

Notice: Use this form to request a **written response (on agency letterhead)** from the Department of Natural Resources (DNR) regarding technical assistance, a post-closure change to a site, a specialized agreement or liability clarification for Property with known or suspected environmental contamination. A fee will be required as is authorized by s. 292.55, Wis. Stats., and NR 749, Wis. Adm. Code., unless noted in the instructions below. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records law [ss. 19.31 - 19.39, Wis. Stats.].

Definitions

"Property" refers to the subject Property that is perceived to have been or has been impacted by the discharge of hazardous substances.

"Liability Clarification" refers to a written determination by the Department provided in response to a request made on this form. The response clarifies whether a person is or may become liable for the environmental contamination of a Property, as provided in s. 292.55, Wis. Stats.

"Technical Assistance" refers to the Department's assistance or comments on the planning and implementation of an environmental investigation or environmental cleanup on a Property in response to a request made on this form as provided in s. 292.55, Wis. Stats.

"Post-closure modification" refers to changes to Property boundaries and/or continuing obligations for Properties or sites that received closure letters for which continuing obligations have been applied or where contamination remains. Many, but not all, of these sites are included on the GIS Registry layer of RR Sites Map to provide public notice of residual contamination and continuing obligations.

Select the Correct Form

This form should be used to request the following from the DNR:

- Technical Assistance
- Liability Clarification
- Post-Closure Modifications
- Specialized Agreements (tax cancellation, negotiated agreements, etc.)

Do not use this form if one of the following applies:

- Request for an **off-site liability exemption or clarification** for Property that has been or is perceived to be contaminated by one or more hazardous substances that originated on another Property containing the source of the contamination. Use DNR's Off-Site Liability Exemption and Liability Clarification Application Form 4400-201.
- Submittal of an Environmental Assessment for the **Lender Liability Exemption**, s 292.21, Wis. Stats., **if no response or review by DNR is requested**. Use the Lender Liability Exemption Environmental Assessment Tracking Form 4400-196.
- Request for an **exemption to develop on a historic fill site** or licensed landfill. Use DNR's Form 4400-226 or 4400-226A.
- **Request for closure** for Property where the investigation and cleanup actions are completed. Use DNR's Case Closure - GIS Registry Form 4400-202.

All forms, publications and additional information are available on the internet at: dnr.wi.gov/topic/Brownfields/Pubs.html.

Instructions

1. Complete sections 1, 2, 6 and 7 for all requests. Be sure to provide adequate and complete information.
2. Select the type of assistance requested: Section 3 for technical assistance or post-closure modifications, Section 4 for a written determination or clarification of environmental liabilities; or Section 5 for a specialized agreement.
3. Include the fee payment that is listed in Section 3, 4, or 5, unless you are a "Voluntary Party" enrolled in the Voluntary Party Liability Exemption Program **and** the questions in Section 2 direct otherwise. Information on to whom and where to send the fee is found in Section 8 of this form.
4. Send the completed request, supporting materials and the fee to the appropriate DNR regional office where the Property is located. See the map on the last page of this form. A paper copy of the signed form and all reports and supporting materials shall be sent with an electronic copy of the form and supporting materials on a compact disk. For electronic document submittal requirements see: <http://dnr.wi.gov/files/PDF/pubs/rr/RR690.pdf>

The time required for DNR's determination varies depending on the complexity of the site, and the clarity and completeness of the request and supporting documentation.

Technical Assistance, Environmental Liability Clarification or Post-Closure Modification Request

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Section 1. Contact and Recipient Information

Requester Information

This is the person requesting technical assistance or a post-closure modification review, that his or her liability be clarified or a specialized agreement and is identified as the requester in Section 7. DNR will address its response letter to this person.

Last Name	First	MI	Organization/ Business Name		
Butz	John		Bay Towel		
Mailing Address			City	State	ZIP Code
2580 Broadway Avenue			Green Bay	WI	54307
Phone # (include area code)	Fax # (include area code)	Email			
(920) 497-2000		jbutz@baytowel.com			

The requester listed above: (select all that apply)

- Is currently the owner
 Is considering selling the Property
 Is renting or leasing the Property
 Is considering acquiring the Property
 Is a lender with a mortgagee interest in the Property
 Other. Explain the status of the Property with respect to the applicant:

Contact Information (to be contacted with questions about this request)

Select if same as requester

Contact Last Name	First	MI	Organization/ Business Name		
Butz	John		Bay Towel		
Mailing Address			City	State	ZIP Code
2580 Broadway Avenue			Green Bay	WI	54307
Phone # (include area code)	Fax # (include area code)	Email			
(920) 497-2000		jbutz@baytowel.com			

Environmental Consultant (if applicable)

Contact Last Name	First	MI	Organization/ Business Name		
Plamann	Dillon		Fehr Graham		
Mailing Address			City	State	ZIP Code
909 North 8th Street, Suite 101			Sheboygan	WI	53081
Phone # (include area code)	Fax # (include area code)	Email			
(920) 946-2407		dplamann@fehrgraham.com			

Attorney (if applicable)

Contact Last Name	First	MI	Organization/ Business Name		
Gallo	Donald	P	Axley Brynerson, LLP		
Mailing Address			City	State	ZIP Code
N20W22961 Watertown Road			Waukesha	WI	53186
Phone # (include area code)	Fax # (include area code)	Email			
(262) 409-2283		dgallo@axley.com			

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Section 2. Property Information

Property Name Bay Towel - Solvent Investigation		FID No. (if known) 405044090		
BRRTS No. (if known) 02-05-237064	Parcel Identification Number 15-23			
Street Address 501 South Adams Street		City Green Bay	State WI	ZIP Code 54307
County Brown	Municipality where the Property is located <input checked="" type="radio"/> City <input type="radio"/> Town <input type="radio"/> Village of Green Bay	Property is composed of: <input checked="" type="radio"/> Single tax parcel <input type="radio"/> Multiple tax parcels		Property Size Acres 1

1. Is a response needed by a specific date? (e.g., Property closing date) Note: Most requests are completed within 60 days. Please plan accordingly.

No Yes

Date requested by: _____

Reason: _____

2. Is the "Requester" enrolled as a Voluntary Party in the Voluntary Party Liability Exemption (VPLE) program?

No. **Include the fee that is required for your request in Section 3, 4 or 5.**

Yes. **Do not include a separate fee.** This request will be billed separately through the VPLE Program.

Fill out the information in Section 3, 4 or 5 which corresponds with the type of request:

Section 3. Technical Assistance or Post-Closure Modifications;

Section 4. Liability Clarification; or Section 5. Specialized Agreement.

Section 3. Request for Technical Assistance or Post-Closure Modification

Select the type of technical assistance requested: [**Numbers in brackets are for WI DNR Use**]

- No Further Action Letter (NFA) (Immediate Actions) - NR 708.09, [183] - **Include a fee of \$350.** Use for a written response to an immediate action after a discharge of a hazardous substance occurs. Generally, these are for a one-time spill event.
- Review of Site Investigation Work Plan - NR 716.09, [135] - **Include a fee of \$700.**
- Review of Site Investigation Report - NR 716.15, [137] - **Include a fee of \$1050.**
- Approval of a Site-Specific Soil Cleanup Standard - NR 720.10 or 12, [67] - **Include a fee of \$1050.**
- Review of a Remedial Action Options Report - NR 722.13, [143] - **Include a fee of \$1050.**
- Review of a Remedial Action Design Report - NR 724.09, [148] - **Include a fee of \$1050.**
- Review of a Remedial Action Documentation Report - NR 724.15, [152] - **Include a fee of \$350**
- Review of a Long-term Monitoring Plan - NR 724.17, [25] - **Include a fee of \$425.**
- Review of an Operation and Maintenance Plan - NR 724.13, [192] - **Include a fee of \$425.**

Other Technical Assistance - s. 292.55, Wis. Stats. [97] (For request to build on an abandoned landfill use Form 4400-226)

- Schedule a Technical Assistance Meeting - **Include a fee of \$700.**
- Hazardous Waste Determination - **Include a fee of \$700.**
- Other Technical Assistance - **Include a fee of \$700.** Explain your request in an attachment.

Post-Closure Modifications - NR 727, [181]

- Post-Closure Modifications: Modification to Property boundaries and/or continuing obligations of a closed site or Property; sites may be on the GIS Registry. This also includes removal of a site or Property from the GIS Registry. **Include a fee of \$1050, and:**
 - Include a fee of \$300 for sites with residual soil contamination; and
 - Include a fee of \$350 for sites with residual groundwater contamination, monitoring wells or for vapor intrusion continuing obligations.

Attach a description of the changes you are proposing, and documentation as to why the changes are needed (if the change to a Property, site or continuing obligation will result in revised maps, maintenance plans or photographs, those documents may be submitted later in the approval process, on a case-by-case basis).

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Skip Sections 4 and 5 if the technical assistance you are requesting is listed above and complete Sections 6 and 7 of this form.

Section 5. Request for a Specialized Agreement

Select the type of agreement needed. Include the appropriate draft agreements and supporting materials. Complete Sections 6 and 7 of this form. More information and model draft agreements are available at: dnr.wi.gov/topic/Brownfields/lgu.html#tabx4.

- Tax cancellation agreement - s. 75.105(2)(d), Wis. Stats. [654]
❖ **Include a fee of \$700, and the information listed below:**
(1) Phase I and II Environmental Site Assessment Reports,
(2) a copy of the Property deed with the correct legal description.
- Agreement for assignment of tax foreclosure judgement - s.75.106, Wis. Stats. [666]
❖ **Include a fee of \$700, and the information listed below:**
(1) Phase I and II Environmental Site Assessment Reports,
(2) a copy of the Property deed with the correct legal description.
- Negotiated agreement - Enforceable contract for non-emergency remediation - s. 292.11(7)(d) and (e), Wis. Stats. [630]
❖ **Include a fee of \$1400, and the information listed below:**
(1) a draft schedule for remediation; and,
(2) the name, mailing address, phone and email for each party to the agreement.

Section 6. Other Information Submitted

Identify all materials that are included with this request.

Send both a paper copy of the signed form and all reports and supporting materials, and an electronic copy of the form and all reports, including Environmental Site Assessment Reports, and supporting materials on a compact disk.

Include one copy of any document from any state agency files that you want the Department to review as part of this request. The person submitting this request is responsible for contacting other state agencies to obtain appropriate reports or information.

- Phase I Environmental Site Assessment Report - Date: _____
- Phase II Environmental Site Assessment Report - Date: _____
- Legal Description of Property (required for all liability requests and specialized agreements)
- Map of the Property (required for all liability requests and specialized agreements)
- Analytical results of the following sampled media: Select all that apply and include date of collection.
- Groundwater Soil Sediment Other medium - Describe: _____
- Date of Collection: _____
- A copy of the closure letter and submittal materials
- Draft tax cancellation agreement
- Draft agreement for assignment of tax foreclosure judgment
- Other report(s) or information - Describe: Site Investigation Work Plan

For Property with newly identified discharges of hazardous substances only: Has a notification of a discharge of a hazardous substance been sent to the DNR as required by s. NR 706.05(1)(b), Wis. Adm. Code?

- Yes - Date (if known): _____
- No

Note: The Notification for Hazardous Substance Discharge (non-emergency) form is available at: dnr.wi.gov/files/PDF/forms/4400/4400-225.pdf.

Section 7. Certification by the Person who completed this form

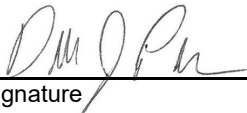
- I am the person submitting this request (requester)
- I prepared this request for: Mr. John Butz, Bay Towel
Requester Name

I certify that I am familiar with the information submitted on this request, and that the information on and included with this request is true, accurate and complete to the best of my knowledge. I also certify I have the legal authority and the applicant's permission to make this request.

**Technical Assistance, Environmental Liability
Clarification or Post-Closure Modification Request**

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Signature

April 1, 2022

Date Signed

Project Hydrogeologist

Title

(920) 946-2407

Telephone Number (include area code)

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Section 8. DNR Contacts and Addresses for Request Submittals

Send or deliver one paper copy and one electronic copy on a compact disk of the completed request, supporting materials, and fee to the region where the property is located to the address below. Contact a [DNR regional brownfields specialist](#) with any questions about this form or a specific situation involving a contaminated property. For electronic document submittal requirements see: <http://dnr.wi.gov/files/PDF/pubs/rr/RR690.pdf>.

DNR NORTHERN REGION

Attn: RR Program Assistant
Department of Natural Resources
223 E Steinfest Rd Antigo, WI 54409

DNR NORTHEAST REGION

Attn: RR Program Assistant
Department of Natural Resources
2984 Shawano Avenue
Green Bay WI 54313

DNR SOUTH CENTRAL REGION

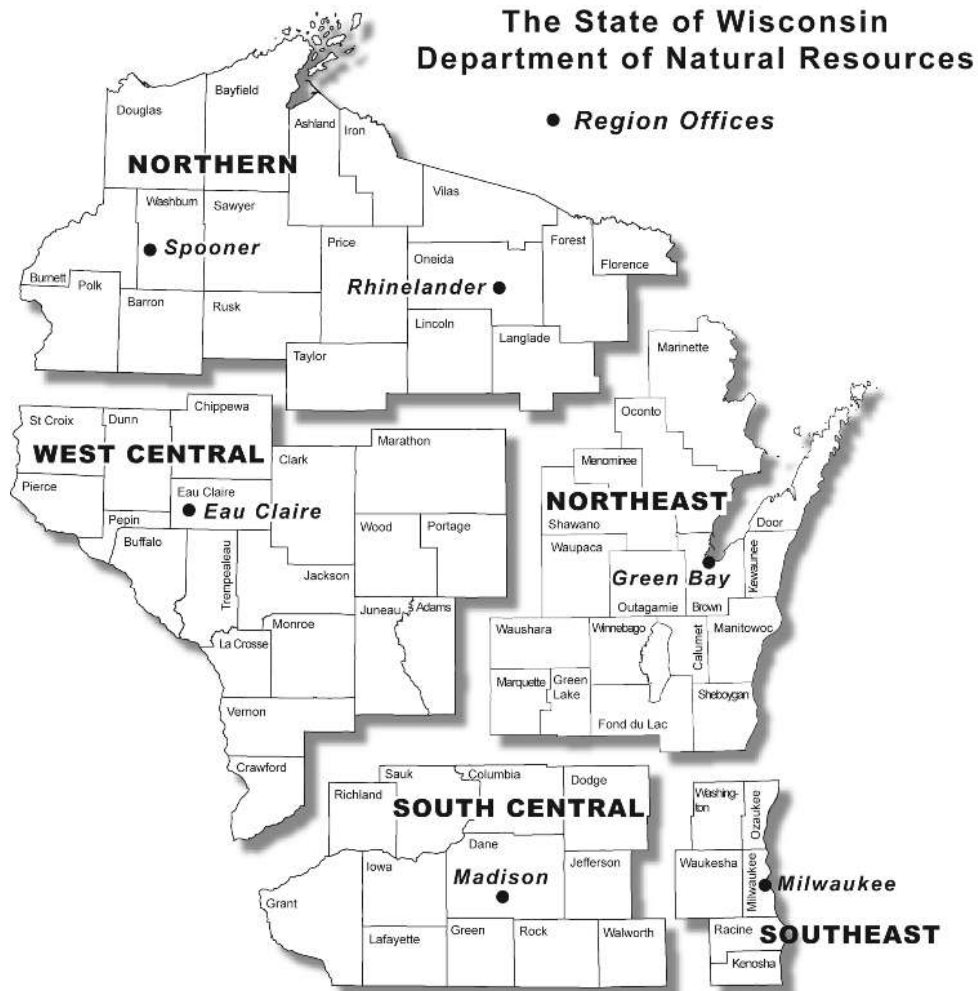
Attn: RR Program Assistant
Department of Natural Resources
3911 Fish Hatchery Road
Fitchburg WI 53711

DNR SOUTHEAST REGION

Attn: RR Program Assistant
Department of Natural Resources
2300 North Martin Luther King Drive
Milwaukee WI 53212

DNR WEST CENTRAL REGION

Attn: RR Program Assistant
Department of Natural Resources
1300 Clairemont Ave.
Eau Claire WI 54702



Note: These are the Remediation and Redevelopment Program's designated regions. Other DNR program regional boundaries may be different.

