	< 0.87	< 0.87
Naphthalene	100	10	µg/l	< 0.42	Sampled	Sampled	< 0.42	Injection	< 0.51	< 1.2	< 1.2	< 1.2
Field Measurements								Completed				
Temperature			°F	NA			61.95		51.4	49.1	61.4	46.3
Conductivity			µS/cm	NA			7,979		7,965	7,730	7,088	7,506
pH				NA			6.76		6.76	6.61	6.49	6.70
Dissolved Oxygen			mg/l	NA			1.18		0.22	0.25	0.72	0.79
ORP			mV	NA			89.4		133.4	198.2	141.0	211.1

Notes:
ES = NR140.10 Enforcement Standards
PAL = NR140.10 Preventive Action Limits
Enforcement Standard exceeded **BOLD**
Preventive Action Limit exceeded *Italics*
NA = Not Analyzed
NS = Not Sampled
J = Estimated value, concentration between the Limit of Detection and the Limit of Quantitation

Table 2h
Summary of Groundwater Analytical Results
AAMW7
Lou John Appraisal
Amery, Wisconsin

			Date ->	7/21/2015	4/13/2016	6/27/2016	9/21/2017	Oct 2018	12/11/2018	5/13/2019	9/5/2019	2/11/2020
Detected VOC Parameters	ES	PAL	Units									
Benzene	5	0.5	µg/l	**1,050**	Well Not Sampled	**733**	**971**	Carbon Injection Completed	**34.7**	**78.3**	**28.9**	**36.6**
Toluene	800	160	µg/l	**1,190**		**893**	**1,200**		*213*	*182*	13.4	159
Ethylbenzene	700	140	µg/l	*360*		*329*	*474*		134	120	5.0[J]	63.3
Xylenes (mixed isomers)	2,000	400	µg/l	**2,095**		*1,735*	**2,241**		*1,471*	*954*	23	346.9
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.48		< 4.8	< 9.7		*17*	< 12.5	< 12.5	< 2.5
Trimethylbenzenes (mixed isomers)	480	96	µg/l	**676**		**581**	**795**		**480**	*285.1*	< 8.7	*124.6*
Naphthalene	100	10	µg/l	**219**		**177**	**247**		*24.3*	*24.4*[J]	< 11.8	3.2[J]
Field Measurements												
Temperature			°F	NA		NA	NA		NA	NA	NA	NA
Conductivity			µS/cm	NA		NA	NA		NA	NA	NA	NA
pH				NA		NA	NA		NA	NA	NA	NA
Dissolved Oxygen			mg/l	NA		NA	NA		NA	NA	NA	NA
ORP			mV	NA		NA	NA		NA	NA	NA	NA

Notes:
ES = NR140.10 Enforcement Standards
PAL = NR140.10 Preventive Action Limits
Enforcement Standard exceeded **BOLD**
Preventive Action Limit exceeded *Italics*
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NS = Not Sampled
[J] = Estimated value, concentration between the Limit of Detection and the Limit of Quantitation

Table 2i
Summary of Groundwater Analytical Results
AAMW8
Lou John Appraisal
Amery, Wisconsin

			Date ->	7/21/2015	4/13/2016	6/27/2016	9/21/2017	10/31/2017
Detected VOC Parameters	ES	PAL	Units					
Benzene	5	0.5	µg/l	**1,270**	Well Not Sampled	Well Not Sampled	Well Not Sampled	Well Abandoned
Toluene	800	160	µg/l	84.9				
Ethylbenzene	700	140	µg/l	*482*				
Xylenes (mixed isomers)	2,000	400	µg/l	*1,899*				
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 4.8				
Trimethylbenzenes (mixed isomers)	480	96	µg/l	*296.8*				
Naphthalene	100	10	µg/l	*56.3*				

Notes:
ES = NR140.10 Enforcement Standards
PAL = NR140.10 Preventive Action Limits
Enforcement Standard exceeded **BOLD**
Preventive Action Limit exceeded *Italics*
NA = Not Analyzed
NS = Not Sampled
J = Estimated value, concentration between the Limit of Detection and the Limit of Quantitation

Table 2j
Summary of Groundwater Analytical Results
AAMW9
Lou John Appraisal
Amery, Wisconsin

			Date ->	7/21/2015	4/13/2016	6/27/2016	9/21/2017	10/31/2017
Detected VOC Parameters	ES	PAL	Units					
Benzene	5	0.5	µg/l	**376**	Well Not Sampled	Well Not Sampled	Well Not Sampled	Well Abandoned
Toluene	800	160	µg/l	28.7				
Ethylbenzene	700	140	µg/l	*233*				
Xylenes (mixed isomers)	2,000	400	µg/l	390.2				
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	5.0				
Trimethylbenzenes (mixed isomers)	480	96	µg/l	*158.3*				
Naphthalene	100	10	µg/l	*31*				

Notes:
ES = NR140.10 Enforcement Standards
PAL = NR140.10 Preventive Action Limits
Enforcement Standard exceeded **BOLD**
Preventive Action Limit exceeded *Italics*
NA = Not Analyzed
NS = Not Sampled
J = Estimated value, concentration between the Limit of Detection and the Limit of Quantitation

Table 2k
Summary of Groundwater Analytical Results
AAMW16
Lou John Appraisal
Amery, Wisconsin

			Date ->	7/21/2015	4/13/2016	6/27/2016	9/21/2017	Oct 2018	12/11/2018	5/13/2019	9/5/2019	2/11/2020
Detected VOC Parameters	ES	PAL	Units									
Benzene	5	0.5	µg/l	< 0.40	Well Not Sampled	Well Not Sampled	NA	Carbon Injection Completed	Well Not Sampled	Well Not Sampled	< 0.25	Well Not Sampled
Toluene	800	160	µg/l	< 0.39			NA				< 0.17	
Ethylbenzene	700	140	µg/l	< 0.39			NA				< 0.22	
Xylenes (mixed isomers)	2,000	400	µg/l	< 0.80			NA				< 0.47	
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.48			NA				< 1.2	
Trimethylbenzenes (mixed isomers)	480	96	µg/l	< 0.42			NA				< 0.87	
Naphthalene	100	10	µg/l	< 0.42			NA				< 1.2	
Field Measurements												
Temperature			°F				61.54				56.6	
Conductivity			µS/cm				866				585.6	
pH							7.26				6.62	
Dissolved Oxygen			mg/l				5.28				5.62	
ORP			mV				62.6				146.5	

Notes:
ES = NR140.10 Enforcement Standards
PAL = NR140.10 Preventive Action Limits
Enforcement Standard exceeded **BOLD**
Preventive Action Limit exceeded *Italics*
NA = Not Analyzed
NS = Not Sampled
J = Estimated value, concentration between the Limit of Detection and the Limit of Quantitation

Table 21
Summary of Groundwater Analytical Results
AAMW17
Lou John Appraisal
Amery, Wisconsin

			Date ->	7/21/2015	4/13/2016	6/27/2016	9/21/2017	10/31/2017
Detected VOC Parameters	ES	PAL	Units					
Benzene	5	0.5	µg/l	< 0.40	Well Not Sampled	Well Not Sampled	Well Not Sampled	Well Abandoned
Toluene	800	160	µg/l	< 0.39				
Ethylbenzene	700	140	µg/l	< 0.39				
Xylenes (mixed isomers)	2,000	400	µg/l	< 0.80				
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.48				
Trimethylbenzenes (mixed isomers)	480	96	µg/l	< 0.42				
Naphthalene	100	10	µg/l	< 0.42				

Notes:
ES = NR140.10 Enforcement Standards
PAL = NR140.10 Preventive Action Limits
Enforcement Standard exceeded **BOLD**
Preventive Action Limit exceeded *Italics*
NA = Not Analyzed
NS = Not Sampled
J = Estimated value, concentration between the Limit of Detection and the Limit of Quantitation

Table 2m
Summary of Groundwater Analytical Results
AAMW18
Lou John Appraisal
Amery, Wisconsin

			Date ->	7/21/2015	4/13/2016	6/27/2016	9/21/2017	10/31/2017
Detected VOC Parameters	ES	PAL	Units					
Benzene	5	0.5	µg/l	< 0.40	Well Not Sampled	Well Not Sampled	Well Not Sampled	Well Abandoned
Toluene	800	160	µg/l	< 0.39				
Ethylbenzene	700	140	µg/l	< 0.39				
Xylenes (mixed isomers)	2,000	400	µg/l	< 0.80				
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.48				
Trimethylbenzenes (mixed isomers)	480	96	µg/l	< 0.42				
Naphthalene	100	10	µg/l	< 0.42				

Notes:
ES = NR140.10 Enforcement Standards
PAL = NR140.10 Preventive Action Limits
Enforcement Standard exceeded **BOLD**
Preventive Action Limit exceeded *Italics*
NA = Not Analyzed
NS = Not Sampled
J = Estimated value, concentration between the Limit of Detection and the Limit of Quantitation

Table 2n
Summary of Groundwater Analytical Results
AAMW19
Lou John Appraisal
Amery, Wisconsin

			Date ->	7/21/2015	4/13/2016	6/27/2016	9/21/2017	10/31/2017
Detected VOC Parameters	ES	PAL	Units					
Benzene	5	0.5	µg/l	< 0.40	Well Not Sampled	Well Not Sampled	Well Not Sampled	Well Abandoned
Toluene	800	160	µg/l	< 0.39				
Ethylbenzene	700	140	µg/l	< 0.39				
Xylenes (mixed isomers)	2,000	400	µg/l	< 0.80				
Methyl tert-Butyl Ether (MTBE)	60	12	µg/l	< 0.48				
Trimethylbenzenes (mixed isomers)	480	96	µg/l	< 0.42				
Naphthalene	100	10	µg/l	< 0.42				

Notes:
ES = NR140.10 Enforcement Standards
PAL = NR140.10 Preventive Action Limits
Enforcement Standard exceeded **BOLD**
Preventive Action Limit exceeded *Italics*
NA = Not Analyzed
NS = Not Sampled
J = Estimated value, concentration between the Limit of Detection and the Limit of Quantitation

