

# 2022 Annual Groundwater Monitoring and Corrective Action Report

Edgewater Generating Station  
I-43 Ash Disposal Facility  
Town of Wilson  
Sheboygan County, Wisconsin

Prepared for:

Alliant Energy



**SCS ENGINEERS**

25222069.00 | January 31, 2023

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## OVERVIEW OF CURRENT STATUS

### Edgewater Generating Station, I-43 Ash Disposal Facility 2022 Annual Report

In accordance with §257.90(e)(6), this section at the beginning of the annual report provides an overview of the current status of groundwater monitoring and corrective action programs for the coal combustion residual (CCR) unit. Supporting information is provided in the text of the annual report.

Category	Rule Requirement	Site Status
<b>Monitoring Status – Start of Year</b>	(i) At the start of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95;	Detection
<b>Monitoring Status – End of Year</b>	(ii) At the end of the current annual reporting period, whether the CCR unit was operating under the detection monitoring program in §257.94 or the assessment monitoring program in §257.95;	Detection
<b>Statistically Significant Increases (SSIs)</b>	(iii) If it was determined that there was an SSI over background for one or more constituents listed in Appendix III to this part pursuant to §257.94(e):	
	(A) Identify those constituents listed in Appendix III to this part and the names of the monitoring wells associated with such an increase; and	<u>October 2021</u> None  <u>April/June 2022</u> Fluoride: MW-302
	(B) Provide the date when the assessment monitoring program was initiated for the CCR unit.	Alternative Source Demonstration prepared for the April 2022 event during 2022. Assessment monitoring not required.

Category	Rule Requirement	Site Status
<b>Statistically Significant Levels (SSL) Above Groundwater Protection Standard (GPS)</b>	(iv) If it was determined that there was an SSL above the groundwater protection standard for one or more constituents listed in Appendix IV to this part pursuant to §257.95(g) include all of the following:	Not applicable – Appendix IV sampling not required
	(A) Identify those constituents listed in Appendix IV to this part and the names of the monitoring wells associated with such an increase;	
	(B) Provide the date when the assessment of corrective measures was initiated for the CCR unit;	
	(C) Provide the date when the public meeting was held for the assessment of corrective measures for the CCR unit; and	
<b>Selection of Remedy</b>	(v) Whether a remedy was selected pursuant to §257.97 during the current annual reporting period, and if so, the date of remedy selection; and	Not applicable – Site is in detection monitoring
<b>Corrective Action</b>	(vi) Whether remedial activities were initiated or are ongoing pursuant to §257.98 during the current annual reporting period.	Not applicable – Site is in detection monitoring

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## 1.0 INTRODUCTION

This 2022 Annual Groundwater Monitoring and Corrective Action Report was prepared to support compliance with the groundwater monitoring requirements of the Coal Combustion Residuals (CCR) Rule [40 Code of Federal Regulations (CFR) 257.50-107]. Specifically, this report was prepared to fulfill the requirements of 40 CFR 257.90(e). The applicable sections of the Rule are provided below in italics, followed by applicable information relative to the 2022 Annual Groundwater Monitoring and Corrective Action Report for the CCR Unit.

This report covers the period of groundwater monitoring from January 1, 2022, through December 31, 2022.

The groundwater monitoring system at the Edgewater (EDG) I-43 Ash Disposal Facility (ADF) monitors a single existing CCR Unit:

- EDG I-43 Phase 3, Module 1 and 2; and Phase 4, Module 1 (existing CCR Landfill)

The monitoring system is designed to detect monitored constituents at the waste boundary of the I-43 ADF as required by 40 CFR 257.91(d). The groundwater monitoring system consists of two background wells and three downgradient monitoring wells (**Table 1** and **Figure 2**).

## 2.0 BACKGROUND

To provide context for the annual report, the following background information is provided in this section of the report, prior to the annual report requirement sections:

- Geologic and hydrogeologic setting
- CCR Rule monitoring system

## 2.1 GEOLOGIC AND HYDROGEOLOGIC SETTING

### 2.1.1 Regional Information

For the purposes of groundwater monitoring, the Niagara Dolomite Aquifer is considered to be the uppermost aquifer unit, as defined under 40 CFR 257.53, at the I-43 ADF. The dolomite aquifer is underlain by the Maquoketa shale, which is a confining unit. The Maquoketa shale is underlain by the Cambrian-Ordovician sandstone aquifer. This sequence of sedimentary bedrock units is over 1,500 feet thick in the area of the I-43 ADF. The sedimentary sequence is underlain by Precambrian crystalline rocks that are not considered an aquifer in eastern Wisconsin. A summary of the regional hydrogeologic stratigraphy is presented in **Appendix A**.

An unconsolidated sand and gravel aquifer is present in some parts of Sheboygan County (Skinner and Borman, 1973), but does not appear laterally extensive.

Regional groundwater flow in the dolomite aquifer, in the vicinity of the site, is to the east or northeast. A map showing the regional water table elevations is included with the regional hydrogeologic information in **Appendix A**.

## 2.1.2 Site Information

Soils at the site are primarily clay with discontinuous layers of sand and silty sand to a depth of at least 100 feet. During drilling of the CCR wells, the unconsolidated materials were identified as consisting primarily of clay. Zones of sand and gravel are known to be present within the clay, but these appear to be discontinuous, and no nearby private wells screened within the unconsolidated material have been identified. Soils encountered in borings MW-301, MW-302, MW-303, and MW-304 were primarily lean clay, silty clay, and silty sand. The upper 70 feet of soils in boring MW-305 were similar, but in approximately the lower 40 feet above bedrock, sand was the primary soil type. The depth to bedrock in the five wells ranged from approximately 109 feet to 133 feet below ground surface (bgs), and the elevation of the top of bedrock ranged from approximately 568 feet above mean sea level (amsl) to 605 feet amsl. The boring logs, well construction, and well development forms for the I-43 ADF CCR monitoring wells are provided in **Appendix B**. All CCR monitoring wells are screened within the dolomite bedrock unit.

Shallow groundwater in the clay unit at the site generally flows east to west towards Weedens Creek, a tributary of the Sheboygan River, based on water levels measured under the state monitoring program. The flow direction to the west at the water table is consistent with previous water table maps prepared since the site was developed in the mid-1980s.

In the dolomite aquifer, groundwater flow is generally to the north and northeast as shown on the April and October 2022 bedrock potentiometric surface maps, based on groundwater elevations from monitoring wells MW-301 through MW-305 (**Figures 3 and 4**). An evaluation will be conducted in 2023 to assess the monitoring network coverage of the downgradient flow path. The groundwater elevation data for the CCR monitoring wells are provided in **Table 3**. Calculated horizontal gradients and flow velocities for representative flow paths are provided in **Table 4**.

## 2.2 CCR RULE MONITORING SYSTEM

The groundwater monitoring system established in accordance with the CCR Rule consists of two upgradient (background) monitoring wells and three downgradient monitoring wells (**Table 1** and **Figure 2**). The background wells include MW-304 and MW-305. The downgradient wells include MW-301, MW-302, and MW-303. The CCR Rule wells are installed in the upper portion of the dolomite aquifer. Well depths range from approximately 119 to 145 feet, measured from the top of the well casing.

## 3.0 §257.90(e) ANNUAL REPORT REQUIREMENTS

*Annual groundwater monitoring and corrective action report. For existing CCR landfills and existing CCR surface impoundments, no later than January 31, 2018, and annually thereafter, the owner or operator must prepare an annual groundwater monitoring and corrective action report. For new CCR landfills, new CCR surface impoundments, and all lateral expansions of CCR units, the owner or operator must prepare the initial annual groundwater monitoring and corrective action report no later than January 31 of the year following the calendar year a groundwater monitoring system has been established for such CCR unit as required by this subpart, and annually thereafter. For the preceding calendar year, the annual report must document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year. For purposes of this section, the owner or operator has prepared the annual report when the report is placed in the facility's operating record as required by*

§257.105(h)(1). At a minimum, the annual groundwater monitoring and corrective action report must contain the following information, to the extent available:

### **3.1 §257.90(e)(1) SITE MAP**

*A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit;*

A map of the site location is provided on **Figure 1**. A map with an aerial image showing the I-43 ADF CCR unit, and all background (or upgradient) and downgradient monitoring wells with identification numbers for the groundwater monitoring program, is provided as **Figure 2**.

### **3.2 §257.90(E)(2) MONITORING SYSTEM CHANGES**

*Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken;*

No new monitoring wells were installed and no wells were decommissioned as part of the groundwater monitoring program for the I-43 ADF CCR unit in 2022.

### **3.3 §257.90(E)(3) SUMMARY OF SAMPLING EVENTS**

*In addition to all the monitoring data obtained under §§257.90 through 257.98, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs;*

Two semiannual groundwater sampling events and one resampling event were completed in 2022 at the I-43 ADF. The samples were collected under the detection monitoring program, which was established on October 17, 2017. A summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs is included in **Table 2**.

Groundwater samples collected during the semiannual events, in April and October 2022, were analyzed for the Appendix III constituents. A resample event occurred in June 2022 at well MW-302 for fluoride. The resampling was performed in accordance with the Sampling and Analysis Plan for the site, which allows for 1-of-2 testing for evaluation of statistically significant increases (SSIs) above background in detection monitoring.

The validation and evaluation of the April/June 2022 monitoring event data was completed and transmitted to WPL on August 11, 2022. The validation and evaluation of the October 2022 monitoring event data was in progress at the end of 2022 and will be transmitted to WPL in 2023; therefore, the October 2022 monitoring results will be included in the 2023 annual report.

The sampling results for Appendix III parameters in April and June 2022 are summarized in **Table 5**. Field parameter results for the April and June 2022 sampling events are provided in **Table 6**. The analytical laboratory reports for April and June 2022 are provided in **Appendix C**. Historical results for each monitoring well through June 2022 are summarized in **Appendix D**.



### 3.4 §257.90(E)(4) MONITORING TRANSITION NARRATIVE

*A narrative discussion of any transition between monitoring programs (e.g., the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase over background levels);*

There were no transitions between monitoring programs in 2022. The I-43 ADF remained in the detection monitoring program.

In 2022, the monitoring results for the October 2021 and April 2022 monitoring events were evaluated for SSIs in detection monitoring parameters relative to background. For all parameters except boron, the comparison to background was based on a prediction limit approach, comparing the results to interwell upper prediction limits (UPLs) based on background monitoring results from the upgradient wells (MW-304 and MW-305). For boron, the comparison to background used intrawell UPLs based on background monitoring results from the compliance wells (MW-301, MW-302, and MW-303).

The interwell and intrawell UPLs were most recently updated in January 2021, using background data collected through October 2020 for interwell UPLs and through April 2020 for intrawell UPLs. The January 2021 Statistical Analysis was included in an appendix in the 2021 Annual Groundwater Monitoring Report. The Unified Guidance for Statistical Analysis of Groundwater Monitoring Data at Resource Conservation and Recovery Act (RCRA) Facilities (U.S. Environmental Protection Agency, 2009; Section 5.3.1) recommends periodic updating of background for both intrawell and interwell analyses. For semiannual monitoring, an update interval of 2 to 3 years is recommended; therefore, the next UPL update is planned for 2023 or 2024.

SSIs for fluoride were observed at MW-302 for the April 2022 monitoring event and June 2022 resampling event; however, an alternative source demonstration (ASD) was completed in October 2022, demonstrating that a source other than the CCR units was the likely cause of the observed concentrations. The ASD report for the April 2022 sampling event is provided in **Appendix E**.

### 3.5 §257.90(E)(5) OTHER REQUIREMENTS

*Other information required to be included in the annual report as specified in §§257.90 through 257.98.*

Additional potentially applicable requirements for the annual report, and the location of the requirement within the Rule, are provided in the following sections. For each cited section of the Rule, the portion referencing the annual report requirement is provided below in italics, followed by applicable information relative to the 2022 Annual Groundwater Monitoring and Corrective Action Report for the I-43 ADF CCR unit.

#### 3.5.1 §257.90(e) General Requirements

*For the preceding calendar year, the annual report must document the status of the groundwater monitoring and corrective action program for the CCR unit, summarize key actions completed, describe any problems encountered, discuss actions to resolve the problems, and project key activities for the upcoming year.*

**Status of Groundwater Monitoring and Corrective Action Program.** The groundwater monitoring and corrective action program is currently in detection monitoring.

### Summary of Key Actions Completed.

- Statistical evaluation and determination of SSIs for the October 2021 and April 2022 monitoring events.
- ASD report for the SSIs identified from the April 2022 monitoring event and June 2022 resampling event.
- Two semiannual groundwater sampling and analysis events (April and October 2022), including a resample event in June 2022 at well MW-302 for fluoride.

**Description of Any Problems Encountered.** No problems were encountered in 2022.

**Discussion of Actions to Resolve the Problems.** Not applicable.

### Projection of Key Activities for the Upcoming Year (2023).

- Statistical evaluation and determination of any SSIs for the October 2022 and April 2023 monitoring events.
- If an SSI is determined, then within 90 days either:
  - Complete alternative source demonstration (if applicable), or
  - Establish an assessment monitoring program.
- Two semiannual groundwater sampling and analysis events (April and October 2023).

### 3.5.2 §257.94(d) Alternative Detection Monitoring Frequency

*The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer in the annual groundwater monitoring and corrective action report required by §257.90(e).*

Not applicable. No alternative detection monitoring frequency has been proposed.

### 3.5.3 §257.94(e)(2) Alternative Source Demonstration for Detection Monitoring

*The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by §257.90(e), in addition to the certification by a qualified professional engineer.*

The Alternative Source Demonstration (ASD) report prepared to address the SSIs observed for the April 2022 sampling event is provided in **Appendix E**. The ASD report is certified by a qualified professional engineer.

### 3.5.4 §257.95(c) Alternative Assessment Monitoring Frequency

*The owner or operator must include the demonstration providing the basis for the alternative monitoring frequency and the certification by a qualified professional engineer in the annual groundwater monitoring and corrective action report required by §257.90(e).*

Not applicable. Assessment monitoring has not been initiated.

### **3.5.5 §257.95(d)(3) Assessment Monitoring Results and Standards**

*Include the recorded concentrations required by paragraph (d)(1) of this section, identify the background concentrations established under §257.94(b), and identify the groundwater protection standards established under paragraph (d)(2) of this section in the annual groundwater monitoring and corrective action report required by §257.90(e).*

Not applicable. Assessment monitoring has not been initiated.

### **3.5.6 §257.95(g)(3)(ii) Alternative Source Demonstration for Assessment Monitoring**

*The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by §257.90(e), in addition to the certification by a qualified professional engineer.*

Not applicable. Assessment monitoring has not been initiated.

### **3.5.7 §257.96(a) Extension of Time for Corrective Measures Assessment**

*The assessment of corrective measures must be completed within 90 days, unless the owner or operator demonstrates the need for additional time to complete the assessment of corrective measure due to site-specific conditions or circumstances. The owner or operator must obtain a certification from a qualified professional engineer attesting that the demonstration is accurate. The 90-day deadline to complete the assessment of corrective measures may be extended for longer than 60 days. The owner or operator must also include the demonstration in the annual groundwater monitoring and corrective action report required by §257.90(e), in addition to the certification by a qualified professional engineer.*

Not applicable. Corrective measures assessment has not been initiated.

## **3.6 §257.90(E)(6) OVERVIEW**

*A section at the beginning of the annual report that provides an overview of the current status of groundwater monitoring and corrective action programs for the CCR unit.*

The specific requirements for the overview under §257.90(e)(6) are listed and the information is provided at the beginning of this report, before the Table of Contents.

## **4.0 REFERENCES**

Skinner, Earl L. and Ronald G. Borman, Water Resources of Wisconsin-Lake Michigan Basin, Department of the Interior United States Geological Survey Hydrogeologic Investigations Atlas HA-432, 1973.

## Tables

1. Groundwater Monitoring Well Network
2. CCR Rule Groundwater Samples Summary
3. Groundwater Elevation Summary
4. Horizontal Gradients and Flow Velocity
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**Table 1. Groundwater Monitoring Well Network  
Edgewater Generating Station I-43 Ash Disposal Facility  
SCS Engineers Project #25222069.00**

<b>Monitoring Well</b>	<b>Location in Monitoring Network</b>	<b>Role in Monitoring Network</b>
MW-301	Downgradient	Compliance
MW-302	Downgradient	Compliance
MW-303	Downgradient	Compliance
MW-304	Upgradient	Background
MW-305	Upgradient	Background

Created by: NDK  
 Last revision by: NDK  
 Checked by: RM

Date: 9/19/2022  
 Date: 9/19/2022  
 Date: 12/20/2022

**Table 2. CCR Rule Groundwater Samples Summary  
Edgewater Generating Station I-43 Ash Disposal Facility  
SCS Engineers Project #25222069.00**

Sample Dates	Compliance Wells			Background Wells	
	MW-301	MW-302	MW-303	MW-304	MW-305
4/11-13/2022	D	D	D	D	D
6/16/2022	--	D-R	--	--	--
10/4-5/2022	D	D	D	D	D
Total Samples	2	3	2	2	2

Abbreviations:

D = Required by Detection Monitoring Program

D-R = Detection Monitoring Retest Sample

-- = Not Sampled

Created by: NDK

Date: 9/19/2022

Last revision by: NDK

Date: 10/18/2022

Checked by: RM

Date: 12/20/2022

**Table 3. Groundwater Elevation Summary**  
**WPL - I43 Ash Disposal Facility / SCS Engineers Project #25222069.00**

Well Number	Ground Water Elevation in feet above mean sea level (amsl)				
	MW-301	MW-302	MW-303	MW-304	MW-305
<b>Top of Casing Elevation (feet amsl)</b>	696.96	702.57	719.25	691.97	717.67
<b>Screen Length (ft)</b>	5.00	5.00	5.00	5.00	5.00
<b>Total Depth (ft from top of casing)</b>	134.56	144.33	144.65	119.49	122.97
<b>Top of Well Screen Elevation (ft)</b>	567.40	563.24	579.60	577.48	600.46
<b>Measurement Date</b>					
April 8, 2016	692.29	683.61	696.30	--	--
April 26, 2016	653.54	653.56	653.59	655.90	
June 20, 2016	652.01	651.89	651.80	653.79	--
August 9, 2016	649.68	649.30	649.37	651.55	--
October 19, 2016	652.32	652.38	652.18	654.00	--
December 19, 2016	652.85	652.79	652.82	654.26	--
January 5, 2017	652.86	652.82	652.80	654.15	
January 23, 2017	652.98	664.97	652.92	654.37	--
February 23, 2017	653.14	653.10	653.10	654.49	658.02
April 7, 2017	654.43	654.72	654.55	654.85	659.65
June 6, 2017	654.11	654.12	654.14	655.70	659.70
August 1, 2017	652.64	652.55	652.50	654.49	658.54
October 23, 2017	652.03	652.05	652.03	653.65	657.22
April 3, 2018	651.28	651.25	651.30	652.86	656.24
October 4, 2018	650.71	650.70	650.70	652.26	655.89
April 8-9, 2019	653.06	654.06	654.06	655.59	659.03
October 8, 2019	653.26	653.21	653.27	654.77	658.77
November 26, 2019	--	--	655.56	--	--
April 7, 2020	656.59	656.47	656.46	658.16	661.58
May 20, 2020	--	655.81	--	--	--
October 13, 2020	652.16	652.17	652.20	654.17	658.08
December 18, 2020	653.91	653.88	--	--	--
April 13, 2021	654.56	654.57	654.53	656.36	659.69
June 16, 2021	649.78	649.75	--	--	--
October 26, 2021	650.76	650.88	650.90	652.54	655.86
April 11-13, 2022	651.65	651.62	651.58	653.08	657.58
June 16, 2022	--	650.55	--	--	--
October 4, 2022	648.87	648.85	648.89	650.51	654.40
<b>Bottom of Well Elevation (ft)</b>	562.40	558.24	574.60	572.48	594.70

Notes:  
 -- = not measured

Created by: NDK  
 Last rev. by: NS  
 Checked by: DK

Date: 1/10/2020  
 Date: 10/10/2022  
 Date: 10/10/2022

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**Table 4. Horizontal Gradients and Flow Velocity Table  
Edgewater I-43 Ash Disposal Facility  
SCS Engineers Project #25222069.00  
January - December 2022**

Flow Path A - North					
Sampling Dates	h1 (ft)	h2 (ft)	Δl (ft)	Δh/Δl (ft/ft)	V (ft/d)
4/11-13/2022	656.00	651.58	1510.07	0.003	0.13
10/4/2022	652.00	648.89	1318.51	0.002	0.10

Wells	K Value (ft/d)	K Value (ft/d)
MW-301	1.7E-03	4.9
MW-302	4.8E-03	14
MW-303	6.8E-03	19
Geometric Mean	3.8E-03	11

Assumed Porosity, n
0.25

Groundwater flow velocity equation:  $V = [K*(\Delta h/\Delta l)] / n$

ft = feet  
ft/d = feet per day  
K = hydraulic conductivity  
n = effective porosity  
V = groundwater flow velocity

h1, h2 = point interpreted groundwater elevations at locations 1 and 2  
Δl = distance between location 1 and 2  
Δh/Δl = hydraulic gradient

**Note:**

1. See Figures 3 and 4 for velocity calculation flow path locations.

Created by: <u>NDK</u>	Date: <u>9/19/2022</u>
Last revision by: <u>JJK</u>	Date: <u>11/1/2022</u>
Checked by: <u>NDK</u>	Date: <u>11/23/2022</u>



**Table 5. Groundwater Analytical Results Summary  
Edgewater I-43 Ash Disposal Facility, Sheboygan, WI / SCS Engineers Project #25222069.00**

Parameter Name	Interwell UPL	Background Wells		Compliance Wells						
		MW-304	MW-305	MW-301		MW-302			MW-303	
		4/11/2022	4/11/2022	Intrawell UPL	4/13/2022	Intrawell UPL	4/13/2022	6/16/2022	Intrawell UPL	4/11/2022
Boron, ug/L		89.3	61.5	184	124	149	113	--	100	80.7
Calcium, ug/L	103,000	25,500	88,500		42,100		28,600	--		31,300
Chloride, mg/L	24.9	2.3	27.5		3.7		4.0	--		4.3
Fluoride, mg/L	0.753	<0.095	<0.095		0.70		0.85	0.77		0.71
Field pH, Std. Units	8.34	7.87	7.42		8.03		8.01	8.10		7.73
Sulfate, mg/L	140	16.2	141		11.1		17.2	--		24.9
Total Dissolved Solids, mg/L	598	220	578		262		238	--		274

**4.4** Blue shaded cell indicates the compliance well result exceeds the UPL (background) and the Limit of Quantitation (LOQ).

Abbreviations:

UPL = Upper Prediction Limit

SSI = Statistically Significant Increase

ug/L = micrograms per liter

mg/L = milligrams per liter

LOQ = Limit of Quantitation

LOD = Limit of Detection

-- = Not Analyzed

Notes:

1. An individual result above the UPL does not constitute an SSI above background. See the accompanying letter text for identification of statistically significant results.
2. Interwell UPLs calculated based on results from background wells MW-304 and MW-305. Interwell UPLs based on 1-of-2 retesting approach. Interwell UPLs were calculated with background results from the May 2016 through the October 2020 sampling event.
3. Following the completion of the April 2018 Alternative Source Demonstration (ASD) Report, dated October 31, 2018, the statistical method for evaluating boron data at the three compliance monitoring wells was modified to an intrawell approach. Intrawell UPLs were calculated using results from the May 2016 through the April 2020 sampling events.

Created by: NDK  
 Last revision by: NDK  
 Checked by: RM  
 Proj Mgr QA/QC: TK

Date: 9/19/2022  
 Date: 11/23/2022  
 Date: 12/20/2022  
 Date: 1/9/2022

**Table 6. Groundwater Field Data Summary  
Edgewater I-43 Ash Disposal Facility / SCS Engineers Project #25222069.00  
2022**

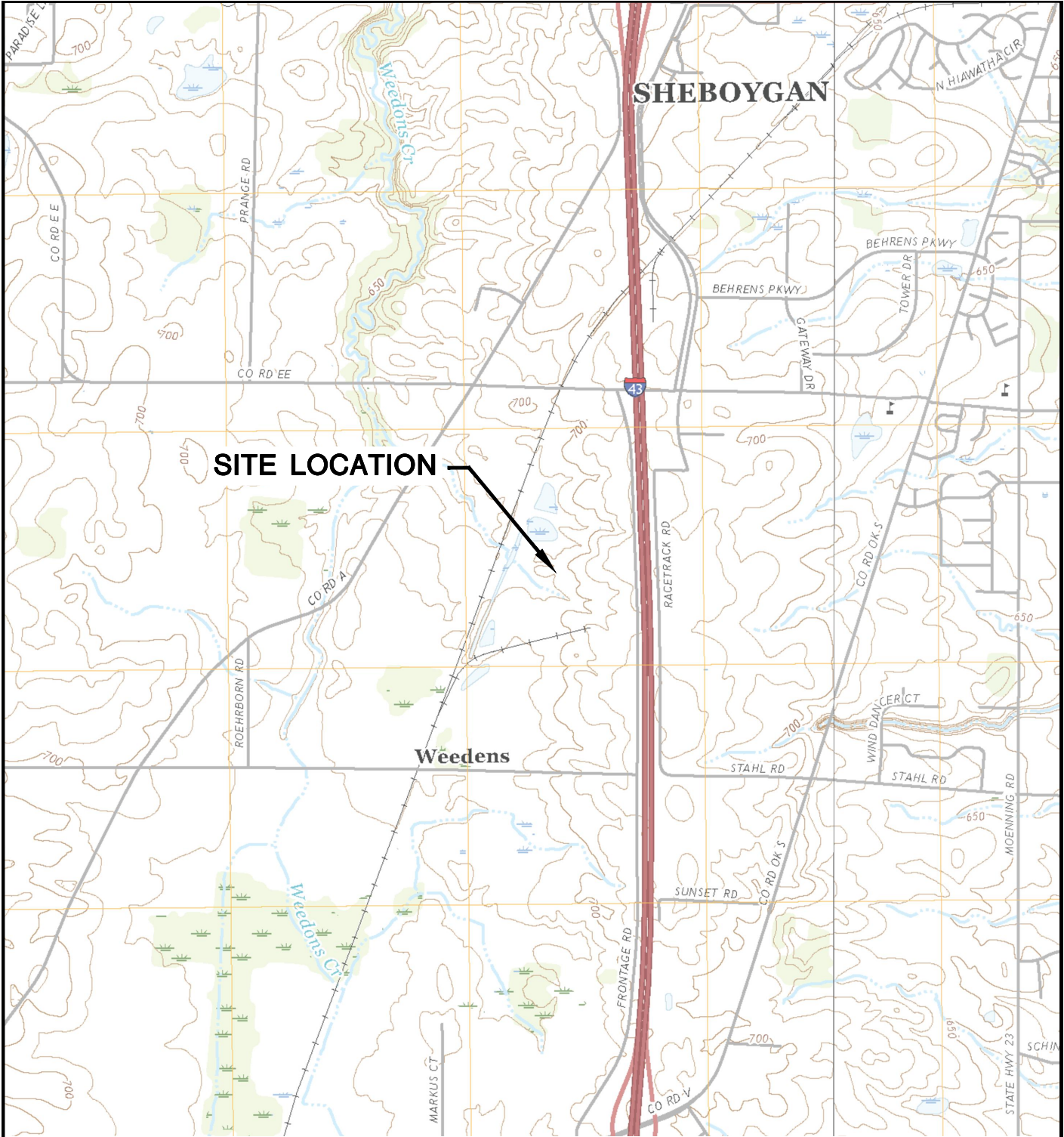
<b>Well</b>	<b>Sample Date</b>	<b>Groundwater Elevation (feet)</b>	<b>Field Temperature (deg C)</b>	<b>Field pH (Std. Units)</b>	<b>Oxygen, Dissolved (mg/L)</b>	<b>Field Specific Conductance (umhos/cm)</b>	<b>Field Oxidation Potential (mV)</b>	<b>Turbidity (NTU)</b>
MW-301	4/13/2022	651.65	9.2	8.03	0.49	377	224.6	145
MW-302	4/13/2022	651.62	9.9	8.01	0.69	399	340.9	3.88
	6/16/2022	650.55	11.1	8.10	0.52	384	105.7	4.95
MW-303	4/11/2022	651.58	10.9	7.73	1.75	458	77.6	0.92
MW-304	4/11/2022	653.08	11.4	7.87	0.41	392	135.6	5.11
MW-305	4/11/2022	657.58	9.9	7.42	0.45	889	261.1	30.1

Created by: NDK  
 Last revision by: AJR  
 Checked by: RM

Date: 9/19/2022  
 Date: 10/19/2022  
 Date: 10/21/2022

## Figures

1. Site Location Map
2. Site Plan and Monitoring Well Locations
3. Bedrock Potentiometric Surface Map – April 11-13, 2022
4. Bedrock Potentiometric Surface Map – October 4-5, 2022



SHEBOYGAN FALLS QUADRANGLE  
 WISCONSIN-SHEBOYGAN CO.  
 7.5 MINUTE SERIES (TOPOGRAPHIC)  
 2018  
 SCALE: 1" = 2,000'

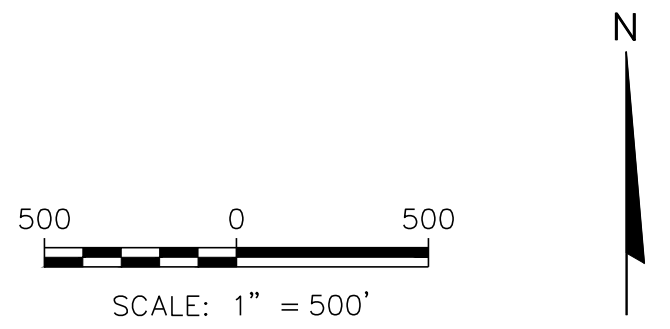


CLIENT	WISCONSIN POWER AND LIGHT CO. 3739 LAKESHORE DRIVE SHEBOYGAN, WI 53081		SITE	ALLIANT ENERGY 1-43 ASH DISPOSAL FACILITY TOWN OF WILSON, WI		ENGINEER	SCS ENGINEERS 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830		FIGURE 1
	PROJECT NO.	25219069.00		DRAWN BY:	BSS		APPROVED BY:	TK 01/30/2020	
	DRAWN:	11/20/2019	CHECKED BY:	MDB					
	REVISED:	01/13/2020							

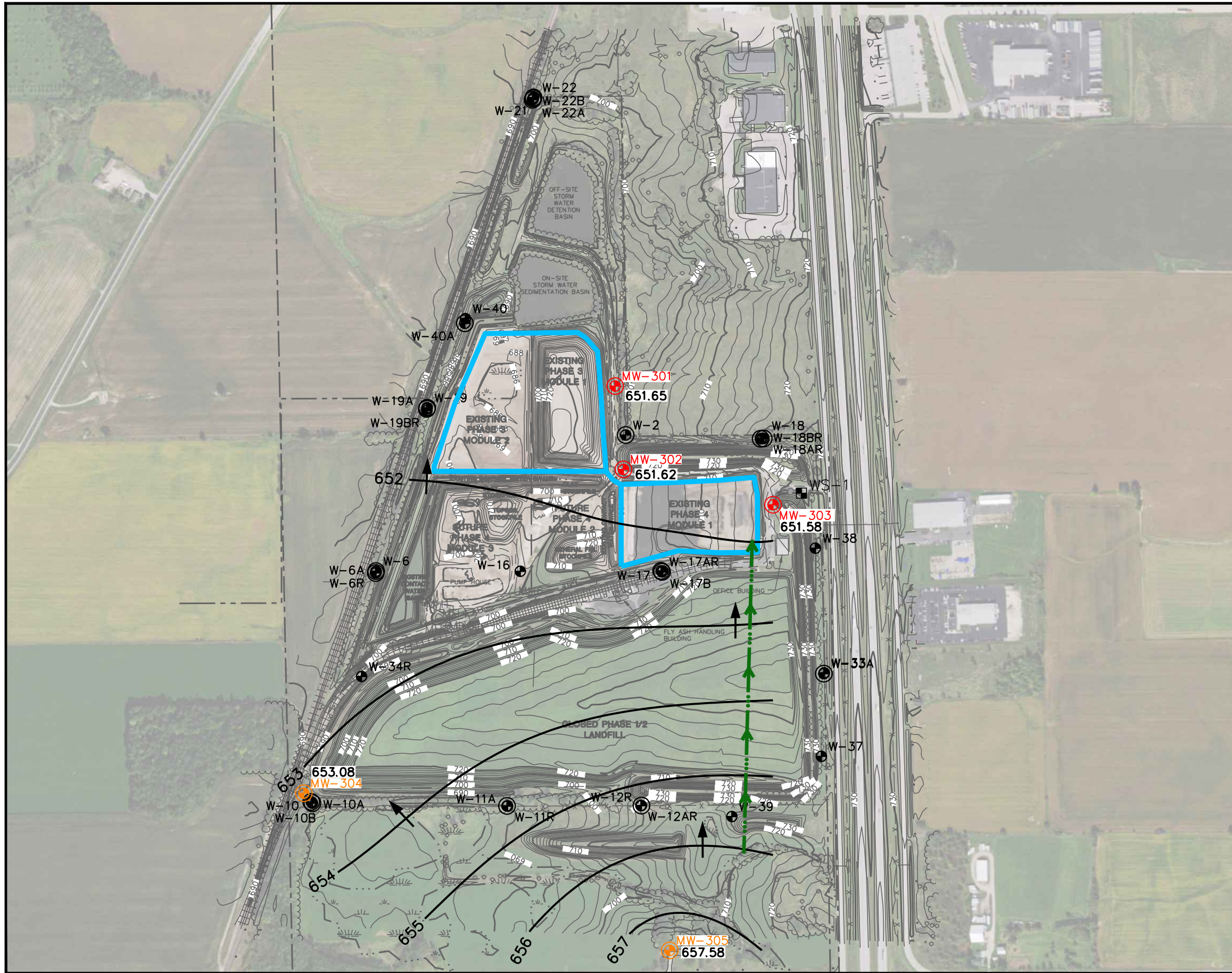


LEGEND	
	APPROXIMATE PROPERTY LINE
	MODULE LIMITS
	GRADE (2' CONTOUR)
	GRADE (10' CONTOUR)
	EDGE OF WATER
	SWALE
	CULVERT
	MANHOLE
	CONTACT WATER TRANSFER PIPE
	ABANDONED 3" DIA. HDPE PIPE
	TREELINE/TREES
	PAVED ROAD
	UNPAVED ACCESS ROAD
	RAILROAD TRACKS
	FENCE
	UTILITY/LIGHT POLE
	MONITORING WELL (UNCONSOLIDATED)
	PIEZOMETER (UNCONSOLIDATED)
	PRIVATE WATER SUPPLY WELL
	CCR PIEZOMETER (BEDROCK)
	CCR RULE BACKGROUND MONITORING WELL
	CCR UNIT
	LIMITS OF FINAL COVER

- NOTE:
- 2018 AERIAL PHOTOGRAPH SOURCES: ESRI, DIGITALGLOBE, GEOEYE, I-CUBED, USDA FSA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY.
  - MONITORING WELLS MW-301, MW-302, MW-303, AND MW-304 WERE INSTALLED BETWEEN NOVEMBER 30, 2015 AND JANUARY 26, 2016 BY BADGER STATE DRILLING INC. DRILLING WAS PERFORMED UNDER THE SUPERVISION OF SCS ENGINEERS.
  - MONITORING WELL MW-305 WAS INSTALLED FEBRUARY 2, 2017 BY BADGER STATE DRILLING, INC.

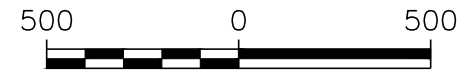


PROJECT NO. 25219069.00	DRAWN BY: BSS	<p>2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830</p>	CLIENT WISCONSIN POWER AND LIGHT CO. 3739 LAKESHORE DRIVE SHEBOYGAN, WI 53081	SITE ALLIANT ENERGY I-43 ASH DISPOSAL FACILITY TOWN OF WILSON, WI	SITE PLAN AND MONITORING WELL LOCATIONS	FIGURE 2
DRAWN: 11/20/2019	CHECKED BY: MDB					
REVISED: 01/13/2022	APPROVED BY: TK 1/8/2023					



LEGEND	
	APPROXIMATE PROPERTY LINE
	MODULE LIMITS
	GRADE (2' CONTOUR)
	GRADE (10' CONTOUR)
	EDGE OF WATER
	SWALE
	CULVERT
	MANHOLE
	CONTACT WATER TRANSFER PIPE
	ABANDONED 3" DIA. HDPE PIPE
	TREELINE/TREES
	PAVED ROAD
	UNPAVED ACCESS ROAD
	RAILROAD TRACKS
	FENCE
	UTILITY/LIGHT POLE
	MONITORING WELL (UNCONSOLIDATED)
	PIEZOMETER (UNCONSOLIDATED)
	PRIVATE WATER SUPPLY WELL
	CCR RULE PIEZOMETER (BEDROCK)
	CCR RULE BACKGROUND MONITORING WELL
	CCR RULE UNIT
	FLOW PATH FOR VELOCITY CALCULATION (SEE TABLE 4)
	POTENTIOMETRIC SURFACE ELEVATION
	POTENTIOMETRIC SURFACE CONTOUR
	APPROXIMATE GROUNDWATER FLOW DIRECTION

- NOTE:
1. MONITORING WELLS MW-301, MW-303, AND MW-304 WERE INSTALLED BETWEEN NOVEMBER 30, 2015 AND JANUARY 26, 2016 BY BADGER STATE DRILLING INC. DRILLING WAS PERFORMED UNDER THE SUPERVISION OF SCS ENGINEERS.
  2. MONITORING WELLS MW-301, MW-302, MW-303 AND MW-304 WERE SURVEYED ON FEBRUARY 8, 2016 BY SCS ENGINEERS.
  3. MONITORING WELL MW-305 WAS SURVEYED ON FEBRUARY 15, 2017 BY CQM, INC.
  4. GROUNDWATER ELEVATIONS WERE COLLECTED FROM PIEZOMETERS ON APRIL 11-13, 2022.
  5. THE BACKGROUND MONITORING WELLS FOR THE I-43 LANDFILL ARE MW-304 AND MW-305.