DNR Use Only			
Date Received	Date Assigned	BRRTS Activity Code	BRRTS No. (if used)
DNR Reviewer		Comments	
Fee Enclosed? <input type="radio"/> Yes <input type="radio"/> No	Fee Amount \$	Date Additional Information Requested	Date Requested for DNR Response Letter
Date Approved	Final Determination		

SITE INVESTIGATION WORK PLAN

**Bay Towel
501 S. Adams Street
Green Bay, WI 54301**

**Project No.: 21-1121
BRRTS # 02-05-237064
FID # 405044090**

March 31, 2022



**909 N. 8th Street, Suite 101
Sheboygan, Wisconsin 53081**

Prepared for:

Ms. Josie Schultz

Wisconsin Department of Natural Resources

Department of Remediation and Redevelopment

2984 Shawano Avenue

Green Bay, Wisconsin 54313-6727

www.fehrgraham.com

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Figure 2: Post-Excavation Soil Chemistry

Figure 3: Post-Excavation Groundwater Chemistry - October 2021

Figure 4: PFAS Groundwater Chemistry – June 2021

Figure 5: Groundwater Flow – October 2021

Figure 6: Piezometer Flow – October 2021

Figure 7: Proposed Site Investigation Locations

Appendices

Appendix A – Laboratory Analytical Report

Appendix B - Pace Analytical PFAS Field Sampling Guide

I, Matt Dahlem, PG, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, and that, to the best of my knowledge, all the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.



Matt Dahlem, PG
Branch Manager

March 31, 2022

Date



1.0 INTRODUCTION

On November 18, 2021, a Technical Assistance Meeting was held with the Wisconsin Department of Natural Resources (WDNR) to discuss the current state of the case and additional site investigation that is needed. Ms. Josie Schultz led the meeting as the WDNR project manager for the case. Ms. Schultz addressed each media (soil, groundwater, and vapor) separately, and commented where the WDNR sees gaps in the data that they recommend additional site investigation to address prior to submitting for case closure. The *Response to Technical Assistance Request* letter from the WDNR dated December 2, 2021, summarizes these recommendations.

This Site has conducted dry-cleaning and fabricare operations at the facility from 1953 to 1989. An open contamination case with the WDNR's Remediation and Redevelopment Program titled "Bay Towel – Solvent Investigation" is tracked as Bureau of Remediation and Redevelopment Tracking System (BRRTS) #02-05-237064. Soil and groundwater contamination resulted from a discharge of chlorinated volatile organic compounds (CVOCs). Select wells have also been sampled for PFAS, as these compounds have been associated with dry-cleaning and fabricare operations both nationally and in Wisconsin. Limited detections of PFAS compounds have been observed at the Site.

This Site Investigation Work Plan (SIWP) presents a summary of the site investigation and remedial activities completed at the Site, and a description of the proposed additional site investigation activities.

1.1 Contacts

Responsible Party:

Mr. John Butz
Bay Towel
P.O. Box 12115
2580 S. Broadway Avenue
Ashwaubenon, WI 54304
920.497.2000
jbutz@baytowel.com

Regulatory Project Manager:

Ms. Josie Schultz
Wisconsin Department of Natural Resources
2984 Shawano Avenue
Green Bay, WI 54313-6727
920.662.5424
josie.schultz@wisconsin.gov

Consultant:

Mr. Matt Dahlem, PG
Fehr Graham
909 N. 8th Street, Suite 101
Sheboygan, WI 53081
920.453.0700
mdahlem@fehr-graham.com

Laboratory:

Mr. Chris Hyska
Pace Analytical Services
1241 Bellevue Street, Suite 9
Green Bay, WI 54302
920.469.2436

1.2 Site Description

The Site is located at 501 S. Adams Street in Green Bay, Wisconsin. The Site is approximately 1.33 acres and was formerly occupied by a large drycleaning building and parking lot and is located on the south corner of S. Adams Street and Chicago Street. The Site is currently used as a gravel parking lot.

The Site is bounded on the southeast and southwest by vacant lots, to the northwest by S. Adams Street and a fire station, and to northeast by Chicago Street, a commercial building, and residences.

The parcel is zoned as D1 (Downtown One) by the City of Green Bay.

The site is in Brown County in the City of Green Bay, Wisconsin at the NW $\frac{1}{4}$ of the SE $\frac{1}{4}$ of Section 36, T24N, R20E. The Wisconsin Transverse Mercator coordinates for the release location from the WDNR BRRTS on the wWeb are 677549 X and 450271 Y.

The site elevation is approximately 590-feet above mean sea level (amsl) and the ground surface slopes slightly to the north.

A Site Location Map is included as Figure 1.

2.0 PREVIOUS FINDINGS

2.1 Site Background

The former Site building was constructed in 1953, with initial drycleaning operations utilizing Stoddard solvents, a mineral spirits-based solvent. Blueprints of the original building plans have been reviewed, and the solvent was originally stored in three (3) underground storage tanks (USTs) that were located immediately adjacent to the former building's south wall.

According to Mr. John Butz, the President of Bay Towel, the Stoddard solvent (specifically, "TruLeen") tanks were no longer used in the early 1960's and were replaced with a "perc" (tetrachloroethene – PCE) product in one (1) aboveground storage tank (AST) located immediately adjacent to the building's southeast corner. Drycleaning solvent was piped into the building through the wall and used in machines located in the adjacent room. The three (3) Stoddard solvent USTs were removed in approximately 1988.

Drycleaning operations ceased at the Site in 1989, following a building fire. The building interior was gutted of offices and most interior walls, but the building remained functional until demolition occurred immediately prior to the soil remediation activities in November 2016. The Site building remained vacant for many years following the fire, other than the use for storage.

Prior to construction of the dry-cleaning structure in 1953, the Site was developed with residences, and was later occupied by a post office. Remnants of previous structures were encountered during the remedial excavations. Following the drycleaning building demolition and soil remediation in 2016 and 2017, the building has no structures, and serves as a small parking lot.

All previous site investigation and remedial activity documentation has been previously submitted to the WDNR. The following provides a summary of investigation and remedial activities completed at the Site.

Previous soil remediation activities were performed in June 2003 by Arcadis, Inc., and included partial excavation of soil from two (2) locations. The area of greatest contamination beneath the building was excavated to a depth of five (5) feet below ground surface (bgs) to install an array of pipes for addition of biological additives. The indoor excavation removed 180 tons of soil beneath the building. In addition, 225 tons of soil were excavated outside in the east parking lot. The outdoor soil was directly excavated

and discarded at a nearby subtitle D landfill located in Hilbert, Wisconsin. The soil beneath the building was excavated and discarded as hazardous waste at a facility in Canada. Soil samples from the perimeter of both excavations were obtained for laboratory analysis at the conclusion of excavation in 2003.

Following the indoor excavation, four horizontal piping arrays were installed in trenches dug to a depth of approximately 5 feet below grade. The trenches were backfilled with perforated piping designed to allow the addition of liquid treatments of carbon (typically molasses) at a depth of 5 feet to help enhance the degradation of PCE.

A solution of molasses was added on multiple occasions from June 2003 to January 2007, with demonstrated success in reducing the concentration of PCE in groundwater. However, increases were observed in degradation products 1,2-dichloroethene (DCE) and vinyl chloride (VC) at well MW-1, located beneath the building within the greatest area of soil and groundwater contamination.

Case closure was denied by the WDNR in 2009. Following closure denial, addition of emulsified vegetable oil was completed in the existing four piping arrays from June 2013 through November 2013, followed by more groundwater monitoring.

Beginning in 2016, work began to treat and remove contaminated soil from under the site building. The building was demolished to allow for additional soil mass to be removed. Remediation activities conducted from November 2016 through March 2017 included the treatment of soil with Fenton's reagent, Bioavailable Absorbent Media (BAM), and a large soil excavation that removed 3,150 tons of soil. In addition, 292 tons of contaminated concrete was hauled to the landfill for disposal.

Following completion of the excavation in January 2017, groundwater was sampled from all on-site monitoring wells and piezometer wells on three occasions, May 5, August 10, and November 15, 2017.

Additional soil sampling determined that additional excavation was required at the site in 2018. The additional excavation removed 2,790 tons of contaminated soil from the site and was hauled to the landfill for disposal. Following completion of the excavation, groundwater was sampled from all site monitoring wells in January 2019.

In preparation for an additional excavation in 2020, pre-remedial excavation borings were also completed in June and August 2019, to determine the horizontal and vertical extent of contamination at the site and determine the excavation limits prior to the 2020 excavation. Soil was retained using hydraulic push and split spoon methods of drilling, with continuous soil samples retained to the borehole base, at a maximum depth of 50 feet below grade. Pre-remedial excavation groundwater samples were collected from all site wells in June 2019.

The 2020 remedial excavation was completed up to 30 feet bgs and BAM was applied to the base of the excavation. The backfill of the excavation consisted of clear stone followed by gravel with sand and ¾ inch stone at the surface.

Following the 2020 remedial excavation, eight (8) soil borings were installed at the Site and completed as NR 141-compliant groundwater monitoring wells, including six (6) new monitoring wells (SMW-1R, SMW-3R, MW-14, MW-15, MW-16, and MW-17) and two (2) new piezometers (PZ-3R and PZ-5) from 15 to 40 feet below grade. The new monitoring wells were developed, and sampled in February/March 2021, May 2021, and October 2021.

2.1.1 Soil Chemistry Results

Soil chemistry results following the excavation in 2020 are described in the *Remedial Action Documentation Report, Groundwater Monitoring Status Report, And PFAS Sampling Report* submitted in October 2021. Residual soil and saturated soil contain levels of dry-cleaning solvent and degradation products along the excavation perimeter. Remaining concentrations exceed the WDNR generic soil to groundwater pathway Residual Contaminant Levels (RCLs), but no soil remains present that exceeds non-industrial direct contact RCLs. The post-remedial excavation soil chemistry results are included on Figure 2.

2.1.2 CVOC Groundwater Chemistry Results

The most recent groundwater sampling event was completed in October 2021. Groundwater samples were collected in laboratory provided containers and was analyzed for CVOCs. Results are displayed on Figure 3. The laboratory analytical report is included in Appendix A.

The groundwater chemistry results indicate CVOC contamination remains present in groundwater from the following wells at levels above the NR 140 Enforcement Standards (ESs) for one or more of the following drycleaning chemicals:

- » PCE (NR 140 ES of 5.0 ug/L): SMW-1R (56.4 ug/L), MW-2RR (69.1 ug/L), MW-8 (5.0 ug/L), MW-14 (193 ug/L), MW-15 (33,600 ug/L), MW-16 (331 ug/L), PZ-5 (16.9 ug/L)
- » Trichloroethylene (TCE) (NR 140 ES of 5.0 ug/L): SMW-1R (7.7 ug/L), MW-2RR (5.6 ug/L), SMW-3R (6.3 ug/L), MW-14 (34.8 ug/L), MW-15 (519 ug/L), MW-16 (93.1 ug/L), PZ-5 (5.9 ug/L)
- » 1,2-Dichloroethene (Cis-DCE) (NR 140 ES of 70 ug/L): SMW-3R (127 ug/L), MW-5R (88.9 ug/L), MW-14 (73.9 ug/L), MW-16 (1,150 ug/L)
- » VC (NR 140 ES of 0.2 ug/L): MW-2RR (1.0 ug/L), SMW-3R (13.0 ug/L), MW-5R (1.0 ug/L), MW-14 (2.9 ug/L), MW-16 (89.4 ug/L), PZ-3R (4.8 ug/L), PZ-5 (0.42 ug/L)

In addition, groundwater from the following wells at levels above the NR 140 Preventive Action Limits (PALs), but not the NR 140 ESs, for one or more of the following drycleaning chemicals:

- » PCE (NR 140 PAL of 0.5 ug/L) : SMW-3R (3.7 ug/L), MW-4 (0.79 ug/L), MW-6 (1.7 ug/L)
- » TCE (NR 140 PAL of 0.5 ug/L): MW-5R (0.64 ug/L), MW-8 (1.1 ug/L)
- » Cis-DCE (NR 140 PAL of 7 ug/L): SMW-1R (18.8 ug/L), MW-2RR (7.5 ug/L), PZ-3R (30.6 ug/L), PZ-5 (18.1 ug/L)
- » 2-dichloroethene (Trans-DCE) (NR 140 PAL of 20 ug/L): MW-16 (38.0 ug/L)

2.1.3 PFAS Groundwater Chemistry Results

A PFAS Site Investigation Work Plan was submitted to WDNR on March 5, 2020, and the work plan was approved by the WDNR on March 18, 2020. Following the remedial excavation and installation of new monitoring wells at the site, sampling of different wells than in the approved work plan was discussed and approved by the WDNR. The wells that were approved for PFAS sampling were SMW-1R, SMW-3R, MW-5R, MW-15, and PZ-1. Per conversations with the WDNR, sampling in this manner is sufficient to satisfy Wis. Admin. Code § NR 716.07 (4) for this Site. The results of the June 2021 groundwater sampling were included in the *Remedial Action Documentation Report, Groundwater Monitoring Status Report, And PFAS Sampling Report* submitted in October 2021. The PFAS groundwater chemistry results from June 2021 are included on Figure 4.

The June 2021 groundwater chemistry results for PFAS compounds from the five (5) monitoring wells, SMW-1R, SMW-3R, MW-5R, MW-15, and PZ-1, indicate the detection of several PFAS compounds in groundwater at these locations. Detections of various compounds in groundwater are described below.

The highest concentration of a PFAS compound was 6:2 Fluorotelomer sulfonic acid (6:2 FTS) detected in MW-5R at a concentration of 38.0 ppt.

PFOA and PFOS were detected in monitoring wells SMW-1R, SMW-3R, and MW-5R. Monitoring well SMW-1R displayed PFOA at a concentration of 5.1 ng/L. Monitoring well SMW-3R displayed PFOA at a concentration of 20 ng/L, and PFOS at a concentration of 2.9 ng/L. It should be noted, the analytical results for the SMW-3R PFOS (2.9 ng/L) was J-flagged by the lab, indicating that results were between the limit of detection and the limit of quantification. Monitoring well MW-5R displayed PFOA at a concentration of 4.6 ng/L.

Other detectable PFAS compounds include Perfluorobutanoic Acid (PFBA), Perfluoropentanoic acid (PFPeA), Perfluorobutanesulfonic acid (PFBS), Perfluorohexanoic acid (PFHxA), Perfluoropentanesulfonic acid (PFPeS), Perfluoroheptanoic acid (PFHpA), Perfluorohexanesulfonic acid (PFHxS).

2.1.4 Vapor Chemistry Results

Vapor samples have not yet been collected at the Site as part of the investigation.

2.2 Geology and Hydrogeology

The Site is generally flat-lying, with an elevation of approximately 590 feet amsl.

Bedrock was not encountered during the site investigation, with boreholes advanced to a maximum depth of 50 feet below grade. Based on regional information, the bedrock consists of Ordovician-age dolomite and is present approximately within the top 50 feet of material, with clay typically present above the bedrock.

Site investigation and soil excavation activities reveal that in most areas, 4 to 30 feet of fill has been observed, consisting of 1 foot of sandy gravel fill and 3 to 5 feet of sandy silt fill. Native deposits consist of silty sand to sandy silt till and river floodplain deposits, extending to approximately 10 feet below grade. Deeper materials consist of dense clay till extending to approximately 35 feet below grade, and the deepest borings detected deeper clayey silt till extending to the total investigation depth of 50 feet below grade.

The depth to water ranges from approximately 5 to 10 feet below grade, and the groundwater flow direction is generally toward the northwest, toward the Fox River, located approximately 600 feet downgradient from the site. The clearstone backfill from the 2020 excavation appears to be creating uncharacteristically low water levels in the center of the site (SMW-1R) where groundwater is still attempting to equilibrate with the rest of the site (Figure 5). The groundwater flow direction mirrors the general surface topography. Measurements from the piezometers show that the depth to deeper groundwater at the site ranges from approximately 7 to 16 feet below grade and flows to the northwest (Figure 6).

The groundwater level at the site, as well as perched water levels and volumes, will likely fluctuate throughout the year based on variations in rainfall, snowmelt, evaporation, surface run-off, and other related hydrogeologic factors. The water level measurements presented in this report are the levels that were measured at the time of Fehr Graham's field activities.

Vertical hydraulic gradients as determined by monitoring wells that have been constructed at different depths within the unconsolidated sediments to assess the vertical component of flow and the vertical migration of groundwater contamination. Based on the vertical hydraulic gradient calculations, vertical flow gradients are downward at the site.

3.0 PROPOSED INVESTIGATION

3.1 Project Objectives

Based on the input from the WDNR during the Technical Assistance Meeting, additional site investigation is required for each media (soil, groundwater, and vapor) prior to submitting for case closure. The objectives of the project include the following:

1. Define the extent and degree of impacts in the soil, groundwater, and vapor.
2. Determine if further investigation or remediation is necessary. If additional remediation is required, options range from source removal and disposal. If vapor testing yields exceedances, installation of sub-slab systems may be needed.