Table 3

Depth to Free Product and Free Product Thickness

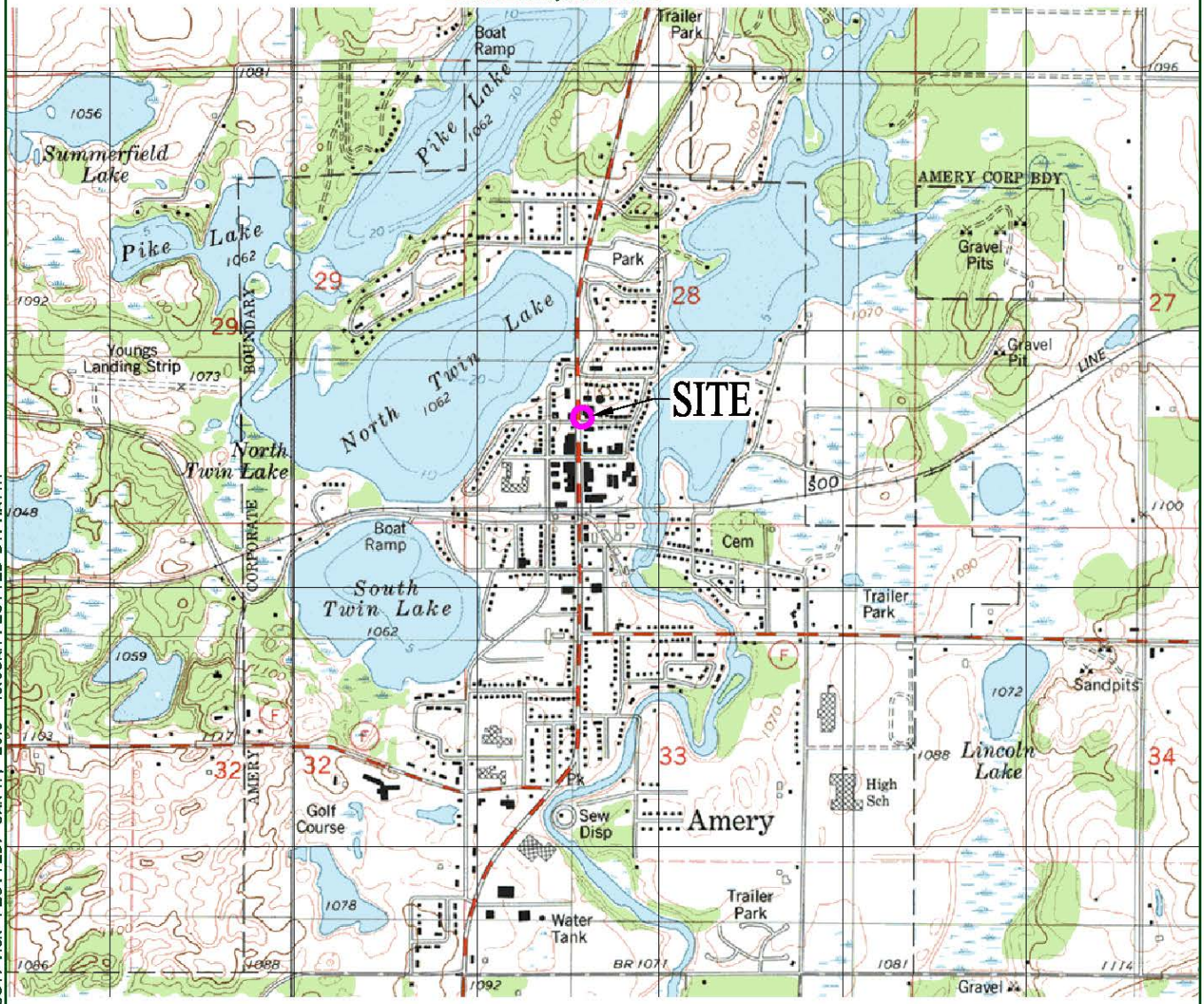
Lou John Appraisal

Amery, WI

Depth To Free Product (feet) below Reference Elevation

Well Name	AAMW7		
	Depth to	Depth to	Product
Date	Product	Groundwater	Thickness (ft)
21-Jul-15	8.71	8.80	0.09
27-Jun-16	8.85	8.93	0.08
21-Sep-17	8.89	9.18	0.29
5-Sep-19	8.57	8.85	0.28
11-Feb-20	8.97	9.21	0.24

REI
CIVIL & ENVIRONMENTAL
ENGINEERING, SURVEYING



SCALE 1:24 000

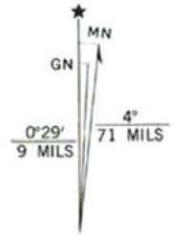
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

QUADRANGLE LOCATION



UTM GRID AND 1978 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

AMERY, WIS.
SE/4 BALSAM LAKE 15' QUADRANGLE
N4515–W9215/7.5
1978

REI Engineering, INC.

LOU JOHN APPRAISAL SERVICE
300 N. KELLER AVENUE
AMERY, WISCONSIN

FIGURE 1 : SITE LOCATION MAP

PROJECT NO.	DRAWN BY:	DATE:
6190	TAW	1/15/2018

DRAWING FILE: P:\6100-6199\6190 LOU JOHN - AMERY\DWG\6190-VICN.DWG LAYOUT: VICN PLOTTED: JAN 17, 2018 - 10:06AM PLOTTED BY: MATTM

HARRIMAN AVENUE

AMERY HIGH RISE APARTMENTS

BREMER BANK

MW3

NORTH KELLER AVENUE

OFFICE BUILDINGS

GP2/MW2

GP3

LOU JOHN APPRAISALS

AAMW-7

GP1/MW1

MAPLE STREET

AAMW-16

AAMW-2R

AAMW-1R

GP22

GP-12

GP20

AMERY PROFESSIONAL BUILDING

AAMW-8

FORMER AMERY AMOCO SITE

AAMW-6

WILLIAMSON FUNERAL HOME

AAMW-5

AAMW-9

OFFICE BUILDINGS

AAMW-17

APARTMENTS

AAMW-19

AAMW-18

LEGEND

0 40

SCALE: 1" = 40'

- AMERY AMOCO MONITORING WELLS BY OTHERS
- MONITORING WELL
- AMERY AMOCO MONITORING WELLS BY OTHERS (ABANDONED)
- GEOPROBE SOIL BORING BY OTHERS
- GEOPROBE SOIL BORING

TANK 1 560 GALLON LEADED GASOLINE - REMOVED 8/27/98
TANK 2 1,000 GALLON LEADED GASOLINE - REMOVED 8/27/98
TANK 3 560 GALLON LEADED GASOLINE - REMOVED 8/27/98

REI CIVIL & ENVIRONMENTAL ENGINEERING, SURVEYING

LOU JOHN APPRAISAL SERVICE
300 N. KELLER AVENUE
AMERY, WISCONSIN

FIGURE 2 : DETAILED SITE MAP

PROJECT No.	DRAWN BY:	DATE:
6190	MCM	1/15/2018

REI Engineering, INC.

DRAWING FILE: P:\6100-6199\6190 LOU JOHN - AMERY\DWG\6190-SITE.DWG LAYOUT: SITE PLOTTED: JAN 15, 2018 - 4:18PM PLOTTED BY: MATTM

APPENDIX A

GROUNDWATER ANALYTICAL REPORTS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

December 20, 2018

DAVID LARSEN
REI
4080 NORTH 20TH AVENUE
Wausau, WI 54401

RE: Project: 6190 LOU JOHN
Pace Project No.: 40181033

Dear DAVID LARSEN:
Enclosed are the analytical results for sample(s) received by the laboratory on December 14, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Brian Basten
brian.basten@pacelabs.com
(920)469-2436
Project Manager

Enclosures

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 6190 LOU JOHN
Pace Project No.: 40181033

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150
Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 6190 LOU JOHN
Pace Project No.: 40181033

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40181033001	**MW1**	Water	12/11/18 16:30	12/14/18 09:00
40181033002	**MW2**	Water	12/11/18 16:45	12/14/18 09:00
40181033003	**MW3**	Water	12/11/18 16:50	12/14/18 09:00
40181033004	**AAMW6**	Water	12/11/18 17:00	12/14/18 09:00
40181033005	**AAMW7**	Water	12/11/18 17:05	12/14/18 09:00

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(920)469-2436

SAMPLE ANALYTE COUNT

Project: 6190 LOU JOHN
Pace Project No.: 40181033

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40181033001	**MW1**	WI MOD GRO	ALD	10
40181033002	**MW2**	WI MOD GRO	ALD	10
40181033003	**MW3**	WI MOD GRO	ALD	10
40181033004	**AAMW6**	WI MOD GRO	ALD	10
40181033005	**AAMW7**	WI MOD GRO	ALD	10

Pace Analytical Services, LLC
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Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 6190 LOU JOHN
Pace Project No.: 40181033

Sample: MW1 **Lab ID: 40181033001** Collected: 12/11/18 16:30 Received: 12/14/18 09:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	**<0.31**	ug/L	1.0	0.31	1		12/18/18 10:43	71-43-2	
Ethylbenzene	**<0.33**	ug/L	1.1	0.33	1		12/18/18 10:43	100-41-4	
Methyl-tert-butyl ether	**<0.32**	ug/L	1.1	0.32	1		12/18/18 10:43	1634-04-4	
Naphthalene	**<0.51**	ug/L	1.7	0.51	1		12/18/18 10:43	91-20-3	
Toluene	**<0.49**	ug/L	1.6	0.49	1		12/18/18 10:43	108-88-3	
1,2,4-Trimethylbenzene	**<0.34**	ug/L	1.1	0.34	1		12/18/18 10:43	95-63-6	
1,3,5-Trimethylbenzene	**<0.33**	ug/L	1.1	0.33	1		12/18/18 10:43	108-67-8	
m&p-Xylene	**<0.66**	ug/L	2.2	0.66	1		12/18/18 10:43	179601-23-1	
o-Xylene	**<0.32**	ug/L	1.0	0.32	1		12/18/18 10:43	95-47-6	
Surrogates									
a,a,a-Trifluorotoluene (S)	96	%	80-120		1		12/18/18 10:43	98-08-8	HS,pH

Sample: MW2 **Lab ID: 40181033002** Collected: 12/11/18 16:45 Received: 12/14/18 09:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	**<0.31**	ug/L	1.0	0.31	1		12/18/18 11:09	71-43-2	
Ethylbenzene	**2.0**	ug/L	1.1	0.33	1		12/18/18 11:09	100-41-4	
Methyl-tert-butyl ether	**0.43J**	ug/L	1.1	0.32	1		12/18/18 11:09	1634-04-4	
Naphthalene	**<0.51**	ug/L	1.7	0.51	1		12/18/18 11:09	91-20-3	
Toluene	**<0.49**	ug/L	1.6	0.49	1		12/18/18 11:09	108-88-3	
1,2,4-Trimethylbenzene	**0.38J**	ug/L	1.1	0.34	1		12/18/18 11:09	95-63-6	
1,3,5-Trimethylbenzene	**0.52J**	ug/L	1.1	0.33	1		12/18/18 11:09	108-67-8	
m&p-Xylene	**2.2**	ug/L	2.2	0.66	1		12/18/18 11:09	179601-23-1	
o-Xylene	**1.6**	ug/L	1.0	0.32	1		12/18/18 11:09	95-47-6	
Surrogates									
a,a,a-Trifluorotoluene (S)	112	%	80-120		1		12/18/18 11:09	98-08-8	

Sample: MW3 **Lab ID: 40181033003** Collected: 12/11/18 16:50 Received: 12/14/18 09:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	**<0.31**	ug/L	1.0	0.31	1		12/18/18 11:35	71-43-2	
Ethylbenzene	**<0.33**	ug/L	1.1	0.33	1		12/18/18 11:35	100-41-4	
Methyl-tert-butyl ether	**<0.32**	ug/L	1.1	0.32	1		12/18/18 11:35	1634-04-4	
Naphthalene	**<0.51**	ug/L	1.7	0.51	1		12/18/18 11:35	91-20-3	
Toluene	**<0.49**	ug/L	1.6	0.49	1		12/18/18 11:35	108-88-3	
1,2,4-Trimethylbenzene	**<0.34**	ug/L	1.1	0.34	1		12/18/18 11:35	95-63-6	
1,3,5-Trimethylbenzene	**<0.33**	ug/L	1.1	0.33	1		12/18/18 11:35	108-67-8	
m&p-Xylene	**<0.66**	ug/L	2.2	0.66	1		12/18/18 11:35	179601-23-1	
o-Xylene	**<0.32**	ug/L	1.0	0.32	1		12/18/18 11:35	95-47-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 6190 LOU JOHN
Pace Project No.: 40181033

Sample: MW3 **Lab ID: 40181033003** Collected: 12/11/18 16:50 Received: 12/14/18 09:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO								
Surrogates									
a,a,a-Trifluorotoluene (S)	96	%	80-120		1		12/18/18 11:35	98-08-8	