SCALE: 1" = 500'



PROJECT NO.	25222069.00	DRAWN BY:	KP
DRAWN:	05/21/2021	CHECKED BY:	JJK
REVISED:	01/16/2023	APPROVED BY:	TK 1/16/2023

**SCS ENGINEERS**  
 2830 DAIRY DRIVE MADISON, WI 53718-6751  
 PHONE: (608) 224-2830

CLIENT: WISCONSIN POWER AND LIGHT CO.  
 3739 LAKESHORE DRIVE  
 SHEBOYGAN, WI 53081

SITE: ALLIANT ENERGY  
 I-43 ASH DISPOSAL FACILITY  
 TOWN OF WILSON, WISCONSIN

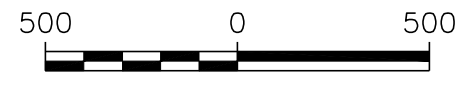
BEDROCK POTENTIOMETRIC SURFACE MAP  
 APRIL 2022

FIGURE  
 3



LEGEND	
	APPROXIMATE PROPERTY LINE
	MODULE LIMITS
	GRADE (2' CONTOUR)
	GRADE (10' CONTOUR)
	EDGE OF WATER
	SWALE
	CULVERT
	MANHOLE
	CONTACT WATER TRANSFER PIPE
	ABANDONED 3" DIA. HDPE PIPE
	TREELINE/TREES
	PAVED ROAD
	UNPAVED ACCESS ROAD
	RAILROAD TRACKS
	FENCE
	UTILITY/LIGHT POLE
	MONITORING WELL (UNCONSOLIDATED)
	PIEZOMETER (UNCONSOLIDATED)
	PRIVATE WATER SUPPLY WELL
	CCR RULE PIEZOMETER (BEDROCK)
	CCR RULE BACKGROUND MONITORING WELL
	CCR RULE UNIT
	FLOW PATH FOR VELOCITY CALCULATION (SEE TABLE 4)
<b>651.58</b>	POTENTIOMETRIC SURFACE ELEVATION
	POTENTIOMETRIC SURFACE CONTOUR
	APPROXIMATE GROUNDWATER FLOW DIRECTION

- NOTE:
1. MONITORING WELLS MW-301, MW-303, AND MW-304 WERE INSTALLED BETWEEN NOVEMBER 30, 2015 AND JANUARY 26, 2016 BY BADGER STATE DRILLING INC. DRILLING WAS PERFORMED UNDER THE SUPERVISION OF SCS ENGINEERS.
  2. MONITORING WELLS MW-301, MW-302, MW-303 AND MW-304 WERE SURVEYED ON FEBRUARY 8, 2016 BY SCS ENGINEERS.
  3. MONITORING WELL MW-305 WAS SURVEYED ON FEBRUARY 15, 2017 BY CQM, INC.
  4. GROUNDWATER ELEVATIONS WERE COLLECTED FROM PIEZOMETERS ON OCTOBER 4, 2022.
  5. THE BACKGROUND MONITORING WELLS FOR THE I-43 LANDFILL ARE MW-304 AND MW-305.



PROJECT NO.	25222069.00	DRAWN BY:	KP
DRAWN:	10/14/2022	CHECKED BY:	NDK
REVISED:	01/16/2023	APPROVED BY:	TK, 1/27/2023


**SCS ENGINEERS**  
 2830 DAIRY DRIVE MADISON, WI 53718-6751  
 PHONE: (608) 224-2830

CLIENT: WISCONSIN POWER AND LIGHT CO.  
 3739 LAKESHORE DRIVE  
 SHEBOYGAN, WI 53081

SITE: ALLIANT ENERGY  
 I-43 ASH DISPOSAL FACILITY  
 TOWN OF WILSON, WISCONSIN

BEDROCK POTENTIOMETRIC SURFACE MAP  
 OCTOBER 2022

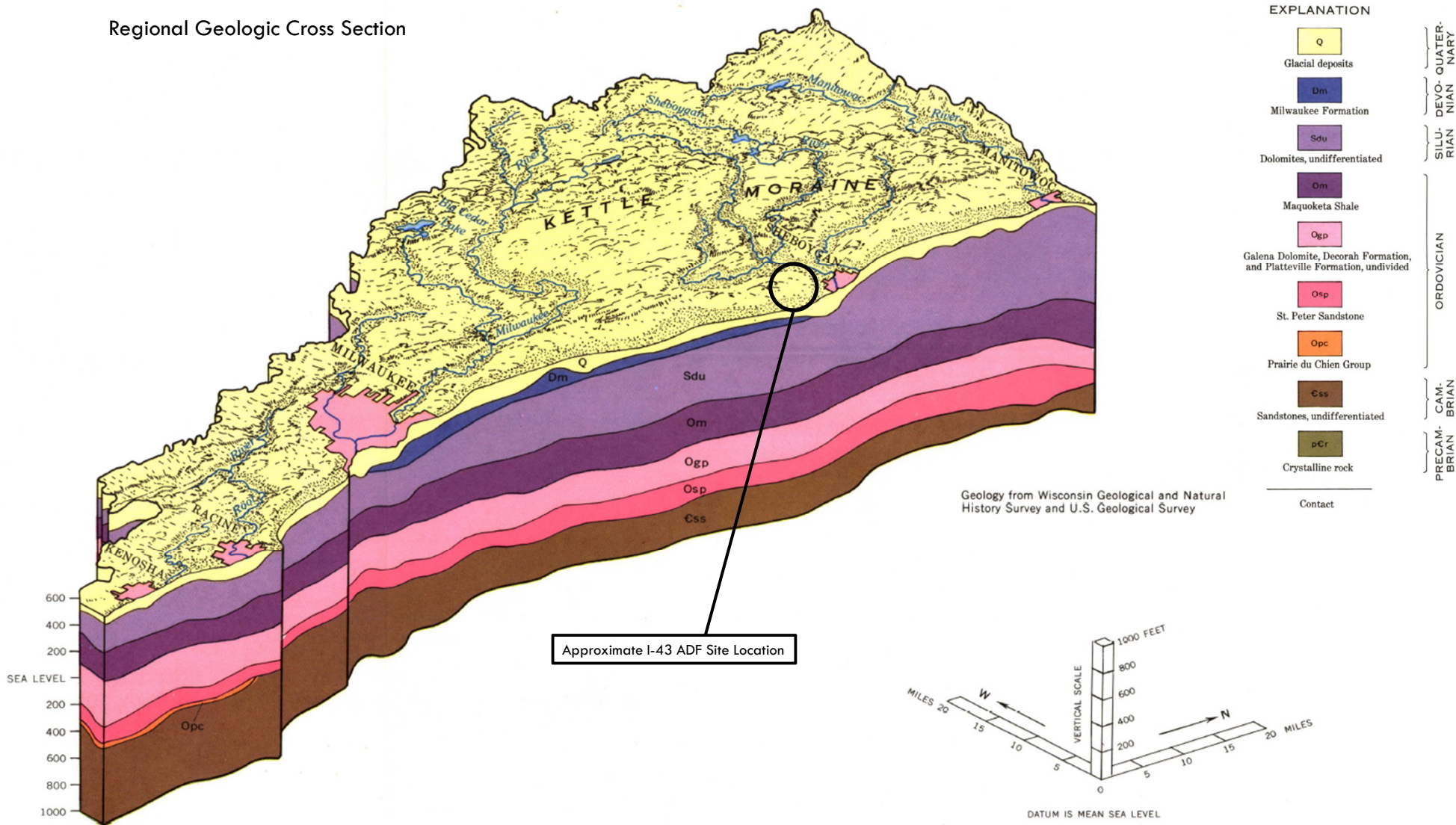
FIGURE  
 4



Appendix A  
Regional Hydrogeologic Information

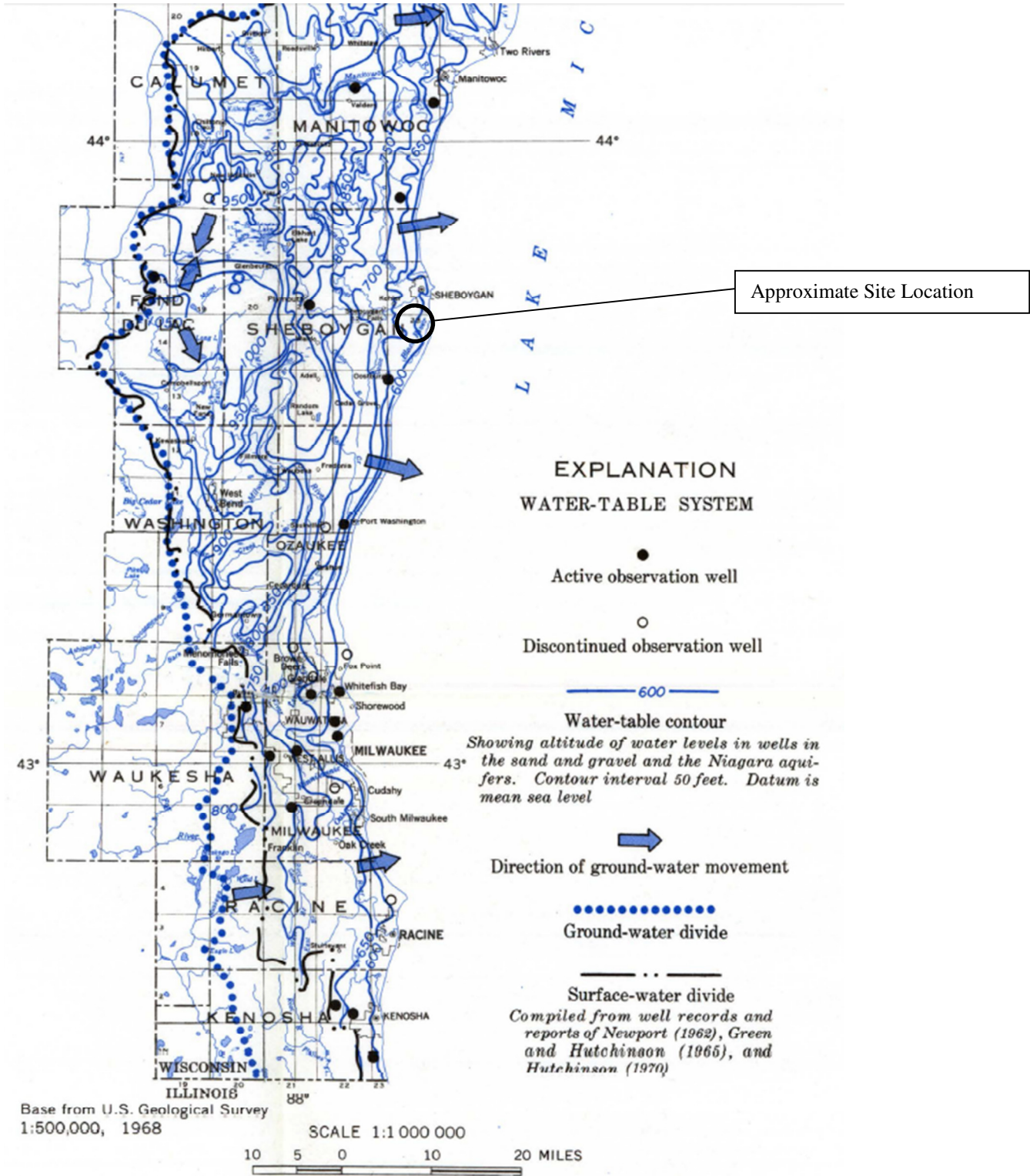


# Regional Geologic Cross Section



Source: Skinner, Earl L. and Ronald G. Borman, Water Resources of Wisconsin-Lake Michigan Basin, Department of the Interior United States Geological Survey Hydrogeologic Investigations Atlas HA-432, 1973.

# Regional Groundwater Flow Map – Uppermost Aquifer



Source: Skinner, Earl L. and Ronald G. Borman, Water Resources of Wisconsin-Lake Michigan Basin, Department of the Interior United States Geological Survey Hydrogeologic Investigations Atlas HA-432, 1973.

**Table I43-3. Regional Hydrogeologic Stratigraphy  
Edgewater I-43 Landfill / SCS Engineers Project #25216069**

Age	Hydrogeologic Unit	General Thickness (feet)	Name of Rock Unit*	Predominant Lithology
Quaternary	Sand and Gravel Aquifer	0 to 235	Surface sand and gravel	Sand and Gravel
		0 to 300	Buried sand and gravel	
Devonian	Niagara Dolomite Aquifer	0 to 750	Dolomite (undifferentiated)	Dolomite
Silurian				
Ordovician	Confining Unit	0 to 400	Maquoketa Shale	Shale and dolomite
	Sandstone Aquifer	100 to 340	Galena Decorah Platteville	Dolomite
		0 to 330	St. Peter	Sandstone
		0 to 140	Prairie du Chien	Dolomite
Cambrian		0 to 3,500?	Trempeleau Franconia Galesville Eau Claire Mt. Simon	Sandstone, some Dolomite and Shale
Precambrian	Not an Aquifer	Unknown	Crystalline Rocks	Igneous and metamorphic rocks

Source:

Skinner, Earl L. and Ronald G. Borman, Water Resources of Wisconsin-Lake Michigan Basin, Department of the Interior United States Geological Survey Hydrogeologic Investigations Atlas HA-432, 1973.

## Appendix B

### Boring Logs and Well Construction Documentation

Route To: Watershed/Wastewater  Waste Management   
Remediation/Redevelopment  Other

Facility/Project Name WPL-Edgewater I43		License/Permit/Monitoring Number		Boring Number MW-301	
SCS#: 25215135.20		Date Drilling Started 12/15/2015		Date Drilling Completed 12/19/2015	
Boring Drilled By: Name of crew chief (first, last) and Firm Kevin Durst Badger State		Drilling Method HSA/rotary (mud)			
WI Unique Well No. VV864	DNR Well ID No.	Common Well Name	Final Static Water Level Feet	Surface Elevation 694.40 Feet	Borehole Diameter 8.0 in.
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input checked="" type="checkbox"/>		State Plane 626,196 N, 2,559,679 E S/C/N		Local Grid Location	
SE 1/4 of NE 1/4 of Section 8, T 14 N, R 23 E		Lat _____ ' _____ "		Feet <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W	
Long _____ ' _____ "		County Sheboygan		Civil Town/City/ or Village Wilson Tn.	
Facility ID		County Code 60			

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties						RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200		
			1	LEAN CLAY, brown (fill).	cl										
S1	17	25 78	2	LEAN CLAY, red brown (7.5YR 4/6), moist, with fine to coarse sand, fine gravel, stiff, gray coatings on fractures, diamicton (till).					3.0	M					
S2	22	47 911	4						2.25						
S3	24	45 88	7						2.25						
S4		24 55	9	Softer, brittle, crumbles.  Color changes to (10.5YR 4/2).	cl				1.5						
S5	22	34 77	14	LEAN CLAY, dark reddish gray (5YR 4/2), trace coarse sand, fine crumbly texture.					2.25						

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Joe Larson <i>[Signature]</i>	Firm SCS Engineers 2830 Dairy Drive Madison, WI 53718	Tel: (608) 224-2830 Fax:
--------------------------------------------	-------------------------------------------------------------	-----------------------------

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.



Boring Number **MW-301**

Use only as an attachment to Form 4400-122.

Page **3** of **6**

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S11	24	55 119	41	LEAN CLAY, red brown (7.5YR 4/2).										
			42	Same as above.										
			43											
			44											
			45											
S12	24	57 99	48	Same.	cl.									
			49											
			50											
			51											
			52											
S13	24	67 1011	53											
			54											
			55											
			56											
			57											
S14	24	57 1010	58											
			59											
			60											
			61											
			62											
S15	24	56 78	63	Same, except less sand and fine gravel										
			64											
			65											





Boring Number **MW-301**

Use only as an attachment to Form 4400-122.

Page 5 of 6

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S22	24	10 12 14	91	LEAN CLAY, same as above.  Same.	CL				2.5					
			92											
			93											
			94											
			95											
S23	22	9 11 15	98	LEAN CLAY, dark grayish brown (10YR 4/2), massive to very indistinctly laminated, very plastic.				3.0	M					
			99											
			100											
			101											
			102											
S24	24	7 8 10	103	LEAN CLAY, dark grayish brown (10YR 4/2), massive to indistinctly laminated, very plastic (lake sediment).				1.5	M					
			104											
			105											
			106											
			107											
S25	22	8 10 12	108					2.0	M					
			109											
			110											
			111											
			112											
S26	NR	8 10 13	113											
			114											
			115											



Route To: Watershed/Wastewater  Waste Management   
Remediation/Redevelopment  Other

Facility/Project Name WPL-Edgewater I43		License/Permit/Monitoring Number SCS#: 25215135.20		Boring Number MW-302	
Boring Drilled By: Name of crew chief (first, last) and Firm Kevin Durst Badger State			Date Drilling Started 12/4/2015	Date Drilling Completed 12/7/2015	Drilling Method HSA/rotary (mud)
WI Unique Well No. VV863	DNR Well ID No.	Common Well Name	Final Static Water Level Feet	Surface Elevation 700.24 Feet	Borehole Diameter 8.0 in.
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input checked="" type="checkbox"/> State Plane 625,788 N, 2,559,719 E S/C/N NE 1/4 of SE 1/4 of Section 8, T 14 N, R 23 E			Local Grid Location Lat _____ " _____ " Long _____ " _____ " Feet <input type="checkbox"/> N <input type="checkbox"/> E <input type="checkbox"/> S <input type="checkbox"/> W		
Facility ID	County Sheboygan	County Code 60	Civil Town/City/ or Village Wilson Tn.		

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S1	13	36 8 10	1 2	LEAN CLAY, strong brown (7.5YR 4/6) to dark brown (7.5YR 3/2) mottled, trace fine to coarse sand.					3.7	M				
S2	11	36 9 11	3 4	LEAN CLAY, brown (7.5YR 4/4), trace small, fine to coarse sand and fine gravel, possible clay and gravel fill @5' very hard, dry, diamicton (till).					3.5	M				
S3	18	58 10 14	5 6 7	LEAN CLAY, mottled, strong brown (7.5YR 4/6) and brown, trace fine to coarse sand, fine gravel, very slightly moist (till).	cl				2.5-4.0	M				
S4	15	44 7 8	8 9						2.0	M				
S5	19	36 10 12	10 11 12 13 14	Same as above, except brown (7.5YR 4/4), very hard, cohesive (till).					2.0-4.0	M				

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Meghan Blodgett 	Firm SCS Engineers 2830 Dairy Drive Madison, WI 53718	Tel: (608) 224-2830 Fax:
------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------	-----------------------------

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

Boring Number **MW-302**

Use only as an attachment to Form 4400-122.

Page **2** of **7**

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S6	24	3 4	16	LEAN CLAY, brown (7.5YR 4/4), trace fine to coarse sand, fine gravel, as above (till).										
		6 9	19											1.5
S7	24	2 3	23	Same as above, except dark brown (7.5YR 4/2), more moist (till).										
		5 6	24											1.5
S8	20	7 8	28	LEAN CLAY, brown (7.5YR 4/2), massive, trace fine to coarse sand, fine gravel (till).	cl.									
		7 9	29											1.0
S9	6	5 6	33											
		8 8	34											1.0
S10	24	5 8	38											
		10 11	39											1.0

Boring Number **MW-302** Use only as an attachment to Form 4400-122. Page **3** of **7**

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S11	19	79	41	LEAN CLAY, brown (7.5YR 4/2), trace fine to coarse sand, fine gravel (till).					1.5-	W				
		11 12	44											2.75
S12	18	6 10	48	Same as above, except less sand and gravel.	cl.				1.5	W				
		12 12	49											
S13	24	7 7	53	Same as above, except less sand and gravel.					1.25	W				
		10 10	54											
S14	24	7 9	58	LEAN CLAY, brown, trace fine to coarse sand, 1/8-3/4" fine to coarse sand seams at 58.5', 59', and 59.75', laminated with very thin silt partings (lake sediment).	cl.				1.5	W				
		11 12	59											
S15	24	7 9	63	SILT, brown (7.5YR 5/2), massive, little clay (lake sediment).	ML				1.5	W				
		12 12	64											

Boring Number **MW-302**

Use only as an attachment to Form 4400-122.

Page **4** of **7**

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S16	18	14 18	66	SILT with sand, brown, massive, sand is very fine to fine.	ML									
		30 26	67	SILTY SAND, fine, massive.	SM									
S17	20	14 25	68	SILT WITH SAND, fine, loose, mostly very fine sand (lake sediment).										
		38 32	69											
S18	18	21 30	70	Same.										
		34 34	71											
S19	18	14 12	72	Same.										
		25 24	73											
S20	18	19 27	74		ML									
		28 28	75											
S21	18	21 29	76											
		33 30	77											
S22	16	23 32	78											
		30 28	79											
S23	16	19 21	80	POORLY GRADED SAND WITH SILT, fine with medium, brown to gray, loose (outwash).										
		21 27	81		SP-SM									
S24 A/S24 B	14	9 19	82	SILT, brown, little fine sand, massive to indistinctly laminated (lake sediment).										
		19 16	83											
S25	18		84											
			85		ML									
			86											
			87											
			88											
		10 20	89	LEAN CLAY, dark brown (7.5YR 4/2), massive, trace fine to coarse sand, fine gravel, very stiff, cohesive, diamicton (till).	CL									
23 24	90													

Sand appears barely wet.

3.0-4.5

Boring Number **MW-302**

Use only as an attachment to Form 4400-122.

Page **5** of **7**

Sample		Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S26	20	12 18 21 25	91	LEAN CLAY, brown, massive, trace fine to coarse sand, fine gravel, as above (till).  Same.	CL									
			92											
			93											
			94											
			95											
S27	14	17 20 22 12	96	LEAN CLAY, brown (7.5YR 5/2), massive to indistinctly laminated, trace fine gravel, red/gray laminations (lake sediment).										
			97											
			98											
			99											
			100											
S28	24	8 10 13 14	101	LEAN CLAY, grayish brown (10YR 5/2), laminated, with very thin silt partings, very stiff, hard (lake sediment).  Same as above, except silt is concentrated in 1 mm layers spaced 2-6" apart.	CL									
			102											
			103											
			104											
			105											
S29	24	7 9 12 14	106	Same except dark grayish brown (10YR 4/2), laminated, fewer silt partings, very plastic (lake sediment).										
			107											
			108											
			109											
			110											
S30		7 9 12 14	111											
			112											
			113											
			114											
			115											







Route To: Watershed/Wastewater  Waste Management   
Remediation/Redevelopment  Other

Facility/Project Name WPL-Edgewater I43		SCS#: 25215135.20		License/Permit/Monitoring Number		Boring Number MW-303	
Boring Drilled By: Name of crew chief (first, last) and Firm Kevin Durst Badger State				Date Drilling Started 11/30/2015		Date Drilling Completed 12/4/2015	
Drilling Method HSA/rotary (mud)		WI Unique Well No. VV865		DNR Well ID No.		Common Well Name	
Final Static Water Level Feet		Surface Elevation 716.60 Feet		Borehole Diameter 8.0 in.			
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input checked="" type="checkbox"/> State Plane 625,616 N, 2,560,451 E S/C/N NE 1/4 of SE 1/4 of Section 8, T 14 N, R 23 E				Lat _____ " _____ "		Local Grid Location	
Feet <input type="checkbox"/> N		Feet <input type="checkbox"/> E		Feet <input type="checkbox"/> S		Feet <input type="checkbox"/> W	
Facility ID		County Sheboygan		County Code 60		Civil Town/City/ or Village Wilson Tn.	

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties						RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200		
S1	14	12 24	1 2	LEAN CLAY, strong brown (7.5YR 4/6), med plasticity, mottled coloring, trace coarse sand.	cl				1.5	M					
S2 A, B	14	41 22	4 5	SILTY SAND layer, fine to coarse @ 5-5.5'.	SM				0.75	M					
S3	24	47 1011	6 7	LEAN CLAY, (7.5YR 4/4), trace sand, fine to coarse, fine gravel, very stiff, firm, massive, diamicton (till).					2.8-4.0	W					
S4	18	25 79	9 10	Same.	cl				3.0	W					
S5	22	23 46	14 15						1-1.8	W					

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Zach Watson <i>[Signature]</i> for Z.W.	Firm SCS Engineers 2830 Dairy Drive Madison, WI 53718	Tel: (608) 224-2830 Fax:
------------------------------------------------------	-------------------------------------------------------------	-----------------------------

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.



Boring Number **MW-303**

Use only as an attachment to Form 4400-122.

Page 3 of 7

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
			41	LEAN CLAY, (7.5YR 4/4).										
S11	6	10 12 12 16	44 45							W				
S12	24	5 6 8 10	49 50	(no sample retained)					1.3	W				
			53		cl.									
S13	21	3 7 7 9	54 55	LEAN CLAY (7.5YR 4/4), fine to coarse sand, fine gravel, firm, massive, diamicton (till).					1.0	W				
S14	19	10 11 13 10	59 60	Same.					1.0	W				
S15	11	4 6 9 11	64 65						0.5	W				



Boring Number **MW-303** Use only as an attachment to Form 4400-122. Page **5** of **7**

Sample		Blow Counts	Depth in Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S22	18	35 38 23 30	91-94	Same with layers of SANDY SILT, yellowish brown (10YR 5/4), fine, loose (lake sediment).										
S23	18	19 12 12 13	94-97		CL			1.0	W					
S24	16	24 28 34 50/4	104-105	SANDY SILT, yellowish brown (10YR 5/4) fine, mostly very fine sand, loose (lake sediment).					W					
S25	12	36 50/5	105-107		ML				W					
S26	23	32 22 20 24	107-109	LEAN CLAY, with layers of SILT, SAND (lake sediment as above).				3.2	W					
S27	3	50/5	109-114		CL									
			114-115	SILTY SAND, (10YR 5/4).	SM				1.2	W				



Boring Number **MW-303**

Use only as an attachment to Form 4400-122.

Page **7** of **7**

Sample			Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	U S C S	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)	Blow Counts							Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
			141	DOLOMITE (bedrock).	DOLOMITE									
			142											
			143											
				End of boring @ 143.5'										
				Checked and edited by: BJS 3/30/2016										



Route To: Watershed/Wastewater  Waste Management   
Remediation/Redevelopment  Other

Facility/Project Name WPL-Edgewater I43		SCS#: 25215135.20		License/Permit/Monitoring Number		Boring Number MW-304	
Boring Drilled By: Name of crew chief (first, last) and Firm Kevin Durst Badger State				Date Drilling Started 1/25/2016		Date Drilling Completed 1/26/2016	
WI Unique Well No. VV866		DNR Well ID No.		Common Well Name		Final Static Water Level Feet	
						Surface Elevation 689.48 Feet	
						Borehole Diameter 8.0 in.	
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input checked="" type="checkbox"/>				Local Grid Location			
State Plane 624,204 N, 2,558,156 E S/C/N				Lat _____ "		Feet <input type="checkbox"/> N	
SW 1/4 of SE 1/4 of Section 8, T 14 N, R 23 E				Long _____ "		Feet <input type="checkbox"/> E	
						Feet <input type="checkbox"/> S	
Facility ID		County Sheboygan		County Code 60		Civil Town/City/ or Village Wilson Tn.	

Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S1	14	25 6 11	1 2	LEAN CLAY, brown (7.5YR 4/6), with fine to coarse sand, fine gravel.	CL				3.5	M				
S2	14	46 5 9	3 4	Same as above, except dark brown.					3.5	M				
S3	24	25 8 11	5 7	LEAN CLAY, brown (7.5YR 4/6), with silt layers, cohesive, stiff.					3.25	M				
S4	24	45 9 10	8 9	LEAN CLAY, brown (7.5YR 4/4), with fine to coarse sand, fine gravel, massive, stiff, diamicton (till).  1 inch interval of sand, fine to medium grained, brown.	CL				3.25	M				
S6	24	24 4 5	13 14	LEAN CLAY, as above (till).					1.5	M				

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature Joe Larson <i>Joe Larson</i>	Firm SCS Engineers 2830 Dairy Drive Madison, WI 53718	Tel: (608) 224-2830 Fax:
-------------------------------------------	-------------------------------------------------------------	-----------------------------

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

Boring Number **MW-304**

Use only as an attachment to Form 4400-122.

Page **2** of **6**

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S7	22	3 4	16	LEAN CLAY, brown (7.5YR 4/4), as above (till).										
		4 6	17											1.25
S8	22	2 3	18											
		5 6	19											
S9	24	2 4	20		cl.									
		6 7	21											1.0
S10	24	3 5	22											
		6 9	23											1.0
S11	24	3 6	24	Same with fine silt partings.										
		8 12	25											2.5



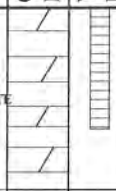




Boring Number **MW-304**

Use only as an attachment to Form 4400-122.

Page **6** of **6**

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S36	NA		116 117 118	DOLOMITE, gray (7.5YR 6/1), angular fragments.	DOLOMITE									
				End of boring @ 118'										
				Logged by: Joe Larson: 0-93' Kyle Kramer: 93-118'										
				Checked and edited by: BJS 3/30/2016										

Route To: Watershed/Wastewater  Waste Management   
Remediation/Redevelopment  Other

Facility/Project Name WPL I43		SCS#: 25217032.00		License/Permit/Monitoring Number		Boring Number MW-305	
Boring Drilled By: Name of crew chief (first, last) and Firm Kevin Duerst Badger State Drilling				Date Drilling Started 1/30/2017		Date Drilling Completed 2/2/2017	
Drilling Method HSA/Rotary		WI Unique Well No. VY819		DNR Well ID No.		Common Well Name MW-305	
Final Static Water Level Feet		Surface Elevation 715.46 Feet		Borehole Diameter 6.3 in.			
Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Boring Location <input checked="" type="checkbox"/> State Plane 623,435 N, 2,559,946 E S/C/N SE 1/4 of SE 1/4 of Section 8, T 14 N, R 23 E				Lat _____ ° _____ ' _____ "		Local Grid Location Feet <input type="checkbox"/> N <input type="checkbox"/> S	
Long _____ ° _____ ' _____ "		Feet <input type="checkbox"/> E <input type="checkbox"/> W					

Facility ID	County Sheboygan	County Code 60	Civil Town/City/ or Village Wilson Tn.
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Sample Number and Type	Length Att. & Recovered (in)	Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments	
									Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200		
			1	TOPSOIL.											
S1	8	22 4	2	LEAN CLAY, strong brown (7.5YR 4/6).						1.75					
S2	14	48 11	5							4.5+					
S3	18	71 14	7		CL					4.5+					
S4	18	410 9	9							4.5+					

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature 	Firm SCS Engineers 2830 Dairy Drive Madison, WI 53711	Tel: (608) 224-2830 Fax:
--------------------------------------------------------------------------------------------------	-------------------------------------------------------------	-----------------------------

This form is authorized by Chapters 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats. Completion of this form is mandatory. Failure to file this form may result in forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. NOTE: See instructions for more information, including where the completed form should be sent.

Boring Number **MW-305** Use only as an attachment to Form 4400-122.

Page **2** of **7**

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length, Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
S5	18	46 8	13 14 15 16 17 18	Same as above except, brown (7.5 YR4/3).					2.5					
S6	18	46 9	19 20 21 22 23	Same as above except, trace gravel.	cl.				4.5+					Mud Rotary @ 15 ft bgs.
S7	18	46 7	24 25 26 27						3.0					
S8	18	46 7	28 29 30 31 32						2.0					





























Boring Number **MW-305**

Use only as an attachment to Form 4400-122.

Page **7** of **7**

Sample		Blow Counts	Depth In Feet	Soil/Rock Description And Geologic Origin For Each Major Unit	USCS	Graphic Log	Well Diagram	PID/FID	Soil Properties					RQD/ Comments
Number and Type	Length Att. & Recovered (in)								Standard Penetration	Moisture Content	Liquid Limit	Plasticity Index	P 200	
			113											
			114											
			115											
			116											
			117											
			118											
			119											
S30			120											
			121	End of boring at 121 ft bgs.										

State of Wisconsin  
Department of Natural Resources

Route to: Watershed/Wastewater  Waste Management   
Remediation/Redevelopment  Other

MONITORING WELL CONSTRUCTION  
Form 4400-113A Rev. 7-98

Facility/Project Name WPL-Edgewater I43	Local Grid Location of Well 626196.3 ft. <input checked="" type="checkbox"/> N. <input type="checkbox"/> S. 2559679 ft. <input checked="" type="checkbox"/> E. <input type="checkbox"/> W.	Well Name MW-301
Facility License, Permit or Monitoring No. 02853	Local Grid Origin (estimated: <input type="checkbox"/> ) or Well Location <input checked="" type="checkbox"/> Lat. " Long. " or	Wis. Unique Well No. VV864
Facility ID 460022090	St. Plane 626196.3 ft. N. 2559679.0 ft. E. S/C/N	DNR Well ID No.
Type of Well Well Code 12 / PZ	Section Location of Waste/Source SW 1/4 of NE 1/4 of Sec. 8, T. 14 N, R. 23 <input checked="" type="checkbox"/> E. <input type="checkbox"/> W.	Date Well Installed 1 / 14 / 2016 m m d d y y v v
Distance from Waste/Source _____ ft.	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input checked="" type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	Well Installed By: Name (first, last) and Firm Kevin Durst
Enf. Stds. Apply <input type="checkbox"/>	Gov. Lot Number	Badger State Drilling

- A. Protective pipe, top elevation --- 697.21 ft. MSL
- B. Well casing, top elevation --- 696.96 ft. MSL
- C. Land surface elevation --- 694.40 ft. MSL
- D. Surface seal, bottom --- 693.90 ft. MSL or --- 0.5 ft.

12. USCS classification of soil near screen:  
 GP  GM  GC  GW  SW  SP   
 SM  SC  ML  MH  CL  CH   
 Bedrock

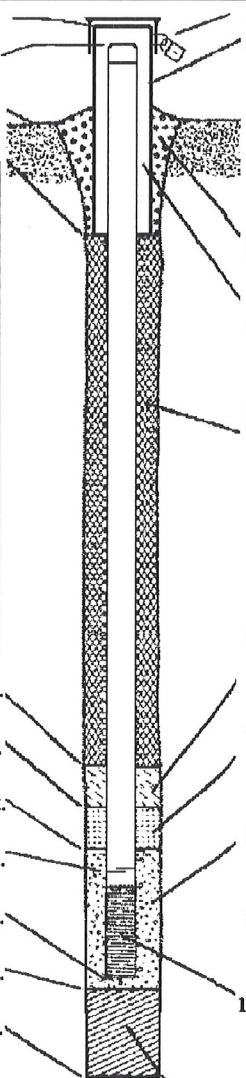
13. Sieve analysis performed?  Yes  No

14. Drilling method used: Rotary  50  
 Hollow Stem Auger  41  
 Other

15. Drilling fluid used: Water  02 Air  01  
 Drilling Mud  03 None  99

16. Drilling additives used?  Yes  No  
 Describe \_\_\_\_\_

17. Source of water (attach analysis, if required):  
 Site Supply Well



- 1. Cap and lock?  Yes  No
- 2. Protective cover pipe:
  - a. Inside diameter: --- 4 in.
  - b. Length: --- 7 ft.
  - c. Material: Steel  04  
Other
  - d. Additional protection?  Yes  No  
If yes, describe: yes, bumper posts (3)
- 3. Surface seal: Bentonite  30  
Concrete  01  
Other   
8 bags 3/8in Bentonite chips
- 4. Material between well casing and protective pipe: Bentonite  30  
Other   
Ohio #5 sand- 2 bags
- 5. Annular space seal:
  - a. Granular/Chipped Bentonite  33
  - b. \_\_\_ Lbs/gal mud weight ... Bentonite-sand slurry  35
  - c. 200 Lbs/gal mud weight ... Bentonite slurry  31
  - d. \_\_\_ % Bentonite ... Bentonite-cement grout  50
  - e. \_\_\_ Ft<sup>3</sup> volume added for any of the above
  - f. How installed: Tremie  01  
Tremie pumped  02  
Gravity  08
- 6. Bentonite seal:
  - a. Bentonite granules  33
  - b.  1/4 in.  3/8 in.  1/2 in. Bentonite chips  32
  - c. 2 Bags Other
- 7. Fine sand material: Manufacturer, product name & mesh size  
a. Ohio #7   
b. Volume added 0.5 lbs ft<sup>3</sup>
- 8. Filter pack material: Manufacturer, product name & mesh size  
a. Ohio #5   
b. Volume added 3 lbs ft<sup>3</sup>
- 9. Well casing: Flush threaded PVC schedule 40  23  
Flush threaded PVC schedule 80  24  
Other
- 10. Screen material: PVC  
a. Screen type: Factory cut  11  
Continuous slot  01  
Other   
b. Manufacturer Monoflex  
c. Slot size: 0.01 in.  
d. Slotted length: --- 5 ft.
- 11. Backfill material (below filter pack): None  14  
Bedrock cuttings/slough

- E. Bentonite seal, top --- 566.40 ft. MSL or --- 118 ft.
- F. Fine sand, top --- 571.40 ft. MSL or --- 123 ft.
- G. Filter pack, top --- 569.40 ft. MSL or --- 125 ft.
- H. Screen joint, top --- 567.40 ft. MSL or --- 127 ft.
- I. Well bottom --- 562.40 ft. MSL or --- 132 ft.
- J. Filter pack, bottom --- 562.40 ft. MSL or --- 132 ft.
- K. Borehole, bottom --- 559.40 ft. MSL or --- 135 ft.
- L. Borehole, diameter --- 8.0 in.
- M. O.D. well casing --- 2.4 in.
- N. I.D. well casing --- 1.9 in.

