



REI

CIVIL & ENVIRONMENTAL
ENGINEERING, SURVEYING



April 29, 2019

Wisconsin Department of Natural Resources

Attn: Ms. Carrie Stoltz
107 Sutliff Avenue
Rhineland, WI 54501

Subject:

Update Report
Greater Bass Lake Storage
N9276 Mill Rd
Summit Lake, WI 54485
WDNR BRRTS #03-34-563946
PECFA #54485-9999-76

Dear Carrie:

On behalf of Greater Bass Lake Storage, REI is submitting a Site Update for the above referenced project. REI has completed two (2) of the four (4) approved post carbon injection rounds of groundwater sampling.

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

Cc: Ms. Veronica Wagner, 2389 County Road Q, Pelican Lake, WI 54463



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CIVIL & ENVIRONMENTAL
ENGINEERING, SURVEYING

**UPDATE REPORT
GREATER BASS LAKE STORAGE
N9276 MILL RD
SUMMIT LAKE, WI 54485**

**BRRTS #03-34-563946
PECFA #54485-9999-76
REI PROJECT #7083**



**COMPREHENSIVE
SERVICES WITH
PRACTICAL
SOLUTIONS**



UPDATE REPORT

**GREATER BASS LAKE STORAGE
N9276 MILL RD
SUMMIT LAKE, WI 54485**

**BRRTS # 03-34-563946
PECFA #54485-9999-76
REI PROJECT #7083**



PREPARED FOR:

**Ms. Veronica Wagner
2389 County Road Q
Pelican Lake, WI 54463**

APRIL 2019

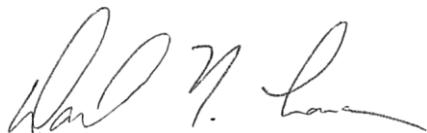
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**BRRTS # 03-34-563946
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REI PROJECT #7083**

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 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

4-29-19

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

4-29-19

Date

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UPDATE REPORT

GREATER BASS LAKE STORAGE N9276 MILL RD SUMMIT LAKE, WI 54485

**BRRTS # 03-34-563946
PECFA #54485-9999-76
REI PROJECT #7083**

1.0 INTRODUCTION

The site is located in the NE $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 11, Township 33 North, Range 10 East, Town of Upham, Langlade County, WI, 54448 (Figure 1). The Wisconsin Transverse Mercator coordinates for the site are 582902, 543726. REI had completed the approved carbon-based injection scope of services in June 2018 and has completed two (2) of four (4) approved post injection groundwater sampling events. This report documents the groundwater analytical concentrations post carbon injection and compares them to pre-injection levels.

The groundwater contaminant plume originating from the Greater Bass Lake Storage release has commingled with another petroleum release originating from the former Raith Logging site located at N9307 Mill Road. REI is the consultant of record for the former Raith Logging investigation (BRRTS 03-34-001281) and the intent is to manage the two (2) investigations concurrently.

2.0 SUMMARY OF ACTIVITIES

2.1 Carbon Based Injection/Soil Vapor Extraction

Between June 6-11, 2018, REI was on site to oversee the proposed carbon based injection scope of services. Geologic Restoration, PLLC, of Pineville, North Carolina mobilized to the site with a CleanInject ® injection trailer and Gestra Engineering, Inc. of Milwaukee, WI was subcontracted to provide Geoprobe services.

A soil vapor extraction (SVE) system was installed and operated from June 21, 2018 to December 20, 2018. The location of the four (4) SVE extraction wells and remedial system is shown on Figure 2.

2.2 Monitoring Well Sampling Results

REI personnel completed two (2) post carbon injection groundwater sampling events. The samples were collected on June 12, 2018 and October 30, 2018. Depth to water was measured at each well sampled during each sampling event and is presented in Table 1. Tables 2a-i present groundwater analytical data for the REI sampling events. An excess of four (4) well volumes were removed from each well prior to sampling by REI personnel. All purge water was containerized and disposed of at the City of Wausau waste water treatment facility. Groundwater samples were collected and submitted to a state certified laboratory for chemical analysis. Copies of the analytical chemistry reports are presented in Appendix A.

Groundwater sample results document residual groundwater contamination in concentrations exceeding the NR 140.10 Groundwater Quality Enforcement Standards (ES) for petroleum compounds following the October 30, 2018 sample event at monitoring wells GB-1, GB-3 and GB-5.

Comparison of pre and post injection samples for each impacted monitoring well is discussed below:

GB-1: The limited pre-injection data documents a well impacted with petroleum compounds. Following the completion of the carbon injection and the operation of the SVE system, groundwater contaminant concentrations have been decreasing.

GB-3: The limited pre-injection data documents a well impacted with petroleum compounds. Following the completion of the carbon injection and the operation of the SVE system, groundwater contaminant concentrations have been decreasing.

GB-5: monitoring well GB-5 analytical results document an increase in contaminant concentrations immediately after the carbon injection and a reduction in concentrations in October 2018. The increase may be due to the impacted formation water displacement that occurred from carbon injection boring number 32 where 600 pounds of carbon was injected into the subsurface at a depth of twenty-two (22) feet. This boring location and depth had one the lowest recorded injection pressures. It was assumed that this location and depth represents a highly permeable zone for contaminant migration and a large volume of carbon was injected into the preferential pathway.

Figure 3 presents the water table contour map from the October 29, 2018 groundwater sampling event. This groundwater contour map is based on the recorded depths to water. It appears that frost action has shifted the casing elevations and that groundwater flow is shown to be southerly and is not consistent with historical groundwater flow directions. The historical flow direction from the Greater Bass Lake Storage site has been from the southwest to the northeast towards Greater Bass Lake where it commingles with the former Raith Logging groundwater contaminant plume.

2.3 Potable Well Sampling

REI collected samples from the source property (9276 Mill Rd) potable well during the sampling event on June 11, 2018. All samples were submitted to a state certified lab and analyzed for drinking water VOCs (EPA Method 524.2). All potable well samples analyzed revealed no VOC impact to potable water supply well (Table 2i).

3.0 Conclusion

The use of in-situ activated carbon appears to be an effective remedial option to address the dissolved phase groundwater contamination. The SVE system was designed to remove the petroleum source in the soil to limit future contaminant loading from the soil to the groundwater. Continued groundwater sampling will aid in determining overall long term effectiveness of the completed remedial options.

REI is recommending completion of the two (2) additional approved groundwater sampling events and a resurvey of casing elevations. If contaminant trends continue to stabilize and/or decrease, REI recommends that the site be considered for case closure.

Table 1
Groundwater Elevation Table
Greater Bass Lake Storage
N9276 Mill Road, Summit Lake, WI 54485

	GB-1	GB-2	GB-3	GB-4	GB-5	GB-6	GB-7	GB-8
Reference Elevation* (TOC)	16888.54	1691.02	1691.04	1690.64	1692.34	1693.61	1702.23	1690.91
Ground Elevation	16888.88	1691.27	1687.87	1687.88	1688.79	1691.24	1699.41	1687.93
Top of Well Screen Elevation	1669.28	1672.42	1668.12	1668.09	1669.43	1671.79	1674.29	1669.22
Length of Well Screen	10'	10'	10'	10'	10'	10'	10'	10'
Depth of Well	29.26	28.6	32.92	32.55	32.91	31.82	37.94	31.69
<hr/>								
Date								
10/5/2016	18.36	20.63	21.08	20.42	22.27	23.27		
2/2/2017	18.84	21.26	21.61	19.96	22.78	23.81		
2/6/2017							32.5	20.44
6/12/2018	17.66	20.02	19.41	19.77	21.58	22.65	31.41	19.92
10/29/2018	18.41	19.72	20.11	19.49	21.34	22.37	31.11	19.33
<hr/>								
Date								
10/5/2016	1670.18	1670.39	1669.96	1670.22	1670.07	1670.34		
2/2/2017	1669.70	1669.76	1669.43	1670.68	1669.56	1669.80		
2/6/2017							1669.73	1670.47
6/12/2018	1670.88	1671.00	1671.63	1670.87	1670.76	1670.96	1670.82	1670.99
10/29/2018	1670.13	1671.30	1670.93	1671.15	1671.00	1671.24	1671.12	1671.58

*Elevations are referenced to a U.S.G.S. Benchmark (feet above Mean Sea Level).

Table 2.a
Groundwater Analytical Results Summary
Greater Bass Lake Storage
N9276 Mill Road, Summit Lake, WI 54485

PARAMETER	GB-1						06/21/18	06/29/18
	ES	PAL	10/5/16	2/2/17	6/11/18	06/12/18		
Metals (ug/L)								
Dissolved Lead	15	1.5	55.7	<4.3			NA	NA
Detected VOC's (ug/L)								
Benzene	5	0.5	5,910	434			52.5	9.1
Ethylbenzene	700	140	1,550	498			606	175
Toluene	800	160	1,840	745			34	3.1
Total Xylenes	2,000	400	6,000	1,235			672.4	179
Methyl-tert-Butyl Ether	60	12	47.3 ^j	<4.8			<3.2	<1.6
Total Trimethylbenzenes	480	96	2,155	1,013			1,755	557
Naphthalene	100	10	394	155			285	81.3
1,2-Dibromoethane (EDB)	0.05	0.005	139	NA			NA	NA
1,2-Dichloroethane	5	0.5	144	NA			NA	NA
n-Propylbenzene			262	NA			NA	NA
Field Measurements								
Temperature (°F)		50.45	47.5				48.03	50.8
Conductivity (ms/cm)		494	149				214	91.2
Dissolved Oxygen (mg/L)		0.14	0.41				0.29	0.50
pH		6.61	6.32				7.98	6.47
Redox Potential (mV)		0.1	106.9				116.7	165.9

Notes:

PAL = Preventive Action Limit

ES = Enforcement Standards

Exceeds Enforcement Standard

Exceeds Preventative Action Limit

NA - Not Analyzed

BOLD

Italic

< - Concentration less than listed detection limit

J - Estimated concentration above the adjusted method detection limit and below the reporting limit

Table 2.b
Groundwater Analytical Results Summary
Greater Bass Lake Storage
N9276 Mill Road, Summit Lake, WI 54485

PARAMETER	GB-2						06/12/18	06/21/18	10/29/18
	ES	PAL	10/5/16	2/2/17	6/11/18	NA			
Metals (ug/L)									
Dissolved Lead	15	1.5	<8.7	<4.3					
Detected VOC's (ug/L)									
Benzene	5	0.5	<0.50	<0.40			<0.31		< 0.31
Ethylbenzene	700	140	<0.50	<0.39			<0.49		< 0.49
Toluene	800	160	<0.50	<0.39			<0.33		< 0.33
Total Xylenes	2,000	400	<1.5	<0.80			<0.66		< 0.66
Methyl-tert-Butyl Ether	60	12	<0.17	<0.48			<0.32		< 0.32
Total Trimethylbenzenes	480	96	<1.0	<0.42			<0.34		< 0.34
Naphthalene	100	10	<2.5	<0.42			<0.51		< 0.51
Field Measurements									
Temperature (°F)		49.26	46.8				44.47		49.3
Conductivity (ms/cm)		508	344				234		170.3
Dissolved Oxygen (mg/L)		0.57	0.59				0.29		0.41
pH		6.81	6.44				5.07		6.50
Redox Potential (mV)		-51.3	10.2				204.3		206.8

Notes:

PAL = Preventive Action Limit
 ES = Enforcement Standards

BOLD
<i>Italic</i>

Exceeds Preventative Action Limit
 NA - Not Analyzed

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Table 2.c
Groundwater Analytical Results Summary
Greater Bass Lake Storage
N9276 Mill Road, Summit Lake, WI 54485

PARAMETER	GB-3						06/12/18	06/21/18	06/29/18
	ES	PAL	10/5/16	2/2/17	6/11/18	<4.3			
Metals (ug/L)									
Dissolved Lead	15	1.5	<4.3	<4.3					
Detected VOC's (ug/L)									
Benzene	5	0.5	1,180	873			350		103
Ethylbenzene	700	140	1,100	672			411		176
Toluene	800	160	1,510	527			93.4		49.6
Total Xylenes	2,000	400	3,518	1,658			934.1		424
Methyl-tert-Butyl Ether	60	12	4.1	5.9 ^J			< 3.2		1.4 ^J
Total Trimethylbenzenes	480	96	1,507	1,074			517		329.6
Naphthalene	100	10	284	161			94.8		57.7
1,2-Dibromoethane (EDB)	0.05	0.005	13.9	NA			NA		NA
1,2-Dichloroethane	5	0.5	12.1	NA			NA		NA
Dichlorodifluoromethane	1,000	200	1.7	NA			NA		NA
Isopropylbenzene			67.4	NA			NA		NA
p-Isopropyltoluene			13.1	NA			NA		NA
n-Propylbenzene			243	NA			NA		NA
Field Measurements									
Temperature (°F)			48.28	47.03			44.00		48.3
Conductivity (ms/cm)			31.3	309			152		65.9
Dissolved Oxygen (mg/L)			0.45	0.36			1.36		1.49
pH			6.55	6.33			7.45		6.24
Redox Potential (mV)			-4.5	13.4			42.1		126