Sample: AAMW6 **Lab ID: 40181033004** Collected: 12/11/18 17:00 Received: 12/14/18 09:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	**<0.31**	ug/L	1.0	0.31	1		12/18/18 12:00	71-43-2	
Ethylbenzene	**<0.33**	ug/L	1.1	0.33	1		12/18/18 12:00	100-41-4	
Methyl-tert-butyl ether	**<0.32**	ug/L	1.1	0.32	1		12/18/18 12:00	1634-04-4	
Naphthalene	**<0.51**	ug/L	1.7	0.51	1		12/18/18 12:00	91-20-3	
Toluene	**<0.49**	ug/L	1.6	0.49	1		12/18/18 12:00	108-88-3	
1,2,4-Trimethylbenzene	**<0.34**	ug/L	1.1	0.34	1		12/18/18 12:00	95-63-6	
1,3,5-Trimethylbenzene	**<0.33**	ug/L	1.1	0.33	1		12/18/18 12:00	108-67-8	
m&p-Xylene	**<0.66**	ug/L	2.2	0.66	1		12/18/18 12:00	179601-23-1	
o-Xylene	**<0.32**	ug/L	1.0	0.32	1		12/18/18 12:00	95-47-6	
Surrogates									
a,a,a-Trifluorotoluene (S)	97	%	80-120		1		12/18/18 12:00	98-08-8	

Sample: AAMW7 **Lab ID: 40181033005** Collected: 12/11/18 17:05 Received: 12/14/18 09:00 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	**34.7**	ug/L	10.2	3.1	10		12/19/18 11:58	71-43-2	
Ethylbenzene	**134**	ug/L	11.0	3.3	10		12/19/18 11:58	100-41-4	
Methyl-tert-butyl ether	**17.0**	ug/L	10.7	3.2	10		12/19/18 11:58	1634-04-4	
Naphthalene	**24.3**	ug/L	16.8	5.1	10		12/19/18 11:58	91-20-3	
Toluene	**213**	ug/L	16.3	4.9	10		12/19/18 11:58	108-88-3	
1,2,4-Trimethylbenzene	**345**	ug/L	11.4	3.4	10		12/19/18 11:58	95-63-6	
1,3,5-Trimethylbenzene	**135**	ug/L	10.9	3.3	10		12/19/18 11:58	108-67-8	
m&p-Xylene	**1070**	ug/L	21.8	6.6	10		12/19/18 11:58	179601-23-1	
o-Xylene	**401**	ug/L	10.5	3.2	10		12/19/18 11:58	95-47-6	
Surrogates									
a,a,a-Trifluorotoluene (S)	99	%	80-120		10		12/19/18 11:58	98-08-8	HS

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 6190 LOU JOHN
Pace Project No.: 40181033

QC Batch: 309455 Analysis Method: WI MOD GRO
QC Batch Method: WI MOD GRO Analysis Description: WIGRO GCV Water
Associated Lab Samples: 40181033001, 40181033002, 40181033003, 40181033004, 40181033005

METHOD BLANK: 1807755 Matrix: Water
Associated Lab Samples: 40181033001, 40181033002, 40181033003, 40181033004, 40181033005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/L	<0.34	1.1	12/18/18 09:00	
1,3,5-Trimethylbenzene	ug/L	<0.33	1.1	12/18/18 09:00	
Benzene	ug/L	<0.31	1.0	12/18/18 09:00	
Ethylbenzene	ug/L	<0.33	1.1	12/18/18 09:00	
m&p-Xylene	ug/L	<0.66	2.2	12/18/18 09:00	
Methyl-tert-butyl ether	ug/L	<0.32	1.1	12/18/18 09:00	
Naphthalene	ug/L	<0.51	1.7	12/18/18 09:00	
o-Xylene	ug/L	<0.32	1.0	12/18/18 09:00	
Toluene	ug/L	<0.49	1.6	12/18/18 09:00	
a,a,a-Trifluorotoluene (S)	%	97	80-120	12/18/18 09:00	

LABORATORY CONTROL SAMPLE & LCSD: 1807756 1807757

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limits	RPD	Max RPD	Qualifiers
1,2,4-Trimethylbenzene	ug/L	20	20.2	20.2	101	101	80-120	0	20	
1,3,5-Trimethylbenzene	ug/L	20	19.6	19.6	98	98	80-120	0	20	
Benzene	ug/L	20	19.7	19.8	99	99	80-120	0	20	
Ethylbenzene	ug/L	20	20.1	20.1	101	101	80-120	0	20	
m&p-Xylene	ug/L	40	39.4	39.4	99	98	80-120	0	20	
Methyl-tert-butyl ether	ug/L	20	20.0	20.0	100	100	80-120	0	20	
Naphthalene	ug/L	20	20.4	20.2	102	101	80-120	1	20	
o-Xylene	ug/L	20	19.7	19.6	98	98	80-120	0	20	
Toluene	ug/L	20	19.8	19.8	99	99	80-120	0	20	
a,a,a-Trifluorotoluene (S)	%				97	98	80-120			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1808354 1808355

Parameter	Units	40181033003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,2,4-Trimethylbenzene	ug/L	<0.34	20	20	15.0	16.9	75	84	51-160	12	20	
1,3,5-Trimethylbenzene	ug/L	<0.33	20	20	16.4	18.1	82	91	56-146	10	20	
Benzene	ug/L	<0.31	20	20	21.3	20.7	106	104	71-137	3	20	
Ethylbenzene	ug/L	<0.33	20	20	21.5	21.2	108	106	71-141	2	20	
m&p-Xylene	ug/L	<0.66	40	40	39.5	40.1	99	100	66-141	2	20	
Methyl-tert-butyl ether	ug/L	<0.32	20	20	20.8	20.3	104	102	80-120	2	20	
Naphthalene	ug/L	<0.51	20	20	21.5	21.0	108	105	67-138	2	20	
o-Xylene	ug/L	<0.32	20	20	19.9	20.1	100	101	75-133	1	20	
Toluene	ug/L	<0.49	20	20	21.2	20.8	106	104	76-134	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 6190 LOU JOHN
Pace Project No.: 40181033

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1808354 1808355

Parameter	Units	40181033003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
a,a,a-Trifluorotoluene (S)	%						99	99	80-120			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 6190 LOU JOHN
Pace Project No.: 40181033

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

HS	Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).
pH	Post-analysis pH measurement indicates insufficient VOA sample preservation.

Pace Analytical Services, LLC
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Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 6190 LOU JOHN
Pace Project No.: 40181033

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40181033001	**MW1**	WI MOD GRO	309455		
40181033002	**MW2**	WI MOD GRO	309455		
40181033003	**MW3**	WI MOD GRO	309455		
40181033004	**AAMW6**	WI MOD GRO	309455		
40181033005	**AAMW7**	WI MOD GRO	309455		

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UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

Page 1 of

40181033

CHAIN OF CUSTODY

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

(Please Print Clearly)	
Company Name:	RET
Branch/Location:	
Project Contact:	DAVID LARSEN
Phone:	715-685-9764
Project Number:	6610
Project Name:	LAU JOHN
Project State:	WI
Sampled By (Print):	DAVID LARSEN
Sampled By (Sign):	
PO #:	Regulatory Program: RECRA

Quote #:	
Mail To Contact:	
Mail To Company:	
Mail To Address:	
Invoice To Contact:	
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes
A = Air, W = Water, B = Biota, DW = Drinking Water, C = Charcoal, GW = Ground Water, O = Oil, SW = Surface Water, S = Soil, WW = Waste Water, SI = Sludge, WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested: PCB's IN	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
001	MW1	12/11/18	4:30	GW		X				
002	MW2		4:45			X				
003	MW3		4:50			X				
004	AAMW6		5:00			X				
005	AAMW7		5:05			X				

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):
Email #1:
Email #2:
Telephone:
Fax:

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
	12-13-18 3:30pm		
Weltco	12/14/18 0900		12/14/18 0900

PACE Project No. 40181033
Receipt Temp = 2.0 °C
Sample Receipt pH OK / Adjusted
Cooler Custody Seal Present / Not Present
Intact / Not Intact

Version 6.0 06/14/06

C019a(27Jun2006)

ORIGINAL

Pace Analytical Services, LLC
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Sample Preservation Receipt Form

Client Name: REI Project # 4981033

All containers needing preservation have been checked and noted below: □Yes □No ☑N/A Initial when completed: Date/ Time:

Lab Lot# of pH paper: Lab Std #ID of preservation (if pH adjusted):

Pace Lab #	Glass							Plastic							Vials						Jars			General			VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
	AG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	BP1U	BP2N	BP2Z	BP3U	BP3C	BP3N	BP3S	DG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	WGFU	WPFU	SP5T	ZPLC	GN							
001																		3	3	12/16/18							3						2.5 / 5 / 10
002																		3															2.5 / 5 / 10
003																		3															2.5 / 5 / 10
004																		3															2.5 / 5 / 10
005																		3									3						2.5 / 5 / 10
006																																	2.5 / 5 / 10
007																																	2.5 / 5 / 10
008																																	2.5 / 5 / 10
009																																	2.5 / 5 / 10
010																																	2.5 / 5 / 10
011																																	2.5 / 5 / 10
012																																	2.5 / 5 / 10
013																																	2.5 / 5 / 10
014																																	2.5 / 5 / 10
015																																	2.5 / 5 / 10
016																																	2.5 / 5 / 10
017																																	2.5 / 5 / 10
018																																	2.5 / 5 / 10
019																																	2.5 / 5 / 10
020																																	2.5 / 5 / 10

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: _____ Headspace in VOA Vials (>6mm): ☑Yes □No □N/A ***If yes look in headspace column**

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	DG9A	40 mL amber ascorbic	JGFU	4 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP2N	500 mL plastic HNO3	DG9T	40 mL amber Na Thio	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH, Znact	VG9U	40 mL clear vial unpres	WPFU	4 oz plastic jar unpres
AG4U	120 mL amber glass unpres	BP3U	250 mL plastic unpres	VG9H	40 mL clear vial HCL		
AG5U	100 mL amber glass unpres	BP3C	250 mL plastic NaOH	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres	BP3S	250 mL plastic H2SO4			GN:	

Pace Analytical™ 1241 Bellevue Street, Green Bay, WI 54302	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: 25Apr2018
	Document No.: F-GB-C-031-Rev.07	Issuing Authority: Pace Green Bay Quality Office

Sample Condition Upon Receipt Form (SCUR)

Project #: WO#: 40181033

40181033

Client Name: REI

Courier: ☐ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☑ Waltco ☐ Client ☐ Pace Other:

Tracking #: 1925411

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other

Thermometer Used SR - NA **Type of Ice:** Wet Blue Dry None ☑ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: ROI /Corr:

Temp Blank Present: ☐ yes ☑ no **Biological Tissue is Frozen:** ☐ yes ☐ no

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C.