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature *[Signature]* for J.L. Firm SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718-6751

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin  
Department of Natural Resources

Route to:  Watershed/Wastewater  Waste Management   
 Remediation/Redevelopment  Other

MONITORING WELL CONSTRUCTION  
Form 4400-113A Rev. 7-98

Facility/Project Name WPL-143	Local Grid Location of Well 625788.4 ft. <input checked="" type="checkbox"/> N. <input type="checkbox"/> S. 2559719 ft. <input checked="" type="checkbox"/> E. <input type="checkbox"/> W.	Well Name MW-302
Facility License, Permit or Monitoring No. 02853	Local Grid Origin (estimated: <input type="checkbox"/> ) or Well Location <input checked="" type="checkbox"/> Lat. " Long. " or	Wis. Unique Well No. VV863
Facility ID 460022090	St. Plane 625788.4 ft. N. 2539719.0 ft. E. S/C/N	DNR Well ID No.
Type of Well Well Code 12 / PZ	Section Location of Waste/Source SW 1/4 of NE 1/4 of Sec. 8, T. 14 N, R. 23 <input checked="" type="checkbox"/> E. <input type="checkbox"/> W.	Date Well Installed 1 / 15 / 2016 m m d d y y v v v y
Distance from Waste/Source _____ ft.	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	Well Installed By: Name (first, last) and Firm Kevin Durst
Enf. Stds. Apply <input type="checkbox"/>	Gov. Lot Number	Badger State Drilling

A. Protective pipe, top elevation	702.81 ft. MSL	1. Cap and lock?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation	702.57 ft. MSL	2. Protective cover pipe:	
C. Land surface elevation	700.24 ft. MSL	a. Inside diameter:	4 in.
D. Surface seal, bottom	699.74 ft. MSL or 0.5 ft.	b. Length:	7 ft.
12. USCS classification of soil near screen:		c. Material:	Steel <input checked="" type="checkbox"/> 04 Other <input type="checkbox"/>
GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/>		d. Additional protection?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/>		If yes, describe:	ves. bumper posts (3)
Bedrock <input checked="" type="checkbox"/>		3. Surface seal:	Bentonite <input checked="" type="checkbox"/> 30 Concrete <input type="checkbox"/> 01 Other <input type="checkbox"/>
13. Sieve analysis performed?	<input type="checkbox"/> Yes <input type="checkbox"/> No	_____ 10 bags 3/8in Bentonite chips	
14. Drilling method used:	Rotary <input checked="" type="checkbox"/> 50 Hollow Stem Auger <input checked="" type="checkbox"/> 41 Other <input type="checkbox"/>	4. Material between well casing and protective pipe:	Bentonite <input type="checkbox"/> 30 Other <input type="checkbox"/>
15. Drilling fluid used:	Water <input checked="" type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input type="checkbox"/> 99	_____ Ohio #5 sand-2 bags	
16. Drilling additives used?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5. Annular space seal:	a. Granular/Chipped Bentonite <input type="checkbox"/> 33 b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry <input type="checkbox"/> 35 c. 200 Lbs/gal mud weight . . . Bentonite slurry <input checked="" type="checkbox"/> 31 d. _____ % Bentonite . . . . Bentonite-cement grout <input type="checkbox"/> 50 e. _____ Ft <sup>3</sup> volume added for any of the above f. How installed:
17. Source of water (attach analysis, if required):	Site supply well	_____ Tremie <input checked="" type="checkbox"/> 01 _____ Tremie pumped <input checked="" type="checkbox"/> 02 _____ Gravity <input type="checkbox"/> 08	
E. Bentonite seal, top	572.24 ft. MSL or 128 ft.	6. Bentonite seal:	a. Bentonite granules <input type="checkbox"/> 33 b. <input type="checkbox"/> 1/4 in. <input checked="" type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite chips <input type="checkbox"/> 32 c. _____ 2 Bags Other <input type="checkbox"/>
F. Fine sand, top	567.24 ft. MSL or 133 ft.	7. Fine sand material: Manufacturer, product name & mesh size	
G. Filter pack, top	565.24 ft. MSL or 135 ft.	a. _____ 1 bag Ohio #7 <input type="checkbox"/>	
H. Screen joint, top	563.24 ft. MSL or 137 ft.	b. Volume added _____ 0.5 ft <sup>3</sup>	
I. Well bottom	558.24 ft. MSL or 142 ft.	8. Filter pack material: Manufacturer, product name & mesh size	
J. Filter pack, bottom	558.24 ft. MSL or 142 ft.	a. _____ Ohio #5 <input type="checkbox"/>	
K. Borehole, bottom	552.24 ft. MSL or 148 ft.	b. Volume added _____ 3 ft <sup>3</sup>	
L. Borehole, diameter	8.0 in.	9. Well casing:	Flush threaded PVC schedule 40 <input type="checkbox"/> 23 Flush threaded PVC schedule 80 <input checked="" type="checkbox"/> 24 Other <input type="checkbox"/>
M. O.D. well casing	2.4 in.	10. Screen material: _____ PVC	
N. I.D. well casing	1.9 in.	a. Screen type:	Factory cut <input type="checkbox"/> 11 Continuous slot <input checked="" type="checkbox"/> 01 Other <input type="checkbox"/>
		b. Manufacturer _____ Monoflex	
		c. Slot size: _____ 0.01 in.	
		d. Slotted length: _____ 5 ft.	
		11. Backfill material (below filter pack):	None <input type="checkbox"/> 14 Limestone Chips Other <input checked="" type="checkbox"/>

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: *[Signature]* for M.H.  
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718-6751

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin  
Department of Natural Resources

Route to:  Watershed/Wastewater  Remediation/Redevelopment  Waste Management  Other

MONITORING WELL CONSTRUCTION  
Form 4400-113A Rev. 7-98

Facility/Project Name WPL-143	Local Grid Location of Well 625615.5 ft. <input checked="" type="checkbox"/> N. <input type="checkbox"/> S. 2560451 ft. <input checked="" type="checkbox"/> E. <input type="checkbox"/> W.	Well Name MW-303
Facility License, Permit or Monitoring No. 02853	Local Grid Origin (estimated: <input type="checkbox"/> ) or Well Location <input checked="" type="checkbox"/> " or Lat. " Long. " or	Wis. Unique Well No. <input type="checkbox"/> DNR Well ID No. <input type="checkbox"/>
Facility ID 460022090	St. Plane 625615.5 ft. N. 2560451.0 ft. E. S/C/N	Date Well Installed 12 / 03 / 2015 m m d d y y v v v y
Type of Well Well Code 12 / PZ	Section Location of Waste/Source SW <sub>1</sub> / <sub>4</sub> of NE <sub>1</sub> / <sub>4</sub> of Sec. 8, T. 14 N, R. 23 <input checked="" type="checkbox"/> E <input type="checkbox"/> W	Well Installed By: Name (first, last) and Firm Kevin Durst
Distance from Waste/Source _____ ft.	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	Gov. Lot Number _____
Enf. Stds. Apply <input type="checkbox"/>		Badger State Drilling

- A. Protective pipe, top elevation -- 719.48 ft. MSL
- B. Well casing, top elevation -- 719.25 ft. MSL
- C. Land surface elevation -- 716.60 ft. MSL
- D. Surface seal, bottom -- 716.10 ft. MSL or -- .50 ft.

12. USCS classification of soil near screen:  
 GP  GM  GC  GW  SW  SP   
 SM  SC  ML  MH  CL  CH   
 Bedrock

13. Sieve analysis performed?  Yes  No

14. Drilling method used: Rotary  5 0  
 Hollow Stem Auger  4 1  
 Other

15. Drilling fluid used: Water  0 2 Air  0 1  
 Drilling Mud  0 3 None  9 9

16. Drilling additives used?  Yes  No  
 Describe \_\_\_\_\_

17. Source of water (attach analysis, if required):  
 Site supply well

- 1. Cap and lock?  Yes  No
- 2. Protective cover pipe:  
 a. Inside diameter: -- 6 in.  
 b. Length: -- 5 ft.  
 c. Material: Steel  0 4  
 Other
- d. Additional protection?  Yes  No  
 If yes, describe: ves. bumper posts (3)
- 3. Surface seal: Bentonite  3 0  
 Concrete  0 1  
 Other
- 4. Material between well casing and protective pipe:  
 Bentonite  3 0  
 Ohio #5 sand Other
- 5. Annular space seal: a. Granular/Chipped Bentonite  3 3  
 b. \_\_\_ Lbs/gal mud weight . . . Bentonite-sand slurry  3 5  
 c. 150 Lbs/gal mud weight . . . . . Bentonite slurry  3 1  
 d. \_\_\_ % Bentonite . . . . . Bentonite-cement grout  5 0  
 e. \_\_\_ Ft<sup>3</sup> volume added for any of the above  
 f. How installed: Tremie  0 1  
 Tremie pumped  0 2  
 Gravity  0 8
- 6. Bentonite seal: a. Bentonite granules  3 3  
 b.  1/4 in.  3/8 in.  1/2 in. Bentonite chips  3 2  
 c. \_\_\_ Other
- 7. Fine sand material: Manufacturer, product name & mesh size  
 a. Ohio #7   
 b. Volume added 0.5 ft<sup>3</sup>
- 8. Filter pack material: Manufacturer, product name & mesh size  
 a. Ohio #5   
 b. Volume added 1.50 ft<sup>3</sup>
- 9. Well casing: Flush threaded PVC schedule 40  2 3  
 Flush threaded PVC schedule 80  2 4  
 Other
- 10. Screen material: PVC  
 a. Screen type: Factory cut  1 1  
 Continuous slot  0 1  
 Other
- b. Manufacturer Model flex  
 c. Slot size: 0.01 in.  
 d. Slotted length: -- 5 ft.
- 11. Backfill material (below filter pack): None  1 4  
 Native Other

- E. Bentonite seal, top -- 588.60 ft. MSL or -- 128 ft.
- F. Fine sand, top -- 583.60 ft. MSL or -- 133 ft.
- G. Filter pack, top -- 581.60 ft. MSL or -- 135 ft.
- H. Screen joint, top -- 579.60 ft. MSL or -- 137 ft.
- I. Well bottom -- 574.60 ft. MSL or -- 142 ft.
- J. Filter pack, bottom -- 574.60 ft. MSL or -- 142 ft.
- K. Borehole, bottom -- 573.60 ft. MSL or -- 143 ft.
- L. Borehole, diameter -- 6.0 in.
- M. O.D. well casing -- 2.4 in.
- N. I.D. well casing -- 1.9 in.

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature *Zach Watson* Firm SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718-6751

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.



State of Wisconsin  
Department of Natural Resources

Route to: Watershed/Wastewater  Waste Management   
Remediation/Redevelopment  Other

MONITORING WELL CONSTRUCTION  
Form 4400-113A Rev. 7-98

Facility/Project Name WPL-143	Local Grid Location of Well 624204 ft. <input checked="" type="checkbox"/> N. 2558156 ft. <input checked="" type="checkbox"/> E.	Well Name MW-304
Facility License, Permit or Monitoring No. 02853	Local Grid Origin (estimated: <input type="checkbox"/> ) or Well Location <input checked="" type="checkbox"/> Lat. " Long. " or	Wis. Unique Well No. <input type="checkbox"/> DNR Well ID No. <input type="checkbox"/>
Facility ID 460022090	St. Plane 624204.0 ft. N, 2558156.0 ft. E. S/C/N	Date Well Installed 1 / 26 / 2016 m m d d y y y y
Type of Well Well Code 12 / PZ	Section Location of Waste/Source SW 1/4 of NE 1/4 of Sec. 8, T. 14 N, R. 23 <input checked="" type="checkbox"/> E <input checked="" type="checkbox"/> W	Well Installed By: Name (first, last) and Firm Kevin Duerst
Distance from Waste/Source ft.	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known	Badger State Drilling
Enf. Stds. Apply <input type="checkbox"/>	Gov. Lot Number	

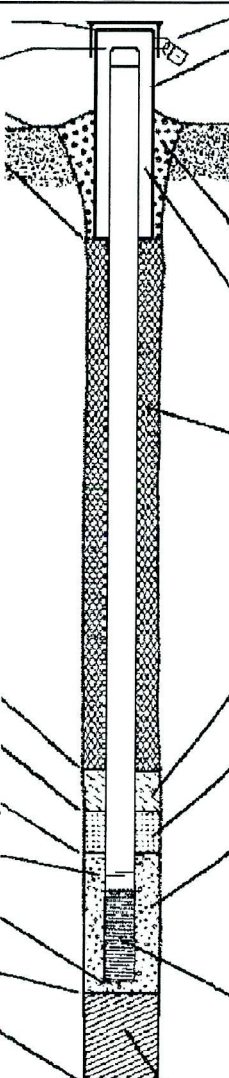
A. Protective pipe, top elevation	692.38 ft. MSL	1. Cap and lock?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
B. Well casing, top elevation	691.97 ft. MSL	2. Protective cover pipe:	
C. Land surface elevation	689.48 ft. MSL	a. Inside diameter:	6 in.
D. Surface seal, bottom	688.98 ft. MSL or 0.5 ft.	b. Length:	5 ft.
12. USCS classification of soil near screen:		c. Material:	Steel <input checked="" type="checkbox"/> 0.4 Other <input type="checkbox"/>
GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/>		d. Additional protection?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/>		If yes, describe:	ves. bumper posts
Bedrock <input checked="" type="checkbox"/>		3. Surface seal:	Bentonite <input checked="" type="checkbox"/> 3.0 Concrete <input type="checkbox"/> 0.1 Other <input type="checkbox"/>
13. Sieve analysis performed?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	4. Material between well casing and protective pipe:	Bentonite <input type="checkbox"/> 3.0 Other <input checked="" type="checkbox"/>
14. Drilling method used:	Rotary <input checked="" type="checkbox"/> 5.0 Hollow Stem Auger <input checked="" type="checkbox"/> 4.1 Other <input type="checkbox"/>	5. Annular space seal:	a. Granular/Chipped Bentonite <input type="checkbox"/> 3.3 b. Lbs/gal mud weight . . . Bentonite-sand slurry <input type="checkbox"/> 3.5 c. 200 Lbs/gal mud weight . . . Bentonite slurry <input type="checkbox"/> 3.1 d. % Bentonite . . . . . Bentonite-cement grout <input type="checkbox"/> 5.0 e. Ft <sup>3</sup> volume added for any of the above
15. Drilling fluid used: Water <input checked="" type="checkbox"/> 0.2 Air <input type="checkbox"/> 0.1 Drilling Mud <input type="checkbox"/> 0.3 None <input checked="" type="checkbox"/> 9.9		f. How installed:	Tremie <input checked="" type="checkbox"/> 0.1 Tremie pumped <input type="checkbox"/> 0.2 Gravity <input type="checkbox"/> 0.8
16. Drilling additives used?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	6. Bentonite seal:	a. Bentonite granules <input type="checkbox"/> 3.3 b. <input type="checkbox"/> 1/4 in. <input checked="" type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite chips <input checked="" type="checkbox"/> 3.2 c. Black Hills Bentonite Other <input type="checkbox"/>
Describe		7. Fine sand material: Manufacturer, product name & mesh size	
17. Source of water (attach analysis, if required): Site supply well		a. Ohio #5	<input type="checkbox"/>
E. Bentonite seal, top	586.48 ft. MSL or 103 ft.	b. Volume added	0.5 ft <sup>3</sup>
F. Fine sand, top	581.48 ft. MSL or 108 ft.	8. Filter pack material: Manufacturer, product name & mesh size	
G. Filter pack, top	579.48 ft. MSL or 110 ft.	a. Ohio #7	<input type="checkbox"/>
H. Screen joint, top	577.48 ft. MSL or 112 ft.	b. Volume added	1 ft <sup>3</sup>
I. Well bottom	572.48 ft. MSL or 117 ft.	9. Well casing:	Flush threaded PVC schedule 40 <input type="checkbox"/> 2.3 Flush threaded PVC schedule 80 <input checked="" type="checkbox"/> 2.4 Other <input type="checkbox"/>
J. Filter pack, bottom	572.48 ft. MSL or 117 ft.	10. Screen material:	PVC
K. Borehole, bottom	571.48 ft. MSL or 118 ft.	a. Screen type:	Factory cut <input checked="" type="checkbox"/> 1.1 Continuous slot <input type="checkbox"/> 0.1 Other <input type="checkbox"/>
L. Borehole, diameter	8.0 in.	b. Manufacturer	Monoflex
M. O.D. well casing	2.4 in.	c. Slot size:	0.01 in.
N. I.D. well casing	1.9 in.	d. Slotted length:	5 ft.
		11. Backfill material (below filter pack):	None <input checked="" type="checkbox"/> 1.4 Other <input type="checkbox"/>

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature: *Tyler [Signature]* for Joe Larson Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718-6751

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

Facility/Project Name WPL - Edgewater I43	Local Grid Location of Well _____ ft. <input type="checkbox"/> N. _____ ft. <input type="checkbox"/> E. _____ ft. <input type="checkbox"/> S. _____ ft. <input type="checkbox"/> W.	Well Name MW-305
Facility License, Permit or Monitoring No.	Local Grid Origin _____ (estimated: <input type="checkbox"/> ) or Well Location <input checked="" type="checkbox"/> Lat. _____ " Long. _____ " or _____ " or _____ "	Wis. Unique Well No. VY819 DNR Well ID No. _____
Facility ID	St. Plane 623435.13 ft. N, 2559945.85 ft. E. S/C/N	Date Well Installed m m d d y y v v y y _ 2 / _ 2 / _ 2017
Type of Well Well Code 12 / PZ	Section Location of Waste/Source 1/4 of _____ 1/4 of Sec. _____ T. _____ N, R. _____ <input type="checkbox"/> E <input type="checkbox"/> W	Well Installed By: Name (first, last) and Firm Kevin Duerst
Distance from Waste/Source _____ ft.	Enf. Stds. Apply <input checked="" type="checkbox"/>	Gov. Lot Number _____
Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known		Badger State Drilling

<p>A. Protective pipe, top elevation --- 717.88 ft. MSL</p> <p>B. Well casing, top elevation --- 717.67 ft. MSL</p> <p>C. Land surface elevation --- 715.46 ft. MSL</p> <p>D. Surface seal, bottom --- 713.46 ft. MSL or --- 2 ft.</p>	<p>12. USCS classification of soil near screen: GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock <input checked="" type="checkbox"/></p> <p>13. Sieve analysis performed? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>14. Drilling method used: Rotary <input checked="" type="checkbox"/> 5 0 Hollow Stem Auger <input checked="" type="checkbox"/> 4 1 Other <input type="checkbox"/></p> <p>15. Drilling fluid used: Water <input checked="" type="checkbox"/> 0 2 Air <input type="checkbox"/> 0 1 Drilling Mud <input type="checkbox"/> 0 3 None <input type="checkbox"/> 9 9</p> <p>16. Drilling additives used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Describe _____</p> <p>17. Source of water (attach analysis, if required): Site Supply Well</p>	 <p>1. Cap and lock? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>2. Protective cover pipe: 6.0 in. a. Inside diameter: _____ b. Length: _____ c. Material: Steel <input checked="" type="checkbox"/> 0 4 Other <input type="checkbox"/></p> <p>d. Additional protection? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe: yes, bumper posts (3)</p> <p>3. Surface seal: Bentonite <input type="checkbox"/> 3 0 Concrete <input checked="" type="checkbox"/> 0 1 Other <input type="checkbox"/></p> <p>4. Material between well casing and protective pipe: Bentonite <input type="checkbox"/> 3 0 #5 R.W. Sidley Other <input checked="" type="checkbox"/></p> <p>5. Annular space seal: a. Granular/Chipped Bentonite <input type="checkbox"/> 3 3 b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry <input type="checkbox"/> 3 5 c. _____ Lbs/gal mud weight . . . . . Bentonite slurry <input checked="" type="checkbox"/> 3 1 d. _____ % Bentonite . . . . . Bentonite-cement grout <input type="checkbox"/> 5 0 e. _____ 9.4 Ft<sup>3</sup> volume added for any of the above f. How installed: Tremie <input type="checkbox"/> 0 1 Tremie pumped <input type="checkbox"/> 0 2 Gravity <input type="checkbox"/> 0 8</p> <p>6. Bentonite seal: a. Bentonite granules <input type="checkbox"/> 3 3 b. <input type="checkbox"/> 1/4 in. <input checked="" type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite chips <input type="checkbox"/> 3 2 c. 100 lbs Other <input type="checkbox"/></p> <p>7. Fine sand material: Manufacturer, product name &amp; mesh size a. #7 R.W. Sidley <input type="checkbox"/> b. Volume added _____ 0.5 ft<sup>3</sup></p> <p>8. Filter pack material: Manufacturer, product name &amp; mesh size a. #5 R.W. Sidley <input type="checkbox"/> b. Volume added _____ 1.5 ft<sup>3</sup></p> <p>9. Well casing: Flush threaded PVC schedule 40 <input type="checkbox"/> 2 3 Flush threaded PVC schedule 80 <input type="checkbox"/> 2 4 Other <input type="checkbox"/></p> <p>10. Screen material: PVC a. Screen type: Factory cut <input type="checkbox"/> 1 1 Continuous slot <input checked="" type="checkbox"/> 0 1 Other <input type="checkbox"/></p> <p>b. Manufacturer _____ Monoflex c. Slot size: _____ 0.01 in. d. Slotted length: _____ 5 ft.</p> <p>11. Backfill material (below filter pack): None <input checked="" type="checkbox"/> 1 4 Other <input type="checkbox"/></p>
<p>E. Bentonite seal, top --- 609.46 ft. MSL or --- 106 ft.</p> <p>F. Fine sand, top --- 603.46 ft. MSL or --- 112 ft.</p> <p>G. Filter pack, top --- 602.46 ft. MSL or --- 113 ft.</p> <p>H. Screen joint, top --- 600.46 ft. MSL or --- 115 ft.</p> <p>I. Well bottom --- 595.46 ft. MSL or --- 120 ft.</p> <p>J. Filter pack, bottom --- 594.46 ft. MSL or --- 121 ft.</p> <p>K. Borehole, bottom --- 594.46 ft. MSL or --- 121 ft.</p> <p>L. Borehole, diameter --- 6.25 in.</p> <p>M. O.D. well casing --- 2.4 in.</p> <p>N. I.D. well casing --- 1.9 in.</p>		

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature *Phyllis* Firm SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

Route to: Watershed/Wastewater  Waste Management   
Remediation/Redevelopment  Other

Facility/Project Name Alliant Energy I-43	County Name Sheboygan	Well Name MW-301	
Facility License, Permit or Monitoring Number	County Code 59	Wis. Unique Well Number VV-864	DNR Well ID Number

1. Can this well be purged dry?  Yes  No

2. Well development method
- surged with bailer and bailed  4 1
  - surged with bailer and pumped  6 1
  - surged with block and bailed  4 2
  - surged with block and pumped  6 2
  - surged with block, bailed and pumped  7 0
  - compressed air  2 0
  - bailed only  1 0
  - pumped only  5 1
  - pumped slowly  5 0
  - Other

3. Time spent developing well \_\_\_\_\_ 190 min.

4. Depth of well (from top of well casing) \_\_\_\_\_ 132 9 ft.

5. Inside diameter of well \_\_\_\_\_ 2 0 in.

6. Volume of water in filter pack and well casing \_\_\_\_\_ 18 2 gal.

7. Volume of water removed from well \_\_\_\_\_ 315 gal.

8. Volume of water added (if any) \_\_\_\_\_ gal.

9. Source of water added \_\_\_\_\_

10. Analysis performed on water added?  Yes  No  
(If yes, attach results)

17. Additional comments on development:

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. _____ 46 _____ 49 ft.	_____ 46 _____ 34 ft.
Date	b. _____ 02 / _____ 16 / _____ 2016	_____ 02 / _____ 16 / _____ 2016
Time	c. _____ 12 : 50 <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.	_____ 16 : 00 <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.
12. Sediment in well bottom	_____ inches	_____ inches
13. Water clarity	Clear <input type="checkbox"/> 1 0 Turbid <input checked="" type="checkbox"/> 1 5 (Describe) _____	Clear <input checked="" type="checkbox"/> 2 0 Turbid <input type="checkbox"/> 2 5 (Describe) _____
14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l

Fill in if drilling fluids were used and well is at solid waste facility:

16. Well developed by: Name (first, last) and Firm  
First Name: Nate Last Name: Harms  
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

Name and Address of Facility Contact /Owner/Responsible Party

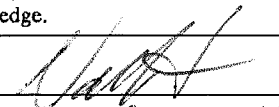
First Name: Jim Last Name: Jakubiak

Facility/Firm: WP&L Alliant Energy

Street: 3739 Lakeshore Drive

City/State/Zip: Sheboygan, WI 53082

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: 

Print Name: Nate Harms

Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

NOTE: See instructions for more information including a list of county codes and well type codes.

Route to: Watershed/Wastewater  Waste Management   
Remediation/Redevelopment  Other

Facility/Project Name Alliant Energy I-43	County Name Sheboygan	Well Name MW-302	
Facility License, Permit or Monitoring Number	County Code 59	Wis. Unique Well Number VV-863	DNR Well ID Number

1. Can this well be purged dry?  Yes  No

2. Well development method
- surged with bailer and bailed  4 1
  - surged with bailer and pumped  6 1
  - surged with block and bailed  4 2
  - surged with block and pumped  6 2
  - surged with block, bailed and pumped  7 0
  - compressed air  2 0
  - bailed only  1 0
  - pumped only  5 1
  - pumped slowly  5 0
  - Other  \_\_\_\_\_

3. Time spent developing well \_\_\_\_\_ 145 min.

4. Depth of well (from top of well casing) \_\_\_\_\_ 143.8 ft.

5. Inside diameter of well \_\_\_\_\_ 2.0 in.

6. Volume of water in filter pack and well casing \_\_\_\_\_ 19.3 gal.

7. Volume of water removed from well \_\_\_\_\_ 296 gal.

8. Volume of water added (if any) \_\_\_\_\_ gal.

9. Source of water added \_\_\_\_\_

10. Analysis performed on water added?  Yes  No  
(If yes, attach results)

17. Additional comments on development:

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. _____ 51.23 ft.	_____ 51.24 ft.
Date	b. <u>02</u> / <u>16</u> / <u>2016</u>	<u>02</u> / <u>16</u> / <u>2016</u>
	m m d d y y y y	m m d d y y y y
Time	c. _____ 11:55 <input checked="" type="checkbox"/> a.m. <input type="checkbox"/> p.m.	_____ 14:20 <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.
12. Sediment in well bottom	_____ inches	_____ inches
13. Water clarity	Clear <input type="checkbox"/> 1 0 Turbid <input checked="" type="checkbox"/> 1 5 (Describe) _____	Clear <input checked="" type="checkbox"/> 2 0 Turbid <input type="checkbox"/> 2 5 (Describe) _____
	Medium brown color	Medium brown color
	Very turbid	Very slight turbidity

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids \_\_\_\_\_ mg/l \_\_\_\_\_ mg/l

15. COD \_\_\_\_\_ mg/l \_\_\_\_\_ mg/l

16. Well developed by: Name (first, last) and Firm

First Name: Nate Last Name: Harms

Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

Name and Address of Facility Contact/Owner/Responsible Party

First Name: Jim Last Name: Jakubiak

Facility/Firm: WP&L Alliant Energy

Street: 3739 Lakeshore Drive

City/State/Zip: Sheboygan, WI 53082

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: 

Print Name: Nate Harms

Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

Route to: Watershed/Wastewater  Waste Management   
Remediation/Redevelopment  Other

Facility/Project Name Alliant Energy I-43	County Name Sheboygan	Well Name MW-303	
Facility License, Permit or Monitoring Number	County Code 59	Wis. Unique Well Number VV-865	DNR Well ID Number

1. Can this well be purged dry?  Yes  No

2. Well development method
- surged with bailer and bailed  4 1
  - surged with bailer and pumped  6 1
  - surged with block and bailed  4 2
  - surged with block and pumped  6 2
  - surged with block, bailed and pumped  7 0
  - compressed air  2 0
  - bailed only  1 0
  - pumped only  5 1
  - pumped slowly  5 0
  - Other  \_\_\_\_\_

3. Time spent developing well \_\_\_\_\_ 150 min.

4. Depth of well (from top of well casing) \_\_\_\_\_ 145.7 ft.

5. Inside diameter of well \_\_\_\_\_ 2.0 in.

6. Volume of water in filter pack and well casing \_\_\_\_\_ 18.4 gal.

7. Volume of water removed from well \_\_\_\_\_ 250 gal.

8. Volume of water added (if any) \_\_\_\_\_ - gal.

9. Source of water added \_\_\_\_\_

10. Analysis performed on water added?  Yes  No  
(If yes, attach results)

17. Additional comments on development:

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. _____ 67 _____ 86 ft.	_____ 67 _____ 86 ft.
Date	b. <u>02</u> / <u>16</u> / <u>2016</u>	<u>02</u> / <u>16</u> / <u>2016</u>
	m m d d y y y y	m m d d y y y y
Time	c. _____ 15 : 10 <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.	_____ 17 : 40 <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.
12. Sediment in well bottom	_____ inches	_____ inches
13. Water clarity	Clear <input type="checkbox"/> 1 0 Turbid <input checked="" type="checkbox"/> 1 5 (Describe) _____	Clear <input checked="" type="checkbox"/> 2 0 Turbid <input type="checkbox"/> 2 5 (Describe) _____
	Medium brown color	Light brown color
	Very turbid	very slight turbidity
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l

16. Well developed by: Name (first, last) and Firm  
First Name: Nate Last Name: Harms  
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

Name and Address of Facility Contact /Owner/Responsible Party

First Name: Jim Last Name: Jakubiak

Facility/Firm: WP&L Alliant Energy

Street: 3739 Lakeshore Drive

City/State/Zip: Sheboygan, WI 53082

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: 

Print Name: Nate Harms

Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

Route to: Watershed/Wastewater  Waste Management   
Remediation/Redevelopment  Other

Facility/Project Name Alliant Energy I-43	County Name Sheboygan	Well Name MW-304	
Facility License, Permit or Monitoring Number	County Code 59	Wis. Unique Well Number VV-866	DNR Well ID Number

1. Can this well be purged dry?  Yes  No

2. Well development method
- surged with bailer and bailed  4 1
  - surged with bailer and pumped  6 1
  - surged with block and bailed  4 2
  - surged with block and pumped  6 2
  - surged with block, bailed and pumped  7 0
  - compressed air  2 0
  - bailed only  1 0
  - pumped only  5 1
  - pumped slowly  5 0
  - Other

3. Time spent developing well 120 min.

4. Depth of well (from top of well casing) 145.7 ft.

5. Inside diameter of well 2.0 in.

6. Volume of water in filter pack and well casing 18.4 gal.

7. Volume of water removed from well 240 gal.

8. Volume of water added (if any) -,- gal.

9. Source of water added \_\_\_\_\_

10. Analysis performed on water added?  Yes  No  
(If yes, attach results)

17. Additional comments on development:

11. Depth to Water Before Development After Development

(from top of well casing) a. 39.15 ft. 39.39 ft.

Date b. 02/16/2016 02/16/2016  
m m d d y y y y m m d d y y y y

Time c. 16:40  a.m.  p.m. 18:40  a.m.  p.m.

12. Sediment in well bottom \_\_\_\_\_ inches \_\_\_\_\_ inches

13. Water clarity Clear  1 0 Clear  2 0  
Turbid  1 5 Turbid  2 5  
(Describe) (Describe)

Medium brown color Water mostly clear  
Very turbid Very slight turbidity

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended \_\_\_\_\_ mg/l \_\_\_\_\_ mg/l  
solids

15. COD \_\_\_\_\_ mg/l \_\_\_\_\_ mg/l

16. Well developed by: Name (first, last) and Firm

First Name: Nate Last Name: Harms

Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

Name and Address of Facility Contact /Owner/Responsible Party

First Name: Jim Last Name: Jakubiak

Facility/Firm: WP&L Alliant Energy

Street: 3739 Lakeshore Drive

City/State/Zip: Sheboygan, WI 53082

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: 

Print Name: Nate Harms

Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718

Route to: Watershed/Wastewater  Waste Management   
Remediation/Redevelopment  Other

Facility/Project Name WPL-I-43	County Name Sheyboygan	Well Name MW-305	
Facility License, Permit or Monitoring Number 02853	County Code 59	Wis. Unique Well Number VY819	DNR Well ID Number _____

1. Can this well be purged dry?  Yes  No

2. Well development method

- surged with bailer and bailed  4 1
- surged with bailer and pumped  6 1
- surged with block and bailed  4 2
- surged with block and pumped  6 2
- surged with block, bailed and pumped  7 0
- compressed air  2 0
- bailed only  1 0
- pumped only  5 1
- pumped slowly  5 0
- Other \_\_\_\_\_  \_\_\_\_\_

3. Time spent developing well \_\_\_\_\_ 162 min.

4. Depth of well (from top of well casing) \_\_\_\_\_ 122.97 ft.

5. Inside diameter of well \_\_\_\_\_ 1.9 in.

6. Volume of water in filter pack and well casing \_\_\_\_\_ 14.16 gal.

7. Volume of water removed from well \_\_\_\_\_ 135.0 gal.

8. Volume of water added (if any) \_\_\_\_\_ -.- gal.

9. Source of water added \_\_\_\_\_ NA

---

10. Analysis performed on water added?  Yes  No  
(If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. _____ 59 . _____ 56 ft.	_____ 59 . _____ 46 ft.
Date	b. _____ 2 / _____ 7 / _____ 2017	_____ 2 / _____ 7 / _____ 2017
Time	c. _____ 11 : 00 <input checked="" type="checkbox"/> a.m. <input type="checkbox"/> p.m.	_____ 2 : 05 <input type="checkbox"/> a.m. <input checked="" type="checkbox"/> p.m.
12. Sediment in well bottom	_____ inches	_____ inches
13. Water clarity	Clear <input type="checkbox"/> 1 0 Turbid <input checked="" type="checkbox"/> 1 5 (Describe) _____	Clear <input checked="" type="checkbox"/> 2 0 Turbid <input type="checkbox"/> 2 5 (Describe) _____
Fill in if drilling fluids were used and well is at solid waste facility:		
14. Total suspended solids	_____ mg/l	_____ mg/l
15. COD	_____ mg/l	_____ mg/l
16. Well developed by: Name (first, last) and Firm		
First Name: Kyle		Last Name: Kramer
Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718		

17. Additional comments on development:  
Water clarity was clear before ten well volumes.

Name and Address of Facility Contact /Owner/Responsible Party


First Name: Jim Last Name: Jakubiak

Facility/Firm: Wisconsin Power and Light

Street: 3739 Lakeshore Drive


City/State/Zip: Sheyboygan, WI 53081

I hereby certify that the above information is true and correct to the best of my knowledge.