3.2 Proposed Scope of Work

The proposed investigation consists of the following tasks:

1. Task 18: Site Investigation Project Management and Access Agreements
2. Task 19: Additional Soil Investigation
3. Task 20: Additional CVOC Groundwater Investigation
4. Task 21: Additional PFAS Groundwater Investigation
5. Task 22: Additional Preferential Pathway Evaluation
6. Task 23: Vapor Investigation
7. Task 24: Data Evaluation and NR 716 Supplemental Site Investigation Report

Depending on the findings, additional phases of investigation may be needed to define the site conditions. More rounds of groundwater monitoring may prove necessary.

3.2.1 Task 18: Project Management and Access Agreements

This task includes setting up the project steps with the regulatory authorities and Bay Towel. Discussions will be held with the project manager to review the site conditions and the scope of additional efforts and will include completion of occasional correspondence and status updates to the WDNR, invoicing, and budget tracking.

This document serves as the Site Investigation Work Plan (SIWP, or “Work Plan”), which will be submitted to the WDNR project manager through the electronic submittal portal for review and input, as required in the *Response to Technical Assistance Request* letter from the WDNR on December 2, 2021. In addition, review of the scope of work, sample locations, and parameters of analysis will be discussed with the WDNR project manager to determine the scope outlined in this SIWP meets the requirements of the WDNR prior to initiating field investigation activities.

The proposed site investigation completion will require access to several off-site properties. Under this task, correspondence with off-site property owners will be completed and access agreements to complete the work will be obtained.

Under this task, emails, phone calls, figures, budgets, and contracts will be prepared and finalized as needed to keep the project moving forward.

Please note that additional charges will be needed under this task if the project duration exceeds an estimated nine (9) months to complete the Site Investigation.

3.2.2 Task 19: Additional Soil Investigation

The degree and extent of soil contamination at the Site is not yet defined. Contamination of CVOCs remains in unsaturated soil along the perimeter of both the “main excavation” and the “eastern excavation” at the Site. Additional delineation of soil surrounding both excavations is needed, including off-site delineation per Wis Admin. Code S NR 716.11(4), as residual sidewall soil contamination was identified from the post-excavation soil sampling.

It is proposed that an additional 14 soil borings be installed to collect additional soil samples on-site and on the adjoining off-site properties and/or rights-of-way (ROW). These will be completed to further define unsaturated soil delineation in all directions. The following describes the proposed locations of these additional soil borings to be advanced at the Site. The proposed boring locations are included on Figure 7.

Four borings (SB-130 to SB-133) will be advanced to the north of the Site (off site), north of EX-14, EX-15, EX-64, EX-65, in the Chicago Street ROW in the grass median on the north side of the street. Soil borings SB-130 to SB-133 will be advanced to 5 feet below grade, and two unsaturated soil samples will be collected from each boring at 2 feet and 5 feet below grade.

Five borings (SB-134 to SB-138) will be advanced on and to the east of the Site (on site and off site), around the smaller “eastern excavation”. On-site borings would be located to the north of EX-51 and EX-51R. Offsite borings would be located to the east of EX-50, EX-53, and B126. Soil borings SB-134 to SB-138 will be advanced to 5 feet below grade, and two unsaturated soil samples will be collected from each boring at 2 feet and 5 feet below grade.

Three borings (SB-139 to SB-141) will be advanced on the south of the Site (on site), both south of the smaller “eastern excavation”, south of B126, and south of the “main excavation”, south of EX-54 and EX-56. Soil borings SB-139 to SB-141 will be advanced to 2 feet (SB-140 and SB-141) or 5 feet (SB-139) below grade, and one to two unsaturated soil samples will be collected from each boring at 2 feet (SB-139, SB-140, and SB-141) and 5 feet below grade (SB-139).

Two borings (SB-142 and SB-143) will be advanced to the west of the Site (off site), west of EX-59 and EX-61, in the South Adams Street ROW in the sidewalk on the west side of the street. Soil borings SB-142 to SB-143 will be advanced to 5 feet below grade, and two unsaturated soil samples will be collected from each boring at 2 feet and 5 feet below grade.

All soil samples will be collected for laboratory analysis of CVOCs (PCE, TCE, cis-DCE, trans-DCE, and VC) to define and delineate the contamination plume of the unsaturated soil.

In addition, it is proposed that three (3) additional monitoring wells (MW-18 to MW-20) are installed as part of the drilling activities to delineate the groundwater contamination at the Site in the interval of 20-30 feet bgs, two downgradient from MW-15, and one upgradient from MW-14. The proposed groundwater monitoring well locations are included on Figure 7. Additional discussion in Section 3.2.3.

3.2.3 Task 20: Additional CVOC Groundwater Investigation

The degree and extent of groundwater contamination is not yet defined. During the latest excavation in 2020, elevated saturated soil contamination was discovered in sidewall samples within the interval of

20-30 feet bgs, and WDNR advised that piezometer(s) be installed and screened within this interval. Monitoring well MW-15 was installed after the excavation was filled in January 2021 and screened at 20-30 feet bgs. MW-15 was sampled three times in 2021 and detected 33,600 ug/L PCE in the latest round of sampling performed in October of 2021.

The WDNR is requiring further delineation of this monitoring well screened within the same vertical interval of 20-30 ft bgs to evaluate the extent, both vertically and horizontally, of groundwater contamination per Wis. Admin. Code § NR 716.11(5)(f).

It is proposed that prior to additional rounds of groundwater sampling, three (3) additional monitoring wells (MW-18 to MW-20) are installed to delineate the groundwater contamination at the Site in the interval of 20-30 feet bgs, two downgradient from MW-15, and one upgradient from MW-14. The proposed groundwater monitoring well locations are included on Figure 7.

Groundwater monitoring well MW-18 will be installed offsite across S. Adams Street near MW-9. Groundwater monitoring well MW-19 will be installed offsite across Chicago Street in the same location as proposed boring SB-132. Groundwater monitoring well MW-20 will be installed onsite, southwest of MW-14 in the same location as proposed boring SB-140. All three groundwater monitoring wells will be geologically logged and field screened to 30 feet. Soil samples will be collected at 5-foot intervals (5 feet, 10 feet, 15 feet, 20 feet, 25 feet, and 30 feet) at each location (no 5-foot sample for MW-19 and MW-20 since it will already be collected for SB-132 and SB-140, respectively) and held by the lab pending the analytical results of the soil borings. These held samples will only be analyzed if warranted.

The groundwater monitoring wells will be installed to 30 feet bgs and screened from 20-30 feet bgs. The groundwater monitoring wells will consist of 2-inch schedule 40 PVC pipe, and completed using sand pack, a bentonite seal, and a traffic-weight, flush mounted surface cover that will be cemented into place. Monitoring well construction reports will be completed in accordance with Chapter NR 141 Wis. Adm. Code. Investigation derived soil generated during the well installation activities will be returned to the site. The groundwater monitoring well installations will be completed in conjunction with the soil borings.

A week (or possibly longer) after well installation activities, the groundwater from each well will be developed per NR 141 Wis. Admn. Code by purging with a bailer until 10 well volumes have been removed or the wells go dry. Based on the anticipated geology, we expect the wells will bail dry. All wells will also be surveyed relative to the North American Vertical Datum of 1988 (NAVD88) in feet asml.

Following the development of the three new groundwater monitoring wells, the groundwater monitoring network will be sampled. The monitoring well network at the Site, which will include 24 monitoring wells/piezometers (PZ-1, PZ-2, PZ-3R, PZ-4, PZ-5, SMW-1R, MW-2RR, SMW-3R, MW-4, MW-5R, MW-6, MW-7R, MW-8, MW-9, MW-10, MW-12, MW-13, MW-14, MW-15, MW-16, MW-17, MW-18, MW-19, MW-20), will be sampled for laboratory analysis of select CVOCs (PCE, TCE, cis-DCE, trans-DCE, and VC).

3.2.4 Task 21: Additional PFAS Groundwater Investigation

Confirmation sampling for PFAS at the Site is required prior to pursuing case closure. On June 4, 2021, five (5) monitoring wells were sampled and are shown on the attached map (Figure 4). PFOA was detected in monitoring wells SMW-1R, MW-5R, and SMW-3R. WDNR is requiring another round of PFAS sampling be performed at these same five (5) wells to confirm PFAS contamination is stable and/or decreasing at the Site prior to pursuing case closure. In addition, it is recommended that groundwater monitoring wells MW-6 and MW-12 (upgradient from contaminant source) also be sampled for PFAS to further establish background levels.

It is proposed that one (1) additional round of PFAS groundwater sampling be collected from the same five (5) monitoring wells that were sampled previously in June 2021 at the Site, including PZ-1, MW-5R, MW-15, SMW-1R, and SMW-3R, and two (2) new monitoring wells at the site, including MW-6 and MW-12. At the time of this SIWP, limited WDNR methods and guidance are available for sampling groundwater for PFAS. Fehr Graham has been provided a "PFAS Field Sampling Guide" by Pace Analytical Services (Pace) for general guidance. A copy of this guide is included in Appendix B.

Due to the potential presence of PFAS in common consumer products and in equipment typically used to collect groundwater samples, as well as the need for very low reporting limits, special handling and care must be taken when collecting samples for PFAS analysis to avoid sample contamination. If groundwater is sampled for PFAS in conjunction with sampling for other parameters, all PFAS samples will be collected prior to any other parameters. All downhole equipment (water level indicator, YSI multiparameter probe) will be disinfected with Alconox® between wells.

Each groundwater sample will be collected in High density polyethylene or Polypropylene laboratory containers, using new disposable nitrile gloves, a peristaltic pump, and silicon tubing.

Additional practices and clothing/personal protective equipment choices that will be followed during PFAS sample collection include:

- » Use of loose paper (non-water resistant)
- » Use of Aluminum field clipboards
- » Use of sharpies and pens for field notes
- » Well-laundered clothing, defined as clothing that has been washed six or more times after purchase, made of synthetic or natural fibers (preferable cotton)
- » Avoidance of fabric softener
- » Polyurethane or polyvinyl (PVC) boots
- » Use of only natural sunscreens or insect repellents
- » Avoidance of cosmetics, moisturizers, hand creams, or other related products as part of personal cleaning routine the morning of sampling

Collected sample bottles will be placed in individual sealed plastic bags separate from all other sample parameter bottles. Samples will be brought directly to the lab in a cooler containing ice (no chemical ice packs). Laboratory analysis of PFAS will include the 33-compound list requested by the WDNR using Environmental Protection Agency Method 537M with Isotope Dilution.

3.2.5 Task 22: Additional Preferential Pathway Evaluation

In addition to the additional rounds of groundwater sampling required for the Site, the WDNR is requiring that a preferential pathway evaluation and/or investigation be completed.

In order to accomplish the required evaluation and/or investigation for preferential pathways for contaminant migration from the Site, which the WDNR is requiring to include the utility backfill within the adjoining ROWs and the abandoned sanitary and storm sewer laterals at the Site, utilities locations along the Site boundaries will first be assessed on-site utilizing a private utility locating contractor with ground penetrating radar technology and equipment as the specific locations of these required Site characteristics have not yet been adequately identified through the review of records or historical Site drawings. In addition, documentation of the utility locations, depths, and utility backfill material will be requested from the City of Green Bay.

Once accurate locations, depths, and utility backfill materials are determined, this information will be compared to the current Site soil and groundwater chemistry to assess if additional investigation is required. At this time, it cannot be determined if additional soil and/or groundwater investigation in the utility corridors will be required. Therefore, depending on the results of the preferential pathway evaluation it may be determined that utilities have been adequately investigated by previous site investigation efforts and no further investigation will be recommended. If it is determined that additional utility corridor investigation is required, a supplemental investigation scope will be provided.

3.2.6 Task 23: Vapor Investigation

Based on the screened-in proximity to residual CVOC contamination in soil at the Site, a vapor investigation is required for the following off-site properties:

- 501 South Washington Street (residentially occupied setting – fire station)
- 317 Chicago Street (residentially occupied setting – single family residence)
- 445 South Adams Street (commercial setting – health clinic)

The proposed vapor investigation off-site properties locations are included Figure 7. Following discussions with the WDNR project manager, the recommended vapor investigation to be conducted for the Site should include indoor air sampling, as well as sub-slab vapor sampling at the above residential settings.

In addition, since TCE is a contaminant of concern (COC) for the Site, the Wisconsin Department of Health Services also recommends indoor air be sampled at commercial and industrial facilities. This may be foregone if such facilities utilize the COC (TCE); however, the identified properties listed above do not

include any such entity which utilizes TCE, therefore, indoor air must also be assessed at the non-residential property listed above. Prior to indoor air vapor sampling at each off-site property, Fehr Graham will survey the buildings for chemicals or other materials that may contain VOCs that would affect the indoor air vapor sampling results.

445 South Adams

For the vapor sampling at the one (1) commercial building, located at 445 South Adams Street, WDNR guidance RR-986 recommends three (3) sub-slab vapor ports be installed and sampled within a commercial building with a footprint of 5,000 sq ft or less with one (1) port for each additional 2,000 sq. ft. Based on the measured footprint of the building (approximately 6,000 sq. ft.), a total of four (4) sub-slab vapor ports will be installed and sampled. In addition, two (2) rounds of sampling must be completed, with one (1) round occurring during the winter months (i.e., snow cover and/or frozen ground conditions) and, if required for confirmation sampling purposes, one (1) round at least four (4) weeks after, but not more than five (5) months from the initial round of vapor sampling, occurring during the heating season (i.e., during the late fall/winter/early spring seasons, as prescribed by RR986). The sub-slab vapor samples will be collected using a 6-liter summa canister, with sampling conducted per WDNR guidance methods (flow regulators, 30-minute grab sampler, shut-in tightness testing of connections). The samples were analyzed by EPA Method TO-15 for CVOCs.

One (1) indoor air vapor sample will be collected from the commercial building will be collected using a 6-liter summa canister, with sampling conducted per WDNR guidance methods for commercial buildings (flow regulators, 8-hour grab sampler, shut-in tightness testing of connections). The samples were analyzed by EPA Method TO-15 for CVOCs.

317 Chicago Street

For the residential building located at 317 Chicago Street, identified as a single-family residential home, WDNR RR986 guidance requires that one (1) vapor port be installed and sampled, located near the center of the building's foundation; however, if the building footprint is greater than 1,500 square feet (sq. ft.), two (2) probes shall be installed and sampled. Based on the measured footprint of the building (approximately 1,475 sq. ft.), a total of one (1) sub-slab vapor ports will be installed and sampled. Following the installation of the vapor port(s) at the 317 Chicago Street residential building, RR986 recommends that one (1) round of sampling be completed during the winter months (i.e., snow cover and/or frozen ground conditions). If sub-slab vapor concentrations exceed the WDNR vapor risk

screening levels (VRSL) in a residential setting, mitigation of the vapor risk is recommended. If this is found for this location, RR-800, Addressing Vapor Intrusion at Remediation & Redevelopment Site in Wisconsin, will be utilized to design and prescribe the appropriate responses to vapor concentrations that exceed screening levels; however, as this is not anticipated as part of this scope of work, these procedures will be reported as necessary following the review of analytical results. If sub-slab vapor concentrations do not exceed the WDNR VRSL, per WDNR recommendations, an additional sub-slab vapor sample will be collected to verify these initial sample results. One (1) additional round of sub-slab vapor sampling that will occur during the late fall/winter/early spring seasons (the “heating season”), if the initial round of sub-slab vapor sampling did not occur during heating season, to rule-out vapor intrusion as a pathway of concern for this residential building from the Site. The additional round of sub-slab vapor sampling will occur at least four (4) weeks after, but not more than five (5) months after the initial sub-slab vapor sampling. The sub-slab vapor samples will be collected using a 6-liter summa canister, with sampling conducted per WDNR guidance methods (flow regulators, 30-minute grab sampler, shut-in tightness testing of connections). The samples were analyzed by EPA Method TO-15 for CVOCs.

One (1) indoor air vapor sample will be collected from the residential building using a 6-liter summa canister, with sampling conducted per WDNR guidance methods (flow regulators, 24-hour grab sampler, shut-in tightness testing of connections). The samples were analyzed by EPA Method TO-15 for CVOCs.