Person examining contents:
Date: 12/14/18
Initials:

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☐Yes ☑No ☐N/A	2. reg #, results, invoice 12/14/18
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No	5.
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☐Yes ☑No	6.
Rush Turn Around Time Requested:	☐Yes ☑No	7.
Sufficient Volume: For Analysis: ☑Yes ☐No MS/MSD: ☐Yes ☑No ☐N/A		8.
Correct Containers Used:	☑Yes ☐No	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☑N/A	
Containers Intact:	☑Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: W	☐Yes ☑No ☐N/A	12. 001 - 4:40 004 - 5:05 005 - 5:00 12/14/18
Trip Blank Present:	☐Yes ☑No ☐N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: Date: 12-14-18

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

May 21, 2019

DAVID LARSEN
REI
4080 NORTH 20TH AVENUE
Wausau, WI 54401

RE: Project: 6190 LOU JOHN
Pace Project No.: 40187904

Dear DAVID LARSEN:
Enclosed are the analytical results for sample(s) received by the laboratory on May 18, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Brian Basten
brian.basten@pacelabs.com
(920)469-2436
Project Manager

Enclosures

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 6190 LOU JOHN
Pace Project No.: 40187904

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150
Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

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SAMPLE SUMMARY

Project: 6190 LOU JOHN
Pace Project No.: 40187904

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40187904001	**MW1**	Water	05/13/19 15:35	05/18/19 08:25
40187904002	**MW2**	Water	05/13/19 15:15	05/18/19 08:25
40187904003	**MW3**	Water	05/13/19 15:00	05/18/19 08:25
40187904004	**AAMW6**	Water	05/13/19 15:30	05/18/19 08:25
40187904005	**AAMW7**	Water	05/13/19 15:40	05/18/19 08:25

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SAMPLE ANALYTE COUNT

Project: 6190 LOU JOHN
Pace Project No.: 40187904

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40187904001	**MW1**	EPA 8260	LAP	12
40187904002	**MW2**	EPA 8260	LAP	12
40187904003	**MW3**	EPA 8260	LAP	12
40187904004	**AAMW6**	EPA 8260	LAP	12
40187904005	**AAMW7**	EPA 8260	LAP	12

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(920)469-2436

ANALYTICAL RESULTS

Project: 6190 LOU JOHN
Pace Project No.: 40187904

Sample: MW1 **Lab ID: 40187904001** Collected: 05/13/19 15:35 Received: 05/18/19 08:25 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST	Analytical Method: EPA 8260								
Benzene	**<0.25**	ug/L	1.0	0.25	1		05/21/19 08:35	71-43-2	
Ethylbenzene	**<0.22**	ug/L	1.0	0.22	1		05/21/19 08:35	100-41-4	
Methyl-tert-butyl ether	**<1.2**	ug/L	4.2	1.2	1		05/21/19 08:35	1634-04-4	
Naphthalene	**<1.2**	ug/L	5.0	1.2	1		05/21/19 08:35	91-20-3	
Toluene	**<0.17**	ug/L	5.0	0.17	1		05/21/19 08:35	108-88-3	
1,2,4-Trimethylbenzene	**<0.84**	ug/L	2.8	0.84	1		05/21/19 08:35	95-63-6	
1,3,5-Trimethylbenzene	**<0.87**	ug/L	2.9	0.87	1		05/21/19 08:35	108-67-8	
m&p-Xylene	**<0.47**	ug/L	2.0	0.47	1		05/21/19 08:35	179601-23-1	
o-Xylene	**<0.26**	ug/L	1.0	0.26	1		05/21/19 08:35	95-47-6	
Surrogates									
Dibromofluoromethane (S)	100	%	70-130		1		05/21/19 08:35	1868-53-7	
Toluene-d8 (S)	97	%	70-130		1		05/21/19 08:35	2037-26-5	
4-Bromofluorobenzene (S)	85	%	70-130		1		05/21/19 08:35	460-00-4	

Sample: MW2 **Lab ID: 40187904002** Collected: 05/13/19 15:15 Received: 05/18/19 08:25 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST	Analytical Method: EPA 8260								
Benzene	**<0.25**	ug/L	1.0	0.25	1		05/21/19 08:58	71-43-2	
Ethylbenzene	**<0.22**	ug/L	1.0	0.22	1		05/21/19 08:58	100-41-4	
Methyl-tert-butyl ether	**<1.2**	ug/L	4.2	1.2	1		05/21/19 08:58	1634-04-4	
Naphthalene	**<1.2**	ug/L	5.0	1.2	1		05/21/19 08:58	91-20-3	
Toluene	**<0.17**	ug/L	5.0	0.17	1		05/21/19 08:58	108-88-3	
1,2,4-Trimethylbenzene	**<0.84**	ug/L	2.8	0.84	1		05/21/19 08:58	95-63-6	
1,3,5-Trimethylbenzene	**<0.87**	ug/L	2.9	0.87	1		05/21/19 08:58	108-67-8	
m&p-Xylene	**<0.47**	ug/L	2.0	0.47	1		05/21/19 08:58	179601-23-1	
o-Xylene	**<0.26**	ug/L	1.0	0.26	1		05/21/19 08:58	95-47-6	
Surrogates									
Dibromofluoromethane (S)	105	%	70-130		1		05/21/19 08:58	1868-53-7	
Toluene-d8 (S)	96	%	70-130		1		05/21/19 08:58	2037-26-5	
4-Bromofluorobenzene (S)	94	%	70-130		1		05/21/19 08:58	460-00-4	

Sample: MW3 **Lab ID: 40187904003** Collected: 05/13/19 15:00 Received: 05/18/19 08:25 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST	Analytical Method: EPA 8260								
Benzene	**<0.25**	ug/L	1.0	0.25	1		05/21/19 09:20	71-43-2	
Ethylbenzene	**<0.22**	ug/L	1.0	0.22	1		05/21/19 09:20	100-41-4	
Methyl-tert-butyl ether	**<1.2**	ug/L	4.2	1.2	1		05/21/19 09:20	1634-04-4	
Naphthalene	**<1.2**	ug/L	5.0	1.2	1		05/21/19 09:20	91-20-3	
Toluene	**<0.17**	ug/L	5.0	0.17	1		05/21/19 09:20	108-88-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 6190 LOU JOHN
Pace Project No.: 40187904

Sample: MW3 **Lab ID: 40187904003** Collected: 05/13/19 15:00 Received: 05/18/19 08:25 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST	Analytical Method: EPA 8260								
1,2,4-Trimethylbenzene	**<0.84**	ug/L	2.8	0.84	1		05/21/19 09:20	95-63-6	
1,3,5-Trimethylbenzene	**<0.87**	ug/L	2.9	0.87	1		05/21/19 09:20	108-67-8	
m&p-Xylene	**<0.47**	ug/L	2.0	0.47	1		05/21/19 09:20	179601-23-1	
o-Xylene	**<0.26**	ug/L	1.0	0.26	1		05/21/19 09:20	95-47-6	
Surrogates									
Dibromofluoromethane (S)	92	%	70-130		1		05/21/19 09:20	1868-53-7	
Toluene-d8 (S)	81	%	70-130		1		05/21/19 09:20	2037-26-5	
4-Bromofluorobenzene (S)	90	%	70-130		1		05/21/19 09:20	460-00-4	

Sample: AAMW6 **Lab ID: 40187904004** Collected: 05/13/19 15:30 Received: 05/18/19 08:25 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST	Analytical Method: EPA 8260								
Benzene	**<0.25**	ug/L	1.0	0.25	1		05/20/19 23:42	71-43-2	
Ethylbenzene	**<0.22**	ug/L	1.0	0.22	1		05/20/19 23:42	100-41-4	
Methyl-tert-butyl ether	**<1.2**	ug/L	4.2	1.2	1		05/20/19 23:42	1634-04-4	
Naphthalene	**<1.2**	ug/L	5.0	1.2	1		05/20/19 23:42	91-20-3	
Toluene	**<0.17**	ug/L	5.0	0.17	1		05/20/19 23:42	108-88-3	
1,2,4-Trimethylbenzene	**<0.84**	ug/L	2.8	0.84	1		05/20/19 23:42	95-63-6	
1,3,5-Trimethylbenzene	**<0.87**	ug/L	2.9	0.87	1		05/20/19 23:42	108-67-8	
m&p-Xylene	**<0.47**	ug/L	2.0	0.47	1		05/20/19 23:42	179601-23-1	
o-Xylene	**<0.26**	ug/L	1.0	0.26	1		05/20/19 23:42	95-47-6	
Surrogates									
Dibromofluoromethane (S)	101	%	70-130		1		05/20/19 23:42	1868-53-7	
Toluene-d8 (S)	85	%	70-130		1		05/20/19 23:42	2037-26-5	
4-Bromofluorobenzene (S)	82	%	70-130		1		05/20/19 23:42	460-00-4	

Sample: AAMW7 **Lab ID: 40187904005** Collected: 05/13/19 15:40 Received: 05/18/19 08:25 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST	Analytical Method: EPA 8260								
Benzene	**78.3**	ug/L	10.0	2.5	10		05/21/19 01:57	71-43-2	
Ethylbenzene	**120**	ug/L	10.0	2.2	10		05/21/19 01:57	100-41-4	
Methyl-tert-butyl ether	**<12.5**	ug/L	41.5	12.5	10		05/21/19 01:57	1634-04-4	
Naphthalene	**24.4J**	ug/L	50.0	11.8	10		05/21/19 01:57	91-20-3	
Toluene	**182**	ug/L	50.0	1.7	10		05/21/19 01:57	108-88-3	
1,2,4-Trimethylbenzene	**209**	ug/L	28.0	8.4	10		05/21/19 01:57	95-63-6	
1,3,5-Trimethylbenzene	**76.1**	ug/L	29.1	8.7	10		05/21/19 01:57	108-67-8	
m&p-Xylene	**734**	ug/L	20.0	4.7	10		05/21/19 01:57	179601-23-1	
o-Xylene	**220**	ug/L	10.0	2.6	10		05/21/19 01:57	95-47-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 6190 LOU JOHN
Pace Project No.: 40187904

Sample: AAMW7 **Lab ID: 40187904005** Collected: 05/13/19 15:40 Received: 05/18/19 08:25 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST	Analytical Method: EPA 8260								
Surrogates									
Dibromofluoromethane (S)	92	%	70-130		10		05/21/19 01:57	1868-53-7	D3
Toluene-d8 (S)	100	%	70-130		10		05/21/19 01:57	2037-26-5	
4-Bromofluorobenzene (S)	100	%	70-130		10		05/21/19 01:57	460-00-4	

REPORT OF LABORATORY ANALYSIS

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Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 6190 LOU JOHN
Pace Project No.: 40187904

QC Batch: 321759 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 40187904001, 40187904002, 40187904003, 40187904004, 40187904005

METHOD BLANK: 1869007 Matrix: Water
Associated Lab Samples: 40187904001, 40187904002, 40187904003, 40187904004, 40187904005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/L	<0.84	2.8	05/20/19 15:52	
1,3,5-Trimethylbenzene	ug/L	<0.87	2.9	05/20/19 15:52	
Benzene	ug/L	<0.25	1.0	05/20/19 15:52	
Ethylbenzene	ug/L	<0.22	1.0	05/20/19 15:52	
m&p-Xylene	ug/L	<0.47	2.0	05/20/19 15:52	
Methyl-tert-butyl ether	ug/L	<1.2	4.2	05/20/19 15:52	
Naphthalene	ug/L	<1.2	5.0	05/20/19 15:52	
o-Xylene	ug/L	<0.26	1.0	05/20/19 15:52	
Toluene	ug/L	<0.17	5.0	05/20/19 15:52	
4-Bromofluorobenzene (S)	%	92	70-130	05/20/19 15:52	
Dibromofluoromethane (S)	%	94	70-130	05/20/19 15:52	
Toluene-d8 (S)	%	95	70-130	05/20/19 15:52	