Signature: 

Print Name: Kyle Kramer

Firm: SCS ENGINEERS, 2830 Dairy Drive, Madison, WI 53718



Appendix C  
Laboratory Reports



## C1 April 2022 Detection Monitoring

May 02, 2022

Meghan Blodgett  
SCS ENGINEERS  
2830 Dairy Drive  
Madison, WI 53718

RE: Project: 25216069 I-43 EDGEWATER CCR  
Pace Project No.: 40243426

Dear Meghan Blodgett:


Enclosed are the analytical results for sample(s) received by the laboratory on April 14, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Green Bay

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

Sincerely,



Dan Milewsky  
dan.milewsky@pacelabs.com  
(920)469-2436  
Project Manager

Enclosures

cc: Sherren Clark, SCS Engineers  
Tom Karwoski, SCS ENGINEERS  
Nicole Kron, SCS ENGINEERS  
Ryan Matzuk, SCS Engineers  
Jeff Maxted, ALLIANT ENERGY  
Marc Morandi, ALLIANT ENERGY



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## CERTIFICATIONS

Project: 25216069 I-43 EDGEWATER CCR

Pace Project No.: 40243426

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### **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

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## SAMPLE SUMMARY

Project: 25216069 I-43 EDGEWATER CCR

Pace Project No.: 40243426

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40243426001	MW-303	Water	04/11/22 14:25	04/14/22 07:50
40243426002	MW-304	Water	04/11/22 13:05	04/14/22 07:50
40243426003	MW-305	Water	04/11/22 11:53	04/14/22 07:50
40243426004	MW-302	Water	04/13/22 13:55	04/14/22 07:50
40243426005	MW-301	Water	04/13/22 14:55	04/14/22 07:50
40243426006	FIELD BLANK	Water	04/13/22 13:42	04/14/22 07:50

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### SAMPLE ANALYTE COUNT

Project: 25216069 I-43 EDGEWATER CCR  
Pace Project No.: 40243426

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40243426001	MW-303	EPA 6020B	KXS	2
			KPR	7
		SM 2540C	SRK	1
		EPA 9040	YER	1
		EPA 300.0	HMB	3
40243426002	MW-304	EPA 6020B	KXS	2
			KPR	7
		SM 2540C	SRK	1
		EPA 9040	YER	1
		EPA 300.0	HMB	3
40243426003	MW-305	EPA 6020B	KXS	2
			KPR	7
		SM 2540C	SRK	1
		EPA 9040	YER	1
		EPA 300.0	HMB	3
40243426004	MW-302	EPA 6020B	KXS	2
			KPR	7
		SM 2540C	SRK	1
		EPA 9040	YER	1
		EPA 300.0	HMB	3
40243426005	MW-301	EPA 6020B	KXS	2
			KPR	7
		SM 2540C	SRK	1
		EPA 9040	YER	1
		EPA 300.0	HMB	3
40243426006	FIELD BLANK	EPA 6020B	KXS	2
			SRK	1
		EPA 9040	YER	1
		EPA 300.0	HMB	3

PASI-G = Pace Analytical Services - Green Bay

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## ANALYTICAL RESULTS

Project: 25216069 I-43 EDGEWATER CCR

Pace Project No.: 40243426

**Sample: MW-303**      **Lab ID: 40243426001**      Collected: 04/11/22 14:25      Received: 04/14/22 07:50      Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>									
Analytical Method: EPA 6020B    Preparation Method: EPA 3010A									
Pace Analytical Services - Green Bay									
Boron	<b>80.7</b>	ug/L	10.0	3.0	1	04/18/22 06:44	04/29/22 23:30	7440-42-8	
Calcium	<b>31300</b>	ug/L	254	76.2	1	04/18/22 06:44	04/28/22 18:00	7440-70-2	
<b>Field Data</b>									
Analytical Method:									
Pace Analytical Services - Green Bay									
Field pH	<b>7.73</b>	Std. Units			1		04/11/22 14:25		
Field Specific Conductance	<b>458</b>	umhos/cm			1		04/11/22 14:25		
Oxygen, Dissolved	<b>1.75</b>	mg/L			1		04/11/22 14:25	7782-44-7	
REDOX	<b>78</b>	mV			1		04/11/22 14:25		
Turbidity	<b>0.92</b>	NTU			1		04/11/22 14:25		
Static Water Level	<b>651.58</b>	feet			1		04/11/22 14:25		
Temperature, Water (C)	<b>10.9</b>	deg C			1		04/11/22 14:25		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Green Bay									
Total Dissolved Solids	<b>274</b>	mg/L	20.0	8.7	1		04/15/22 15:14		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
Pace Analytical Services - Green Bay									
pH at 25 Degrees C	<b>7.9</b>	Std. Units	0.10	0.010	1		04/15/22 12:47		H6
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Green Bay									
Chloride	<b>4.3</b>	mg/L	2.0	0.43	1		04/27/22 00:01	16887-00-6	
Fluoride	<b>0.71</b>	mg/L	0.32	0.095	1		04/27/22 00:01	16984-48-8	
Sulfate	<b>24.9</b>	mg/L	2.0	0.44	1		04/27/22 00:01	14808-79-8	

## REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: 25216069 I-43 EDGEWATER CCR  
Pace Project No.: 40243426

**Sample: MW-304**      **Lab ID: 40243426002**      Collected: 04/11/22 13:05      Received: 04/14/22 07:50      Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>									
Analytical Method: EPA 6020B    Preparation Method: EPA 3010A Pace Analytical Services - Green Bay									
Boron	<b>89.3</b>	ug/L	10.0	3.0	1	04/18/22 06:44	04/29/22 23:38	7440-42-8	
Calcium	<b>25500</b>	ug/L	254	76.2	1	04/18/22 06:44	04/28/22 18:07	7440-70-2	
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Green Bay									
Field pH	<b>7.87</b>	Std. Units			1		04/11/22 13:05		
Field Specific Conductance	<b>392</b>	umhos/cm			1		04/11/22 13:05		
Oxygen, Dissolved	<b>0.41</b>	mg/L			1		04/11/22 13:05	7782-44-7	
REDOX	<b>135.6</b>	mV			1		04/11/22 13:05		
Turbidity	<b>5.11</b>	NTU			1		04/11/22 13:05		
Static Water Level	<b>653.08</b>	feet			1		04/11/22 13:05		
Temperature, Water (C)	<b>11.4</b>	deg C			1		04/11/22 13:05		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C Pace Analytical Services - Green Bay									
Total Dissolved Solids	<b>220</b>	mg/L	20.0	8.7	1		04/15/22 15:14		
<b>9040 pH</b>									
Analytical Method: EPA 9040 Pace Analytical Services - Green Bay									
pH at 25 Degrees C	<b>7.9</b>	Std. Units	0.10	0.010	1		04/15/22 12:49		H6
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay									
Chloride	<b>2.3</b>	mg/L	2.0	0.43	1		04/27/22 00:16	16887-00-6	
Fluoride	<b>&lt;0.095</b>	mg/L	0.32	0.095	1		04/27/22 00:16	16984-48-8	
Sulfate	<b>16.2</b>	mg/L	2.0	0.44	1		04/27/22 00:16	14808-79-8	

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## ANALYTICAL RESULTS

Project: 25216069 I-43 EDGEWATER CCR

Pace Project No.: 40243426

**Sample: MW-305**      **Lab ID: 40243426003**      Collected: 04/11/22 11:53      Received: 04/14/22 07:50      Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>									
Analytical Method: EPA 6020B    Preparation Method: EPA 3010A									
Pace Analytical Services - Green Bay									
Boron	<b>61.5</b>	ug/L	10.0	3.0	1	04/18/22 06:44	04/29/22 23:45	7440-42-8	
Calcium	<b>88500</b>	ug/L	254	76.2	1	04/18/22 06:44	04/28/22 18:14	7440-70-2	
<b>Field Data</b>									
Analytical Method:									
Pace Analytical Services - Green Bay									
Field pH	<b>7.42</b>	Std. Units			1		04/11/22 11:53		
Field Specific Conductance	<b>889</b>	umhos/cm			1		04/11/22 11:53		
Oxygen, Dissolved	<b>0.45</b>	mg/L			1		04/11/22 11:53	7782-44-7	
REDOX	<b>261.1</b>	mV			1		04/11/22 11:53		
Turbidity	<b>30.1</b>	NTU			1		04/11/22 11:53		
Static Water Level	<b>657.58</b>	feet			1		04/11/22 11:53		
Temperature, Water (C)	<b>9.9</b>	deg C			1		04/11/22 11:53		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Green Bay									
Total Dissolved Solids	<b>578</b>	mg/L	20.0	8.7	1		04/15/22 15:14		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
Pace Analytical Services - Green Bay									
pH at 25 Degrees C	<b>7.5</b>	Std. Units	0.10	0.010	1		04/15/22 12:51		H6
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Green Bay									
Chloride	<b>27.5</b>	mg/L	2.0	0.43	1		04/27/22 00:30	16887-00-6	
Fluoride	<b>&lt;0.095</b>	mg/L	0.32	0.095	1		04/27/22 00:30	16984-48-8	
Sulfate	<b>141</b>	mg/L	20.0	4.4	10		04/27/22 09:25	14808-79-8	

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### ANALYTICAL RESULTS

Project: 25216069 I-43 EDGEWATER CCR

Pace Project No.: 40243426

**Sample: MW-302**      **Lab ID: 40243426004**      Collected: 04/13/22 13:55      Received: 04/14/22 07:50      Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>									
Analytical Method: EPA 6020B    Preparation Method: EPA 3010A									
Pace Analytical Services - Green Bay									
Boron	<b>113</b>	ug/L	10.0	3.0	1	04/18/22 06:44	04/29/22 23:52	7440-42-8	
Calcium	<b>28600</b>	ug/L	254	76.2	1	04/18/22 06:44	04/28/22 18:22	7440-70-2	
<b>Field Data</b>									
Analytical Method:									
Pace Analytical Services - Green Bay									
Field pH	<b>8.01</b>	Std. Units			1		04/13/22 13:55		
Field Specific Conductance	<b>399</b>	umhos/cm			1		04/13/22 13:55		
Oxygen, Dissolved	<b>0.69</b>	mg/L			1		04/13/22 13:55	7782-44-7	
REDOX	<b>341</b>	mV			1		04/13/22 13:55		
Turbidity	<b>3.88</b>	NTU			1		04/13/22 13:55		
Static Water Level	<b>651.62</b>	feet			1		04/13/22 13:55		
Temperature, Water (C)	<b>9.9</b>	deg C			1		04/13/22 13:55		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C									
Pace Analytical Services - Green Bay									
Total Dissolved Solids	<b>238</b>	mg/L	20.0	8.7	1		04/15/22 15:15		
<b>9040 pH</b>									
Analytical Method: EPA 9040									
Pace Analytical Services - Green Bay									
pH at 25 Degrees C	<b>7.9</b>	Std. Units	0.10	0.010	1		04/15/22 12:53		H6
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0									
Pace Analytical Services - Green Bay									
Chloride	<b>4.0</b>	mg/L	2.0	0.43	1		04/27/22 01:00	16887-00-6	
Fluoride	<b>0.85</b>	mg/L	0.32	0.095	1		04/27/22 01:00	16984-48-8	
Sulfate	<b>17.2</b>	mg/L	2.0	0.44	1		04/27/22 01:00	14808-79-8	

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### ANALYTICAL RESULTS

Project: 25216069 I-43 EDGEWATER CCR  
Pace Project No.: 40243426

**Sample: MW-301**      **Lab ID: 40243426005**      Collected: 04/13/22 14:55      Received: 04/14/22 07:50      Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>									
Analytical Method: EPA 6020B    Preparation Method: EPA 3010A Pace Analytical Services - Green Bay									
Boron	<b>124</b>	ug/L	10.0	3.0	1	04/18/22 06:44	04/30/22 00:00	7440-42-8	
Calcium	<b>42100</b>	ug/L	254	76.2	1	04/18/22 06:44	04/28/22 18:29	7440-70-2	
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Green Bay									
Field pH	<b>8.03</b>	Std. Units			1		04/13/22 14:55		
Field Specific Conductance	<b>377</b>	umhos/cm			1		04/13/22 14:55		
Oxygen, Dissolved	<b>0.49</b>	mg/L			1		04/13/22 14:55	7782-44-7	
REDOX	<b>224.6</b>	mV			1		04/13/22 14:55		
Turbidity	<b>145.0</b>	NTU			1		04/13/22 14:55		
Static Water Level	<b>651.65</b>	feet			1		04/13/22 14:55		
Temperature, Water (C)	<b>9.2</b>	deg C			1		04/13/22 14:55		
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C Pace Analytical Services - Green Bay									
Total Dissolved Solids	<b>262</b>	mg/L	20.0	8.7	1		04/15/22 15:15		
<b>9040 pH</b>									
Analytical Method: EPA 9040 Pace Analytical Services - Green Bay									
pH at 25 Degrees C	<b>8.0</b>	Std. Units	0.10	0.010	1		04/15/22 12:55		H6
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay									
Chloride	<b>3.7</b>	mg/L	2.0	0.43	1		04/27/22 01:15	16887-00-6	
Fluoride	<b>0.70</b>	mg/L	0.32	0.095	1		04/27/22 01:15	16984-48-8	
Sulfate	<b>11.1</b>	mg/L	2.0	0.44	1		04/27/22 01:15	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: 25216069 I-43 EDGEWATER CCR  
Pace Project No.: 40243426

**Sample: FIELD BLANK**      **Lab ID: 40243426006**      Collected: 04/13/22 13:42      Received: 04/14/22 07:50      Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>6020B MET ICPMS</b>									
Analytical Method: EPA 6020B    Preparation Method: EPA 3010A Pace Analytical Services - Green Bay									
Boron	<3.0	ug/L	10.0	3.0	1	04/18/22 06:44	04/28/22 15:40	7440-42-8	1q
Calcium	<76.2	ug/L	254	76.2	1	04/18/22 06:44	04/28/22 15:40	7440-70-2	
<b>2540C Total Dissolved Solids</b>									
Analytical Method: SM 2540C Pace Analytical Services - Green Bay									
Total Dissolved Solids	<8.7	mg/L	20.0	8.7	1		04/15/22 15:15		
<b>9040 pH</b>									
Analytical Method: EPA 9040 Pace Analytical Services - Green Bay									
pH at 25 Degrees C	6.0	Std. Units	0.10	0.010	1		04/15/22 13:08		H6
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay									
Chloride	<0.43	mg/L	2.0	0.43	1		04/27/22 01:30	16887-00-6	
Fluoride	<0.095	mg/L	0.32	0.095	1		04/27/22 01:30	16984-48-8	
Sulfate	<0.44	mg/L	2.0	0.44	1		04/27/22 01:30	14808-79-8	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: 25216069 I-43 EDGEWATER CCR  
Pace Project No.: 40243426

QC Batch: 413363 Analysis Method: EPA 6020B  
QC Batch Method: EPA 3010A Analysis Description: 6020B MET  
Laboratory: Pace Analytical Services - Green Bay  
Associated Lab Samples: 40243426001, 40243426002, 40243426003, 40243426004, 40243426005, 40243426006

METHOD BLANK: 2380558 Matrix: Water  
Associated Lab Samples: 40243426001, 40243426002, 40243426003, 40243426004, 40243426005, 40243426006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	ug/L	<3.0	10.0	04/28/22 15:11	
Calcium	ug/L	<76.2	254	04/28/22 15:11	

LABORATORY CONTROL SAMPLE: 2380559

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	ug/L	250	233	93	80-120	
Calcium	ug/L	10000	9490	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2380560 2380561

Parameter	Units	40243427001		2380560		2380561		% Rec Limits	RPD	Max RPD	Qual	
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec					MSD % Rec
Boron	ug/L	83.4	250	250	329	321	98	95	75-125	3	20	
Calcium	ug/L	50000	10000	10000	65000	62100	150	121	75-125	5	20	P6

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: 25216069 I-43 EDGEWATER CCR  
Pace Project No.: 40243426

QC Batch: 413332 Analysis Method: SM 2540C  
QC Batch Method: SM 2540C Analysis Description: 2540C Total Dissolved Solids  
Laboratory: Pace Analytical Services - Green Bay  
Associated Lab Samples: 40243426001, 40243426002, 40243426003, 40243426004, 40243426005, 40243426006

METHOD BLANK: 2380052 Matrix: Water  
Associated Lab Samples: 40243426001, 40243426002, 40243426003, 40243426004, 40243426005, 40243426006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	<8.7	20.0	04/15/22 15:10	

LABORATORY CONTROL SAMPLE: 2380053

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	555	510	92	80-120	

SAMPLE DUPLICATE: 2380054

Parameter	Units	40243353001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	602	620	3	10	

SAMPLE DUPLICATE: 2380055

Parameter	Units	40243379003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	118	112	5	10	

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### QUALITY CONTROL DATA

Project: 25216069 I-43 EDGEWATER CCR

Pace Project No.: 40243426

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QC Batch:	413287	Analysis Method:	EPA 9040
QC Batch Method:	EPA 9040	Analysis Description:	9040 pH
		Laboratory:	Pace Analytical Services - Green Bay

Associated Lab Samples: 40243426001, 40243426002, 40243426003, 40243426004, 40243426005, 40243426006

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SAMPLE DUPLICATE: 2379732

Parameter	Units	10604043001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.3	8.4	1	20	2q,H6

---

SAMPLE DUPLICATE: 2379799

Parameter	Units	40243424001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.5	7.4	1	20	H6

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### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: 25216069 I-43 EDGEWATER CCR  
Pace Project No.: 40243426

QC Batch: 413910 Analysis Method: EPA 300.0  
QC Batch Method: EPA 300.0 Analysis Description: 300.0 IC Anions  
Laboratory: Pace Analytical Services - Green Bay  
Associated Lab Samples: 40243426001, 40243426002, 40243426003, 40243426004, 40243426005, 40243426006

METHOD BLANK: 2383323 Matrix: Water  
Associated Lab Samples: 40243426001, 40243426002, 40243426003, 40243426004, 40243426005, 40243426006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	<0.43	2.0	04/26/22 17:06	
Fluoride	mg/L	<0.095	0.32	04/26/22 17:06	
Sulfate	mg/L	<0.44	2.0	04/26/22 17:06	

LABORATORY CONTROL SAMPLE: 2383324

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	20	20.9	105	90-110	
Fluoride	mg/L	2	2.0	100	90-110	
Sulfate	mg/L	20	21.1	106	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2383325 2383326

Parameter	Units	40243405002		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	79.0	100	100	184	180	105	101	101	90-110	3	15	
Fluoride	mg/L	<0.48	10	10	11.3	11.0	113	110	110	90-110	2	15	M0
Sulfate	mg/L	10.6	100	100	129	124	118	113	113	90-110	4	15	M0

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2383327 2383328

Parameter	Units	40243448003		MSD		MS		MSD		% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec					
Chloride	mg/L	1340	2000	2000	3590	3650	113	115	115	90-110	1	15	M0
Fluoride	mg/L	191	1000	1000	1280	1310	109	112	112	90-110	2	15	M0
Sulfate	mg/L	187J	2000	2000	2380	2390	110	110	110	90-110	0	15	

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## QUALIFIERS

Project: 25216069 I-43 EDGEWATER CCR

Pace Project No.: 40243426

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### 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

- |    |                                                                                                                                       |
|----|---------------------------------------------------------------------------------------------------------------------------------------|
| 1q | Analyte was measured in the associated method blank at -3.1 ug/L                                                                      |
| 2q | Due to the sample matrix, DI water was added to this sample on a one to one basis and the sample was stirred before analysis.         |
| H6 | Analysis initiated outside of the 15 minute EPA required holding time.                                                                |
| M0 | Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.                                   |
| p6 | Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level. |

## REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 25216069 I-43 EDGEWATER CCR  
Pace Project No.: 40243426

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40243426001	MW-303	EPA 3010A	413363	EPA 6020B	413523
40243426002	MW-304	EPA 3010A	413363	EPA 6020B	413523
40243426003	MW-305	EPA 3010A	413363	EPA 6020B	413523
40243426004	MW-302	EPA 3010A	413363	EPA 6020B	413523
40243426005	MW-301	EPA 3010A	413363	EPA 6020B	413523
40243426006	FIELD BLANK	EPA 3010A	413363	EPA 6020B	413523
40243426001	MW-303				
40243426002	MW-304				
40243426003	MW-305				
40243426004	MW-302				
40243426005	MW-301				
40243426001	MW-303	SM 2540C	413332		
40243426002	MW-304	SM 2540C	413332		
40243426003	MW-305	SM 2540C	413332		
40243426004	MW-302	SM 2540C	413332		
40243426005	MW-301	SM 2540C	413332		
40243426006	FIELD BLANK	SM 2540C	413332		
40243426001	MW-303	EPA 9040	413287		
40243426002	MW-304	EPA 9040	413287		
40243426003	MW-305	EPA 9040	413287		
40243426004	MW-302	EPA 9040	413287		
40243426005	MW-301	EPA 9040	413287		
40243426006	FIELD BLANK	EPA 9040	413287		
40243426001	MW-303	EPA 300.0	413910		
40243426002	MW-304	EPA 300.0	413910		
40243426003	MW-305	EPA 300.0	413910		
40243426004	MW-302	EPA 300.0	413910		
40243426005	MW-301	EPA 300.0	413910		
40243426006	FIELD BLANK	EPA 300.0	413910		

### REPORT OF LABORATORY ANALYSIS

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# CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here or List Pace Workorder Number or MTJL Log-in Number Here

40243476

ALL SHADED AREAS are for LAB USE ONLY

Company: **SCS Engineers**

Billing Information:

Address: **2038 Dairy Dr. 53718**

Report To: **Meg Blodgett**

Email To: **mblodgett@scsengineers.com**

Copy To:

Site Collection Info/Address:

Customer Project Name/Number: **25216069 I-43 Edgewater**

State: **/** County/City: Time Zone Collected: [ ] PT [ ] MT [ ] CT [ ] ET

Phone: Email:

Site/Facility ID #:

Compliance Monitoring? [ ] Yes [ ] No

Collected By (print): **Michael Kraet**

Purchase Order #: Quote #:

DW PWS ID #: DW Location Code:

Collected By (signature): *[Signature]*

Turnaround Date Required:

Immediately Packed on Ice: [ ] Yes [ ] No

Sample Disposal:  Dispose as appropriate [ ] Return [ ] Archive [ ] Hold:

Rush: [ ] Same Day [ ] Next Day [ ] 2 Day [ ] 3 Day [ ] 4 Day [ ] 5 Day (Expedite Charges Apply)

Field Filtered (if applicable): [ ] Yes [ ] No Analysis:

\* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SL), Oil (OL), Wipe (WP), Air (AR), Tissue (TS), Bioassay (B), Vapor (V), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Collected (or Composite Start)		Composite End		Res Cl	# of Ctns
			Date	Time	Date	Time		
MW-303	GW	G	4/11	1425				3
MW-304				1305				
MW-305				1153				
MW-302			4/13	1355				
MW-301				1455				
Field Blank	W			1342				

Analyses										
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

PH  
TDS, Cl, F, SO4  
Metals (Ca, B)

Container Preservative Type \*\*

Lab Project Manager:

Lab Profile/Line:

Lab Sample Receipt Checklist:

Custody Seals Present/Intact Y N NA

Custody Signatures Present Y N NA

Collector Signature Present Y N NA

Bottles Intact Y N NA

Correct Bottles Y N NA

Sufficient Volume Y N NA

Samples Received on Ice Y N NA

VOA - Headspace Acceptable Y N NA

USDA Regulated Soils Y N NA

Samples in Holding Time Y N NA

Residual Chlorine Present Y N NA

Cl Strips: Y N NA

Sample pH Acceptable Y N NA

pH Strips: Y N NA

Sulfide Present Y N NA

Lead Acetate Strips: Y N NA

LAB USE ONLY: Lab Sample # / Comments:

Customer Remarks / Special Conditions / Possible Hazards:

Type of Ice Used: Wet Blue Dry None  
Packing Material Used: *see SCUR 4/14/22 mp*

SHORT HOLDS PRESENT (<72 hours): Y N N/A  
Lab Tracking #: **2764137**  
Samples received via: FEDEX UPS Client Courier Pace Courier

Lab Sample Temperature Info: *see SCUR*  
Temp Blank Received: **4/14/22**  
Therm ID#: **mp**  
Cooler 1 Temp Upon Receipt: **mp**  
Cooler 1 Therm Corr. Factor: **mp**  
Cooler 1 Corrected Temp: **mp**  
Comments:

Relinquished by/Company: (Signature) *[Signature] / SCS*  
Date/Time: **4/13/22 16:30**

Relinquished by/Company: (Signature) *CS Logistics*  
Date/Time: **4/14/22 750**

Received by/Company: (Signature) *[Signature]*  
Date/Time: **4/14/22**


Received by/Company: (Signature) *[Signature]*  
Date/Time: **750 4/14/22**

Trip Blank Received: Y N NA  
HCL MeOH TSP Other  
Non Conformance(s): YES / NO  
Page: **Page 17 of 19**  
of: \_\_\_\_\_



**Sample Condition Upon Receipt Form (SCUR)**

Client Name: SCS Eng.  
 Courier:  CS Logistics  Fed Ex  Speedee  UPS  Waltco  
 Client  Pace Other: \_\_\_\_\_

Project #: \_\_\_\_\_  
**WO#: 40243426**  
  
 40243426

Tracking #: \_\_\_\_\_  
 Custody Seal on Cooler/Box Present:  yes  no  yes  no  
 Custody Seal on Samples Present:  yes  no Seals intact:  yes  no  
 Packing Material:  Bubble Wrap  Bubble Bags  None  Other  
 Thermometer Used SR-111 Type of Ice:  Wet  Blue  Dry  None  Samples on ice, cooling process has begun  
 Cooler Temperature Uncorr: 0° / Corr: 0°  
 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 if shipped on Dry Ice.

Person examining contents:  
 Date: 4/14/22 Initials: MLP  
 Labeled By Initials: [Signature]

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1. <u>↑ CC 4/14/22 MLP</u>
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2. <u>pg# inv. info 4/14/22 MLP</u>
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:	<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 checked="" 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: <u>W</u>		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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: \_\_\_\_\_

PM Review is documented electronically in LIMs. By releasing the project, the PM acknowledges they have reviewed the sample login  
 Page 2 of 2

## C2 June 2022 Resample

July 12, 2022

Meghan Blodgett  
SCS ENGINEERS  
2830 Dairy Drive  
Madison, WI 53718

RE: Project: 25222069 I-43 EDGEWATER  
Pace Project No.: 40246773

Dear Meghan Blodgett:

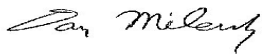
Enclosed are the analytical results for sample(s) received by the laboratory on June 17, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Green Bay

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

Sincerely,



Dan Milewsky  
dan.milewsky@pacelabs.com  
(920)469-2436  
Project Manager

Enclosures

cc: Matt Bizjack, Alliant Energy  
Sherren Clark, SCS Engineers  
Tom Karwoski, SCS ENGINEERS  
Nicole Kron, SCS ENGINEERS  
Ryan Matzuk, SCS Engineers  
Jeff Maxted, ALLIANT ENERGY  
Marc Morandi, ALLIANT ENERGY



## REPORT OF LABORATORY ANALYSIS

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## CERTIFICATIONS

Project: 25222069 I-43 EDGEWATER

Pace Project No.: 40246773

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### **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

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## REPORT OF LABORATORY ANALYSIS

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## SAMPLE SUMMARY

Project: 25222069 I-43 EDGEWATER

Pace Project No.: 40246773

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40246773001	MW-302	Water	06/16/22 10:35	06/17/22 07:50
40246773002	FB	Water	06/16/22 10:00	06/17/22 07:50

## REPORT OF LABORATORY ANALYSIS

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### SAMPLE ANALYTE COUNT

Project: 25222069 I-43 EDGEWATER

Pace Project No.: 40246773

Lab ID	Sample ID	Method	Analysts	Analytes Reported
40246773001	MW-302		MEA	9
		EPA 300.0	HMB	1
40246773002	FB	EPA 300.0	HMB	1

PASI-G = Pace Analytical Services - Green Bay

### REPORT OF LABORATORY ANALYSIS

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### SUMMARY OF DETECTION

Project: 25222069 I-43 EDGEWATER

Pace Project No.: 40246773

Lab Sample ID	Client Sample ID					
Method	Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
<b>40246773001</b>	<b>MW-302</b>					
	Field pH	8.10	Std. Units		06/16/22 10:35	
	Field Specific Conductance	384	umhos/cm		06/16/22 10:35	
	Oxygen, Dissolved	0.52	mg/L		06/16/22 10:35	
	REDOX	105.7	mV		06/16/22 10:35	
	Turbidity	4.95	NTU		06/16/22 10:35	
	Static Water Level	650.55	feet		06/16/22 10:35	
	Apparent Color	N	no units		06/16/22 10:35	
	Odor	N	no units		06/16/22 10:35	
	Temperature, Water (C)	11.1	deg C		06/16/22 10:35	
EPA 300.0	Fluoride	0.77	mg/L	0.32	06/21/22 23:40	

### REPORT OF LABORATORY ANALYSIS

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### ANALYTICAL RESULTS

Project: 25222069 I-43 EDGEWATER

Pace Project No.: 40246773

**Sample: MW-302**      **Lab ID: 40246773001**      Collected: 06/16/22 10:35      Received: 06/17/22 07:50      Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>Field Data</b>									
Analytical Method: Pace Analytical Services - Green Bay									
Field pH	8.10	Std. Units			1		06/16/22 10:35		
Field Specific Conductance	384	umhos/cm			1		06/16/22 10:35		
Oxygen, Dissolved	0.52	mg/L			1		06/16/22 10:35	7782-44-7	
REDOX	105.7	mV			1		06/16/22 10:35		
Turbidity	4.95	NTU			1		06/16/22 10:35		
Static Water Level	650.55	feet			1		06/16/22 10:35		
Apparent Color	N	no units			1		06/16/22 10:35		
Odor	N	no units			1		06/16/22 10:35		
Temperature, Water (C)	11.1	deg C			1		06/16/22 10:35		
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay									
Fluoride	0.77	mg/L	0.32	0.095	1		06/21/22 23:40	16984-48-8	

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### ANALYTICAL RESULTS

Project: 25222069 I-43 EDGEWATER

Pace Project No.: 40246773

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**Sample: FB**                                      **Lab ID: 40246773002**    Collected: 06/16/22 10:00    Received: 06/17/22 07:50    Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
<b>300.0 IC Anions</b>									
Analytical Method: EPA 300.0 Pace Analytical Services - Green Bay									
Fluoride	<0.095	mg/L	0.32	0.095	1		06/22/22 01:09	16984-48-8	

### REPORT OF LABORATORY ANALYSIS

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### QUALITY CONTROL DATA

Project: 25222069 I-43 EDGEWATER

Pace Project No.: 40246773

QC Batch: 418974

Analysis Method: EPA 300.0

QC Batch Method: EPA 300.0

Analysis Description: 300.0 IC Anions

Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40246773001, 40246773002

METHOD BLANK: 2412568

Matrix: Water

Associated Lab Samples: 40246773001, 40246773002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Fluoride	mg/L	<0.095	0.32	06/21/22 23:10	

LABORATORY CONTROL SAMPLE: 2412569

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Fluoride	mg/L	2	2.1	104	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2412570 2412571

Parameter	Units	2412570		2412571		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
Fluoride	mg/L	0.77	2	2.9	2.9	104	104	90-110	0	15	

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: 25222069 I-43 EDGEWATER

Pace Project No.: 40246773

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### 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.

### WORKORDER QUALIFIERS

WO: 40246773

[1] Revised Report: The correct anion is now reported for 40246773002.

## REPORT OF LABORATORY ANALYSIS

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**QUALITY CONTROL DATA CROSS REFERENCE TABLE**

Project: 25222069 I-43 EDGEWATER  
Pace Project No.: 40246773

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40246773001	MW-302				
40246773001	MW-302	EPA 300.0	418974		
40246773002	FB	EPA 300.0	418974		

**REPORT OF LABORATORY ANALYSIS**

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Sample Preservation Receipt Form

Client Name: SCS Engineers

Project # 4024673

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): \_\_\_\_\_

Face 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	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
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																																	2.5 / 5 / 10

6/17/22  
AW

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	VG9A	40 mL clear ascorbic	JGFU	4 oz amber jar unpres
BG1U	1 liter clear glass	BP3U	250 mL plastic unpres	DG9T	40 mL amber Na Thio	JG9U	9 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP3B	250 mL plastic NaOH	VG9U	40 mL clear vial unpres	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9H	40 mL clear vial HCL	WPFU	4 oz plastic jar unpres
AG4U	120 mL amber glass unpres	BP3S	250 mL plastic H2SO4	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG5U	100 mL amber glass unpres			VG9D	40 mL clear vial DI	ZPLC	ziploc bag
AG2S	500 mL amber glass H2SO4					GN	
BG3U	250 mL clear glass unpres						

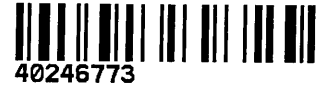
**Sample Condition Upon Receipt Form (SCUR)**

Project #: \_\_\_\_\_

Client Name: SCS Engineers

WO#: **40246773**

Courier:  CS Logistics  Fed Ex  Speedee  UPS  Walco  
 Client  Pace Other: \_\_\_\_\_



Tracking #: \_\_\_\_\_

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: SRAD Type of Ice:  Wet  Blue Dry None

Samples on ice, cooling process has begun

Cooler Temperature: Uncorr: 3 / Corr: 24.26

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 if shipped on Dry Ice.

Person examining contents:  
 Date: 6/17/22 / Initials: AW  
 Labeled By Initials: mt

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. <u>no pg #, mail info</u> <u>6/17/22 AW</u>
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:	<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 checked="" 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: <u>W</u>		
Trip Blank Present:	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" 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: Crust, seals present, not signed/dated 6/17/22 AW

PM Review is documented electronically in LIMs. By releasing the project, the PM acknowledges they have reviewed the sample login



Appendix D  
Historical Monitoring Results

# Single Location

Name: WPL - Edgewater I43

Location ID: MW-301

Number of Sampling Dates: 23

Parameter Name	Units	4/26/2016	6/21/2016	8/10/2016	10/19/2016	12/19/2016	1/5/2017	1/23/2017	2/23/2017	4/6/2017	6/6/2017	8/1/2017	10/23/2017	4/3/2018	10/4/2018	4/9/2019	10/8/2019	4/7/2020	10/13/2020	12/18/2020	4/13/2021	6/16/2021	10/26/2021	4/13/2022
Boron	ug/L	298	157	151	148	174	--	177	181	144	138	145	149	136	120	126	142	133	142	--	132	--	130	124
Calcium	ug/L	389000	148000	94900	77800	127000	--	105000	51400	45200	57600	59400	48700	36700	43700	42900	42600	55800	33400	--	53900	--	30200	42100
Chloride	mg/L	28.5	18	6.2	7.4	8.9	--	8.2	6.3	5.6	7.5	5.2	4.7	4.7	4.1	4	3.8	6.9	4.2	--	3.9	--	3.3	3.7
Fluoride	mg/L	<2	1.1	0.62	0.65	0.86	--	0.77	0.64	0.61	0.87	0.63	0.62	0.62	0.61	0.63	0.63	0.82	0.83	0.64	0.64	--	0.61	0.7
Field pH	Std. Units	8.24	8.01	8.08	8	8.36	--	8.21	8.14	8.12	7.89	7.99	7.82	8.02	8.15	8.18	7.7	8.05	7.96	7.64	8.48	8.14	8.23	8.03
Sulfate	mg/L	25.9	15.9	7.4	9.5	9.6	--	9.3	9.1	9.1	9	8.2	8.6	9.3	8.8	9.2	9.3	11.2	19	--	10.2	--	10.2	11.1
Total Dissolved Solids	mg/L	343	290	306	312	264	194	254	276	240	264	248	236	214	260	230	256	276	228	--	238	--	200	262
Antimony	ug/L	0.98	0.58	0.12	<0.36	1	--	<0.36	2.7	1.4	<0.15	<0.15	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	ug/L	20.8	8.1	5.8	4.6	7.3	--	6.8	5.6	4.7	3.7	4.2	--	--	--	--	--	--	--	--	--	--	--	--
Barium	ug/L	596	236	177	141	195	--	219	128	107	125	115	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	ug/L	3.9	1.1	0.54	<0.63	1.1	--	1.1	4.1	0.49	0.18	0.25	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	ug/L	0.47	<0.44	<0.089	<0.44	0.97	--	<0.44	2.1	1	0.091	<0.081	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	ug/L	133	37.7	20.8	16	27.7	--	28.6	14.2	8.6	10.6	8.6	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	ug/L	36.3	10.6	5.4	4.2	8.4	--	7.6	5.2	2.9	2.7	2.3	--	--	--	--	--	--	--	--	--	--	--	--
Lead	ug/L	35.9	11.3	6.1	5.1	9.6	--	8.1	5.6	3.3	3.2	3	--	--	--	--	--	--	--	--	--	--	--	--
Lithium	ug/L	137	49.2	29	24.8	42.2	--	38.6	25.1	16.2	18.1	16.7	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	ug/L	<0.18	<0.13	<0.13	<0.13	<0.13	--	<0.13	<0.13	<0.13	<0.13	<0.13	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	ug/L	12.2	11.5	10.8	9.4	11	--	10.9	13.3	10.6	10.2	9.7	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	ug/L	12.2	2.6	1.1	<1	2.5	--	<1	3.4	1.5	<0.32	0.39	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	ug/L	0.88	<0.71	<0.14	<0.71	1.2	--	<0.71	2.6	1.3	<0.14	<0.14	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	1.9	1.29	-0.088	-0.595	0.446	--	0.432	0.546	-0.084	0.408	0.539	--	--	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	3.54	0.349	0.462	1.58	1.65	--	0.563	3.3	0.486	1.2	0.557	--	--	--	--	--	--	--	--	--	--	--	--
Total Radium	pCi/L	5.44	1.64	0.462	1.58	2.09	--	0.995	3.85	0.486	1.61	1.16	--	--	--	--	--	--	--	--	--	--	--	--
Field Specific Conductance	umhos/cm	401	394	387	367	384	--	382	371	390	374	377	378	384	387	395	390	384	354	391	387	358	356	377
Oxygen, Dissolved	mg/L	1.1	0.9	0.1	0.1	0.09	--	0.1	1.5	0.3	0.2	0	0.6	0.1	0.2	0.2	0.32	0.3	1.1	0.5	0.2	0.3	1.3	0.49
Field Oxidation Potential	mV	-94	-178	-155	-135	-143	--	-141	33	-53	-171	-161	-46	-138	-97	-99	97	-69	162	1.7	-16	146	291	224.6
Groundwater Elevation	feet	653.54	652.01	649.68	652.32	652.85	--	652.98	653.14	654.43	654.11	652.64	652.03	651.28	650.71	653.06	653.26	656.59	652.16	653.91	654.56	649.78	650.76	651.65
Temperature, Water (C)	deg C	8.7	10.9	10.9	11.3	7.5	--	8.5	9	9.9	11.1	10.5	9.7	8.6	9.5	9.4	9.8	9.5	12.5	8.1	9.1	10.2	11.2	9.2
Turbidity	NTU	340.1	916.9	739.9	452.6	895.1	--	650.8	264.3	207.4	322.2	349.1	150.6	89.45	136.6	125.8	133.7	259	57.28	69.45	179	--	130	145
pH, Lab (at 25 Degrees C)	Std. Units	7.8	8	7.6	7.8	7.9	--	8.1	7.9	8	8	7.9	7.8	8	7.2	7.9	7.9	7.9	7.8	--	8	--	7.9	8