501 South Washington Street

For the off-site building located at 501 South Washington Street, identified as Green Bay City Fire Station 1, which WDNR indicated is screened as a residentially occupied building falling under the requirements for a residential setting, WDNR RR986 guidance requires that one (1) vapor port be installed and sampled, located near the center of the building’s foundation; however, if the building footprint is greater than 1,500 sq. ft., two (2) probes shall be installed and sampled. Based on the measured footprint of the building (approximately 4,650 sq. ft.), a total of two (2) sub-slab vapor ports will be installed and sampled. Following the installation of the vapor ports at the 501 South Washington Street residential building, RR986 recommends that one (1) round of sampling be completed during the winter months (i.e., snow cover and/or frozen ground conditions). If sub-slab vapor concentrations exceed the WDNR VRSL in a residential setting, mitigation of the vapor risk is recommended. If this is found for this location, RR-800, Addressing Vapor Intrusion at Remediation & Redevelopment Site in Wisconsin, will be utilized to design and prescribe the appropriate responses to vapor concentrations that exceed

screening levels; however, as this is not anticipated as part of this scope of work, these procedures will be reported as necessary following the review of analytical results. If sub-slab vapor concentrations do not exceed the WDNR VRSL, per WDNR recommendations, an additional sub-slab vapor sample will be collected to verify these initial sample results. One (1) additional round of sub-slab vapor sampling that will occur during the late fall/winter/early spring seasons (the “heating season”), if the initial round of sub-slab vapor sampling did not occur during heating season, to rule-out vapor intrusion as a pathway of concern for this residential building from the Site. The additional round of sub-slab vapor sampling will occur at least four (4) weeks after, but not more than five (5) months after the initial sub-slab vapor sampling. The sub-slab vapor samples will be collected using a 6-liter summa canister, with sampling conducted per WDNR guidance methods (flow regulators, 30-minute grab sampler, shut-in tightness testing of connections). The samples were analyzed by EPA Method TO-15 for CVOCs.

One (1) indoor air vapor sample will be collected from the residential building using a 6-liter summa canister, with sampling conducted per WDNR guidance methods (flow regulators, 24-hour grab sampler, shut-in tightness testing of connections). The samples were analyzed by EPA Method TO-15 for CVOCs.

Sanitary Sewer Vapor Investigation

As part of the recommended vapor investigation, the WDNR also recommended vapor assessment within the sanitary sewer lateral in the up and down gradient manholes, which may be acting as a preferential pathway for vapors to travel due to the potential of spent product being disposed directly into drains within the former dry-cleaning building.

These in-pipe vapor samples will include Two (2) in-pipe vapor samples from the following locations:

- » One (1) from a downgradient manhole in the Chicago Street ROW
- » One (1) from an upgradient manhole in the Chicago Street ROW

The WDNR’s guidance document RR-649 provides guidance on sampling of the sanitary sewer. The vapor samples will be collected from within the sanitary sewer via access through a manhole. An access point will be assessed in conjunction with either the first round of sub-slab/indoor air vapor sampling, or the soil boring/monitoring well installation. Then the sample will be collected during the second round of sub-slab vapor sampling or groundwater sampling. The sanitary sewer investigation vapor samples can be completed via grab sample using a 1-Liter summa with no flow controller. The samples were analyzed by EPA Method TO-15 for CVOCs.

3.2.7 Task 24: Data Evaluation and NR 716 Supplemental Site Investigation Report

Upon completion of the sampling, the soil, groundwater, PFAS, and vapor laboratory analytical results will be received. Tables and figures showing the findings will be prepared and provided to Bay Towel and the WDNR. Fehr Graham will interpret the results and submit the findings to the WDNR. In addition, the WDNR discovered that the Site lies within the Well Head Protection Area for a City of Green Bay municipal well. As a result of this finding, all groundwater analytical results are required to be submitted to the City of Green Bay following each sampling event.

Upon agreement that the extent of impacts has been adequately defined, a Supplemental Site Investigation Report compliant with NR 716 requirements will be prepared and submitted to the WDNR. The Supplemental Site Investigation Report will summarize the site conditions and the magnitude and extent of impacts. Comments will be made on the need for additional actions and how future activities should accommodate known contamination. This report is a requirement prior to requesting case closure. The site investigation report requirements include the preparation of geologic cross sections and several figures that document the nature and extent of contamination, and the site geology.

Depending on the findings, we may recommend completion of additional site investigation or remedial action. A discussion of remedial action options will be provided if warranted. If it appears the site may merely need to obtain further rounds of groundwater sampling to establish trends, then pursue closure once trends are suitable, that approach will be described in the Supplemental Site Investigation Report, but no involved discussion of remedial action options will be prepared.

4.0 SCHEDULE

This SIWP is being submitted with the \$700 WDNR review fee. The WDNR has up to 60 days for this review and feedback. It is expected the WDNR will respond relatively fast to this Work Plan, and the field activities can be initiated soon. Once WDNR approval has been received, the work can proceed as follows:

Task	Duration	Completion
SIWP Submittal to WDNR	Complete	April 2022
WDNR Work Plan Approval	60 days	June 2022
Site Investigation Field Activities (soil sampling, monitoring well installation, VOC groundwater sampling, PFAS groundwater sampling, and vapor sampling)	60-90 days	June to October 2022
Site Investigation Report	30 days	November 2022
WDNR Response to Site Investigation Report	60 days	January 2023

5.0 RP APPROVAL

Bay Towel has approved the proposed investigation activities and costs, which includes all consultant and subcontractor charges, at standard laboratory turnaround timeframes of approximately 5 to 7 business days.

Figures

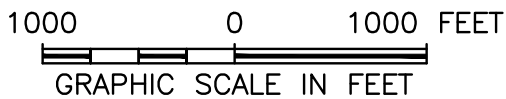
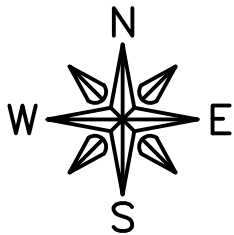
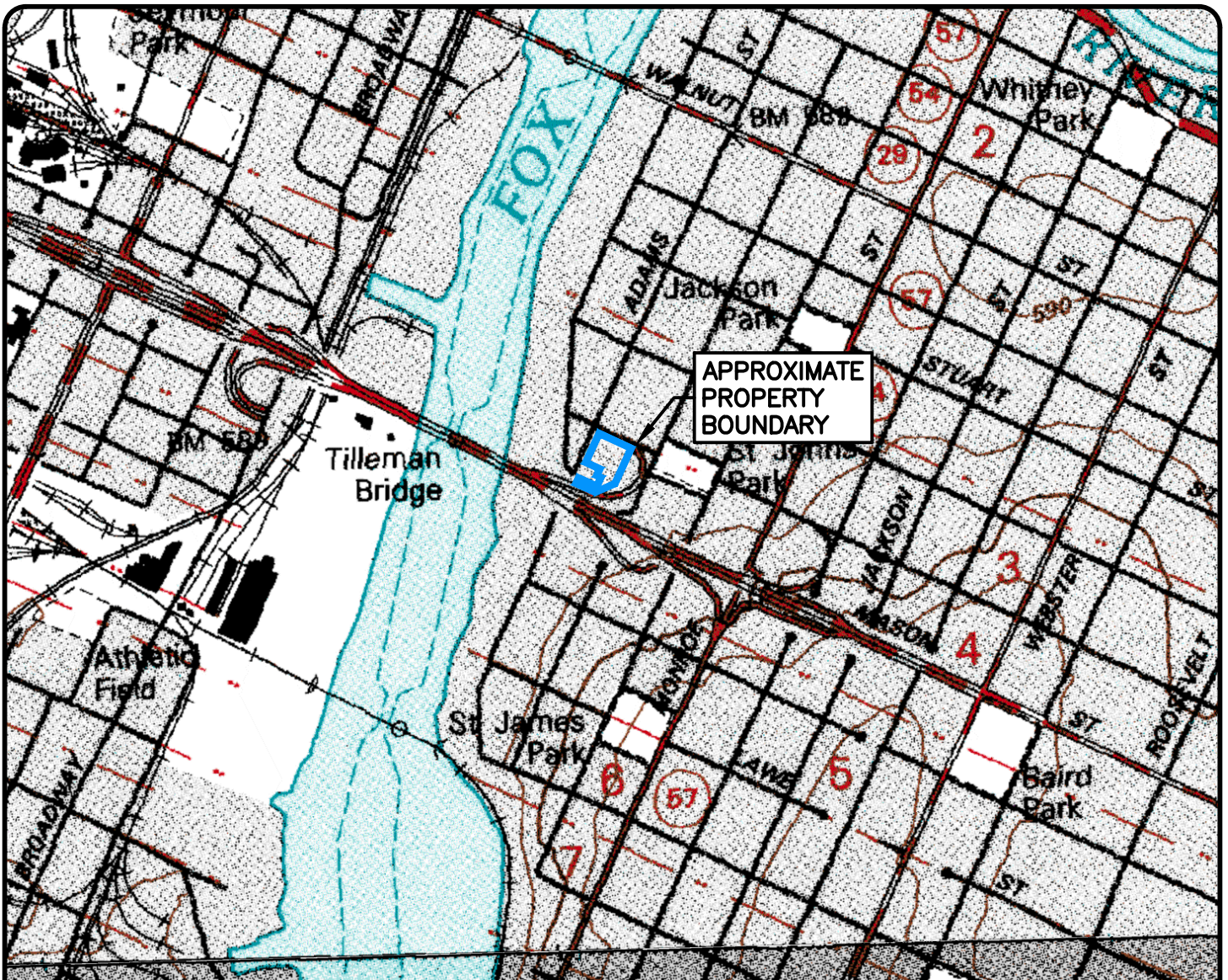
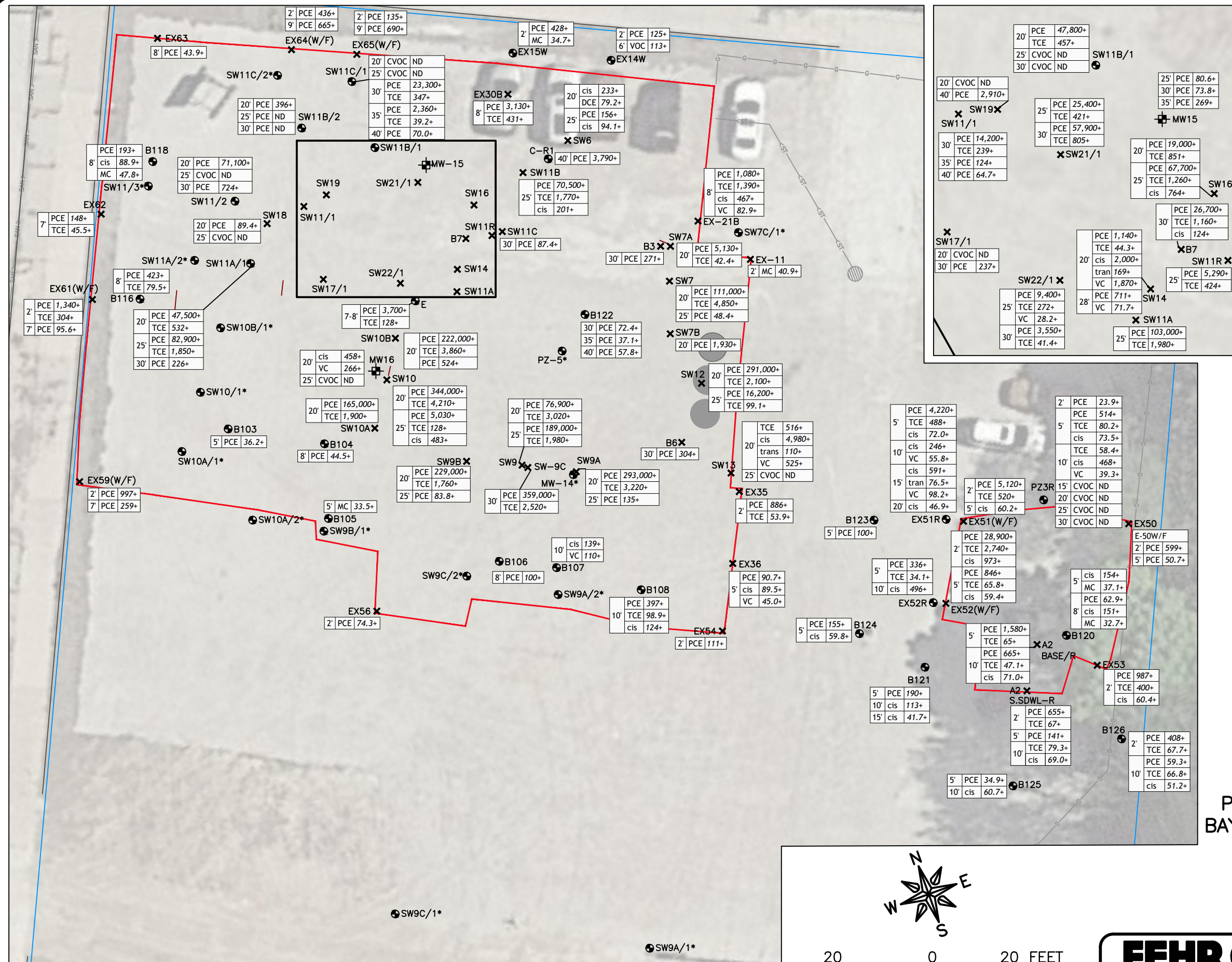


FIGURE 1
SITE LOCATION
 BAY TOWEL – SOLVENT INVESTIGATION
 501 S. ADAMS ST.
 GREEN BAY, WI 54301
 BRRTS NO.: 02-05-237064

1/30/22

FEHR GRAHAM
 ENGINEERING & ENVIRONMENTAL

ILLINOIS
 IOWA
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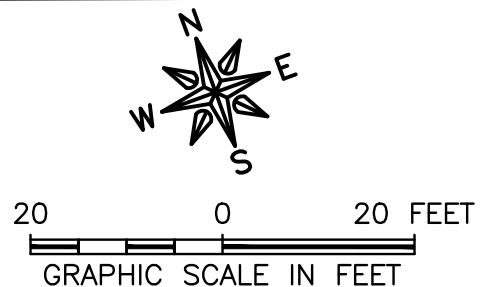
DEPTH OF SAMPLES WITH NO CVOC DETECTIONS

B-4*	SW9A/1*	SW9C/2*	SW10B/1*	SW12/1*
30'	20'	20'	20'	20'
	25'	25'	25'	25'
	30'	30'	30'	30'
B-5*	SW9A/2*	SW10/1*	SW11/3*	PZ-5*
30'	20'	20'	20'	40'
	25'	25'	25'	
	30'	30'	30'	
B-8*	SW9B/1*	SW10A/1*	SW11A/2*	MW-14*
25'	20'	20'	20'	20'
	25'	25'	25'	25'
	30'	30'	30'	
SW7/1*	SW9C/1*	SW10A/2*	SW11C/2*	
20'	20'	20'	20'	
25'	25'	25'	25'	
30'	30'	30'	30'	

LEGEND

- SOIL BORING SAMPLE LOCATION
- ✕ EXCAVATION SAMPLE LOCATION
- SW-7/1* SAMPLE DID NOT HAVE CVOC DETECTIONS
- FURTHEST EXTENT OF ALL SITE EXCAVATIONS
- 2' SAMPLE DEPTH
- PCE TETRACHLOROETHENE (ug/kg)
- TCE TRICHLOROETHENE (ug/kg)
- cis cis-1,2-DICHLOROETHENE (ug/kg)
- trans trans-1,2-DICHLOROETHENE (ug/kg)
- VC VINYL CHLORIDE (ug/kg)
- DCE 1,2-DICHLOROETHENE (ug/kg)
- CVOC CHLORINATED VOLATILE ORGANIC COMPOUNDS
- ND NO DETECTION
- ITALICS+* EXCEEDS GROUNDWATER PATHWAY RCL