LABORATORY CONTROL SAMPLE: 1869008

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	50	44.0	88	70-130	
Ethylbenzene	ug/L	50	58.9	118	80-124	
m&p-Xylene	ug/L	100	118	118	70-130	
Methyl-tert-butyl ether	ug/L	50	42.4	85	54-137	
o-Xylene	ug/L	50	59.3	119	70-130	
Toluene	ug/L	50	54.9	110	80-126	
4-Bromofluorobenzene (S)	%			103	70-130	
Dibromofluoromethane (S)	%			90	70-130	
Toluene-d8 (S)	%			100	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1869332 1869333

Parameter	Units	40187879012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	0.32J	50	50	42.9	42.8	85	85	70-130	0	20	
Ethylbenzene	ug/L	<0.22	50	50	54.9	59.2	110	118	80-125	8	20	
m&p-Xylene	ug/L	<0.47	100	100	110	117	110	117	70-130	6	20	
Methyl-tert-butyl ether	ug/L	<1.2	50	50	47.4	49.1	95	98	51-145	4	20	
o-Xylene	ug/L	<0.26	50	50	54.2	58.8	108	118	70-130	8	20	
Toluene	ug/L	<0.17	50	50	50.7	51.3	101	103	80-131	1	20	
4-Bromofluorobenzene (S)	%						102	104	70-130			
Dibromofluoromethane (S)	%						93	90	70-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6190 LOU JOHN
Pace Project No.: 40187904

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1869332 1869333

Parameter	Units	40187879012 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Toluene-d8 (S)	%						101	97	70-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 6190 LOU JOHN
Pace Project No.: 40187904

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 6190 LOU JOHN
Pace Project No.: 40187904

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40187904001	**MW1**	EPA 8260	321759		
40187904002	**MW2**	EPA 8260	321759		
40187904003	**MW3**	EPA 8260	321759		
40187904004	**AAMW6**	EPA 8260	321759		
40187904005	**AAMW7**	EPA 8260	321759		

40187904

Pace Analytical®
www.pacelabs.com

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

CHAIN OF COUNTY

(Please Print Clearly)

Company Name:	REI
Branch/Location:	Wausau
Project Contact:	Dave Larsen
Phone:	715-675-9784
Project Number:	6190
Project Name:	Lou John
Project State:	WI
Sampled By (Print):	Ryan Resch
Sampled By (Sign):	[signature]
PO #:	
Regulatory Program:	

Quote #:	
Mail To Contact:	Dave Larsen
Mail To Company:	REI
Mail To Address:	DLarsen@reiengineering.com
Invoice To Contact:	SAA
Invoice To Company:	|
Invoice To Address:	|
Invoice To Phone:	

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

FILTERED? (YES/NO) — Y/N: N
PRESERVATION (CODE)* — Pick Letter: B

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, Sl = Sludge
W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	Analyses Requested: PVOC+Naphthalene	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
001	MW1	5/13/19	3:35	GW	X		OK	
002	MW2	|	3:15	|	X			
003	MW3	|	3:00	|	X			
004	AAMW6	|	3:30	|	X			
005	AAMW7	|	3:40	|	X			

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:	
Email #2:	
Telephone:	
Fax:	

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	5/17/19 4:40pm		
Walt CO	5/18/19 0825	[signature]	5/18/19 0825

PACE Project No. 40187904

Receipt Temp = ROI °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal Present / Not Present (circled: Not Present)
Intact / Not Intact

Version 6.0 06/14/06

C019a(27Jun2006)

ORIGINAL

Pace Analytical Services, LLC
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Sample Preservation Receipt Form

Client Name: REL Loc Project # 40187904

All containers needing preservation have been checked and noted below: □Yes □No ☑N/A Initial when completed: Date/ Time:

Lab Lot# of pH paper: Lab Std #ID of preservation (if pH adjusted):

Pace Lab #	Glass: AG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	Plastic: BP1U	BP2N	BP2Z	BP3U	BP3B	BP3N	BP3S	Vials: DG9A	DG9T	VG9U	VG9H	VG9M	VG9D	Jars: JGFU	WGFU	WPFU	General: SP5T	ZPLC	GN	VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
001																		3															2.5 / 5 / 10
002																		3															2.5 / 5 / 10
003																		3															2.5 / 5 / 10
004																		3															2.5 / 5 / 10
005																		3															2.5 / 5 / 10
006																																	2.5 / 5 / 10
007																																	2.5 / 5 / 10
008																																	2.5 / 5 / 10
009																																	2.5 / 5 / 10
010																																	2.5 / 5 / 10
011																																	2.5 / 5 / 10
012																																	2.5 / 5 / 10
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014																																	2.5 / 5 / 10
015																																	2.5 / 5 / 10
016																																	2.5 / 5 / 10
017																																	2.5 / 5 / 10
018																																	2.5 / 5 / 10
019																																	2.5 / 5 / 10
020																																	2.5 / 5 / 10

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: _____ Headspace in VOA Vials (>6mm) : □Yes ☑No □N/A ***If yes look in headspace column**

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	DG9A	40 mL amber ascorbic	JGFU	4 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP2N	500 mL plastic HNO3	DG9T	40 mL amber Na Thio	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH, Znact	VG9U	40 mL clear vial unpres	WPFU	4 oz plastic jar unpres
AG4U	120 mL amber glass unpres	BP3U	250 mL plastic unpres	VG9H	40 mL clear vial HCL		
AG5U	100 mL amber glass unpres	BP3B	250 mL plastic NaOH	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres	BP3S	250 mL plastic H2SO4			GN:	

Pace Analytical™ 1241 Bellevue Street, Green Bay, WI 54302	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: 25Apr2018
	Document No.: F-GB-C-031-Rev.07	Issuing Authority: Pace Green Bay Quality Office

Sample Condition Upon Receipt Form (SCUR)

Project #: WO# : 40187904

Client Name: REI

Courier: ☐ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☑ Waltco ☐ Client ☐ Pace Other:

Tracking #: 2060822-1

Custody Seal on Cooler/Box Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☑ Other paper

Thermometer Used SR - NA **Type of Ice:** (wet) Blue Dry None ☑ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: 6.1 /Corr:

Temp Blank Present: ☐ yes ☑ no **Biological Tissue is Frozen:** ☐ yes ☐ no

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C.

Person examining contents:
Date: 5/18/19
Initials: RS

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No	5.
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☐Yes ☑No	6.
Rush Turn Around Time Requested:	☐Yes ☑No	7.
Sufficient Volume:		8. 004 AAMW 6 Rec'd 2 VOAH vials 5/18/19 RS
For Analysis: ☑Yes ☐No MS/MSD:	☐Yes ☑No ☐N/A	
Correct Containers Used:	☑Yes ☐No	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☑N/A	
Containers Intact:	☑Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: W		
Trip Blank Present:	☐Yes ☑No ☐N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: Date: 5-20-19

Page 2 of 2

Pace Analytical Services, LLC
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Green Bay, WI 54302
(920)469-2436

September 13, 2019

DAVID LARSEN
REI
4080 NORTH 20TH AVENUE
Wausau, WI 54401

RE: Project: 6190 LOU JOHN
Pace Project No.: 40194679

Dear DAVID LARSEN:
Enclosed are the analytical results for sample(s) received by the laboratory on September 10, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Brian Basten
brian.basten@pacelabs.com
(920)469-2436
Project Manager

Enclosures

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 6190 LOU JOHN
Pace Project No.: 40194679

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150
Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

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SAMPLE SUMMARY

Project: 6190 LOU JOHN
Pace Project No.: 40194679

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40194679001	**MW1**	Water	09/05/19 11:45	09/10/19 09:20
40194679002	**MW2**	Water	09/05/19 11:30	09/10/19 09:20
40194679003	**MW3**	Water	09/05/19 11:00	09/10/19 09:20
40194679004	**AAMW-6**	Water	09/05/19 10:30	09/10/19 09:20
40194679005	**AAMW-7**	Water	09/05/19 10:55	09/10/19 09:20
40194679006	**AAMW-16**	Water	09/05/19 10:45	09/10/19 09:20

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SAMPLE ANALYTE COUNT

Project: 6190 LOU JOHN
Pace Project No.: 40194679

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40194679001	**MW1**	EPA 8260	HNW	12
40194679002	**MW2**	EPA 8260	HNW	12
40194679003	**MW3**	EPA 8260	HNW	12
40194679004	**AAMW-6**	EPA 8260	HNW	12
40194679005	**AAMW-7**	EPA 8260	HNW	12
40194679006	**AAMW-16**	EPA 8260	HNW	12

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ANALYTICAL RESULTS

Project: 6190 LOU JOHN
Pace Project No.: 40194679

Sample: MW1 **Lab ID: 40194679001** Collected: 09/05/19 11:45 Received: 09/10/19 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST	Analytical Method: EPA 8260								
Benzene	**<0.25**	ug/L	1.0	0.25	1		09/12/19 13:03	71-43-2	
Ethylbenzene	**<0.22**	ug/L	1.0	0.22	1		09/12/19 13:03	100-41-4	
Methyl-tert-butyl ether	**<1.2**	ug/L	4.2	1.2	1		09/12/19 13:03	1634-04-4	
Naphthalene	**<1.2**	ug/L	5.0	1.2	1		09/12/19 13:03	91-20-3	
Toluene	**<0.17**	ug/L	5.0	0.17	1		09/12/19 13:03	108-88-3	
1,2,4-Trimethylbenzene	**<0.84**	ug/L	2.8	0.84	1		09/12/19 13:03	95-63-6	
1,3,5-Trimethylbenzene	**<0.87**	ug/L	2.9	0.87	1		09/12/19 13:03	108-67-8	
m&p-Xylene	**<0.47**	ug/L	2.0	0.47	1		09/12/19 13:03	179601-23-1	
o-Xylene	**<0.26**	ug/L	1.0	0.26	1		09/12/19 13:03	95-47-6	
Surrogates									
Dibromofluoromethane (S)	103	%	70-130		1		09/12/19 13:03	1868-53-7	
Toluene-d8 (S)	94	%	70-130		1		09/12/19 13:03	2037-26-5	
4-Bromofluorobenzene (S)	93	%	70-130		1		09/12/19 13:03	460-00-4	

Sample: MW2 **Lab ID: 40194679002** Collected: 09/05/19 11:30 Received: 09/10/19 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST	Analytical Method: EPA 8260								
Benzene	**<0.25**	ug/L	1.0	0.25	1		09/12/19 13:24	71-43-2	
Ethylbenzene	**<0.22**	ug/L	1.0	0.22	1		09/12/19 13:24	100-41-4	
Methyl-tert-butyl ether	**<1.2**	ug/L	4.2	1.2	1		09/12/19 13:24	1634-04-4	
Naphthalene	**<1.2**	ug/L	5.0	1.2	1		09/12/19 13:24	91-20-3	
Toluene	**<0.17**	ug/L	5.0	0.17	1		09/12/19 13:24	108-88-3	
1,2,4-Trimethylbenzene	**<0.84**	ug/L	2.8	0.84	1		09/12/19 13:24	95-63-6	
1,3,5-Trimethylbenzene	**<0.87**	ug/L	2.9	0.87	1		09/12/19 13:24	108-67-8	
m&p-Xylene	**<0.47**	ug/L	2.0	0.47	1		09/12/19 13:24	179601-23-1	
o-Xylene	**<0.26**	ug/L	1.0	0.26	1		09/12/19 13:24	95-47-6	
Surrogates									
Dibromofluoromethane (S)	103	%	70-130		1		09/12/19 13:24	1868-53-7	
Toluene-d8 (S)	95	%	70-130		1		09/12/19 13:24	2037-26-5	
4-Bromofluorobenzene (S)	93	%	70-130		1		09/12/19 13:24	460-00-4	