Notes:

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ES = Enforcement Standards

Exceeds Enforcement Standard

Exceeds Preventative Action Limit

NA - Not Analyzed

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J - Estimated concentration above the adjusted method detection limit and below the reporting limit

BOLD
<i>Italic</i>

Table 2.d
Groundwater Analytical Results Summary
Greater Bass Lake Storage
N9276 Mill Road, Summit Lake, WI 54485

PARAMETER	GB-4						NA	NA
	ES	PAL	10/5/16	2/2/17	6/11/18	06/12/18		
Metals (ug/L)								
Dissolved Lead	15	1.5	<4.3	<4.3				
Detected VOC's (ug/L)								
Benzene	5	0.5	1.9	0.98 ^j		< 0.31		< 0.31
Ethylbenzene	700	140	<0.50	<0.39		< 0.49		< 0.49
Toluene	800	160	<0.50	<0.39		< 0.33		< 0.33
Total Xylenes	2,000	400	<1.5	<0.80		< 0.66		< 0.66
Methyl-tert-Butyl Ether	60	12	<0.17	<0.48		< 0.32		< 0.32
Total Trimethylbenzenes	480	96	<1.0	<0.42	Carbon	< 0.34		< 0.34
Naphthalene	100	10	<2.5	<0.42	Injection	< 0.51	SVE System	< 0.51
Field Measurements								
Temperature (°F)		51.83	44.87			44.06		52.6
Conductivity (ms/cm)		249		123			205	167.5
Dissolved Oxygen (mg/L)		0.23		0.38		0.21		1.43
pH		6.49		6.22		6.42		6.36
Redox Potential (mV)		19		91.5		121.8		162.9

Notes:

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ES = Enforcement Standards

Exceeds Enforcement Standard

Exceeds Preventative Action Limit

NA - Not Analyzed

BOLD

Italic

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Table 2.e
Groundwater Analytical Results Summary
Greater Bass Lake Storage
N9276 Mill Road, Summit Lake, WI 54485

PARAMETER	GB-5						NA	NA	NA
	ES	PAL	10/5/16	2/2/17	6/11/18	06/12/18			
Metals (ug/L)									
Dissolved Lead	15	1.5	<4.3	<8.7					
Detected VOC's (ug/L)									
Benzene	5	0.5	720	1,550		2,060			572
Ethylbenzene	700	140	1,830	1,550		1,940			1,520
Toluene	800	160	6,860	4,120		3,590			2,320
Total Xylenes	2,000	400	7,410	5,700		7,300			4,912
Methyl-tert-Butyl Ether	60	1.2	<8.7	17.2 ^J		21.54 ^J			10. ^G
Total Trimethylbenzenes	480	96	1,848	1,797		1,954			1,803
Naphthalene	100	10	328	320		345			341
Isopropylbenzene			53.6	NA		NA	SVE System Started	NA	
n-Propylbenzene			187	NA		NA	Completed	NA	
Field Measurements									
Temperature (°F)	49.33	46.44			44.18				49.4
Conductivity (mS/cm)	525	370			410				328.3
Dissolved Oxygen (mg/L)	0.32	0.67			1.52				1.24
pH	6.7	6.52			8.85				6.67
Redox Potential (mV)	-49.4	-47.7			-46.2				-102

Notes:

PAL = Preventive Action Limit
 ES = Enforcement Standards

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Exceeds Enforcement Standard
 Exceeds Preventative Action Limit
 NA - Not Analyzed

< - Concentration less than listed detection limit

^J - Estimated concentration above the adjusted method detection limit and below the reporting limit

Table 2.f
Groundwater Analytical Results Summary
Greater Bass Lake Storage
N9276 Mill Road, Summit Lake, WI 54485

PARAMETER	GB-6							NA	NA
	ES	PAL	10/5/16	2/2/17	6/11/18	06/12/18	06/21/18		
Metals (ug/L)									
Dissolved Lead	15	1.5	<4.3	<4.3					
Detected VOC's (ug/L)									
Benzene	5	0.5	<0.50	<0.40	<0.31			<0.31	
Ethylbenzene	700	140	<0.50	<0.39	<0.49			<0.49	
Methyl-tert-Butyl Ether	60	12	<0.17	<0.48	<0.33			<0.33	
Naphthalene	100	10	<2.5	<0.42	<0.66			<0.66	
Toluene	800	160	<0.50	<0.39	<0.32			<0.32	
Total Trimethylbenzenes	480	96	<1.0	<0.42	Carbon	<0.34		<0.34	
Total Xylenes	2,000	400	<1.5	<0.80	Injection	<0.51	SVE System	<0.51	
Field Measurements									
Temperature (°F)		49.44	45.29		45.15			49.4	
Conductivity (ms/cm)		71	57		32			65	
Dissolved Oxygen (mg/L)		3.32	2.46		3.18			2.48	
pH		7.14	6.53		6.4			6.18	
Redox Potential (mV)		48.7	96.5		234.4			70.2	

Notes:

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Exceeds Enforcement Standard
 Exceeds Preventative Action Limit

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Table 2.g
Groundwater Analytical Results Summary
Greater Bass Lake Storage
N9276 Mill Road, Summit Lake, WI 54485

PARAMETER	GB-7						06/21/18	06/29/18
	ES	PAL	2/6/17	6/11/18	06/12/18			
Metals (ug/L)								
Dissolved Lead	15	1.5	<4.3			NA		NA
Detected VOC's (ug/L)								
Benzene	5	0.5	<0.50			<0.31		<0.31
Ethylbenzene	700	140	<0.50			<0.49		<0.49
Toluene	800	160	<0.50			<0.32		<0.32
Total Xylenes	2,000	400	<1.5			<0.51		<0.51
Methyl-tert-Butyl Ether	60	12	<0.17			<0.33		<0.33
Total Trimethylbenzenes	480	96	<1.0			<0.34		<0.34
Naphthalene	100	10	<2.5			<0.66		<0.66
Field Measurements								
Temperature (°F)		NA				46.38		46.3
Conductivity (ms/cm)		NA				78		54.4
Dissolved Oxygen (mg/L)		NA				3.36		2.06
pH		NA				5.91		5.96
Redox Potential (mV)		NA				122.9		115.5

Notes:

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Exceeds Enforcement Standard

Exceeds Preventative Action Limit

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Table 2.h
Groundwater Analytical Results Summary
Greater Bass Lake Storage
N9276 Mill Road, Summit Lake, WI 54485

PARAMETER	GB-8						06/21/18	06/29/18
	ES	PAL	2/6/17	6/11/18	06/12/18			
Metals (ug/L)								
Dissolved Lead	15	1.5	4.9 ^J			NA		NA
Detected VOC's (ug/L)								
Benzene	5	0.5	<0.50			<0.31		<0.31
Ethylbenzene	700	140	<0.50			<0.49		<0.49
Toluene	800	160	<0.50			<0.32		<0.32
Total Xylenes	2,000	400	<1.5			<0.51		<0.51
Methyl-tert-Butyl Ether	60	12	<0.17			<0.33		<0.33
Total Trimethylbenzenes	480	96	<1.0			Carbon Injection Completed	<0.34	SVE System Started
Naphthalene	100	10	<2.5			<0.66	<0.66	
Field Measurements								
Temperature (°F)		NA				46.34	46.1	
Conductivity (ms/cm)		NA				103	137.9	
Dissolved Oxygen (mg/L)		NA				1.95	0.64	
pH		NA				6.88	6.23	
Redox Potential (mV)		NA				79.7	5.1	

Notes:

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Table 2.i
Groundwater Analytical Results Summary
Greater Bass Lake Storage
N9276 Mill Road, Summit Lake, WI 54485

PARAMETER Detected VOC's (ug/L)	Potable						Well Not Sampled
	ES	PAL	10/5/16	6/11/18	06/12/18	06/21/18	
Benzene	5	0.5	<0.50	<0.11	<0.14	<0.17	
Ethylbenzene	700	140	<0.50	<0.50	<0.17	<0.24	
Toluene	800	160	<0.50	Carbon Injection Completed	<0.17	<0.17	SVE System Started
Total Xylenes	2,000	400	<1.5	<1.0	<0.093	<0.093	
Methyl-tert-Butyl Ether	60	12	<0.17	<0.42			
Total Trimethylbenzenes	480	96	<1.0				
Naphthalene	100	10	<2.5				

Notes:

PAL = Preventive Action Limit

ES = Enforcement Standards

Exceeds Enforcement Standard

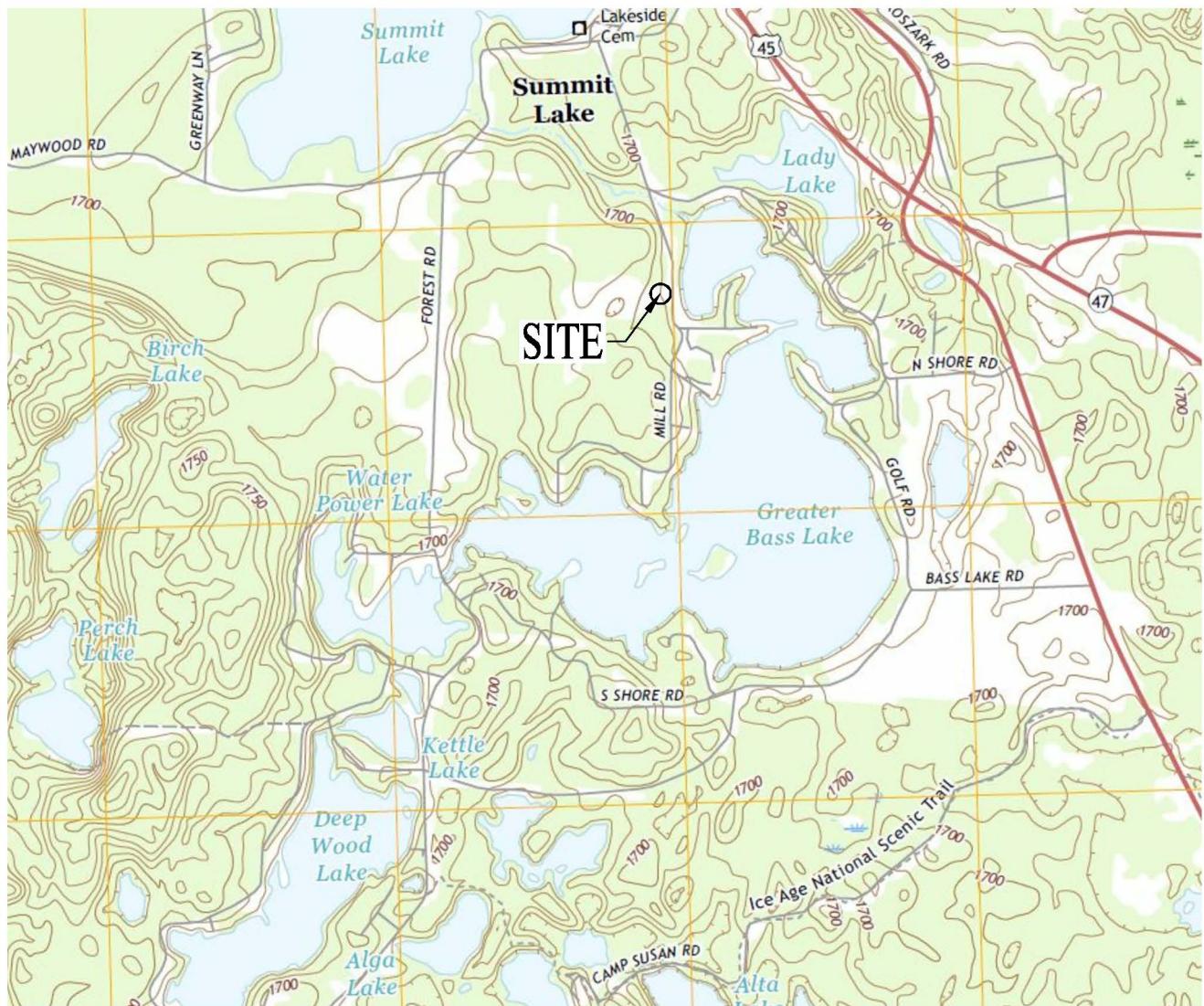
Exceeds Preventative Action Limit

NA - Not Analyzed

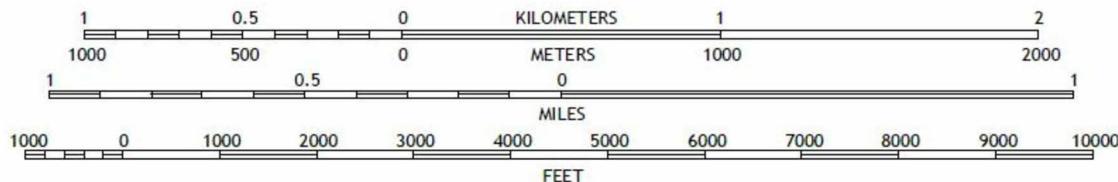
< - Concentration less than listed detection limit

BOLD
<i>Italic</i>

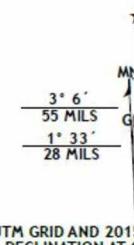
DRAWING FILE: P:\7000-7099\7083 - GREATER BASS LAKE STORAGE\DWG\7083-VICN.DWG LAYOUT: VICINITY PLOTTED: MAR 07, 2017 - 11:00AM PLOTTED BY: TODDW



SCALE 1:24 000



CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988



UTM GRID AND 2015 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

KEMPSTER, WI

2015



QUADRANGLE LOCATION

REI Engineering, Inc.