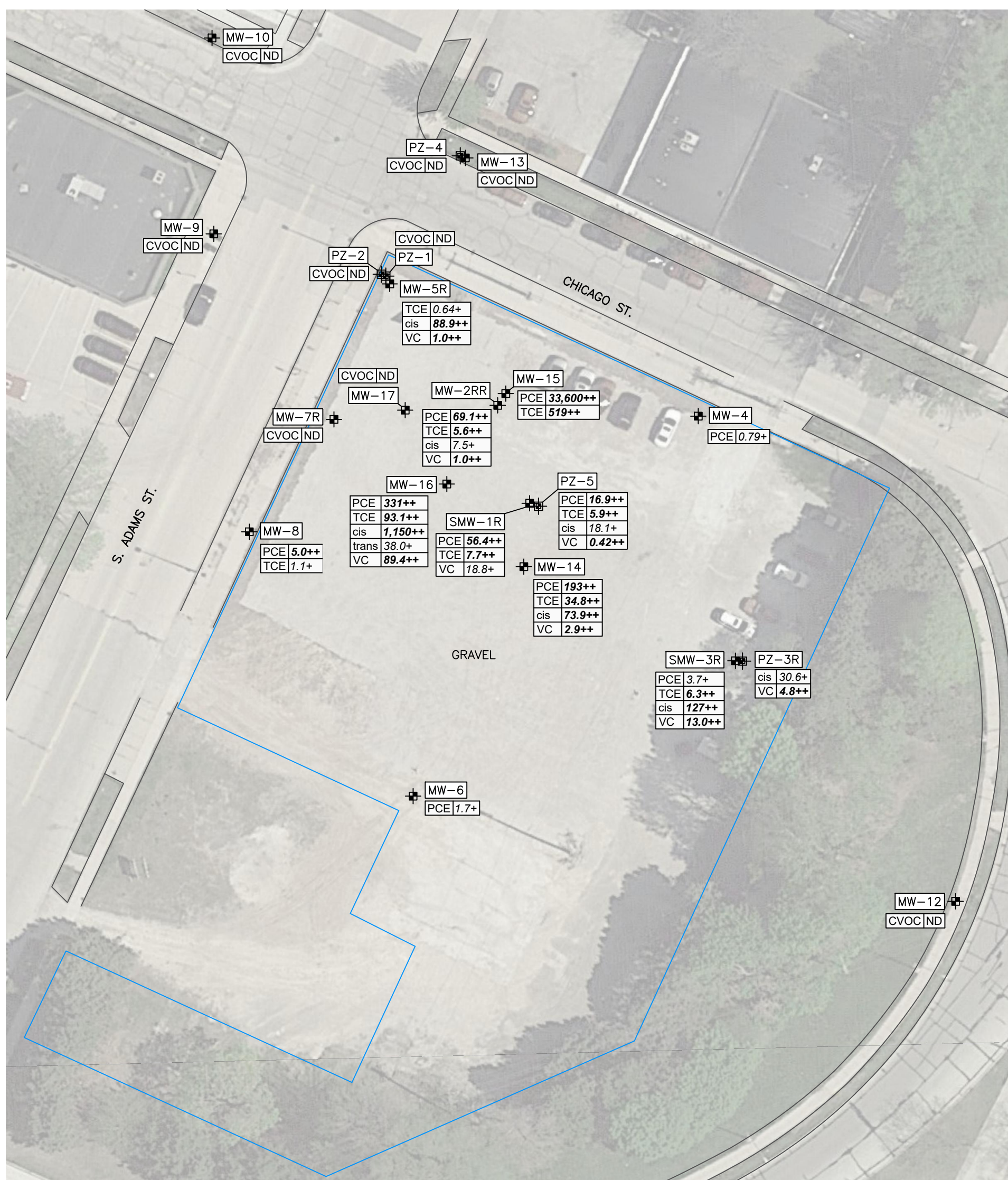
FIGURE 2
 POST EXCAVATION SOIL CHEMISTRY
 BAY TOWEL – SOLVENT INVESTIGATION
 501 S. ADAMS ST.
 GREEN BAY, WI 54301
 BRRTS NO.: 02-05-237064



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 ILLINOIS DESIGN FIRM NO. 194-003525

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1/30/22

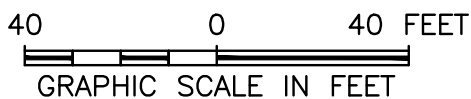
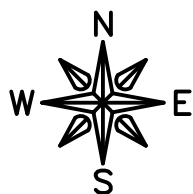


LEGEND

- ⊕ MONITORING WELL
- ⊕ PIEZOMETER
- ND NO DETECT
- PCE TETRACHLOROETHENE (ug/L)
- TCE TRICHLOROETHENE (ug/L)
- cis cis-1,2-DICHLOROETHENE (ug/L)
- trans trans-1,2-DICHLOROETHENE (ug/L)
- VC VINYL CHLORIDE (ug/L)
- CVOC CHLORINATED VOLATILE ORGANIC COMPOUNDS
- ITALICS+* EXCEEDS NR140 PREVENTIVE ACTION LIMIT (PAL)
- ITALICS/ BOLD++* EXCEEDS BOTH NR140 PAL & ENFORCEMENT STANDARD

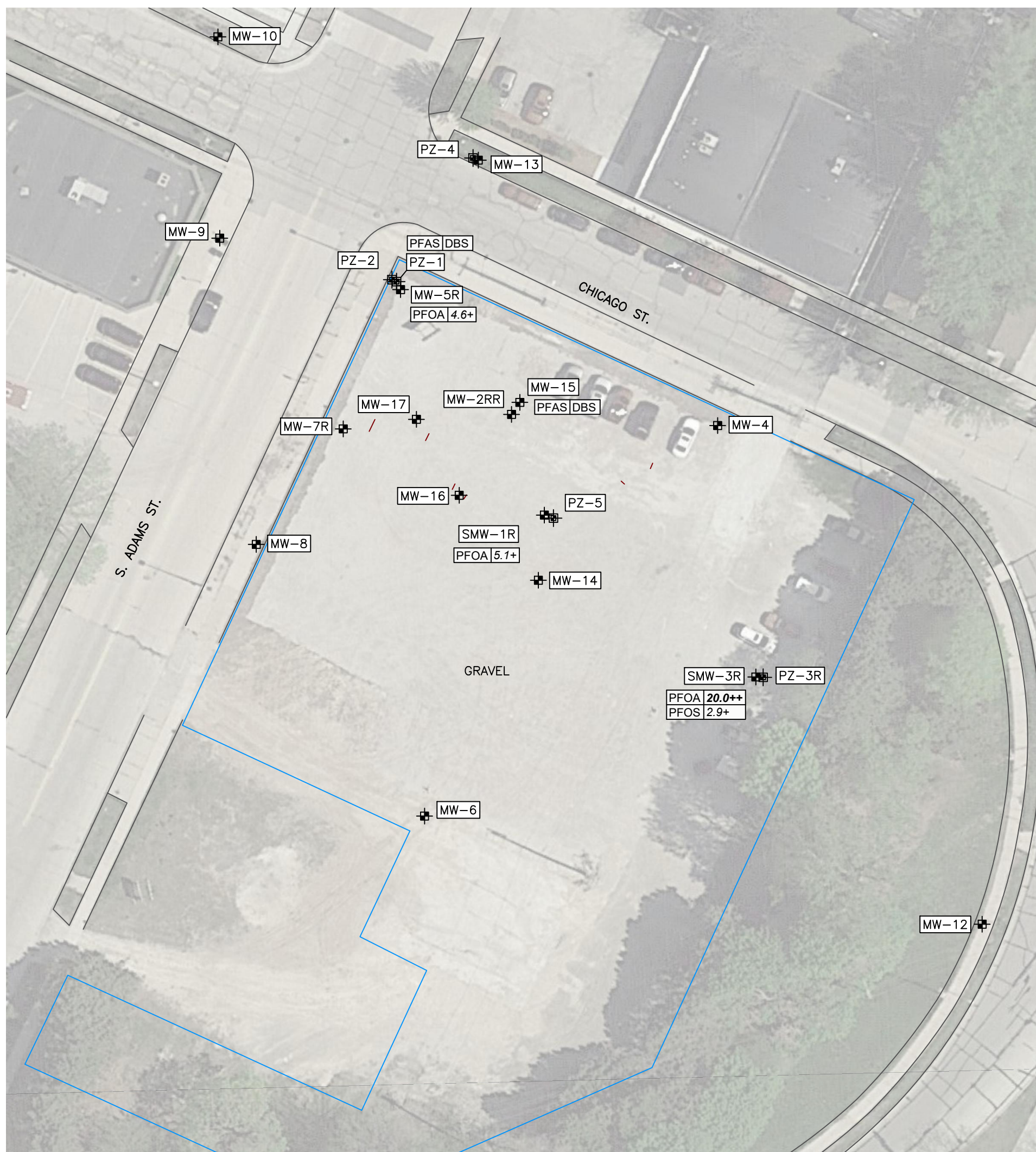
FIGURE 3
 POST-EXCAVATION GROUNDWATER CHEMISTRY – OCT. 2021
 BAY TOWEL – SOLVENT INVESTIGATION
 501 S. ADAMS ST.
 GREEN BAY, WI 54301
 BRRTS NO.: 02-05-237064

10/25/21



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LEGEND

- ⊕ MONITORING WELL
- ⊕ PIEZOMETER

DBS DETECTIONS BELOW STANDARDS

PFAS PER-AND POLYFLUOROALKYL SUBSTANCES

PFOA PERFLUOROOCTANOIC ACID (ng/L)

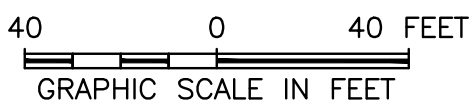
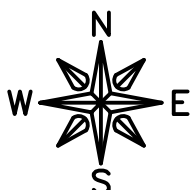
PFOS PERFLUOROOCTANESULFONIC ACID (ng/L)

ITALICS+ EXCEEDS NR140 PREVENTIVE ACTION LIMIT (PAL)

ITALICS/ BOLD++ EXCEEDS BOTH NR140 PAL & ENFORCEMENT STANDARD

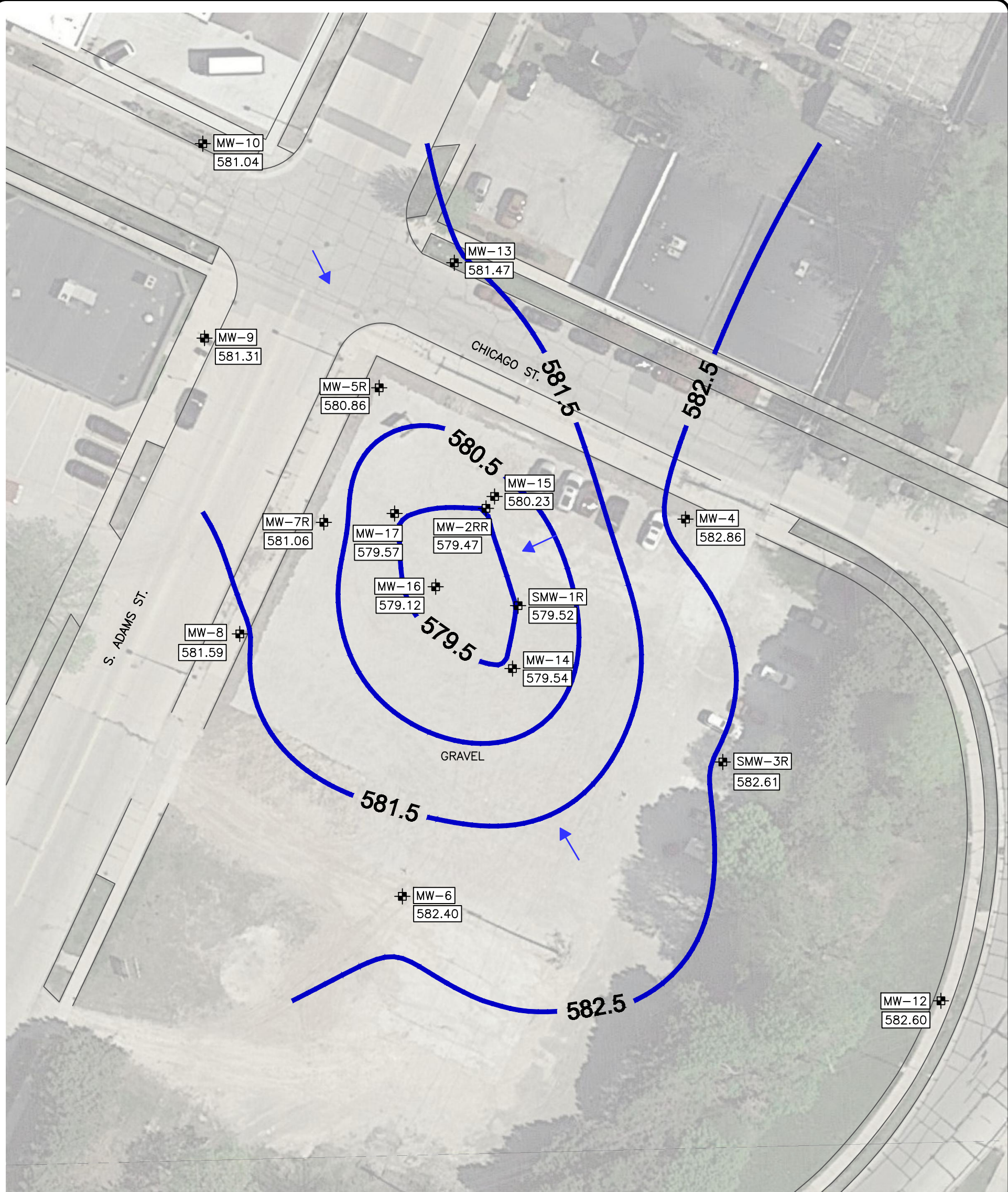
FIGURE 4
PFAS GROUNDWATER
CHEMISTRY – JUNE 2021
BAY TOWEL – SOLVENT INVESTIGATION
501 S. ADAMS ST.
GREEN BAY, WI 54301
BRRTS NO.: 02-05-237064

1/30/22



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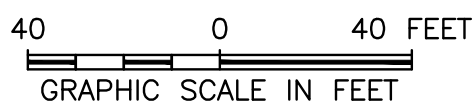
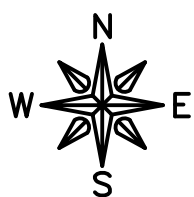
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LEGEND

- MONITORING WELL
- GROUNDWATER ELEVATION
- GROUNDWATER FLOW DIRECTION

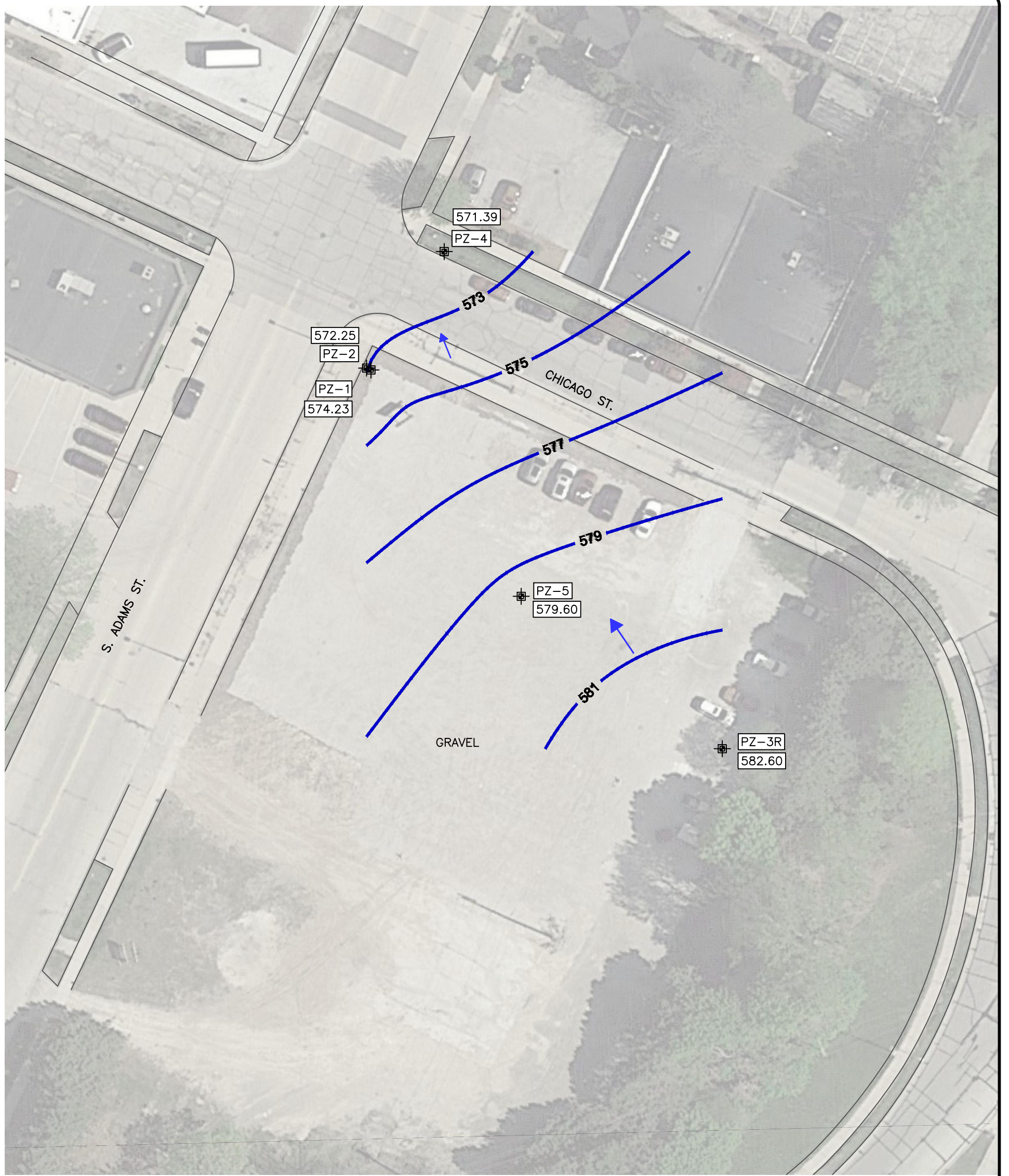
FIGURE 5
 GROUNDWATER FLOW
 OCTOBER 2021
 BAY TOWEL – SOLVENT INVESTIGATION
 501 S. ADAMS ST.
 GREEN BAY, WI 54301
 BRRTS NO.: 02-05-237064