Sample: MW3 **Lab ID: 40194679003** Collected: 09/05/19 11:00 Received: 09/10/19 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST	Analytical Method: EPA 8260								
Benzene	**<0.25**	ug/L	1.0	0.25	1		09/12/19 23:35	71-43-2	
Ethylbenzene	**<0.22**	ug/L	1.0	0.22	1		09/12/19 23:35	100-41-4	
Methyl-tert-butyl ether	**<1.2**	ug/L	4.2	1.2	1		09/12/19 23:35	1634-04-4	
Naphthalene	**<1.2**	ug/L	5.0	1.2	1		09/12/19 23:35	91-20-3	
Toluene	**<0.17**	ug/L	5.0	0.17	1		09/12/19 23:35	108-88-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 6190 LOU JOHN
Pace Project No.: 40194679

Sample: MW3 **Lab ID: 40194679003** Collected: 09/05/19 11:00 Received: 09/10/19 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST	Analytical Method: EPA 8260								
1,2,4-Trimethylbenzene	**<0.84**	ug/L	2.8	0.84	1		09/12/19 23:35	95-63-6	
1,3,5-Trimethylbenzene	**<0.87**	ug/L	2.9	0.87	1		09/12/19 23:35	108-67-8	
m&p-Xylene	**<0.47**	ug/L	2.0	0.47	1		09/12/19 23:35	179601-23-1	
o-Xylene	**<0.26**	ug/L	1.0	0.26	1		09/12/19 23:35	95-47-6	
Surrogates									
Dibromofluoromethane (S)	101	%	70-130		1		09/12/19 23:35	1868-53-7	
Toluene-d8 (S)	91	%	70-130		1		09/12/19 23:35	2037-26-5	
4-Bromofluorobenzene (S)	93	%	70-130		1		09/12/19 23:35	460-00-4	

Sample: AAMW-6 **Lab ID: 40194679004** Collected: 09/05/19 10:30 Received: 09/10/19 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST	Analytical Method: EPA 8260								
Benzene	**<0.25**	ug/L	1.0	0.25	1		09/12/19 23:56	71-43-2	
Ethylbenzene	**<0.22**	ug/L	1.0	0.22	1		09/12/19 23:56	100-41-4	
Methyl-tert-butyl ether	**<1.2**	ug/L	4.2	1.2	1		09/12/19 23:56	1634-04-4	
Naphthalene	**<1.2**	ug/L	5.0	1.2	1		09/12/19 23:56	91-20-3	
Toluene	**<0.17**	ug/L	5.0	0.17	1		09/12/19 23:56	108-88-3	
1,2,4-Trimethylbenzene	**<0.84**	ug/L	2.8	0.84	1		09/12/19 23:56	95-63-6	
1,3,5-Trimethylbenzene	**<0.87**	ug/L	2.9	0.87	1		09/12/19 23:56	108-67-8	
m&p-Xylene	**<0.47**	ug/L	2.0	0.47	1		09/12/19 23:56	179601-23-1	
o-Xylene	**<0.26**	ug/L	1.0	0.26	1		09/12/19 23:56	95-47-6	
Surrogates									
Dibromofluoromethane (S)	101	%	70-130		1		09/12/19 23:56	1868-53-7	
Toluene-d8 (S)	90	%	70-130		1		09/12/19 23:56	2037-26-5	
4-Bromofluorobenzene (S)	93	%	70-130		1		09/12/19 23:56	460-00-4	

Sample: AAMW-7 **Lab ID: 40194679005** Collected: 09/05/19 10:55 Received: 09/10/19 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST	Analytical Method: EPA 8260								
Benzene	**28.9**	ug/L	10.0	2.5	10		09/12/19 12:42	71-43-2	
Ethylbenzene	**5.0J**	ug/L	10.0	2.2	10		09/12/19 12:42	100-41-4	
Methyl-tert-butyl ether	**<12.5**	ug/L	41.5	12.5	10		09/12/19 12:42	1634-04-4	
Naphthalene	**<11.8**	ug/L	50.0	11.8	10		09/12/19 12:42	91-20-3	
Toluene	**13.4J**	ug/L	50.0	1.7	10		09/12/19 12:42	108-88-3	
1,2,4-Trimethylbenzene	**<8.4**	ug/L	28.0	8.4	10		09/12/19 12:42	95-63-6	
1,3,5-Trimethylbenzene	**<8.7**	ug/L	29.1	8.7	10		09/12/19 12:42	108-67-8	
m&p-Xylene	**23.0**	ug/L	20.0	4.7	10		09/12/19 12:42	179601-23-1	
o-Xylene	**7.1J**	ug/L	10.0	2.6	10		09/12/19 12:42	95-47-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 6190 LOU JOHN
Pace Project No.: 40194679

Sample: AAMW-7 **Lab ID: 40194679005** Collected: 09/05/19 10:55 Received: 09/10/19 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST	Analytical Method: EPA 8260								
Surrogates									
Dibromofluoromethane (S)	100	%	70-130		10		09/12/19 12:42	1868-53-7	D3
Toluene-d8 (S)	96	%	70-130		10		09/12/19 12:42	2037-26-5	
4-Bromofluorobenzene (S)	95	%	70-130		10		09/12/19 12:42	460-00-4	

Sample: AAMW-16 **Lab ID: 40194679006** Collected: 09/05/19 10:45 Received: 09/10/19 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST	Analytical Method: EPA 8260								
Benzene	**<0.25**	ug/L	1.0	0.25	1		09/13/19 00:18	71-43-2	
Ethylbenzene	**<0.22**	ug/L	1.0	0.22	1		09/13/19 00:18	100-41-4	
Methyl-tert-butyl ether	**<1.2**	ug/L	4.2	1.2	1		09/13/19 00:18	1634-04-4	
Naphthalene	**<1.2**	ug/L	5.0	1.2	1		09/13/19 00:18	91-20-3	
Toluene	**<0.17**	ug/L	5.0	0.17	1		09/13/19 00:18	108-88-3	
1,2,4-Trimethylbenzene	**<0.84**	ug/L	2.8	0.84	1		09/13/19 00:18	95-63-6	
1,3,5-Trimethylbenzene	**<0.87**	ug/L	2.9	0.87	1		09/13/19 00:18	108-67-8	
m&p-Xylene	**<0.47**	ug/L	2.0	0.47	1		09/13/19 00:18	179601-23-1	
o-Xylene	**<0.26**	ug/L	1.0	0.26	1		09/13/19 00:18	95-47-6	
Surrogates									
Dibromofluoromethane (S)	102	%	70-130		1		09/13/19 00:18	1868-53-7	
Toluene-d8 (S)	90	%	70-130		1		09/13/19 00:18	2037-26-5	
4-Bromofluorobenzene (S)	90	%	70-130		1		09/13/19 00:18	460-00-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 6190 LOU JOHN
Pace Project No.: 40194679

QC Batch: 333491 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 40194679001, 40194679002, 40194679003, 40194679004, 40194679005, 40194679006

METHOD BLANK: 1935865 Matrix: Water
Associated Lab Samples: 40194679001, 40194679002, 40194679003, 40194679004, 40194679005, 40194679006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/L	<0.84	2.8	09/12/19 07:20	
1,3,5-Trimethylbenzene	ug/L	<0.87	2.9	09/12/19 07:20	
Benzene	ug/L	<0.25	1.0	09/12/19 07:20	
Ethylbenzene	ug/L	<0.22	1.0	09/12/19 07:20	
m&p-Xylene	ug/L	<0.47	2.0	09/12/19 07:20	
Methyl-tert-butyl ether	ug/L	<1.2	4.2	09/12/19 07:20	
Naphthalene	ug/L	<1.2	5.0	09/12/19 07:20	
o-Xylene	ug/L	<0.26	1.0	09/12/19 07:20	
Toluene	ug/L	<0.17	5.0	09/12/19 07:20	
4-Bromofluorobenzene (S)	%	94	70-130	09/12/19 07:20	
Dibromofluoromethane (S)	%	102	70-130	09/12/19 07:20	
Toluene-d8 (S)	%	95	70-130	09/12/19 07:20	

LABORATORY CONTROL SAMPLE: 1935866

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	50	47.7	95	70-130	
Ethylbenzene	ug/L	50	47.2	94	80-124	
m&p-Xylene	ug/L	100	97.0	97	70-130	
Methyl-tert-butyl ether	ug/L	50	28.3	57	54-137	
o-Xylene	ug/L	50	47.8	96	70-130	
Toluene	ug/L	50	48.5	97	80-126	
4-Bromofluorobenzene (S)	%			101	70-130	
Dibromofluoromethane (S)	%			105	70-130	
Toluene-d8 (S)	%			95	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1936919 1936920

Parameter	Units	40194733004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	1.5	50	50	48.6	49.3	94	95	70-130	1	20	
Ethylbenzene	ug/L	ND	50	50	48.2	48.8	96	98	80-125	1	20	
m&p-Xylene	ug/L	ND	100	100	103	100	102	100	70-130	2	20	
Methyl-tert-butyl ether	ug/L	ND	50	50	30.4	30.7	59	59	51-145	1	20	
o-Xylene	ug/L	ND	50	50	49.9	49.3	100	99	70-130	1	20	
Toluene	ug/L	ND	50	50	48.3	49.2	97	98	80-131	2	20	
4-Bromofluorobenzene (S)	%						101	101	70-130			
Dibromofluoromethane (S)	%						103	101	70-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 6190 LOU JOHN
Pace Project No.: 40194679

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1936919 1936920

Parameter	Units	40194733004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Toluene-d8 (S)	%						95	94	70-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 6190 LOU JOHN
Pace Project No.: 40194679

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 6190 LOU JOHN
Pace Project No.: 40194679

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40194679001	**MW1**	EPA 8260	333491		
40194679002	**MW2**	EPA 8260	333491		
40194679003	**MW3**	EPA 8260	333491		
40194679004	**AAMW-6**	EPA 8260	333491		
40194679005	**AAMW-7**	EPA 8260	333491		
40194679006	**AAMW-16**	EPA 8260	333491		

(Please Print Clearly)	
Company Name:	REI
Branch/Location:	Wausau
Project Contact:	Dave Larsen
Phone:	715-675-9784
Project Number:	6190
Project Name:	Lou John
Project State:	WI
Sampled By (Print):	Dave Larsen
Sampled By (Sign):	
PO #:	Regulatory Program:

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UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

Page 1 of 1

CHAIN OF CUSTODY

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

Quote #:	40194679
Mail To Contact:	Dave Larsen
Mail To Company:	REI
Mail To Address:	Dlarsen@reiengineering.com
Invoice To Contact:	SAA
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes

A = Air	W = Water
B = Biota	DW = Drinking Water
C = Charcoal	GW = Ground Water
O = Oil	SW = Surface Water
S = Soil	WW = Waste Water
SI = Sludge	WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested: 8 VOC + Naphthalene	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
001	MW1	9/5/19	11:45	GW	N	B	X			
002	MW2		11:30				X			
003	MW3		11:00				X			
004	AAMW-6		10:30				X			
005	AAMW-7		10:55				X			
006	AAMW-16		10:45				X			

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:	
Email #2:	
Telephone:	
Fax:	

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
	9/9/19 3:00pm		
Walteo	9/10/19 0920	John T. Brunette Pace	9/10/19 0920

PACE Project No.