**Single Location**

**Name: WPL - Edgewater I43**

Location ID: MW-302		Number of Sampling Dates: 25																								
Parameter Name	Units	4/26/2016	6/21/2016	8/9/2016	10/19/2016	12/19/2016	1/5/2017	1/23/2017	2/23/2017	4/6/2017	6/6/2017	8/1/2017	10/23/2017	4/3/2018	10/4/2018	4/9/2019	10/8/2019	4/8/2020	5/20/2020	10/13/2020	12/18/2020	4/13/2021	6/16/2021	10/26/2021	4/13/2022	6/16/2022
Boron	ug/L	198	121	131	126	127	--	151	149	132	124	130	128	124	115	118	129	111	--	128	--	121	--	122	113	--
Calcium	ug/L	254000	49000	36500	30900	42600	--	59300	41900	40800	38700	33900	31200	30000	28200	28400	29900	27200	--	26900	--	28700	--	27200	28600	--
Chloride	mg/L	19.5	8.9	7.1	7.6	10	--	8.9	6.9	6.7	6.9	5.6	5.5	5.2	4.5	4.4	3.8	4.4	--	4.3	--	4.1	--	3.8	4	--
Fluoride	mg/L	1.1	0.74	0.75	0.69	0.94	--	0.85	0.67	0.68	0.83	0.74	0.71	0.73	0.71	0.73	0.71	0.75	0.7	0.82	0.73	0.76	0.77	0.74	0.85	0.77
Field pH	Std. Units	8.33	8.05	6.24	12.2	8.31	--	8.16	8.16	8	7.95	7.98	7.7	8.02	8.08	8.14	7.67	7.79	8.19	7.85	8.05	8.36	8.37	8.23	8.01	8.1
Sulfate	mg/L	81.5	36.4	35	42.6	36.4	--	30.4	27.9	29.6	32.2	24	26.3	22.6	19.6	20.4	18.4	19.4	--	19	--	17.4	--	15.9	17.2	--
Total Dissolved Solids	mg/L	543	346	308	298	302	280	324	344	322	284	262	238	248	250	248	242	254	--	192	--	232	--	220	238	--
Antimony	ug/L	4.5	0.73	0.28	0.37	0.97	--	0.75	0.96	0.41	0.4	0.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Arsenic	ug/L	26.7	7.8	6.2	4.5	6.5	--	9	8.5	5.7	7.2	6.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Barium	ug/L	309	100	80.1	60.4	77.5	--	119	103	90.2	77.2	78.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Beryllium	ug/L	3.8	0.69	0.22	<0.13	0.35	--	1	0.8	<0.63	<0.18	<0.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cadmium	ug/L	0.85	<0.18	<0.089	<0.089	0.6	--	<0.44	<0.44	<0.44	<0.081	<0.081	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	ug/L	49.8	5.2	2	0.81	3	--	7	5.5	3.6	1.6	1.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	ug/L	14.6	1.8	0.65	0.36	1.1	--	2.5	2.1	1.1	0.52	0.47	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lead	ug/L	55	7.1	2.3	0.92	3.6	--	8.8	6.5	3.5	1.4	1.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Lithium	ug/L	79.9	19.2	14.4	14	15.8	--	22.8	19.6	16.8	12.7	11.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mercury	ug/L	<0.18	<0.13	<0.13	<0.13	<0.13	--	<0.13	<0.13	<0.13	<0.13	<0.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Molybdenum	ug/L	24.4	11.8	11.5	12.7	10.7	--	11.6	9.8	10.3	10.7	8	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	ug/L	21.6	2.3	0.64	0.39	1.4	--	2.1	2.7	1.4	<0.32	0.44	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	ug/L	<0.71	<0.29	<0.14	<0.14	0.68	--	<0.71	<0.71	<0.14	<0.14	<0.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	4.55	1.73	0.0816	0	0.293	--	0.325	1.21	1.49	0.366	1.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	3	1.84	1.24	1.12	0.574	--	2.4	2.64	0.351	0.841	0.208	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total Radium	pCi/L	7.55	3.57	1.32	1.12	0.867	--	2.73	3.85	1.84	1.21	0.844	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Field Specific Conductance	umhos/cm	648	508	507	510	497	--	486	470	491	419	435	455	434	433	426	423	413	420	418	426	412	386	393	399	384
Oxygen, Dissolved	mg/L	2.4	0.5	0.5	0	0	--	0.4	1	0	0.3	0	0.7	0.2	0.3	0.8	0.72	0.7	0.2	0.3	1	0.4	0.6	0.6	0.69	0.52
Field Oxidation Potential	mV	52	-108	-95	-107	-73	--	-79	25	-12	-14	-115	70	-75	60	18	90	-3.4	-6	37	163	189	24	207	341	105.7
Groundwater Elevation	feet	653.56	651.89	649.3	652.38	652.79	--	664.97	653.1	654.72	654.12	652.55	652.05	651.25	650.7	654.06	653.21	656.47	655.81	652.17	653.88	654.57	649.75	650.88	651.62	650.55
Temperature, Water (C)	deg C	8.8	10.1	11.3	12.2	8.1	--	8.6	9.1	9.7	12.1	10.7	10.4	8.8	10.1	9.9	9.7	9.3	10	11.9	8.9	9.2	10.3	9.8	9.9	11.1
Turbidity	NTU	961.9	248.2	85.43	32.08	190.8	--	372.8	296.2	144.2	84.5	56.73	33.56	35.46	23.32	18.41	11.73	25.99	10.15	14.16	9.23	19.6	18.1	38.3	3.88	4.95
pH, Lab (at 25 Degrees C)	Std. Units	8	8	7.8	7.8	7.9	--	8	7.9	8	7.9	7.9	7.9	8	7.9	7.9	7.9	7.7	--	7.9	--	8	--	8	7.9	--

# Single Location

Name: WPL - Edgewater I43

Location ID: MW-303																						
Number of Sampling Dates: 21																						
Parameter Name	Units	4/26/2016	6/21/2016	8/9/2016	10/19/2016	12/19/2016	1/5/2017	1/23/2017	2/23/2017	4/7/2017	6/6/2017	8/1/2017	10/23/2017	4/3/2018	10/4/2018	4/9/2019	10/7/2019	4/8/2020	10/13/2020	4/13/2021	10/26/2021	4/11/2022
Boron	ug/L	86.4	85	96	90.8	81.6	--	99.8	93.9	89.8	89.1	95	89	94.6	87.3	88.4	91.2	79	85.8	84.7	83.3	80.7
Calcium	ug/L	48300	36900	36700	31600	50500	--	46700	32600	33200	35500	35900	29100	31900	31600	31700	30900	29900	29000	29600	29300	31300
Chloride	mg/L	15.5	6.9	6.8	6.8	22.9	--	8.8	5.3	6.2	6.2	5.7	6.8	5	4.4	4.1	4.7	4.3	5.2	4.5	4.2	4.3
Fluoride	mg/L	0.55	0.59	0.59	0.6	0.63	--	0.8	0.55	0.57	0.69	0.6	0.66	0.54	0.56	0.57	0.6	0.6	0.7	0.62	0.61	0.71
Field pH	Std. Units	7.96	7.98	6.24	8.03	8.32	--	8.23	8.24	8.15	7.9	7.91	7.59	7.98	8.04	8.05	10.12	7.67	8.31	8.26	8.05	7.73
Sulfate	mg/L	131	45.2	70.1	137	38.2	--	113	46.1	79.2	51.1	40.5	67.1	27.3	26.1	23.7	30.3	23.3	33.2	25.6	28.9	24.9
Total Dissolved Solids	mg/L	468	314	378	458	312	310	400	300	348	314	290	304	260	270	270	230	274	150	260	268	274
Antimony	ug/L	0.66	0.1	0.077	0.077	2.3	--	0.59	0.081	<0.073	<0.15	<0.15	--	--	--	--	--	--	--	--	--	--
Arsenic	ug/L	2.8	5.3	4.4	2.7	3.2	--	3.8	5.5	2.8	4	4.4	--	--	--	--	--	--	--	--	--	--
Barium	ug/L	134	80.2	91.2	81.6	90.3	--	120	81.1	80.7	80.6	81.1	--	--	--	--	--	--	--	--	--	--
Beryllium	ug/L	0.18	<0.13	<0.13	<0.13	<0.13	--	0.13	<0.13	<0.13	<0.18	<0.18	--	--	--	--	--	--	--	--	--	--
Cadmium	ug/L	<0.089	<0.089	<0.089	<0.089	0.22	--	0.098	<0.089	<0.089	<0.081	<0.081	--	--	--	--	--	--	--	--	--	--
Chromium	ug/L	8.1	1	0.93	0.41	1.3	--	8.6	2.1	0.79	<1	<1	--	--	--	--	--	--	--	--	--	--
Cobalt	ug/L	2.2	0.5	0.4	0.32	0.63	--	2	0.75	0.34	0.4	0.44	--	--	--	--	--	--	--	--	--	--
Lead	ug/L	1.9	0.26	0.091	0.16	0.3	--	2.1	0.52	0.082	<0.2	0.22	--	--	--	--	--	--	--	--	--	--
Lithium	ug/L	19.3	10.2	13.1	14.8	10.3	--	20.1	11.9	13.2	11.4	11.4	--	--	--	--	--	--	--	--	--	--
Mercury	ug/L	<0.18	<0.13	<0.13	<0.13	<0.13	--	<0.13	<0.13	<0.13	<0.13	<0.13	--	--	--	--	--	--	--	--	--	--
Molybdenum	ug/L	45.4	12.7	23	34	9.4	--	30.5	11	21.2	14.4	12.4	--	--	--	--	--	--	--	--	--	--
Selenium	ug/L	0.66	<0.21	<0.21	<0.21	0.26	--	0.29	<0.21	<0.21	<0.32	<0.32	--	--	--	--	--	--	--	--	--	--
Thallium	ug/L	<0.14	0.17	<0.14	<0.14	<0.14	--	<0.14	<0.14	<0.14	<0.14	<0.14	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	0	0.721	0	0	0.367	--	-0.066	0.233	0.535	0.298	0.198	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	0.392	0.338	0.426	0.921	0.497	--	0.236	1.37	0.336	0.397	0.454	--	--	--	--	--	--	--	--	--	--
Total Radium	pCi/L	0.392	1.06	0.426	0.921	0.864	--	0.236	1.6	0.871	0.695	0.603	--	--	--	--	--	--	--	--	--	--
Field Specific Conductance	umhos/cm	586	589	756	567	582	--	681	558	617	486	564	557	494	500	486	497	454	570	475	478	458
Oxygen, Dissolved	mg/L	1.1	0.8	0.4	2.2	0	--	0.9	0.1	0.6	0.4	0	1	0.2	0.2	0.2	0.56	0.5	0.4	0.5	0.6	1.75
Field Oxidation Potential	mV	178	-174	-138	-185	-156	--	-168	-119	-93	-65	-157	88	-125	-105	-65	127	-75.2	128	154	244	78
Groundwater Elevation	feet	653.59	651.8	649.37	652.18	652.82	--	652.92	653.1	654.55	654.14	652.5	652.03	651.3	650.7	654.06	653.27	656.46	652.2	654.53	650.9	651.58
Temperature, Water (C)	deg C	8.6	10.2	11.3	11.3	4.4	--	8.8	8.9	9.7	11	11.7	10.1	8.9	10	9.5	11.8	9.4	10.7	9.4	9.7	10.9
Turbidity	NTU	107.6	21.88	13.48	8.9	30.04	--	103.3	51.76	9.79	22.54	16.29	3.06	6.62	17.2	4.92	9.74	21.08	7.21	<0.02	71.5	0.92
pH, Lab (at 25 Degrees C)	Std. Units	7.6	7.9	7.8	7.9	7.7	--	8.1	7.9	7.9	7.9	7.9	7.9	7.8	7.9	7.8	7.9	7.8	7.9	8	8	7.9

# Single Location

Name: WPL - Edgewater I43

Location ID: MW-304																						
Number of Sampling Dates: 21																						
Parameter Name	Units	4/26/2016	6/21/2016	8/9/2016	10/19/2016	12/19/2016	1/5/2017	1/23/2017	2/23/2017	4/7/2017	6/6/2017	8/1/2017	10/23/2017	4/3/2018	10/4/2018	4/8/2019	10/8/2019	4/7/2020	10/15/2020	4/13/2021	10/26/2021	4/11/2022
Boron	ug/L	92.1	90.9	102	106	102	--	101	99.8	96.9	102	103	104	98.6	90.2	100	104	100	94.5	91.7	89.8	89.3
Calcium	ug/L	24500	25400	26700	23000	24800	--	24300	24500	24800	23500	23000	20100	20200	19400	19100	20600	18600	15800	19700	21600	25500
Chloride	mg/L	3.8	3.9	2.7	1.8	2.2	--	2.1	2.3	1.8	2	1.8	1.7	1.7	1.8	1.8	1.7	5.2	2.1	2.1	2.3	2.3
Fluoride	mg/L	0.49	0.55	0.51	0.45	0.59	--	0.5	0.5	0.48	0.6	0.53	0.54	0.5	0.5	0.51	0.48	0.75	0.58	0.53	0.49	<0.095
Field pH	Std. Units	8.16	8	6.29	8.17	8.29	--	8.14	8.22	7.86	8.03	7.9	7.74	7.99	8.1	8.06	7.68	8.07	8.12	8.31	8.12	7.87
Sulfate	mg/L	13.8	14.2	13.2	13.5	14.6	--	14.3	14.6	14.5	14.9	14.2	14.2	15.2	13.5	14.5	13.5	15.4	15.5	15.3	15.6	16.2
Total Dissolved Solids	mg/L	222	234	244	232	198	212	214	206	224	218	222	208	222	224	226	172	228	228	224	218	220
Antimony	ug/L	0.11	0.52	0.36	<0.073	0.23	--	0.3	0.63	<0.073	<0.15	<0.15	--	--	--	--	--	--	--	--	--	--
Arsenic	ug/L	8.8	10	11.2	10.7	11.4	--	12.2	12.2	10.9	11.8	11.4	--	--	--	--	--	--	--	--	--	--
Barium	ug/L	77.6	74.7	81.5	73.4	71	--	81.1	73.5	73.7	79.1	75.1	--	--	--	--	--	--	--	--	--	--
Beryllium	ug/L	<0.13	<0.13	<0.13	<0.13	<0.13	--	<0.13	<0.13	<0.13	<0.18	<0.18	--	--	--	--	--	--	--	--	--	--
Cadmium	ug/L	<0.089	<0.089	<0.089	<0.089	0.17	--	<0.089	0.45	<0.089	<0.081	<0.081	--	--	--	--	--	--	--	--	--	--
Chromium	ug/L	0.75	0.94	0.78	<0.39	0.7	--	0.8	1	<0.39	<1	<1	--	--	--	--	--	--	--	--	--	--
Cobalt	ug/L	0.26	0.23	0.12	0.078	0.18	--	0.17	0.53	0.047	0.11	0.088	--	--	--	--	--	--	--	--	--	--
Lead	ug/L	0.36	0.52	0.24	0.12	0.44	--	0.54	0.78	0.08	<0.2	<0.2	--	--	--	--	--	--	--	--	--	--
Lithium	ug/L	9.1	9.1	9.4	9.1	10.1	--	9.5	8.9	9.2	9.1	9.2	--	--	--	--	--	--	--	--	--	--
Mercury	ug/L	<0.18	<0.13	<0.13	<0.13	<0.13	--	<0.13	<0.13	<0.13	<0.13	<0.13	--	--	--	--	--	--	--	--	--	--
Molybdenum	ug/L	4.6	4	3.9	3.8	3.7	--	3.8	4.1	3.6	4.7	3.7	--	--	--	--	--	--	--	--	--	--
Selenium	ug/L	<0.21	<0.21	<0.21	<0.21	<0.21	--	<0.21	0.32	<0.21	<0.32	<0.32	--	--	--	--	--	--	--	--	--	--
Thallium	ug/L	<0.14	<0.14	<0.14	<0.14	0.19	--	<0.14	0.59	<0.14	<0.14	<0.14	--	--	--	--	--	--	--	--	--	--
Radium-226	pCi/L	-0.215	0.511	0.161	-0.369	0.171	--	0.181	-0.164	0.326	0.604	2.05	--	--	--	--	--	--	--	--	--	--
Radium-228	pCi/L	0.687	0.288	0.137	0.625	-0.101	--	0.018	1.5	0.274	0.688	0.0736	--	--	--	--	--	--	--	--	--	--
Total Radium	pCi/L	0.687	0.799	0.298	0.625	0.171	--	0.199	1.5	0.6	1.29	1.1	--	--	--	--	--	--	--	--	--	--
Field Specific Conductance	umhos/cm	4.9	402	399	397	394	--	393	382	399	391	382	387	398	400	395	404	392	411	403	398	392
Oxygen, Dissolved	mg/L	0.8	0.5	0.1	0	0.3	--	0	1.1	2	0.5	0.4	0.8	0.3	0.2	0.7	0.81	1.9	0.2	0.5	0.6	0.41
Field Oxidation Potential	mV	-57	-129	-127	-84	-3	--	-98	14	-100	-104	-107	145	-103	-81	-23	104	190	-10	216	205	135.6
Groundwater Elevation	feet	655.9	653.79	651.55	654	654.26	--	654.37	654.49	654.85	655.7	654.49	653.65	652.86	652.26	655.59	654.77	658.16	654.17	656.36	652.54	653.08
Temperature, Water (C)	deg C	8.9	11.02	12	11.1	7.6	--	8.6	8.8	12	11.2	14.3	10	8.9	9.5	10.4	11	12.4	9.7	9.1	9.6	11.4
Turbidity	NTU	22.36	17.46	7.38	6.77	8.88	--	10.78	5.06	2.56	3	2.88	1.7	9.62	3	6.25	43.61	227.3	9.1	<0.02	96.3	5.11
pH, Lab (at 25 Degrees C)	Std. Units	7.8	8	7.8	7.8	7.9	--	8	7.9	8	7.8	8	7.9	8	7.9	7.9	8	7.8	8	8	8	7.9

# Single Location

Name: WPL - Edgewater I43

Location ID: MW-305															
Number of Sampling Dates: 14															
Parameter Name	Units	2/23/2017	4/7/2017	6/6/2017	8/1/2017	10/23/2017	4/3/2018	10/4/2018	4/9/2019	10/8/2019	4/7/2020	10/15/2020	4/13/2021	10/26/2021	4/11/2022
Boron	ug/L	94.4	86.4	78.8	76.5	70	71.7	65.9	68	73	65.8	65.5	66.6	67.8	61.5
Calcium	ug/L	93800	103000	102000	95900	90700	83000	82200	89000	90300	88800	76800	86800	87800	88500
Chloride	mg/L	20.8	20.4	22.5	21.3	21.5	21.8	22.7	23	22.5	24.9	24.5	25.3	24.9	27.5
Fluoride	mg/L	0.73	0.59	0.72	0.69	0.64	0.63	0.58	0.65	0.63	0.75	0.72	0.67	0.72	<0.095
Field pH	Std. Units	7.75	7.62	7.52	7.47	7.55	7.54	7.65	7.85	7.36	7.48	7.63	7.76	7.76	7.42
Sulfate	mg/L	127	131	140	130	134	129	130	136	137	135	139	127	125	141
Total Dissolved Solids	mg/L	576	576	598	570	540	566	572	568	548	580	500	540	556	578
Antimony	ug/L	0.21	0.088	0.59	0.53	0.23	<0.15	<0.15	0.78	<0.15	--	--	--	--	--
Arsenic	ug/L	3	2.5	2.5	2.3	2.4	2.2	2.3	2.9	2.4	--	--	--	--	--
Barium	ug/L	230	220	208	200	195	177	169	169	169	--	--	--	--	--
Beryllium	ug/L	0.21	0.15	<0.18	<0.18	<0.18	<0.18	<0.18	0.19	<0.25	--	--	--	--	--
Cadmium	ug/L	<0.089	<0.089	<0.081	<0.081	0.1	<0.081	<0.15	0.83	<0.15	--	--	--	--	--
Chromium	ug/L	10.8	6.8	4	2.7	1.8	<1	<1	1.2	<1	--	--	--	--	--
Cobalt	ug/L	2.6	1.5	0.8	0.56	0.5	<0.085	<0.12	0.83	<0.12	--	--	--	--	--
Lead	ug/L	2.4	1.6	0.98	0.87	0.44	<0.2	<0.24	0.81	<0.24	--	--	--	--	--
Lithium	ug/L	23.2	19.7	15.7	14.8	12.4	12	11.2	11.8	12.4	--	--	--	--	--
Mercury	ug/L	<0.13	<0.13	<0.13	<0.13	<0.13	<0.13	<0.084	<0.084	<0.084	--	--	--	--	--
Molybdenum	ug/L	5	4.6	3.3	3.6	3.2	2.5	2.3	3.3	2.6	--	--	--	--	--
Selenium	ug/L	0.56	0.28	<0.32	<0.32	<0.32	<0.32	<0.32	0.92	<0.32	--	--	--	--	--
Thallium	ug/L	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	0.8	<0.14	--	--	--	--	--
Radium-226	pCi/L	0.35	0.0649	0.51	0.791	0.277	0.597	0.323	0.764	0.238	--	--	--	--	--
Radium-228	pCi/L	3.8	0.836	0.555	0.878	0.969	0.73	0.716	0.921	0.473	--	--	--	--	--
Total Radium	pCi/L	4.15	0.901	1.07	1.31	1.25	1.33	1.04	1.69	0.711	--	--	--	--	--
Field Specific Conductance	umhos/cm	856	922	884	901	886	915	941	942	935	917	911	891	863	889
Oxygen, Dissolved	mg/L	1.2	0.7	0.4	0.74	0.2	0.2	0.2	0.3	0.82	0.53	0.3	0.8	1.6	0.45
Field Oxidation Potential	mV	-224	-108	-167	-122	-125	-120	-101	-75	112	28	-41	128	136	261.1
Groundwater Elevation	feet	658.02	659.65	659.7	658.54	657.22	656.24	655.89	659.03	658.77	661.58	658.08	659.69	655.86	657.58
Temperature, Water (C)	deg C	7.9	9.2	11.3	12.4	10.3	8.9	9.9	9.8	12.4	10.5	10	9.4	11	9.9
Turbidity	NTU	613.2	138	140.6	67.21	42.54	13.01	10.56	9.67	6.56	7.35	8.27	0.93	21.7	30.1



Location ID: MW-305

Number of Sampling Dates: 14

Parameter Name	Units	2/23/2017	4/7/2017	6/6/2017	8/1/2017	10/23/2017	4/3/2018	10/4/2018	4/9/2019	10/8/2019	4/7/2020	10/15/2020	4/13/2021	10/26/2021	4/11/2022
pH, Lab (at 25 Degrees C)	Std. Units	7.6	7.6	7.5	7.5	7.7	7.5	7.5	7.5	7.6	7.5	7.6	7.6	7.6	7.5

## Appendix E

### Alternative Source Demonstration – April 2022

# Alternative Source Demonstration April 2022 Detection Monitoring

Edgewater Generating Station  
I-43 Ash Disposal Facility  
Town of Wilson  
Sheboygan County, Wisconsin

Prepared for:



**SCS ENGINEERS**

25222069.00 | October 13, 2022

2830 Dairy Drive  
Madison, WI 53718-6751  
608-224-2830

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- Appendix D Intrawell Statistical Analysis

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# PE CERTIFICATION

 <p>Sherron C. Clark E-29863 Madison, Wis.</p>	<p>I, Sherren Clark, hereby certify that that the information in this alternate source demonstration is accurate and meets the requirements of 40 CFR 257.94(e)(2). This certification is based on my review of the groundwater data and related site information available for the Edgewater Generating Station I-43 Ash Disposal Facility. I am a duly licensed Professional Engineer under the laws of the State of Wisconsin.</p>
	<p style="text-align: center;">  <span style="float: right;">10-13-2022</span> </p>
	<p>(signature) <span style="float: right;">(date)</span></p>
	<p>Sherren Clark, PE (printed or typed name)</p>
	<p>License number E-29863</p> <p>My license renewal date is July 31, 2024.</p> <p>Pages or sheets covered by this seal:</p> <p>Alternative Source Demonstration – April 2022 Detection Monitoring, Edgewater I-43 Ash Disposal Facility, Town of Wilson, Sheboygan County, Wisconsin (Entire Document)</p>

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## 1.0 INTRODUCTION

This Alternative Source Demonstration (ASD) was prepared to support compliance with the groundwater monitoring requirements of the “Coal Combustion Residuals (CCR) Final Rule” published by the U.S. Environmental Protection Agency (U.S. EPA) in the Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule, dated April 17, 2015 (U.S. EPA, 2015), and subsequent amendments. Specifically, this report is prepared to fulfill the requirements of 40 CFR 257.94(e)(2). The applicable sections of the CCR Rule are provided below in italics.

### 1.1 §257.94(E)(2) ALTERNATIVE SOURCE DEMONSTRATION REQUIREMENTS

*The owner and operator may demonstrate that a source other than the CCR Unit caused the statistically significant increase over background levels for a constituent or that the statistically significant increase resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality. The owner or operator must complete the written demonstration within 90 days of detecting a statistically significant increase over background levels.*

An ASD is completed when there are exceedances of one or more benchmarks established within the groundwater monitoring program to determine if any other sources are likely causes of the identified exceedance(s) of established benchmark(s) at the site. This ASD was performed in response to results indicating a statistically significant increase (SSI) over background levels during detection monitoring under the CCR Rule.

This ASD report evaluates an SSI observed in the statistical evaluation of the April 2022 detection monitoring event and June 2022 resampling event at the Edgewater I-43 Ash Disposal Facility (I-43 ADF). This ASD report has been developed for an SSI for fluoride at monitoring well MW-302.

### 1.2 SITE INFORMATION AND MAP

The I-43 ADF is located in the Town of Wilson, Sheboygan County, Wisconsin (**Figure 1**). The I-43 ADF receives CCR from the Edgewater Generating Station. The layout of the site on an aerial photograph base is shown on **Figure 2**. The I-43 ADF is operated under Wisconsin Department of Natural Resources (WDNR) License No. 02853.

The I-43 ADF includes a closed landfill (Phases 1 and 2) and multiple existing CCR Units which are landfill modules in Phases 3 and 4 of the facility. Contact water basins and storm water runoff basins, which do not receive CCR, are also present at the site. The existing CCR Unit evaluated for this ASD is referred to as:

- EDG I-43 Phase 3, Modules 1 & 2, and Phase 4 Module 1 (existing CCR Landfill)

The Phase 3 Module 1, Phase 3 Module 2, and Phase 4 Module 1 units were previously described as separate existing CCR landfills although they are collectively managed and permitted in one footprint as a single existing CCR landfill by the facility and by the WDNR.

The closed landfill (Phase 1 and Phase 2) was completely closed in 2012. The closed landfill did not accept CCR after October 19, 2015; therefore, it is not subject to the requirements of 40 CFR 257.50-107. The closed landfill was constructed with a 5-foot compacted clay liner.



The active landfill, which is the CCR Unit, is constructed either with a 5-foot compacted clay liner overlain with a 1.5-foot-thick drainage layer or a 2-foot compacted clay liner and 60-mil high density polyethylene (HDPE) geomembrane, overlain by a 1-foot leachate collection drainage layer. The active landfill first accepted CCR for disposal in October 2011.

A map showing the CCR Unit and all background (or upgradient) and downgradient monitoring wells with identification numbers for the CCR groundwater monitoring program and the state monitoring program is provided as **Figure 2**.

### **1.3 STATISTICALLY SIGNIFICANT INCREASES IDENTIFIED**

The only SSI for the April 2022 monitoring event and June 2022 retesting event was for fluoride at monitoring well MW-302. Sample results for MW-302 exceeded the upper prediction limit (UPL) for fluoride in both the April and June events. A summary of the April 2022 and June 2022 constituent concentrations and the established benchmark concentrations is provided in **Table 1**. The constituent concentrations with results above the background concentrations are highlighted in the table.

### **1.4 OVERVIEW OF ALTERNATIVE SOURCE DEMONSTRATION**

This ASD report includes:

- Background information (**Section 2.0**)
- Evaluation of potential that SSIs are due to methodology or analysis (**Section 3.0**)
- Evaluation of potential that SSIs are due to natural sources or man-made sources other than the CCR Units (**Section 4.0**)
- ASD conclusions (**Section 5.0**)
- Monitoring recommendations (**Section 6.0**)

The CCR Rule constituent results from background and compliance sampling in April and June 2022 are provided in **Table 1**. Historical fluoride concentrations are summarized in **Table 2**, and concentration trends for fluoride are shown in **Appendix A**. Complete laboratory reports for the April 2022 detection monitoring event and June 2022 resampling monitoring event will be included in the 2022 Annual Groundwater Monitoring and Corrective Action Report for the I-43 ADF.

## 2.0 BACKGROUND

To provide context for the ASD evaluation, the following background information is provided in this section of the report, prior to the ASD evaluation sections:

- Geologic and hydrogeologic setting
- CCR Rule monitoring system
- Other monitoring wells

## 2.1 REGIONAL GEOLOGY AND HYDROGEOLOGY

### 2.1.1 Regional Information

For the purposes of groundwater monitoring, the Niagara Dolomite Aquifer is considered to be the uppermost aquifer unit, as defined under 40 CFR 257.53, at the I-43 ADF. The dolomite aquifer is underlain by the Maquoketa shale, which is a confining unit. The Maquoketa shale is underlain by the Cambrian-Ordovician sandstone aquifer. This sequence of sedimentary bedrock units is over 1,500 feet thick in the area of the I-43 ADF. The sedimentary sequence is underlain by Precambrian crystalline rocks that are not considered an aquifer in eastern Wisconsin.

An unconsolidated sand and gravel aquifer is present in some parts of Sheboygan County (Skinner and Borman, 1973), but does not appear laterally extensive.

Regional groundwater flow in the dolomite aquifer in the vicinity of the site is to the east or northeast.

### 2.1.2 Site Information

Soils at the site are primarily clay with discontinuous layers of sand and silty sand to a depth of at least 100 feet. During drilling of the CCR wells, the unconsolidated materials were identified as consisting primarily of clay. Zones of sand and gravel are known to be present within the clay, but these appear to be discontinuous, and no nearby private wells screened within the unconsolidated material have been identified. Soils encountered in borings MW-301, MW-302, MW-303, and MW-304 were primarily lean clay, silty clay, and silty sand. The upper 70 feet of soils in boring MW-305 were similar, but in approximately the lower 40 feet above bedrock, sand was the primary soil type. The depth to bedrock in the five wells ranged from approximately 109 feet to 133 feet below ground surface (bgs), and the elevation of the top of bedrock ranged from approximately 568 feet above mean sea level (amsl) to 605 feet amsl.

Shallow groundwater at the site generally flows east to west towards Weedens Creek, a tributary of the Sheboygan River.

Groundwater elevations at the CCR wells are summarized in **Table 3**. The April 2022 potentiometric surface map for the dolomite aquifer (**Figure 3**), based on groundwater elevations from monitoring wells MW-301 through MW-305, shows groundwater flow to the north, consistent with previous potentiometric surface maps. The southern portion of the map shows a northwest component of flow, driven by a higher water level at MW-305. This bedrock was shallower at this location so this well is screened at least 20 feet higher than the other wells, which may influence the water level in the well. Flow near the CCR units appears to have an eastern component, which is consistent with the regional flow direction in bedrock.

## 2.2 CCR MONITORING SYSTEM

The groundwater monitoring system established in accordance with the CCR Rule consists of two upgradient (background) monitoring wells and three downgradient monitoring wells. The background wells include MW-304 and MW-305. The downgradient wells include MW-301, MW-302, and MW-303. The CCR Rule wells are installed in the upper portion of the dolomite aquifer. Well depths range from approximately 119 to 145 feet, measured from the top of the well casing.

## 2.3 OTHER MONITORING WELLS

Thirty-four groundwater monitoring wells currently exist at the I-43 ADF as part of the monitoring system developed for the state monitoring program. The well locations are shown on **Figure 2**. These monitoring wells and one on-site water supply well (WS-1) are used to monitor groundwater conditions at the site under WDNR License No. 02853, which includes the closed Phase 1/2 Landfill and the active Phase 3/4 Landfill.

Monitoring wells for the state monitoring program are installed in the unconsolidated glacial till unit, which is not the uppermost aquifer as defined under 40 CFR 257.53. This shallow monitoring system includes water table wells, mid-depth piezometers, and deep piezometers. Well depths range from approximately 15 to 49 feet, measured from the top of the well casing.

## 3.0 METHODOLOGY AND ANALYSIS REVIEW

To evaluate the potential that an SSI is due to a source other than the regulated CCR Unit, SCS used a two-step evaluation process. First, the sample collection, field and laboratory analysis, and statistical evaluation were reviewed to identify potential errors or analysis that led to an exceedance of the benchmark. Second, potential alternative sources, including natural variation and man-made sources other than the CCR Unit, were evaluated. This section of the report provides the findings of the methodology and analysis review. **Section 4.0** of the report addresses the potential alternative sources.

### 3.1 SAMPLING AND FIELD ANALYSIS REVIEW

Field notes and sampling results were reviewed to determine if sampling error may have caused or contributed to the observed SSI for fluoride. Potential field sampling errors or issues could include mislabeling of samples, improper sample handling, missed holding times, cross contamination during sampling, or other field errors. Field blank sample results were also reviewed for indication of potential contamination from sampling equipment or containers. Based on the review of the field notes and results, SCS did not identify any indication that the fluoride SSI was due to a sampling error.

Because fluoride is a laboratory parameter, there is little potential for a field analysis error to contribute to an SSI.

### 3.2 LABORATORY ANALYSIS REVIEW

Laboratory reports for the April and June 2022 detection monitoring results were reviewed to determine if a laboratory analysis error or issue may have caused or contributed to the observed SSI for fluoride. The laboratory report review included reviewing the laboratory quality control flags and narrative, verifying that correct methods were used and desired detection limits were achieved, and checking the field and laboratory blank sample results. Laboratory reports for the background

monitoring and the April 2022 detection monitoring event will be included in the 2022 Annual Groundwater Monitoring and Corrective Action Report for the facility.

Based on the review of the laboratory reports, SCS did not identify any indication that the fluoride SSIs were due to a laboratory analysis error. The fluoride results for the three compliance wells were slightly higher than the October 2021 results. Although none of the fluoride results were flagged by the laboratory, both the matrix spike/matrix spike duplicate (MS/MSD) quality control analyses included with the sample batch had one of the two spike recoveries slightly exceeding the allowable limits, indicating a possible slight high bias in the fluoride results.

A time series plot of the fluoride analytical data was also reviewed for any anomalous results that might indicate a possible sampling or laboratory error (e.g., dilution error or incorrect sample labeling) (**Appendix A**). The April and June 2022 fluoride results for MW-302 are consistent with the historical data for this well.

The fluoride results for the two background wells were anomalously low in comparison to previous results, as shown in the time series plot. Results for other parameters at these wells were consistent with previous results. The anomalous background results do not affect the determination of an SSI for the April 2022 event, because the UPL is based on previous background data. If the interwell UPLs are updated with additional data in the future, these background results will be evaluated as potential outliers.

### **3.3 STATISTICAL EVALUATION REVIEW**

The review of the statistical results and methods includes a quality control check of the following:

- Input analytical data vs. laboratory analytical reports
- Review statistical method and outlier concentration lists for each monitoring well/CCR Unit

SCS did not identify any errors or issues in the statistical evaluation that caused or contributed to the determination of interwell SSIs for fluoride at well MW-302.

### **3.4 SUMMARY OF METHODOLOGY AND ANALYSIS REVIEW FINDINGS**

In summary, there were no changes to the SSI determinations for the April 2022 monitoring event based on the methodology and analysis review. No errors or issues causing or contributing to the reported fluoride SSI were identified.

## **4.0 ALTERNATIVE SOURCES**

This section of the report discusses the potential alternative sources for the fluoride SSI at MW-302, identifies the most likely alternative source(s), and presents the lines of evidence indicating that an alternative source is the most likely cause of the observed SSIs for fluoride.

## 4.1 POTENTIAL CAUSES OF SSI

### 4.1.1 Natural Variation

The statistical analysis for fluoride was completed using an interwell approach, comparing the April 2022 detection monitoring results to the UPLs calculated based on sampling of the background wells (MW-304 and MW-305). If concentrations of a constituent that is naturally present in the aquifer vary spatially, then the potential exists that the downgradient concentrations may be higher than upgradient concentrations due to natural variation.

Fluoride has been detected in the upgradient (background) wells in all sampling events, with the exception of the anomalous non-detect results for the April 2022 sampling event discussed in **Section 3.2**. The MW-302 results were only slightly above the interwell UPL. Additional regional and site information is discussed below, indicating that natural variation is a likely cause of the fluoride SSI for well MW-302.

### 4.1.2 Man-Made Alternative Sources

Man-made alternative sources that could potentially contribute to the fluoride SSI at MW-302 include the closed I-43 Phase 1/2 Landfill, the contact water basin, or the ash unloading area. The closed Phase 1/2 Landfill was constructed with a 5-foot-thick compacted clay liner that is designed to inhibit the movement of leachate beyond the footprint of the closed landfill. The contact water basin consists of a 4-foot-thick compacted clay liner and a 60-mil HDPE textured geomembrane, overlain by a geotextile cushion and 1-foot of coarse aggregate.

## 4.2 LINES OF EVIDENCE

The lines of evidence indicating that the SSI for fluoride in compliance well MW-302, relative to the background wells, is due to natural variability include:

1. The hydraulic conductivity of the thick glacial till aquitard overlying the dolomite aquifer is very low, and there is limited hydrogeologic connection between the shallow groundwater and the aquifer.
2. The active Phase 3/4 landfill was constructed with a clay and/or composite liner system, so the potential for a release is very low.
3. Fluoride has been identified as a naturally occurring groundwater constituent in the region encompassing the I-43 ADF.
4. Publicly available data from the WDNR's Groundwater Retrieval Network (GRN) database indicate fluoride is commonly detected in Sheboygan County.
5. Publicly available data from the WDNR's Groundwater and Environmental Monitoring System (GEMS) database show that fluoride concentrations in shallow and deep groundwater at the I-43 ADF site, prior to CCR placement, were similar to those detected at MW-302.
6. Intrawell statistical analysis of the fluoride results from MW-302 shows that the concentrations of this parameter have not increased significantly since background monitoring was performed.

Each of these lines of evidence and the supporting data are discussed in more detail in the following sections.

#### **4.2.1 Glacial Clay Till Hydraulic Conductivity**

The glacial clay till at the I-43 ADF is an aquitard with very low vertical hydraulic conductivity. A site review completed by Weston for the U.S. EPA in 2010 found that samples of the native upper clay till collected by Warzyn Engineering, Inc. (Warzyn) in 1981 contained 65 to 85 percent clay size particles, indicating low hydraulic conductivity.

Vertical hydraulic conductivity tests of the clay till, completed as part of the 1981 Warzyn study, found the upper clay till ranged from  $5 \times 10^{-8}$  to  $9 \times 10^{-8}$  cm/s. The 1981 Warzyn study estimated the time required for groundwater to traverse vertically through the till to be “on the order of hundreds if not thousands of years” (Warzyn, 1981). Observed high vertical gradients provide further documentation of very low vertical hydraulic conductivity at the site (Weston, 2010). These results suggest there is limited hydrogeologic connection between the upper shallow till aquitard and the uppermost bedrock aquifer.