GREATER BASS LAKE STORAGE
N9276 MILL ROAD
SUMMIT LAKE WISCONSIN

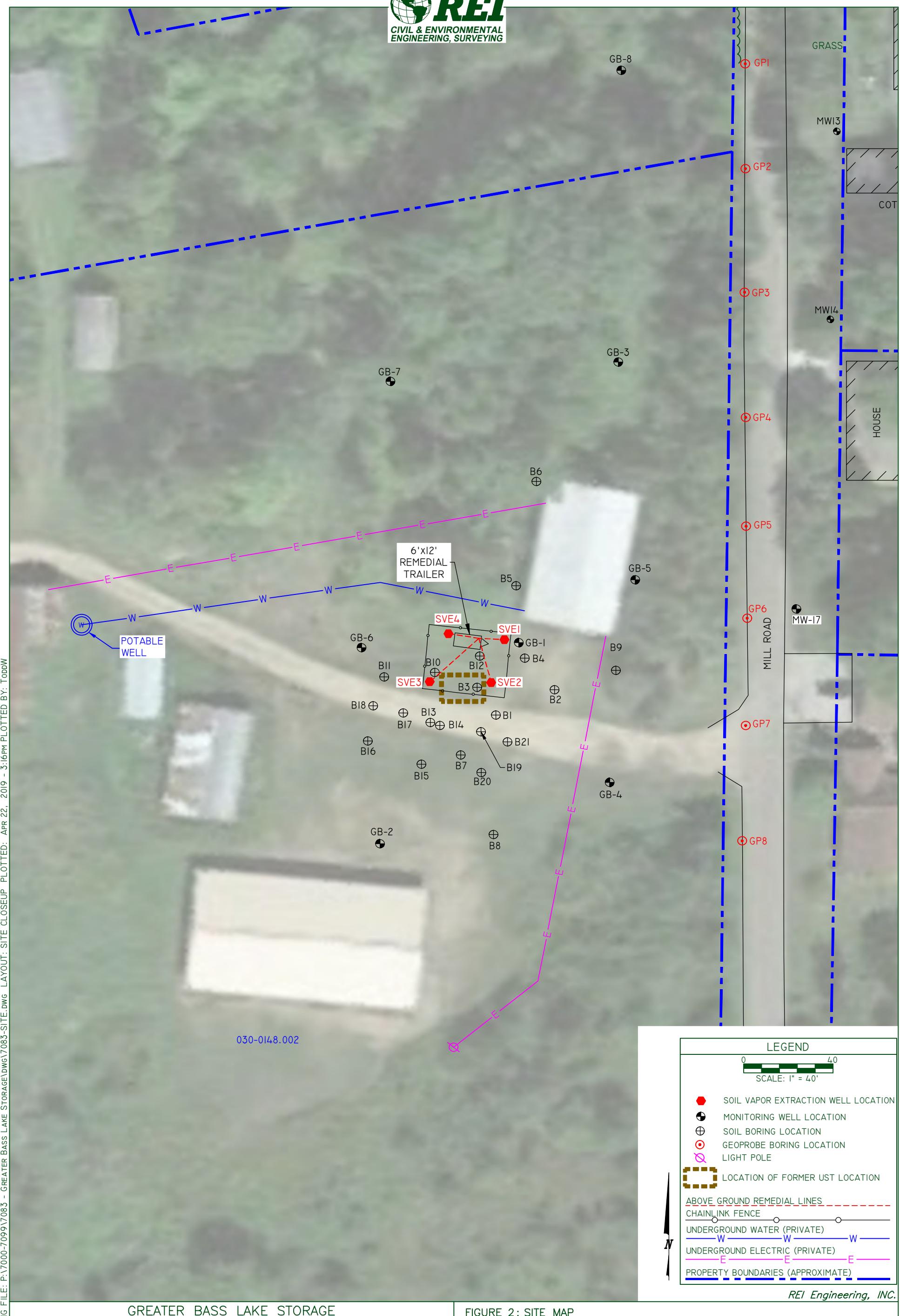
FIGURE 1 : SITE VICINITY MAP

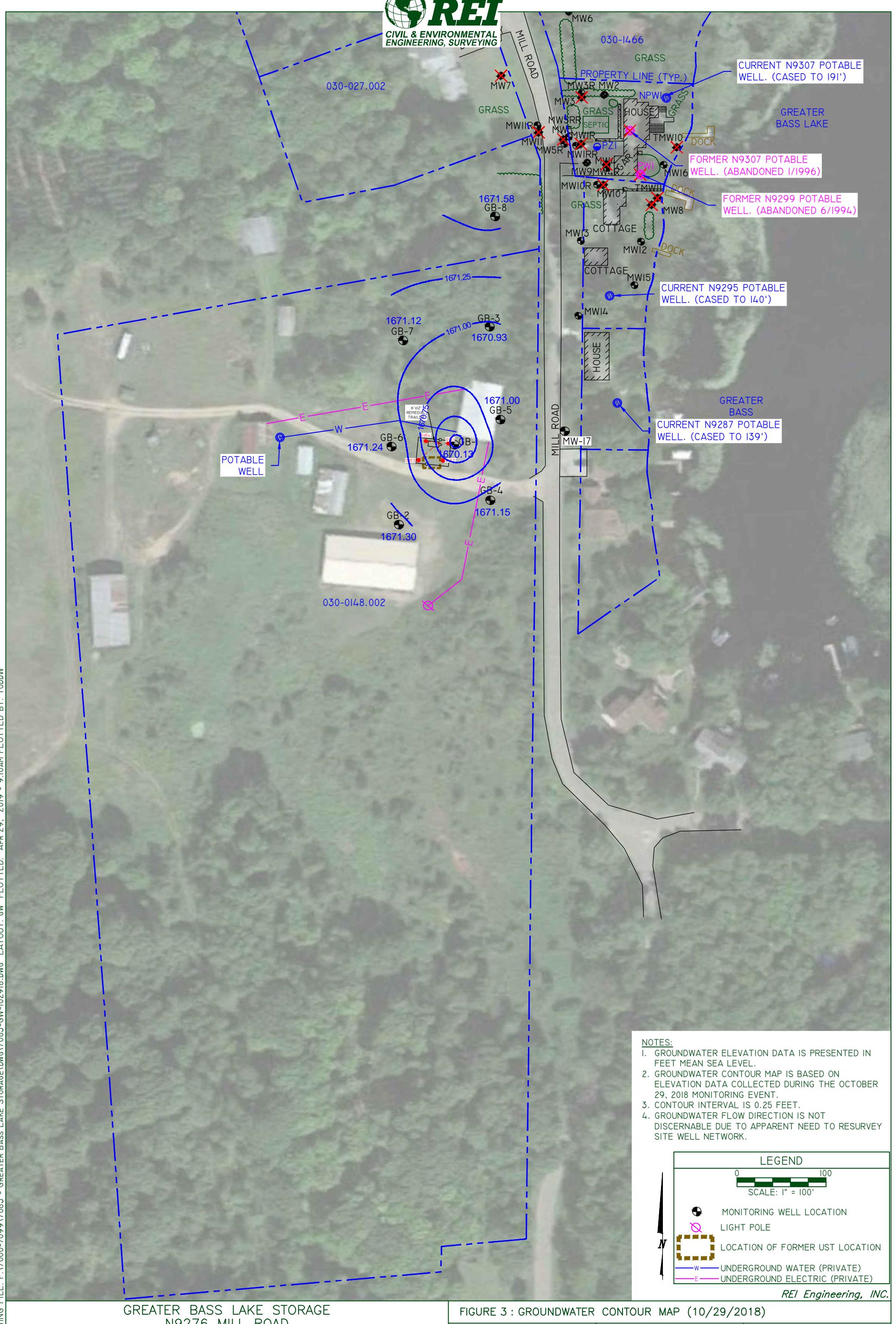
PROJECT NO.

7083

DRAWN BY:
TAW

DATE:
3/7/2017





DRAWING FILE: P:\7000-7099\7083 - GREATER BASS LAKE STORAGE\DWG\7083-GW-W102918.DWG PLOTTED: APR 29, 2019 - 9:10AM PLOTTED BY: TODDW

APPENDIX A

GROUNDWATER LABORATORY ANALYTICAL RESULTS



June 26, 2018

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

RE: Project: 7083 AXUC GREATER BASS LAKE ST
Pace Project No.: 40170931

Dear DAVID LARSEN:

Enclosed are the analytical results for sample(s) received by the laboratory on June 15, 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



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 7083 AXUC GREATER BASS LAKE ST
 Pace Project No.: 40170931

Minnesota Certification IDs

1700 Elm Street SE, Suite 200, Minneapolis, MN 55414-2485
 A2LA Certification #: 2926.01
 Alabama Certification #: 40770
 Alaska Contaminated Sites Certification #: 17-009
 Alaska DW Certification #: MN00064
 Arizona Certification #: AZ0014
 Arkansas Certification #: 88-0680
 California Certification #: 2929
 CNMI Saipan Certification #: MP0003
 Colorado Certification #: MN00064
 Connecticut Certification #: PH-0256
 EPA Region 8+Wyoming DW Certification #: via MN 027-053-137
 Florida Certification #: E87605
 Georgia Certification #: 959
 Guam EPA Certification #: MN00064
 Hawaii Certification #: MN00064
 Idaho Certification #: MN00064
 Illinois Certification #: 200011
 Indiana Certification #: C-MN-01
 Iowa Certification #: 368
 Kansas Certification #: E-10167
 Kentucky DW Certification #: 90062
 Kentucky WW Certification #: 90062
 Louisiana DEQ Certification #: 03086
 Louisiana DW Certification #: MN00064
 Maine Certification #: MN00064
 Maryland Certification #: 322
 Massachusetts Certification #: M-MN064

Michigan Certification #: 9909
 Minnesota Certification #: 027-053-137
 Mississippi Certification #: MN00064
 Montana Certification #: CERT0092
 Nebraska Certification #: NE-OS-18-06
 Nevada Certification #: MN00064
 New Hampshire Certification #: 2081
 New Jersey Certification #: MN002
 New York Certification #: 11647
 North Carolina DW Certification #: 27700
 North Carolina WW Certification #: 530
 North Dakota Certification #: R-036
 Ohio DW Certification #: 41244
 Ohio VAP Certification #: CL101
 Oklahoma Certification #: 9507
 Oregon NwTPH Certification #: MN300001
 Oregon Secondary Certification #: MN200001
 Pennsylvania Certification #: 68-00563
 Puerto Rico Certification #: MN00064
 South Carolina Certification #: 74003001
 Tennessee Certification #: TN02818
 Texas Certification #: T104704192
 Utah Certification #: MN00064
 Virginia Certification #: 460163
 Washington Certification #: C486
 West Virginia DW Certification #: 9952 C
 West Virginia DEP Certification #: 382
 Wisconsin Certification #: 999407970

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: 7083 AXUC GREATER BASS LAKE ST
Pace Project No.: 40170931

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40170931001	GB-1	Water	06/11/18 18:00	06/15/18 08:50
40170931002	GB-2	Water	06/12/18 07:50	06/15/18 08:50
40170931003	GB-3	Water	06/12/18 10:00	06/15/18 08:50
40170931004	GB-4	Water	06/12/18 08:40	06/15/18 08:50
40170931005	GB-5	Water	06/12/18 09:05	06/15/18 08:50
40170931006	GB-6	Water	06/12/18 08:15	06/15/18 08:50
40170931007	GB-7	Water	06/12/18 10:20	06/15/18 08:50
40170931008	GB-8	Water	06/12/18 09:30	06/15/18 08:50
40170931009	GB-POTABLE	Water	06/12/18 10:45	06/15/18 08:50

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SAMPLE ANALYTE COUNT

Project: 7083 AXUC GREATER BASS LAKE ST
Pace Project No.: 40170931

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40170931001	GB-1	WI MOD GRO	ALD	10	PASI-G
40170931002	GB-2	WI MOD GRO	ALD	10	PASI-G
40170931003	GB-3	WI MOD GRO	ALD	10	PASI-G
40170931004	GB-4	WI MOD GRO	ALD	10	PASI-G
40170931005	GB-5	WI MOD GRO	ALD	10	PASI-G
40170931006	GB-6	WI MOD GRO	ALD	10	PASI-G
40170931007	GB-7	WI MOD GRO	ALD	10	PASI-G
40170931008	GB-8	WI MOD GRO	ALD	10	PASI-G
40170931009	GB-POTABLE	EPA 524.2	AEZ	62	PASI-M

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 7083 AXUC GREATER BASS LAKE ST
Pace Project No.: 40170931