Receipt Temp = 2.01 °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal Present / (Not Present)
Intact / (Not Intact)

Version 6.0 06/14/06

C019a(27Jun2006)

ORIGINAL

Pace Analytical Services, LLC
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Sample Preservation Receipt Form

Client Name: REI Project # 40194679

All containers needing preservation have been checked and noted below: □Yes □No ☒N/A Initial when completed: Date/ Time:

Lab Lot# of pH paper: Lab Std #ID of preservation (if pH adjusted):

Pace Lab #	Glass: AG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	Plastic: BP1U	BP2N	BP2Z	BP3U	BP3B	BP3N	BP3S	Vials: DG9A	DG9T	VG9U	VG9H	VG9M	VG9D	Jars: JGFU	WGFU	WPFU	General: SP5T	ZPLC	GN	VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
001																																	2.5 / 5 / 10
002																																	2.5 / 5 / 10
003																																	2.5 / 5 / 10
004																																	2.5 / 5 / 10
005																																	2.5 / 5 / 10
006																																	2.5 / 5 / 10
007																																	2.5 / 5 / 10
008																																	2.5 / 5 / 10
009																																	2.5 / 5 / 10
010																																	2.5 / 5 / 10
011																																	2.5 / 5 / 10
012																																	2.5 / 5 / 10
013																																	2.5 / 5 / 10
014																																	2.5 / 5 / 10
015																																	2.5 / 5 / 10
016																																	2.5 / 5 / 10
017																																	2.5 / 5 / 10
018																																	2.5 / 5 / 10
019																																	2.5 / 5 / 10
020																										JTB		9/10/19					2.5 / 5 / 10

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: _____ Headspace in VOA Vials (>6mm) : □Yes ☒No □N/A ***If yes look in headspace column**

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	DG9A	40 mL amber ascorbic	JGFU	4 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP2N	500 mL plastic HNO3	DG9T	40 mL amber Na Thio	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH, Znact	VG9U	40 mL clear vial unpres	WPFU	4 oz plastic jar unpres
AG4U	120 mL amber glass unpres	BP3U	250 mL plastic unpres	VG9H	40 mL clear vial HCL		
AG5U	100 mL amber glass unpres	BP3B	250 mL plastic NaOH	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres	BP3S	250 mL plastic H2SO4			GN:	

Pace Analytical 1241 Bellevue Street, Green Bay, WI 54302	Document Name: **Sample Condition Upon Receipt (SCUR)**	Document Revised: 25Apr2018
	Document No.: **F-GB-C-031-Rev.07**	Issuing Authority: Pace Green Bay Quality Office

Sample Condition Upon Receipt Form (SCUR)

Project #:

WO# : 40194679

40194679

Client Name: REI

Courier: ☐ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☒ Waltco
☐ Client ☐ Pace Other:

Tracking #: 2169977-1

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other

Thermometer Used SR - N/A **Type of Ice:** (Wet) Blue Dry None ☒ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: Rei /Corr:

Temp Blank Present: ☐ yes ☒ no **Biological Tissue is Frozen:** ☐ yes ☐ no

Person examining contents:
Date: 9/10/19
Initials: JTB

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C.

Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☒Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☐Yes ☒No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No	5.
- VOA Samples frozen upon receipt	☐Yes ☒No	Date/Time:
Short Hold Time Analysis (<72hr):	☐Yes ☒No	6.
Rush Turn Around Time Requested:	☐Yes ☒No	7.
Sufficient Volume: For Analysis: ☒Yes ☐No MS/MSD:	☐Yes ☒No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☒N/A	
Containers Intact:	☒Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☒Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: W		
Trip Blank Present:	☐Yes ☐No ☒N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: **Date:** 9-10-19

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

February 21, 2020

DAVID LARSEN
REI
4080 NORTH 20TH AVENUE
Wausau, WI 54401

RE: Project: 6190 LOU JOHN
Pace Project No.: 40203551

Dear DAVID LARSEN:
Enclosed are the analytical results for sample(s) received by the laboratory on February 19, 2020. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Brian Basten
brian.basten@pacelabs.com
(920)469-2436
Project Manager

Enclosures

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 6190 LOU JOHN
Pace Project No.: 40203551

Pace Analytical Services Green Bay
1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150
Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 6190 LOU JOHN
Pace Project No.: 40203551

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40203551001	**MW1**	Water	02/11/20 12:40	02/19/20 09:25
40203551002	**MW2**	Water	02/11/20 12:25	02/19/20 09:25
40203551003	**MW3**	Water	02/11/20 12:10	02/19/20 09:25
40203551004	**AAMW6**	Water	02/11/20 11:55	02/19/20 09:25
40203551005	**AAMW7**	Water	02/11/20 12:55	02/19/20 09:25

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
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SAMPLE ANALYTE COUNT

Project: 6190 LOU JOHN
Pace Project No.: 40203551

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40203551001	**MW1**	EPA 8260	HNW	12
40203551002	**MW2**	EPA 8260	HNW	12
40203551003	**MW3**	EPA 8260	HNW	12
40203551004	**AAMW6**	EPA 8260	HNW	12
40203551005	**AAMW7**	EPA 8260	HNW	12

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
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(920)469-2436

ANALYTICAL RESULTS

Project: 6190 LOU JOHN
Pace Project No.: 40203551

Sample: MW1 **Lab ID: 40203551001** Collected: 02/11/20 12:40 Received: 02/19/20 09:25 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST	Analytical Method: EPA 8260								
Benzene	**<0.25**	ug/L	1.0	0.25	1		02/21/20 09:13	71-43-2	
Ethylbenzene	**<0.22**	ug/L	1.0	0.22	1		02/21/20 09:13	100-41-4	
Methyl-tert-butyl ether	**<1.2**	ug/L	4.2	1.2	1		02/21/20 09:13	1634-04-4	
Naphthalene	**<1.2**	ug/L	5.0	1.2	1		02/21/20 09:13	91-20-3	
Toluene	**<0.17**	ug/L	5.0	0.17	1		02/21/20 09:13	108-88-3	
1,2,4-Trimethylbenzene	**<0.84**	ug/L	2.8	0.84	1		02/21/20 09:13	95-63-6	
1,3,5-Trimethylbenzene	**<0.87**	ug/L	2.9	0.87	1		02/21/20 09:13	108-67-8	
m&p-Xylene	**<0.47**	ug/L	2.0	0.47	1		02/21/20 09:13	179601-23-1	
o-Xylene	**<0.26**	ug/L	1.0	0.26	1		02/21/20 09:13	95-47-6	
Surrogates									
Dibromofluoromethane (S)	105	%	70-130		1		02/21/20 09:13	1868-53-7	
Toluene-d8 (S)	101	%	70-130		1		02/21/20 09:13	2037-26-5	
4-Bromofluorobenzene (S)	95	%	70-130		1		02/21/20 09:13	460-00-4	

Sample: MW2 **Lab ID: 40203551002** Collected: 02/11/20 12:25 Received: 02/19/20 09:25 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST	Analytical Method: EPA 8260								
Benzene	**<0.25**	ug/L	1.0	0.25	1		02/21/20 09:35	71-43-2	
Ethylbenzene	**0.33J**	ug/L	1.0	0.22	1		02/21/20 09:35	100-41-4	
Methyl-tert-butyl ether	**<1.2**	ug/L	4.2	1.2	1		02/21/20 09:35	1634-04-4	
Naphthalene	**<1.2**	ug/L	5.0	1.2	1		02/21/20 09:35	91-20-3	
Toluene	**<0.17**	ug/L	5.0	0.17	1		02/21/20 09:35	108-88-3	
1,2,4-Trimethylbenzene	**5.1**	ug/L	2.8	0.84	1		02/21/20 09:35	95-63-6	
1,3,5-Trimethylbenzene	**2.3J**	ug/L	2.9	0.87	1		02/21/20 09:35	108-67-8	
m&p-Xylene	**0.48J**	ug/L	2.0	0.47	1		02/21/20 09:35	179601-23-1	
o-Xylene	**0.55J**	ug/L	1.0	0.26	1		02/21/20 09:35	95-47-6	
Surrogates									
Dibromofluoromethane (S)	102	%	70-130		1		02/21/20 09:35	1868-53-7	
Toluene-d8 (S)	103	%	70-130		1		02/21/20 09:35	2037-26-5	
4-Bromofluorobenzene (S)	98	%	70-130		1		02/21/20 09:35	460-00-4	

Sample: MW3 **Lab ID: 40203551003** Collected: 02/11/20 12:10 Received: 02/19/20 09:25 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST	Analytical Method: EPA 8260								
Benzene	**<0.25**	ug/L	1.0	0.25	1		02/21/20 10:20	71-43-2	
Ethylbenzene	**<0.22**	ug/L	1.0	0.22	1		02/21/20 10:20	100-41-4	
Methyl-tert-butyl ether	**<1.2**	ug/L	4.2	1.2	1		02/21/20 10:20	1634-04-4	
Naphthalene	**<1.2**	ug/L	5.0	1.2	1		02/21/20 10:20	91-20-3	
Toluene	**<0.17**	ug/L	5.0	0.17	1		02/21/20 10:20	108-88-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6190 LOU JOHN
Pace Project No.: 40203551

Sample: MW3 **Lab ID: 40203551003** Collected: 02/11/20 12:10 Received: 02/19/20 09:25 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST	Analytical Method: EPA 8260								
1,2,4-Trimethylbenzene	**<0.84**	ug/L	2.8	0.84	1		02/21/20 10:20	95-63-6	
1,3,5-Trimethylbenzene	**<0.87**	ug/L	2.9	0.87	1		02/21/20 10:20	108-67-8	
m&p-Xylene	**<0.47**	ug/L	2.0	0.47	1		02/21/20 10:20	179601-23-1	
o-Xylene	**<0.26**	ug/L	1.0	0.26	1		02/21/20 10:20	95-47-6	
Surrogates									
Dibromofluoromethane (S)	105	%	70-130		1		02/21/20 10:20	1868-53-7	
Toluene-d8 (S)	101	%	70-130		1		02/21/20 10:20	2037-26-5	
4-Bromofluorobenzene (S)	96	%	70-130		1		02/21/20 10:20	460-00-4	

Sample: AAMW6 **Lab ID: 40203551004** Collected: 02/11/20 11:55 Received: 02/19/20 09:25 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST	Analytical Method: EPA 8260								
Benzene	**<0.25**	ug/L	1.0	0.25	1		02/21/20 10:42	71-43-2	
Ethylbenzene	**<0.22**	ug/L	1.0	0.22	1		02/21/20 10:42	100-41-4	
Methyl-tert-butyl ether	**<1.2**	ug/L	4.2	1.2	1		02/21/20 10:42	1634-04-4	
Naphthalene	**<1.2**	ug/L	5.0	1.2	1		02/21/20 10:42	91-20-3	
Toluene	**<0.17**	ug/L	5.0	0.17	1		02/21/20 10:42	108-88-3	
1,2,4-Trimethylbenzene	**<0.84**	ug/L	2.8	0.84	1		02/21/20 10:42	95-63-6	
1,3,5-Trimethylbenzene	**<0.87**	ug/L	2.9	0.87	1		02/21/20 10:42	108-67-8	
m&p-Xylene	**<0.47**	ug/L	2.0	0.47	1		02/21/20 10:42	179601-23-1	
o-Xylene	**<0.26**	ug/L	1.0	0.26	1		02/21/20 10:42	95-47-6	
Surrogates									
Dibromofluoromethane (S)	105	%	70-130		1		02/21/20 10:42	1868-53-7	
Toluene-d8 (S)	100	%	70-130		1		02/21/20 10:42	2037-26-5	
4-Bromofluorobenzene (S)	95	%	70-130		1		02/21/20 10:42	460-00-4	