#### **4.2.2 Liner Construction**

The active landfill, which comprises the three CCR Units, is constructed with a low permeability liner system that minimizes potential leakage. Phase 4 Module 1 was constructed with a 5-foot compacted clay liner. Phase 3 Modules 1 and 2 were constructed with a composite liner system including 2 feet of compacted clay and a 60-mil HDPE geomembrane. The compacted clay hydraulic conductivity is less than  $10^{-7}$  cm/s for all modules, documented through construction quality assurance testing. All constructed modules have a leachate collection drainage layer overlying the liner. The collected leachate flows by gravity and/or is pumped to the contact water basin. The leachate/contact water swales and contact water basin have composite liners, consisting of compacted clay overlain by a 60-mil HDPE geomembrane.

#### **4.2.3 Fluoride in Wisconsin Groundwater**

Elevated natural fluoride concentrations above those reported for the downgradient wells (above 2 milligrams per liter [mg/L]) have been observed in a region in eastern Wisconsin extending along the Lake Michigan shoreline from Kewaunee County in the north to the Illinois border in the south, as described Luczaj, J., and Masarik, K, 2015, *Groundwater Quantity and Quality Issues in a Water-Rich Region: Examples from Wisconsin, USA*. The authors note that most of the wells with elevated fluoride appear to be drawing from the Pleistocene glacial sediments and Silurian dolomite units. Skinner and Borman (1973) and Kammerer (1995) also identify the Lake Michigan shoreline area of eastern Wisconsin as having somewhat elevated fluoride concentrations in groundwater.

#### **4.2.4 Fluoride in Sheboygan County Groundwater**

Publicly available data from the WDNR’s GRN database indicate fluoride is commonly detected in Sheboygan County. Data retrieved from the GRN database included a total of 543 Sheboygan County water supply well samples analyzed for fluoride. Fluoride was detected in 94 percent of the samples. For the samples with fluoride detections, the average result for fluoride was 0.31 mg/L and the maximum result was 1.3 mg/L. Of the 433 results where fluoride was above the limit of quantitation, 5.5 percent of the results were at or above the UPL concentration of 0.753 mg/L. The fluoride concentrations reported for MW-302 in April and June 2022, 0.85 and 0.77 mg/L, are within the

range of concentrations in the GRN database for Sheboygan County. WDNR GRN fluoride concentrations for Sheboygan County are provided in **Appendix B**.

#### **4.2.5 State Program Background Data for Fluoride**

Publicly available data from the WDNR's GEMS database show that fluoride concentrations in shallow and deep groundwater at the I-43 ADF site, prior to landfilling, were similar to those detected at MW-302. Fluoride is not included in the state monitoring program for the shallow monitoring wells; however, a limited number of samples were collected in 1978 during baseline monitoring prior to the I-43 landfill construction. The baseline samples indicated fluoride concentrations ranging from 0.43 to 0.84 mg/L in the glacial till. The fluoride concentration in the sample from MW-302 in June 2022 falls within this range, and the sample from April 2022 is 0.01 mg/L outside of this range (**Table 1**), indicating they are consistent with a natural source. The baseline monitoring data downloaded from the GEMS database are provided in **Appendix C**.

The GEMS database download also includes results for two water supply wells that were previously located on site. Fluoride results for samples from these two wells in 1978, prior to the I-43 landfill construction, were 0.7 and 0.74 mg/L. These results are very similar to the concentrations detected in 2022 samples from MW-302, indicating that fluoride at these levels was historically present in the aquifer prior to CCR disposal at the site.

#### **4.2.6 Intrawell Evaluation**

Intrawell statistical analysis of the fluoride results from MW-302 shows that the concentrations of this parameter have not increased significantly since background monitoring was completed prior to October 2017. The intrawell analysis for this parameter at MW-302 is provided in **Appendix D**.

ASDs previously prepared for the October 2017 and April 2018 detection monitoring events concluded that interwell SSIs reported for boron concentrations in downgradient monitoring wells MW-301 and MW-302 were likely due to naturally occurring boron in the bedrock aquifer at the I-43 ADF (SCS, 2018a and 2018b). This conclusion was based on several lines of evidence, including the site geology and historical boron monitoring results for the glacial till and bedrock aquifer. Following these ASDs, the statistical method for boron was modified to an intrawell prediction limit approach to account for natural variation. Since that change, boron levels have remained below the intrawell UPLs indicating no impact from the CCR Unit or the closed CCR landfill.

Review of time series plots for MW-302, included in **Appendix D**, indicates that the other Appendix III parameters, including calcium, chloride, sulfate and total dissolved solids, have had stable or decreasing concentrations background sampling was completed in 2016 and 2017. Based on the results for all Appendix III parameters, it is very unlikely that the interwell SSI for fluoride at MW-302 is due to the CCR Unit. The monitoring well concentrations are consistent with regional and historic site background for the bedrock aquifer and the intrawell analyses and time series plots indicate no impact from the CCR Unit.

### **5.0 ALTERNATIVE SOURCE DEMONSTRATION CONCLUSIONS**

The lines of evidence discussed above regarding the SSI reported for fluoride concentrations in downgradient monitoring well MW-302 demonstrate that the SSI is likely due to natural variation in groundwater quality in the bedrock aquifer at the I-43 ADF.

## **6.0 SITE GROUNDWATER MONITORING RECOMMENDATIONS**

In accordance with section 257.94(e)(2) of the CCR Rule, the I-43 site may continue with detection monitoring based on this ASD. The ASD report will be included in the 2022 Annual Report due January 31, 2023.

## **7.0 REFERENCES**

Kammerer, Jr., P.A., Ground-Water Flow and Quality in Wisconsin's Shallow Aquifer System. U.S. Geological Survey Water-Resources Investigations Report 90-4171, 1995.

Luczaj, J., and Masarik, K, 2015, Groundwater Quantity and Quality Issues in a Water-Rich Region: Examples from Wisconsin, USA: Resources, 2015, 4, 323-357.

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Warzyn Engineering, Inc., 1981, Summary Report, Proposed Fly Ash Disposal Facility, Beeck-Goebel Properties, Edgewater Power Plant – Unit 5, Wisconsin Power and Light Company, 1981.



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## Tables

- 1 Groundwater Analytical Results Summary
- 2 Historical Analytical Results for Parameters with SSIs
- 3 Groundwater Elevation Summary – CCR Wells

**Table 1. Groundwater Analytical Results Summary  
Edgewater I-43 Ash Disposal Facility, Sheboygan, WI / SCS Engineers Project #25222069.00**

Parameter Name	Interwell UPL	Background Wells		Compliance Wells						
		MW-304	MW-305	MW-301		MW-302			MW-303	
		4/11/2022	4/11/2022	Intrawell UPL	4/13/2022	Intrawell UPL	4/13/2022	6/16/2022	Intrawell UPL	4/11/2022
Boron, ug/L		89.3	61.5	184	124	149	113	--	100	80.7
Calcium, ug/L	103,000	25,500	88,500		42,100		28,600	--		31,300
Chloride, mg/L	24.9	2.3	27.5		3.7		4.0	--		4.3
Fluoride, mg/L	0.753	<0.095	<0.095		0.70		0.85	0.77		0.71
Field pH, Std. Units	8.34	7.87	7.42		8.03		8.01	8.10		7.73
Sulfate, mg/L	140	16.2	141		11.1		17.2	--		24.9
Total Dissolved Solids, mg/L	598	220	578		262		238	--		274

**4.4** Blue shaded cell indicates the compliance well result exceeds the UPL (background) and the Limit of Quantitation (LOQ).

Abbreviations:

UPL = Upper Prediction Limit

ug/L = micrograms per liter

LOQ = Limit of Quantitation

SSI = Statistically Significant Increase

mg/L = milligrams per liter

LOD = Limit of Detection

-- = Not Analyzed

Notes:

1. An individual result above the UPL does not constitute an SSI above background. See the accompanying letter text for identification of statistically significant results.

2. Interwell UPLs calculated based on results from background wells MW-304 and MW-305. Interwell UPLs based on 1-of-2 retesting approach. Interwell UPLs were calculated with background results from the May 2016 through the October 2020 sampling event.

3. Following the completion of the April 2018 Alternative Source Demonstration (ASD) Report, dated October 31, 2018, the statistical method for evaluating boron data at the three compliance monitoring wells was modified to an intrawell approach. Intrawell UPLs were calculated using results from the May 2016 through the April 2020 sampling events.

Created by: NDK  
 Last revision by: NDK  
 Checked by: JAO  
 Proj Mgr QA/QC: TK

Date: 1/7/2021  
 Date: 7/11/2022  
 Date: 7/12/2022  
 Date: 7/12/2022

**Table 2. Historical Analytical Results for Parameters with SSIs  
WPL-Edgewater I-43 Ash Disposal Facility  
Sheboygan, Wisconsin**

Well Group	Well	Collection Date	Fluoride (mg/L)
Background	MW-304	4/26/2016	0.49
		6/21/2016	0.55
		8/9/2016	0.51
		10/19/2016	0.45
		12/19/2016	0.59
		1/23/2017	0.50
		2/23/2017	0.50
		4/7/2017	0.48
		6/6/2017	0.60
		8/1/2017	0.53
		10/23/2017	0.54
		4/3/2018	0.50
		10/4/2018	0.50
		4/8/2019	0.51
		10/8/2019	0.48
		4/7/2020	0.75
		10/15/2020	0.58
		4/13/2021	0.53
		10/26/2021	0.49
		4/11/2022	<0.095
	MW-305	2/23/2017	0.73
		4/7/2017	0.59
		6/6/2017	0.72
		8/1/2017	0.69
		10/23/2017	0.64
		4/3/2018	0.63
		10/4/2018	0.58
		4/9/2019	0.65
		10/8/2019	0.63
		4/7/2020	0.75
		10/15/2020	0.72
		4/13/2021	0.67
10/26/2021	0.72 J		
4/11/2022	<0.095		
Compliance	MW-301	4/26/2016	<2.0
		6/21/2016	1.10 J
		8/10/2016	0.62
		10/19/2016	0.65 J
		12/19/2016	0.86 J
		1/23/2017	0.77 J
		2/23/2017	0.64
		4/6/2017	0.61
		6/6/2017	0.87 J
		8/1/2017	0.63
		10/23/2017	0.62
		4/3/2018	0.62
		10/4/2018	0.61
		4/9/2019	0.63
		10/8/2019	0.63
		4/7/2020	0.82 J
		10/13/2020	0.83
		12/18/2020	0.64
		4/13/2021	0.64
		10/26/2021	0.61
4/13/2022	0.70		

**Table 2. Historical Analytical Results for Parameters with SSIs  
WPL-Edgewater I-43 Ash Disposal Facility  
Sheboygan, Wisconsin**

Well Group	Well	Collection Date	Fluoride (mg/L)
Compliance	MW-302	4/26/2016	1.10 J
		6/21/2016	0.74
		8/9/2016	0.75
		10/19/2016	0.69
		12/19/2016	0.94 J
		1/23/2017	0.85 J
		2/23/2017	0.67
		4/6/2017	0.68
		6/6/2017	0.83
		8/1/2017	0.74
		10/23/2017	0.71
		4/3/2018	0.73
		10/4/2018	0.71
		4/9/2019	0.73
		10/8/2019	0.71
		4/8/2020	0.75
		5/20/2020	0.70
		10/13/2020	0.82
		12/18/2020	0.73
		4/13/2021	0.76
6/16/2021	0.77		
10/26/2021	0.74		
4/13/2022	0.85		
6/16/2022	0.77		
Compliance	MW-303	4/26/2016	0.55
		6/21/2016	0.59
		8/9/2016	0.59
		10/19/2016	0.60
		12/19/2016	0.63
		1/23/2017	0.80 J
		2/23/2017	0.55
		4/7/2017	0.57
		6/6/2017	0.69
		8/1/2017	0.60
		10/23/2017	0.66
		4/3/2018	0.54
		10/4/2018	0.56
		4/9/2019	0.57
		10/7/2019	0.60
		4/8/2020	0.60
		10/13/2020	0.70
4/13/2021	0.62		
10/26/2021	0.61		
4/11/2022	0.71		

Abbreviations:  
 mg/L = milligrams per liter or parts per million (ppm)  
 LOD = Limit of Detection  
 LOQ = Limit of Quantitation

Notes:  
 J = Estimated concentration at or above the LOD and below the LOQ.

Created by: NDK Date: 8/5/2022  
 Last revision by: NDK Date: 8/5/2022  
 Checked by: JR Date: 8/5/2022

I:\25222069.00\Deliverables\2022 April ASD\Tables\[Table 2 - Fluoride Concentrations - CCR Wells.xlsx]Table 2-Analytical-CCR wells

**Table 3. Groundwater Elevation Summary - CCR Wells**  
**WPL - I43 / SCS Engineers Project #25222069.00**

Well Number	Ground Water Elevation in feet above mean sea level (amsl)				
	MW-301	MW-302	MW-303	MW-304	MW-305
<b>Top of Casing Elevation (feet amsl)</b>	696.96	702.57	719.25	691.97	717.67
<b>Screen Length (ft)</b>	5.00	5.00	5.00	5.00	5.00
<b>Total Depth (ft from top of casing)</b>	134.56	144.33	144.65	119.49	122.97
<b>Top of Well Screen Elevation (ft)</b>	567.40	563.24	579.60	577.48	600.46
<b>Measurement Date</b>					
April 8, 2016	692.29	683.61	696.30	--	--
April 26, 2016	653.54	653.56	653.59	655.90	
June 20, 2016	652.01	651.89	651.80	653.79	--
August 9, 2016	649.68	649.30	649.37	651.55	--
October 19, 2016	652.32	652.38	652.18	654.00	--
December 19, 2016	652.85	652.79	652.82	654.26	--
January 5, 2017	652.86	652.82	652.80	654.15	
January 23, 2017	652.98	664.97	652.92	654.37	--
February 23, 2017	653.14	653.10	653.10	654.49	658.02
April 7, 2017	654.43	654.72	654.55	654.85	659.65
June 6, 2017	654.11	654.12	654.14	655.70	659.70
August 1, 2017	652.64	652.55	652.50	654.49	658.54
October 23, 2017	652.03	652.05	652.03	653.65	657.22
April 3, 2018	651.28	651.25	651.30	652.86	656.24
October 4, 2018	650.71	650.70	650.70	652.26	655.89
April 8-9, 2019	653.06	654.06	654.06	655.59	659.03
October 8, 2019	653.26	653.21	653.27	654.77	658.77
November 26, 2019	--	--	655.56	--	--
April 7, 2020	656.59	656.47	656.46	658.16	661.58
May 20, 2020	--	655.81	--	--	--
October 13, 2020	652.16	652.17	652.20	654.17	658.08
December 18, 2020	653.91	653.88	--	--	--
April 13, 2021	654.56	654.57	654.53	656.36	659.69
June 16, 2021	649.78	649.75	--	--	--
October 26, 2021	650.76	650.88	650.90	652.54	655.86
April 11-13, 2022	651.65	651.62	651.58	653.08	657.58
June 16, 2022	--	650.55	--	--	--
<b>Bottom of Well Elevation (ft)</b>	562.40	558.24	574.60	572.48	594.70

-- = not measured

Notes:  
None

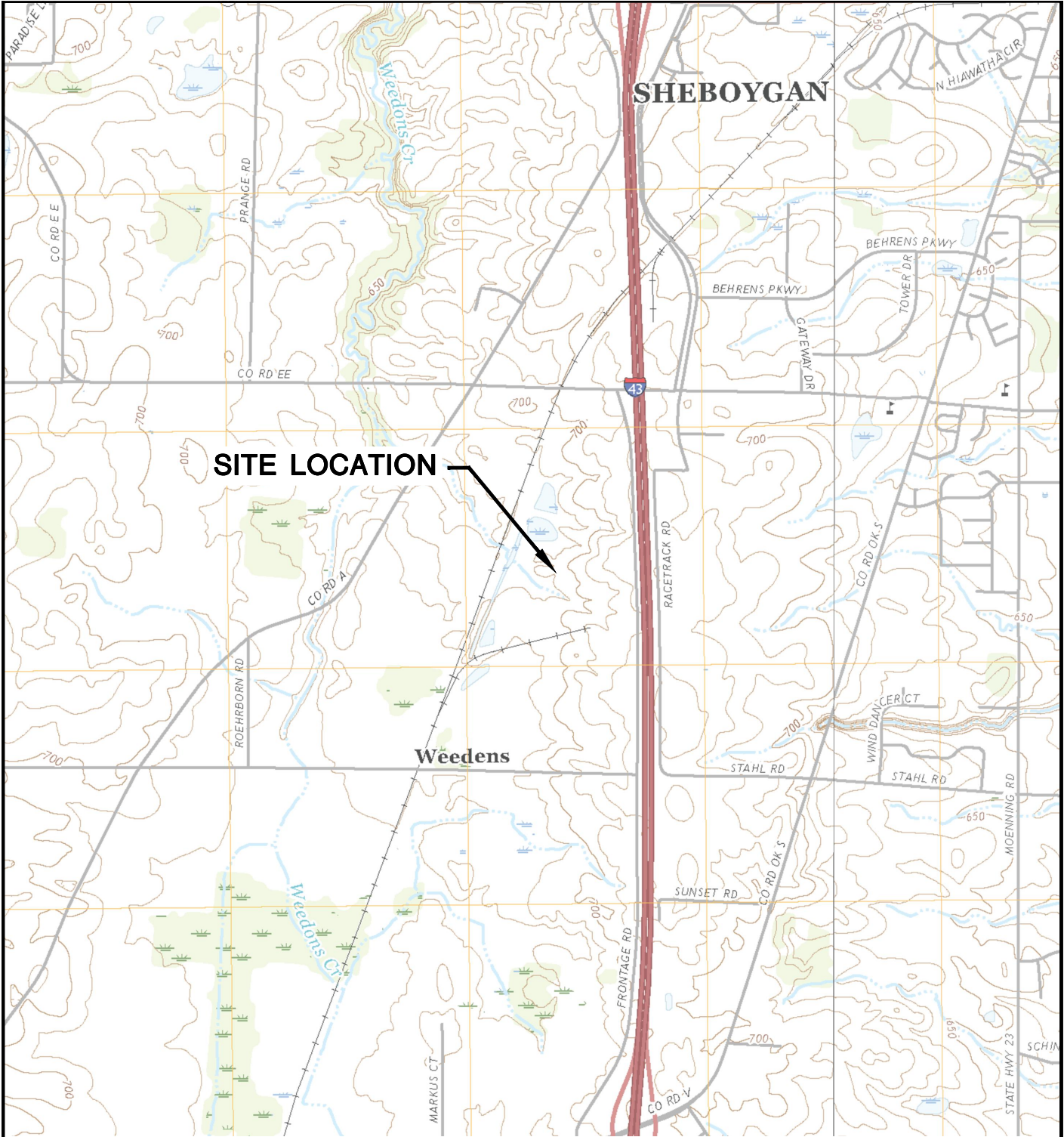
Created by: NDK  
 Last rev. by: NDK  
 Checked by: JR

Date: 1/10/2020  
 Date: 8/5/2022  
 Date: 8/5/2022

I:\25222069.00\Deliverables\2022 April ASD\Tables\[Table 3 - I43\_wlstat\_CCR.xls]levels

## Figures

- 1 Site Location Map
- 2 Site Plan and Monitoring Well Locations
- 3 Bedrock Potentiometric Surface Map – April 2022



SHEBOYGAN FALLS QUADRANGLE  
 WISCONSIN-SHEBOYGAN CO.  
 7.5 MINUTE SERIES (TOPOGRAPHIC)  
 2018  
 SCALE: 1" = 2,000'



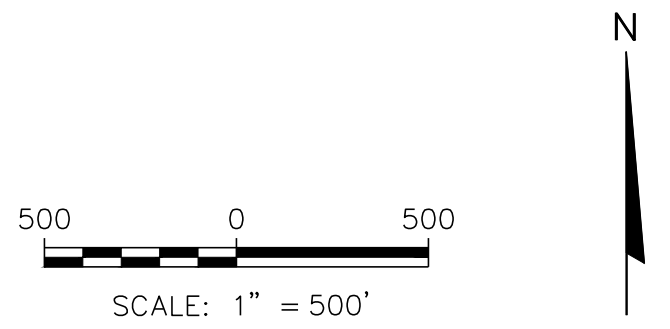
CLIENT	WISCONSIN POWER AND LIGHT CO. 3739 LAKESHORE DRIVE SHEBOYGAN, WI 53081		SITE	ALLIANT ENERGY 1-43 ASH DISPOSAL FACILITY TOWN OF WILSON, WI		SITE LOCATION MAP
	PROJECT NO.	25219069.00		DRAWN BY:	BSS	
	DRAWN:	11/20/2019	CHECKED BY:	MDB	ENGINEER	SCS ENGINEERS 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830
	REVISED:	01/13/2020	APPROVED BY:	TK 01/30/2020		





LEGEND	
	APPROXIMATE PROPERTY LINE
	MODULE LIMITS
	GRADE (2' CONTOUR)
	GRADE (10' CONTOUR)
	EDGE OF WATER
	SWALE
	CULVERT
	MANHOLE
	CONTACT WATER TRANSFER PIPE
	ABANDONED 3" DIA. HDPE PIPE
	TREELINE/TREES
	PAVED ROAD
	UNPAVED ACCESS ROAD
	RAILROAD TRACKS
	FENCE
	UTILITY/LIGHT POLE
	MONITORING WELL (UNCONSOLIDATED)
	PIEZOMETER (UNCONSOLIDATED)
	PRIVATE WATER SUPPLY WELL
	CCR PIEZOMETER (BEDROCK)
	CCR RULE BACKGROUND MONITORING WELL
	CCR UNIT
	LIMITS OF FINAL COVER

- NOTE:
- 2018 AERIAL PHOTOGRAPH SOURCES: ESRI, DIGITALGLOBE, GEOEYE, I-CUBED, USDA FSA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, SWISSTOPO, AND THE GIS USER COMMUNITY.
  - MONITORING WELLS MW-301, MW-302, MW-303, AND MW-304 WERE INSTALLED BETWEEN NOVEMBER 30, 2015 AND JANUARY 26, 2016 BY BADGER STATE DRILLING INC. DRILLING WAS PERFORMED UNDER THE SUPERVISION OF SCS ENGINEERS.
  - MONITORING WELL MW-305 WAS INSTALLED FEBRUARY 2, 2017 BY BADGER STATE DRILLING, INC.

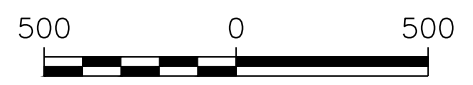


PROJECT NO. 25219069.00	DRAWN BY: BSS	 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830	CLIENT WISCONSIN POWER AND LIGHT CO. 3739 LAKESHORE DRIVE SHEBOYGAN, WI 53081	SITE ALLIANT ENERGY I-43 ASH DISPOSAL FACILITY TOWN OF WILSON, WI	SITE PLAN AND MONITORING WELL LOCATIONS	FIGURE
DRAWN: 11/20/2019	CHECKED BY: MDB					2
REVISED: 01/13/2022	APPROVED BY: TK 09/28/2022					



LEGEND	
	APPROXIMATE PROPERTY LINE
	MODULE LIMITS
	GRADE (2' CONTOUR)
	GRADE (10' CONTOUR)
	EDGE OF WATER
	SWALE
	CULVERT
	MANHOLE
	CONTACT WATER TRANSFER PIPE
	ABANDONED 3" DIA. HDPE PIPE
	TREELINE/TREES
	PAVED ROAD
	UNPAVED ACCESS ROAD
	RAILROAD TRACKS
	FENCE
	UTILITY/LIGHT POLE
	MONITORING WELL (UNCONSOLIDATED)
	PIEZOMETER (UNCONSOLIDATED)
	PRIVATE WATER SUPPLY WELL
	CCR RULE PIEZOMETER (BEDROCK)
	CCR RULE BACKGROUND MONITORING WELL
	CCR RULE UNIT
	POTENTIOMETRIC SURFACE ELEVATION
	POTENTIOMETRIC SURFACE CONTOUR
	APPROXIMATE GROUNDWATER FLOW DIRECTION

- NOTE:
1. MONITORING WELLS MW-301, MW-303, AND MW-304 WERE INSTALLED BETWEEN NOVEMBER 30, 2015 AND JANUARY 26, 2016 BY BADGER STATE DRILLING INC. DRILLING WAS PERFORMED UNDER THE SUPERVISION OF SCS ENGINEERS.
  2. MONITORING WELLS MW-301, MW-302, MW-303 AND MW-304 WERE SURVEYED ON FEBRUARY 8, 2016 BY SCS ENGINEERS.
  3. MONITORING WELL MW-305 WAS SURVEYED ON FEBRUARY 15, 2017 BY CQM, INC.
  4. GROUNDWATER ELEVATIONS WERE COLLECTED FROM PIEZOMETERS ON APRIL 11-13, 2022.
  5. THE BACKGROUND MONITORING WELLS FOR THE I-43 LANDFILL ARE MW-304 AND MW-305.



SCALE: 1" = 500'



PROJECT NO.	25221069.00	DRAWN BY:	KP
DRAWN:	05/21/2021	CHECKED BY:	JJK
REVISED:	08/03/2022	APPROVED BY:	TK 09/28/2022

**SCS ENGINEERS**  
 2830 DAIRY DRIVE MADISON, WI 53718-6751  
 PHONE: (608) 224-2830

**CLIENT** **ALLIANT ENERGY**  
 ALLIANT ENERGY WISCONSIN POWER AND LIGHT COMPANY

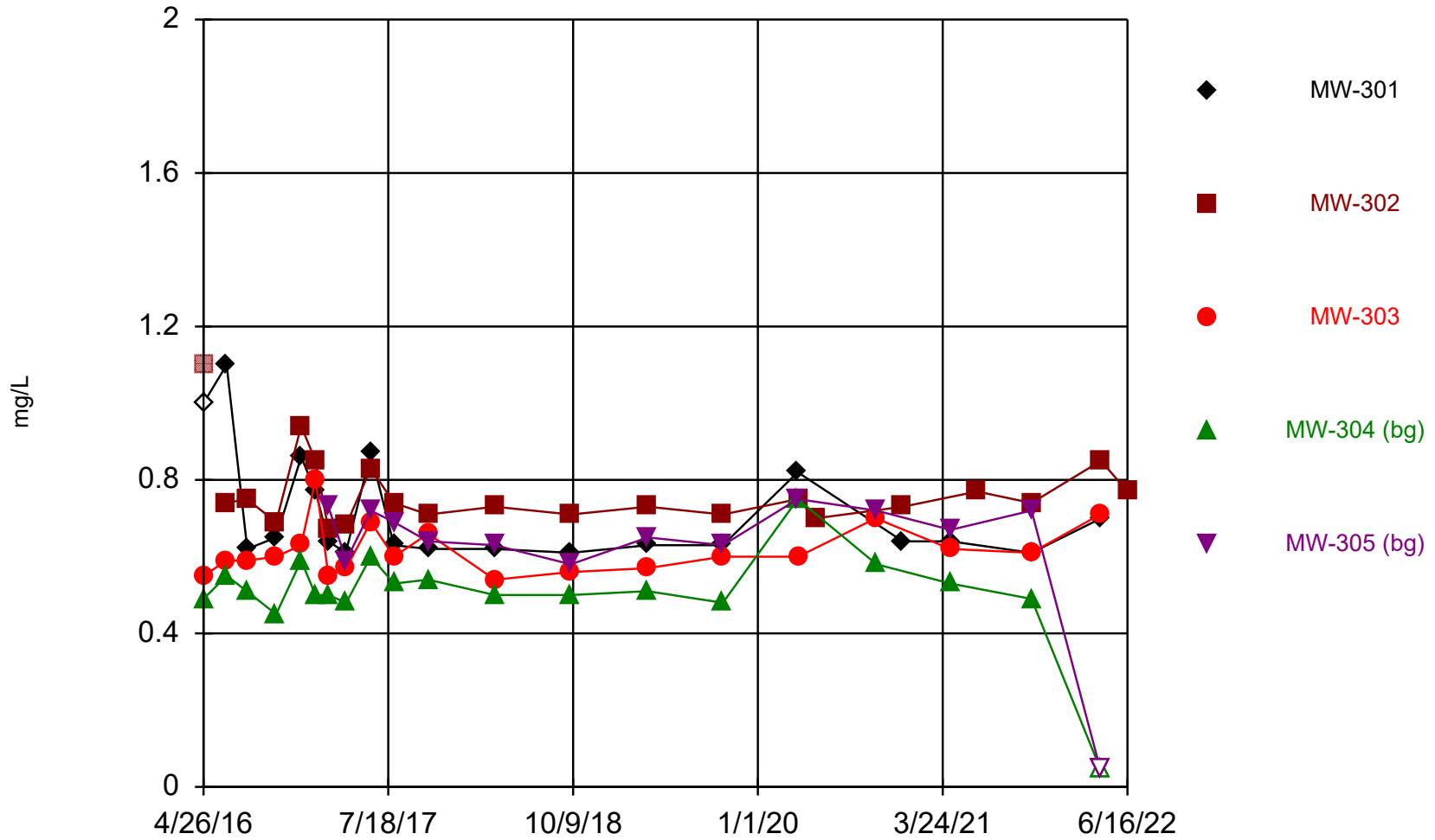
**SITE** WISCONSIN POWER AND LIGHT  
 EDGEWATER GENERATING STATION  
 I-43 LANDFILL  
 TOWN OF WILSON, WISCONSIN

**FIGURE** BEDROCK POTENTIOMETRIC SURFACE MAP  
 APRIL 2022

**FIGURE** 3

Appendix A  
CCR Well Fluoride Trend Plots

### Time Series




Constituent: Fluoride Analysis Run 8/5/2022 12:11 AM View: I-43 LF Detection Monitoring  
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43\_2020\_Oct\_All

# Time Series

Constituent: Fluoride (mg/L) Analysis Run 8/5/2022 12:12 AM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43\_2020\_Oct\_All

	MW-301	MW-302	MW-303	MW-304 (bg)	MW-305 (bg)
4/26/2016	<2 (U)	1.1 (J,X)	0.55	0.49	
6/21/2016	1.1 (J)	0.74	0.59	0.55	
8/9/2016		0.75	0.59	0.51	
8/10/2016	0.62				
10/19/2016	0.65 (J)	0.69	0.6	0.45	
12/19/2016	0.86 (J)	0.94 (J)	0.63	0.59	
1/23/2017	0.77 (J)	0.85 (J)	0.8 (J)	0.5	
2/23/2017	0.64	0.67	0.55	0.5	0.73
4/6/2017	0.61	0.68			
4/7/2017			0.57	0.48	0.59
6/6/2017	0.87 (J)	0.83	0.69	0.6	0.72
8/1/2017	0.63	0.74	0.6	0.53	0.69
10/23/2017	0.62	0.71	0.66	0.54	0.64
4/3/2018	0.62	0.73	0.54	0.5	0.63
10/4/2018	0.61	0.71	0.56	0.5	0.58
4/8/2019				0.51	
4/9/2019	0.63	0.73	0.57		0.65
10/7/2019			0.6		
10/8/2019	0.63	0.71		0.48	0.63
4/7/2020	0.82 (J)			0.75	0.75
4/8/2020		0.75	0.6		
5/20/2020		0.7			
10/13/2020			0.7		
10/15/2020				0.58	0.72
12/18/2020	0.64 (R)	0.73 (R)			
4/13/2021	0.64		0.62	0.53	0.67
6/16/2021		0.77 (R)			
10/26/2021	0.61	0.74	0.61	0.49	0.72 (J)
4/11/2022			0.71	<0.095 (U)	<0.095 (U)
4/13/2022	0.7	0.85			
6/16/2022		0.77			



## Appendix B

### Sheboygan County Fluoride Concentrations – WDNR GRN Table

**Fluoride Data from WDNR's Groundwater Retrieval Network (GRN) Database for Water Supply Wells  
Sheboygan County, Wisconsin  
Summary of Fluoride Detections**

Row Labels	Count of Analytical Result
<b>FLUORIDE TOTAL</b>	<b>543</b>
DETECT BETWEEN LOD & LOQ	76
NON-DETECT	34
NORMAL QUANTIFIED RESULT	433
<b>Grand Total</b>	<b>543</b>

**Percent with Fluoride Detected** 94%

Sample Analytical Qualifier	(Multiple Items)
-----------------------------	------------------

Count of Sample Analytical Result	Average of Sample Analytical Result	Max of Sample Analytical Result
509	0.31	1.3

Data downloaded by RM on 8/17/2022; Summary tables developed by NDK 8/22/2022

I:\25222069.00\Deliverables\2022 April ASD\Appendix B Sheboygan Co Fluoride Concentrations\[WDNR\_GRN\_Fluoride\_SheboyganCo\_2208.xlsx]Detects

Sheboygan County Water Supply Well Results from WDNR's Groundwater Retrieval Network (GRN) Database - Fluoride

WI Unique Well #	Sample		Storet Parameter Code	Storet Parameter Description	Sample Analytical Qualifier	Sample Analytical Result	Units	Limit of Detection	Limit of Quantitation
	Collection Date	Labslip # / Sample ID							
BH038	6/8/1977	I0000896	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.4	MG/L		
BH037	6/8/1977	I0000895	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.25	MG/L		
BH005	8/17/1977	I0000736	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15	MG/L		
BH021	5/20/1980	I0000657	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L		
BH003	2/5/1985	I0000134	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1	MG/L		
BH040	9/12/1985	I0000882	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1	MG/L		
CZ365	8/20/1990	BB019178	951	FLUORIDE TOTAL	LESS THAN LL OF REP RANGE		MG/L	0.1	
CW708	1/18/1991	IB059335	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	1.1	MG/L		
AK890	8/13/1991	IC019849	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.3	MG/L		
DE281	9/4/1991	IC027667	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	1.1	MG/L		
AF628	2/3/1992	IC068693	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.38	MG/L		
BH037	2/3/1993	4186-1	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.49	MG/L	0.003	
BH038	2/3/1993	4186-2	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.56	MG/L	0.003	
BH039	2/10/1993	I4266-1	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12	MG/L	0.003	
BH024	2/17/1993	I12171	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.62	MG/L	0.1	
AY324	2/17/1993	I12170	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.41	MG/L	0.1	
JA221	3/29/1993	I12945	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.24	MG/L	0.1	
BH007	3/30/1993	I12967	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.75	MG/L	0.1	
BH008	3/30/1993	I12968	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.51	MG/L	0.1	
DB283	4/7/1993	083426000	951	FLUORIDE TOTAL		1			
BH028	9/8/1993	I917	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.65	MG/L	0.1	
BH029	9/8/1993	I918	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.42	MG/L	0.1	
BH030	10/4/1993	I4092991	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.11	MG/L	0.1	
BH036	10/4/1993	I4092997	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.22	MG/L	0.1	
BH031	10/4/1993	I4092992	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1	MG/L	0.1	
BH032	10/4/1993	I4092993	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.11	MG/L	0.1	
BH033	10/4/1993	I4092994	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L	0.1	
BH034	10/4/1993	I4092995	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.14	MG/L	0.1	
BH040	10/4/1993	I4092998	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12	MG/L	0.1	
BH035	10/4/1993	I4092996	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.24	MG/L	0.1	
BH022	10/22/1993	I1758	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.1	
BH027	11/9/1993	I2202030	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.18	MG/L	0.1	
BH004	11/29/1993	IE014430	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.09	MG/L	.1	
BH003	11/29/1993	IE014429	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.09	MG/L	.1	
BH020	12/28/1993	I3398	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.24	MG/L	0.1	
BH021	12/28/1993	I3433399	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.27	MG/L	0.1	
BH005	12/29/1993	I46175	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.5	MG/L	.1	
BH006	12/29/1993	I46176	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.4	MG/L	.1	
BP300	2/21/1994	I4080	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.36	MG/L	0.1	
BH025	3/29/1994	I4646	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19	MG/L	0.1	
BH026	3/29/1994	I4647	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L	0.1	
GM365	4/12/1994	IE022511	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.08	MG/L	.1	
ET893	5/2/1994	BE080593	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.14	MG/L		
G5070	7/27/1994	BF008958	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.023	0.085
BP305	11/9/1994	I13894851	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.1	
GM370	11/10/1994	I4025766	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L	0.1	
JA221	11/10/1994	I4025765	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.1	
BP301	11/15/1994	I4051214	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L	0.1	
EQ831	2/8/1995	BF054999	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.6	MG/L		
BM458	2/28/1995	IF019742	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.33	MG/L		
EF758	3/1/1995	I6993	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15	MG/L	0.1	
FX054	3/14/1995	I75996	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.37	MG/L	0.1	
BP317	3/21/1995	I63121	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.1	
ES728	3/26/1995	I005164	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.46			
BP313	3/27/1995	I9750881	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L	0.1	
FH035	3/27/1995	I76608	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.24	MG/L	0.1	
FX589	3/27/1995	I76607	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.33	MG/L	0.1	
BH590	3/27/1995	I76609	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.23	MG/L	0.1	
BP309	4/12/1995	I68387	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.1	
AY032	4/17/1995	IF023129	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.42	MG/L		
ES865	4/17/1995	IF023130	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.42	MG/L		
ES738	4/18/1995	I9760630	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	1.3		0.10	
EZ004	4/26/1995	I69705	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.4	MG/L	0.1	
GT012	5/1/1995	I95W1111	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.23	MG/L		
GH435	6/6/1995	BF078838	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.09	MG/L	0.06	
ES717	6/7/1995	I81868	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19	MG/L	0.1	
ES715	6/7/1995	I81867	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.24	MG/L	0.1	
BP307	6/14/1995	I134105	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.54	MG/L		
ES716	6/20/1995	I82986	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L	0.1	
BP306	7/25/1995	I8859	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.31	MG/L	0.1	
G0596	8/1/1995	I4902	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.85	MG/L		
ES724	9/26/1995	I50806	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.274	MG/L	0.003	
ES771	10/31/1995	I92848	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.48	MG/L	0.1	
FG133	11/16/1995	I9755861	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.5	MG/L	0.1	
EZ003	12/18/1995	IG018850	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.09	MG/L	0.06	0.2
GM370	3/18/1996	I20933436	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L	0.1	
BP300	4/9/1996	I21208588	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.4	MG/L	0.1	
BP309	5/6/1996	I04525	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1	MG/L	0.1	
KU372	5/22/1996	I217549	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.6	MG/L	0.1	
GM365	10/7/1996	IHO10120	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.07	MG/L	0.06	0.2
KU372	1/13/1997	I24634446	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.6	MG/L	0.1	
KX779	3/3/1997	IHO19228	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.51	MG/L		
FR474	4/8/1997	I061024000	951	FLUORIDE TOTAL		7			
KY852	5/7/1997	IHO24636	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L		