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

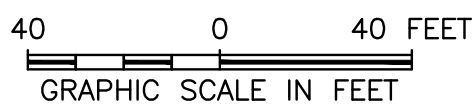
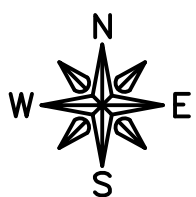
-  PIEZOMETER WELL
-  GROUNDWATER ELEVATION
-  GROUNDWATER FLOW DIRECTION

FIGURE 3
 PIEZOMETRIC FLOW
 OCTOBER 2021
 BAY TOWEL – SOLVENT INGESTION
 501 S. ADAMS ST.
 GREEN BAY, WI 54301
 BRRTS NO.: 02-05-237064

1/30/22



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Appendices

Appendix A
Laboratory Analytical Rport

October 18, 2021

Dillon Plamann
Fehr Graham Engineering & Environmental
909 N. 8th Street
Suite 101
Sheboygan, WI 53081

RE: Project: 21-953 PHASE 12 BAY TOWEL
Pace Project No.: 40234959

Dear Dillon Plamann:

Enclosed are the analytical results for sample(s) received by the laboratory on October 12, 2021. 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,



Christopher Hyska
christopher.hyska@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Matt Dahlem, Fehr Graham Engineering and
Environmental



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

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: 21-953 PHASE 12 BAY TOWEL
Pace Project No.: 40234959

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40234959001	SMW-1R	Water	10/12/21 13:00	10/12/21 15:10
40234959002	MW-2RR	Water	10/12/21 09:04	10/12/21 15:10
40234959003	SMW-3R	Water	10/12/21 08:17	10/12/21 15:10
40234959004	MW-4	Water	10/12/21 12:26	10/12/21 15:10
40234959005	MW-5R	Water	10/12/21 13:22	10/12/21 15:10
40234959006	MW-6	Water	10/12/21 12:11	10/12/21 15:10
40234959007	MW-7R	Water	10/12/21 11:53	10/12/21 15:10
40234959008	MW-8	Water	10/12/21 11:36	10/12/21 15:10
40234959009	MW-9	Water	10/12/21 12:32	10/12/21 15:10
40234959010	MW-10	Water	10/12/21 12:43	10/12/21 15:10
40234959011	MW-12	Water	10/12/21 11:17	10/12/21 15:10
40234959012	MW-13	Water	10/12/21 13:55	10/12/21 15:10
40234959013	MW-14	Water	10/12/21 14:17	10/12/21 15:10
40234959014	MW-15	Water	10/12/21 09:44	10/12/21 15:10
40234959015	MW-16	Water	10/12/21 10:23	10/12/21 15:10
40234959016	MW-17	Water	10/12/21 10:57	10/12/21 15:10
40234959017	PZ-1	Water	10/12/21 13:33	10/12/21 15:10
40234959018	PZ-2	Water	10/12/21 13:35	10/12/21 15:10
40234959019	PZ-3R	Water	10/12/21 08:45	10/12/21 15:10
40234959020	PZ-4	Water	10/12/21 14:02	10/12/21 15:10
40234959021	PZ-5	Water	10/12/21 13:09	10/12/21 15:10
40234959022	TRIP BLANK	Water	10/12/21 00:00	10/12/21 15:10

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 21-953 PHASE 12 BAY TOWEL
Pace Project No.: 40234959

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40234959001	SMW-1R	EPA 8260	LAP	8	PASI-G
40234959002	MW-2RR	EPA 8260	LAP	8	PASI-G
40234959003	SMW-3R	EPA 8260	LAP	8	PASI-G
40234959004	MW-4	EPA 8260	LAP	8	PASI-G
40234959005	MW-5R	EPA 8260	LAP	8	PASI-G
40234959006	MW-6	EPA 8260	LAP	8	PASI-G
40234959007	MW-7R	EPA 8260	LAP	8	PASI-G
40234959008	MW-8	EPA 8260	LAP	8	PASI-G
40234959009	MW-9	EPA 8260	LAP	8	PASI-G
40234959010	MW-10	EPA 8260	LAP	8	PASI-G
40234959011	MW-12	EPA 8260	LAP	8	PASI-G
40234959012	MW-13	EPA 8260	LAP	8	PASI-G
40234959013	MW-14	EPA 8260	LAP	8	PASI-G
40234959014	MW-15	EPA 8260	LAP	8	PASI-G
40234959015	MW-16	EPA 8260	LAP	8	PASI-G
40234959016	MW-17	EPA 8260	LAP	8	PASI-G
40234959017	PZ-1	EPA 8260	LAP	8	PASI-G
40234959018	PZ-2	EPA 8260	LAP	8	PASI-G
40234959019	PZ-3R	EPA 8260	LAP	8	PASI-G
40234959020	PZ-4	EPA 8260	LAP	8	PASI-G
40234959021	PZ-5	EPA 8260	LAP	8	PASI-G
40234959022	TRIP BLANK	EPA 8260	LAP	8	PASI-G

PASI-G = Pace Analytical Services - Green Bay

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40234959001	SMW-1R					
EPA 8260	cis-1,2-Dichloroethene	18.8	ug/L	1.0	10/14/21 00:51	
EPA 8260	trans-1,2-Dichloroethene	0.55J	ug/L	1.0	10/14/21 00:51	
EPA 8260	Tetrachloroethene	56.4	ug/L	1.0	10/14/21 00:51	
EPA 8260	Trichloroethene	7.7	ug/L	1.0	10/14/21 00:51	
40234959002	MW-2RR					
EPA 8260	cis-1,2-Dichloroethene	7.5	ug/L	1.0	10/14/21 14:31	
EPA 8260	Tetrachloroethene	69.1	ug/L	1.0	10/14/21 14:31	
EPA 8260	Trichloroethene	5.6	ug/L	1.0	10/14/21 14:31	
EPA 8260	Vinyl chloride	1.0	ug/L	1.0	10/14/21 14:31	
40234959003	SMW-3R					
EPA 8260	cis-1,2-Dichloroethene	127	ug/L	1.0	10/14/21 01:50	
EPA 8260	trans-1,2-Dichloroethene	6.6	ug/L	1.0	10/14/21 01:50	
EPA 8260	Tetrachloroethene	3.7	ug/L	1.0	10/14/21 01:50	
EPA 8260	Trichloroethene	6.3	ug/L	1.0	10/14/21 01:50	
EPA 8260	Vinyl chloride	13.0	ug/L	1.0	10/14/21 01:50	
40234959004	MW-4					
EPA 8260	Tetrachloroethene	0.79J	ug/L	1.0	10/13/21 23:31	
40234959005	MW-5R					
EPA 8260	cis-1,2-Dichloroethene	88.9	ug/L	1.0	10/14/21 02:09	
EPA 8260	trans-1,2-Dichloroethene	2.8	ug/L	1.0	10/14/21 02:09	
EPA 8260	Trichloroethene	0.64J	ug/L	1.0	10/14/21 02:09	
EPA 8260	Vinyl chloride	1.0	ug/L	1.0	10/14/21 02:09	
40234959006	MW-6					
EPA 8260	Tetrachloroethene	1.7	ug/L	1.0	10/13/21 23:12	
40234959008	MW-8					
EPA 8260	cis-1,2-Dichloroethene	0.89J	ug/L	1.0	10/13/21 22:32	
EPA 8260	Tetrachloroethene	5.0	ug/L	1.0	10/13/21 22:32	
EPA 8260	Trichloroethene	1.1	ug/L	1.0	10/13/21 22:32	
40234959013	MW-14					
EPA 8260	cis-1,2-Dichloroethene	73.9	ug/L	2.0	10/14/21 14:50	
EPA 8260	trans-1,2-Dichloroethene	4.3	ug/L	2.0	10/14/21 14:50	
EPA 8260	Tetrachloroethene	193	ug/L	2.0	10/14/21 14:50	
EPA 8260	Trichloroethene	34.8	ug/L	2.0	10/14/21 14:50	
EPA 8260	Vinyl chloride	2.9	ug/L	2.0	10/14/21 14:50	
40234959014	MW-15					
EPA 8260	Tetrachloroethene	33600	ug/L	200	10/14/21 03:09	
EPA 8260	Trichloroethene	519	ug/L	200	10/14/21 03:09	
40234959015	MW-16					
EPA 8260	cis-1,2-Dichloroethene	1150	ug/L	10.0	10/14/21 03:28	
EPA 8260	trans-1,2-Dichloroethene	38.0	ug/L	10.0	10/14/21 03:28	
EPA 8260	Tetrachloroethene	331	ug/L	10.0	10/14/21 03:28	
EPA 8260	Trichloroethene	93.1	ug/L	10.0	10/14/21 03:28	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

Lab Sample ID Method	Client Sample ID Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40234959015	MW-16					
EPA 8260	Vinyl chloride	89.4	ug/L	10.0	10/14/21 03:28	
40234959019	PZ-3R					
EPA 8260	cis-1,2-Dichloroethene	30.6	ug/L	1.0	10/14/21 01:30	
EPA 8260	trans-1,2-Dichloroethene	2.2	ug/L	1.0	10/14/21 01:30	
EPA 8260	Vinyl chloride	4.8	ug/L	1.0	10/14/21 01:30	
40234959021	PZ-5					
EPA 8260	cis-1,2-Dichloroethene	18.1	ug/L	1.0	10/14/21 10:34	
EPA 8260	Tetrachloroethene	16.9	ug/L	1.0	10/14/21 10:34	
EPA 8260	Trichloroethene	5.9	ug/L	1.0	10/14/21 10:34	
EPA 8260	Vinyl chloride	0.42J	ug/L	1.0	10/14/21 10:34	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

Sample: SMW-1R **Lab ID: 40234959001** Collected: 10/12/21 13:00 Received: 10/12/21 15:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Pace Analytical Services - Green Bay									
cis-1,2-Dichloroethene	18.8	ug/L	1.0	0.47	1		10/14/21 00:51	156-59-2	
trans-1,2-Dichloroethene	0.55J	ug/L	1.0	0.53	1		10/14/21 00:51	156-60-5	
Tetrachloroethene	56.4	ug/L	1.0	0.41	1		10/14/21 00:51	127-18-4	
Trichloroethene	7.7	ug/L	1.0	0.32	1		10/14/21 00:51	79-01-6	
Vinyl chloride	<0.17	ug/L	1.0	0.17	1		10/14/21 00:51	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		10/14/21 00:51	460-00-4	
1,2-Dichlorobenzene-d4 (S)	104	%	70-130		1		10/14/21 00:51	2199-69-1	
Toluene-d8 (S)	99	%	70-130		1		10/14/21 00:51	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

Sample: MW-2RR **Lab ID: 40234959002** Collected: 10/12/21 09:04 Received: 10/12/21 15:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Pace Analytical Services - Green Bay									
cis-1,2-Dichloroethene	7.5	ug/L	1.0	0.47	1		10/14/21 14:31	156-59-2	
trans-1,2-Dichloroethene	<0.53	ug/L	1.0	0.53	1		10/14/21 14:31	156-60-5	
Tetrachloroethene	69.1	ug/L	1.0	0.41	1		10/14/21 14:31	127-18-4	
Trichloroethene	5.6	ug/L	1.0	0.32	1		10/14/21 14:31	79-01-6	
Vinyl chloride	1.0	ug/L	1.0	0.17	1		10/14/21 14:31	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	103	%	70-130		1		10/14/21 14:31	460-00-4	pH
1,2-Dichlorobenzene-d4 (S)	106	%	70-130		1		10/14/21 14:31	2199-69-1	
Toluene-d8 (S)	99	%	70-130		1		10/14/21 14:31	2037-26-5	

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ANALYTICAL RESULTS

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

Sample: SMW-3R **Lab ID: 40234959003** Collected: 10/12/21 08:17 Received: 10/12/21 15:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Pace Analytical Services - Green Bay									
cis-1,2-Dichloroethene	127	ug/L	1.0	0.47	1		10/14/21 01:50	156-59-2	
trans-1,2-Dichloroethene	6.6	ug/L	1.0	0.53	1		10/14/21 01:50	156-60-5	
Tetrachloroethene	3.7	ug/L	1.0	0.41	1		10/14/21 01:50	127-18-4	
Trichloroethene	6.3	ug/L	1.0	0.32	1		10/14/21 01:50	79-01-6	
Vinyl chloride	13.0	ug/L	1.0	0.17	1		10/14/21 01:50	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	101	%	70-130		1		10/14/21 01:50	460-00-4	HS,pH
1,2-Dichlorobenzene-d4 (S)	105	%	70-130		1		10/14/21 01:50	2199-69-1	
Toluene-d8 (S)	100	%	70-130		1		10/14/21 01:50	2037-26-5	

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ANALYTICAL RESULTS

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

Sample: MW-4 **Lab ID: 40234959004** Collected: 10/12/21 12:26 Received: 10/12/21 15:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Pace Analytical Services - Green Bay									
cis-1,2-Dichloroethene	<0.47	ug/L	1.0	0.47	1		10/13/21 23:31	156-59-2	
trans-1,2-Dichloroethene	<0.53	ug/L	1.0	0.53	1		10/13/21 23:31	156-60-5	
Tetrachloroethene	0.79J	ug/L	1.0	0.41	1		10/13/21 23:31	127-18-4	
Trichloroethene	<0.32	ug/L	1.0	0.32	1		10/13/21 23:31	79-01-6	
Vinyl chloride	<0.17	ug/L	1.0	0.17	1		10/13/21 23:31	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		10/13/21 23:31	460-00-4	
1,2-Dichlorobenzene-d4 (S)	103	%	70-130		1		10/13/21 23:31	2199-69-1	
Toluene-d8 (S)	99	%	70-130		1		10/13/21 23:31	2037-26-5	

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ANALYTICAL RESULTS

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

Sample: MW-5R **Lab ID: 40234959005** Collected: 10/12/21 13:22 Received: 10/12/21 15:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Pace Analytical Services - Green Bay									
cis-1,2-Dichloroethene	88.9	ug/L	1.0	0.47	1		10/14/21 02:09	156-59-2	
trans-1,2-Dichloroethene	2.8	ug/L	1.0	0.53	1		10/14/21 02:09	156-60-5	
Tetrachloroethene	<0.41	ug/L	1.0	0.41	1		10/14/21 02:09	127-18-4	
Trichloroethene	0.64J	ug/L	1.0	0.32	1		10/14/21 02:09	79-01-6	
Vinyl chloride	1.0	ug/L	1.0	0.17	1		10/14/21 02:09	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		1		10/14/21 02:09	460-00-4	
1,2-Dichlorobenzene-d4 (S)	105	%	70-130		1		10/14/21 02:09	2199-69-1	
Toluene-d8 (S)	99	%	70-130		1		10/14/21 02:09	2037-26-5	

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ANALYTICAL RESULTS

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

Sample: MW-6 **Lab ID: 40234959006** Collected: 10/12/21 12:11 Received: 10/12/21 15:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Pace Analytical Services - Green Bay									
cis-1,2-Dichloroethene	<0.47	ug/L	1.0	0.47	1		10/13/21 23:12	156-59-2	
trans-1,2-Dichloroethene	<0.53	ug/L	1.0	0.53	1		10/13/21 23:12	156-60-5	
Tetrachloroethene	1.7	ug/L	1.0	0.41	1		10/13/21 23:12	127-18-4	
Trichloroethene	<0.32	ug/L	1.0	0.32	1		10/13/21 23:12	79-01-6	
Vinyl chloride	<0.17	ug/L	1.0	0.17	1		10/13/21 23:12	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	102	%	70-130		1		10/13/21 23:12	460-00-4	
1,2-Dichlorobenzene-d4 (S)	105	%	70-130		1		10/13/21 23:12	2199-69-1	
Toluene-d8 (S)	97	%	70-130		1		10/13/21 23:12	2037-26-5	

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ANALYTICAL RESULTS

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

Sample: MW-7R **Lab ID: 40234959007** Collected: 10/12/21 11:53 Received: 10/12/21 15:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Pace Analytical Services - Green Bay									
cis-1,2-Dichloroethene	<0.47	ug/L	1.0	0.47	1		10/13/21 22:52	156-59-2	
trans-1,2-Dichloroethene	<0.53	ug/L	1.0	0.53	1		10/13/21 22:52	156-60-5	
Tetrachloroethene	<0.41	ug/L	1.0	0.41	1		10/13/21 22:52	127-18-4	
Trichloroethene	<0.32	ug/L	1.0	0.32	1		10/13/21 22:52	79-01-6	
Vinyl chloride	<0.17	ug/L	1.0	0.17	1		10/13/21 22:52	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	101	%	70-130		1		10/13/21 22:52	460-00-4	
1,2-Dichlorobenzene-d4 (S)	103	%	70-130		1		10/13/21 22:52	2199-69-1	
Toluene-d8 (S)	99	%	70-130		1		10/13/21 22:52	2037-26-5	