Sample: GB-1	Lab ID: 40170931001	Collected: 06/11/18 18:00	Received: 06/15/18 08:50	Matrix: Water					
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	52.5	ug/L	10.2	3.1	10		06/19/18 23:41	71-43-2	
Ethylbenzene	606	ug/L	11.0	3.3	10		06/19/18 23:41	100-41-4	
Methyl-tert-butyl ether	<3.2	ug/L	10.7	3.2	10		06/19/18 23:41	1634-04-4	
Naphthalene	285	ug/L	16.8	5.1	10		06/19/18 23:41	91-20-3	
Toluene	34.0	ug/L	16.3	4.9	10		06/19/18 23:41	108-88-3	
1,2,4-Trimethylbenzene	1280	ug/L	11.4	3.4	10		06/19/18 23:41	95-63-6	
1,3,5-Trimethylbenzene	475	ug/L	10.9	3.3	10		06/19/18 23:41	108-67-8	
m&p-Xylene	620	ug/L	21.8	6.6	10		06/19/18 23:41	179601-23-1	
o-Xylene	52.4	ug/L	10.5	3.2	10		06/19/18 23:41	95-47-6	
Surrogates									
a,a,a-Trifluorotoluene (S)	100	%	80-120		10		06/19/18 23:41	98-08-8	
Sample: GB-2	Lab ID: 40170931002	Collected: 06/12/18 07:50	Received: 06/15/18 08:50	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		06/19/18 19:51	71-43-2	
Ethylbenzene	<0.33	ug/L	1.1	0.33	1		06/19/18 19:51	100-41-4	
Methyl-tert-butyl ether	<0.32	ug/L	1.1	0.32	1		06/19/18 19:51	1634-04-4	
Naphthalene	<0.51	ug/L	1.7	0.51	1		06/19/18 19:51	91-20-3	
Toluene	<0.49	ug/L	1.6	0.49	1		06/19/18 19:51	108-88-3	
1,2,4-Trimethylbenzene	<0.34	ug/L	1.1	0.34	1		06/19/18 19:51	95-63-6	
1,3,5-Trimethylbenzene	<0.33	ug/L	1.1	0.33	1		06/19/18 19:51	108-67-8	
m&p-Xylene	<0.66	ug/L	2.2	0.66	1		06/19/18 19:51	179601-23-1	
o-Xylene	<0.32	ug/L	1.0	0.32	1		06/19/18 19:51	95-47-6	
Surrogates									
a,a,a-Trifluorotoluene (S)	103	%	80-120		1		06/19/18 19:51	98-08-8	
Sample: GB-3	Lab ID: 40170931003	Collected: 06/12/18 10:00	Received: 06/15/18 08:50	Matrix: Water					
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	350	ug/L	10.2	3.1	10		06/20/18 00:07	71-43-2	
Ethylbenzene	411	ug/L	11.0	3.3	10		06/20/18 00:07	100-41-4	
Methyl-tert-butyl ether	<3.2	ug/L	10.7	3.2	10		06/20/18 00:07	1634-04-4	
Naphthalene	94.8	ug/L	16.8	5.1	10		06/20/18 00:07	91-20-3	
Toluene	93.4	ug/L	16.3	4.9	10		06/20/18 00:07	108-88-3	
1,2,4-Trimethylbenzene	384	ug/L	11.4	3.4	10		06/20/18 00:07	95-63-6	
1,3,5-Trimethylbenzene	133	ug/L	10.9	3.3	10		06/20/18 00:07	108-67-8	
m&p-Xylene	885	ug/L	21.8	6.6	10		06/20/18 00:07	179601-23-1	
o-Xylene	49.1	ug/L	10.5	3.2	10		06/20/18 00:07	95-47-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 7083 AXUC GREATER BASS LAKE ST
Pace Project No.: 40170931

Sample: GB-3	Lab ID: 40170931003	Collected: 06/12/18 10:00	Received: 06/15/18 08:50	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)	102	%	80-120		10		06/20/18 00:07	98-08-8	
Sample: GB-4	Lab ID: 40170931004	Collected: 06/12/18 08:40	Received: 06/15/18 08:50	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		06/19/18 20:17	71-43-2	
Ethylbenzene	<0.33	ug/L	1.1	0.33	1		06/19/18 20:17	100-41-4	
Methyl-tert-butyl ether	<0.32	ug/L	1.1	0.32	1		06/19/18 20:17	1634-04-4	
Naphthalene	<0.51	ug/L	1.7	0.51	1		06/19/18 20:17	91-20-3	
Toluene	<0.49	ug/L	1.6	0.49	1		06/19/18 20:17	108-88-3	
1,2,4-Trimethylbenzene	<0.34	ug/L	1.1	0.34	1		06/19/18 20:17	95-63-6	
1,3,5-Trimethylbenzene	<0.33	ug/L	1.1	0.33	1		06/19/18 20:17	108-67-8	
m&p-Xylene	<0.66	ug/L	2.2	0.66	1		06/19/18 20:17	179601-23-1	
o-Xylene	<0.32	ug/L	1.0	0.32	1		06/19/18 20:17	95-47-6	
Surrogates									
a,a,a-Trifluorotoluene (S)	105	%	80-120		1		06/19/18 20:17	98-08-8	
Sample: GB-5	Lab ID: 40170931005	Collected: 06/12/18 09:05	Received: 06/15/18 08:50	Matrix: Water					
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	2060	ug/L	51.0	15.3	50		06/19/18 22:50	71-43-2	
Ethylbenzene	1940	ug/L	55.0	16.4	50		06/19/18 22:50	100-41-4	
Methyl-tert-butyl ether	21.5J	ug/L	53.5	16.0	50		06/19/18 22:50	1634-04-4	
Naphthalene	345	ug/L	84.0	25.3	50		06/19/18 22:50	91-20-3	
Toluene	3590	ug/L	81.5	24.4	50		06/19/18 22:50	108-88-3	
1,2,4-Trimethylbenzene	1530	ug/L	57.0	17.1	50		06/19/18 22:50	95-63-6	
1,3,5-Trimethylbenzene	424	ug/L	54.5	16.4	50		06/19/18 22:50	108-67-8	
m&p-Xylene	5390	ug/L	109	32.8	50		06/19/18 22:50	179601-23-1	
o-Xylene	1910	ug/L	52.5	15.8	50		06/19/18 22:50	95-47-6	
Surrogates									
a,a,a-Trifluorotoluene (S)	99	%	80-120		50		06/19/18 22:50	98-08-8	

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ANALYTICAL RESULTS

Project: 7083 AXUC GREATER BASS LAKE ST
Pace Project No.: 40170931

Sample: GB-6	Lab ID: 40170931006	Collected: 06/12/18 08:15	Received: 06/15/18 08:50	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		06/19/18 20:42	71-43-2	
Ethylbenzene	<0.33	ug/L	1.1	0.33	1		06/19/18 20:42	100-41-4	
Methyl-tert-butyl ether	<0.32	ug/L	1.1	0.32	1		06/19/18 20:42	1634-04-4	
Naphthalene	<0.51	ug/L	1.7	0.51	1		06/19/18 20:42	91-20-3	
Toluene	<0.49	ug/L	1.6	0.49	1		06/19/18 20:42	108-88-3	
1,2,4-Trimethylbenzene	<0.34	ug/L	1.1	0.34	1		06/19/18 20:42	95-63-6	
1,3,5-Trimethylbenzene	<0.33	ug/L	1.1	0.33	1		06/19/18 20:42	108-67-8	
m&p-Xylene	<0.66	ug/L	2.2	0.66	1		06/19/18 20:42	179601-23-1	
o-Xylene	<0.32	ug/L	1.0	0.32	1		06/19/18 20:42	95-47-6	
Surrogates									
a,a,a-Trifluorotoluene (S)	102	%	80-120		1		06/19/18 20:42	98-08-8	
<hr/>									
Sample: GB-7	Lab ID: 40170931007	Collected: 06/12/18 10:20	Received: 06/15/18 08:50	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		06/20/18 09:51	71-43-2	
Ethylbenzene	<0.33	ug/L	1.1	0.33	1		06/20/18 09:51	100-41-4	
Methyl-tert-butyl ether	<0.32	ug/L	1.1	0.32	1		06/20/18 09:51	1634-04-4	
Naphthalene	<0.51	ug/L	1.7	0.51	1		06/20/18 09:51	91-20-3	
Toluene	<0.49	ug/L	1.6	0.49	1		06/20/18 09:51	108-88-3	
1,2,4-Trimethylbenzene	<0.34	ug/L	1.1	0.34	1		06/20/18 09:51	95-63-6	
1,3,5-Trimethylbenzene	<0.33	ug/L	1.1	0.33	1		06/20/18 09:51	108-67-8	
m&p-Xylene	<0.66	ug/L	2.2	0.66	1		06/20/18 09:51	179601-23-1	
o-Xylene	<0.32	ug/L	1.0	0.32	1		06/20/18 09:51	95-47-6	
Surrogates									
a,a,a-Trifluorotoluene (S)	102	%	80-120		1		06/20/18 09:51	98-08-8	
<hr/>									
Sample: GB-8	Lab ID: 40170931008	Collected: 06/12/18 09:30	Received: 06/15/18 08:50	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		06/20/18 01:49	71-43-2	
Ethylbenzene	<0.33	ug/L	1.1	0.33	1		06/20/18 01:49	100-41-4	
Methyl-tert-butyl ether	<0.32	ug/L	1.1	0.32	1		06/20/18 01:49	1634-04-4	
Naphthalene	<0.51	ug/L	1.7	0.51	1		06/20/18 01:49	91-20-3	
Toluene	<0.49	ug/L	1.6	0.49	1		06/20/18 01:49	108-88-3	
1,2,4-Trimethylbenzene	<0.34	ug/L	1.1	0.34	1		06/20/18 01:49	95-63-6	
1,3,5-Trimethylbenzene	<0.33	ug/L	1.1	0.33	1		06/20/18 01:49	108-67-8	
m&p-Xylene	<0.66	ug/L	2.2	0.66	1		06/20/18 01:49	179601-23-1	
o-Xylene	<0.32	ug/L	1.0	0.32	1		06/20/18 01:49	95-47-6	

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ANALYTICAL RESULTS

Project: 7083 AXUC GREATER BASS LAKE ST
Pace Project No.: 40170931

Sample: GB-8 **Lab ID: 40170931008** Collected: 06/12/18 09:30 Received: 06/15/18 08:50 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)	102	%	80-120		1		06/20/18 01:49	98-08-8	

Sample: GB-POTABLE **Lab ID: 40170931009** Collected: 06/12/18 10:45 Received: 06/15/18 08:50 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
524.2 MSV	Analytical Method: EPA 524.2								
Benzene	<0.11	ug/L	0.37	0.11	1		06/25/18 18:53	71-43-2	
Bromobenzene	<0.12	ug/L	0.40	0.12	1		06/25/18 18:53	108-86-1	
Bromochloromethane	<0.38	ug/L	1.3	0.38	1		06/25/18 18:53	74-97-5	
Bromodichloromethane	<0.14	ug/L	0.48	0.14	1		06/25/18 18:53	75-27-4	
Bromoform	<1.0	ug/L	3.5	1.0	1		06/25/18 18:53	75-25-2	
Bromomethane	<1.1	ug/L	3.8	1.1	1		06/25/18 18:53	74-83-9	
n-Butylbenzene	<0.12	ug/L	0.40	0.12	1		06/25/18 18:53	104-51-8	
sec-Butylbenzene	<0.12	ug/L	0.41	0.12	1		06/25/18 18:53	135-98-8	
tert-Butylbenzene	<0.15	ug/L	0.49	0.15	1		06/25/18 18:53	98-06-6	
Carbon tetrachloride	<0.17	ug/L	0.57	0.17	1		06/25/18 18:53	56-23-5	
Chlorobenzene	<0.11	ug/L	0.38	0.11	1		06/25/18 18:53	108-90-7	
Chloroethane	<0.32	ug/L	1.1	0.32	1		06/25/18 18:53	75-00-3	
Chloroform	<0.46	ug/L	1.5	0.46	1		06/25/18 18:53	67-66-3	
Chloromethane	<1.1	ug/L	3.6	1.1	1		06/25/18 18:53	74-87-3	
2-Chlorotoluene	<0.078	ug/L	0.26	0.078	1		06/25/18 18:53	95-49-8	
4-Chlorotoluene	<0.089	ug/L	0.30	0.089	1		06/25/18 18:53	106-43-4	
1,2-Dibromo-3-chloropropane	<1.0	ug/L	3.4	1.0	1		06/25/18 18:53	96-12-8	
Dibromochloromethane	<0.13	ug/L	0.45	0.13	1		06/25/18 18:53	124-48-1	
1,2-Dibromoethane (EDB)	<0.14	ug/L	0.46	0.14	1		06/25/18 18:53	106-93-4	
Dibromomethane	<0.50	ug/L	1.7	0.50	1		06/25/18 18:53	74-95-3	
1,2-Dichlorobenzene	<0.077	ug/L	0.26	0.077	1		06/25/18 18:53	95-50-1	
1,3-Dichlorobenzene	<0.074	ug/L	0.25	0.074	1		06/25/18 18:53	541-73-1	
1,4-Dichlorobenzene	<0.073	ug/L	0.24	0.073	1		06/25/18 18:53	106-46-7	
Dichlorodifluoromethane	<0.31	ug/L	1.0	0.31	1		06/25/18 18:53	75-71-8	
1,1-Dichloroethane	<0.14	ug/L	0.48	0.14	1		06/25/18 18:53	75-34-3	
1,2-Dichloroethane	<0.11	ug/L	0.37	0.11	1		06/25/18 18:53	107-06-2	
1,1-Dichloroethene	<0.18	ug/L	0.60	0.18	1		06/25/18 18:53	75-35-4	
cis-1,2-Dichloroethene	<0.073	ug/L	0.24	0.073	1		06/25/18 18:53	156-59-2	
trans-1,2-Dichloroethene	<0.21	ug/L	0.70	0.21	1		06/25/18 18:53	156-60-5	
1,2-Dichloropropane	<0.20	ug/L	0.68	0.20	1		06/25/18 18:53	78-87-5	
1,3-Dichloropropane	<0.093	ug/L	0.31	0.093	1		06/25/18 18:53	142-28-9	
2,2-Dichloropropane	<0.32	ug/L	1.1	0.32	1		06/25/18 18:53	594-20-7	
1,1-Dichloropropene	<0.16	ug/L	0.55	0.16	1		06/25/18 18:53	563-58-6	
cis-1,3-Dichloropropene	<0.12	ug/L	0.39	0.12	1		06/25/18 18:53	10061-01-5	
trans-1,3-Dichloropropene	<0.11	ug/L	0.36	0.11	1		06/25/18 18:53	10061-02-6	
Ethylbenzene	<0.14	ug/L	0.45	0.14	1		06/25/18 18:53	100-41-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 7083 AXUC GREATER BASS LAKE ST
Pace Project No.: 40170931