Sheboygan County Water Supply Well Results from WDNR's Groundwater Retrieval Network (GRN) Database - Fluoride

WI Unique Well #	Sample		Storet Parameter Code	Storet Parameter Description	Sample Analytical Qualifier	Sample Analytical Result		Limit of Detection	Limit of Quantitation
	Collection Date	Labslip # / Sample ID				Units	Result		
KT498	7/14/1997	8I003516	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.06	MG/L	0.031	
KX159	2/2/1998	30438183	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.6	MG/L	0.1	
FX054	2/3/1998	28002511	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.39	MG/L	0.10	
EF758	2/3/1998	185929	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.11	MG/L	0.05	
BP313	2/9/1998	8260408	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.1	
BP317	6/4/1998	32815860	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L	0.1	
ES771	6/18/1998	8300775	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.4	MG/L	0.1	
ES728	7/19/1998	8310756	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.5	MG/L	0.1	
BP307	7/30/1998	1175243	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.34	MG/L	0.1	
AY032	8/11/1998	1004628	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.45	MG/L		
ES865	8/11/1998	1004629	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.44	MG/L		
ES716	8/17/1998	28010846	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.23	MG/L		
ES715	8/17/1998	28010845	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.26	MG/L		
ES717	8/17/1998	28010847	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.22	MG/L		
BM458	9/1/1998	1006314	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.3	MG/L		
KS415	9/28/1998	1008222	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.26	MG/L		
FH035	11/5/1998	219266	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.21	MG/L	.002	
FX589	11/5/1998	219265	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.24	MG/L	.002	
EZ003	11/10/1998	10011156	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.06	MG/L	0.031	0.10
ES724	11/16/1998	173926	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.37	MG/L	0.002	
BP309	11/30/1998	10012438	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.11	MG/L		
GT012	12/2/1998	887240-1	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.21	MG/L	0.015	
GO596	12/3/1998	23146	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.88	MG/L		
EZ004	12/9/1998	37526667	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.4	MG/L	0.1	
IZ671	12/15/1998	188438	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.72	MG/L	0.1	
BH039	3/17/1999	1194987	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.24	MG/L	0.1	
BH038	4/12/1999	1197631	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.42	MG/L	0.1	
BH037	4/12/1999	1197629	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.36	MG/L	0.1	
GM365	4/13/1999	1197601	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.092	MG/L	0.1	
BH004	4/13/1999	1197602	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.089	MG/L	0.1	
FR455	4/15/1999	8J057963	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.21	MG/L		
JA221	5/5/1999	1200119	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L	0.1	
GM370	5/5/1999	1200120	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15	MG/L	0.1	
MM036	6/8/1999	10024508	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.08	MG/L	0.031	0.10
BH006	6/10/1999	415306-07	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L	0.1	
IZ671	6/21/1999	204472	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.73	MG/L	0.1	
BH029	7/21/1999	993158	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.71	MG/L	0.076	
BH028	7/21/1999	9931582	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.83	MG/L	0.076	
MW184	7/26/1999	8K006730	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.04	MG/L	0.031	0.10
KU372	8/24/1999	1210085	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.65	MG/L	0.1	
AY324	8/24/1999	210083	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.5	MG/L	0.1	
BH024	8/24/1999	1210084	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.75	MG/L	0.1	
BH025	9/2/1999	249386	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.08	MG/L	.002	
BH021	9/22/1999	1212901	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.11	MG/L	0.1	
BH005	9/22/1999	43941617	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1	MG/L	0.1	
BH005	9/22/1999	439416-17	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1	MG/L	0.1	
BH020	9/22/1999	1212900	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.13	MG/L	0.1	
BH040	9/28/1999	44169394	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.1	
BH032	9/28/1999	44167374	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.1	
BH033	9/28/1999	44163334	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L	0.1	
BH030	9/28/1999	44166263	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.1	
BH034	9/28/1999	44165152	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1	MG/L	0.1	
BH035	9/28/1999	44168485	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L	0.1	
BH022	9/29/1999	017424	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.74	MG/L		
BH027	10/4/1999	1213961	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.071	MG/L	0.1	
BH008	11/2/1999	1217077	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.48	MG/L	0.1	
BH007	11/2/1999	1217076	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	1.2	MG/L	0.1	
LK037	11/10/1999	1218077	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.073	MG/L	0.1	
IZ056	11/18/1999	45397880	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.4	MG/L	0.1	
ES724	11/29/1999	180874	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.33	MG/L	0.002	
BH026	12/6/1999	1787	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.09	MG/L	.002	
BP300	3/6/2000	475751-52	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.3	MG/L	0.1	
NG999	5/8/2000	002704	951	FLUORIDE TOTAL		20			
IZ056	5/9/2000	492731-33	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.5	MG/L	0.1	
NG912	6/27/2000	1K031738	951	FLUORIDE TOTAL	NON-DETECT		MG/L	0.031	0.10
IN090	11/2/2000	1L010968	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.25	MG/L		
BP305	12/6/2000	246470	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.18	MG/L	0.1	
EZ004	4/10/2001	593221+23	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.4	MG/L	0.1	4
EF758	4/17/2001	1253485	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.16	MG/L	0.1	
BP317	4/24/2001	598160+62	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.1	
BM458	5/21/2001	1L024467	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.32	MG/L	0.031	0.10
ES865	6/25/2001	1L028790	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.52	MG/L	0.031	0.10
BP309	6/25/2001	1L028680	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.11	MG/L	0.031	0.10
AY032	6/25/2001	1L028791	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.48	MG/L	0.031	0.10
FX054	7/24/2001	31012095	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.32	MG/L		
KC243	8/20/2001	1M004566	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.48	MG/L	0.031	0.10
FX589	8/20/2001	83121	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.27	MG/L	.002	
FH035	8/20/2001	83143	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.23	MG/L	.002	
BH590	8/20/2001	83136	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L	.002	
ES728	8/22/2001	140079433	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.63	MG/L	0.1	
ES771	8/24/2001	263216	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.5	MG/L	0.1	
AK340	8/29/2001	31014231	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.18	MG/L		
ES716	8/29/2001	31014230	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.18	MG/L		
ES715	8/29/2001	31014229	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.18	MG/L		

Sheboygan County Water Supply Well Results from WDNR's Groundwater Retrieval Network (GRN) Database - Fluoride

WI Unique Well #	Sample		Storet Parameter Code	Storet Parameter Description	Sample Analytical Qualifier	Sample Analytical Result		Limit of Detection	Limit of Quantitation
	Collection Date	Labslip # / Sample ID				Units	Result		
IQ706	9/4/2001	IM006146	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.16	MG/L	0.031	0.10
IZ671	9/4/2001	263888	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.8	MG/L	0.1	
ES724	9/11/2001	92193	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.3	MG/L	0.002	
IZ047	9/17/2001	1264974	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19	MG/L	0.1	
BP307	9/27/2001	IM009195	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.31	MG/L	.1	
GT012	9/28/2001	266362	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17	MG/L	0.1	
KX159	12/5/2001	992503-04	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.6	MG/L	0.1	
BP306	1/21/2002	1273745	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.29	MG/L	0.1	
BH037	2/11/2002	274732	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.35	MG/L	0.1	
BH038	2/11/2002	1274733	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.48	MG/L	0.1	
BH028	2/19/2002	5037537A	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.47	MG/L		
BH029	2/19/2002	5037538A	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.31	MG/L		
BH021	3/6/2002	1276005	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.13	MG/L	0.1	
BH020	3/6/2002	1276004	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.24	MG/L	0.1	
KX159	3/12/2002	712767-68	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.5	MG/L	0.1	
JA221	3/18/2002	276903	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.22	MG/L	0.1	
GM370	3/18/2002	1276904	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17	MG/L	0.1	
AY324	5/2/2002	1280798	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.47	MG/L	0.1	
KU372	5/2/2002	1280799	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.68	MG/L	0.1	
BH024	5/2/2002	1280797	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.72	MG/L	0.1	
BH027	6/26/2002	285343	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.068	MG/L	0.1	
BH005	8/20/2002	289013	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12	MG/L	0.1	
BH006	8/20/2002	1289014	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12	MG/L	0.1	
BH039	8/22/2002	289465	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.26	MG/L	0.1	
LK037	8/29/2002	145826	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12	MG/L	.002	
BH025	8/29/2002	145825	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12	MG/L	.002	
GM365	9/17/2002	1291361	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.082	MG/L	0.1	
BH004	9/17/2002	291360	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.082	MG/L	0.1	
PT012	9/26/2002	1292536	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L	0.1	
BH035	10/22/2002	805161-62	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1	MG/L	0.1	
BH034	10/22/2002	805158-59	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.1	
BH032	10/22/2002	805143-44	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.1	
BH030	10/22/2002	805139-40	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.1	
BH040	10/22/2002	805164-65	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.1	
BH033	10/22/2002	805154-55	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1	MG/L	0.1	
OO270	11/7/2002	IN010944	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.27	MG/L	0.031	0.10
BH022	6/12/2003	312497	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.32	MG/L	0.1	
GT012	6/24/2003	1313750	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19	MG/L	0.1	
RD045	8/14/2003	3175251	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17	MG/L	0.1	
GO596	8/25/2003	318297	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.95	MG/L	0.1	
ES715	1/22/2004	330117	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.16	MG/L	0.1	
ES716	1/28/2004	1330343	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15	MG/L	0.1	
BM458	2/16/2004	IO015386	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.25	MG/L	0.031	0.10
BP317	2/24/2004	1004239-40	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.1	
ES716	3/3/2004	1332172	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15	MG/L	0.1	
RM262	3/8/2004	IO016631	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.25	MG/L	0.031	0.10
EZ004	3/16/2004	1013343-44	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.4	MG/L	0.1	
IZ671	3/17/2004	1333585	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.75	MG/L	0.1	
ES724	3/23/2004	1334018	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.31	MG/L	0.1	
RU937	4/12/2004	IO018615	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.53	MG/L	0.031	0.10
ES771	5/12/2004	338824	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.48	MG/L	0.1	
FX054	6/8/2004	1341603	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.41	MG/L	0.1	
AY032	7/6/2004	IP000514	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.46	MG/L	0.031	0.10
ES865	7/6/2004	IP000636	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.53	MG/L	0.031	0.10
IQ706	8/17/2004	347245	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17	MG/L	0.1	
GO596	8/18/2004	347370	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.87	MG/L	0.050	0.10
FH035	8/30/2004	271584	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.424	MG/L	0.17	0.56
FX589	8/30/2004	271579	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.324	MG/L	0.17	0.56
BH590	8/30/2004	271582	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.227	MG/L	0.17	0.56
BP309	9/13/2004	IP007779	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.08	MG/L	0.031	0.10
KX159	9/21/2004	1106860-61	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.6	MG/L	0.1	
RD045	9/21/2004	351109	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L	0.1	
PT012	9/22/2004	351014	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.21	MG/L	0.1	
BP307	9/29/2004	1351687	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.3	MG/L	0.1	
BP306	10/5/2004	352358	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.31	MG/L	0.1	
AK340	12/15/2004	358680	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15	MG/L	0.050	0.10
FA105	1/11/2005	BP038275	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.72	MG/L	0.031	0.10
BH037	2/21/2005	362326	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.36	MG/L	0.050	0.10
BH038	2/21/2005	362328	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.48	MG/L	0.050	0.10
BH004	3/15/2005	364324	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.092	MG/L	0.050	0.10
GM365	3/15/2005	364327	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.098	MG/L	0.050	0.10
GM370	4/12/2005	367352	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17	MG/L	0.050	0.10
JA221	4/12/2005	367351	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.24	MG/L	0.050	0.10
BH027	6/1/2005	372633	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.081	MG/L	0.050	0.10
LK037	6/22/2005	323828	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.15	0.50
BH025	6/22/2005	323827	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.16	MG/L	0.15	0.50
BH005	7/28/2005	380641	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15	MG/L	0.050	0.10
BH029	7/28/2005	35014298	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.7	MG/L		
BH028	7/28/2005	35014297	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.8	MG/L		
R2848	7/28/2005	35014299	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.9	MG/L		
BH006	7/28/2005	380642	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15	MG/L	0.050	0.10
BH021	8/25/2005	383260	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.13	MG/L	0.050	0.10
BH020	8/25/2005	383258	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.27	MG/L	0.050	0.10
BH039	8/30/2005	383562	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.27	MG/L	0.050	0.10

Sheboygan County Water Supply Well Results from WDNR's Groundwater Retrieval Network (GRN) Database - Fluoride

WI Unique Well #	Sample		Storet Parameter Code	Storet Parameter Description	Sample Analytical Qualifier	Sample Analytical Result	Units	Limit of Detection	Limit of Quantitation
	Collection Date	Labslip # / Sample ID							
BH024	9/20/2005	385929	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.71	MG/L	0.050	0.10
AY324	9/20/2005	385926	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.5	MG/L	0.050	0.10
KU372	9/20/2005	385932	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.73	MG/L	0.050	0.10
BH035	9/22/2005	1315607-10	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.13	MG/L	0.1	
BH032	9/22/2005	1315594-97	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.1	
BH040	9/22/2005	1315620-23	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.1	
BH033	9/22/2005	1315581-84	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15	MG/L	0.1	
BH034	9/22/2005	1315568-71	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1	MG/L	0.1	
BH030	9/28/2005	1318533-36	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0	MG/L		0.1
BH022	9/30/2005	387532	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.29	MG/L	0.050	0.10
TV908	10/31/2005	351632	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.45	MG/L	.002	
QS360	2/3/2006	IQ015413	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.09	MG/L	0.031	0.10
GT012	8/17/2006	415207	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.18	MG/L	0.050	0.10
ES771	2/21/2007	431916	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.55	MG/L	0.050	0.10
TF666	2/22/2007	IR016077	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12	MG/L	0.031	0.10
FX054	3/19/2007	434197	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.38	MG/L	0.050	0.10
BM458	4/2/2007	IR017921	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.27	MG/L	0.031	0.10
ES865	4/16/2007	IR018780	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.46	MG/L	0.031	0.10
AY032	4/16/2007	IR018781	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.37	MG/L	0.031	0.10
BP306	5/1/2007	469693	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.49	MG/L	0.060	0.19
BP309	5/14/2007	IR021407	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.09	MG/L	0.031	0.10
HB022	7/10/2007	IS000866	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.28	MG/L	0.031	0.10
ES724	7/17/2007	447136	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.29	MG/L	0.050	0.10
BP317	7/31/2007	1677214	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19	MG/L		0.1
BP307	8/8/2007	AC47300	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.313	MG/L		
TE954	8/13/2007	449966	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.59	MG/L	0.050	0.10
IQ706	9/5/2007	452566	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19	MG/L	0.050	0.10
PT012	9/11/2007	453547	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.22	MG/L	0.050	0.10
AK340	9/19/2007	454876	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.18	MG/L	0.050	0.10
ES716	9/19/2007	454872	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17	MG/L	0.050	0.10
RZ873	9/19/2007	454864	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19	MG/L	0.050	0.10
SA121	9/19/2007	454868	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.21	MG/L	0.050	0.10
FX589	9/25/2007	505127	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.44	MG/L	0.13	0.45
TB898	9/25/2007	1713521	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19	MG/L		0.1
TQ726	10/3/2007	456579	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.13	MG/L	0.050	0.10
TQ043	10/3/2007	456571	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.14	MG/L	0.050	0.10
BH038	3/4/2008	469361	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.48	MG/L	0.050	0.10
BH037	3/4/2008	469363	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.39	MG/L	0.050	0.10
BH027	3/13/2008	470617	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.11	MG/L	0.050	0.10
GT012	4/22/2008	475526	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.22	MG/L	0.050	0.10
VL312	6/3/2008	480378	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1	MG/L	0.050	0.10
GM365	6/3/2008	480375	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.084	MG/L	0.050	0.10
BH039	7/9/2008	485960	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.3	MG/L	0.050	0.10
GM370	7/21/2008	487059	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.14	MG/L	0.050	0.10
JA221	7/21/2008	487057	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.21	MG/L	0.050	0.10
BH029	7/22/2008	38015406	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.4	MG/L	0.100	
RZ848	7/22/2008	38015407	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.7	MG/L	0.100	
BH028	7/22/2008	38015405	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.6	MG/L	0.100	
BH025	8/13/2008	490125	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.092	MG/L	0.050	0.10
LK037	8/13/2008	490127	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.073	MG/L	0.050	0.10
BH032	9/3/2008	IT006090	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.05	MG/L	0.031	0.10
BH034	9/3/2008	IT006089	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.07	MG/L	0.031	0.10
BH035	9/3/2008	IT006088	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12	MG/L	0.031	0.10
BH033	9/3/2008	IT006093	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12	MG/L	0.031	0.10
BH040	9/3/2008	IT006092	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.08	MG/L	0.031	0.10
BH030	9/3/2008	IT006091	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.07	MG/L	0.031	0.10
BH005	9/4/2008	493046	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12	MG/L	0.050	0.10
BH006	9/4/2008	493048	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12	MG/L	0.050	0.10
BH020	9/16/2008	494926	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.14	MG/L	0.050	0.10
BH021	9/16/2008	494925	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15	MG/L	0.050	0.10
AY324	9/23/2008	496064	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.43	MG/L	0.050	0.10
BH024	9/23/2008	496066	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.57	MG/L	0.050	0.10
KU372	9/23/2008	496068	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.63	MG/L	0.050	0.10
TU514	9/26/2008	496495	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.25	MG/L	0.050	0.10
BH022	9/30/2008	497195	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.23	MG/L	0.050	0.10
US905	10/19/2008	IT010729	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.32	MG/L	0.031	0.10
TF691	4/22/2009	IT019701	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.49	MG/L	0.031	0.10
GT012	8/19/2009	533335	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.16	MG/L	0.050	0.10
BP305	9/16/2009	536595	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17	MG/L	0.050	0.10
BP300	9/22/2009	302985	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	0.3	
ES716	2/3/2010	551181	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.16	MG/L	0.050	0.10
TQ726	2/3/2010	551186	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.14	MG/L	0.050	0.10
TQ043	2/3/2010	551189	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.13	MG/L	0.050	0.10
SA121	2/3/2010	551191	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17	MG/L	0.050	0.10
RZ873	2/3/2010	551194	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17	MG/L	0.050	0.10
AK340	3/8/2010	554765	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.16	MG/L	0.050	0.10
BM458	3/10/2010	307897	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.59	MG/L	0.3	
IZ671	3/24/2010	0030897-01	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.71	MG/L	.13	
AY032	4/20/2010	IU017148	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.41	MG/L	.031	.1
ES865	4/20/2010	IU017149	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.53	MG/L	.031	.1
BP309	5/3/2010	IU018151	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1	MG/L	.031	.1
BP317	6/1/2010	IU021140	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15	MG/L	.031	.1
BP307	7/28/2010	AD17547	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.3	MG/L		
BP306	8/19/2010	1008306-01	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.37	MG/L	.1	

Sheboygan County Water Supply Well Results from WDNR's Groundwater Retrieval Network (GRN) Database - Fluoride

WI Unique Well #	Sample		Storet Parameter Code	Storet Parameter Description	Sample Analytical Qualifier	Sample Analytical Result		Limit of Detection	Limit of Quantitation
	Collection Date	Labslip # / Sample ID				Units			
G0596	8/23/2010	578016	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.49	MG/L	.05	.1
TE954	8/23/2010	578014	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.47	MG/L	.05	.1
IQ706	8/25/2010	578638	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.14	MG/L	.05	.1
ES724	9/7/2010	580581	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.28	MG/L	.05	.1
ES771	9/17/2010	583225	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.5	MG/L	.05	.1
PT012	9/21/2010	583439	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.068	MG/L	.05	.1
FX589	9/22/2010	1009427-01	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.31	MG/L	.1	
BH027	1/25/2011	598624	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.065	MG/L	.05	.1
BH038	1/26/2011	598779	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.43	MG/L	.05	.1
BH037	1/26/2011	598776	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.34	MG/L	.05	.1
BH039	6/7/2011	614917	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.27	MG/L	.05	.1
JA221	6/7/2011	614908	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L	.05	.1
TU514	6/7/2011	614913	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.23	MG/L	.05	.1
GM370	6/7/2011	614910	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12	MG/L	.05	.1
RZ848	6/21/2011	41014373	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.78	MG/L	.1	
BH028	6/21/2011	41014374	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.56	MG/L	.1	
BH029	6/21/2011	41014372	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.37	MG/L	.1	
LK037	6/22/2011	618027	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.065	MG/L	.05	.1
BH025	6/22/2011	618024	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.076	MG/L	.05	.1
BH005	8/24/2011	628663	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.13	MG/L	.05	.1
BH006	8/24/2011	628664	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.13	MG/L	.05	.1
GM365	9/15/2011	633036	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.098	MG/L	.05	.1
VL312	9/15/2011	633039	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.11	MG/L	.05	.1
BH034	9/19/2011	IW006642	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.11	MG/L	.031	.1
BH022	9/20/2011	IW006734	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.27	MG/L	.031	.1
BH030	9/21/2011	IW007053	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1	MG/L	.031	.1
BH035	9/21/2011	IW007054	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.18	MG/L	.031	.1
BH040	9/21/2011	IW007055	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1	MG/L	.031	.1
BH032	9/21/2011	IW007056	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.1	MG/L	.031	.1
BH033	9/21/2011	IW007052	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17	MG/L	.031	.1
BH020	9/26/2011	634855	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15	MG/L	.05	.1
BH021	9/26/2011	634858	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.13	MG/L	.05	.1
BH024	9/27/2011	635195	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.66	MG/L	.05	.1
AY324	9/27/2011	635188	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.49	MG/L	.05	.1
KU372	11/8/2011	641303	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.72	MG/L	.05	.1
TK065	1/10/2012	BW031157	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.33	MG/L	0.031	0.10
SN152	5/29/2012	IW019431	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	1.01	MG/L	0.031	0.10
WU998	9/10/2012	340488	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.35	MG/L	.3	.9
GT012	9/11/2012	682644	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15	MG/L	.05	.1
TU517	9/11/2012	682665	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.16	MG/L	.05	.1
BP317	3/5/2013	IX016320	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.22	MG/L	.031	.1
PT012	3/25/2013	711249	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17	MG/L	.05	.1
ES865	4/15/2013	IX018897	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.52	MG/L	.031	.1
AY032	4/15/2013	IX018898	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.4	MG/L	.031	.1
BP309	6/11/2013	78819001	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.107	MG/L	.03	.3
BM458	7/23/2013	352165	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.31	MG/L	.3	.9
BP307	7/29/2013	AD68760	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.277	MG/L	.01	
TE954	8/6/2013	735501	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.51	MG/L	.05	.1
RD045	9/9/2013	3090291-01A	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.18	MG/L	.13	
BH590	9/9/2013	3090285-01	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.14	MG/L	.14	
ES771	9/23/2013	747137	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.51	MG/L	.05	.1
IZ671	9/24/2013	3091079-01	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	1.28	MG/L	.13	
IQ706	9/25/2013	748089	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.16	MG/L	.05	.1
ES724	11/26/2013	358414	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	.3	.9
WQ175	12/19/2013	114422001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.0956	MG/L	.03	.3
BH027	2/24/2014	771669	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.052	MG/L	.05	.1
BH037	3/10/2014	773637	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.31	MG/L	0.050	0.10
BH038	3/10/2014	773640	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.37	MG/L	0.050	0.10
BH030	3/24/2014	124636004	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.0844	MG/L	0.030	0.300
BH032	3/24/2014	124636006	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.0879	MG/L	0.030	0.300
BH033	3/24/2014	124636005	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.192	MG/L	0.030	0.300
BH034	3/24/2014	124636003	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.102	MG/L	0.030	0.300
BH035	3/24/2014	124636001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.163	MG/L	0.030	0.300
BH040	3/24/2014	124636002	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.0976	MG/L	0.030	0.300
BH022	4/8/2014	126687001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.27	MG/L	0.030	0.300
GM370	4/9/2014	779165	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L	0.050	0.10
JA221	4/9/2014	779162	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.22	MG/L	0.050	0.10
TU514	4/9/2014	779168	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.22	MG/L	0.050	0.10
RZ848	5/28/2014	793273	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.95	MG/L	0.050	0.10
BH028	5/28/2014	793271	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.69	MG/L	0.050	0.10
BH029	5/28/2014	793272	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.45	MG/L	0.050	0.10
BH025	7/16/2014	803910	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.078	MG/L	0.050	0.10
LK037	7/16/2014	803913	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.068	MG/L	0.050	0.10
GM365	7/23/2014	805275	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.07	MG/L	0.050	0.10
VL312	7/23/2014	805279	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.086	MG/L	0.050	0.10
BH039	7/24/2014	805781	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.23	MG/L	0.050	0.10
BH006	8/13/2014	4080509-02	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12	MG/L	0.005	
BH021	8/27/2014	813711	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12	MG/L	0.050	0.10
BH020	8/27/2014	813710	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.14	MG/L	0.050	0.10
KU372	9/16/2014	819202	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.67	MG/L	0.050	0.10
BH024	9/16/2014	819200	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.7	MG/L	0.050	0.10
AY324	9/16/2014	819198	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.43	MG/L	0.050	0.10
WU998	7/28/2015	389212	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.46	MG/L	.3	.9
GT012	8/25/2015	5081033-02	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.18	MG/L	.004	

Sheboygan County Water Supply Well Results from WDNR's Groundwater Retrieval Network (GRN) Database - Fluoride

WI Unique Well #	Sample		Storet Parameter Code	Storet Parameter Description	Sample Analytical Qualifier	Sample Analytical Result		Limit of Detection	Limit of Quantitation
	Collection Date	Labslip # / Sample ID				Units	Result		
TU517	8/25/2015	5081033-01	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19	MG/L	.004	
MW167	1/26/2016	903148	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.55	MG/L	.05	.1
PU277	2/23/2016	906482	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.76	MG/L	.05	.1
XP679	2/23/2016	906486	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.76	MG/L	.05	.1
BP307	4/5/2016	AE11318	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.294	MG/L		
AY032	6/6/2016	258378001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.414	MG/L	.03	.1
ES865	6/6/2016	258379001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.572	MG/L	.03	.1
RD045	6/7/2016	6060308-06	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.16	MG/L	.004	
BM458	6/15/2016	411343	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.19	MG/L	.11	.36
ES724	6/15/2016	411352	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.27	MG/L	.11	.36
BP309	8/23/2016	273859001	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.075	MG/L	.03	.1
BH590	9/7/2016	6090252-01	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.16	MG/L	.003	
TE954	9/12/2016	944497	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.55	MG/L	.05	.1
GD596	9/12/2016	944494	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.55	MG/L	.05	.1
FX589	9/20/2016	6090816-06	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	.003	
PT012	9/20/2016	946819	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.2	MG/L	.05	.1
TB898	9/20/2016	6090827-06	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19	MG/L	.003	
IQ706	9/21/2016	947474	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.18	MG/L	.05	.1
YR115	11/16/2016	1611C78-001C	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17	MG/L	.017	.053
SJ161	12/20/2016	967211	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.54	MG/L	.05	.1
BH035	1/16/2017	296326001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.157	MG/L	.03	.1
BH032	1/16/2017	296326004	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.0795	MG/L	.03	.1
WQ175	1/16/2017	296326005	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.0843	MG/L	.03	.1
BH033	1/16/2017	296326003	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.175	MG/L	.03	.1
BH040	1/16/2017	296326002	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.0834	MG/L	.03	.1
BH034	1/16/2017	296326006	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.0966	MG/L	.03	.1
BH030	1/30/2017	297917001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.108	MG/L	.03	.1
BH027	2/13/2017	973320	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.085	MG/L	.05	.1
BH021	3/20/2017	1703D30-001B	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.13	MG/L	.017	.053
BH020	3/20/2017	1703D23-001B	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.16	MG/L	.017	.053
AY324	5/1/2017	1705208-001B	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.47	MG/L	.017	.053
BH024	5/1/2017	1705208-002B	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.64	MG/L	.017	.053
FW168	6/1/2017	438196	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.23	MG/L	.12	.4
RZ848	6/20/2017	999093	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	1	MG/L	.05	.1
BH028	6/20/2017	999087	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.7	MG/L	.05	.1
BH029	6/20/2017	999090	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.47	MG/L	.05	.1
KU372	7/19/2017	1707F53-001B	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.73	MG/L	.017	.053
GM365	8/1/2017	1007981	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.086	MG/L	.05	.1
VL312	8/1/2017	1007984	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.099	MG/L	.05	.1
BH038	8/2/2017	1008438	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.44	MG/L	.05	.1
BH037	8/2/2017	1008433	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.33	MG/L	.05	.1
BH022	8/15/2017	336271001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.244	MG/L	.03	.1
GM370	8/21/2017	1012757	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.14	MG/L	.05	.1
BH039	8/21/2017	1012772	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.26	MG/L	.05	.1
BH005	8/21/2017	1012887	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.12	MG/L	.05	.1
TU514	8/21/2017	1012762	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.25	MG/L	.05	.1
JA221	8/21/2017	1012755	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19	MG/L	.05	.1
BH006	8/21/2017	1012884	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15	MG/L	.05	.1
YP985	9/12/2017	1017646	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.54	MG/L	.05	.1
YP984	9/12/2017	1017643	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.8	MG/L	.05	.1
BH025	9/12/2017	1017512	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.08	MG/L	.05	.1
LK037	9/12/2017	1017515	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.067	MG/L	.05	.1
BP300	1/30/2018	458291	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.38	MG/L	.12	.4
WU998	1/30/2018	458304	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.31	MG/L	.12	.4
FW168	1/31/2018	458356	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.34	MG/L	.12	.4
TU517	8/20/2018	1074827	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.18	MG/L	.05	.1
GT012	11/12/2018	1811807-001A	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.18	MG/L	.0217	.069
ES724	2/18/2019	489675	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	.2	.67
BP305	2/26/2019	490295	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	.2	.67
FW168	3/4/2019	490574	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	.2	.67
BM458	3/6/2019	490804	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	.2	.67
TE954	3/22/2019	491868	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.4	MG/L	.2	.67
RD045	4/5/2019	493015	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	.2	.67
IQ706	4/16/2019	493782	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	.2	.67
YR115	4/23/2019	1116845	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.16	MG/L	.046	.16
PT012	4/23/2019	494294	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	.2	.67
MW167	5/14/2019	1120996	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.49	MG/L	.046	.16
ES865	5/22/2019	447769002	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.585	MG/L	.03	.1
AY032	5/22/2019	447769001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.409	MG/L	.03	.1
BP307	5/29/2019	1905208-01	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.32	MG/L		
XP679	6/11/2019	1126874	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.66	MG/L	.046	.16
PU277	6/11/2019	1126870	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.66	MG/L	.046	.16
BP307	6/12/2019	1127378	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.28	MG/L	.046	.16
SJ161	6/18/2019	1128775	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.54	MG/L	.046	.16
IN260	6/18/2019	500174	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.24	MG/L	.17	.57
YP984	7/23/2019	1136220	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.61	MG/L	.046	.16
YP985	7/23/2019	1136222	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.74	MG/L	.046	.16
TB898	8/12/2019	1139995	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.22	MG/L	.046	.16
BH590	8/13/2019	1140414	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.14	MG/L	.046	.16
FX589	8/14/2019	1140884	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.22	MG/L	.046	.16
BH035	1/21/2020	490304001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.164	MG/L	.03	.1
BH032	1/21/2020	490306001	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.0866	MG/L	.03	.1
BH040	1/21/2020	490307001	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.0929	MG/L	.03	.1
WQ175	1/21/2020	490305001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.107	MG/L	.03	.1

**Sheboygan County Water Supply Well Results from WDNR's Groundwater Retrieval Network (GRN) Database - Fluoride**

WI Unique Well #	Sample		Storet Parameter Code	Storet Parameter Description	Sample Analytical Qualifier	Sample Analytical Result		Limit of Detection	Limit of Quantitation
	Collection Date	Labslip # / Sample ID				Result	Units		
BH033	1/21/2020	490309001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.145	MG/L	.03	.1
BH030	1/21/2020	490310001	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.0937	MG/L	.03	.1
BH034	1/21/2020	490308001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.104	MG/L	.03	.1
FW168	2/24/2020	522752	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.2	MG/L	.17	.57
BH027	5/4/2020	1186150	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.052	MG/L	.046	.16
TU514	6/1/2020	1190745	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.23	MG/L	.046	.16
JA221	6/1/2020	1190743	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19	MG/L	.046	.16
GM370	6/1/2020	1190744	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.14	MG/L	.046	.16
BH029	7/23/2020	1201841	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.44	MG/L	.046	.16
BH028	7/23/2020	1201842	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.69	MG/L	.046	.16
RZ848	7/23/2020	1201843	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.99	MG/L	.046	.16
BH039	8/24/2020	20H0822-01	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.24	MG/L	.006	
BH020	9/9/2020	1213505	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.13	MG/L	.046	.16
BH021	9/9/2020	1213508	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.12	MG/L	.046	.16
BH022	9/14/2020	526003001	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.258	MG/L	.03	.1
BH038	9/16/2020	1215149	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.43	MG/L	.046	.16
BH037	9/16/2020	1215152	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.33	MG/L	.046	.16
VL312	9/17/2020	1215335	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.1	MG/L	.046	.16
GM365	9/17/2020	1215338	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.072	MG/L	.046	.16
BH024	9/22/2020	1216845	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.72	MG/L	.046	.16
AY324	9/22/2020	1216842	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.5	MG/L	.046	.16
KU372	9/22/2020	1216848	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.72	MG/L	.046	.16
LK037	9/29/2020	1218584	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.069	MG/L	.046	.16
BH025	9/29/2020	1218581	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.075	MG/L	.046	.16
FW168	5/11/2021	562665	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.43	MG/L	.23	.77
WU998	6/7/2021	564966	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.35	MG/L	.23	.77
GT012	9/20/2021	1278615	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17	MG/L	.027	.1
TU517	9/20/2021	1278616	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17	MG/L	.027	.1
WU998	9/24/2021	575816	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	.23	.77
BP307	1/5/2022	2201009-01	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.248	MG/L	.022	
PT012	1/11/2022	1295582	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.17	MG/L	.027	.1
GM370	4/13/2022	1307691	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.14	MG/L	.03	.1
PU277	5/24/2022	1314372	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.7	MG/L	.03	.1
XP679	5/24/2022	1314375	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.68	MG/L	.03	.1
RD045	6/9/2022	592206	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.24	MG/L	.23	
IN260	6/20/2022	593085	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	.23	.77
BM458	6/20/2022	593087	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	.23	.77
ES724	6/20/2022	593091	951	FLUORIDE TOTAL	NON-DETECT	0	MG/L	.23	.77
FW168	6/23/2022	593440	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.31	MG/L	.23	.77
SJ161	6/23/2022	593423	951	FLUORIDE TOTAL	DETECT BETWEEN LOD & LOQ	0.51	MG/L	.23	.77
FV516		IL021435	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19	MG/L	0.031	0.10
FV516		IL021435	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.19	MG/L	0.031	0.10
DB283		ID083426	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.15	MG/L		
FR474		BH061024	951	FLUORIDE TOTAL	NORMAL QUANTIFIED RESULT	0.72	MG/L		

## Appendix C


### State Program Background Monitoring Data for Fluoride

**GEMS Data Download - Edgewater I-43 Landfill, License 2853, Fluoride Results**

Total Rows: 12

Lic#	Point ID	Dup Samp No	Point Name	Point Type Description	Parm Code	Parameter Description	Sample Date	Result Value	Result Unit	Rslt Qual Code	Point Status	QC1	QC2	QC3	LOD	LOQ	RL	Analysis Method Code	Report Period Date	Lab Anal. Date	Sample ID	Lab ID	Pt Key
2853	201	01	W-002	WT Obs Well-Non Sub D	951	FLUORIDE, TOTAL (MG/L F)	6/21/1978	0.52	mg/L	D	A							NOT REPORTED					5108
2853	201	01	W-002	WT Obs Well-Non Sub D	951	FLUORIDE, TOTAL (MG/L F)	5/15/1978	0.43	mg/L	D	A							NOT REPORTED					5108
2853	202	01	W-009	WT Obs Well-Non Sub D	951	FLUORIDE, TOTAL (MG/L F)	6/21/1978	0.84	mg/L	D	I							NOT REPORTED					5109
2853	202	01	W-009	WT Obs Well-Non Sub D	951	FLUORIDE, TOTAL (MG/L F)	5/15/1978	0.5	mg/L	D	I							NOT REPORTED					5109
2853	203	01	W-010B	Piezometer-Non Sub D Well	951	FLUORIDE, TOTAL (MG/L F)	6/21/1978	0.71	mg/L	D	A							NOT REPORTED					5110
2853	203	01	W-010B	Piezometer-Non Sub D Well	951	FLUORIDE, TOTAL (MG/L F)	5/15/1978	0.5	mg/L	D	A							NOT REPORTED					5110
2853	204	01	W-019B	Piezometer-Non Sub D Well	951	FLUORIDE, TOTAL (MG/L F)	6/21/1978	0.49	mg/L	D	P							NOT REPORTED					5111
2853	204	01	W-019B	Piezometer-Non Sub D Well	951	FLUORIDE, TOTAL (MG/L F)	5/15/1978	0.43	mg/L	D	P							NOT REPORTED					5111
2853	205	01	W-022B	Piezometer-Non Sub D Well	951	FLUORIDE, TOTAL (MG/L F)	6/21/1978	0.47	mg/L	D	A							NOT REPORTED					5112
2853	205	01	W-022B	Piezometer-Non Sub D Well	951	FLUORIDE, TOTAL (MG/L F)	5/15/1978	0.48	mg/L	D	A							NOT REPORTED					5112
2853	226	01	GOEBEL WELL	Private Well - Potable	951	FLUORIDE, TOTAL (MG/L F)	5/15/1978	0.74	mg/L	D	A							NOT REPORTED					5133
2853	227	01	BEECK WELL	Private Well - Potable	951	FLUORIDE, TOTAL (MG/L F)	6/21/1978	0.7	mg/L	D	A							NOT REPORTED					5134





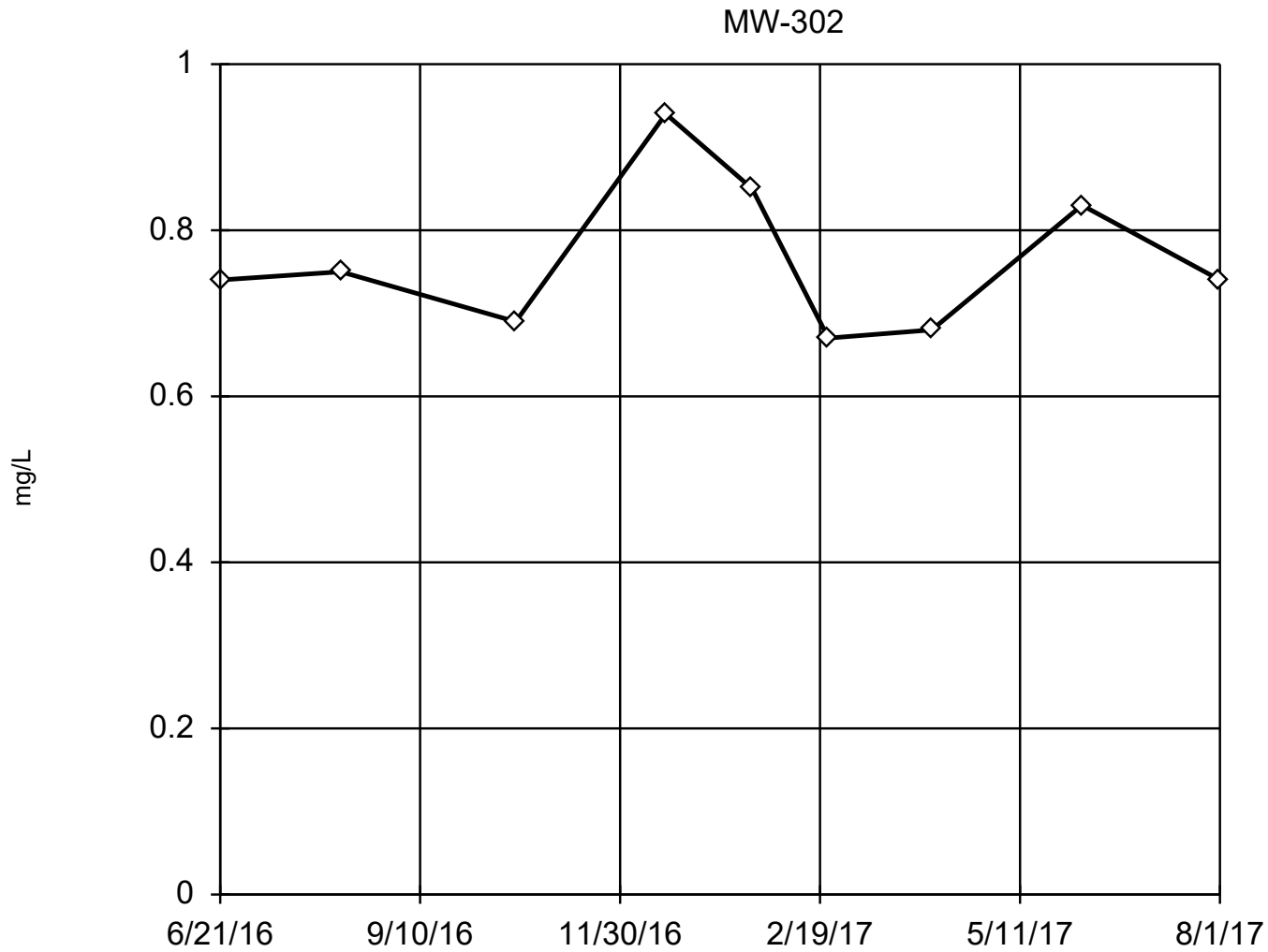
Appendix D  
Intrawell Statistical Analysis

# Outlier Analysis

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43\_2020\_Oct\_All Printed 8/24/2022, 12:21 PM

<u>Constituent</u>	<u>Well</u>	<u>Outlier</u>	<u>Value(s)</u>	<u>Date(s)</u>	<u>Method</u>	<u>Alpha</u>	<u>N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>Distribution</u>	<u>Normality Test</u>
Fluoride (mg/L)	MW-302	No	n/a	n/a	EPA 1989	0.05	9	0.7656	0.09043	normal	ShapiroWilk

### EPA Screening (suspected outliers for Dixon's Test)



n = 9

Dixon's will not be run.  
No suspect values identified or unable to establish suspect values.  
Mean 0.7656, std. dev. 0.09043, critical Tn 2.11

Normality test used:  
Shapiro Wilk@alpha = 0.1  
Calculated = 0.9006  
Critical = 0.859  
The distribution was found to be normally distributed.