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ANALYTICAL RESULTS

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

Sample: MW-8 **Lab ID: 40234959008** Collected: 10/12/21 11:36 Received: 10/12/21 15:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Pace Analytical Services - Green Bay									
cis-1,2-Dichloroethene	0.89J	ug/L	1.0	0.47	1		10/13/21 22:32	156-59-2	
trans-1,2-Dichloroethene	<0.53	ug/L	1.0	0.53	1		10/13/21 22:32	156-60-5	
Tetrachloroethene	5.0	ug/L	1.0	0.41	1		10/13/21 22:32	127-18-4	
Trichloroethene	1.1	ug/L	1.0	0.32	1		10/13/21 22:32	79-01-6	
Vinyl chloride	<0.17	ug/L	1.0	0.17	1		10/13/21 22:32	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		10/13/21 22:32	460-00-4	
1,2-Dichlorobenzene-d4 (S)	103	%	70-130		1		10/13/21 22:32	2199-69-1	
Toluene-d8 (S)	98	%	70-130		1		10/13/21 22:32	2037-26-5	

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ANALYTICAL RESULTS

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

Sample: MW-9 **Lab ID: 40234959009** Collected: 10/12/21 12:32 Received: 10/12/21 15:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Pace Analytical Services - Green Bay									
cis-1,2-Dichloroethene	<0.47	ug/L	1.0	0.47	1		10/13/21 22:12	156-59-2	
trans-1,2-Dichloroethene	<0.53	ug/L	1.0	0.53	1		10/13/21 22:12	156-60-5	
Tetrachloroethene	<0.41	ug/L	1.0	0.41	1		10/13/21 22:12	127-18-4	
Trichloroethene	<0.32	ug/L	1.0	0.32	1		10/13/21 22:12	79-01-6	
Vinyl chloride	<0.17	ug/L	1.0	0.17	1		10/13/21 22:12	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		10/13/21 22:12	460-00-4	
1,2-Dichlorobenzene-d4 (S)	103	%	70-130		1		10/13/21 22:12	2199-69-1	
Toluene-d8 (S)	98	%	70-130		1		10/13/21 22:12	2037-26-5	

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ANALYTICAL RESULTS

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

Sample: MW-10 **Lab ID: 40234959010** Collected: 10/12/21 12:43 Received: 10/12/21 15:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Pace Analytical Services - Green Bay									
cis-1,2-Dichloroethene	<0.47	ug/L	1.0	0.47	1		10/13/21 21:53	156-59-2	
trans-1,2-Dichloroethene	<0.53	ug/L	1.0	0.53	1		10/13/21 21:53	156-60-5	
Tetrachloroethene	<0.41	ug/L	1.0	0.41	1		10/13/21 21:53	127-18-4	
Trichloroethene	<0.32	ug/L	1.0	0.32	1		10/13/21 21:53	79-01-6	
Vinyl chloride	<0.17	ug/L	1.0	0.17	1		10/13/21 21:53	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	102	%	70-130		1		10/13/21 21:53	460-00-4	HS
1,2-Dichlorobenzene-d4 (S)	102	%	70-130		1		10/13/21 21:53	2199-69-1	
Toluene-d8 (S)	98	%	70-130		1		10/13/21 21:53	2037-26-5	

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ANALYTICAL RESULTS

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

Sample: MW-12 **Lab ID: 40234959011** Collected: 10/12/21 11:17 Received: 10/12/21 15:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Pace Analytical Services - Green Bay									
cis-1,2-Dichloroethene	<0.47	ug/L	1.0	0.47	1		10/13/21 21:33	156-59-2	
trans-1,2-Dichloroethene	<0.53	ug/L	1.0	0.53	1		10/13/21 21:33	156-60-5	
Tetrachloroethene	<0.41	ug/L	1.0	0.41	1		10/13/21 21:33	127-18-4	
Trichloroethene	<0.32	ug/L	1.0	0.32	1		10/13/21 21:33	79-01-6	
Vinyl chloride	<0.17	ug/L	1.0	0.17	1		10/13/21 21:33	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	103	%	70-130		1		10/13/21 21:33	460-00-4	
1,2-Dichlorobenzene-d4 (S)	101	%	70-130		1		10/13/21 21:33	2199-69-1	
Toluene-d8 (S)	98	%	70-130		1		10/13/21 21:33	2037-26-5	

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ANALYTICAL RESULTS

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

Sample: MW-13 **Lab ID: 40234959012** Collected: 10/12/21 13:55 Received: 10/12/21 15:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Pace Analytical Services - Green Bay									
cis-1,2-Dichloroethene	<0.47	ug/L	1.0	0.47	1		10/13/21 21:13	156-59-2	
trans-1,2-Dichloroethene	<0.53	ug/L	1.0	0.53	1		10/13/21 21:13	156-60-5	
Tetrachloroethene	<0.41	ug/L	1.0	0.41	1		10/13/21 21:13	127-18-4	
Trichloroethene	<0.32	ug/L	1.0	0.32	1		10/13/21 21:13	79-01-6	
Vinyl chloride	<0.17	ug/L	1.0	0.17	1		10/13/21 21:13	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	102	%	70-130		1		10/13/21 21:13	460-00-4	
1,2-Dichlorobenzene-d4 (S)	103	%	70-130		1		10/13/21 21:13	2199-69-1	
Toluene-d8 (S)	97	%	70-130		1		10/13/21 21:13	2037-26-5	

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ANALYTICAL RESULTS

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

Sample: MW-14 **Lab ID: 40234959013** Collected: 10/12/21 14:17 Received: 10/12/21 15:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Pace Analytical Services - Green Bay									
cis-1,2-Dichloroethene	73.9	ug/L	2.0	0.94	2		10/14/21 14:50	156-59-2	
trans-1,2-Dichloroethene	4.3	ug/L	2.0	1.1	2		10/14/21 14:50	156-60-5	
Tetrachloroethene	193	ug/L	2.0	0.82	2		10/14/21 14:50	127-18-4	
Trichloroethene	34.8	ug/L	2.0	0.64	2		10/14/21 14:50	79-01-6	
Vinyl chloride	2.9	ug/L	2.0	0.35	2		10/14/21 14:50	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	104	%	70-130		2		10/14/21 14:50	460-00-4	
1,2-Dichlorobenzene-d4 (S)	106	%	70-130		2		10/14/21 14:50	2199-69-1	
Toluene-d8 (S)	99	%	70-130		2		10/14/21 14:50	2037-26-5	

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ANALYTICAL RESULTS

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

Sample: MW-15 **Lab ID: 40234959014** Collected: 10/12/21 09:44 Received: 10/12/21 15:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Pace Analytical Services - Green Bay									
cis-1,2-Dichloroethene	<94.3	ug/L	200	94.3	200		10/14/21 03:09	156-59-2	
trans-1,2-Dichloroethene	<106	ug/L	200	106	200		10/14/21 03:09	156-60-5	
Tetrachloroethene	33600	ug/L	200	81.7	200		10/14/21 03:09	127-18-4	
Trichloroethene	519	ug/L	200	63.9	200		10/14/21 03:09	79-01-6	
Vinyl chloride	<34.9	ug/L	200	34.9	200		10/14/21 03:09	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		200		10/14/21 03:09	460-00-4	
1,2-Dichlorobenzene-d4 (S)	107	%	70-130		200		10/14/21 03:09	2199-69-1	
Toluene-d8 (S)	99	%	70-130		200		10/14/21 03:09	2037-26-5	

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ANALYTICAL RESULTS

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

Sample: MW-16 **Lab ID: 40234959015** Collected: 10/12/21 10:23 Received: 10/12/21 15:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Pace Analytical Services - Green Bay									
cis-1,2-Dichloroethene	1150	ug/L	10.0	4.7	10		10/14/21 03:28	156-59-2	
trans-1,2-Dichloroethene	38.0	ug/L	10.0	5.3	10		10/14/21 03:28	156-60-5	
Tetrachloroethene	331	ug/L	10.0	4.1	10		10/14/21 03:28	127-18-4	
Trichloroethene	93.1	ug/L	10.0	3.2	10		10/14/21 03:28	79-01-6	
Vinyl chloride	89.4	ug/L	10.0	1.7	10		10/14/21 03:28	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		10		10/14/21 03:28	460-00-4	
1,2-Dichlorobenzene-d4 (S)	104	%	70-130		10		10/14/21 03:28	2199-69-1	
Toluene-d8 (S)	99	%	70-130		10		10/14/21 03:28	2037-26-5	

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ANALYTICAL RESULTS

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

Sample: MW-17 **Lab ID: 40234959016** Collected: 10/12/21 10:57 Received: 10/12/21 15:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Pace Analytical Services - Green Bay									
cis-1,2-Dichloroethene	<0.47	ug/L	1.0	0.47	1		10/14/21 01:10	156-59-2	
trans-1,2-Dichloroethene	<0.53	ug/L	1.0	0.53	1		10/14/21 01:10	156-60-5	
Tetrachloroethene	<0.41	ug/L	1.0	0.41	1		10/14/21 01:10	127-18-4	
Trichloroethene	<0.32	ug/L	1.0	0.32	1		10/14/21 01:10	79-01-6	
Vinyl chloride	<0.17	ug/L	1.0	0.17	1		10/14/21 01:10	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		1		10/14/21 01:10	460-00-4	
1,2-Dichlorobenzene-d4 (S)	104	%	70-130		1		10/14/21 01:10	2199-69-1	
Toluene-d8 (S)	99	%	70-130		1		10/14/21 01:10	2037-26-5	

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ANALYTICAL RESULTS

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

Sample: PZ-1 **Lab ID: 40234959017** Collected: 10/12/21 13:33 Received: 10/12/21 15:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV		Analytical Method: EPA 8260 Pace Analytical Services - Green Bay							
cis-1,2-Dichloroethene	<0.47	ug/L	1.0	0.47	1		10/14/21 00:11	156-59-2	
trans-1,2-Dichloroethene	<0.53	ug/L	1.0	0.53	1		10/14/21 00:11	156-60-5	
Tetrachloroethene	<0.41	ug/L	1.0	0.41	1		10/14/21 00:11	127-18-4	
Trichloroethene	<0.32	ug/L	1.0	0.32	1		10/14/21 00:11	79-01-6	
Vinyl chloride	<0.17	ug/L	1.0	0.17	1		10/14/21 00:11	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	101	%	70-130		1		10/14/21 00:11	460-00-4	
1,2-Dichlorobenzene-d4 (S)	105	%	70-130		1		10/14/21 00:11	2199-69-1	
Toluene-d8 (S)	100	%	70-130		1		10/14/21 00:11	2037-26-5	

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ANALYTICAL RESULTS

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

Sample: PZ-2 **Lab ID: 40234959018** Collected: 10/12/21 13:35 Received: 10/12/21 15:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Pace Analytical Services - Green Bay									
cis-1,2-Dichloroethene	<0.47	ug/L	1.0	0.47	1		10/14/21 00:31	156-59-2	
trans-1,2-Dichloroethene	<0.53	ug/L	1.0	0.53	1		10/14/21 00:31	156-60-5	
Tetrachloroethene	<0.41	ug/L	1.0	0.41	1		10/14/21 00:31	127-18-4	
Trichloroethene	<0.32	ug/L	1.0	0.32	1		10/14/21 00:31	79-01-6	
Vinyl chloride	<0.17	ug/L	1.0	0.17	1		10/14/21 00:31	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	102	%	70-130		1		10/14/21 00:31	460-00-4	
1,2-Dichlorobenzene-d4 (S)	106	%	70-130		1		10/14/21 00:31	2199-69-1	
Toluene-d8 (S)	99	%	70-130		1		10/14/21 00:31	2037-26-5	

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ANALYTICAL RESULTS

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

Sample: PZ-3R **Lab ID: 40234959019** Collected: 10/12/21 08:45 Received: 10/12/21 15:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Pace Analytical Services - Green Bay									
cis-1,2-Dichloroethene	30.6	ug/L	1.0	0.47	1		10/14/21 01:30	156-59-2	
trans-1,2-Dichloroethene	2.2	ug/L	1.0	0.53	1		10/14/21 01:30	156-60-5	
Tetrachloroethene	<0.41	ug/L	1.0	0.41	1		10/14/21 01:30	127-18-4	
Trichloroethene	<0.32	ug/L	1.0	0.32	1		10/14/21 01:30	79-01-6	
Vinyl chloride	4.8	ug/L	1.0	0.17	1		10/14/21 01:30	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		1		10/14/21 01:30	460-00-4	pH
1,2-Dichlorobenzene-d4 (S)	104	%	70-130		1		10/14/21 01:30	2199-69-1	
Toluene-d8 (S)	99	%	70-130		1		10/14/21 01:30	2037-26-5	

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ANALYTICAL RESULTS

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

Sample: PZ-4 **Lab ID: 40234959020** Collected: 10/12/21 14:02 Received: 10/12/21 15:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Pace Analytical Services - Green Bay									
cis-1,2-Dichloroethene	<0.47	ug/L	1.0	0.47	1		10/13/21 23:51	156-59-2	
trans-1,2-Dichloroethene	<0.53	ug/L	1.0	0.53	1		10/13/21 23:51	156-60-5	
Tetrachloroethene	<0.41	ug/L	1.0	0.41	1		10/13/21 23:51	127-18-4	
Trichloroethene	<0.32	ug/L	1.0	0.32	1		10/13/21 23:51	79-01-6	
Vinyl chloride	<0.17	ug/L	1.0	0.17	1		10/13/21 23:51	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	101	%	70-130		1		10/13/21 23:51	460-00-4	
1,2-Dichlorobenzene-d4 (S)	104	%	70-130		1		10/13/21 23:51	2199-69-1	
Toluene-d8 (S)	99	%	70-130		1		10/13/21 23:51	2037-26-5	

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ANALYTICAL RESULTS

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

Sample: PZ-5 **Lab ID: 40234959021** Collected: 10/12/21 13:09 Received: 10/12/21 15:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Pace Analytical Services - Green Bay									
cis-1,2-Dichloroethene	18.1	ug/L	1.0	0.47	1		10/14/21 10:34	156-59-2	
trans-1,2-Dichloroethene	<0.53	ug/L	1.0	0.53	1		10/14/21 10:34	156-60-5	
Tetrachloroethene	16.9	ug/L	1.0	0.41	1		10/14/21 10:34	127-18-4	
Trichloroethene	5.9	ug/L	1.0	0.32	1		10/14/21 10:34	79-01-6	
Vinyl chloride	0.42J	ug/L	1.0	0.17	1		10/14/21 10:34	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	101	%	70-130		1		10/14/21 10:34	460-00-4	
1,2-Dichlorobenzene-d4 (S)	106	%	70-130		1		10/14/21 10:34	2199-69-1	
Toluene-d8 (S)	100	%	70-130		1		10/14/21 10:34	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

Sample: TRIP BLANK **Lab ID: 40234959022** Collected: 10/12/21 00:00 Received: 10/12/21 15:10 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV									
Analytical Method: EPA 8260									
Pace Analytical Services - Green Bay									
cis-1,2-Dichloroethene	<0.47	ug/L	1.0	0.47	1		10/14/21 10:15	156-59-2	
trans-1,2-Dichloroethene	<0.53	ug/L	1.0	0.53	1		10/14/21 10:15	156-60-5	
Tetrachloroethene	<0.41	ug/L	1.0	0.41	1		10/14/21 10:15	127-18-4	
Trichloroethene	<0.32	ug/L	1.0	0.32	1		10/14/21 10:15	79-01-6	
Vinyl chloride	<0.17	ug/L	1.0	0.17	1		10/14/21 10:15	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	102	%	70-130		1		10/14/21 10:15	460-00-4	
1,2-Dichlorobenzene-d4 (S)	106	%	70-130		1		10/14/21 10:15	2199-69-1	
Toluene-d8 (S)	99	%	70-130		1		10/14/21 10:15	2037-26-5	

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QUALITY CONTROL DATA

Project: 21-953 PHASE 12 BAY TOWEL
Pace Project No.: 40234959

QC Batch: 398416 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV
Laboratory: Pace Analytical Services - Green Bay
Associated Lab Samples: 40234959001, 40234959003, 40234959004, 40234959005, 40234959006, 40234959007, 40234959008, 40234959009, 40234959010, 40234959011, 40234959012, 40234959014, 40234959015, 40234959016, 40234959017, 40234959018, 40234959019, 40234959020

METHOD BLANK: 2299802 Matrix: Water
Associated Lab Samples: 40234959001, 40234959003, 40234959004, 40234959005, 40234959006, 40234959007, 40234959008, 40234959009, 40234959010, 40234959011, 40234959012, 40234959014, 40234959015, 40234959016, 40234959017, 40234959018, 40234959019, 40234959020