Sample: GB-POTABLE	Lab ID: 40170931009	Collected: 06/12/18 10:45	Received: 06/15/18 08:50	Matrix: Water					
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
524.2 MSV	Analytical Method: EPA 524.2								
Hexachloro-1,3-butadiene	<0.31	ug/L	1.0	0.31	1		06/25/18 18:53	87-68-3	
Isopropylbenzene (Cumene)	<0.095	ug/L	0.32	0.095	1		06/25/18 18:53	98-82-8	
p-Isopropyltoluene	<0.088	ug/L	0.29	0.088	1		06/25/18 18:53	99-87-6	
Methylene Chloride	<1.2	ug/L	3.9	1.2	1		06/25/18 18:53	75-09-2	
Methyl-tert-butyl ether	<0.097	ug/L	0.32	0.097	1		06/25/18 18:53	1634-04-4	
Naphthalene	<0.42	ug/L	1.4	0.42	1		06/25/18 18:53	91-20-3	
n-Propylbenzene	<0.11	ug/L	0.36	0.11	1		06/25/18 18:53	103-65-1	
Styrene	<0.10	ug/L	0.35	0.10	1		06/25/18 18:53	100-42-5	
1,1,1,2-Tetrachloroethane	<0.13	ug/L	0.44	0.13	1		06/25/18 18:53	630-20-6	
1,1,2,2-Tetrachloroethane	<0.19	ug/L	0.63	0.19	1		06/25/18 18:53	79-34-5	
Tetrachloroethene	<0.12	ug/L	0.38	0.12	1		06/25/18 18:53	127-18-4	
Toluene	<0.17	ug/L	0.57	0.17	1		06/25/18 18:53	108-88-3	
1,2,3-Trichlorobenzene	0.14J	ug/L	0.26	0.078	1		06/25/18 18:53	87-61-6	B
1,2,4-Trichlorobenzene	<0.11	ug/L	0.38	0.11	1		06/25/18 18:53	120-82-1	
1,1,1-Trichloroethane	<0.13	ug/L	0.44	0.13	1		06/25/18 18:53	71-55-6	
1,1,2-Trichloroethane	<0.12	ug/L	0.41	0.12	1		06/25/18 18:53	79-00-5	
Trichloroethene	<0.11	ug/L	0.36	0.11	1		06/25/18 18:53	79-01-6	
Trichlorofluoromethane	<0.080	ug/L	0.27	0.080	1		06/25/18 18:53	75-69-4	
1,2,3-Trichloropropane	<0.31	ug/L	1.0	0.31	1		06/25/18 18:53	96-18-4	
1,2,4-Trimethylbenzene	<0.085	ug/L	0.28	0.085	1		06/25/18 18:53	95-63-6	
1,3,5-Trimethylbenzene	<0.093	ug/L	0.31	0.093	1		06/25/18 18:53	108-67-8	
Vinyl chloride	<0.074	ug/L	0.25	0.074	1		06/25/18 18:53	75-01-4	
Xylene (Total)	<0.24	ug/L	0.81	0.24	1		06/25/18 18:53	1330-20-7	
Surrogates									
4-Bromofluorobenzene (S)	100	%.	75-125		1		06/25/18 18:53	460-00-4	
Toluene-d8 (S)	99	%.	75-125		1		06/25/18 18:53	2037-26-5	
1,2-Dichloroethane-d4 (S)	100	%.	75-125		1		06/25/18 18:53	17060-07-0	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 7083 AXUC GREATER BASS LAKE ST

Pace Project No.: 40170931

QC Batch:	292186	Analysis Method:	WI MOD GRO
QC Batch Method:	WI MOD GRO	Analysis Description:	WIGRO GCV Water
Associated Lab Samples: 40170931001, 40170931002, 40170931003, 40170931004, 40170931005, 40170931006, 40170931007, 40170931008			

METHOD BLANK:	1708513	Matrix:	Water
Associated Lab Samples: 40170931001, 40170931002, 40170931003, 40170931004, 40170931005, 40170931006, 40170931007, 40170931008			

Parameter	Units	Blank	Reporting		Qualifiers
		Result	Limit	Analyzed	
1,2,4-Trimethylbenzene	ug/L	<0.34	1.1	06/19/18 16:01	
1,3,5-Trimethylbenzene	ug/L	<0.33	1.1	06/19/18 16:01	
Benzene	ug/L	<0.31	1.0	06/19/18 16:01	
Ethylbenzene	ug/L	<0.33	1.1	06/19/18 16:01	
m&p-Xylene	ug/L	<0.66	2.2	06/19/18 16:01	
Methyl-tert-butyl ether	ug/L	<0.32	1.1	06/19/18 16:01	
Naphthalene	ug/L	<0.51	1.7	06/19/18 16:01	
o-Xylene	ug/L	<0.32	1.0	06/19/18 16:01	
Toluene	ug/L	<0.49	1.6	06/19/18 16:01	
a,a,a-Trifluorotoluene (S)	%	102	80-120	06/19/18 16:01	

LABORATORY CONTROL SAMPLE & LCSD:	1708514	1708515								
Parameter	Units	Spike	LCS	LCSD	LCS	LCSD	% Rec	RPD	Max RPD	Qualifiers
		Conc.	Result	Result	% Rec	% Rec	Limits			
1,2,4-Trimethylbenzene	ug/L	20	21.0	22.4	105	112	80-120	6	20	
1,3,5-Trimethylbenzene	ug/L	20	20.8	22.0	104	110	80-120	6	20	
Benzene	ug/L	20	20.6	21.7	103	109	80-120	5	20	
Ethylbenzene	ug/L	20	21.1	22.2	105	111	80-120	5	20	
m&p-Xylene	ug/L	40	41.7	44.0	104	110	80-120	5	20	
Methyl-tert-butyl ether	ug/L	20	20.4	20.6	102	103	80-120	1	20	
Naphthalene	ug/L	20	20.1	20.4	100	102	80-120	2	20	
o-Xylene	ug/L	20	20.7	21.9	103	110	80-120	6	20	
Toluene	ug/L	20	21.0	22.1	105	110	80-120	5	20	
a,a,a-Trifluorotoluene (S)	%				103	102	80-120			

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:	1709026	1709027										
Parameter	Units	MS		MSD		MS		MSD		Max RPD	RPD	Qual
		40170928013	Result	Spike	Conc.	MS	Result	MSD	% Rec			
1,2,4-Trimethylbenzene	ug/L	<0.34	20	20	20.0	23.0	100	115	51-160	14	20	
1,3,5-Trimethylbenzene	ug/L	<0.33	20	20	19.7	22.6	99	113	56-146	14	20	
Benzene	ug/L	<0.31	20	20	19.4	22.1	97	110	71-137	13	20	
Ethylbenzene	ug/L	<0.33	20	20	20.0	22.9	100	115	71-141	14	20	
m&p-Xylene	ug/L	<0.66	40	40	39.7	45.5	99	114	66-141	14	20	
Methyl-tert-butyl ether	ug/L	<0.32	20	20	18.3	20.4	92	102	80-120	11	20	
Naphthalene	ug/L	<0.51	20	20	18.0	20.5	90	102	67-138	13	20	
o-Xylene	ug/L	<0.32	20	20	19.5	22.4	98	112	75-133	14	20	

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QUALITY CONTROL DATA

Project: 7083 AXUC GREATER BASS LAKE ST
Pace Project No.: 40170931

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		1709026	1709027									
Parameter	Units	40170928013 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Max RPD	Max Qual
Toluene a,a,a-Trifluorotoluene (S)	ug/L %	<0.49	20	20	19.8	22.6	99	113	76-134	13	20	102
							102	102	80-120			

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QUALITY CONTROL DATA

Project: 7083 AXUC GREATER BASS LAKE ST

Pace Project No.: 40170931

QC Batch:	546818	Analysis Method:	EPA 524.2
QC Batch Method:	EPA 524.2	Analysis Description:	524.2 MSV
Associated Lab Samples: 40170931009			

METHOD BLANK: 2973328	Matrix: Water
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Associated Lab Samples: 40170931009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.13	0.44	06/25/18 18:06	
1,1,1-Trichloroethane	ug/L	<0.13	0.44	06/25/18 18:06	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	0.63	06/25/18 18:06	
1,1,2-Trichloroethane	ug/L	<0.12	0.41	06/25/18 18:06	
1,1-Dichloroethane	ug/L	<0.14	0.48	06/25/18 18:06	
1,1-Dichloroethene	ug/L	<0.18	0.60	06/25/18 18:06	
1,1-Dichloropropene	ug/L	<0.16	0.55	06/25/18 18:06	
1,2,3-Trichlorobenzene	ug/L	0.29	0.26	06/25/18 18:06	
1,2,3-Trichloropropane	ug/L	<0.31	1.0	06/25/18 18:06	
1,2,4-Trichlorobenzene	ug/L	0.16J	0.38	06/25/18 18:06	MN
1,2,4-Trimethylbenzene	ug/L	<0.085	0.28	06/25/18 18:06	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	3.4	06/25/18 18:06	
1,2-Dibromoethane (EDB)	ug/L	<0.14	0.46	06/25/18 18:06	
1,2-Dichlorobenzene	ug/L	<0.077	0.26	06/25/18 18:06	
1,2-Dichloroethane	ug/L	<0.11	0.37	06/25/18 18:06	
1,2-Dichloropropane	ug/L	<0.20	0.68	06/25/18 18:06	
1,3,5-Trimethylbenzene	ug/L	<0.093	0.31	06/25/18 18:06	
1,3-Dichlorobenzene	ug/L	<0.074	0.25	06/25/18 18:06	
1,3-Dichloropropane	ug/L	<0.093	0.31	06/25/18 18:06	
1,4-Dichlorobenzene	ug/L	<0.073	0.24	06/25/18 18:06	
2,2-Dichloropropane	ug/L	<0.32	1.1	06/25/18 18:06	
2-Chlorotoluene	ug/L	<0.078	0.26	06/25/18 18:06	
4-Chlorotoluene	ug/L	<0.089	0.30	06/25/18 18:06	
Benzene	ug/L	<0.11	0.37	06/25/18 18:06	
Bromobenzene	ug/L	<0.12	0.40	06/25/18 18:06	
Bromochloromethane	ug/L	<0.38	1.3	06/25/18 18:06	
Bromodichloromethane	ug/L	<0.14	0.48	06/25/18 18:06	MN
Bromoform	ug/L	<1.0	3.5	06/25/18 18:06	
Bromomethane	ug/L	<1.1	3.8	06/25/18 18:06	
Carbon tetrachloride	ug/L	<0.17	0.57	06/25/18 18:06	
Chlorobenzene	ug/L	<0.11	0.38	06/25/18 18:06	
Chloroethane	ug/L	<0.32	1.1	06/25/18 18:06	
Chloroform	ug/L	<0.46	1.5	06/25/18 18:06	
Chloromethane	ug/L	<1.1	3.6	06/25/18 18:06	
cis-1,2-Dichloroethene	ug/L	<0.073	0.24	06/25/18 18:06	
cis-1,3-Dichloropropene	ug/L	<0.12	0.39	06/25/18 18:06	
Dibromochloromethane	ug/L	<0.13	0.45	06/25/18 18:06	
Dibromomethane	ug/L	<0.50	1.7	06/25/18 18:06	
Dichlorodifluoromethane	ug/L	<0.31	1.0	06/25/18 18:06	
Ethylbenzene	ug/L	<0.14	0.45	06/25/18 18:06	
Hexachloro-1,3-butadiene	ug/L	<0.31	1.0	06/25/18 18:06	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 7083 AXUC GREATER BASS LAKE ST