Constituent: Fluoride Analysis Run 8/24/2022 12:17 PM View: I-43 LF Detection Monitoring

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43\_2020\_Oct\_All

# EPA 1989 Outlier Screening

Constituent: Fluoride (mg/L) Analysis Run 8/24/2022 12:21 PM View: I-43 LF Detection Monitoring  
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43\_2020\_Oct\_All

MW-302

4/26/2016	1.1 (J,X)
6/21/2016	0.74
8/9/2016	0.75
10/19/2016	0.69
12/19/2016	0.94 (J)
1/23/2017	0.85 (J)
2/23/2017	0.67
4/6/2017	0.68
6/6/2017	0.83
8/1/2017	0.74

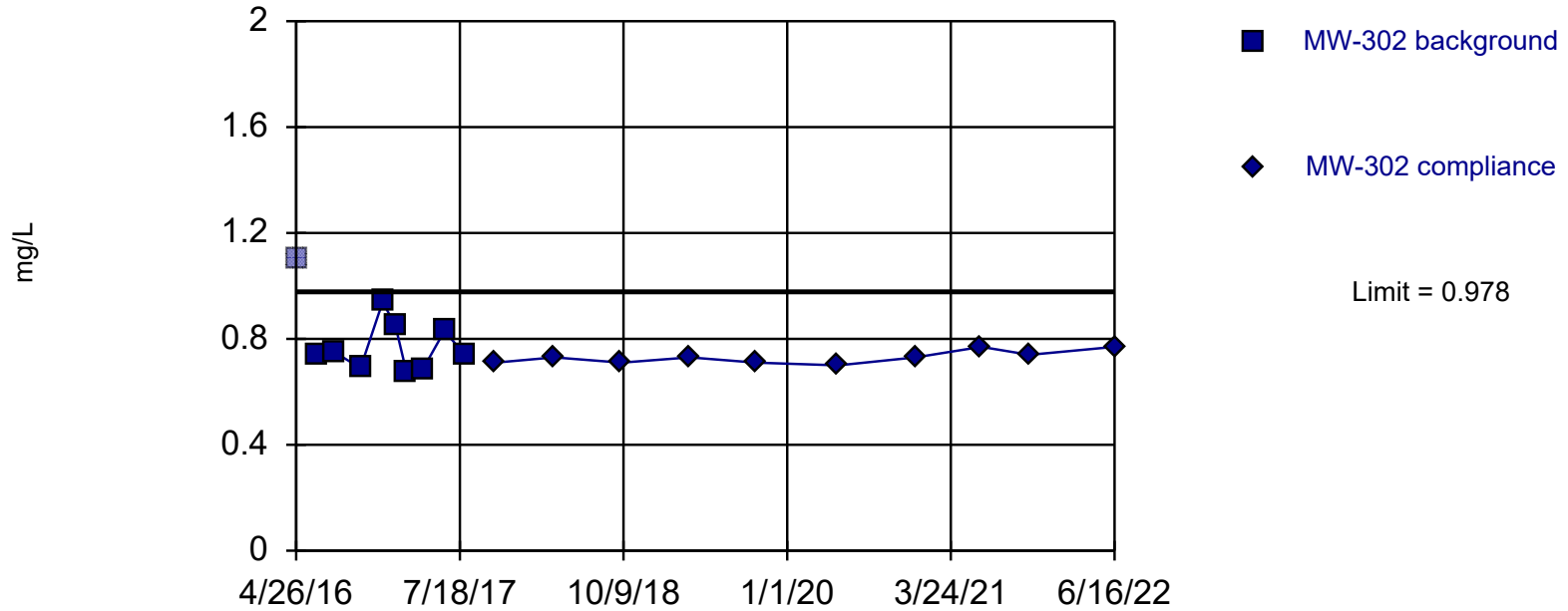
# Prediction Limit

I-43 Ash Disposal Facility Client: SCS Engineers Data: I43\_2020\_Oct\_All Printed 8/31/2022, 10:15 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>Bg Wells</u>	<u>Bg Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>	<u>ND Adj.</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Fluoride (mg/L)	MW-302	0.978	n/a	6/16/2022	0.77	No	9	n/a	0.7656	0.09043	0	None	No	0.002505	Param Intra 1 of 2

Within Limit

### Prediction Limit Intrawell Parametric



Background Data Summary: Mean=0.7656, Std. Dev.=0.09043, n=9. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9006, critical = 0.829. Kappa = 2.348 (c=7, w=3, 1 of 2, event alpha = 0.05132). Report alpha = 0.002505.

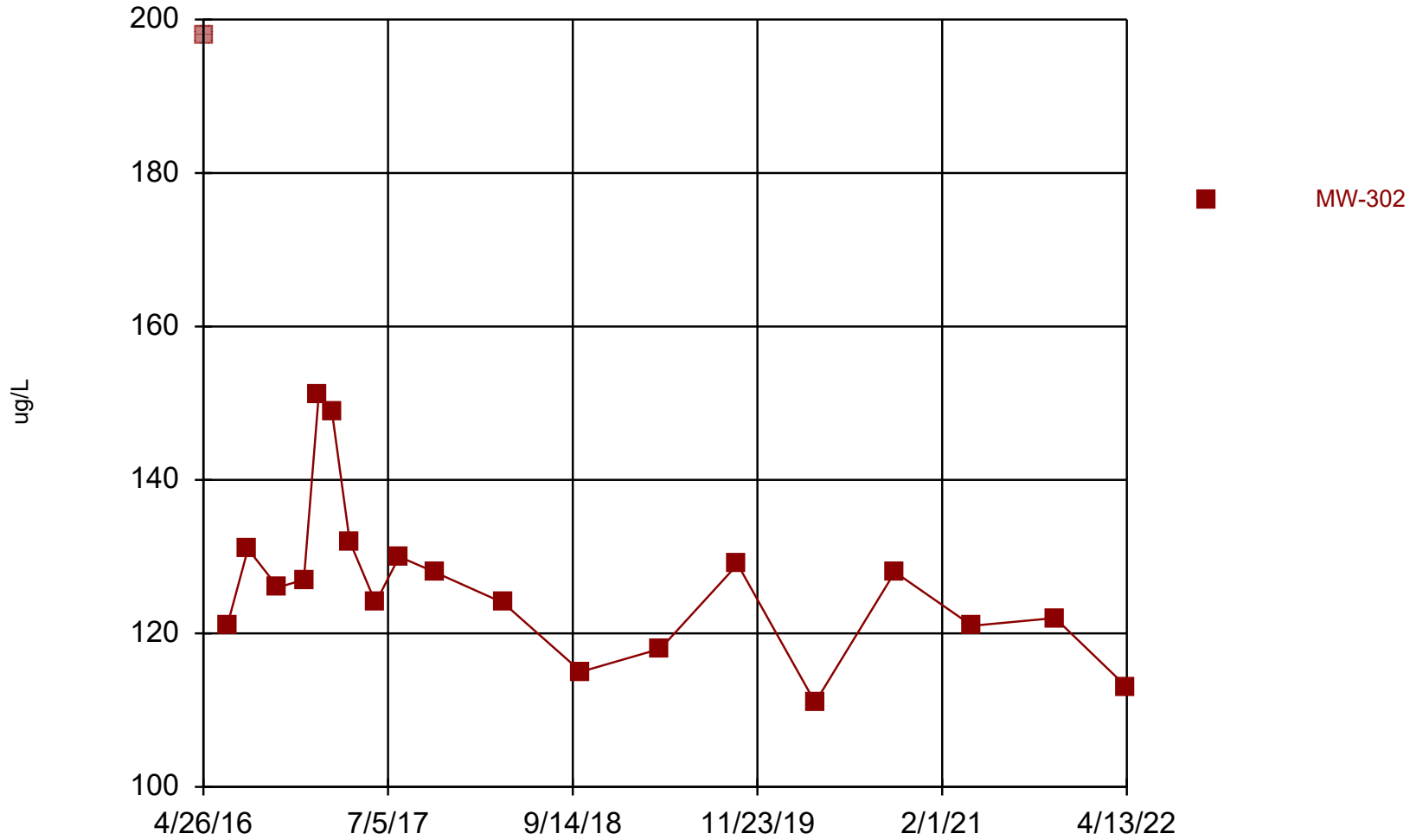
Constituent: Fluoride Analysis Run 8/31/2022 10:11 AM View: I-43 LF Detection Monitoring  
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43\_2020\_Oct\_All

# Prediction Limit

Constituent: Fluoride (mg/L) Analysis Run 8/31/2022 10:15 AM View: I-43 LF Detection Monitoring  
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43\_2020\_Oct\_All

	MW-302	MW-302
4/26/2016	1.1 (J,X)	
6/21/2016	0.74	
8/9/2016	0.75	
10/19/2016	0.69	
12/19/2016	0.94 (J)	
1/23/2017	0.85 (J)	
2/23/2017	0.67	
4/6/2017	0.68	
6/6/2017	0.83	
8/1/2017	0.74	
10/23/2017		0.71
4/3/2018		0.73
10/4/2018		0.71
4/9/2019		0.73
10/8/2019		0.71
5/20/2020		0.7 (R)
12/18/2020		0.73 (R)
6/16/2021		0.77 (R)
10/26/2021		0.74
6/16/2022		0.77 (R)

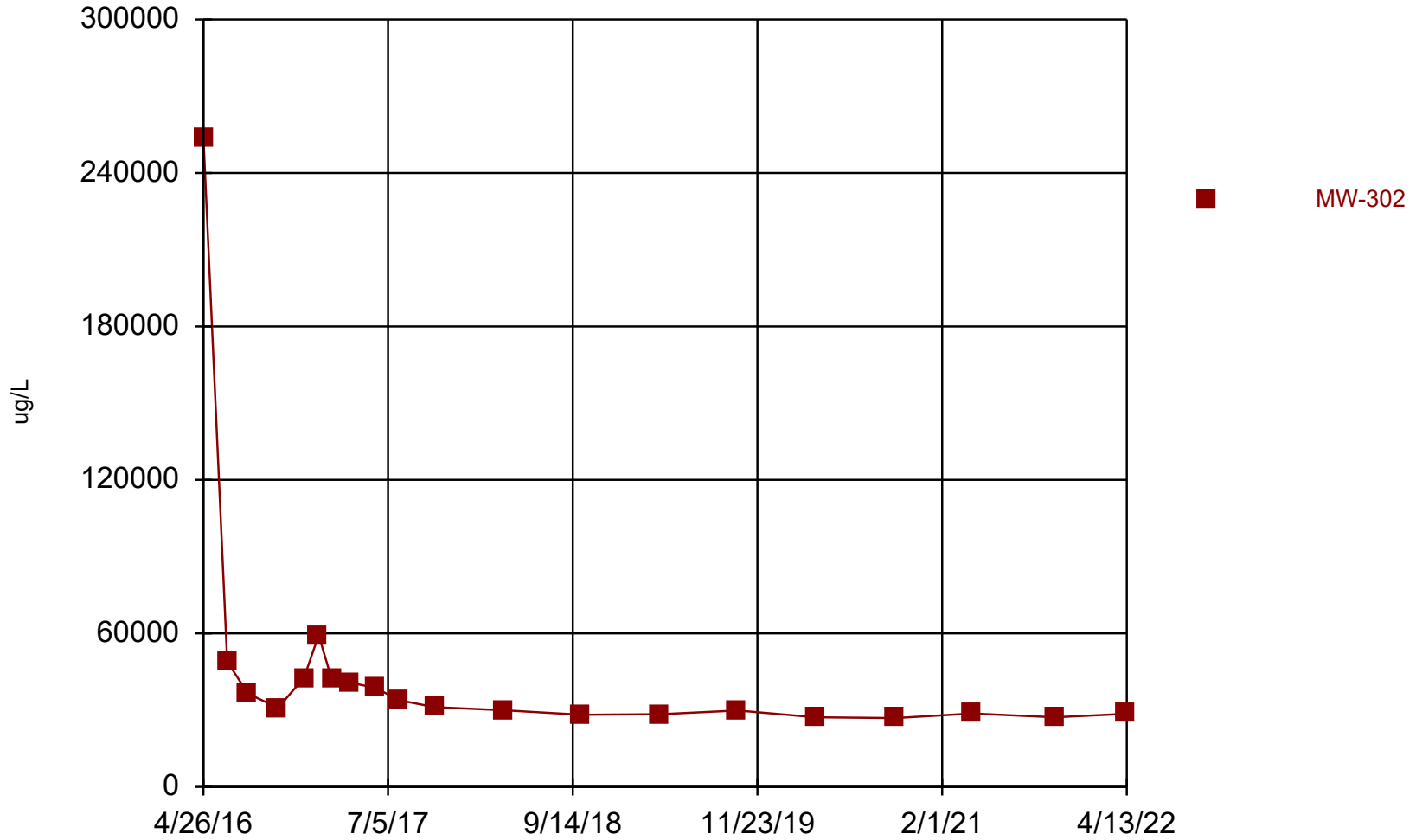
### Time Series



Constituent: Boron Analysis Run 8/31/2022 10:03 AM View: I-43 LF Detection Monitoring  
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43\_2020\_Oct\_All

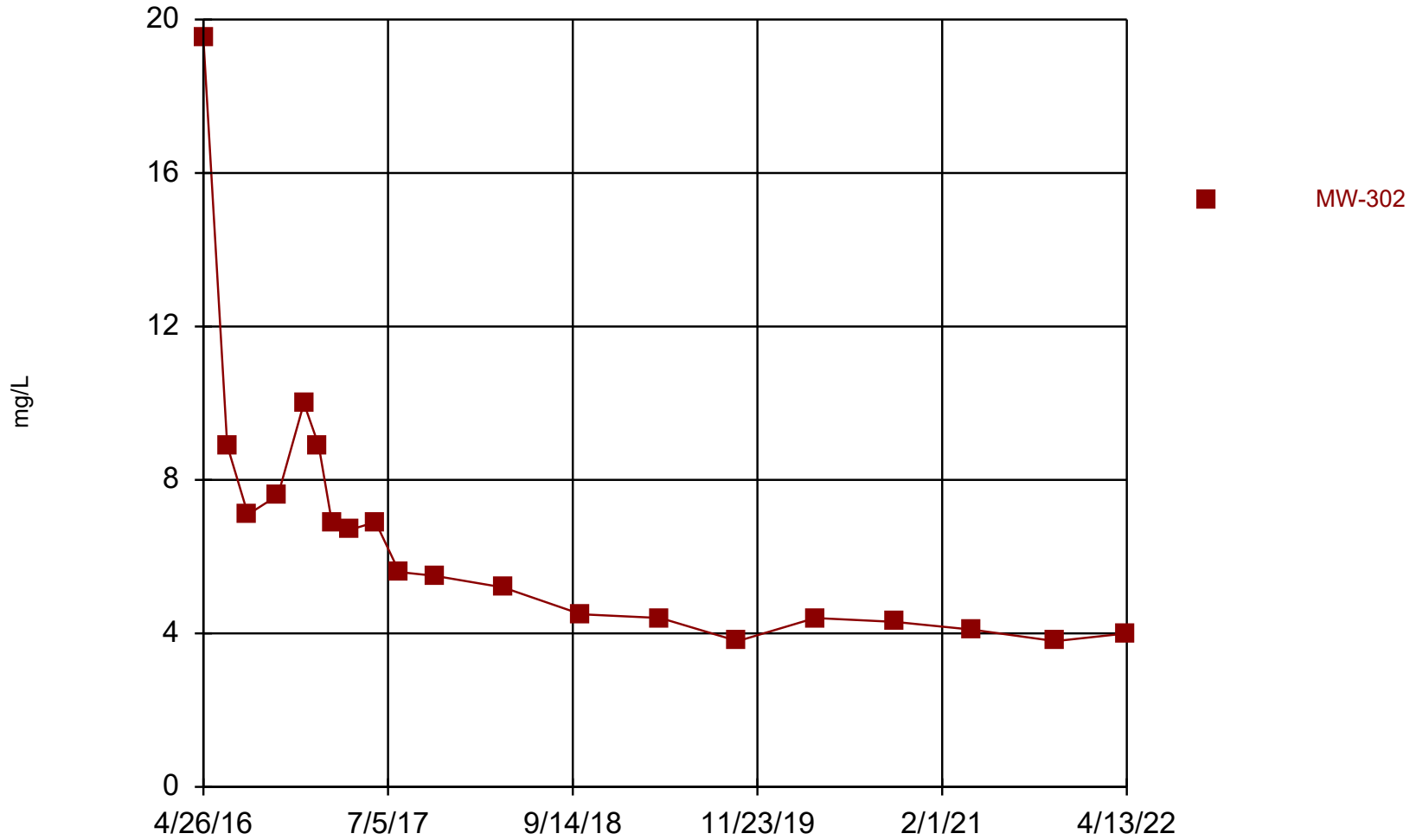


### Time Series



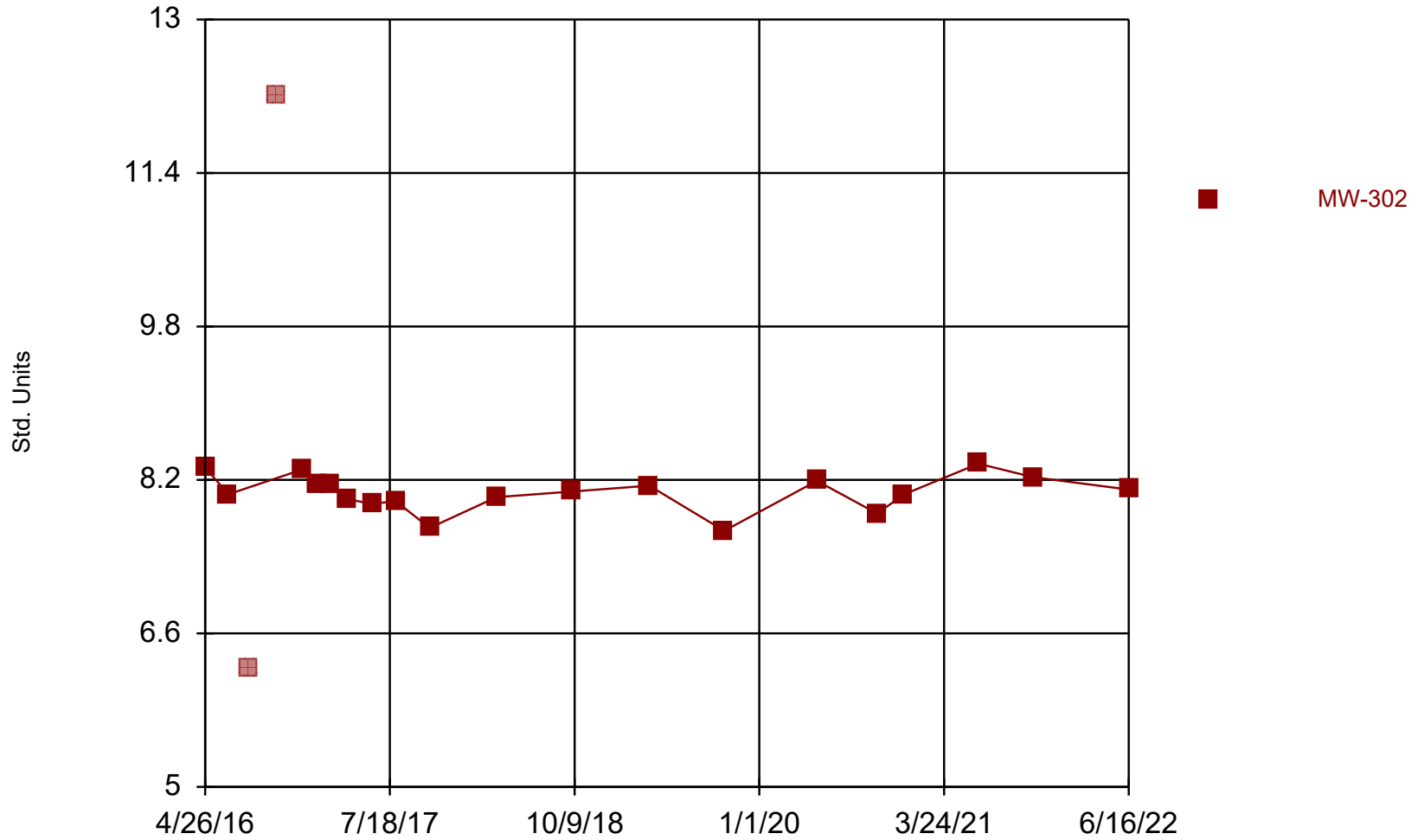
Constituent: Calcium Analysis Run 8/31/2022 10:03 AM View: I-43 LF Detection Monitoring  
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43\_2020\_Oct\_All

### Time Series



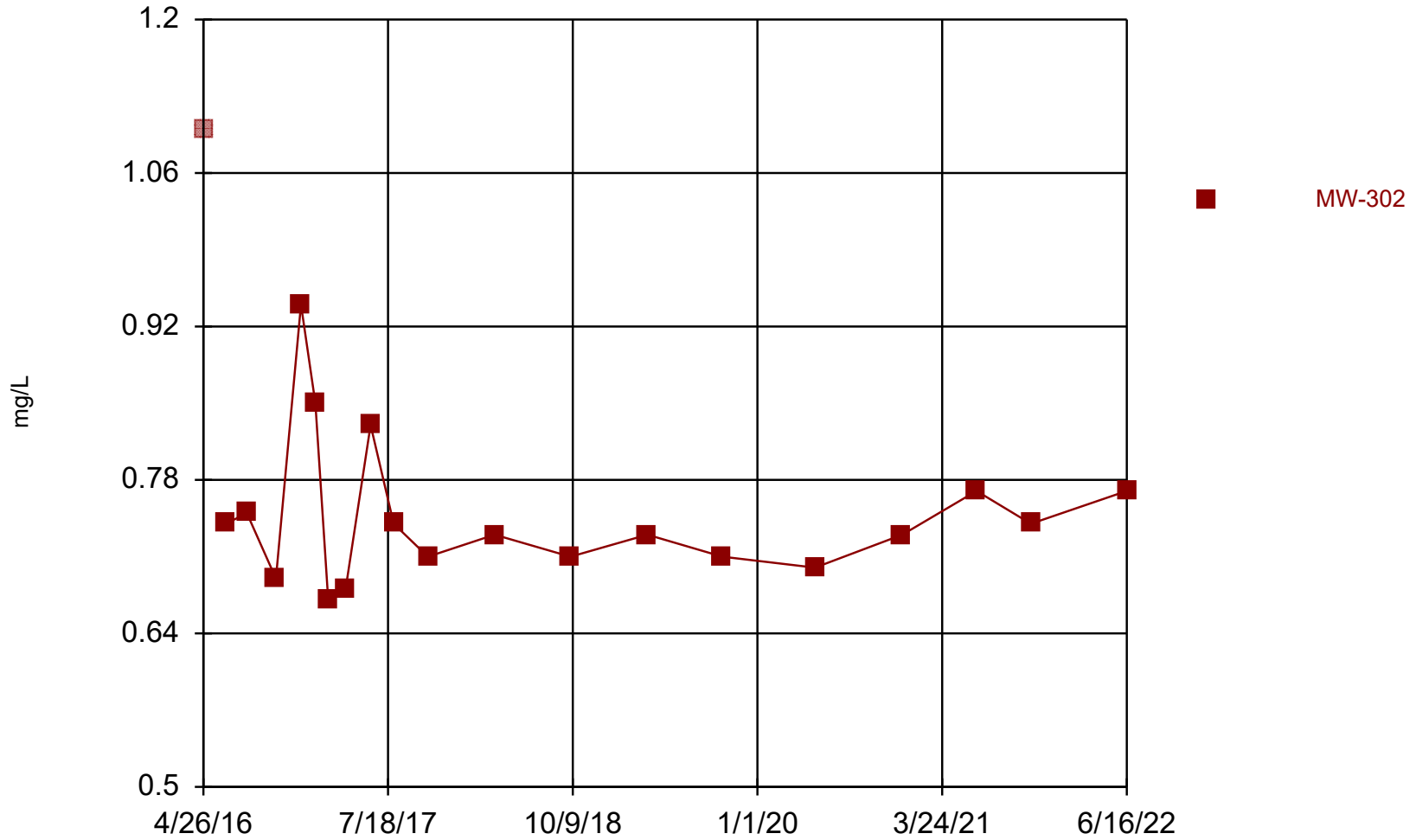
Constituent: Chloride    Analysis Run 8/31/2022 10:03 AM    View: I-43 LF Detection Monitoring  
I-43 Ash Disposal Facility    Client: SCS Engineers    Data: I43\_2020\_Oct\_All

### Time Series



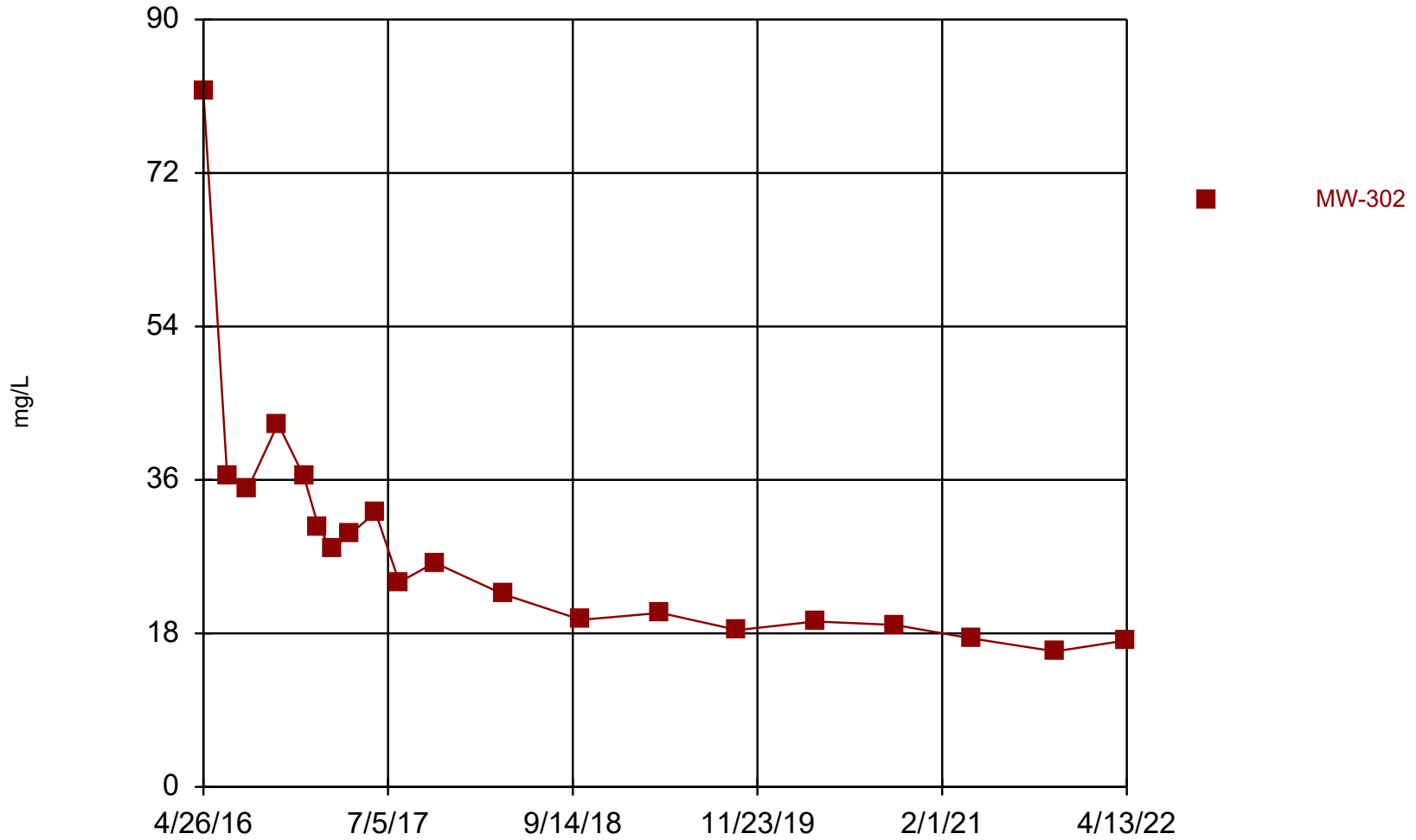
Constituent: Field pH    Analysis Run 8/31/2022 10:03 AM    View: I-43 LF Detection Monitoring  
I-43 Ash Disposal Facility    Client: SCS Engineers    Data: I43\_2020\_Oct\_All

### Time Series



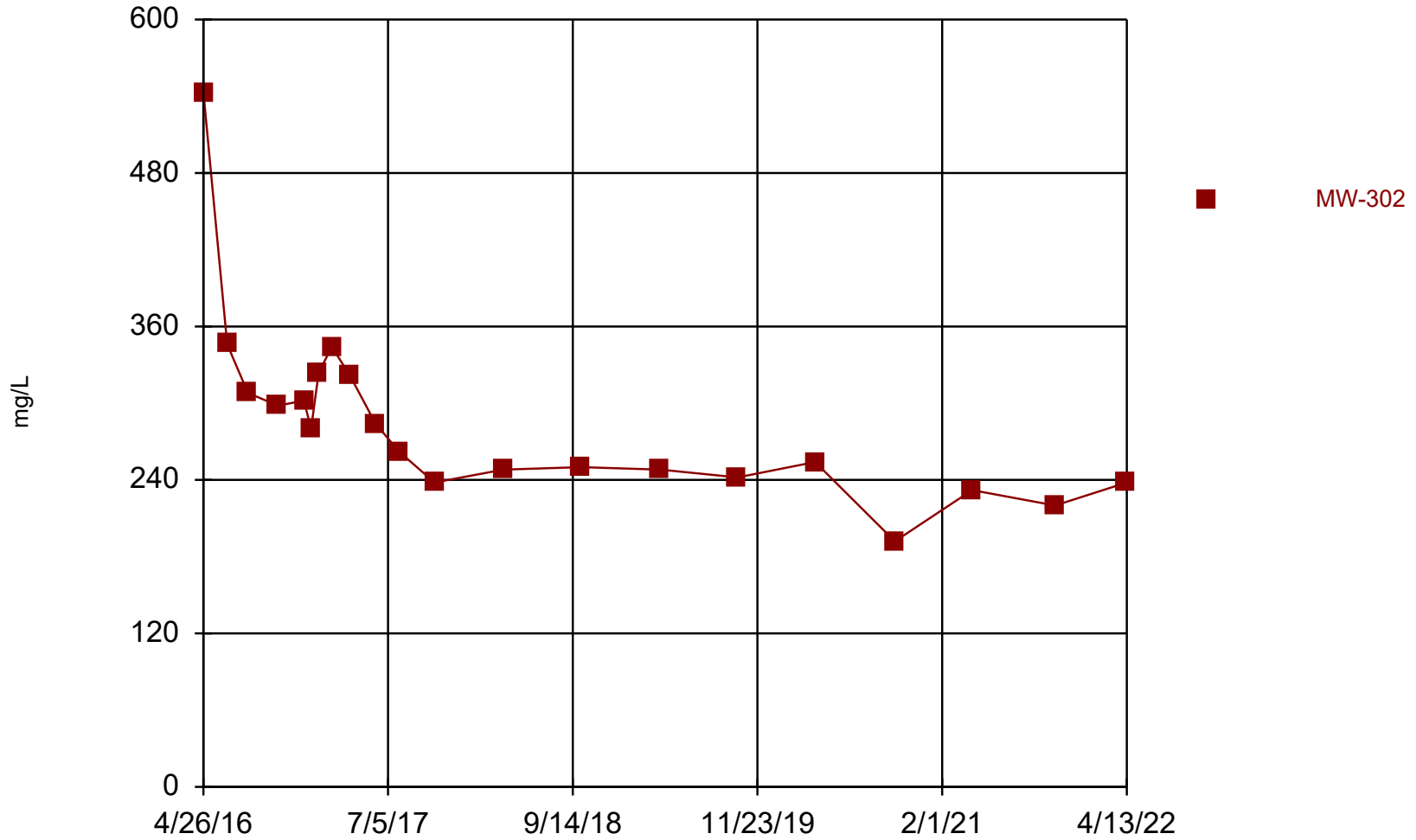
Constituent: Fluoride Analysis Run 8/31/2022 10:03 AM View: I-43 LF Detection Monitoring  
I-43 Ash Disposal Facility Client: SCS Engineers Data: I43\_2020\_Oct\_All

### Time Series



Constituent: Sulfate    Analysis Run 8/31/2022 10:03 AM    View: I-43 LF Detection Monitoring  
I-43 Ash Disposal Facility    Client: SCS Engineers    Data: I43\_2020\_Oct\_All

### Time Series



Constituent: Total Dissolved Solids    Analysis Run 8/31/2022 10:03 AM    View: I-43 LF Detection Monitoring  
I-43 Ash Disposal Facility    Client: SCS Engineers    Data: I43\_2020\_Oct\_All