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
cis-1,2-Dichloroethene	ug/L	<0.47	1.0	10/13/21 17:55	
Tetrachloroethene	ug/L	<0.41	1.0	10/13/21 17:55	
trans-1,2-Dichloroethene	ug/L	<0.53	1.0	10/13/21 17:55	
Trichloroethene	ug/L	<0.32	1.0	10/13/21 17:55	
Vinyl chloride	ug/L	<0.17	1.0	10/13/21 17:55	
1,2-Dichlorobenzene-d4 (S)	%	104	70-130	10/13/21 17:55	
4-Bromofluorobenzene (S)	%	101	70-130	10/13/21 17:55	
Toluene-d8 (S)	%	101	70-130	10/13/21 17:55	

LABORATORY CONTROL SAMPLE: 2299803

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
cis-1,2-Dichloroethene	ug/L	50	55.9	112	70-130	
Tetrachloroethene	ug/L	50	54.3	109	70-130	
trans-1,2-Dichloroethene	ug/L	50	54.5	109	70-130	
Trichloroethene	ug/L	50	57.4	115	70-130	
Vinyl chloride	ug/L	50	54.6	109	63-142	
1,2-Dichlorobenzene-d4 (S)	%			100	70-130	
4-Bromofluorobenzene (S)	%			105	70-130	
Toluene-d8 (S)	%			98	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2300617 2300618

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		40234959012 Result	Spike Conc.	Spike Conc.	MS Result						
cis-1,2-Dichloroethene	ug/L	<0.47	50	50	53.8	55.1	108	110	70-130	2	20
Tetrachloroethene	ug/L	<0.41	50	50	51.6	55.1	103	110	70-130	6	20
trans-1,2-Dichloroethene	ug/L	<0.53	50	50	52.0	53.9	104	108	70-134	4	20
Trichloroethene	ug/L	<0.32	50	50	55.3	57.3	111	115	70-130	4	20
Vinyl chloride	ug/L	<0.17	50	50	44.6	45.9	89	92	61-143	3	20
1,2-Dichlorobenzene-d4 (S)	%						98	101	70-130		
4-Bromofluorobenzene (S)	%						102	103	70-130		
Toluene-d8 (S)	%						98	98	70-130		

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

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 21-953 PHASE 12 BAY TOWEL
Pace Project No.: 40234959

QC Batch: 398426 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV
Laboratory: Pace Analytical Services - Green Bay

Associated Lab Samples: 40234959002, 40234959013, 40234959021, 40234959022

METHOD BLANK: 2299961 Matrix: Water
Associated Lab Samples: 40234959002, 40234959013, 40234959021, 40234959022

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
cis-1,2-Dichloroethene	ug/L	<0.47	1.0	10/14/21 07:37	
Tetrachloroethene	ug/L	<0.41	1.0	10/14/21 07:37	
trans-1,2-Dichloroethene	ug/L	<0.53	1.0	10/14/21 07:37	
Trichloroethene	ug/L	<0.32	1.0	10/14/21 07:37	
Vinyl chloride	ug/L	<0.17	1.0	10/14/21 07:37	
1,2-Dichlorobenzene-d4 (S)	%	104	70-130	10/14/21 07:37	
4-Bromofluorobenzene (S)	%	102	70-130	10/14/21 07:37	
Toluene-d8 (S)	%	99	70-130	10/14/21 07:37	

LABORATORY CONTROL SAMPLE: 2299962

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
cis-1,2-Dichloroethene	ug/L	50	50.7	101	70-130	
Tetrachloroethene	ug/L	50	51.5	103	70-130	
trans-1,2-Dichloroethene	ug/L	50	51.8	104	70-130	
Trichloroethene	ug/L	50	54.3	109	70-130	
Vinyl chloride	ug/L	50	42.1	84	63-142	
1,2-Dichlorobenzene-d4 (S)	%			98	70-130	
4-Bromofluorobenzene (S)	%			101	70-130	
Toluene-d8 (S)	%			100	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2300652 2300653

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		40234959021 Result	Spike Conc.	Spike Conc.	MS Result						
cis-1,2-Dichloroethene	ug/L	18.1	50	50	72.5	71.0	109	106	70-130	2	20
Tetrachloroethene	ug/L	16.9	50	50	70.0	69.8	106	106	70-130	0	20
trans-1,2-Dichloroethene	ug/L	<0.53	50	50	54.5	54.3	108	108	70-134	0	20
Trichloroethene	ug/L	5.9	50	50	61.4	60.7	111	110	70-130	1	20
Vinyl chloride	ug/L	0.42J	50	50	50.8	49.6	101	98	61-143	2	20
1,2-Dichlorobenzene-d4 (S)	%						101	99	70-130		
4-Bromofluorobenzene (S)	%						102	103	70-130		
Toluene-d8 (S)	%						101	101	70-130		

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

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

DEFINITIONS

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

ND - Not Detected at or above LOD.

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

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

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

S - Surrogate

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

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

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

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

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

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

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

HS Results are from sample aliquot taken from VOA vial with headspace (air bubble greater than 6 mm diameter).

pH Post-analysis pH measurement indicates insufficient VOA sample preservation.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 21-953 PHASE 12 BAY TOWEL

Pace Project No.: 40234959

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40234959001	SMW-1R	EPA 8260	398416		
40234959002	MW-2RR	EPA 8260	398426		
40234959003	SMW-3R	EPA 8260	398416		
40234959004	MW-4	EPA 8260	398416		
40234959005	MW-5R	EPA 8260	398416		
40234959006	MW-6	EPA 8260	398416		
40234959007	MW-7R	EPA 8260	398416		
40234959008	MW-8	EPA 8260	398416		
40234959009	MW-9	EPA 8260	398416		
40234959010	MW-10	EPA 8260	398416		
40234959011	MW-12	EPA 8260	398416		
40234959012	MW-13	EPA 8260	398416		
40234959013	MW-14	EPA 8260	398426		
40234959014	MW-15	EPA 8260	398416		
40234959015	MW-16	EPA 8260	398416		
40234959016	MW-17	EPA 8260	398416		
40234959017	PZ-1	EPA 8260	398416		
40234959018	PZ-2	EPA 8260	398416		
40234959019	PZ-3R	EPA 8260	398416		
40234959020	PZ-4	EPA 8260	398416		
40234959021	PZ-5	EPA 8260	398426		
40234959022	TRIP BLANK	EPA 8260	398426		

REPORT OF LABORATORY ANALYSIS

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(Please Print Clearly)

Company Name: Fehr Graham
 Branch/Location: Sheboygan
 Project Contact: Dillon Plamann
 Phone: 920-453-0700
 Project Number: 21-953 Phase 12
 Project Name: Bay Towel
 Project State: WI
 Sampled By (Print): Kelsey Bird
 Sampled By (Sign): *[Signature]*
 PO #:



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

COC No. 40234959

CHAIN OF CUSTODY

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

FILTERED?
(YES/NO)
 PRESERVATION
(CODE)*

Y/N	N																		
	B																		

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

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

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

PACE LAB #	CLIENT FIELD ID	COLLECTION		MATRIX	Analyses Requested	CVOCs
		DATE	TIME			
	SMW-1R	10/12	1:00	GW	x	
	MW-2RR	10/12	9:04	GW	x	
	SMW-3R		8:17	GW	x	
	MW-4		12:26	GW	x	
	MW-5R		1:22	GW	x	
	MW-6		12:11	GW	x	
	MW-7R		11:53	GW	x	
	MW-8		12:36	GW	x	
	MW-9		12:32	GW	x	
	MW-10		12:43	GW	x	
	MW-12		11:19	GW	x	
	MW-13		1:59	GW	x	
	MW-14		2:19	GW	x	

Quote #:

Mail To Contact: Dillon Plamann

Mail To Company: Fehr Graham

Mail To Address: dplamann@fehr-graham.com

Invoice To Contact: a/a

Invoice To Company: a/a

Invoice To Address: a/a

Invoice To Phone: 920-453-0700

CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
		001
		002
		003
		004
		005
		006
		007
		008
		009
		010
		011
		012
		013

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

Relinquished By: *Kelsey M...* Date/Time: 10/12 3:10
 Received By: *[Signature]* Date/Time: 10/12/21 3:10

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

Email #1: _____ Date/Time: _____
 Email #2: _____ Date/Time: _____
 Telephone: _____ Date/Time: _____
 Fax: _____ Date/Time: _____

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

PACE Project No. 40234959
 Receipt Temp = 3.1 °C
 Sample Receipt pH OK / Adjusted
 Cooler Custody Seal Present / Not Present Intact / Not Intact

(Please Print Clearly)

Company Name: Fehr Graham
 Branch/Location: Sheboygan
 Project Contact: Dillon Plamann
 Phone: 920-453-0700
 Project Number: 21-953 Phase 12
 Project Name: Bay Towel
 Project State: WI
 Sampled By (Print): Kelsey Bird
 Sampled By (Sign): *Kelsey Bird*
 PO #:
 Regulatory Program:



UPPER MIDWEST REGION

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

40234959

CHAIN OF CUSTODY

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

FILTERED?
(YES/NO)
 PRESERVATION
(CODE)*

Y/N	Pick Letter	Analyses Requested																			
N	B																				

Quote #:
 Mail To Contact: a/r Same as Page 1
 Mail To Company: a/a
 Mail To Address: a/a
 Invoice To Contact: a/a
 Invoice To Company: a/a
 Invoice To Address: a/a
 Invoice To Phone: a/a
 CLIENT COMMENTS
 LAB COMMENTS (Lab Use Only)
 Profile #

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

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

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

PACE LAB #	CLIENT FIELD ID	COLLECTION		MATRIX	Y/N	Pick Letter	Analyses Requested
		DATE	TIME				
001	NW-15	10/12	9:44		X		
002	NW-16	↑	10:23		X		
003	NW-17		10:57		X		
004	PZ-1		1:33		X		
005	PZ-2		1:35		X		
006	PZ-3R		8:45		X		
007	PZ-4		2:02		X		
008	PZ-5		1:09		X		
009	Trip Blank	✓	—		X		


Rush Turnaround Time Requested - Prelims (Rush TAT subject to approval/surcharge)
 Date Needed:
 Relinquished By: *Kelsey Bird* Date/Time: 10/12/21 3:10
 Received By: *Maya Kellner* Date/Time: 10/12/21 3:10
 PACE Project No. 40234959
 Receipt Temp = 3.1 °C
 Sample Receipt pH OK / Adjusted
 Cooler Custody Seal Present / Not Present Intact / Not Intact
 Email #1:
 Email #2:
 Telephone:
 Fax:
 Samples on HOLD are subject to special pricing and release of liability

Sample Preservation Receipt Form

Client Name: Fehr Graham


Project #: 40234959

Pace Lab #	Glass								Plastic					Vials					Jars				General			VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act. pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)									
	AG1U	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								
21																																									2.5 / 5 / 10
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 1241 Bellevue Street, Green Bay, WI 54302	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: 26Mar2020
	Document No.: ENV-FRM-GBAY-0014-Rev.00	Author: Pace Green Bay Quality Office

Sample Condition Upon Receipt Form (SCUR)

Client Name: Fehr Graham
Courier: CS Logistics Fed Ex Speedee UPS Waltco
 Client Pace Other: _____

Project #: _____
WO# : 40234959

 40234959

Tracking #: N/A
Custody Seal on Cooler/Box Present: yes no ^{10/12/21} Seals intact: yes no
Custody Seal on Samples Present: yes no Seals intact: yes no
Packing Material: Bubble Wrap Bubble Bags None Other
Thermometer Used: SR-113 **Type of Ice:** Blue Dry None
Cooler Temperature: Uncorr: 3° / Corr: 3.1°
Temp Blank Present: yes no **Biological Tissue is Frozen:** yes no

Samples on ice, cooling process has begun
Person examining contents:
 Date: 10/12/21 Initials: MP
 Labeled By Initials: AL

Temp should be above freezing to 6°C.
 Biota Samples may be received at ≤ 0°C if shipped on Dry Ice.

Chain of Custody Present:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.
Chain of Custody Filled Out:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.
Chain of Custody Relinquished:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.
Sampler Name & Signature on COC:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.
Samples Arrived within Hold Time:	<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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	13.
Trip Blank Custody Seals Present	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution: _____ If checked, see attached form for additional comments
 Person Contacted: _____ Date/Time: _____
 Comments/ Resolution: _____

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

Appendix B

Pace Analytical PFAS Field Sampling Guide

PFAS FIELD SAMPLING GUIDE

Per- and Polyfluoroalkyl Substances (PFAS) are found in a variety of sources, including equipment typically used to collect soil, groundwater, surface water, sediment, and drinking water samples. Due to this concern, as well as the need for very low reporting limits, special handling and care must be taken when collecting samples.

To avoid PFAS sample contamination, Pace Analytical[®] has developed this Guide of recommendations for collecting PFAS samples for testing and analysis.



BEST PRACTICES FOR PFAS SAMPLE COLLECTION

- Wash hands and use new nitrile gloves for each sample collected
- Groundwater, surface water, or drinking water samples should not be filtered as the glass fiber on the filter can potentially absorb PFAS
- Collect the PFAS sample first, prior to collecting samples for any other parameters into any other containers. This avoids contact with any other type of sample container, bottles or package materials
- Do not place the sample bottle cap on any surface when collecting the sample, and avoid all contact with the inside of the sample bottle or its cap
- When the labeled sample is collected, place the samples in an individual sealed plastic bag separate from all other sample parameter bottles
- Samples must be chilled during shipment and should arrive at the lab at $<6\text{ C } \pm 2$

FIELD QUALITY CONTROL

Field QC is important since many items typically taken to the field contain PFAS and laboratories report to single digit ppt or ng/L levels. The use of Field Reagent Blanks (FRB) (synonymous with Field Blanks) is written into EPA 537.1 and 533 as a means to verify that PFAS contamination of samples was not caused by the field sampling activity. FRBs include a container filled with PFAS-free water and an empty container. An FRB is collected by pouring the PFAS-free water into the empty container at the time a sample is collected in the field. The FRB is processed in the laboratory in the same manner as a field sample.

The use of PFAS-free rinsate water is recommended after cleaning any required sampling equipment (before and after sampling) for matrices such as soil. Collection of the rinsate water as an Equipment Blank (EB) and submittal to the laboratory for analysis is recommended to verify that sampling equipment did not cause contamination of samples.

Some states have issued sampling standard operating procedures that also stipulate the use of Trip Blanks (TBs) for PFAS projects.

FIELD SAMPLING GUIDE

MATRIX	CONTAINER	PRESERVATIVE	METHOD	NOTES
Drinking Water	2 x 250 ml HDPE or PP	Trizma	EPA Method 537 or EPA Method 537M	Trizma is a buffer and removes free chlorine.
Groundwater, surface water, waters	2 x 250 ml HDPE or PP	none	EPA Method 537M	
Effluent	2 x 250 ml HDPE or PP	Trizma	EPA Method 537M	Finished samples may require Trizma.
Soil, sediment, bio-solids	1 x 250 ml (or 4 ounce) HDPE or PP	none	EPA Method 537M	

Sample extraction = 14 days. Sample analysis = 28 days.

DO USE

DO NOT USE

Sample Container Items

- HDPE or Polypropylene (PP)
- Lined or unlined HDPE or polypropylene caps
- Glass or LDPE container
- Teflon™-lined cap

Field Equipment

- High density polyethylene (HDPE) or polypropylene materials
- Silicon tubing
- Loose paper (non-water resistant)
- Aluminum field clipboards or Masonite
- Sharpies, pens
- Regular Ice
- Teflon™ containing materials
- Teflon™ tubing
- Waterproof field books
- Plastic clipboards, binders, or spiral notebooks
- Post-It Notes
- Chemical (blue) ice packs

Field Clothing and Personal Protection Equipment

- Well-laundered clothing, defined as clothing that has been washed six or more times after purchase, made of synthetic or natural fibers. Cotton clothing preferred.
- No fabric softener
- Boots made with polyurethane and polyvinyl chloride (PVC)
- Sunscreen that is all natural and/or organic
- Insect repellents that is all natural and/or organic
- New clothing or water resistant, waterproof, or stain-treated clothing; no clothing containing Gore-Tex™
- Clothing laundered using fabric softener
- Tyvek®
- Boots containing Gore-Tex™
- Cosmetics, moisturizers, hand cream or related products as part of personal hygiene and/or showering routine the day of sampling

Field Equipment Decontamination Items

- Alconox® and/or Liquinox®
- Decon 90

Food Items

- Bottled water and hydration drinks (i.e. Gatorade® and Powerade®) to be brought and consumed only in the staging area
- Food and drink other than the exceptions listed at left.

Field Sampling Guidance & SOPs

Click here for a list of state and other organization issued SOPs.

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