Pace Project No.: 40170931

METHOD BLANK: 2973328

Matrix: Water

Associated Lab Samples: 40170931009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Isopropylbenzene (Cumene)	ug/L	<0.095	0.32	06/25/18 18:06	
Methyl-tert-butyl ether	ug/L	<0.097	0.32	06/25/18 18:06	
Methylene Chloride	ug/L	<1.2	3.9	06/25/18 18:06	
n-Butylbenzene	ug/L	<0.12	0.40	06/25/18 18:06	MN
n-Propylbenzene	ug/L	<0.11	0.36	06/25/18 18:06	
Naphthalene	ug/L	0.48J	1.4	06/25/18 18:06	
p-Isopropyltoluene	ug/L	<0.088	0.29	06/25/18 18:06	
sec-Butylbenzene	ug/L	<0.12	0.41	06/25/18 18:06	
Styrene	ug/L	<0.10	0.35	06/25/18 18:06	
tert-Butylbenzene	ug/L	<0.15	0.49	06/25/18 18:06	
Tetrachloroethene	ug/L	<0.12	0.38	06/25/18 18:06	
Toluene	ug/L	<0.17	0.57	06/25/18 18:06	
trans-1,2-Dichloroethene	ug/L	<0.21	0.70	06/25/18 18:06	
trans-1,3-Dichloropropene	ug/L	<0.11	0.36	06/25/18 18:06	MN
Trichloroethene	ug/L	<0.11	0.36	06/25/18 18:06	
Trichlorofluoromethane	ug/L	<0.080	0.27	06/25/18 18:06	
Vinyl chloride	ug/L	<0.074	0.25	06/25/18 18:06	
Xylene (Total)	ug/L	<0.24	0.81	06/25/18 18:06	
1,2-Dichloroethane-d4 (S)	%.	98	75-125	06/25/18 18:06	
4-Bromofluorobenzene (S)	%.	100	75-125	06/25/18 18:06	
Toluene-d8 (S)	%.	101	75-125	06/25/18 18:06	

LABORATORY CONTROL SAMPLE: 2973329

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	20	21.7	108	70-130	
1,1,1-Trichloroethane	ug/L	20	22.5	113	70-130	
1,1,2,2-Tetrachloroethane	ug/L	20	21.8	109	70-130	
1,1,2-Trichloroethane	ug/L	20	22.6	113	70-130	
1,1-Dichloroethane	ug/L	20	21.1	105	70-130	
1,1-Dichloroethene	ug/L	20	23.6	118	70-130	
1,1-Dichloropropene	ug/L	20	21.7	109	70-130	
1,2,3-Trichlorobenzene	ug/L	20	22.7	113	70-130	
1,2,3-Trichloropropane	ug/L	20	21.0	105	70-130	
1,2,4-Trichlorobenzene	ug/L	20	21.6	108	70-130	
1,2,4-Trimethylbenzene	ug/L	20	22.7	114	70-130	
1,2-Dibromo-3-chloropropane	ug/L	50	58.3	117	70-130	
1,2-Dibromoethane (EDB)	ug/L	20	22.6	113	70-130	
1,2-Dichlorobenzene	ug/L	20	21.8	109	70-130	
1,2-Dichloroethane	ug/L	20	19.0	95	70-130	
1,2-Dichloropropane	ug/L	20	27.7	139	70-130 L3	
1,3,5-Trimethylbenzene	ug/L	20	22.2	111	70-130	
1,3-Dichlorobenzene	ug/L	20	21.6	108	70-130	
1,3-Dichloropropane	ug/L	20	22.9	114	70-130	

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QUALITY CONTROL DATA

Project: 7083 AXUC GREATER BASS LAKE ST

Pace Project No.: 40170931

LABORATORY CONTROL SAMPLE: 2973329

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,4-Dichlorobenzene	ug/L	20	20.2	101	70-130	
2,2-Dichloropropane	ug/L	20	21.1	106	70-130	
2-Chlorotoluene	ug/L	20	20.8	104	70-130	
4-Chlorotoluene	ug/L	20	21.7	109	70-130	
Benzene	ug/L	20	21.4	107	70-130	
Bromobenzene	ug/L	20	21.9	109	70-130	
Bromochloromethane	ug/L	20	22.1	110	70-130	
Bromodichloromethane	ug/L	20	24.7	123	70-130	
Bromoform	ug/L	20	19.8	99	70-130	
Bromomethane	ug/L	20	27.7	139	70-130 L3	
Carbon tetrachloride	ug/L	20	22.6	113	70-130	
Chlorobenzene	ug/L	20	21.0	105	70-130	
Chloroethane	ug/L	20	21.3	106	70-130	
Chloroform	ug/L	20	19.9	99	70-130	
Chloromethane	ug/L	20	19.5	98	70-130	
cis-1,2-Dichloroethene	ug/L	20	22.5	113	70-130	
cis-1,3-Dichloropropene	ug/L	20	26.6	133	70-130 L3	
Dibromochloromethane	ug/L	20	23.1	116	70-130	
Dibromomethane	ug/L	20	25.9	129	70-130	
Dichlorodifluoromethane	ug/L	20	26.3	132	70-130 L3	
Ethylbenzene	ug/L	20	22.1	110	70-130	
Hexachloro-1,3-butadiene	ug/L	20	20.3	102	70-130	
Isopropylbenzene (Cumene)	ug/L	20	22.7	114	70-130	
Methyl-tert-butyl ether	ug/L	20	22.7	113	70-130	
Methylene Chloride	ug/L	20	19.1	96	70-130	
n-Butylbenzene	ug/L	20	18.9	95	70-130	
n-Propylbenzene	ug/L	20	21.6	108	70-130	
Naphthalene	ug/L	20	24.4	122	70-130	
p-Isopropyltoluene	ug/L	20	21.5	107	70-130	
sec-Butylbenzene	ug/L	20	21.4	107	70-130	
Styrene	ug/L	20	23.5	117	70-130	
tert-Butylbenzene	ug/L	20	22.2	111	70-130	
Tetrachloroethene	ug/L	20	22.6	113	70-130	
Toluene	ug/L	20	20.2	101	70-130	
trans-1,2-Dichloroethene	ug/L	20	21.5	108	70-130	
trans-1,3-Dichloropropene	ug/L	20	20.2	101	70-130	
Trichloroethene	ug/L	20	22.2	111	70-130	
Trichlorofluoromethane	ug/L	20	22.5	113	70-130	
Vinyl chloride	ug/L	20	24.2	121	70-130	
Xylene (Total)	ug/L	60	67.9	113	70-130	
1,2-Dichloroethane-d4 (S)	%.			99	75-125	
4-Bromofluorobenzene (S)	%.			99	75-125	
Toluene-d8 (S)	%.			101	75-125	

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QUALITY CONTROL DATA

Project: 7083 AXUC GREATER BASS LAKE ST
Pace Project No.: 40170931

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		2974300		2974301								
Parameter	Units	40170931010	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Max RPD	Max Qual
1,1,1,2-Tetrachloroethane	ug/L	<0.13	20	20	21.2	19.1	106	96	70-130	10	20	
1,1,1-Trichloroethane	ug/L	<0.13	20	20	23.5	22.0	117	110	70-130	6	20	
1,1,2,2-Tetrachloroethane	ug/L	<0.19	20	20	20.6	20.3	103	102	70-130	1	20	
1,1,2-Trichloroethane	ug/L	<0.12	20	20	20.8	19.5	104	98	70-130	6	20	
1,1-Dichloroethane	ug/L	<0.14	20	20	21.4	19.5	107	98	70-130	9	20	
1,1-Dichloroethene	ug/L	<0.18	20	20	25.9	22.3	130	111	70-130	15	20	
1,1-Dichloropropene	ug/L	<0.16	20	20	23.4	20.6	117	103	70-130	13	20	
1,2,3-Trichlorobenzene	ug/L	<0.078	20	20	25.7	23.5	129	118	70-130	9	20	
1,2,3-Trichloropropane	ug/L	<0.31	20	20	20.0	18.9	100	95	70-130	6	20	
1,2,4-Trichlorobenzene	ug/L	<0.11	20	20	24.2	21.6	121	108	70-130	11	20	
1,2,4-Trimethylbenzene	ug/L	<0.085	20	20	22.0	21.5	110	108	70-130	2	20	
1,2-Dibromo-3-chloropropane	ug/L	<1.0	50	50	58.9	53.3	118	107	70-130	10	20	
1,2-Dibromoethane (EDB)	ug/L	<0.14	20	20	21.0	19.6	105	98	70-130	7	20	
1,2-Dichlorobenzene	ug/L	<0.077	20	20	23.0	20.1	115	101	70-130	13	20	
1,2-Dichloroethane	ug/L	1.4	20	20	20.3	17.7	94	81	70-130	14	20	
1,2-Dichloropropane	ug/L	<0.20	20	20	21.9	18.7	109	93	70-130	16	20	
1,3,5-Trimethylbenzene	ug/L	<0.093	20	20	21.6	21.0	108	105	70-130	3	20	
1,3-Dichlorobenzene	ug/L	<0.074	20	20	22.2	20.2	111	101	70-130	9	20	
1,3-Dichloropropane	ug/L	<0.093	20	20	20.6	20.3	103	101	70-130	2	20	
1,4-Dichlorobenzene	ug/L	<0.073	20	20	21.1	19.3	105	96	70-130	9	20	
2,2-Dichloropropane	ug/L	<0.32	20	20	23.8	22.1	119	111	70-130	7	20	
2-Chlorotoluene	ug/L	<0.078	20	20	19.3	19.6	96	98	70-130	2	20	
4-Chlorotoluene	ug/L	<0.089	20	20	20.5	20.0	102	100	70-130	2	20	
Benzene	ug/L	<0.11	20	20	22.0	19.1	110	95	70-130	14	20	
Bromobenzene	ug/L	<0.12	20	20	20.7	19.9	103	100	70-130	4	20	
Bromochloromethane	ug/L	<0.38	20	20	21.8	20.8	109	104	70-130	5	20	
Bromodichloromethane	ug/L	<0.14	20	20	19.8	17.0	99	85	70-130	15	20	
Bromoform	ug/L	<1.0	20	20	19.4	17.1	97	86	70-130	12	20	
Bromomethane	ug/L	<1.1	20	20	26.2	25.5	131	128	70-130	3	20 M0	
Carbon tetrachloride	ug/L	<0.17	20	20	23.1	22.4	115	112	70-130	3	20	
Chlorobenzene	ug/L	<0.11	20	20	20.5	18.6	102	93	70-130	10	20	
Chloroethane	ug/L	<0.32	20	20	20.3	20.2	101	101	70-130	0	20	
Chloroform	ug/L	<0.46	20	20	19.7	18.3	99	91	70-130	8	20	
Chloromethane	ug/L	<1.1	20	20	19.1	18.6	95	93	70-130	3	20	
cis-1,2-Dichloroethene	ug/L	<0.073	20	20	23.3	21.4	116	107	70-130	8	20	
cis-1,3-Dichloropropene	ug/L	<0.12	20	20	20.4	17.9	102	89	70-130	13	20	
Dibromochloromethane	ug/L	<0.13	20	20	21.4	20.1	107	100	70-130	7	20	
Dibromomethane	ug/L	<0.50	20	20	21.5	17.5	108	88	70-130	20	20	
Dichlorodifluoromethane	ug/L	<0.31	20	20	25.8	25.1	129	126	70-130	3	20	
Ethylbenzene	ug/L	<0.14	20	20	21.2	20.0	106	100	70-130	6	20	
Hexachloro-1,3-butadiene	ug/L	<0.31	20	20	25.9	22.7	129	114	70-130	13	20	
Isopropylbenzene (Cumene)	ug/L	<0.095	20	20	22.7	21.0	113	105	70-130	8	20	
Methyl-tert-butyl ether	ug/L	<0.097	20	20	22.8	20.8	114	104	70-130	9	20	
Methylene Chloride	ug/L	<1.2	20	20	19.3	17.3	97	86	70-130	11	20	
n-Butylbenzene	ug/L	<0.12	20	20	20.9	19.8	105	99	70-130	6	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

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QUALITY CONTROL DATA

Project: 7083 AXUC GREATER BASS LAKE ST

Pace Project No.: 40170931

Parameter	Units	40170931010		MS		MSD		MS		MSD		% Rec		Max	
		Result	Spike Conc.	Spike Conc.	Result	MSD	Result	% Rec	MSD	% Rec	% Rec Limits	RPD	RPD	Qual	
n-Propylbenzene	ug/L	<0.11	20	20	20.7	20.4	104	102	70-130	2	20				
Naphthalene	ug/L	<0.42	20	20	27.0	24.5	135	122	70-130	10	20	M1			
p-Isopropyltoluene	ug/L	<0.088	20	20	22.6	21.9	113	109	70-130	3	20				
sec-Butylbenzene	ug/L	<0.12	20	20	22.5	21.4	112	107	70-130	5	20				
Styrene	ug/L	<0.10	20	20	22.6	20.7	113	103	70-130	9	20				
tert-Butylbenzene	ug/L	<0.15	20	20	22.0	21.2	110	106	70-130	4	20				
Tetrachloroethene	ug/L	<0.12	20	20	22.9	20.9	115	105	70-130	9	20				
Toluene	ug/L	<0.17	20	20	18.8	18.1	94	90	70-130	4	20				
trans-1,2-Dichloroethene	ug/L	<0.21	20	20	23.1	20.9	115	104	70-130	10	20				
trans-1,3-Dichloropropene	ug/L	<0.11	20	20	18.8	17.7	94	89	70-130	6	20				
Trichloroethene	ug/L	<0.11	20	20	23.2	16.2	116	81	70-130	36	20	R1			
Trichlorofluoromethane	ug/L	<0.080	20	20	22.0	21.1	110	106	70-130	4	20				
Vinyl chloride	ug/L	<0.074	20	20	23.4	23.0	117	115	70-130	2	20				
Xylene (Total)	ug/L	<0.24	60	60	66.2	62.0	110	103	70-130	7	20				
1,2-Dichloroethane-d4 (S)	%.						103	99	75-125						
4-Bromofluorobenzene (S)	%.							91	101	75-125					
Toluene-d8 (S)	%.							97	100	75-125					

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QUALIFIERS

Project: 7083 AXUC GREATER BASS LAKE ST

Pace Project No.: 40170931

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 and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

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.