Sample: AAMW7 **Lab ID: 40203551005** Collected: 02/11/20 12:55 Received: 02/19/20 09:25 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST	Analytical Method: EPA 8260								
Benzene	**366**	ug/L	2.0	0.49	2		02/20/20 14:11	71-43-2	
Ethylbenzene	**63.3**	ug/L	2.0	0.44	2		02/20/20 14:11	100-41-4	
Methyl-tert-butyl ether	**<2.5**	ug/L	8.3	2.5	2		02/20/20 14:11	1634-04-4	
Naphthalene	**3.2J**	ug/L	10.0	2.4	2		02/20/20 14:11	91-20-3	
Toluene	**159**	ug/L	10.0	0.34	2		02/20/20 14:11	108-88-3	
1,2,4-Trimethylbenzene	**86.7**	ug/L	5.6	1.7	2		02/20/20 14:11	95-63-6	
1,3,5-Trimethylbenzene	**37.9**	ug/L	5.8	1.7	2		02/20/20 14:11	108-67-8	
m&p-Xylene	**265**	ug/L	4.0	0.93	2		02/20/20 14:11	179601-23-1	
o-Xylene	**81.9**	ug/L	2.0	0.52	2		02/20/20 14:11	95-47-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6190 LOU JOHN
Pace Project No.: 40203551

Sample: AAMW7 **Lab ID: 40203551005** Collected: 02/11/20 12:55 Received: 02/19/20 09:25 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV UST	Analytical Method: EPA 8260								
Surrogates									
Dibromofluoromethane (S)	101	%	70-130		2		02/20/20 14:11	1868-53-7	
Toluene-d8 (S)	102	%	70-130		2		02/20/20 14:11	2037-26-5	
4-Bromofluorobenzene (S)	101	%	70-130		2		02/20/20 14:11	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6190 LOU JOHN
Pace Project No.: 40203551

QC Batch: 348154 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV UST-WATER
Associated Lab Samples: 40203551001, 40203551002, 40203551003, 40203551004, 40203551005

METHOD BLANK: 2018400 Matrix: Water
Associated Lab Samples: 40203551001, 40203551002, 40203551003, 40203551004, 40203551005

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2,4-Trimethylbenzene	ug/L	<0.84	2.8	02/20/20 09:19	
1,3,5-Trimethylbenzene	ug/L	<0.87	2.9	02/20/20 09:19	
Benzene	ug/L	<0.25	1.0	02/20/20 09:19	
Ethylbenzene	ug/L	<0.22	1.0	02/20/20 09:19	
m&p-Xylene	ug/L	<0.47	2.0	02/20/20 09:19	
Methyl-tert-butyl ether	ug/L	<1.2	4.2	02/20/20 09:19	
Naphthalene	ug/L	<1.2	5.0	02/20/20 09:19	
o-Xylene	ug/L	<0.26	1.0	02/20/20 09:19	
Toluene	ug/L	<0.17	5.0	02/20/20 09:19	
4-Bromofluorobenzene (S)	%	95	70-130	02/20/20 09:19	
Dibromofluoromethane (S)	%	103	70-130	02/20/20 09:19	
Toluene-d8 (S)	%	101	70-130	02/20/20 09:19	

LABORATORY CONTROL SAMPLE: 2018401

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Benzene	ug/L	50	53.2	106	70-130	
Ethylbenzene	ug/L	50	53.9	108	80-124	
m&p-Xylene	ug/L	100	105	105	70-130	
Methyl-tert-butyl ether	ug/L	50	44.5	89	54-137	
o-Xylene	ug/L	50	51.4	103	70-130	
Toluene	ug/L	50	52.3	105	80-126	
4-Bromofluorobenzene (S)	%			100	70-130	
Dibromofluoromethane (S)	%			103	70-130	
Toluene-d8 (S)	%			101	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2018417 2018418

Parameter	Units	40203553002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	32.4	50	50	81.7	83.0	99	101	70-130	2	20	
Ethylbenzene	ug/L	17.0	50	50	68.4	70.0	103	106	80-125	2	20	
m&p-Xylene	ug/L	35.4	100	100	135	138	99	102	70-130	2	20	
Methyl-tert-butyl ether	ug/L	<1.2	50	50	43.2	42.4	86	85	51-145	2	20	
o-Xylene	ug/L	1.1	50	50	49.9	50.9	98	100	70-130	2	20	
Toluene	ug/L	4.5J	50	50	53.9	55.4	99	102	80-131	3	20	
4-Bromofluorobenzene (S)	%						101	100	70-130			
Dibromofluoromethane (S)	%						104	103	70-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6190 LOU JOHN
Pace Project No.: 40203551

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2018417 2018418

Parameter	Units	40203553002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Toluene-d8 (S)	%						101	102	70-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 6190 LOU JOHN
Pace Project No.: 40203551

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Pace Analytical Services, LLC
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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 6190 LOU JOHN
Pace Project No.: 40203551

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40203551001	**MW1**	EPA 8260	348154		
40203551002	**MW2**	EPA 8260	348154		
40203551003	**MW3**	EPA 8260	348154		
40203551004	**AAMW6**	EPA 8260	348154		
40203551005	**AAMW7**	EPA 8260	348154		

4020355I

(Please Print Clearly)

Company Name:	REI
Branch/Location:	Wausau
Project Contact:	Dan Larson
Phone:	715-679-2411
Project Number:	6190
Project Name:	Lou John
Project State:	WI
Sampled By (Print):	Paul Busha
Sampled By (Sign):	Paul B
PO #:	
Regulatory Program:	Pecfa

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www.pacelabs.com

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

BR

CHAIN OF CUSTODY

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

Quote #:	
Mail To Contact:	DLarson@REIengineering.com
Mail To Company:	REI
Mail To Address:	SAA
Invoice To Contact:	SAA
Invoice To Company:	SAA
Invoice To Address:	SAA
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, Sl = Sludge
W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

FILTERED? (YES/NO) — Y/N: N
PRESERVATION (CODE)* — Pick Letter: B
Analyses Requested: PVOC/Nap

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	PVOC/Nap	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
001	MW1	2-11-20	12:40	GW	↓			
002	MW2	↓	12:25	↓	↓			
003	MW3	↓	12:10	↓	↓			
004	AAMW6	↓	11:55	↓	↓			
005	AAMW7	↓	12:55	↓	↓			

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:	
Email #2:	
Telephone:	
Fax:	

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
[signature]	2-18-2020 3:00pm		
Waltco	2-19-20 0925	Madeleine L Pachuk Pace	2-19-20 0925

PACE Project No. 4020355I
Receipt Temp = ROI °C
Sample Receipt pH OK / Adjusted
Cooler Custody Seal
Present / Not Present
Intact / Not Intact

Version 6.0 06/14/06

Pace Analytical Services, LLC
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Sample Preservation Receipt Form

Client Name: REI Project # 40203551

All containers needing preservation have been checked and noted below: □Yes □No ☒N/A

Initial when completed: Date/ Time:

Lab Lot# of pH paper: Lab Std #ID of preservation (if pH adjusted):

	Glass								Plastic					Vials						Jars				General								
Pace Lab #	AG1U	BG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	VG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U	WGFU	WPFU	SP5T	ZPLC	GN	VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
001																	3															2.5 / 5 / 10
002																	3															2.5 / 5 / 10
003																	3															2.5 / 5 / 10
004																	3															2.5 / 5 / 10
005																	3															2.5 / 5 / 10
006																																2.5 / 5 / 10
007																																2.5 / 5 / 10
008																																2.5 / 5 / 10
009																																2.5 / 5 / 10
010																																2.5 / 5 / 10
011									MLL 2-19-20																							2.5 / 5 / 10
012																																2.5 / 5 / 10
013																																2.5 / 5 / 10
014																																2.5 / 5 / 10
015																																2.5 / 5 / 10
016																																2.5 / 5 / 10
017																																2.5 / 5 / 10
018																																2.5 / 5 / 10
019																																2.5 / 5 / 10
020																																2.5 / 5 / 10

Exceptions to preservation check: VOA Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other:_____ Headspace in VOA Vials (>6mm) : □Yes ☒No □N/A ***If yes look in headspace column**

AG1U	1 liter amber glass
BG1U	1 liter clear glass
AG1H	1 liter amber glass HCL
AG4S	125 mL amber glass H2SO4
AG4U	120 mL amber glass unpres
AG5U	100 mL amber glass unpres
AG2S	500 mL amber glass H2SO4
BG3U	250 mL clear glass unpres

BP1U	1 liter plastic unpres
BP3U	250 mL plastic unpres
BP3B	250 mL plastic NaOH
BP3N	250 mL plastic HNO3
BP3S	250 mL plastic H2SO4

VG9A	40 mL clear ascorbic
DG9T	40 mL amber Na Thio
VG9U	40 mL clear vial unpres
VG9H	40 mL clear vial HCL
VG9M	40 mL clear vial MeOH
VG9D	40 mL clear vial DI

JGFU	4 oz amber jar unpres
JG9U	9 oz amber jar unpres
WGFU	4 oz clear jar unpres
WPFU	4 oz plastic jar unpres
SP5T	120 mL plastic Na Thiosulfate
ZPLC	ziploc bag
GN	

Pace Analytical 1241 Bellevue Street, Green Bay, WI 54302	Document Name: **Sample Condition Upon Receipt (SCUR)**	Document Revised: 25Apr2018
	Document No.: **F-GB-C-031-Rev.07**	Issuing Authority: Pace Green Bay Quality Office

Sample Condition Upon Receipt Form (SCUR)

Project #

WO# : 40203551

40203551

Client Name: REI

Courier: ☐ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☒ Waltco ☐ Client ☐ Pace Other:

Tracking #: 2344113-1 MLR 2-19-20

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Packing Material: ☒ Bubble Wrap ☒ Bubble Bags ☐ None ☒ Other packing paper MLR 2-19-20

Thermometer Used SR - n/a **Type of Ice:** (Wet) Blue Dry None ☒ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: ROI /Corr: ROI

Temp Blank Present: ☐ yes ☒ no MLR 2-19-20 **Biological Tissue is Frozen:** ☐ yes ☐ no

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C.

Person examining contents:
Date: 2-19-20
Initials: MLR

Chain of Custody Present:	☒Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☐Yes ☒No ☐N/A	2. PO#, page #, invoice to phone MLR 2-19-20
Chain of Custody Relinquished:	☒Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☒Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☒Yes ☐No	5.
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☐Yes ☒No	6.
Rush Turn Around Time Requested:	☐Yes ☒No	7.
Sufficient Volume: For Analysis: ☒Yes ☐No MS/MSD:	☐Yes ☒No ☐N/A	8.
Correct Containers Used:	☒Yes ☐No	9.
-Pace Containers Used:	☒Yes ☐No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☒N/A	
Containers Intact:	☐Yes ☒No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☒N/A	11.
Sample Labels match COC:	☒Yes ☒No ☐N/A	12. sample labels state collection date 6-2019 MLR 2-19-20
-Includes date/time/ID/Analysis Matrix: W	MLR 2-19-20	MLR 2-19-20
Trip Blank Present:	☐Yes ☒No ☐N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☒N/A	
Pace Trip Blank Lot # (if purchased):		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: Date/Time:

Comments/ Resolution:

Project Manager Review: Date: 2-20-20