LABORATORIES

PASI-G Pace Analytical Services - Green Bay

PASI-M Pace Analytical Services - Minneapolis

ANALYTE QUALIFIERS

B Analyte was detected in the associated method blank.

L3 Analyte recovery in the laboratory control sample (LCS) exceeded QC limits. Analyte presence below reporting limits in associated samples.

M0 Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

M1 Matrix spike recovery exceeded QC limits. Batch accepted based on laboratory control sample (LCS) recovery.

MN The reporting limit has been raised in accordance with Minnesota Statutes 4740.2100 Subpart 8. C, D. Reporting Limit Evaluation Rule.

R1 RPD value was outside control limits.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

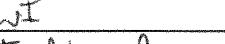
Project: 7083 AXUC GREATER BASS LAKE ST
 Pace Project No.: 40170931

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40170931001	GB-1	WI MOD GRO	292186		
40170931002	GB-2	WI MOD GRO	292186		
40170931003	GB-3	WI MOD GRO	292186		
40170931004	GB-4	WI MOD GRO	292186		
40170931005	GB-5	WI MOD GRO	292186		
40170931006	GB-6	WI MOD GRO	292186		
40170931007	GB-7	WI MOD GRO	292186		
40170931008	GB-8	WI MOD GRO	292186		
40170931009	GB-POTABLE	EPA 524.2	546818		

REPORT OF LABORATORY ANALYSIS

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(Please Print Clearly)

Company Name:	REI
Branch/Location:	Wausau
Project Contact:	Dave Allen
Phone:	(715) 675-9784
Project Number:	7083 AXUC
Project Name:	Greater Bass Lake Storage
Project State:	WI
Sampled By (Print):	Jeff Korsch
Sampled By (Sign):	
PO #:	Regulatory Program:



CHAIN OF CUSTODY

***Preservation Codes**

A=None	B=HCl	C=H ₂ SO ₄	D=HNO ₃	E=DI Water	F=Methanol	G=NaOH
H=Sodium Bisulfate Solution			I=Sodium Thiosulfate		J=Other	

Y / N	N	N					
Pick Letter	B	J					
Analyses Requested	DW VOCs (S04.3)						
TIME	MATRIX		DW VOCs (S04.3)				
6:00pm	GW						
7:50							
10:00							
3:40							
1:05							
3:15							
10:30							
1:30							
0:45 DW			X				

UPPER MIDWEST REGION

MN: 612-607-1700 WI: 920-469-2436

Page 1 of 1

Page 19 of 21

Rush Turnaround Time Requested - Prelims (Rush TAT subject to approval/surcharge) Date Needed:	Relinquished By: <i>Kyle Kaf</i>	Date/Time: <i>6/14/18 1:30</i>	Received By:	Date/Time:	PACE Project No. <i>40170931</i>
Transmit Prelim Rush Results by (complete what you want):	Relinquished By: <i>Wentco</i>	Date/Time: <i>6/15/18 0850</i>	Received By: <i>RELMIS</i>	Date/Time: <i>6/15/18 0850</i>	Receipt Temp = <i>ReL</i> °C
Email #1:	Relinquished By:	Date/Time:	Received By:	Date/Time:	Sample Receipt pH
Email #2:	Relinquished By:	Date/Time:	Received By:	Date/Time:	OK / Adjusted
Telephone:	Relinquished By:	Date/Time:	Received By:	Date/Time:	Cooler Custody Seal
Fax:	Relinquished By:	Date/Time:	Received By:	Date/Time:	Present <i>Not Present</i>
Samples on HOLD are subject to special pricing and release of liability	Relinquished By:	Date/Time:	Received By:	Date/Time:	Intact / Not Intact

Client Name: RB D

Sample Preservation Receipt Form

Project # 40170931

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

Lab Lot# of pH paper:

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

Initial when completed:

Date/
Time:

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													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															3													2.5 / 5 / 10
007															3													2.5 / 5 / 10
008															3													2.5 / 5 / 10
009															3													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:	



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# : 40170931

Client Name: REI

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

Tracking #: 1747909-1



40170931

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

Cooler Temperature Uncorr: 20.2 /Corr:

Samples on ice, cooling process has begun

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: 6/15/18

Initials: PDS

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time: - VOA Samples frozen upon receipt	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5. Date/Time:
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.
Sufficient Volume: For Analysis: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No MS/MSD: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used: -Pace Containers Used: -Pace IR Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	12. 009-10 "Bass pot", no date, 2 vials unlabeled NR 6/15/18
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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: 6-15-18

November 06, 2018

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

RE: Project: 7083 GREATER BASS
Pace Project No.: 40178769

Dear DAVID LARSEN:

Enclosed are the analytical results for sample(s) received by the laboratory on November 01, 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



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 7083 GREATER BASS
Pace Project No.: 40178769

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

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SAMPLE SUMMARY

Project: 7083 GREATER BASS
Pace Project No.: 40178769

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40178769001	GB1	Water	10/29/18 13:11	11/01/18 09:00
40178769002	GB2	Water	10/29/18 12:52	11/01/18 09:00
40178769003	GB3	Water	10/29/18 14:56	11/01/18 09:00
40178769004	GB4	Water	10/29/18 13:30	11/01/18 09:00
40178769005	GB5	Water	10/29/18 13:40	11/01/18 09:00
40178769006	GB6	Water	10/29/18 14:02	11/01/18 09:00
40178769007	GB7	Water	10/29/18 14:20	11/01/18 09:00
40178769008	GB8	Water	10/29/18 15:12	11/01/18 09:00

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SAMPLE ANALYTE COUNT

Project: 7083 GREATER BASS
Pace Project No.: 40178769

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40178769001	GB1	WI MOD GRO	ALD	10
40178769002	GB2	WI MOD GRO	ALD	10
40178769003	GB3	WI MOD GRO	ALD	10
40178769004	GB4	WI MOD GRO	ALD	10
40178769005	GB5	WI MOD GRO	ALD	10
40178769006	GB6	WI MOD GRO	ALD	10
40178769007	GB7	WI MOD GRO	ALD	10
40178769008	GB8	WI MOD GRO	ALD	10

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 7083 GREATER BASS

Pace Project No.: 40178769

Sample: GB1	Lab ID: 40178769001	Collected: 10/29/18 13:11	Received: 11/01/18 09:00	Matrix: Water					
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	9.1	ug/L	5.1	1.5	5		11/06/18 08:18	71-43-2	
Ethylbenzene	175	ug/L	5.5	1.6	5		11/06/18 08:18	100-41-4	
Methyl-tert-butyl ether	<1.6	ug/L	5.4	1.6	5		11/06/18 08:18	1634-04-4	
Naphthalene	81.3	ug/L	8.4	2.5	5		11/06/18 08:18	91-20-3	
Toluene	3.1J	ug/L	8.2	2.4	5		11/06/18 08:18	108-88-3	
1,2,4-Trimethylbenzene	377	ug/L	5.7	1.7	5		11/06/18 08:18	95-63-6	
1,3,5-Trimethylbenzene	180	ug/L	5.4	1.6	5		11/06/18 08:18	108-67-8	
m&p-Xylene	179	ug/L	10.9	3.3	5		11/06/18 08:18	179601-23-1	
o-Xylene	4.2J	ug/L	5.2	1.6	5		11/06/18 08:18	95-47-6	
Surrogates									
a,a,a-Trifluorotoluene (S)	98	%	80-120		5		11/06/18 08:18	98-08-8	
Sample: GB2	Lab ID: 40178769002	Collected: 10/29/18 12:52	Received: 11/01/18 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		11/05/18 10:47	71-43-2	
Ethylbenzene	<0.33	ug/L	1.1	0.33	1		11/05/18 10:47	100-41-4	
Methyl-tert-butyl ether	<0.32	ug/L	1.1	0.32	1		11/05/18 10:47	1634-04-4	
Naphthalene	<0.51	ug/L	1.7	0.51	1		11/05/18 10:47	91-20-3	
Toluene	<0.49	ug/L	1.6	0.49	1		11/05/18 10:47	108-88-3	
1,2,4-Trimethylbenzene	<0.34	ug/L	1.1	0.34	1		11/05/18 10:47	95-63-6	
1,3,5-Trimethylbenzene	<0.33	ug/L	1.1	0.33	1		11/05/18 10:47	108-67-8	
m&p-Xylene	<0.66	ug/L	2.2	0.66	1		11/05/18 10:47	179601-23-1	
o-Xylene	<0.32	ug/L	1.0	0.32	1		11/05/18 10:47	95-47-6	
Surrogates									
a,a,a-Trifluorotoluene (S)	100	%	80-120		1		11/05/18 10:47	98-08-8	
Sample: GB3	Lab ID: 40178769003	Collected: 10/29/18 14:56	Received: 11/01/18 09:00	Matrix: Water					
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	103	ug/L	2.0	0.61	2		11/05/18 15:54	71-43-2	
Ethylbenzene	176	ug/L	2.2	0.66	2		11/05/18 15:54	100-41-4	
Methyl-tert-butyl ether	1.4J	ug/L	2.1	0.64	2		11/05/18 15:54	1634-04-4	
Naphthalene	57.7	ug/L	3.4	1.0	2		11/05/18 15:54	91-20-3	
Toluene	49.6	ug/L	3.3	0.98	2		11/05/18 15:54	108-88-3	
1,2,4-Trimethylbenzene	245	ug/L	2.3	0.68	2		11/05/18 15:54	95-63-6	
1,3,5-Trimethylbenzene	84.6	ug/L	2.2	0.66	2		11/05/18 15:54	108-67-8	
m&p-Xylene	409	ug/L	4.4	1.3	2		11/05/18 15:54	179601-23-1	
o-Xylene	15.0	ug/L	2.1	0.63	2		11/05/18 15:54	95-47-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 7083 GREATER BASS

Pace Project No.: 40178769

Sample: GB3	Lab ID: 40178769003	Collected: 10/29/18 14:56	Received: 11/01/18 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)	99	%	80-120		2		11/05/18 15:54	98-08-8	
Sample: GB4	Lab ID: 40178769004	Collected: 10/29/18 13:30	Received: 11/01/18 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		11/05/18 11:13	71-43-2	
Ethylbenzene	<0.33	ug/L	1.1	0.33	1		11/05/18 11:13	100-41-4	
Methyl-tert-butyl ether	<0.32	ug/L	1.1	0.32	1		11/05/18 11:13	1634-04-4	
Naphthalene	<0.51	ug/L	1.7	0.51	1		11/05/18 11:13	91-20-3	
Toluene	<0.49	ug/L	1.6	0.49	1		11/05/18 11:13	108-88-3	
1,2,4-Trimethylbenzene	<0.34	ug/L	1.1	0.34	1		11/05/18 11:13	95-63-6	
1,3,5-Trimethylbenzene	<0.33	ug/L	1.1	0.33	1		11/05/18 11:13	108-67-8	
m&p-Xylene	<0.66	ug/L	2.2	0.66	1		11/05/18 11:13	179601-23-1	
o-Xylene	<0.32	ug/L	1.0	0.32	1		11/05/18 11:13	95-47-6	
Surrogates									
a,a,a-Trifluorotoluene (S)	103	%	80-120		1		11/05/18 11:13	98-08-8	
Sample: GB5	Lab ID: 40178769005	Collected: 10/29/18 13:40	Received: 11/01/18 09:00	Matrix: Water					
Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
WIGRO GCV	Analytical Method: WI MOD GRO								
Benzene	572	ug/L	20.4	6.1	20		11/05/18 15:03	71-43-2	
Ethylbenzene	1520	ug/L	22.0	6.6	20		11/05/18 15:03	100-41-4	
Methyl-tert-butyl ether	10.6J	ug/L	21.4	6.4	20		11/05/18 15:03	1634-04-4	
Naphthalene	341	ug/L	33.6	10.1	20		11/05/18 15:03	91-20-3	
Toluene	2320	ug/L	32.6	9.8	20		11/05/18 15:03	108-88-3	
1,2,4-Trimethylbenzene	1410	ug/L	22.8	6.8	20		11/05/18 15:03	95-63-6	
1,3,5-Trimethylbenzene	393	ug/L	21.8	6.6	20		11/05/18 15:03	108-67-8	
m&p-Xylene	3980	ug/L	43.6	13.1	20		11/05/18 15:03	179601-23-1	
o-Xylene	932	ug/L	21.0	6.3	20		11/05/18 15:03	95-47-6	
Surrogates									
a,a,a-Trifluorotoluene (S)	99	%	80-120		20		11/05/18 15:03	98-08-8	

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ANALYTICAL RESULTS

Project: 7083 GREATER BASS

Pace Project No.: 40178769

Sample: GB6	Lab ID: 40178769006	Collected: 10/29/18 14:02	Received: 11/01/18 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		11/05/18 11:39	71-43-2	
Ethylbenzene	<0.33	ug/L	1.1	0.33	1		11/05/18 11:39	100-41-4	
Methyl-tert-butyl ether	<0.32	ug/L	1.1	0.32	1		11/05/18 11:39	1634-04-4	
Naphthalene	<0.51	ug/L	1.7	0.51	1		11/05/18 11:39	91-20-3	
Toluene	<0.49	ug/L	1.6	0.49	1		11/05/18 11:39	108-88-3	
1,2,4-Trimethylbenzene	<0.34	ug/L	1.1	0.34	1		11/05/18 11:39	95-63-6	
1,3,5-Trimethylbenzene	<0.33	ug/L	1.1	0.33	1		11/05/18 11:39	108-67-8	
m&p-Xylene	<0.66	ug/L	2.2	0.66	1		11/05/18 11:39	179601-23-1	
o-Xylene	<0.32	ug/L	1.0	0.32	1		11/05/18 11:39	95-47-6	
Surrogates									
a,a,a-Trifluorotoluene (S)	99	%	80-120		1		11/05/18 11:39	98-08-8	
Sample: GB7	Lab ID: 40178769007	Collected: 10/29/18 14:20	Received: 11/01/18 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		11/05/18 12:04	71-43-2	
Ethylbenzene	<0.33	ug/L	1.1	0.33	1		11/05/18 12:04	100-41-4	
Methyl-tert-butyl ether	<0.32	ug/L	1.1	0.32	1		11/05/18 12:04	1634-04-4	
Naphthalene	<0.51	ug/L	1.7	0.51	1		11/05/18 12:04	91-20-3	
Toluene	<0.49	ug/L	1.6	0.49	1		11/05/18 12:04	108-88-3	
1,2,4-Trimethylbenzene	<0.34	ug/L	1.1	0.34	1		11/05/18 12:04	95-63-6	
1,3,5-Trimethylbenzene	<0.33	ug/L	1.1	0.33	1		11/05/18 12:04	108-67-8	
m&p-Xylene	<0.66	ug/L	2.2	0.66	1		11/05/18 12:04	179601-23-1	
o-Xylene	<0.32	ug/L	1.0	0.32	1		11/05/18 12:04	95-47-6	
Surrogates									
a,a,a-Trifluorotoluene (S)	101	%	80-120		1		11/05/18 12:04	98-08-8	
Sample: GB8	Lab ID: 40178769008	Collected: 10/29/18 15:12	Received: 11/01/18 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		11/05/18 12:30	71-43-2	
Ethylbenzene	<0.33	ug/L	1.1	0.33	1		11/05/18 12:30	100-41-4	
Methyl-tert-butyl ether	<0.32	ug/L	1.1	0.32	1		11/05/18 12:30	1634-04-4	
Naphthalene	<0.51	ug/L	1.7	0.51	1		11/05/18 12:30	91-20-3	
Toluene	<0.49	ug/L	1.6	0.49	1		11/05/18 12:30	108-88-3	
1,2,4-Trimethylbenzene	<0.34	ug/L	1.1	0.34	1		11/05/18 12:30	95-63-6	
1,3,5-Trimethylbenzene	<0.33	ug/L	1.1	0.33	1		11/05/18 12:30	108-67-8	
m&p-Xylene	<0.66	ug/L	2.2	0.66	1		11/05/18 12:30	179601-23-1	
o-Xylene	<0.32	ug/L	1.0	0.32	1		11/05/18 12:30	95-47-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 7083 GREATER BASS

Pace Project No.: 40178769

Sample: GB8	Lab ID: 40178769008	Collected: 10/29/18 15:12	Received: 11/01/18 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)	100	%	80-120		1		11/05/18 12:30	98-08-8	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 7083 GREATER BASS

Pace Project No.: 40178769

QC Batch:	305390	Analysis Method:	WI MOD GRO
QC Batch Method:	WI MOD GRO	Analysis Description:	WIGRO GCV Water
Associated Lab Samples: 40178769001, 40178769002, 40178769003, 40178769004, 40178769005, 40178769006, 40178769007, 40178769008			

METHOD BLANK:	1784854	Matrix:	Water
Associated Lab Samples: 40178769001, 40178769002, 40178769003, 40178769004, 40178769005, 40178769006, 40178769007, 40178769008			

Parameter	Units	Blank	Reporting		Qualifiers
		Result	Limit	Analyzed	
1,2,4-Trimethylbenzene	ug/L	<0.34	1.1	11/05/18 08:14	
1,3,5-Trimethylbenzene	ug/L	<0.33	1.1	11/05/18 08:14	
Benzene	ug/L	<0.31	1.0	11/05/18 08:14	
Ethylbenzene	ug/L	<0.33	1.1	11/05/18 08:14	
m&p-Xylene	ug/L	<0.66	2.2	11/05/18 08:14	
Methyl-tert-butyl ether	ug/L	<0.32	1.1	11/05/18 08:14	
Naphthalene	ug/L	<0.51	1.7	11/05/18 08:14	
o-Xylene	ug/L	<0.32	1.0	11/05/18 08:14	
Toluene	ug/L	<0.49	1.6	11/05/18 08:14	
a,a,a-Trifluorotoluene (S)	%	100	80-120	11/05/18 08:14	

LABORATORY CONTROL SAMPLE & LCSD:	1784855	1784856									
Parameter	Units	Spike	LCS	LCSD	LCS	LCSD	% Rec	RPD	Max	RPD	Qualifiers
		Conc.	Result	Result	% Rec	% Rec	Limits	RPD	RPD	Qualifiers	
1,2,4-Trimethylbenzene	ug/L	20	21.1	20.8	105	104	80-120	1	20		
1,3,5-Trimethylbenzene	ug/L	20	20.6	20.4	103	102	80-120	1	20		
Benzene	ug/L	20	20.8	20.4	104	102	80-120	2	20		
Ethylbenzene	ug/L	20	21.1	20.8	105	104	80-120	1	20		
m&p-Xylene	ug/L	40	41.5	40.8	104	102	80-120	2	20		
Methyl-tert-butyl ether	ug/L	20	20.2	19.9	101	100	80-120	1	20		
Naphthalene	ug/L	20	20.2	20.4	101	102	80-120	1	20		
o-Xylene	ug/L	20	20.5	20.3	103	102	80-120	1	20		
Toluene	ug/L	20	21.0	20.7	105	103	80-120	2	20		
a,a,a-Trifluorotoluene (S)	%				101	101	80-120				

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:	1785044	1785045									
Parameter	Units	MS		MSD		MS	MSD	% Rec	% Rec	RPD	Max
		40178764014	Result	Spike	Conc.						
1,2,4-Trimethylbenzene	ug/L	<0.34	20	20	21.6	21.9	108	110	51-160	2	20
1,3,5-Trimethylbenzene	ug/L	<0.33	20	20	21.0	21.4	105	107	56-146	2	20
Benzene	ug/L	1.1	20	20	21.3	21.4	101	101	71-137	0	20
Ethylbenzene	ug/L	<0.33	20	20	22.0	22.2	110	111	71-141	1	20
m&p-Xylene	ug/L	<0.66	40	40	42.9	43.2	107	108	66-141	1	20
Methyl-tert-butyl ether	ug/L	<0.32	20	20	19.2	19.5	96	98	80-120	2	20
Naphthalene	ug/L	<0.51	20	20	21.9	22.7	109	114	67-138	4	20
o-Xylene	ug/L	<0.32	20	20	21.0	21.5	105	107	75-133	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.

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QUALITY CONTROL DATA

Project: 7083 GREATER BASS
Pace Project No.: 40178769

MATRIX SPIKE & MATRIX SPIKE DUPLICATE:		1785044		1785045									
Parameter	Units	40178764014	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Max RPD	Max Qual	
Toluene a,a,a-Trifluorotoluene (S)	ug/L %	<0.49	20	20	21.3	21.6	107	108	76-134	1	20		
							107	107	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.

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QUALIFIERS

Project: 7083 GREATER BASS

Pace Project No.: 40178769

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 and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

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.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 7083 GREATER BASS

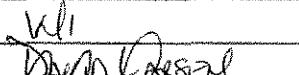
Pace Project No.: 40178769

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40178769001	GB1	WI MOD GRO	305390		
40178769002	GB2	WI MOD GRO	305390		
40178769003	GB3	WI MOD GRO	305390		
40178769004	GB4	WI MOD GRO	305390		
40178769005	GB5	WI MOD GRO	305390		
40178769006	GB6	WI MOD GRO	305390		
40178769007	GB7	WI MOD GRO	305390		
40178769008	GB8	WI MOD GRO	305390		

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(Please Print Clearly)

Company Name:	FEI	
Branch/Location:		
Project Contact:	Dawn Larsen	
Phone:	715-675-9784	
Project Number:	7093	
Project Name:	Greater Bass	
Project State:	WI	
Sampled By (Print):	David Larsen	
Sampled By (Sign):		
PO #:		Regulatory Program:



~~CHAIN OF CUSTODY~~

UPPER MIDWEST REGION

Page 1 of

Page 13 of 15

*Preservation Codes						
A=None	B=HCl	C=H ₂ SO ₄	D=HNO ₃	E=DI Water	F=Methanol	G=NaOH
H=Sodium Bisulfate Solution	I=Sodium Thiosulfate	J=Other				

Rush Turnaround Time Requested - Prelims (Rush TAT subject to approval/surcharge) Date Needed:	Relinquished By: WATCO	Date/Time: 11/11/13 0900	Received By: John PACE	Date/Time: 11/11/13 0900	PACE Project No. 46178769
Transmit Prelim Rush Results by (complete what you want):	Relinquished By:	Date/Time:	Received By:	Date/Time:	Receipt Temp = POL °C
Email #1:	Relinquished By:	Date/Time:	Received By:	Date/Time:	Sample Receipt pH
Email #2:	Relinquished By:	Date/Time:	Received By:	Date/Time:	OK / Adjusted
Telephone:	Relinquished By:	Date/Time:	Received By:	Date/Time:	Cooler Custody Seal
Fax:	Relinquished By:	Date/Time:	Received By:	Date/Time:	Present / Not Present Intact / Not Intact
Samples on HOLD are subject to special pricing and release of liability	Relinquished By:	Date/Time:	Received By:	Date/Time:	

Sample Preservation Receipt Form

Client Name: REI

Project # 40178769

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

Lab Lot# of pH paper:

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

Initial when completed:

Date/
Time:

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	SPST	ZPLC	GN		
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
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010																												2.5 / 5 / 10
011																												2.5 / 5 / 10
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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	SPST	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:	



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 #:

Client Name: REI

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

Tracking #: 188351

WO# : 40178769



40178769

Custody Seal on Cooler/Box Present: yes no Seals intact: yes noCustody Seal on Samples Present: yes no Seals intact: yes noPacking Material: Bubble Wrap Bubble Bags None OtherThermometer Used SR - N/A Type of Ice: Wet Blue Dry None Samples on ice, cooling process has begun

Cooler Temperature Uncorr: /Corr: RD

Temp Blank Present: yes noBiological Tissue is Frozen: yes no

Person examining contents:

Date: 11/11/18

Initials: DBS

Temp should be above freezing to 6°C.

Biota Samples may be received at ≤ 0°C.

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	2. Project manual to initials 11/11/18
Chain of Custody Relinquished:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	5.
- VOA Samples frozen upon receipt	<input type="checkbox"/> Yes <input type="checkbox"/> No	Date/Time:
Short Hold Time Analysis (<72hr):	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6.
Rush Turn Around Time Requested:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	7.
Sufficient Volume:		8.
For Analysis: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No MS/MSD: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A		
Correct Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	9.
-Pace Containers Used:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
-Pace IR Containers Used:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	
Containers Intact:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	10.
Filtered volume received for Dissolved tests	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	11.
Sample Labels match COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.
-Includes date/time/ID/Analysis Matrix:	W	
Trip Blank Present:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	13.
Trip Blank Custody Seals Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> 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:	iu	Date: 11/11/18